

RETAIL LIGHTING

Food | Fashion | Shop

SALES-PROMOTING AND EFFICIENT LIGHTING

Optimum light quality for
your products



- › Food
- › Fashion
- › Shop



Managing Director: Johannes Brumberg and Benedikt Brumberg

LIGHT FOR GENERATIONS

‘The spirit of innovation, quality and sustainability – our basic philosophy is based on these cornerstones. Also and especially in times of technological change’.

Johannes Brumberg

Trailblazing and smart lighting solutions

As an independent family company, BRUMBERG is one of the leading producers of innovative and smart lighting solutions. We combine a wealth of experience with extensive knowledge about the market. We also use the latest technologies, which we continually and actively develop further. We are investing today in tomorrow's trends and standards in order to think ahead to future-oriented solutions. At the same time we are paying attention to the highest levels of material and workmanship. This is an expression of our value-oriented and sustainable company philosophy.

A unique diversity of products

We offer in our portfolio a broad spectrum of LED lights and lighting fixtures with conventional light sources in various designs, materials, surface finishes and power ratings with different protection classes for all applications. We have the widest range of recessed spots throughout Europe. We have professionally implemented diverse product types from Tunable White and dim2warm to laser technology and flex strips to retail lighting concepts and dynamic lighting scenarios. In close collaboration with scientists at the South Westphalia University of Applied Sciences, we have created the smart vitalizing vitaLED® RGBW lighting system. Customised project-related solutions are also feasible in all product areas.

Complex lighting projects

We are connected through numerous alliances to electricians, lighting planners, architects, wholesalers and specialist retailers. In our BRUMBERG TECHNOLOGY CENTRE, we convey to our partners theoretical principles and practical know-how about the latest lighting technology, e.g. for the retail sector, hotel and restaurant sector, healthcare, industry and the upscale private sector.

Focus on the retail sector

Our focus is on sales-promoting and energy-efficient lighting for the retail sector. We bring our many years of know-how into every lighting concept. With our professional lighting concepts, we contribute significantly to sales success. Our retail specialists manage to activate the desire to buy and create buying incentives.

We offer a wide selection of the latest lighting technology for food, fashion and shop applications. With this technology, we highlight the atmosphere of the store and bring retail spaces to life.

RETAIL LIGHTING 2017

Optimum light quality for your products

With vivid lighting scenarios, we ensure the perfect staging of the store as an experiential space for brands and products. Good illumination is just as important as the targeted accentuation of the products. Using light, we emphasise product quality and optimise the product presentation.

Retail lighting performs the following functions:

- Staging the store as an experiential space
- Attractive product presentation
- Good orientation through all areas
- Clear guidance to the presentation areas and goods
- Increase awareness
- Create buying incentives
- Convey brand messages / brand identities

Light quality and efficiency

Our lighting solutions are characterised by an outstanding quality of light. The LED lights have a long service life and low energy consumption. Considering the still high energy consumptions (see infobox), technical quality and efficiency determine good store lighting.

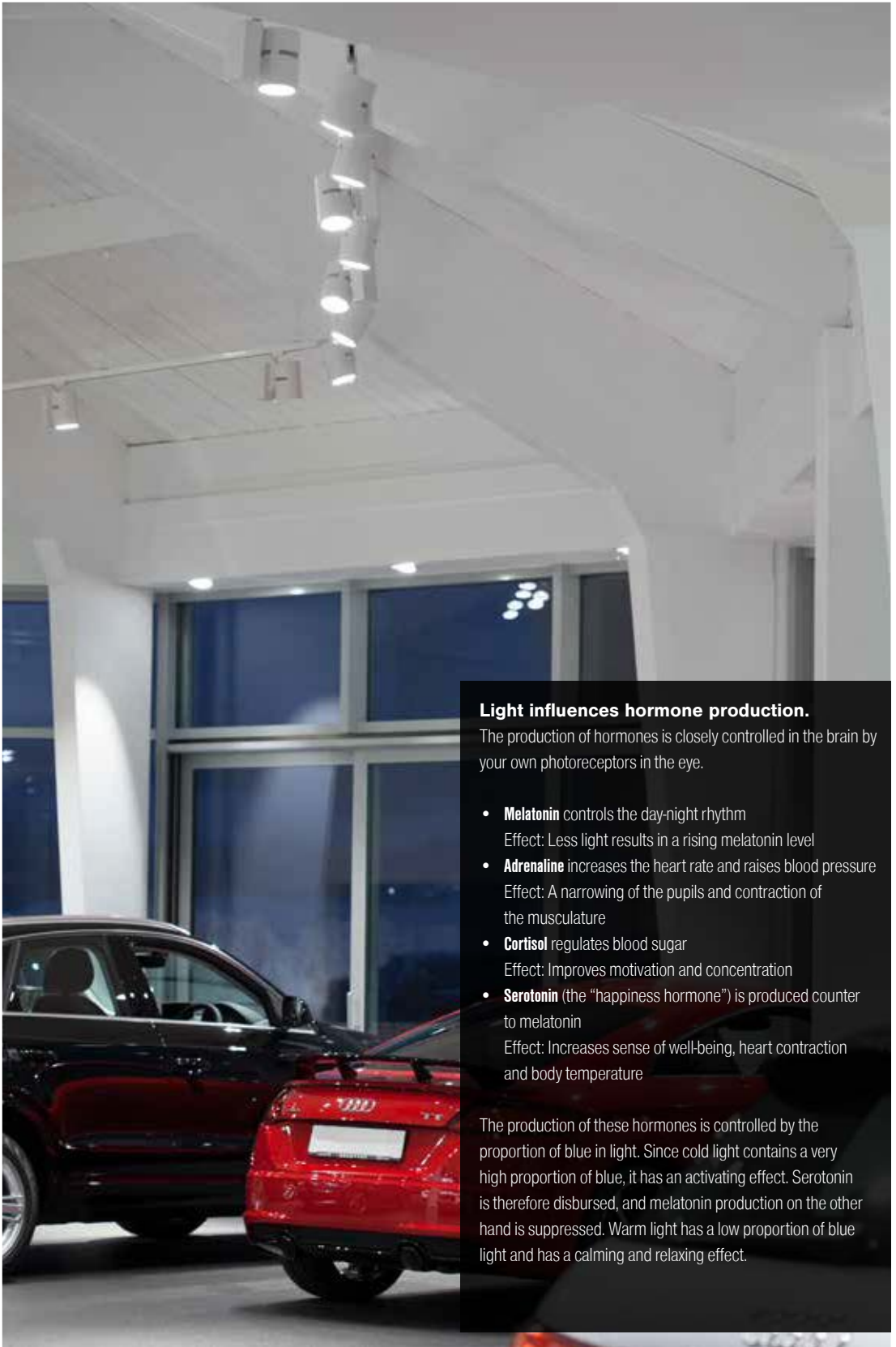
Biological and psychological factors

In addition, we take biological and psychological factors into account during our light planning – for light colour, brightness and light quality contribute significantly to increasing the well-being of people. If, for example, light is adapted to the time of day, that can have a positive effect on the motivation of the customers. Communication is stimulated, and “natural” light promotes regeneration in quiet areas. Commitment of employees can also be increased in this way.

How LED lighting lowers energy costs

The share of energy costs for store lighting is 27% in the food sector and even 53% in the non-food sector, according to the EHI Retail Institute. Based on these figures, 70% of retailers have already decided to convert to energy-efficient LED lighting by 2020.

Since LED light gives off less heat into the room, additional energy can be saved. Less heat means less energy is expended for air-conditioning. Energy costs of air conditioners can therefore be significantly reduced.



Light influences hormone production.

The production of hormones is closely controlled in the brain by your own photoreceptors in the eye.

- **Melatonin** controls the day-night rhythm
Effect: Less light results in a rising melatonin level
- **Adrenaline** increases the heart rate and raises blood pressure
Effect: A narrowing of the pupils and contraction of the musculature
- **Cortisol** regulates blood sugar
Effect: Improves motivation and concentration
- **Serotonin** (the "happiness hormone") is produced counter to melatonin
Effect: Increases sense of well-being, heart contraction and body temperature

The production of these hormones is controlled by the proportion of blue in light. Since cold light contains a very high proportion of blue, it has an activating effect. Serotonin is therefore disbursed, and melatonin production on the other hand is suppressed. Warm light has a low proportion of blue light and has a calming and relaxing effect.



3D visualisation with Relux®

LIGHT PLANNING AND SALES PROMOTION

In the retail sector, we use light as an essential design factor. Using customised lighting concepts, we create a connection between architecture, the interior and the product range. In this way we achieve an optimum lighting effect for actively supporting sales with maximum energy efficiency and compliance with all the relevant standards.

Lighting concept with priorities and goals

Together with our customers, we define goals and priorities before the beginning of the project. We then select the types of lighting. Defining light management, lights, lamps and control units follows. Every component should make a maximum contribution to light quality, purpose orientation and energy efficiency.

A vivid image through 3D visualisation

Special software programs, such as the leading planning software Relux®, support lighting planners by making photometric calculations for a lighting system. RELUX provides all the necessary programs and data for preparing professional planning. A graphic computer display conveys a vivid image of the property and the light planning as a 3D visualisation. This includes both the basic lighting as well as the accent lighting in interior and exterior spaces.

Planning reliability through lighting calculation

With the help of the lighting calculation, parameters such as type of lighting, lighting intensity and lighting mood are determined and checked in advance. The position of the lights can also be precisely determined. The calculation of the correct photometric data furthermore provides information about compliance with international standards.



Completed property
Autohaus Hoffmann, Winterberg

RELUX®

We make available on an online platform – together with other international manufacturers – our complete product information in a standardised format. From a selection of around a million light, 2,000 sensor and 1,000 lamp variants, lighting designers can quickly and securely find the right BRUMBERG products in the right configuration. The selected light fixtures can be compared, and the favourites saved in the account made available by Relux®. Sharing your own knowledge with other ReluxNet users is also possible, as is the online calculation of the number of products required for a specific task. We are convinced that you can work extremely efficiently using ReluxNet.

RELUX®
international member



Carolin Baumgärtner
Interior designer (B.A.)
Brumberg Light Planning



ModulMax[®]



ONE DESIGN, MORE THAN
4,000 CONFIGURATIONS.

**Modular LED spots for contemporary
flexible sales concepts**

The modular design is based on a well thought-out concept that combines the uniformity of the light design with maximum flexibility in the configuration of the spot. The components of the ModulMax[®] LED spots meet the highest quality demands in order to be ready for replacement.

Insert, engage, finished!

The important quality features of the components are material strength, accuracy of fit and cable lengths for the mechanical components as well as luminous power and efficiency and colour fidelity for the LED elements. An exact coding supports the easy assembly according to the principle: insert, engage, finished! The reliable accuracy of fit is thus thought through ahead of time and the modules are automatically fixed in the correct position.

Uniform light design

For the project-related configuration of the LED spots, the ModulMax[®] programme offers more than 4,000 versions. BRUMBERG Service includes personal consultation for the optimum configuration. The ModulMax[®] spots will be delivered fully assembled according to your configuration. The homogeneous lighting design ensures a balanced aesthetic in the store. In this way, the attention of the customer will be directed specifically to the brand messages and products.





DESIGNED WITH AN EYE FOR DETAIL

ModuMax® LED spots in high-end quality

The ModuMax® LED lights create a very harmonious light pattern that meet the most stringent demands. The chip and reflector are perfectly matched for this purpose. Due to the smooth transitions, no contours are visible, and the outer corona does not show any shadings. In this way, shops and products manage to be put in their best possible light.

ModulMax®

Click, Click
Light!

ModulMax®
Now configure
products
quickly &
easily online



THE MODULMAX® ONLINE CONFIGURATOR

Maximum simplicity:
Configuring LED spots individually

By means of the unique variety of over 4,000 configurations, the online configurator leads to the desired spot – securely, easily and quickly.

Nine parameters are configured click by click: from the type of light to the housing colour, the colour temperature, the current feed and the colour rendering index to the beam angle, dimmability and protective glass. The result shows the customised ModulMax® LED spot that will optimally meet the requirements of the particular retail concept with its specific categories of goods. The data sheet of the configured light is available for downloading. We will be happy to create a quote including the required accessories.

Configurable from the converter to the reflector

The converter

Selected brand name converters that have been tested by BRUMBERG connect the ModulMax® LED spots to a track system. The converters are equipped with a universal adapter, which is compatible with almost all conventional 3-phase track systems. Our service team will be happy to help you find a solution to establish a connection to older 3-phase tracks or to Dali track systems of various manufacturers.

The housing

The spotlight housing is available in the basic colours white, black and silver. 'RAL on request' is feasible depending on the project. The ModulMax® LED spots will then be painted in selected RAL colours. Thanks to the well thought-out engagement coding, even small details such as the cooling slot in the housing cover is always automatically fixed in the same position. All of the spots installed in the store are thus combined into a harmonious overall appearance with the uniform light design.

The light engine:

The entire light engine is installed 'with one turn' in the LED spot. It can be replaced just as easily if necessary. The heat sink including the chip and cable connection are easily screwed into the track spot at the practical grip bar.

With the heat sink that has been specially developed for the LED chips, BRUMBERG ensures a constant housing temperature with top values: Tc value of 43° Celsius at 24.3 watt LED output and Tc value of 51° Celsius at 37.5 watt LED output. The reduced thermal load has a positive effect on the service life of the LED chips and the light yield. Less energy is required for the air conditioning of the stores as a result of the sound temperature management.

The ModulMax® LED spots are equipped with the latest generation of high-quality brand name chips. Brumberg has available a wide range with six basic light engines for different retail applications. These light engines – as well as additional special chips for food – can be selected using the online configurator.

The front ring

The front ring can be configured with or without protective glass or a glass colour filter. The quality protective glass ensures a high light yield and virtually reflection-free emission. This provides energy efficiency and accents the intrinsic value of the products that can be showcased and promoted with the high-quality protective glass in the front ring.

The light colour

With the special BBL LED chip (below black body locus), BRUMBERG offers an interesting lighting variant with 3000 Kelvin. The light colour is below the Planckian curve. The unneeded green component is thereby reduced in the light, which is at 2700 Kelvin, 3000 Kelvin and 3500 Kelvin on the Planckian curve. These findings are based on a study of the American Light Research Center.

The colour coordinates of the BBL chip are ideally suited for fashion store lighting. The colours appear to be more brilliant, and white and colour-intensive articles of clothing especially are more radiant. Equally worthwhile is the LED variant with 3500 Kelvin. Blue and black can be especially well differentiated with this version, which makes the selection of men's outerwear easier.

The reflector

With beam angles of 12°, 24°, 36° or 60°, the ModulMax® LED spots can be used both for illuminating large surfaces as well as for spot accent illumination of display areas and shelf systems. The bayonet fitting ensures easy installation and replacement of the reflector. The front ring is also easy to insert and is automatically fixed in the correct position by the coding. The angle of reflection can thereby be changed if necessary without much effort.



Food Light

Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

ModulMax[®]



Track spotlights

Track spotlights that can be easily positioned lend themselves to flexible lighting for frequently changing store concepts.

Track spotlights

The brand name converter installed horizontally on the track appears unobtrusively and is integrated harmoniously into the store. In this design, vertical installation of the tracks is also possible on the wall in order, for example, to stage ceilings as well.

THE IDEAL SOLUTION
FOR EVERY STORE

Suitable for track and ceiling installation



Semi-recessed directional spotlights

The fixed installation equivalent to track spots. Also suitable for suspended ceilings with low installation depth.

Mounted directional spotlights

Mounted spots especially lend themselves to areas where tracks cannot be installed.

Ceiling-installed directional spotlights

Especially good for low room heights. Ceiling-tight installation. There is no view into ceiling cavities even in the swivelled alignment. Can be used unswivelled as a downlight due to the small gap size.



Tracklights



88343... to 88350...
ModulMax® LED tracklights

ModulMax®

27W

System efficiency
up to 113 lm / w

Luminaire light flux
up to 3057 lm



Specification

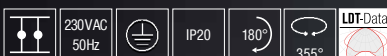
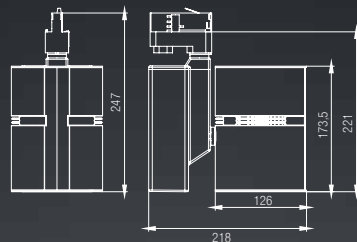
Incl. light source: 1 x LED COB, colour rendering: CRI > 80,
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling, dimensions lamp: Ø 126 mm x 173,5 mm, weight approx. 2.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC)
Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



88343... to 88350...

ModulMax® LED tracklights 27W

NEW

LED power: 24.3 W, System power: 27 W

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Flux	System efficiency	Price €
88347073	88347083	88347683	2700 K	12°	Spot (SP)	3052 lm	113 lm/W	339.00
88348073	88348083	88348683	2700 K	24°	Medium Flood (MF)	3052 lm	113 lm/W	339.00
88349073	88349083	88349683	2700 K	36°	Flood (FL)	3052 lm	113 lm/W	339.00
88350073	88350083	88350683	2700 K	60°	Wide Flood (WFL)	3052 lm	113 lm/W	339.00
88343073	88343083	88343683	3000 K	12°	Spot (SP)	3193 lm	118 lm/W	339.00
88344073	88344083	88344683	3000 K	24°	Medium Flood (MF)	3193 lm	118 lm/W	339.00
88345073	88345083	88345683	3000 K	36°	Flood (FL)	3193 lm	118 lm/W	339.00
88346073	88346083	88346683	3000 K	60°	Wide Flood (WFL)	3193 lm	118 lm/W	339.00
88347074	88347084	88347684	3500 K	12°	Spot (SP)	3286 lm	122 lm/W	339.00
88348074	88348084	88348684	3500 K	24°	Medium Flood (MF)	3286 lm	122 lm/W	339.00
88349074	88349084	88349684	3500 K	36°	Flood (FL)	3286 lm	122 lm/W	339.00
88350074	88350084	88350684	3500 K	60°	Wide Flood (WFL)	3286 lm	122 lm/W	339.00
88343074	88343084	88343684	4000 K	12°	Spot (SP)	3347 lm	124 lm/W	339.00
88344074	88344084	88344684	4000 K	24°	Medium Flood (MF)	3347 lm	124 lm/W	339.00
88345074	88345084	88345684	4000 K	36°	Flood (FL)	3347 lm	124 lm/W	339.00
88346074	88346084	88346684	4000 K	60°	Wide Flood (WFL)	3347 lm	124 lm/W	339.00



ModulMax® - Now configure quickly & easily online using the new Brumberg online configurator www.brumberg.com/ModulMax-Konfigurator. You will find detailed information on ModulMax® on pages 10-15.



Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

8817... / 8894...

ModulMax® LED tracklight accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® LED track spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI*	Surcharge incl. special food chip, not dimmable
- 12.50 €	339.00 €	not available	+ 25.30 €

88356... to 88367...
ModulMax® LED tracklights

ModulMax®

40 W

System efficiency
up to 105 lm/W

Luminaire light flux
up to 4193 lm



Specification

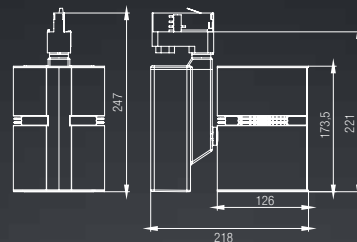
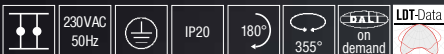
Incl. light source: 1 x LED COB, colour rendering: CRI > 80,
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling,
dimensions lamp: Ø 126 mm x 173,5 mm, weight approx. 2.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230V AC)
Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



88356... to 88363...

ModulMax® LED tracklights 40W

NEW

LED power: 37.5 W, System power: 40 W

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88360073	88360083	88360683	2700 K	12°	Spot (SP)	4189 lm	105 lm/W	339.00
88361073	88361083	88361683	2700 K	24°	Medium Flood (MF)	4189 lm	105 lm/W	339.00
88362073	88362083	88362683	2700 K	36°	Flood (FL)	4189 lm	105 lm/W	339.00
88363073	88363083	88363683	2700 K	60°	Wide Flood (WFL)	4189 lm	105 lm/W	339.00
88356073	88356083	88356683	3000 K	12°	Spot (SP)	4382 lm	110 lm/W	339.00
88357073	88357083	88357683	3000 K	24°	Medium Flood (MF)	4382 lm	110 lm/W	339.00
88358073	88358083	88358683	3000 K	36°	Flood (FL)	4382 lm	110 lm/W	339.00
88359073	88359083	88359683	3000 K	60°	Wide Flood (WFL)	4382 lm	110 lm/W	339.00
88360074	88360084	88360684	3500 K	12°	Spot (SP)	4510 lm	113 lm/W	339.00
88361074	88361084	88361684	3500 K	24°	Medium Flood (MF)	4510 lm	113 lm/W	339.00
88362074	88362084	88362684	3500 K	36°	Flood (FL)	4510 lm	113 lm/W	339.00
88363074	88363084	88363684	3500 K	60°	Wide Flood (WFL)	4510 lm	113 lm/W	339.00
88356074	88356084	88356684	4000 K	12°	Spot (SP)	4594 lm	115 lm/W	339.00
88357074	88357084	88357684	4000 K	24°	Medium Flood (MF)	4594 lm	115 lm/W	339.00
88358074	88358084	88358684	4000 K	36°	Flood (FL)	4594 lm	115 lm/W	339.00
88359074	88359084	88359684	4000 K	60°	Wide Flood (WFL)	4594 lm	115 lm/W	339.00



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Customised food lighting solutions

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8817... / 8894...

ModulMax® LED tracklight accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® LED track spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI*	Surcharge incl. special food chip, not dimmable
- 12,50 €	339,00 €	+ 66,00	+ 25,30 €

*Only for Brumberg 1-phase DALI tracks

89091... to 89102...
ModulMax® LED tracklights

ModulMax®

27W

System efficiency
up to 113 lm/w

Luminaire light flux
up to 3057lm



Specification

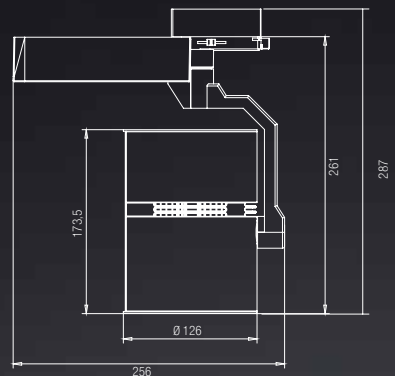
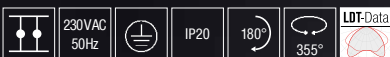
Incl. light source: 1 x LED COB, colour rendering: CRI > 80,
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling,
dimensions lamp: Ø 126 mm x 261 mm, weight approx. 2.800 g

Incl. operating device, not dimmable, power factor >0.9 (230 V AC)
Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



89091... to 89102...

ModulMax® LED tracklights 27W

NEW

LED power: 24.3 W, System power: 27 W

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
89091027	89095027	89099027	2700K	12°	Spot (SP)	2559 lm	95 lm/W	375.00
89092027	89096027	89100027	2700K	24°	Medium Flood (MF)	2585 lm	96 lm/W	375.00
89093027	89097027	89101027	2700K	36°	Flood (FL)	2617 lm	97 lm/W	375.00
89094027	89098027	89102027	2700K	60°	Wide Flood (WFL)	2630 lm	97 lm/W	375.00
89091030	89095030	89099030	3000K	12°	Spot (SP)	2677 lm	99 lm/W	375.00
89092030	89096030	89100030	3000K	24°	Medium Flood (MF)	2704 lm	100 lm/W	375.00
89093030	89097030	89101030	3000K	36°	Flood (FL)	2738 lm	101 lm/W	375.00
89094030	89098030	89102030	3000K	60°	Wide Flood (WFL)	2751 lm	102 lm/W	375.00
89091035	89095035	89099035	3500K	12°	Spot (SP)	2756 lm	102 lm/W	375.00
89092035	89096035	89100035	3500K	24°	Medium Flood (MF)	2783 lm	103 lm/W	375.00
89093035	89097035	89101035	3500K	36°	Flood (FL)	2818 lm	104 lm/W	375.00
89094035	89098035	89102035	3500K	60°	Wide Flood (WFL)	2832 lm	105 lm/W	375.00
89091040	89095040	89099040	4000K	12°	Spot (SP)	2807 lm	104 lm/W	375.00
89092040	89096040	89100040	4000K	24°	Medium Flood (MF)	2835 lm	105 lm/W	375.00
89093040	89097040	89101040	4000K	36°	Flood (FL)	2871 lm	106 lm/W	375.00
89094040	89098040	89102040	4000K	60°	Wide Flood (WFL)	2885 lm	107 lm/W	375.00



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8817... / 8894...

ModulMax® LED tracklight accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
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88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® LED track spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI	Surcharge incl. special food chip, not dimmable
- 12,50 €	375,00 €	not available	+ 25,30 €

89103... to 89114...
ModulMax® LED tracklights

ModulMax®

40 W

System efficiency
up to 105 lm/w

Luminaire light flux
up to 4193 lm



Specification

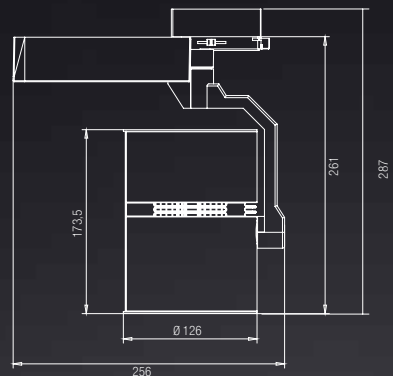
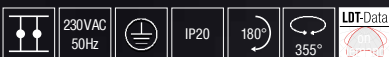
Incl. light source: 1 x LED COB, colour rendering: CRI > 80,
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling,
dimensions lamp: Ø 126 mm x 261 mm, weight approx. 2.800 g

Incl. operating device, not dimmable, power factor >0,9 (230 V AC)
Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



89103... to 89114...

ModulMax® LED tracklights 40W

NEW

LED power: 37.5 W, System power: 40 W

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €	
89103027	89107027	89111027	2700 K	●	12°	Spot (SP)	3511 lm	88 lm/W	375.00
89104027	89108027	89112027	2700 K	●	24°	Medium Flood (MF)	3546 lm	89 lm/W	375.00
89105027	89109027	89113027	2700 K	●	36°	Flood (FL)	3590 lm	90 lm/W	375.00
89106027	89110027	89114027	2700 K	●	60°	Wide Flood (WFL)	3607 lm	90 lm/W	375.00
89103030	89107030	89111030	3000 K	●	12°	Spot (SP)	3673 lm	92 lm/W	375.00
89104030	89108030	89112030	3000 K	●	24°	Medium Flood (MF)	3710 lm	93 lm/W	375.00
89105030	89109030	89113030	3000 K	●	36°	Flood (FL)	3757 lm	94 lm/W	375.00
89106030	89110030	89114030	3000 K	●	60°	Wide Flood (WFL)	3774 lm	94 lm/W	375.00
89103035	89107035	89111035	3500 K	●	12°	Spot (SP)	3780 lm	95 lm/W	375.00
89104035	89108035	89112035	3500 K	●	24°	Medium Flood (MF)	3818 lm	95 lm/W	375.00
89105035	89109035	89113035	3500 K	●	36°	Flood (FL)	3866 lm	97 lm/W	375.00
89106035	89110035	89114035	3500 K	●	60°	Wide Flood (WFL)	3884 lm	97 lm/W	375.00
89103040	89107040	89111040	4000 K	●	12°	Spot (SP)	3851 lm	96 lm/W	375.00
89104040	89108040	89112040	4000 K	●	24°	Medium Flood (MF)	3889 lm	97 lm/W	375.00
89105040	89109040	89113040	4000 K	●	36°	Flood (FL)	3938 lm	98 lm/W	375.00
89106040	89110040	89114040	4000 K	●	60°	Wide Flood (WFL)	3957 lm	99 lm/W	375.00



ModulMax® - Now configure quickly & easily online using the new Brumberg online configurator www.brumberg.com/ModulMax-Konfigurator. You will find detailed information on ModulMax® on pages 10-15.



Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

8817... / 8894...

ModulMax® LED tracklight accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® LED track spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI	Surcharge incl. special food chip, not dimmable
- 12,50 €	375,00 €	not available	+ 25,30 €

88381... LED tracklights

NEW



Specification

Incl. light source: 1x LED COB, LED power: 30 W, power of sytem: 31,3W, heat conduction: passive (without fan), material: aluminium / clear glass, rotation angle: twistable / swiveling, dimensions lamp: Ø 110 mm x 225 mm, colour rendering: CRI > 80, weight: 1500 g

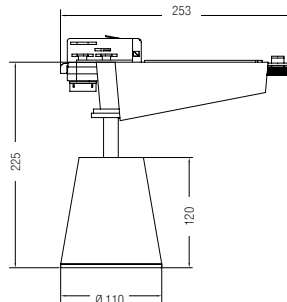
Incl. operating device, not dimmable, power factor >0,9 (230 V AC)

Luminaire incl. adapter for standard 3-phase track.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency (without lense)	Price €
88381173	white	3000 K	38°	Flood (FL)	2574 lm	82 lm/W	189.00
88381183	black	3000 K	38°	Flood (FL)	2575 lm	82 lm/W	189.00
88381175	white	3500 K	38°	Flood (FL)	2703 lm	86 lm/W	189.00
88381185	black	3500 K	38°	Flood (FL)	2704 lm	86 lm/W	189.00
88381174	white	4000 K	38°	Flood (FL)	2833 lm	91 lm/W	189.00
88381184	black	4000 K	38°	Flood (FL)	2833 lm	91 lm/W	189.00

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.



88385...
LED track pendants

NEW



Specification

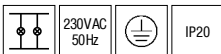
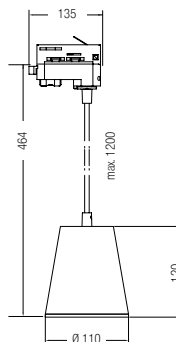
Incl. light source: 1x LED COB, LED power: 18 W, power of sytem: 18 W, heat conduction: passive (without fan), material: aluminium / clear glass, Pendellänge max: 1200mm, dimensions lamp: Ø 110 mm x 120 mm, colour rendering: CRI > 80, weight: 900 g

High voltage COB, not dimmable, Luminaire incl. adapter for standard 3-phase track.

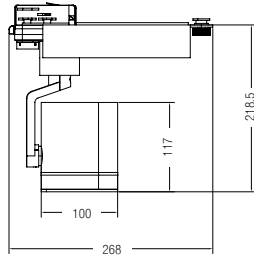
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency (without lense)	Price €
88385173	white	3000 K	38°	Flood (FL)	1423 lm	79 lm/W	129.00
88385183	black	3000 K	38°	Flood (FL)	1423 lm	79 lm/W	129.00



88373... LED tracklights



Specification

Incl. light source: 1 x LED COB, LED power: 30W, system power: 34W, heat dissipation: passive (without fan), material: aluminium / clear glass / plastic, rotation angle: twistable / swiveling, dimensions lamp: Ø 100 mm x 245 mm, colour rendering: CRI > 80, weight: 1400g.

Incl. operating device, not dimmable, power factor >0,9 (230 V AC).

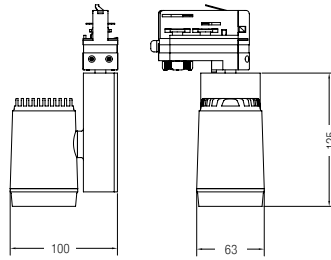
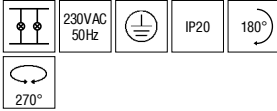
Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency (without lense)	Price €
88373173	white	3000 K	38°	Flood (FL)	2687 lm	79 lm/W	189.00
88373183	black	3000 K	38°	Flood (FL)	2687 lm	79 lm/W	189.00
88373683	silver	3000 K	38°	Flood (FL)	2687 lm	79 lm/W	189.00
88373174	white	4000 K	38°	Flood (FL)	2762 lm	81 lm/W	189.00
88373184	black	4000 K	38°	Flood (FL)	2762 lm	81 lm/W	189.00
88373684	silver	4000 K	38°	Flood (FL)	2762 lm	81 lm/W	189.00



12013...
LED tracklights

Specification

Incl. light source: LED, system power: 12 W, material: aluminium / plastic, heat conduction: passive (without fan), colour rendering: CRI>80, weight: 500 g

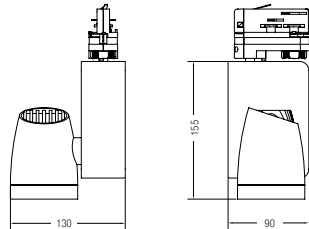
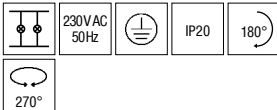
Incl. operating device, not dimmable.

Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
12013073	white	3000 K	38°	Flood (FL)	840 lm	70 lm/W	119.00
12013083	black	3000 K	38°	Flood (FL)	840 lm	70 lm/W	119.00

12019...
LED tracklights

Specification

Incl. light source: LED, system power: 12 W, material: aluminium / plastic, heat conduction: passive (without fan), colour rendering: CRI>80, weight: 650 g

Incl. operating device, not dimmable.

Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
12019073	white	3000 K	38°	Flood (FL)	840 lm	70 lm/W	135.00
12019083	black	3000 K	38°	Flood (FL)	840 lm	70 lm/W	135.00







Specification

Incl. light source: 1x LED COB, LED power: 40 W, system power: 43,2 W, heat conduction: passive (without fan), material: aluminium / clear glass, rotation angle: twistable / swiveling, dimensions lamp: Ø 116 mm x 237 mm, weight: 1800 g

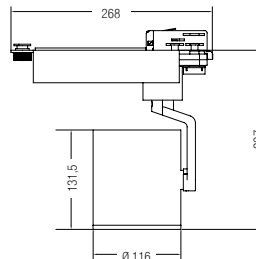
Incl. operating device, not dimmable, power factor >0,9 (230 V AC).

Luminaire incl. adapter for standard 3-phase track.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency (without lens)	Price €
88377173	white	3000 K	38°	Flood (FL)	3803 lm	88 lm/W	229.00
88377183	black	3000 K	38°	Flood (FL)	3803 lm	88 lm/W	229.00
88377175	white	3500 K	38°	Flood (FL)	3917 lm	91 lm/W	229.00
88377185	black	3500 K	38°	Flood (FL)	3917 lm	91 lm/W	229.00
88377174	white	4000 K	38°	Flood (FL)	4030 lm	93 lm/W	229.00
88377184	black	4000 K	38°	Flood (FL)	4030 lm	93 lm/W	229.00



88311...
LED tracklights



Specification

Incl. light source: 1x LED COB, LED power: 26W, power of sytem: 29W, eat conduction: passive (without fan), material: aluminium / plastic, rotation angle: twistable / swiveling, dimensions lamp: Ø165 mm x 172 mm, colour rendering: CRI>85.

Incl. operating device, not dimmable, power factor >0,9 (230V AV).

Luminaire incl. adapter for standard 3-phase track.

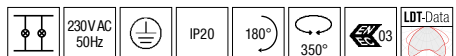
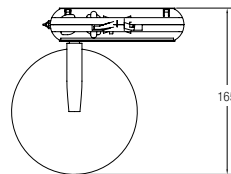
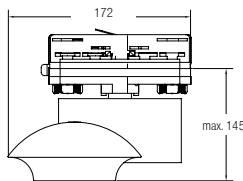
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.



advice: silver version always with black shade.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88311073	white	3000 K	28°	Medium Flood (MF)	2091 lm	100 lm/W	389.70
88311083	black	3000 K	28°	Medium Flood (MF)	2091 lm	100 lm/W	389.70
88311683	silver	3000 K	28°	Medium Flood (MF)	2091 lm	100 lm/W	389.70
88311074	white	4000 K	28°	Medium Flood (MF)	2937 lm	101 lm/W	389.70
88311084	black	4000 K	28°	Medium Flood (MF)	2937 lm	101 lm/W	389.70
88311684	silver	4000 K	28°	Medium Flood (MF)	2937 lm	101 lm/W	389.70





Specification

Incl. light source: 1x LED COB, LED power: 12 W, power of sytem: 15 W, heat conduction: passive (without fan), material: aluminium / plastic, rotation angle: twistable / swiveling, dimensions lamp: Ø160 x 34 x 215 mm, colour rendering: CRI>85.

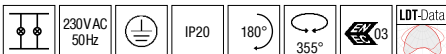
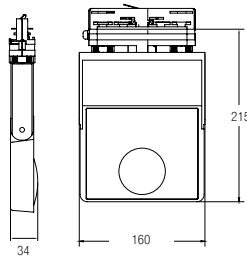
Incl. operating device, not dimmable.

Luminaire incl. adapter for standard 3-phase track.

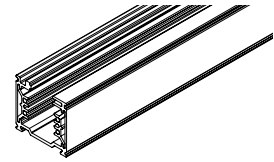
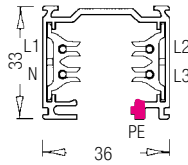
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

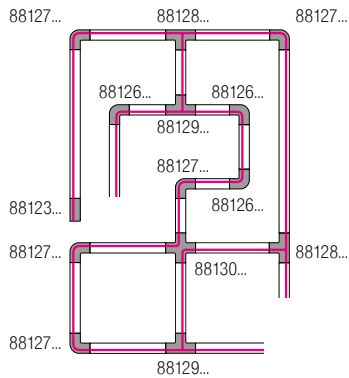
Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88331073	white	3000 K	32°	Flood (FL)	1403 lm	93 lm/W	284.10
88331083	black	3000 K	32°	Flood (FL)	1403 lm	93 lm/W	284.10
88331683	silver	3000 K	32°	Flood (FL)	1403 lm	93 lm/W	284.10
88331074	white	4000 K	32°	Flood (FL)	1444 lm	96 lm/W	284.10
88331084	black	4000 K	32°	Flood (FL)	1444 lm	96 lm/W	284.10
88331684	silver	4000 K	32°	Flood (FL)	1444 lm	96 lm/W	284.10



88101.../ 88102.../ 88103.../ 88104...
3-phase track

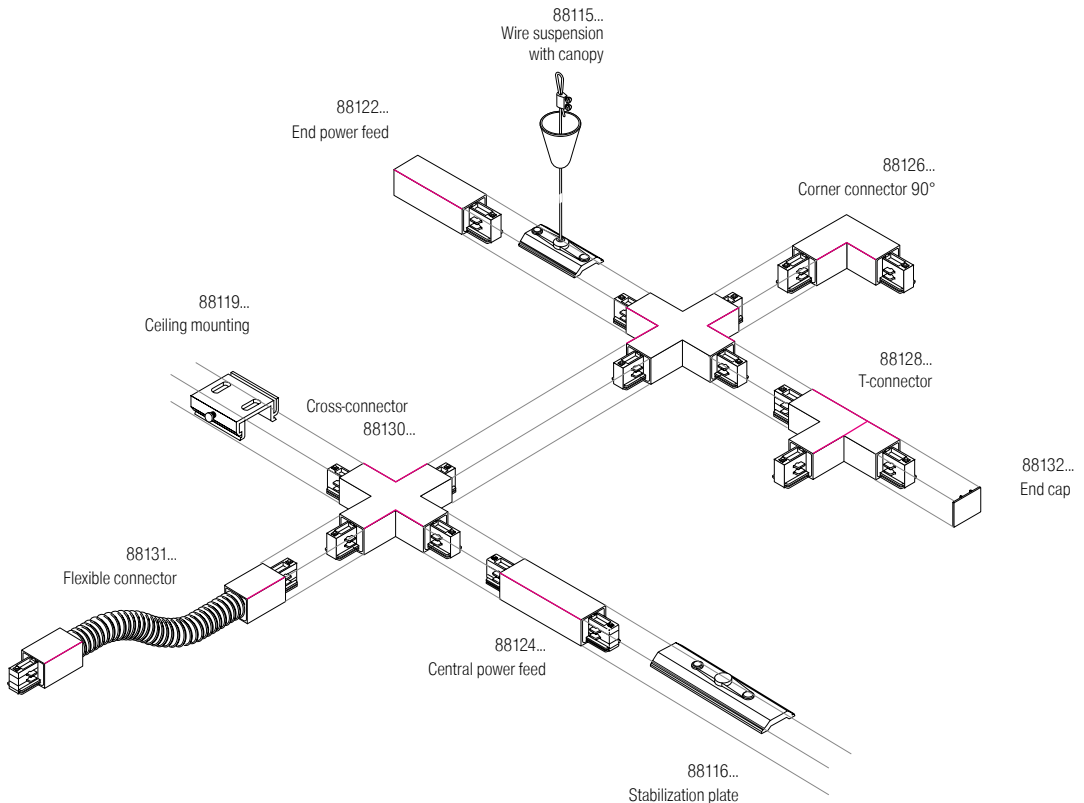


Planning tool, top view:



Article-no.	Length	Colour	Price €
88101070	1000 mm	white	35.00
88101080	1000 mm	black	35.00
88101250	1000 mm	alu anodized	35.00
88102070	2000 mm	white	66.80
88102080	2000 mm	black	66.80
88102250	2000 mm	alu anodized	66.80
88103070	3000 mm	white	96.90
88103080	3000 mm	black	96.90
88103250	3000 mm	alu anodized	96.90
88104070	4000 mm	white	128.70
88104080	4000 mm	black	128.70
88104250	4000 mm	alu anodized	128.70

1-phase DALI track see next pages



88114... Electrical connector



Article-no.	Colour	Price €
88114070	white	10.90
88114080	black	10.90
88114680	silver	10.90

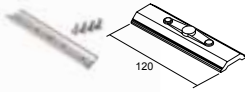
88115... Wire suspension with canopy



Article-no.	Colour	Price €
88115070	white	6.80
88115080	black	6.80

Rope thickness: 1,5 mm

88116250 Stabilization plate, aluminium-untreated



Article-no.	Length	Price €
88116250	120mm	8.50

88119250 Ceiling mounting, aluminium-untreated



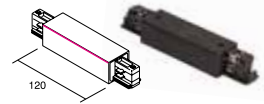
Article-no.	Price €
88119250	7.10

88125... Mechanical connector



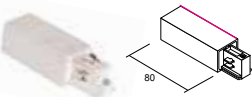
Article-no.	Colour	Price €
88125070	white	6.80
88125080	black	6.80

88124... Central power feed



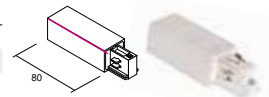
Article-no.	Colour	Price €
88124070	white	31.70
88124080	black	31.70
88124680	silver	31.70

88123... End power feed, protective earth conductor left



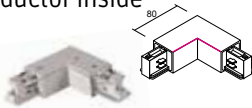
Article-no.	Colour	Price €
88123070	white	15.80
88123080	black	15.80
88123680	silver	15.80

88122... End power feed, protective earth conductor right



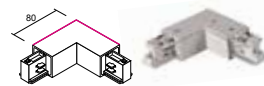
Article-no.	Colour	Price €
88122070	white	15.80
88122080	black	15.80
88122680	silver	15.80

88126... Corner connectors 90°, protective earth conductor inside



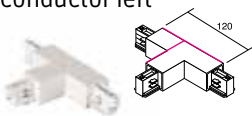
Article-no.	Colour	Price €
88126070	white	33.80
88126080	black	33.80
88126680	silver	33.80

88127... Corner connectors 90°, protective earth conductor outside



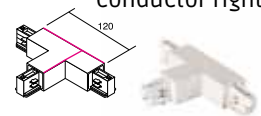
Article-no.	Colour	Price €
88127070	white	33.80
88127080	black	33.80
88127680	silver	33.80

88129... T-connector, protective earth conductor left



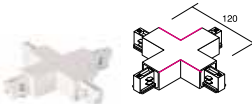
Article-no.	Colour	Price €
88129070	white	51.90
88129080	black	51.90
88129680	silver	51.90

88128... T-connector, protective earth conductor right



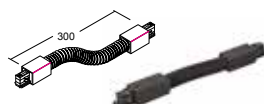
Article-no.	Colour	Price €
88128070	white	51.90
88128080	black	51.90
88128680	silver	51.90

88130... Cross-connector



Article-no.	Colour	Price €
88130070	white	66.60
88130080	black	66.60
88130680	silver	66.60

88131... Flexible connector



Article-no.	Colour	Price €
88131070	white	41.20
88131080	black	41.20
88131680	silver	41.20

88132... End cap



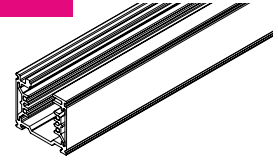
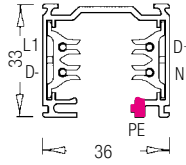
Article-no.	Colour	Price €
88132070	white	2.10
88132080	black	2.10
88132680	silver	2.10

88133... Ingress protection for track

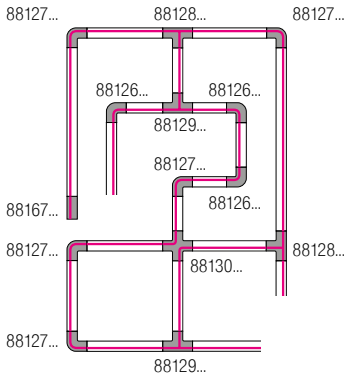


Article-no.	Colour	Length	Price €
88133070	white	1000 mm	9.50
88133080	black	1000 mm	9.50

88161... / 88162... / 88163... / 88164...
1-phase track DALI



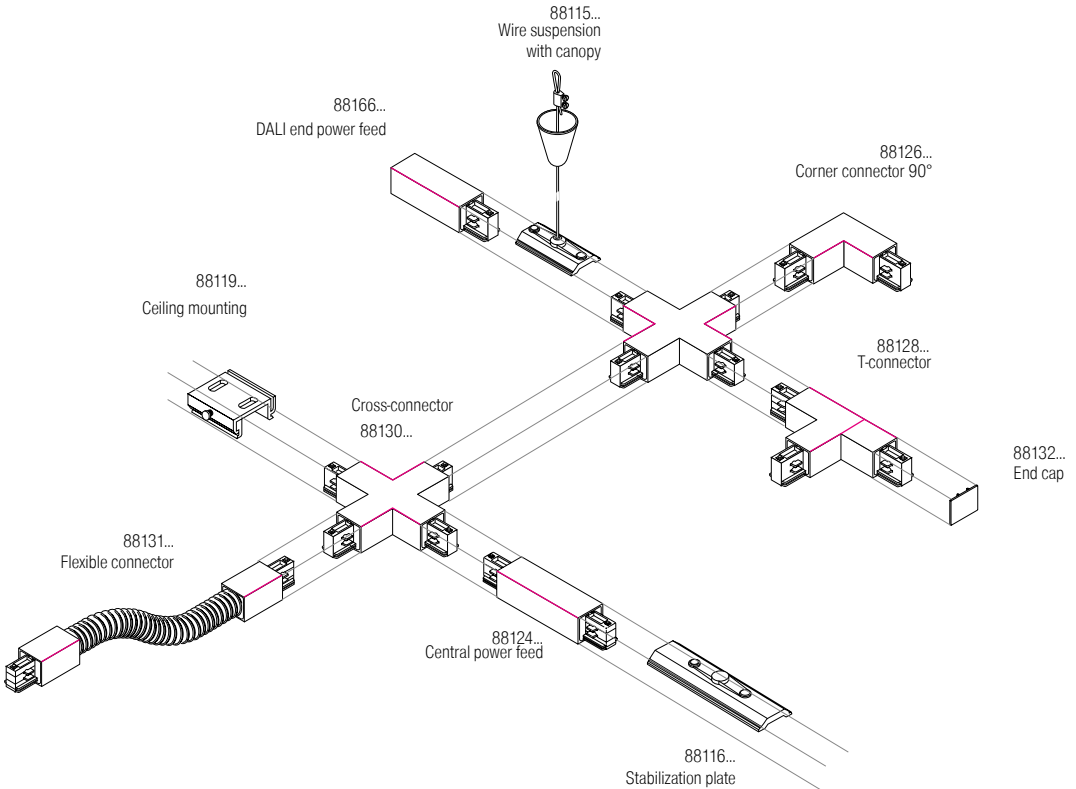
Planning tool, top view:



Article-no.	Length	Colour	Price €
88161070	1000 mm	white	49.10
88161080	1000 mm	black	49.10
88161250	1000 mm	alu anodized	49.10
88162070	2000 mm	white	88.70
88162080	2000 mm	black	88.70
88162250	2000 mm	alu anodized	88.70
88163070	3000 mm	white	132.10
88163080	3000 mm	black	132.10
88163250	3000 mm	alu anodized	132.10
88164070	4000 mm	white	177.40
88164080	4000 mm	black	177.40
88164250	4000 mm	alu anodized	177.40

Compatible DALI track spots on request.

DALI compatibility: The track spots and track system from Brumberg must necessarily be used!



88114... Electrical connector



Article-no.	Colour	Price €
88114070	white	10.90
88114080	black	10.90
88114680	silver	10.90

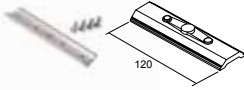
88115... Wire suspension with canopy

Article-no.	Colour	Price €
88115070	white	6.80
88115080	black	6.80

Rope thickness: 1,5 mm



88116250 Stabilization plate, aluminium-untreated



Article-no.	Length	Price €
88116250	120mm	8.50

88119250 Ceiling mounting, aluminium-untreated

Article-no.	Price €
88119250	7.10



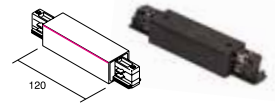
88125... Mechanical connector



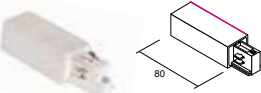
Article-no.	Colour	Price €
88125070	white	6.80
88125080	black	6.80

88124... Central power feed

Article-no.	Colour	Price €
88124070	white	31.70
88124080	black	31.70
88124680	silver	31.70



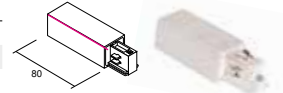
88167... DALI end power feed, protective earth conductor left



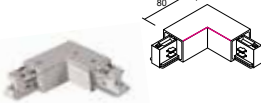
Article-no.	Colour	Price €
88167070	white	17.50
88167080	black	17.50
88167680	silver	17.50

88166... DALI end power feed, protective earth conductor right

Article-no.	Colour	Price €
88166070	white	17.50
88166080	black	17.50
88166680	silver	17.50



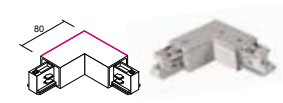
88126... Corner connectors 90°, protective earth conductor inside



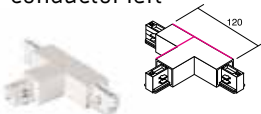
Article-no.	Colour	Price €
88126070	white	33.80
88126080	black	33.80
88126680	silver	33.80

88127... Corner connectors 90°, protective earth conductor outside

Article-no.	Colour	Price €
88127070	white	33.80
88127080	black	33.80
88127680	silver	33.80



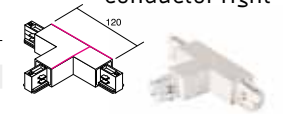
88129... T-connector, protective earth conductor left



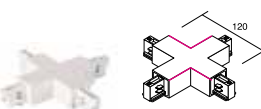
Article-no.	Colour	Price €
88129070	white	51.90
88129080	black	51.90
88129680	silver	51.90

88128... T-connector, protective earth conductor right

Article-no.	Colour	Price €
88128070	white	51.90
88128080	black	51.90
88128680	silver	51.90



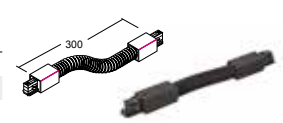
88130... Cross-connector



Article-no.	Colour	Price €
88130070	white	66.60
88130080	black	66.60
88130680	silver	66.60

88131... Flexible connector

Article-no.	Colour	Price €
88131070	white	41.20
88131080	black	41.20
88131680	silver	41.20



88132... End cap



Article-no.	Colour	Price €
88132070	white	2.10
88132080	black	2.10
88132680	silver	2.10

88115... Ingress protection for track

Article-no.	Colour	Length	Price €
88133070	white	1000 mm	9.50
88133080	black	1000 mm	9.50



Pivotable spots



Z.one concept

88643... to 88650...
 ModulMax® LED recessed pivotable spot

ModulMax®



27W

System efficiency
 up to 113lm/W

Luminaire light flux
 up to 3057lm



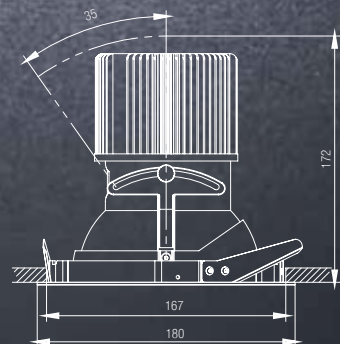
Specification

Incl. light source: 1x LED COB, colour render: CRI > 80,
 heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
 rotation angle: twistable / swiveling, dimensions lamp: Ø 180 mm x 162 mm, weight: approx. 1.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC)
 Primary power supply via silicon hose line, length 500 mm with connector model Adels AC166

Energy efficiency class: A++ to A
 This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



88643... to 88650...

ModulMax® LED recessed pivotable spots 27W
LED power: 24.3 W, System power: 27 W
Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88647073	88647083	88647683	2700 K	12°	Spot (SP)	2559 lm	95 lm/W	299.00
88648073	88648083	88648683	2700 K	24°	Medium Flood (MF)	2585 lm	96 lm/W	299.00
88649073	88649083	88649683	2700 K	36°	Flood (FL)	2617 lm	97 lm/W	299.00
88650073	88650083	88650683	2700 K	60°	Wide Flood (WFL)	2630 lm	97 lm/W	299.00
88643073	88643083	88643683	3000 K	12°	Spot (SP)	2677 lm	99 lm/W	299.00
88644073	88644083	88644683	3000 K	24°	Medium Flood (MF)	2704 lm	100 lm/W	299.00
88645073	88645083	88645683	3000 K	36°	Flood (FL)	2738 lm	101 lm/W	299.00
88646073	88646083	88646683	3000 K	60°	Wide Flood (WFL)	2751 lm	102 lm/W	299.00
88647074	88647084	88647684	3500 K	12°	Spot (SP)	2756 lm	102 lm/W	299.00
88648074	88648084	88648684	3500 K	24°	Medium Flood (MF)	2783 lm	103 lm/W	299.00
88649074	88649084	88649684	3500 K	36°	Flood (FL)	2818 lm	104 lm/W	299.00
88650074	88650084	88650684	3500 K	60°	Wide Flood (WFL)	2832 lm	105 lm/W	299.00
88643074	88643084	88643684	4000 K	12°	Spot (SP)	2807 lm	104 lm/W	299.00
88644074	88644084	88644684	4000 K	24°	Medium Flood (MF)	2835 lm	105 lm/W	299.00
88645074	88645084	88645684	4000 K	36°	Flood (FL)	2871 lm	106 lm/W	299.00
88646074	88646084	88646684	4000 K	60°	Wide Flood (WFL)	2885 lm	107 lm/W	299.00



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Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

8817... / 8860... / 8894...

ModulMax® accessories

Article-no.	Description		Energy efficiency class current 700mA	Energy efficiency class current 1050mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

Article-no. white	Article-no. black	Article-no. silver	Description		Price €
88601070	88601080	88601680	Mounting cover, single, quadratic, 220 x 220mm	for ModulMax®	79.00
88602070	88602080	88802680	Mounting cover, double, rectangular, 420 x 220mm	for ModulMax®	89.00
88603070	88603080	88603680	Mounting cover, triple, rectangular, 620 x 220mm	for ModulMax®	99.00

For on-site modification of existing ModulMax® ceiling spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI converter	Surcharge incl. special food chip, not dimmable
- 12.50 €	299.00 €	not available	+ 25.30 €

88656... to 88663...
 ModulMax® LED recessed pivotable spot

ModulMax®



40 W

System efficiency
 up to 105 lm/W

Luminaire light flux
 up to 4193 lm



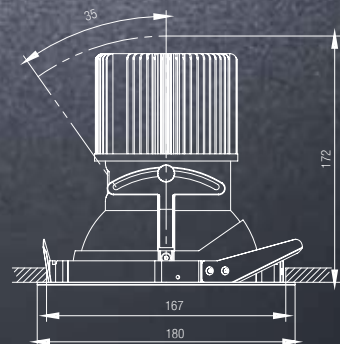
Specification

Incl. light source: 1x LED COB, colour render: CRI > 80,
 heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
 rotation angle: twistable / swiveling, dimensions lamp: Ø 180 mm x 162 mm, weight: approx. 1.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC)
 Primary power supply via silicon hose line, length 500 mm with connector model Adels AC166

Energy efficiency class: A++ to A
 This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



88656... to 88663...

LED power: 37.5 W, System power: 40 W

ModulMax® LED recessed pivotable spots 40W

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88660073	88660083	88660683	2700 K	12°	Spot (SP)	3511 lm	88 lm/W	299.00
88661073	88661083	88661683	2700 K	24°	Medium Flood (MF)	3546 lm	89 lm/W	299.00
88662073	88662083	88662683	2700 K	36°	Flood (FL)	3590 lm	90 lm/W	299.00
88663073	88663083	88663683	2700 K	60°	Wide Flood (WFL)	3607 lm	90 lm/W	299.00
88656073	88656083	88656683	3000 K	12°	Spot (SP)	3673 lm	92 lm/W	299.00
88657073	88657083	88657683	3000 K	24°	Medium Flood (MF)	3710 lm	93 lm/W	299.00
88658073	88658083	88658683	3000 K	36°	Flood (FL)	3757 lm	94 lm/W	299.00
88659073	88659083	88659683	3000 K	60°	Wide Flood (WFL)	3774 lm	94 lm/W	299.00
88660074	88660084	88660684	3500 K	12°	Spot (SP)	3780 lm	95 lm/W	299.00
88661074	88661084	88661684	3500 K	24°	Medium Flood (MF)	3818 lm	95 lm/W	299.00
88662074	88662084	88662684	3500 K	36°	Flood (FL)	3866 lm	97 lm/W	299.00
88663074	88663084	88663684	3500 K	60°	Wide Flood (WFL)	3884 lm	97 lm/W	299.00
88656074	88656084	88656684	4000 K	12°	Spot (SP)	3851 lm	96 lm/W	299.00
88657074	88657084	88657684	4000 K	24°	Medium Flood (MF)	3889 lm	97 lm/W	299.00
88658074	88658084	88658684	4000 K	36°	Flood (FL)	3938 lm	98 lm/W	299.00
88659074	88659084	88659684	4000 K	60°	Wide Flood (WFL)	3957 lm	99 lm/W	299.00



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Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

8817... / 8860... / 8894...

ModulMax® accessories

Article-no.	Description	Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	93,70
88171001	Reflector 12°	for ModulMax®		23,60
88171002	Reflector 24°	for ModulMax®		23,60
88171003	Reflector 36°	for ModulMax®		23,60
88171006	Reflector 60°	for ModulMax®		23,60
88947000	Driver 700mA	for ModulMax®		59,00
88948000	Driver 1050mA	for ModulMax®		59,00

Article-no. white	Article-no. black	Article-no. silver	Description	Price €
88601070	88601080	88601680	Mounting cover, single, quadratic, 220 x 220mm	79.00
88602070	88602080	8802680	Mounting cover, double, rectangular, 420 x 220mm	89.00
88603070	88603080	88603680	Mounting cover, triple, rectangular, 620 x 220mm	99.00

For on-site modification of existing ModulMax® ceiling spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI converter	Surcharge incl. special food chip, not dimmable
- 12.50 €	299.00 €	+ 51.00 €	+ 25.30 €

89151... to 89162...

ModulMax® LED semi-recessed directional spotlights

ModulMax®



27W

System efficiency
up to 113 lm/W

Luminaire light flux
up to 3057lm



Specification

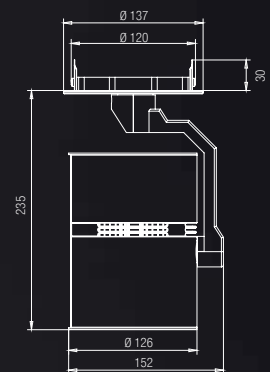
Incl. light source: 1x LED COB, colour render: CRI > 80
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling, dimensions lamp: Ø 126 mm x 235 mm, weight: approx. 1.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC)
Primary power supply via silicon hose line, length 500 mm with connector model Adels AC166

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



89151... to 89162...

LED power: 24.3 W, System power: 27 W

LED semi-recessed directional spotlights 27W

NEW

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
89151027	89155027	89159027	2700 K	12°	Spot (SP)	2559 lm	95 lm/W	349.00
89152027	89156027	89160027	2700 K	24°	Medium Flood (MF)	2585 lm	96 lm/W	349.00
89153027	89157027	89161027	2700 K	36°	Flood (FL)	2617 lm	97 lm/W	349.00
89154027	89158027	89162027	2700 K	60°	Wide Flood (WFL)	2630 lm	97 lm/W	349.00
89151030	89155030	89159030	3000 K	12°	Spot (SP)	2677 lm	99 lm/W	349.00
89152030	89156030	89160030	3000 K	24°	Medium Flood (MF)	2704 lm	100 lm/W	349.00
89153030	89157030	89161030	3000 K	36°	Flood (FL)	2738 lm	101 lm/W	349.00
89154030	89158030	89162030	3000 K	60°	Wide Flood (WFL)	2751 lm	102 lm/W	349.00
89151035	89155035	89159035	3500 K	12°	Spot (SP)	2756 lm	102 lm/W	349.00
89152035	89156035	89160035	3500 K	24°	Medium Flood (MF)	2783 lm	103 lm/W	349.00
89153035	89157035	89161035	3500 K	36°	Flood (FL)	2818 lm	104 lm/W	349.00
89154035	89158035	89162035	3500 K	60°	Wide Flood (WFL)	2832 lm	105 lm/W	349.00
89151040	89155040	89159040	4000 K	12°	Spot (SP)	2807 lm	104 lm/W	349.00
89152040	89156040	89160040	4000 K	24°	Medium Flood (MF)	2835 lm	105 lm/W	349.00
89153040	89157040	89161040	4000 K	36°	Flood (FL)	2871 lm	106 lm/W	349.00
89154040	89158040	89162040	4000 K	60°	Wide Flood (WFL)	2885 lm	107 lm/W	349.00



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Customised food lighting solutions

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8817... / 8860... / 8894...
ModulMax® accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® ceiling spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI converter	Surcharge incl. special food chip, not dimmable
- 12.50 €	349.00€	not available	+ 25.30 €

89163... to 89174...

ModulMax® LED semi-recessed directional spotlights

ModulMax®



40 W

System efficiency
up to 105 lm/wLuminaire light flux
up to 4193 lm

Specification

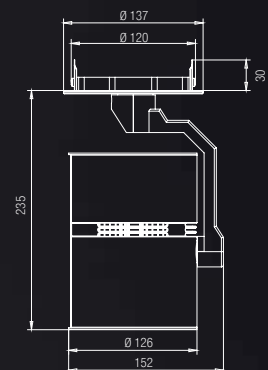
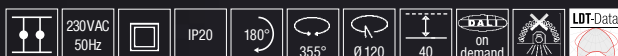
Incl. light source: 1x LED COB, colour render: CRI > 80,
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling, dimensions lamp: Ø 126 mm x 235 mm, weight: approx. 1.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC),
Primary power supply via silicon hose line, length 500 mm with connector model Adels AC166

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



89163... to 89174...

LED semi-recessed directional spotlights 40 W

LED power: 37.5 W, System power: 40 W

NEW

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
89163027	89167027	89171027	2700 K	12°	Spot (SP)	3511 lm	88 lm/W	349.00
89164027	89168027	89172027	2700 K	24°	Medium Flood (MF)	3546 lm	89 lm/W	349.00
89165027	89169027	89173027	2700 K	36°	Flood (FL)	3590 lm	90 lm/W	349.00
89166027	89170027	89174027	2700 K	60°	Wide Flood (WFL)	3607 lm	90 lm/W	349.00
89163030	89167030	89171030	3000 K	12°	Spot (SP)	3673 lm	92 lm/W	349.00
89164030	89168030	89172030	3000 K	24°	Medium Flood (MF)	3710 lm	93 lm/W	349.00
89165030	89169030	89173030	3000 K	36°	Flood (FL)	3757 lm	94 lm/W	349.00
89166030	89170030	89174030	3000 K	60°	Wide Flood (WFL)	3774 lm	94 lm/W	349.00
89163035	89167035	89171035	3500 K	12°	Spot (SP)	3780 lm	95 lm/W	349.00
89164035	89168035	89172035	3500 K	24°	Medium Flood (MF)	3818 lm	95 lm/W	349.00
89165035	89169035	89173035	3500 K	36°	Flood (FL)	3866 lm	97 lm/W	349.00
89166035	89170035	89174035	3500 K	60°	Wide Flood (WFL)	3884 lm	97 lm/W	349.00
89163040	89167040	89171040	4000 K	12°	Spot (SP)	3851 lm	96 lm/W	349.00
89164040	89168040	89172040	4000 K	24°	Medium Flood (MF)	3889 lm	97 lm/W	349.00
89165040	89169040	89173040	4000 K	36°	Flood (FL)	3938 lm	98 lm/W	349.00
89166040	89170040	89174040	4000 K	60°	Wide Flood (WFL)	3957 lm	99 lm/W	349.00



ModulMax® - Now configure quickly & easily online using the new Brumberg online configurator www.brumberg.com/ModulMax-Konfigurator. You will find detailed information on ModulMax® on pages 10-15.



Customised food lighting solutions

You can find basic information on the special requirements in the food sector on page 164.

All technical information and data are available to you as a download in the online configurator.

8817... / 8860... / 8894...

ModulMax® accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® ceiling spots.

Price variations:

Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI converter	Surcharge incl. special food chip, not dimmable
- 12.50 €	349.00€	+ 51.00 €	+ 25.30 €

89121... to 89132...

ModulMax® LED surface-mounted pivotable spot

ModulMax®



27W

System efficiency
up to 113 lm/W

Luminaire light flux
up to 3057lm



Specification

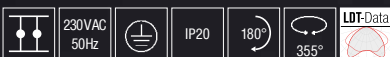
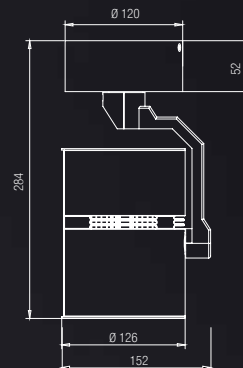
Incl. light source: LED COB, colour render: CRI > 80
heat dissipation: passive (without fan), material: aluminium / clear glass / plastic,
rotation angle: twistable / swiveling, dimensions lamp: Ø 126 mm x 284 mm, weight: approx. 1.800 g

Incl. operating device, not dimmable (DALI on request), power factor >0,9 (230 V AC)

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Modular construction



89121... to 89132...

LED power: 24.3 W, System power: 27 W

ModulMax® LED surface-mounted pivotable spots 27W

NEW

Basic variants:

Article-no. white	Article-no. black	Article-no. silver	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
89121027	89125027	89129027	2700 K	12°	Spot (SP)	2559 lm	95 lm/W	349.00
89122027	89126027	89130027	2700 K	24°	Medium Flood (MF)	2585 lm	96 lm/W	349.00
89123027	89127027	89131027	2700 K	36°	Flood (FL)	2617 lm	97 lm/W	349.00
89124027	89128027	89132027	2700 K	60°	Wide Flood (WFL)	2630 lm	97 lm/W	349.00
89121030	89125030	89129030	3000 K	12°	Spot (SP)	2677 lm	99 lm/W	349.00
89122030	89126030	89130030	3000 K	24°	Medium Flood (MF)	2704 lm	100 lm/W	349.00
89123030	89127030	89131030	3000 K	36°	Flood (FL)	2738 lm	101 lm/W	349.00
89124030	89128030	89132030	3000 K	60°	Wide Flood (WFL)	2751 lm	102 lm/W	349.00
89121035	89125035	89129035	3500 K	12°	Spot (SP)	2756 lm	102 lm/W	349.00
89122035	89126035	89130035	3500 K	24°	Medium Flood (MF)	2783 lm	103 lm/W	349.00
89123035	89127035	89131035	3500 K	36°	Flood (FL)	2818 lm	104 lm/W	349.00
89124035	89128035	89132035	3500 K	60°	Wide Flood (WFL)	2832 lm	105 lm/W	349.00
89121040	89125040	89129040	4000 K	12°	Spot (SP)	2807 lm	104 lm/W	349.00
89122040	89126040	89130040	4000 K	24°	Medium Flood (MF)	2835 lm	105 lm/W	349.00
89123040	89127040	89131040	4000 K	36°	Flood (FL)	2871 lm	106 lm/W	349.00
89124040	89128040	89132040	4000 K	60°	Wide Flood (WFL)	2885 lm	107 lm/W	349.00



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Customised food lighting solutions

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All technical information and data are available to you as a download in the online configurator.

8817... / 8860... / 8894...

ModulMax® accessories

NEW

Article-no.	Description		Energy efficiency class current 700 mA	Energy efficiency class current 1050 mA	Price €
88170027	Light Engine 2700K	for ModulMax®	A++	A+	93,70
88170003	Light Engine 3000 K	for ModulMax®	A+	A+	93,70
88170035	Light Engine 3500K	for ModulMax®	A++	A+	93,70
88170004	Light Engine 4000 K	for ModulMax®	A++	A+	93,70
88171001	Reflector 12°	for ModulMax®			23,60
88171002	Reflector 24°	for ModulMax®			23,60
88171003	Reflector 36°	for ModulMax®			23,60
88171006	Reflector 60°	for ModulMax®			23,60
88947000	Driver 700mA	for ModulMax®			59,00
88948000	Driver 1050mA	for ModulMax®			59,00

For on-site modification of existing ModulMax® ceiling spots.

Price variations:

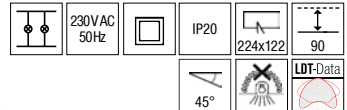
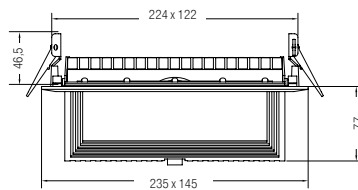
Discount without protective glass	Basic variant: not dimmable, includes protective glass	Surcharge incl. DALI converter	Surcharge incl. special food chip, not dimmable
- 12.50 €	349.00€	not available	+ 25.30 €

Pharmacy „Rath Apotheke“, Otterndorf (Germany)



88687... LED-Wallwasher

NEW



Specification

Incl. light source: 1x LED COB,
LED power: 40 W, system power: 43.2 W,
heat dissipation: passive (without fan),
material: aluminium / clear glass,
rotation angle: swiveling, dimensions lamp:
1235 mm x w 145 mm x h 90 mm,
colour render: CRI > 80, weight: approx. 1.100 g

Mechanical installation depth depending on swivel
angle (45°-0°) from 50mm - 90mm.

Incl. operating device, not dimmable,
power factor >0,9 (230 V AC)

Energy efficiency class: A++ to A

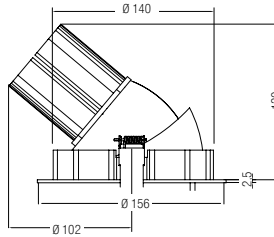
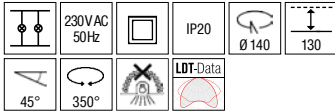
This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88687173	white	3000 K	110°	Wide Flood (WFL)	3694 lm	86 lm/W	165.00
88687183	black	3000 K	110°	Wide Flood (WFL)	3694 lm	86 lm/W	165.00
88687175	white	3500 K	110°	Wide Flood (WFL)	3679 lm	85 lm/W	165.00
88687185	black	3500 K	110°	Wide Flood (WFL)	3679 lm	85 lm/W	165.00
88687174	white	4000 K	110°	Wide Flood (WFL)	3663 lm	85 lm/W	165.00
88687184	black	4000 K	110°	Wide Flood (WFL)	3663 lm	85 lm/W	165.00

88673...

LED recessed spot

NEW



Specification

Incl. light source: 1x LED COB,
 LED power: 25.3 W, system power: 28.9 W,
 heat dissipation: passive (without fan),
 material: aluminium / clear glass,
 rotation angle: twistable / swiveling,
 dimensions lamp: Ø 156 mm x 130 mm,
 colour render: CRI > 80, weight: approx. 1.000 g

Mechanical installation depth depending on swivel
 angle (45°-0°) from 95mm - 130mm.

Incl. operating device, not dimmable,
 power factor >0,9 (230 V AC)

Energy efficiency class: A++ to A

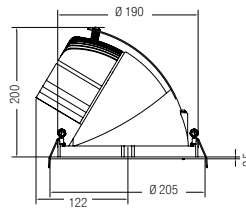
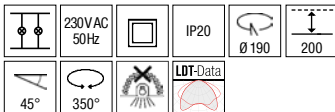
This luminaire contains incorporated and
 non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88673173	white	3000 K	38°	Flood (FL)	2639 lm	91 lm/W	150.00
88673183	black	3000 K	38°	Flood (FL)	2639 lm	91 lm/W	150.00
88673175	white	3500 K	38°	Flood (FL)	2668 lm	92 lm/W	150.00
88673185	black	3500 K	38°	Flood (FL)	2668 lm	92 lm/W	150.00
88673174	white	4000 K	38°	Flood (FL)	2697 lm	93 lm/W	150.00
88673184	black	4000 K	38°	Flood (FL)	2697 lm	93 lm/W	150.00

88677...

LED recessed spot

NEW



Specification

Incl. light source: 1x LED COB,
 LED power: 44 W, system power: 48.9 W,
 heat dissipation: passive (without fan),
 material: aluminium / clear glass,
 rotation angle: twistable / swiveling,
 dimensions lamp: Ø 205 mm x 200 mm,
 colour render: CRI > 80, weight: approx. 1.700 g

Incl. operating device, not dimmable,
 power factor >0,9 (230 V AC)

Energy efficiency class: A++ to A

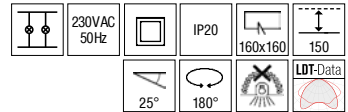
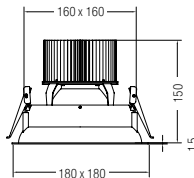
This luminaire contains incorporated and
 non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88677173	white	3000 K	38°	Flood (FL)	4441 lm	91 lm/W	239.00
88677183	black	3000 K	38°	Flood (FL)	4441 lm	91 lm/W	239.00
88677175	white	3500 K	38°	Flood (FL)	4661 lm	95 lm/W	239.00
88677185	black	3500 K	38°	Flood (FL)	4661 lm	95 lm/W	239.00
88677174	white	4000 K	38°	Flood (FL)	4881 lm	100 lm/W	239.00
88677184	black	4000 K	38°	Flood (FL)	4881 lm	100 lm/W	239.00



88681... LED recessed spot

NEW



Specification

Incl. light source: 1x LED COB,
LED power: 31.3 W, power system 34.4 W,
heat dissipation: passive (without fan),
material: aluminium / clear glass,
rotation angle: twistable / swiveling,
dimensions lamp: 1180 mm x w 180 mm x h
150mm, colour render: CRI > 80,
weight: approx. 1.300 g

Incl. operating device, not dimmable,
power factor >0,9 (230 VAC)

Energy efficiency class: A+++ to A

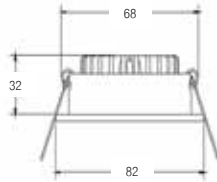
This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam angle	Beam patterns	Luminaire light flux	System efficiency	Price €
88681173	white	3000 K	38°	Flood (FL)	2917 lm	85 lm/W	155.00
88681183	black	3000 K	38°	Flood (FL)	2917 lm	85 lm/W	155.00
88681175	white	3500 K	38°	Flood (FL)	3011 lm	88 lm/W	155.00
88681185	black	3500 K	38°	Flood (FL)	3011 lm	88 lm/W	155.00
88681174	white	4000 K	38°	Flood (FL)	3106 lm	90 lm/W	155.00
88681184	black	4000 K	38°	Flood (FL)	3106 lm	90 lm/W	155.00

car dealership Hoffmann, Winterberg



12261... / 12361... / 33261... / 33361... / 34261... / 34361... LED recessed spots



Base model LED 350 mA

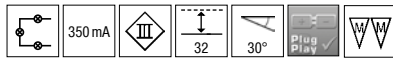
Incl. light source: 1x LED, power: 7 W, beam angle: 38°,
material: aluminium / clear glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
12261023	chrome	2700 K	710 lm	48.00
12261073	white	2700 K	710 lm	47.00
12261253	alu satin	2700 K	710 lm	51.00
12261633	champagne satin**	2700 K	710 lm	56.00
12261643	titanium satin	2700 K	710 lm	56.00
12361023	chrome	3000 K	750 lm	48.00
12361073	white	3000 K	750 lm	47.00
12361253	alu satin	3000 K	750 lm	51.00
12361633	champagne satin**	3000 K	750 lm	56.00
12361643	titanium satin	3000 K	750 lm	56.00

**as shown in picture



LED set, including driver

Incl. light source: 1x LED, power: 7 W, beam angle: 38°,
material: aluminium / clear glass,
incl. driver for 230 V-connection, not dimmable,
dimensions of driver: l 68 x w 35 x h 21 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
33261023	chrome	2700 K	710 lm	87.00
33261073	white	2700 K	710 lm	86.00
33261253	alu satin	2700 K	710 lm	89.00
33261633	champagne satin**	2700 K	710 lm	94.00
33261643	titanium satin	2700 K	710 lm	94.00
33361023	chrome	3000 K	750 lm	87.00
33361073	white	3000 K	750 lm	86.00
33361253	alu satin	3000 K	750 lm	89.00
33361633	champagne satin**	3000 K	750 lm	94.00
33361633	titanium satin	3000 K	750 lm	94.00



*for the luminaire included in the set

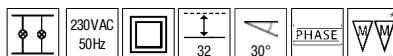
LED set, including driver, dimmable

Incl. light source: 1x LED, power: 7 W, beam angle: 38°,
material: aluminium / clear glass,
incl. driver for 230 V-connection, dimmable,
dimensions of driver: l 122 x w 39 x h 18 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

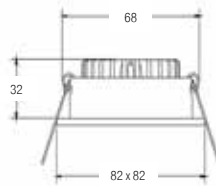
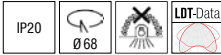
Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
34261023	chrome	2700 K	710 lm	97.00
34261073	white	2700 K	710 lm	96.00
34261253	alu satin	2700 K	710 lm	99.00
34261633	champagne satin**	2700 K	710 lm	104.00
34261643	titanium satin	2700 K	710 lm	104.00
34361023	chrome	3000 K	750 lm	97.00
34361073	white	3000 K	750 lm	96.00
34361253	alu satin	3000 K	750 lm	99.00
34361633	champagne satin**	3000 K	750 lm	104.00
34361643	titanium satin	3000 K	750 lm	104.00



*for the luminaire included in the set

12262... / 12362... / 33262... / 33362... / 34262... / 34362...

LED recessed spots



Base model LED 350 mA

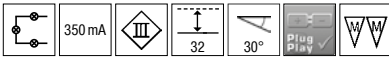
Incl. light source: 1x LED, power: 7 W, beam angle: 38°
material: aluminium / clear glass,

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
12262023	chrome	2700 K	710 lm	51.00
12262073	white	2700 K	710 lm	50.00
12262253	alu satin	2700 K	710 lm	54.00
12262633	champagne satin	2700 K	710 lm	59.00
12262643	titanium satin**	2700 K	710 lm	59.00
12362023	chrome	3000 K	750 lm	51.00
12362073	white	3000 K	750 lm	50.00
12362253	alu satin	3000 K	750 lm	54.00
12362633	champagne satin	3000 K	750 lm	59.00
12362643	titanium satin**	3000 K	750 lm	59.00

**as shown in picture



LED set, including driver

Incl. light source: 1x LED, power: 7 W, beam angle: 38°,
material: aluminium / clear glass,
incl. driver for 230 V-connection, not dimmable,
dimensions of driver: l 68 x w 35 x h 21 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
33262023	chrome	2700 K	710 lm	90.00
33262073	white	2700 K	710 lm	89.00
33262253	alu satin	2700 K	710 lm	92.00
33262633	champagne satin	2700 K	710 lm	97.00
33262643	titanium satin**	2700 K	710 lm	97.00
33362023	chrome	3000 K	750 lm	90.00
33362073	white	3000 K	750 lm	89.00
33362253	alu satin	3000 K	750 lm	92.00
33362633	champagne satin	3000 K	750 lm	97.00
33362643	titanium satin**	3000 K	750 lm	97.00



*for the luminaire included in the set

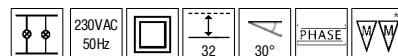
LED set, including driver, dimmable

Incl. light source: 1x LED, power: 7 W,
material: aluminium / clear glass, beam angle: 38°,
incl. driver for 230 V-connection, dimmable,
dimensions of driver: l 122 x w 39 x h 18 mm

Energy efficiency class: A++ to A

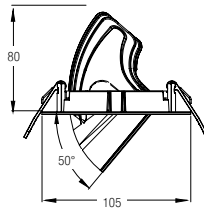
This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Luminaire light flux	Price €
34262023	chrome	2700 K	710 lm	100.00
34262073	white	2700 K	710 lm	99.00
34262253	alu satin	2700 K	710 lm	102.00
34262633	champagne satin	2700 K	710 lm	107.00
34262643	titanium satin**	2700 K	710 lm	107.00
34362023	chrome	3000 K	750 lm	100.00
34362073	white	3000 K	750 lm	99.00
34362253	alu satin	3000 K	750 lm	102.00
34362633	champagne satin	3000 K	750 lm	107.00
34362643	titanium satin**	3000 K	750 lm	107.00



*for the luminaire included in the set

12401073 LED recessed spot



Specification

Incl. light source: LED, power: 15 W,
beam angle: 38°,
material: aluminium/plastic

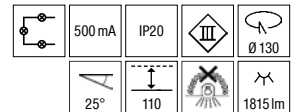
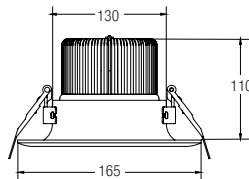
Article-no.	Colour of housing	Colour temperature	Price €
12401073	white	3000 K ●	77.80

Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

12414073 LED recessed spot



Specification

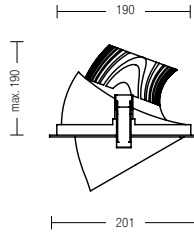
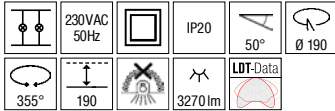
Incl. light source: LED, power: 18 W,
beam angle: 38°,
material: aluminium/clear glass

Article-no.	Colour of housing	Colour temperature	Price €
12414073	white	3000 K ●	159.00

Suitable drivers see page 147.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

88492... / 88493...
 LED recessed spot


Specification

Incl. light source: LED, LED power: 29 W, system power: 32 W, heat dissipation: passive (without fan), material: aluminium / clear glass, incl. separate driver (driver dimensions: 147 x 45 x 32 mm). Not applicable for through-wiring.

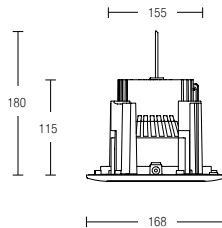
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam patterns	Price €
88492073	white	3000 K	24° (MF)	442.40
88492083	black	3000 K	24° (MF)	442.40
88492683	silver	3000 K	24° (MF)	442.40
88493073	white	3000 K	40° (FL)	442.40
88493083	black	3000 K	40° (FL)	442.40
88493683	silver	3000 K	40° (FL)	442.40



On request also available in colour temperatures 2700K, 3500K and 4000 K.


 88415...
 LED recessed spot


Specification

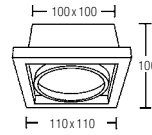
Incl. light source: LED, power: 36 W, material: aluminium / plastic clear, incl. separate driver (driver dimensions: 160 x 80 x 35 mm). Not applicable for through-wiring.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Beam patterns	Price €
88415073	white satin	3000 K	36° (FL)	421.30
88415683	silver	3000 K	36° (FL)	421.30

12161253 / 33161253 Recessed gimbal LED spot



Base model LED 350 mA

Incl. light source: 1 x LED, power: 6,6 W, beam angle: 38°, material: aluminium / clear glass

Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12161253	brushed alu	2700 K	185.90

Modular construction: further light colors and power outputs are available on demand.



LED-Set, including driver

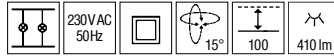
Incl. light source: 1 x LED, power: 6,6 W, beam angle: 38°, material: aluminium / clear glass, incl. driver for 230 V-connection, not dimmable, dimension driver: 1 68 x w 35 x h 21 mm

Energy efficiency class: A++ to A

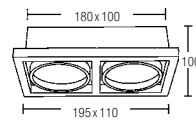
This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
33161253	brushed alu	2700 K	212.00

Modular construction: further light colors and power outputs are available on demand



12162253 / 33162253 Recessed gimbal LED spot



Base model LED 350 mA

Incl. light source: 2 x LED, power: 2x 6,6 W, beam angle: 38°, material: aluminium / clear glass

Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12162253	brushed alu	2700 K	331.00

Modular construction: further light colors and power outputs are available on demand



LED-Set, including driver

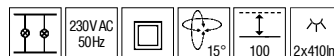
Incl. light source: 2 x LED, power: 2x 6,6 W, beam angle: 38°, material: aluminium / clear glass, incl. driver for 230 V-connection, not dimmable, dimension driver: 1 145 x w 50 x h 22 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
33162253	brushed alu	2700 K	388.10

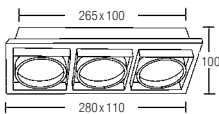
Modular construction: further light colors and power outputs are available on demand



Conference room fence manufacturer, Arnsberg (Germany)



12163253 / 33163253
Recessed gimbal LED spot



Base model LED 350 mA

Incl. light source: 3 x LED, power: 3 x 6,6 W, beam angle: 38°, material: aluminium / clear glass

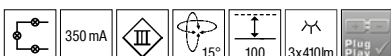
Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature		Price €
12163253	brushed alu	2700 K		481.80

Modular construction: further light colors and power outputs are available on demand



LED-Set, including driver

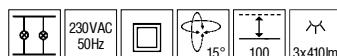
Incl. light source: 3 x LED, power: 3 x 6,6 W, beam angle: 38°, material: aluminium / clear glass, incl. driver for 230 V-connection, not dimmable, dimension driver: 1 145 x w 50 x h 22 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature		Price €
33163253	brushed alu	2700 K		538.80

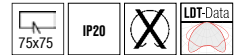
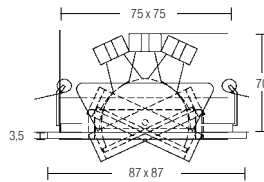
Modular construction: further light colors and power outputs are available on demand



Wellness exhibition, Rheda-Wiedenbrück (Germany)



12157... / 33157... Recessed pivotable LED spot



Base model LED 350 mA

Incl. light source: 1 x LED, power: 6,6W, beam angle: 38°,
material: aluminium / clear glass,

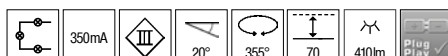
Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature		Price €
12157073	white	2700 K	☉	94.70
12157253	alu satin	2700 K	☉	94.70

Modular construction: further light colors and power outputs are available on demand



LED-Set, including driver

Incl. light source: 1 x LED, power: 6,6W, beam angle: 38°,
material: aluminium / clear glass, incl. incl. driver for 230 V-connection,
not dimmable, dimension driver: 1 68 x w 35 x h 21 mm

Energy efficiency class: A++ to A

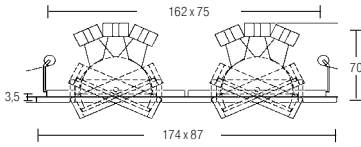
This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature		Price €
33157073	white	2700 K	☉	120.90
33157253	alu satin	2700 K	☉	120.90

Modular construction: further light colors and power outputs are available on demand



12158... / 33158...
Recessed pivotable LED spot



Base model LED 350 mA

Incl. light source: 2 x LED, power: 2 x 6,6 W, beam angle: 38°, material: aluminium / clear glass

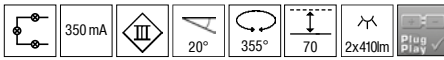
Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12158073	white	2700 K	190.50
12158253	alu satin	2700 K	190.50

Modular construction: further light colors and power outputs are available on demand



LED-Set, including driver

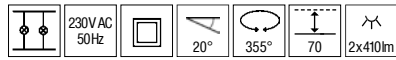
Incl. light source: 2 x LED, power: 2 x 6,6 W, beam angle: 38°, material: aluminium / clear glass, incl. driver for 230 V-connection, not dimmable, dimension driver: 1 145 x w 50 x h 22 mm

Energy efficiency class: A++ to A

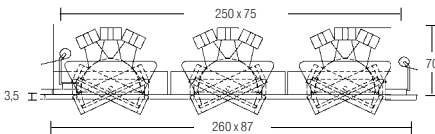
This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
33158073	white	2700 K	247.60
33158253	alu satin	2700 K	247.60

Modular construction: further light colors and power outputs are available on demand



12159... / 33159...
Recessed pivotable LED spot



Base model LED 350 mA

Incl. light source: 3 x LED, power: 3 x 6,6 W, beam angle: 38°, material: aluminium / clear glass

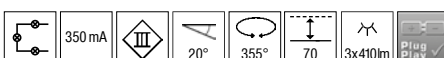
Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12159073	white	2700 K	291.80
12159253	alu satin	2700 K	291.80

Modular construction: further light colors and power outputs are available on demand



LED-Set, alu including driver

Incl. light source: 3 x LED, power: 3 x 6,6 W, beam angle: 38°, material: aluminium, incl. driver for 230 V-connection, not dimmable, dimension driver: 1 145 x w 50 x h 22 mm

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

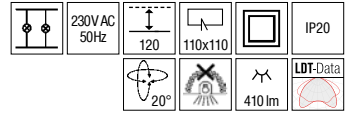
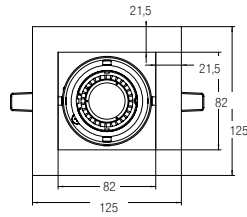
Article-no.	Colour of housing	Colour temperature	Price €
33159073	white	2700 K	348.90
33159253	alu satin	2700 K	348.90

Modular construction: further light colors and power outputs are available on demand



88454173

Recessed gimbal LED spot



LED set, including driver

Incl. light source: LED, power: 1 x 6,6 W,
beam angle: 38°,
material: steel / aluminium / clear glass,
incl. separate driver for 230 V-connection, not dim-
mable, dimensions driver: 168 x w 35 x h 21 mm

Special RAL colour on request.

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
88454173	textured white	2700 K ●	146.80

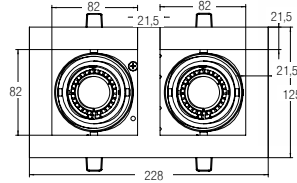
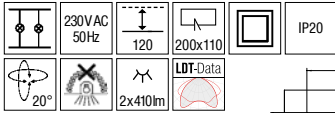
modular construction: further light colors and
power outputs are available on demand



Exhibition, Bielefeld (Germany)

88457173

Recessed gimbal LED spot



LED set, including driver

Incl. light source: 2 x LED, power: 2 x 6,6 W, beam angle: 38°, material: steel / aluminium / clear glass, incl. separate driver for 230 V-connection, not dimmable, dimensions driver: l 145 x w 50 x h 22 mm

Special RAL colour on request.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

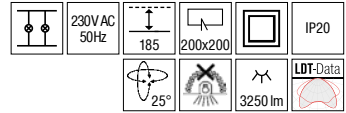
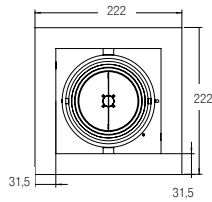
Article-no.	Colour of housing	Colour temperature	Price €
88457173	textured white	2700 K	294.60

modular construction: further light colors and power outputs are available on demand



Electrician "Schwarte Haustechnik", Hüven (Germany)

88461173 / 88462173 / 88463173 Recessed gimbal LED spot



LED set, including driver

Incl. light source: LED,
LED power: 31 W, system power: 33 W,
material: steel / aluminium,
colour rendering: CRI>80,
incl. separate driver for 230 V-connection,
not dimmable,
dimensions driver: l 180 x w 32 x h 32 mm

Special RAL colour on request.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

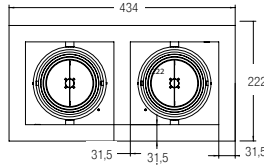
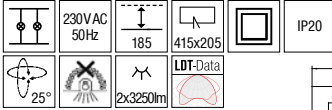
Article-no.	Colour of housing	Power	Colour temperature	Beam patterns	Price €
88461173	textured white	1 x 31 W	3000 K	18° (SP)	389.70
88462173	textured white	1 x 31 W	3000 K	30° (MF)	389.70
88463173	textured white	1 x 31 W	3000 K	50° (WFL)	389.70

modular construction: further light colors and power outputs are available on demand



Fashion shop "Schauerte", Sundern (Germany)

88464173 / 88465173 / 88466173
 Recessed gimbal LED spot



LED set, including driver

Incl. light source: LED,
 LED power: 2x 31 W, system power: 2x 33 W,
 material: steel / aluminium,
 colour rendering: CRI>80,
 incl. separate driver for 230 V-connection,
 not dimmable,
 dimensions driver: l 180 x w 32 x h 32 mm.

Special RAL colour on request.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Power	Colour temperature	Beam patterns	Price €
88464173	textured white	2 x 31 W	3000 K	18° (SP)	685.30
88465173	textured white	2 x 31 W	3000 K	30° (MF)	685.30
88466173	textured white	2 x 31 W	3000 K	50° (WFL)	685.30

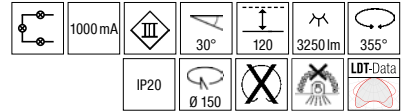
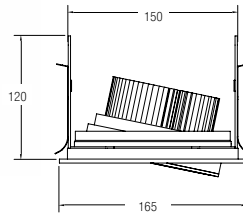
modular construction: further light colors and power outputs are available on demand



Fashion shop "Schauerte", Sundern (Germany)

12132...

Recessed pivotable LED spot



Specification

Incl. light source: 1 x LED, power: 31 W,
material: aluminium, with thrust spring

Suitable drivers see page 152.

Energy efficiency class: A++ to A

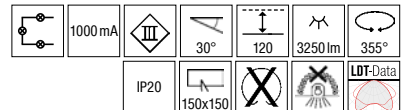
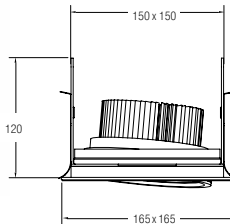
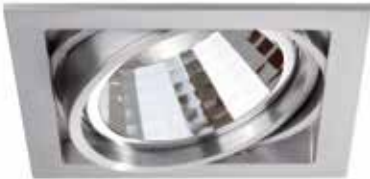
This luminaire contains incorporated and
non-exchangeable LED light sources.

Other beam pattern on demand.

Article-no.	Colour of cabinet	Colour temperature	Beam pattern	Price €
12132073	white	3000 K	30° (FL)	259.30
12132253	alu satin	3000 K	30° (FL)	262.20

12133...

Recessed pivotable LED spot



Specification

Incl. light source: 1 x LED, power: 31 W,
material: aluminium, with thrust spring

Suitable drivers see page 152.

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Other beam pattern on demand.

Article-no.	Colour of cabinet	Colour temperature	Beam pattern	Price €
12133073	white	3000 K	30° (FL)	263.90
12133253	alu satin	3000 K	30° (FL)	266.60

Hair salon "Aufderbeck", Oeventrop (Germany)



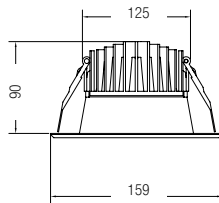
Downlights



ENT-department, Solingen (Germany)



40515.. Recessed LED downlight



Specification

Incl. light source: LED, power: 14 W, material: aluminium / plastic, beam angle: 60°, UGR<19*, reflector silver satin

Suitable drivers see page 147.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

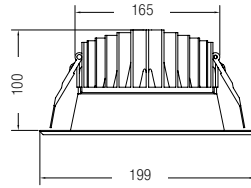
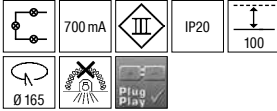
* Standardised glare rating in accordance with DIN EN 12464-1

Item suitable for reading and writing rooms as well as for computer work, control work and classrooms.

Article-no.	Colour of housing	Colour temperature	light flux	CRI	Price €
40515073	white	3000 K	1050 lm	>83	94.00
40515074	white	4000 K	1150 lm	>83	94.00

40516...

Recessed LED downlight



Specification

Incl. light source: LED, power: 24 W, material: aluminium / plastic, beam angle: 60°, UGR<19°, reflector silver satin

Suitable drivers see page 149.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

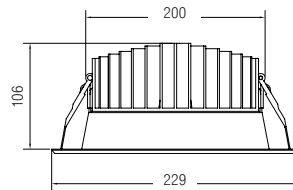
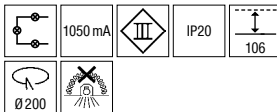
* Standardised glare rating in accordance with DIN EN 12464-1

Item suitable for reading and writing rooms as well as for computer work, control work and classrooms.

Article-no.	Colour of housing	Colour temperature	light flux	CRI	Price €
40516073	white	3000 K	2150 lm	>83	136.90
40516074	white	4000 K	2350 lm	>83	136.90

40517...

Recessed LED downlight



Specification

Incl. light source: LED, power: 36 W, material: aluminium / plastic, beam angle: 70°, UGR<19°, reflector with silver finish

Suitable drivers see page 153.

Energy efficiency class: A++ to A

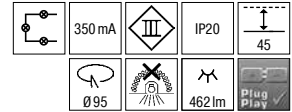
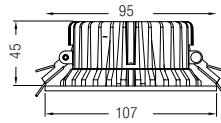
This luminaire contains incorporated and non-exchangeable LED light sources.

* Standardised glare rating in accordance with DIN EN 12464-1

Item suitable for reading and writing rooms as well as for computer work, control work and classrooms.

Article-no.	Colour of housing	Colour temperature	light flux	CRI	Price €
40517073	white	3000 K	3250 lm	>83	170.60
40517074	white	4000 K	3510 lm	>83	170.60

40523073 Recessed LED downlight



Specification

Incl. light source: LED, power: 6 W, beam angle: 90°,
material: aluminium / plastic satined, plastic mounting ring,
for maximum ceiling thickness 15 mm

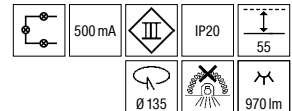
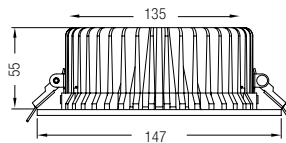
Article-no.	Colour of housing	Colour temperature	Price €
40523073	white	3000 K ●	66.00

Suitable drivers see page 142.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

40524073 Recessed LED downlight



Specification

Incl. light source: LED, power: 12 W, beam angle: 90°,
material: aluminium / plastic satined, for maximum ceiling thickness 15 mm

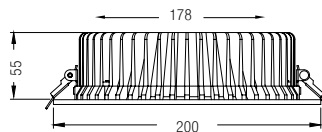
Article-no.	Colour of housing	Colour temperature	Price €
40524073	white	3000 K ●	99.50

Suitable drivers see page 147.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

40526073 Recessed LED downlight



Specification

Incl. light source: LED, power: 17 W, beam angle: 100°,
material: aluminium / plastic satined, for maximum ceiling thickness 15 mm

Article-no.	Colour of housing	Colour temperature	Price €
40526073	white	3000 K ●	107.20

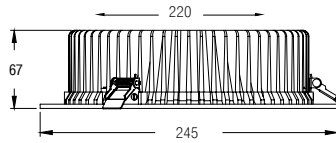
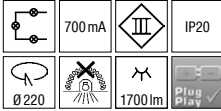
Suitable drivers see page 148.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

40527073

Recessed LED downlight



Specification

Incl. light source: LED, power: 22 W, beam angle: 100°
material: aluminium / plastic satined, for maximum ceiling thickness 15 mm

Suitable drivers see page 148.

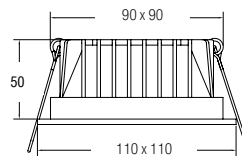
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
40527073	white	3000 K ●	188.70

40535073

Recessed LED downlight



Specification

Incl. light source: LED, power: 13 W, beam angle: 100°
material: aluminium / plastic frosted

Suitable drivers see page 142.

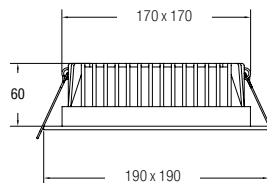
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
40535073	white	3000 K ●	88.50

40536073

Recessed LED downlight



Specification

Incl. light source: LED, power: 25 W, beam angle: 100°
material: aluminium / plastic frosted

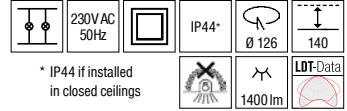
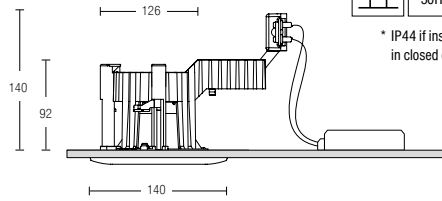
Suitable drivers see page 148.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
40536073	white	3000 K ●	133.50

88405... Recessed LED downlight



Specification

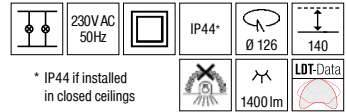
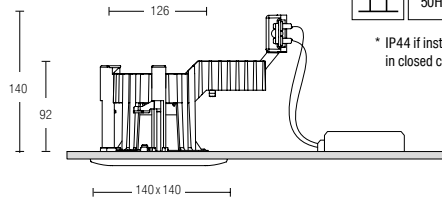
Incl. light source: LED, material: aluminium / clear glass, incl. separate driver (driver dimensions: 100 x 50 x 30 mm). Not applicable for through-wiring.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Power	Colour temperature	Beam patterns	Price €
88405073	white	12 W	3000 K	60° (WFL)	219.60
88405683	silver	12 W	3000 K	60° (WFL)	219.60

88406... Recessed LED downlight



Specification

Incl. light source: LED, material: aluminium / clear glass, incl. separate driver (driver dimensions: 100 x 50 x 30 mm). Not applicable for through-wiring.

Energy efficiency class: A++ to A

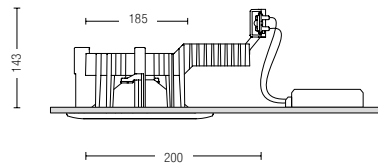
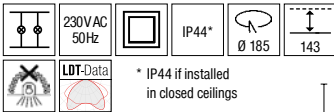
This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Power	Colour temperature	Beam patterns	Price €
88406073	white	12 W	3000 K	60° (WFL)	230.30
88406683	silver	12 W	3000 K	60° (WFL)	230.30

Electrician's exhibition „Bollmann“, Ellerau (Germany)



88401... / 88402...
Recessed LED downlight



Specification

Incl. light source: LED, material: aluminium / clear glass, incl. separate driver (driver dimensions: 160 x 80 x 35 mm). Not applicable for through-wiring.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

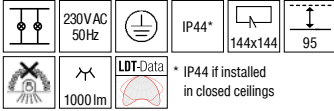
Article-no.	Colour of housing	Power	Colour temperature	Flux	Beam angle	Price €
88401073	white	39 W	3000 K	3500 lm	WFL	315.70
88401683	silver	39 W	3000 K	3500 lm	WFL	315.70
88402073	white	51 W	3000 K	5000 lm	WFL	410.80
88402683	silver	51 W	3000 K	5000 lm	WFL	410.80



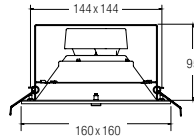
Restaurant "Schwögler", Bad Abbach (Germany)

40510223

Recessed LED downlight



* IP44 if installed
in closed ceilings



Specification

Incl. light source: LED, power: 12 W, material: stainless steel / glass, cover: partially frosted, incl. operating device. Adapted for through-wiring.

Article-no.	Colour of housing	Colour temperature	Beam patterns	Price €
40510223	stainless steel	3000 K	60° (WFL)	183.80

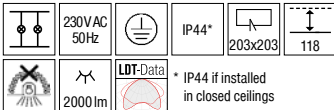
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

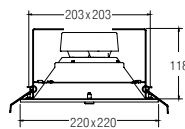


40511223

Recessed LED downlight



* IP44 if installed
in closed ceilings



Specification

Incl. light source: LED, power: 26 W, material: stainless steel / glass, cover: partially frosted, incl. operating device. Adapted for through-wiring.

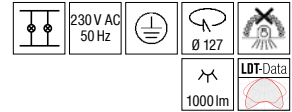
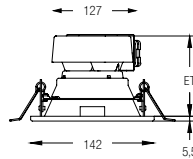
Article-no.	Colour of housing	Colour temperature	Beam Patterns	Price €
40511223	stainless steel	3000 K	60° (WFL)	204.90

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.



88431... / 88433... Recessed LED downlight



Specification

Incl. light source: LED, power: 15 W,
material: steel / aluminium,
incl. driver. Not applicable for through-wiring.

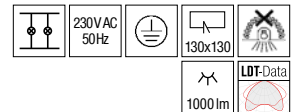
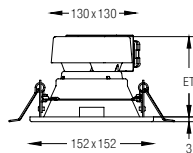
Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Installation depth	Ingress protection	Colour temperature	Beam patterns	Price €
88431073	white	91 mm	IP20	3000 K	60° (WFL)	146.80
88431074	white	91 mm	IP20	4000 K	60° (WFL)	146.80
88433073	white	95 mm	IP44*	3000 K	60° (WFL)	157.40
88433074	white	95 mm	IP44*	4000 K	60° (WFL)	157.40

* IP44 if installed in closed ceilings (cover: clear glass)

88445... / 88446... Recessed LED downlight



Specification

Incl. light source: LED, power: 15 W,
material: steel / aluminium,
incl. driver. Not applicable for through-wiring.

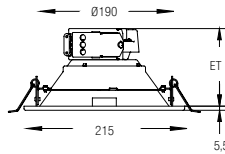
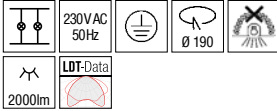
Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Installation depth	Ingress protection	Colour temperature	Beam patterns	Price €
88445073	white	77 mm	IP20	3000 K	60° (WFL)	162.70
88445074	white	77 mm	IP20	4000 K	60° (WFL)	162.70
88446073	white	81 mm	IP44*	3000 K	60° (WFL)	173.20
88446074	white	81 mm	IP44*	4000 K	60° (WFL)	173.20

* IP44 if installed in closed ceilings (cover: clear glass)

88432... / 88434... Recessed LED downlight



Specification

Incl. light source: LED, power: 26 W,
material: steel / aluminium,
incl. driver. Adapted for through-wiring.

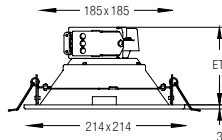
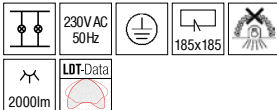
Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Installation depth	Ingress protection	Colour temperature	Beam patterns	Price €
88432073	white	104 mm	IP20	3000 K	60° (WFL)	167.90
88432074	white	104 mm	IP20	4000 K	60° (WFL)	167.90
88434073	white	108 mm	IP44*	3000 K	60° (WFL)	183.80
88434074	white	108 mm	IP44*	4000 K	60° (WFL)	183.80

* IP44 if installed in closed ceilings (cover: clear glass)

88447... / 88448... Recessed LED downlight



Specification

Incl. light source: LED, power: 26 W,
material: steel / aluminium,
incl. driver. Adapted for through-wiring.

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Installation depth	Ingress protection	Colour temperature	Beam patterns	Price €
88447073	white	84 mm	IP20	3000 K	60° (WFL)	173.20
88447074	white	84 mm	IP20	4000 K	60° (WFL)	173.20
88448073	white	89 mm	IP44	3000 K	60° (WFL)	199.70
88448074	white	89 mm	IP44	4000 K	60° (WFL)	199.70

* IP44 if installed in closed ceilings (cover: clear glass)

QualityFlex® Select





ATMOSPHERIC LIGHTING

Perfect ambient light with QualityFlex® Select LED light strips

QualityFlex® Select LED strips are perfect for atmospheric lighting. They are flexible and can be customised to individual lengths and integrated perfectly into the architecture of buildings and rooms.

Ceiling panels and recesses can be lit with QualityFlex® Select, and room dividers are highlighted to great effect. The LED light strips create a genuine sense of well-being in common areas. Integrated into entrance areas or roof edges, they are effective in exterior areas as well.

QualityFlex® Select is frequently used in retail stores and the restaurant and hotel industries as well as in the upscale private sector. Brumberg service includes expert advice about lighting technology and prefabrication to the desired lengths.

Good reasons for QualityFlex® Select

- Four white light colours, three protection classes and individual lengths.
- Maximum colour fidelity in four white tones
- Three protection classes for interior and exterior areas
- Cutting points for easy divisibility
- Perfectly matched QualityFlex® Select profiles
- Easy installation with adhesive film and plug-in system.
- A wide range of accessories
- Customization service

You will find in this section a selection from the QualityFlex® product range that is specially suitable for stores.

You will find the entire QualityFlex® product range as well as notes on exact customisation in the BRUMBERG main catalogue.

QualityFlex®

FLEXIBLE LIGHTING DESIGN



QualityFlex® Select Edition

QualityFlex® Select has achieved a new level of quality in the Edition 2016. The white or coloured light strips are available in a variety of colour temperatures and light colours. As a rolled product with power inputs at both ends and individual divisibility of the segments (corresponding to the pre-set division segments), QualityFlex® Select is highly flexible.

Maximum colour fidelity in four white tones

The QualityFlex® Select programme features maximum colour fidelity and a variety of white colour temperatures. Each LED flex strip is available in cool white, neutral white and in two warm white tones.

Three protection classes

With the three protection classes, IP00, IP60 and IP67, QualityFlex® Select can be used with correct installation in damp locations without quality loss or safety risk. Integrated into the ceilings of pool and wellness oases, QualityFlex® Select provides a soothing atmosphere. Furthermore, the LED flex strips are provided with a silicon coating in the IP67 protection class. They can thus also be used in outdoor areas.

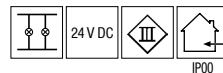
Customization service

On request, Brumberg supplies prefabricated QualityFlex® Select strips. For this purpose, the entire roll length is divided into the smallest divisible unit of length. This unit of length is identified in the catalogue for each QualityFlex® Select light strip. To order the desired overall length, simply order a multiple of the respective smallest unit of length plus the customization service.

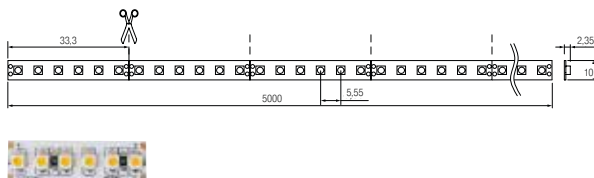
88203.. LED flexible for Food strip 14.4 W / m



NEW



14.4 W / m



Specification

Flexible LED conductor strips for food applications, fitted with 900x SMD 3528 LEDs; power: max.72 W (14.4 W / m), beam angle: 120°, width: 10 mm, length: 5,000 mm, easily cut every 33,33 mm, two-sided 3M adhesive tape included in delivery to aid installation. Incl. connection cables at both ends; length 350 mm each. Tinnes wire ends.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

To dissipate heat, light must be mounted on aluminium profiles (profiles can be found in our main catalog).

Electrical data

Nominal voltage [V DC]: 24
Protection class: III
Max. efficiency [lm/W]: 93
Power input [W / m]: 14,4
Number of LEDs per metre: 180
Current [mA/Chip]: 20

Mechanical data

Separable length [mm]: 33,33
Short Pitch [mm]: 5,55
max. module length [mm]: 5,000
protection class: IP00
dimensions (w x h in mm): 10 x 2,35

Temperature data

Ambient temperature [°C]:
-20 - +50

Luminaire data

Beam angle: 120°

*Intended purpose: special product for a decorative application. Not appropriate for use in other applications.

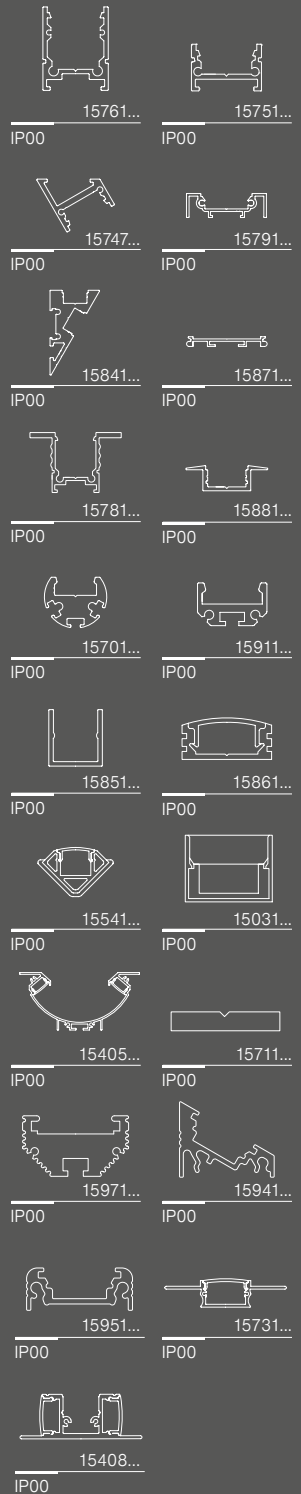
IP00



Article-no./ 5 m	Price €	Article-no./ 33,33 mm	Price €	Colour temperature	Flux/m	EEC	CRI	Application
88203020	275.00	75203020	2.20	2050 K	≈ 1225 lm	A+	Ra 42	red meat
88203024	275.00	75203024	2.20	2400 K	≈ 1045 lm	A	Ra 92	bread pastries
88203028	275.00	75203028	2.20	2750 K	≈ 1205 lm	A+	Ra 92	cheese restaurant
88203030	275.00	75203030	2.20	3050 K	≈ 1240 lm	A+	Ra 92	fruit
88203038	275.00	75203038	2.20	3850 K	≈ 1350 lm	A+	Ra 75	marble meat
88203040	275.00	75203040	2.20	4050 K	≈ 1350 lm	A+	Ra 90	vegetables
		75998000	10.20	Customization for protection class IP00				



APPLICABLE PROFILES



Scope of application

Optimal goods presentation using harmonious installations in the food sectors mentioned.

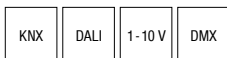
Drivers

Suitable drivers see page 154.



Controllers

Controllers for all signal types can be found in our main catalogue.

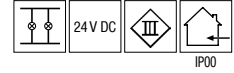


You will find profiles and additional accessories as well as QualityFlex® strips in our main catalogue.

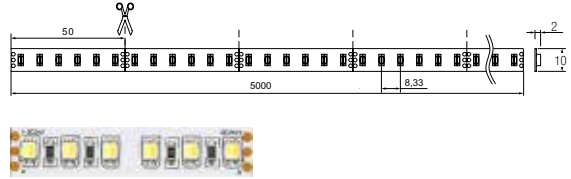
15215004
Tunablewhite LED flexible strip 19.2 W/m



NEW



19.2 W/m



Specification

Flexible LED conductor strips fitted with 600x SMD 3527 LEDs, bi-colour double chip technology (DCT); power: max. 96 W (19.2 W / m), beam angle: 120°, width: 10 mm, length: 5,000 mm, easily cut every 50 mm, two-sided 3M adhesive tape included in delivery to aid installation. Incl. connection cables at both ends, length 350 mm each.

To dissipate heat, light must be mounted on aluminium profiles (profiles can be found in our main catalog).

Electrical data	Mechanical data	Temperature data	Luminaire data
Nominal voltage [V DC]: 24 protection class: III Power input [W / m]: 19.2 Number of LEDs per metre: 120 Current [mA/Chip]: 40 Control: negative (3-core wire)	Separable length [mm]: 50 Short Pitch [mm]: 8.33 max. module length [mm]: 5,000 dimensions (w x h in mm): 10 x 2	Ambient temperature [°C]: -10 - +40	Beam angle: 120°

IP00



Article-no./5m	Price €	Article-no./50mm	Price €	Colour temperature	Flux/m	EEC
15215004	379.00	75215004	4.55	2700 K	about 700lm	A
				5700 K	about 700lm	
		75998000	10.20	Customization for protection class IP00		

Culinary School of Johann Lafer, Guldental (Germany)

APPLICABLE PROFILES



15761...

IP00



15751...

IP00



15747...

IP00



15791...

IP00



15841...

IP00



15871...

IP00



15781...

IP00



15881...

IP00



15701...

IP00



15911...

IP00



15851...

IP00



15861...

IP00



15541...

IP00



15031...

IP00



15405...

IP00



15711...

IP00



15971...

IP00



15408...

IP00



Accessories for 15215004

Scope of application

Changeable white light area using adjustment of colour temperature of the warm white and cool white channels for customised and efficient lighting of lighting covers, linear applications and backlighting, such as furniture, shelves, display cases, shadow gaps, illuminated ceilings and many others. Optimised for use with Brumberg 2-channel or TunableWhite control units.

Drivers

Suitable drivers and control units can be found from page 154.



Controllers

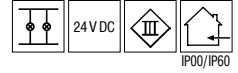
Controllers for all signal types can be found in our main catalogue.



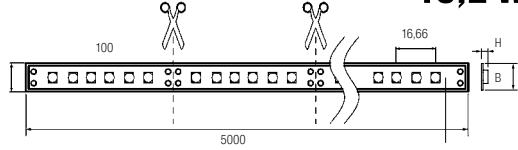
You will find profiles and additional accessories as well as QualityFlex® strips in our main catalogue.

18503002 / 18523002

LED flexible strip vitaLED® (RGBW) 19.2 W/m



19,2 W/m



Specification

Flexible LED conductor strips fitted with 600x SMD LED double chip, multi-colour 4in1; power; max. 96 W (19.2 W/m), beam angle: 120°, width: 10 mm, length: 5,000 mm, easily cut every 100 mm, two-sided 3M adhesive tape included in delivery to aid installation. Incl. connection cables at both ends; length 350 mm each.

To dissipate heat, light must be mounted on aluminium profiles (profiles can be found in our main catalog).

*Special product (details on page 171).

Electrical data	Mechanical data	Temperature data	Luminaire data
Nominal voltage [V DC]: 24 protection class: III Power input [W/m]: 19.2 Number of LEDs per metre: 120 Control: negative (5-core wire)	Separable length [mm]: 100 Short Pitch [mm]: 16.66 max. module length [mm]: 5,000	Ambient temperature [°C]: -10 - +40	Beam angle: 120° Light colour category RGBW

IP00



Article-no./5 m	Price €	Article-no./100 mm	Price €	Light colour	Flux/m	EEC	Dimensions [W x H]:
18503002	427.60	75503002	10.30	4000 K	○ about 445 lm	A+	10 x 2 mm
				622 nm	● about 120 lm		
				531 nm	● about 270 lm		
				452 nm	● about 50 lm		
		75998000	10.20	Customization for protection class IP00			

Optimized for the use in the Brumberg vitaLED® system.

IP60



Article-no./5 m	Price €	Article-no./100 mm	Price €	Light colour	Flux/m	EEC	Dimensions [W x H]:
18523002	492.00	75523001	11.85	4000 K	○ about 320 lm	A+	10 x 3 mm
				622 nm	● about 86 lm		
				531 nm	● about 194 lm		
				452 nm	● about 36 lm		
		75999000	15.30	Customization with increased protection rating IP6...			

Resistant silicon coating, impervious to any mechanical stress; wipeable.

Event center „Zentralhallen“, Hamm (Germany)

APPLICABLE PROFILES



15761...

IP00 | IP60



15751...

IP00 | IP60



15747...

IP00 | IP60



15791...

IP00 | IP60



15841...

IP00 | IP60



15871...

IP00 | IP60



15781...

IP00 | IP60



15881...

IP00 | IP60



15701...

IP00 | IP60



15911...

IP00 | IP60

Accessories for 18503002 / 18523002

Scope of application

White light area and colour blending using the red, green and blue colour channels for changeable and efficient lighting of lighting covers, linear applications and backlighting, such as furniture, shelves, display cases, shadow gaps, illuminated ceilings and many others. The IP00 flexible strip is optimised for used in the Brumberg vitaLED® 2.0 System



15541...

IP00 | IP60

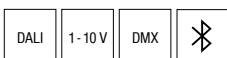
Drivers

Suitable drivers see page 154.



Controllers

Controllers for all signal types can be found from page 104.



15971...

IP00 | IP60



15731...

IP00 | IP60

You will find profiles and additional accessories as well as QualityFlex® strips in our main catalogue.

vitaLED® 2.0





INNOVATIVE LIGHTING SOLUTION

Flexible, vital light.

Intelligent lighting.

Flexible sales concepts. Healthy light.

vitaLED® – the intelligent lighting system that can be adapted to the needs of your shop. It creates light appropriate to your requirements, can be adapted to your needs, and can activate, guide and accentuate but also support quiet areas. Discover the new possibilities of modern lighting technology with vitaLED®.

With vitaLED®, all facets for optimal showcase lighting are covered. Creativity knows no boundaries.

With a sophisticated lighting concept, a space can be optically divided into zones and thus provide the guest with a sense of safety, comfort, and orientation. The modern lighting solution vitaLED® makes it possible to realize a number of different lighting scenarios in a space. The lighting can be flexibly adapted to any thematic concept.

Just one lighting system can be used to support seasonal concepts and theme nights with harmonious lighting and thus create a distinctive atmosphere. Customers will experience vital and compelling focus points, or you can highlight different sales areas.

Customers are motivated to buy, thanks to targeted use of lighting. In the area where the products are displayed, the light colour will need to be adjusted to the products, while quiet areas and check-out areas should be bathed in warm, white light in the range of 2,500 - 3,500 Kelvin.

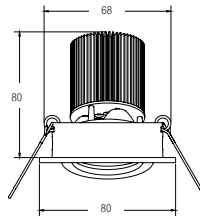


Smart Control

Control the light very easily using different keypad elements or touch panels on-site but also via an app. Pre-defined settings can also be automatically accessed. Stored lighting designs can be selected or individually adjusted to your needs. A networked lighting concept makes it possible to coordinate lighting solutions in individual rooms or areas and to control these areas in sync or individually as needed. You can control the entire lighting with just one touch of the screen.



18426... vitaLED® 2.0 - recessed spot



Specification

Incl. light source: 3 x RGBW-LED, power: max. 14 W,
beam angle: 40°, material: aluminium / plastic

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

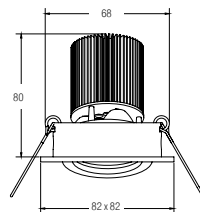
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

🌈 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18426072	white	RGBW	227.40
18426252	alu satin	RGBW	227.40

Also available in housing colour champagne satin or titanium satin on demand.

18427... vitaLED® 2.0 - recessed spot



Specification

Incl. light source: 3 x RGBW-LED, power: max. 14 W,
beam angle: 40°, material: aluminium / plastic

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

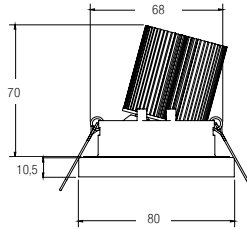
🌈 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18427072	white	RGBW	229.60
18427252	alu satin	RGBW	229.60

Also available in housing colour champagne satin or titanium satin on demand.

18420...

vitaLED® 2.0 - recessed spot



Design by Lounge Design Alexander Grimm

Specification

Incl. light source: RGBW-LED, power: max. 14 W,
beam angle: 40°, material: aluminium / steel / plastic

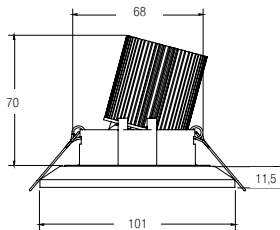
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via system cable 18900000 - 18902000 (p. 117) possible.

🚫 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18420022	chrome	RGBW	284.80
18420052	gold	RGBW	287.20
18420152	nickel satin	RGBW	291.00
18420172	texture white	RGBW	267.60
18420182	texture black	RGBW	267.60
18420672	texture slate	RGBW	267.60



Design by Lounge Design Alexander Grimm

Specification

Incl. light source: 3 x RGBW-LED, power: max. 14 W,
beam angle: 40°, material: aluminium / steel / plastic

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via system cable 18900000 - 18902000 (p. 117) possible.

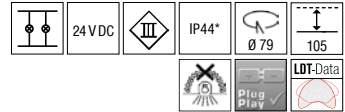
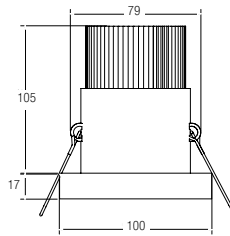
🚫 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18420022	chrome	RGBW	276.50
18420052	gold	RGBW	278.80
18420152	nickel satin	RGBW	282.50
18420172	texture white	RGBW	259.80
18420182	texture black	RGBW	259.80
18420672	texture slate	RGBW	259.80

18402... vitaLED® 2.0 - Downlight



Design by Lounge Design Alexander Grimm



*IP44 if installed in closed ceilings

Specification

Incl. light source: 4 x RGBW-LED, power: max. 27 W,
beam angle: 44°, material: aluminium / clear glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

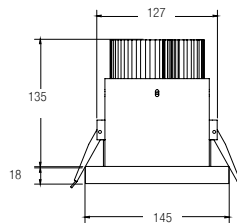
🚫 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18402022	chrome	RGBW	452.10
18402052	gold	RGBW	447.90
18402152	nickel satin	RGBW	452.10
18402172	textured white	RGBW	432.50
18402182	textured black	RGBW	432.50
18402672	textured slate	RGBW	432.50

18406... vitaLED® 2.0 - Downlight



Design by Lounge Design Alexander Grimm



*IP44 if installed in closed ceilings

Specification

Incl. light source: 6 x RGBW-LED, power: max. 39 W,
beam angle: 44°, material: aluminium / clear glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

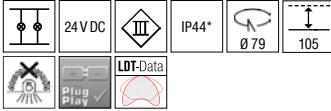
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

🚫 *Special product (details on page 171).

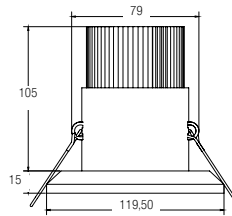
Article-no.	Colour of housing	Light colour	Price €
18406022	chrome	RGBW	556.90
18406052	gold	RGBW	565.40
18406152	nickel satin	RGBW	554.70
18406172	textured white	RGBW	533.50
18406182	textured black	RGBW	533.50
18406672	textured slate	RGBW	533.50

18403...

vitaLED® 2.0 - Downlight



*IP44 if installed in closed ceilings



Design by Lounge Design Alexander Grimm

Specification

Incl. light source: 4 x RGBW-LED, power: max. 27 W,
beam angle: 44°, material: aluminium / clear glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

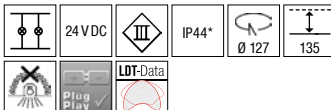
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

🌈 *Special product (details on page 171).

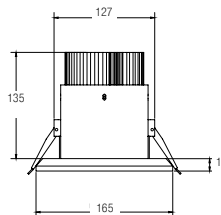
Article-no.	Colour of housing	Light colour	Price €
18403022	chrome	RGBW	451.60
18403052	gold	RGBW	451.70
18403152	nickel satin	RGBW	451.60
18403172	textured white	RGBW	432.10
18403182	textured black	RGBW	432.10
18403672	textured slate	RGBW	432.10

18407...

vitaLED® 2.0 - Downlight



*IP44 if installed in closed ceilings



Design by Lounge Design Alexander Grimm

Specification

Incl. light source: 6 x RGBW-LED, power: max. 39 W,
beam angle: 44°, material: aluminium / clear glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

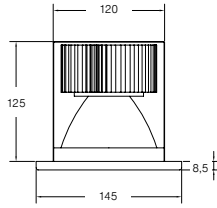
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

🌈 *Special product (details on page 171).

Article-no.	Colour of housing	Light colour	Price €
18407022	chrome	RGBW	562.20
18407052	gold	RGBW	571.00
18407152	nickel satin	RGBW	560.10
18407172	textured white	RGBW	538.80
18407182	textured black	RGBW	538.80
18407672	textured slate	RGBW	538.80

18415072

vitaLED® 2.0 - recessed downlight



Specification

Incl. light source: 5 x RGBW-LED, power: max. 24W,
beam angle: 45°, material: steel / aluminium

Energy efficiency class: A++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

✘ *Special product (details on page 171).

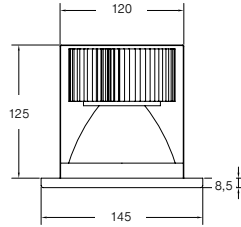
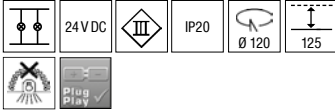
Article-no.	Colour of housing	Light colour	Price €
18415072	white	RGBW	484.70



Bathroom Studio Brinkschulte, Menden

18416072

vitaLED® 2.0 - recessed downlight



Specification

Incl. light source: 5 x RGBW-LED, power: max. 24 W,
beam angle: 45°, material: steel / aluminium / frosted glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

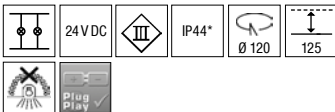
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

*Special product (details on page 171).

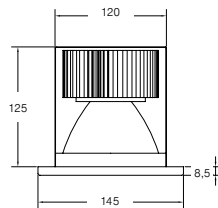
Article-no.	Colour of housing	Light colour	Price €
18416072	white	RGBW	516.40

18417072

vitaLED® 2.0 - recessed downlight



*IP44 if installed in closed ceilings



Specification

Incl. light source: 5 x RGBW-LED, power: max. 24 W,
beam angle: 45°, material: steel / aluminium / frosted glass

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via
system cable 18900000 - 18902000 (p. 117) possible.

*Special product (details on page 171).

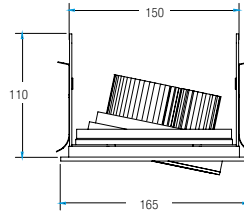
Article-no.	Colour of housing	Light colour	Price €
18417072	white	RGBW	516.40

Free School, Langscheid



18413252

vitaLED® 2.0 - recessed ceiling spot



Specification

Incl. light source: 6x RGBW-LED, power: max. 28W, beam angle: 34°, material: aluminium / plastic

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

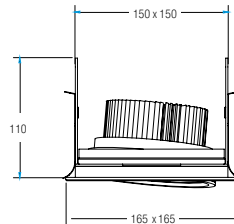
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via system cable 18900000 - 18902000 (p. 117) possible.

Article-no.	Colour of housing	Light colour	Price €
18413252	alu satin	RGBW	525.70

*Special product (details on page 171).

18414252

vitaLED® 2.0 - recessed ceiling spot



Specification

Incl. light source: 6x RGBW-LED, power: max. 28W, beam angle: 34°, material: aluminium / plastic

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

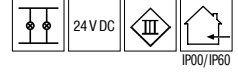
Connection to distribution board 18301000 & 18314000 (p. 104 & 107) only via system cable 18900000 - 18902000 (p. 117) possible.

Article-no.	Colour of housing	Light colour	Price €
18414252	alu satin	RGBW	530.20

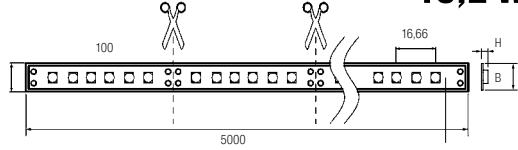
*Special product (details on page 171).

18503002 / 18523002

LED flexible strip vitaLED® (RGBW) 19.2 W/m



19,2 W/m



Specification

Flexible LED conductor strips fitted with 600x SMD LED double chip, RB+BNW; power: max. 96 W (19.2 W/m), beam angle: 120°, width: 10 mm, length: 5,000 mm, easily cut every 100 mm, two-sided 3M adhesive tape included in delivery to aid installation. Incl. connection cables at both ends; length 350 mm each.

To dissipate heat, light must be mounted on aluminium profiles (profiles can be found in our main catalog).

*Special product (details on page 171).

Electrical data	Mechanical data	Temperature data	Luminaire data
Nominal voltage [V DC]: 24 protection class: III Power input [W/m]: 19.2 Number of LEDs per metre: 120 Control: negative (5-core wire)	Separable length [mm]: 100 Short Pitch [mm]: 16.66 max. module length [mm]: 5,000	Ambient temperature [°C]: -10 - +40	Beam angle: 120° Light colour category: RGBW

IP00



Article no./5 m	Price €	Article no./100 mm	Price €	Light colour	Light flux/m	EEC	Dimensions [W x H]:
18503002	427.60	75503002	10.30	4000 K	about 445 lm	A+	10 x 2 mm
				622 nm	about 120 lm		
				531 nm	about 270 lm		
				452 nm	about 50 lm		
		75998000	10.20	Customization for protection class IP00			

Optimized for the use in the Brumberg vitaLED® system.

IP60



Article no./5 m	Price €	Article no./100 mm	Price €	Light colour	Light flux/m	EEC	Dimensions [W x H]:
18523002	492.00	75523001	11.85	4000 K	about 320 lm	A+	10 x 3 mm
				622 nm	about 86 lm		
				531 nm	about 194 lm		
				452 nm	about 36 lm		
		75999000	15.30	Customization with increased protection rating IP6...			

Resistant silicon coating, impervious to any mechanical stress; wipeable.

Event center „Zentralhallen“, Hamm (Germany)

APPLICABLE PROFILES



15761...

IP00 | IP60



15751...

IP00 | IP60



15747...

IP00 | IP60



15791...

IP00 | IP60



15841...

IP00 | IP60



15871...

IP00 | IP60



15781...

IP00 | IP60



15881...

IP00 | IP60



15701...

IP00 | IP60



15911...

IP00 | IP60

Accessories for 18503002 / 18523002

Scope of application

White light area and colour blending using the red, green and blue colour channels for changeable and efficient lighting of lighting covers, linear applications and backlighting, such as furniture, shelves, display cases, shadow gaps, illuminated ceilings and many others. The IP00 flexible strip is optimised for used in the Brumberg vitaLED® 2.0 system.



15541...

IP00 | IP60

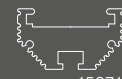
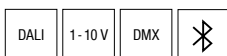
Drivers

Suitable drivers see page 154.



Controllers

Controllers for all signal types can be found from page 104.



15971...

IP00 | IP60



15731...

IP00 | IP60



You will find profiles and additional accessories as well as QualityFlex® strips in our main catalogue.

1830000 vitaLED® 2.0 master control



Control accessories:

18303000	radio remote control
18304...	8fold push button module
18305...	4fold push button module
18306...	2fold push button module
18307...	Touch-Panel
18318000	smart-lighting module

Specification

Material: plastic, ambient temperature (ta): 0 °C to 45 °C
Dimensions: 153 mm x 102 mm x 26 mm (LxWxH)

Suitable for DIN rail mounting (9 pitch units)

The vitaLED® 2.0 control unit serves for individual or pre-configured color- and brightness regulation of RGBW-LED modules. The control can be executed via push-button, touch panel, multiple 2-, 4- or 8fold push-buttons, radio remote control or a variety of protocol based control signals. The signal splits up into a DMX signal (control effects by Art. No. 18318000), a DALI signal and four individual analogue 1-10 V signals. The mode of operation and the details of functionality are based and connected to the corresponding way of addressing the system. The control-protocol has to be provided to the system on site. The relevant address-coding needs to be adapted to the corresponding way of piloting. Our mounting- and installation instruction delivers all relevant information regarding the required coding.

The vitaLED® modules can only be addressed via the corresponding vitaLED® 2.0 distribution boards 18301000 (for system luminaires) or 18302000 (for flexible strip).

Article-no.	Price €
18300000	400.20

For a connection length of more than 20m between the master control and the distribution board, you need the power supply Art. 18313000 (p. 110) for supplying!

18301000 vitaLED® 2.0 distribution board Plug 'n' Play - system luminaires



Specification

Material: plastic, ambient temperature (ta): 0 °C to 45 °C, current: max. 10 A,
power: max. 120 W at 12 V | max. 240 W at 24 V
dimensions: 126 mm x 54 mm x 31 mm (LxWxH)

Suitable for DIN rail mounting (7,5 pitch units)

The vitaLED® 2.0 distributor serves to transfer the control signals to the vitaLED® 2.0 luminaires. Max. 6 luminaires can be connected to a distributor. The vitaLED® 2.0 distributor permits the control of vitaLED® 2.0 products with a common anode, whereby the luminaires are connected by means of a vitaLED® 2.0 system connector. The max. length of the data cables between the vitaLED® 2.0 distributors may not exceed 50 m.

Important: Operation without master control unit 18300000, 18312000 or 18314000 is not possible!

Article-no.	Price €
18301000	178.50

18302000

vitaLED® 2.0 distribution board PWM



Specification

Material: plastic, ambient temperature (ta): 0 °C to 45 °C, current: max. 10 A, power: max. 120 W at 12V | max. 240 W at 24 V dimensions: 126 mm x 54 mm x 31 mm (LxWxH)

Article-no.	Price €
18302000	146.80

Suitable for DIN rail mounting (7,5 pitch units)

The vitaLED® 2.0 distributor serves to transfer the control signals to the vitaLED® 2.0 luminaires. Flex circuit boards can be connected to a distributor by 2 output jacks. The vitaLED® 2.0 distributor permits the control of vitaLED® 2.0 products with a common anode, whereby the luminaires are connected by means of two separate screw terminals. The max. length of the data cables between the vitaLED® 2.0 distributors may not exceed 50 m.

Important: Operation without master control unit 18300000, 18312000 or 18314000 is not possible!



18312000 vitaLED® 2.0 DALI-control modul



Specification

Material: plastics, ambient temperature (ta): 0 °C to 45 °C
Dimensions: 121 mm x 54 mm x 30 mm (LxWxH)

Article-no.	Price €
18312000	263.00

The vitaLED® 2.0 DALI control module is used for individual or pre-configured colour- and brightness regulation via the DALI bus.

The DALI protocol for the control has to be provided on the system on site.

The vitaLED modules can only be addressed via the corresponding vitaLED® 2.0 distribution boards 18301000 (for system luminaires) or 18302000 (for flexible strip).

For a connection length of more than 20 m between the master control and the distribution board, you need the power supply Art. 18313000 (p. 110) for supplying!



Showroom, München (Germany)

18314000

vitaLED® smart Bluetooth distribution board



vitaLED® smart

Bluetooth®



system requirements: min. Android vers. 4.3 or iOS vers. 7.1 / min. Bluetooth 4.0 (Bluetooth LE)

Specification

Material: plastic, ambient temperature (ta): 0 °C to 45 °C,
power: max. 80 W at 12 V | max. 160 W at 24 V,
dimensions: 126 mm x 54 mm x 31 mm (LxWxH)

Article-no.	Price €
18314000	315.70

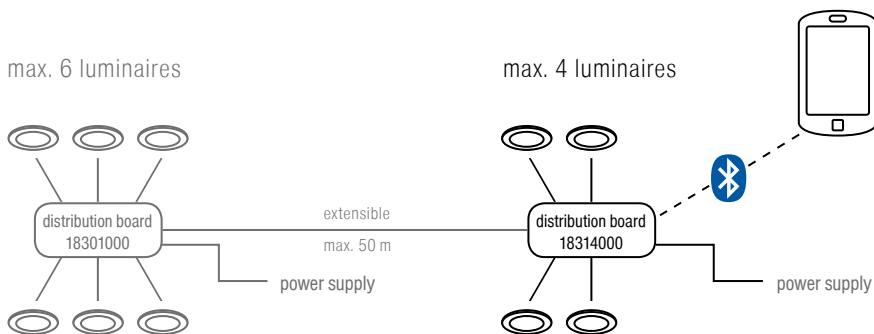
Suitable for DIN rail mounting (7,5 pitch units)

The vitaLED® smart Bluetooth distributor is to be used for a simple and intuitive control of RGBW-LED. They are to be controlled by an App available by download.

1. Individual control of all 4 colour channels (R/G/B/W)
2. Stepplessly adjustable all white tones from 2.000 up to 10.000 Kelvin
3. Control of colour moods in accordance to saturation, speed and brightness
4. Possible loading of a personal photo for selection of a light mood
5. Targeted selection of a colour value from the RGB colour triangle with dimming
6. Selection and control of different vitaLED® smart Bluetooth distributors

vitaLED® smart

System



18304... vitaLED® 2.0 8-channel push button module

IP20



Specification

Material: plastic / steel, ambient temperature (ta): 0 °C to 45 °C, suitable for installation into junction- and flush boxes (Ø 68 mm), dimensions: 81 mm x 81 mm x 25 mm

Together with the vitaLED® 2.0 Master Control Unit 18300000 (p. 104) and the Bus Coupler 18310000 (p. 110), the following functions are possible (the respective control possibilities vary according to adjustment and master control):

- Independent brightness control of all four colours (RGBW)
 - Storage of 2 individual colour values - Selection of preset colour temperatures (2.000 K - 10.000 K)
 - Selection of 11 colour sequences / colour moods
 - Continuous adjustment of change speed for the 11 colour sequences / colour moods.
 - Three colour sequences:
 1. RGB (fast change) red, green, blue, turquoise, violet, yellow, white
 2. RGB (soft change) blue, turquoise, violet, red, pink, yellow, green, white, white-blue
 4. RGBW (soft change) red, red-white, white-yellow, yellow, green, green-white, white-blue, turquoise, blue, violet, violet-white, white
- Four colour moods: 1. Colour Freshness | 2. Sunset | 4. Spring Awakening | 5. Biorhythm

2-core wire (i.e. J-Y(St)Y) max. 30 meter for connection to Bus Coupler 18310000.

Article-no.	Colour of housing	Price €
18304070	white	305.20
18304080	black	305.20
18304220	stainless steel	336.90
18304250	alu satin	336.90

18305... vitaLED® 2.0 4-channel push button module

IP20



Specification

Material: plastic / steel, ambient temperature (ta): 0 °C to 45 °C, suitable for installation into junction- and flush boxes (Ø 68 mm), dimensions: 81 mm x 81 mm x 25 mm

Together with the vitaLED® 2.0 Master Control Unit 18300000 (p. 104) and the Bus Coupler 18310000 (p. 110), the following functions are possible (the respective control possibilities vary according to adjustment and master control):

- Selection of preset colour temperatures (2.000 K - 10.000 K)
 - Selection of 3 colour sequences / colour moods
 - Continuous adjustment of change speed for the colour sequences / colour moods
- Two colour sequences:
1. RGB (soft change) red, green, blue, turquoise, violet, yellow, white
 2. RGBW (soft change) red, red-white, white-yellow, yellow, green, green-white, white-blue, turquoise, blue, violet, violet-white, white
- One colour mood: Biorhythm
- Selection of preset colour values: cold white, warm white, utility lighting

2-core wire (i.e. J-Y(St)Y) max. 30 meter for connection to Bus Coupler 18310000.

Article-no.	Colour of housing	Price €
18305070	white	263.00
18305080	black	263.00
18305220	stainless steel	294.60
18305250	alu satin	294.60

IP20

18306... vitaLED® 2.0 2-channel module



Specification

Material: plastic / steel, ambient temperature (ta): 0 °C to 45 °C, suitable for installation into junction- and flush boxes (Ø68 mm), dimensions: 81 mm x 81 mm x 25 mm

Together with the vitaLED® 2.0 Master Control Unit 18300000 (p. 104) and the Bus Coupler 18310000 (p. 110), the following functions are possible:

- Stimulating Morning Freshness
- Soothing Sunset
- Both lighting options are dimmable.

2-core wire (i.e. J-Y(St)Y) max. 30 meter for connection to Bus Coupler 18310000.

Article-no.	Colour of housing	Price €
18306070	white	252.40
18306080	black	252.40
18306220	stainless steel	284.10
18306250	alu satin	284.10

IP20

18307... vitaLED® 2.0 sensor-touch-module



Specification

Material: plastic / steel, ambient temperature (ta): 0 °C to 45 °C, suitable for installation into junction- and flush boxes (Ø68 mm), dimensions: 81 mm x 81 mm x 25 mm

Together with the vitaLED® 2.0 Master Control Unit 18300000 (p. 104) and the Bus Coupler 18310000 (p. 110), the following functions are possible:

- Independent brightness control of all four colours (RGBW)
- Storage of 3 individual colour values
- Selection of preset colour temperatures (2.000 K - 10.000 K)
- Selection of 11 colour sequences / colour moods
- Continuous adjustment of change speed for the 11 colour sequences /colourmoods

Six colour sequences:

1. RGB (soft change) red, green, blue, turquoise, violet, yellow, white
2. RGB (soft change) blue, turquoise, violet, red, pink, yellow, green, white, white-blue
3. RGB (abrupt change) green, red, blue, violet, pink, orange, yellow, white
4. RGBW (soft change) red, red-white, white-yellow, yellow, green, green-white, white-blue, turquoise, blue, violet, violet-white, white
5. RGBW (soft change) cold white, white, warm white, yellow, orange, red, violet, turquoise, white-blue, blue, white
6. RGBW (abrupt change) green, red, blue, white, turquoise, violet, violet-white, pink, pink-white, yellow, yellow-white, white, white-green

Five colour moods:

1. Colour Freshness, 2. Sunset, 3. Indian Summer, 4. Spring Awakening, 5. Biorhythm

2-core wire (i.e. J-Y(St)Y) max. 30 meter for connection to Bus Coupler 18310000.

Article-no.	Colour of housing	Price €
18307070	white	368.60
18307080	black	368.60
18307220	stainless steel	379.10
18307250	alu satin	379.10

18310000 vitaLED® 2.0 bus coupling unit



Specification

Material: plastic housing, ambient temperature (ta): 0 °C to 45 °C,
dimensions: 92 mm x 52,5 mm x 62,5 mm
suitable for DIN rail mounting (3 pitch units)

Used together with the master (Art. 18300000) enables the keypad module and the sensor-touch module (Art. 18304... - Art. 18307...) to be integrated for controlling a vitaLED® 2.0 system. 2-core cable (e.g. J-Y(St)Y) max. 30 m to connect to the keypad module or sensor-touch module 18304...-18307. 4-core shielded cable (e.g. J-Y(St)Y) max. 6 m to connect to the master 18300000.

Article-no.	Price €
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18310000	315.70
----------	--------

18309000 vitaLED® 2.0 power supply for bus coupling unit



Specification

Material: plastic housing, primary voltage: 85-260 VAC / 50 Hz | 120-370 VDC,
ambient temperature (ta): 20 °C to 60 °C,
dimensions: 93 mm x 25 mm x 56 mm

Suitable for DIN rail mounting (1.5 pitch units)

Article-no.	Secondary voltage	Power output	Price €
-------------	-------------------	--------------	---------

18309000	24 VDC	max. 0,63 A (15 VA)	38.10
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18313000 vitaLED® 2.0 power adapter for master control



Specification

Material: plastic housing, primary voltage: 90-260 VAC / 50 Hz | 130-370 VDC,
ambient temperature (ta): 0 °C to 40 °C,
dimensions: 92 mm x 52,5 mm x 62,5 mm

For the power supply of the master controls
art.-no. 18300000 and art.-no 18312000.

Article-no.	Secondary voltage	Power output	Price €
-------------	-------------------	--------------	---------

18313000	24 VDC	max. 0,25 A (6 VA)	29.50
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shopping mall "Arcaden Erlangen" (Germany)

SMART LIGHTING IN THE SMART HOME: THE BRUMBERG MODULE

Easy Integration. Central Lighting Control.
Individual Colour Scenarios.

In a smart home, the various systems of the building technology communicate with each other – often connected to household appliances and consumer electronics. The complex processes are centrally controlled, scenarios can be individually defined and accessed using a smartphone, for example. Living in a smart home is thus arranged extremely conveniently, safely and energy efficiently.

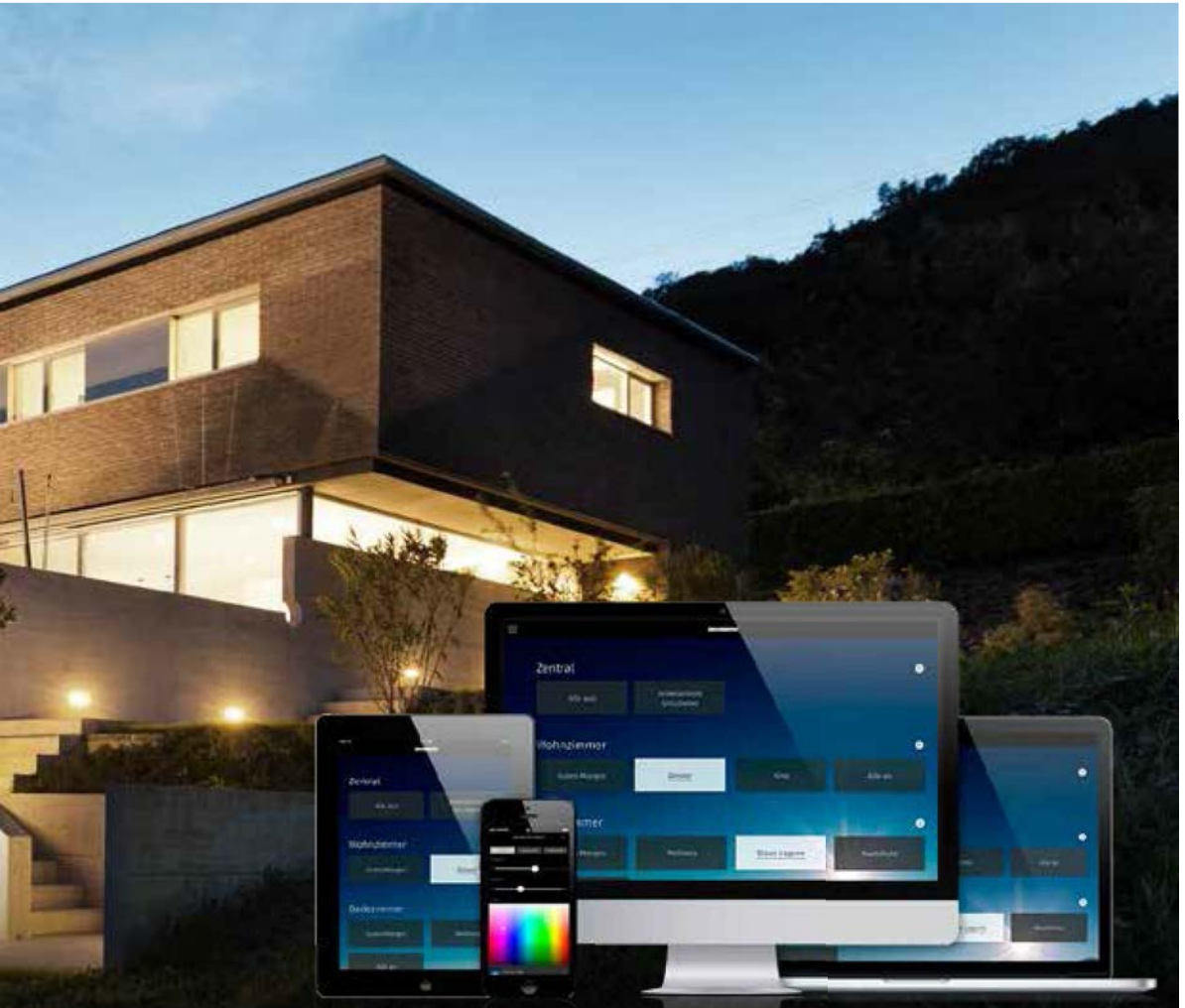
Brumberg SmartLighting in the smart home:

The Brumberg lighting systems can be controlled by corresponding smart home systems by integrating the SmartLighting module into the smart home systems available on the market. The integration of the SmartLighting module into the available IP environment takes place via the available open API interface.

As a central control element, the SmartLighting module has 2 DMX outputs: one for a DMX out for controlling vitaLED 2.0 and the other for a DMX out for controlling vitaLED 1.0, RGB, Tunable White monochromatic and dim2warm.

Intuitive user interface per app or browser:

Following the smart home logic, Brumberg SmartLighting can be controlled intuitively using a smart user interface. This is optimized for different end devices: as an app (iOS and Android) for tablets and smartphones or browser-based for PCs and laptops.



Freely definable and accessible light scenarios:

The abundance of functions makes a lighting system possible that can be individually adjusted at any time to the needs of the residents of a smart home. For this purpose, individual parameters such as light intensity, light colour, colour temperature etc. can be adjusted in different scenarios.

With the SmartLighting module, the lighting system can be separately controlled in 16 individual zones and groups. Separate control areas can be defined from the 16 zones. A zone can be integrated into several groups or scenarios. Each of the 16 zones can be individually set to vitaLED® 1.0 or 2.0 RGB, Tunable White,

monochromatic white light or colour light. In each zone configuration, the individually controllable channels can be changed separately for brightness. Different light scenarios can be freely defined.

Vital and colour progressions with time control:

The spectrum of the pre-set colour temperatures ranges from 2,000 to 10,000 kelvin. Vital and colour progressions can be defined and accessed for example via a time control. The program duration is also freely selectable: if the SmartLighting module is connected to the Internet, vital progressions can be controlled in real time. With SmartLighting, the lighting system will turn into a personal highlight.

18318000 smart-lighting module



Specification

Functions:

- Each of the 16 zones can be set to vitaLED® 1.0 / 2.0, RGB, TunableWhite, monochrome white light / coloured light
- In each zone configuration, the individually controllable channels could be changed separately for brightness
- Retrieval of pre-set colour temperatures from 2,000 K - 10,000 K
- Retrieval of factory-set gradients (RGB / Vita gradient / 11 colour scores)
- Setting a free choice of colours
- Setting and retrieving self-defined colour gradients / Vita gradients
- For each zone, light scenarios have been factory-set but are available as changeable
- Ease of initial configuration
- Control ranges freely definable from 16 zones
- Scenes can include freely selectable zones / areas
- A zone can be integrated into several areas
- Easy operation via a more convenient user interface than is possible with the LAN module
- Online updates can be installed using the IP interface (Internet required)
- Provision of a REST-API, including selected control functions

Connectivity:

- The assignment of the IP address of the smart-lighting module is made via DHCP
- The control of the module is made with an app (iOS / Android) (if this end device is in the same network). The smart-lighting module can also be accessed using the IP call-up via a browser.

Ambient temperature (ta): 0° C to +45° C, housing: plastic / aluminium

Article-no.	Price €
18318000	498.00

18153000 4 channel LED dimmer

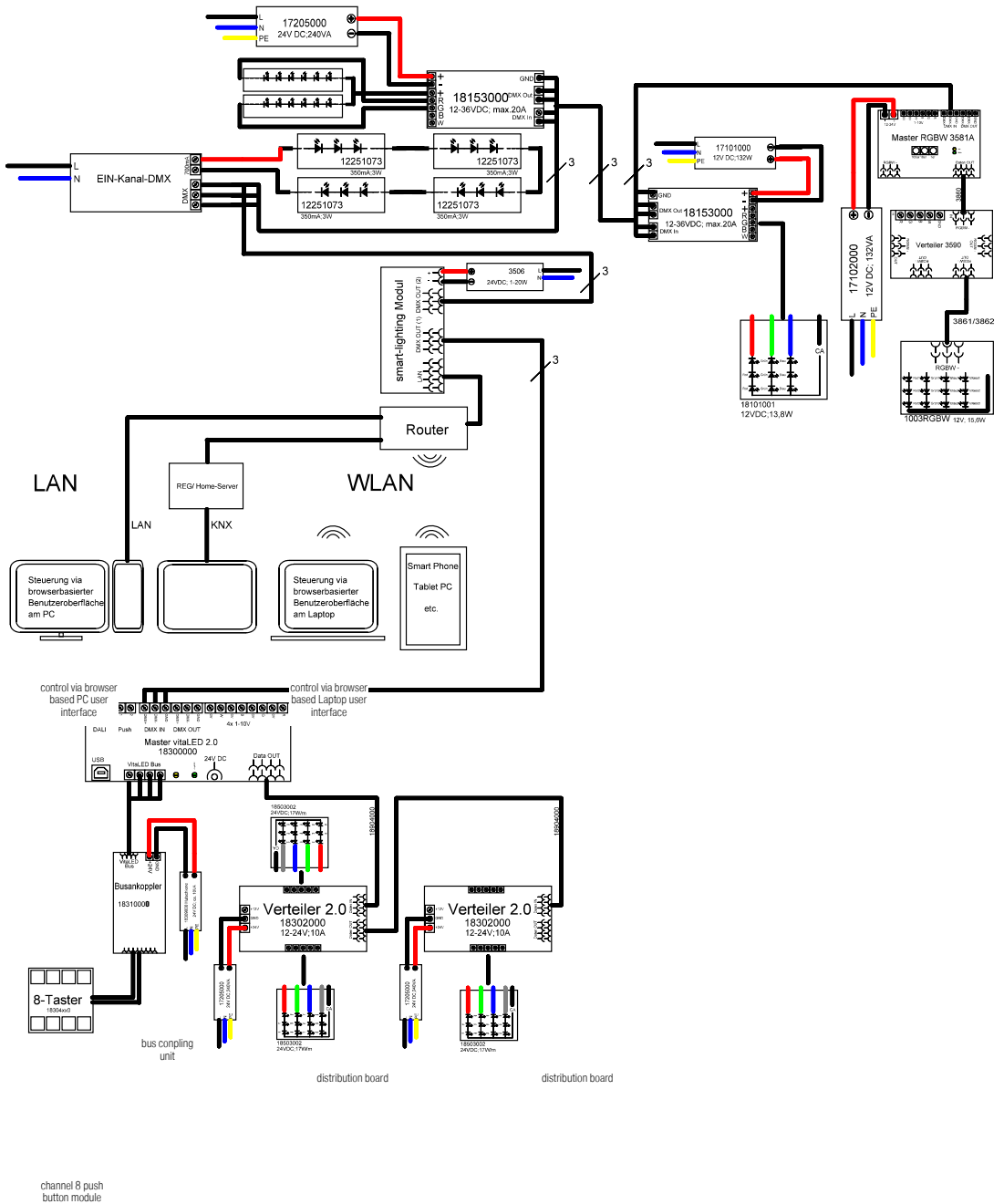


Beschreibung

LED dimmer series for constant voltage operation over 4 channels (single- or multi-coloured). Wiring takes takes place without screws via plug-in terminals.

It requires an external power supply to operate, control signal: DMX, number of channels: 1-4, max. output current: 4 x 5 A, voltage range: 12 - 36 V DC, max. output rating: 4x 60 W (12V DC) | 4x 120 W (24 V DC), cable cross-section: 0.5 - 2.5 mm², output signal (dimming): pulse width modulation (PWM), ambient temperature (ta): 0° C - +50° C, casing temperature (tc): 75° C, reverse polarity protection: yes, heat protection: yes, dimensions [LxWxH]: 170 x 54 x 30 mm, material: plastic

Article-no.	Price €
18153000	129,00



channel 8 push button module



Brumberg Retail showroom, Sundern (Germany)

18900000 - 18902000 vitaLED® 2.0 8-pole connection cable



Specification

System cable to link distribution board and luminaire

Article-no.	Description	Price €
18900000	system cable 1000 mm	14.40
18901000	system cable 2000 mm	17.50
18902000	connection for system cable 100 mm	11.60

18906000 / 18909000 vitaLED® 2.0 extension cable



Specification

Connection set for signal transmission on pre-installed control lines from connection to distribution board or from the distribution board to the luminaire (see table).

Article-no.	Description	Length	Price €
18909000	connecting cable IN to Plug & Play distributor	200 mm	13.20
18906000	connecting cable (IN/OUT) from distributor to luminaire	200 mm	26.40

18903000 - 18905000 vitaLED® 2.0 system cable



Specification

System cable for signal continuation; from the master to the distribution board / from the distribution board to distribution board

Article-no.	Length	Price €
18903000	500 mm	4.90
18904000	5000 mm	15.30
18905000	10.000 mm	26.40

TunableWhite



tunable 
WHITE

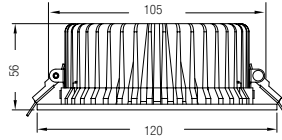
DYNAMIC WHITE LIGHT

WELL-BEING BY
CHANGING COLOUR
TEMPERATURES



12423074

LED recessed spot TunableWhite



Specification

Incl. light source: LED, total power: max. 13 W,
material: aluminium / plastic satined

Suitable dimmable drivers and control units can be found from page 154.

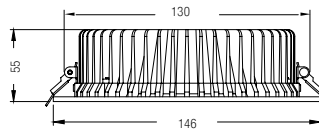
Energy efficiency class: A+++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12423074	white	2700 K-6000 K	88.00

12424074

LED recessed spot TunableWhite



Specification

Incl. light source: LED, total power: max. 20 W,
material: aluminium / plastic satined

Suitable dimmable drivers and control units can be found from page 154.

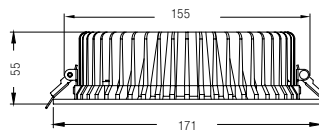
Energy efficiency class: A+++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12424074	white	2700 K-6000 K	111.50

12425074

LED recessed spot TunableWhite



Specification

Incl. light source: LED, total power: max. 28 W,
material: aluminium / plastic satined

Suitable dimmable drivers and control units can be found from page 154.

Energy efficiency class: A+++ to A

This luminaire contains incorporated and
non-exchangeable LED light sources.

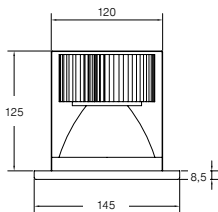
Article-no.	Colour of housing	Colour temperature	Price €
12425074	white	2700 K-6000 K	146.50

40601074 / 40602074 / 40603074

LED-Downlight TunableWhite



40602074



40601074



40603074

Specification

Incl. light source: LED, power: 21 W, beam angle: 45°, colour rendering: CRI>90, material: aluminium / steel

Create an ambient room lightening by adjustable colour temperature from cool white to warm white. I.e. cool white at day and warm and comfortable light in the evening.

Control via two 1-10V-interface:
1. for luminaire dimming
2. to control light colour (2700 K-5700 K)

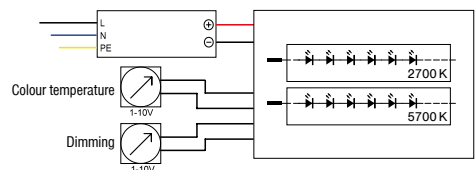
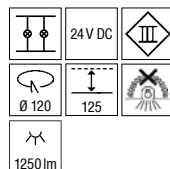
Suitable drivers can be found from page 154/155

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Cover	Protection	Colour temperature	Price €
40601074	none	IP20	2700 K-5700 K	495.30
40602074	satined glass ring	IP20	2700 K-5700 K	526.90
40603074	satined glass cover	IP44*	2700 K-5700 K	526.90

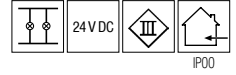
* IP44 if installed in closed ceilings



Centermanagement office, Berlin (Germany)



15215004
Tunablewhite LED flexible strip 19.2 W/m



19.2 W/m



Specification

Flexible LED conductor strips fitted with 600x SMD 3527 LEDs, bi-colour double chip technology (DCT); power: max. 96 W (19.2 W / m), beam angle: 120°, width: 10 mm, length: 5,000 mm, easily cut every 50 mm, two-sided 3M adhesive tape included in delivery to aid installation. Incl. connector cables at both ends, length 350 mm each.

To dissipate heat, light must be mounted on aluminium profiles (profiles can be found in our main catalog).

Electrical data	Mechanical data	Temperature data	Luminaire data
Nominal voltage [V DC]: 24 protection class: III Power input [W / m]: 19.2 Number of LEDs per metre: 120 Current [mA/Chip]: 40 Control: negative (3-core wire)	Separable length [mm]: 50 Short Pitch [mm]: 8.33 max. module length [mm]: 5,000 dimensions (w x h in mm): 10 x 2	Ambient temperature [°C]: -10 - +40	Beam angle: 120°

IP00



Article-no./5m	Price €	Article-no./50mm	Price €	Colour temperature	Flux/m	EEC
15215004	379.00	75215004	4.55	2700 K	about 700 lm	A
				5700 K	about 700 lm	
		75998000	10.20	Customization for protection class IP00		

Culinary School of Johann Lafer, Guldental (Germany)

APPLICABLE PROFILES



15761...

IP00



15751...

IP00



15747...

IP00



15791...

IP00



15841...

IP00



15871...

IP00



15781...

IP00



15881...

IP00



15701...

IP00



15911...

IP00



15851...

IP00



15861...

IP00



15541...

IP00



15031...

IP00



15405...

IP00



15711...

IP00



15971...

IP00



15408...

IP00



Accessories for 15215004

Scope of application

Changeable white light area using adjustment of colour temperature of the warm white and cool white channels for customised and efficient lighting of lighting covers, linear applications and backlighting, such as furniture, shelves, display cases, shadow gaps, illuminated ceilings and many others. Optimised for use with Brumberg 2-channel or TunableWhite control units.

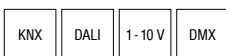
Drivers

Suitable drivers and control units can be found from page 154.



Controllers

Controllers for all signal types can be found in our main catalog.



You will find profiles and additional accessories as well as QualityFlex® strips in our main catalogue.

CLOTHES PERFECTLY PRESENTED

Application-related
lighting scenes increase
the willingness to buy



A wide variety of colours and materials must be reproduced realistically and attractively. Finely tuned different colour temperatures create a fresh, modern ambience and support a realistic colour reproduction of the fabrics. The right light makes colours appear natural, sets accents, significantly supports the purchasing decision and provides greater customer satisfaction.

REMARKABLY DIFFERENT

Convincing lighting for your changing room.

The new lighting concept, which was specifically developed for the special requirements in the fashion industry, offers the customer the option of customising the lighting. Thus, the customer can see the clothing in the light in which it will be worn. Predefined light scenes such as „dinner“ with warm light tones, „office“ with balanced lighting conditions or „outdoor“ give the customer an authentic impression of the clothing. The entire system is set up wirelessly via E-Net and is therefore perfect for retrofitting.

88990074

eNet – TunableWhite changing room set

Price : 1998,00 €

consists of:

1 x LED – TunableWhite Downlight,
Type 40601074
power: 21W, beam angle: 45°,
Δ 125 mm, Ø 145 mm, cut out 120 mm



1 x LED – TunableWhite flexible board,
Type 15215004
length: 5000 mm, power: 19,2 W / m,
for custom assembly



1 x TunableWhite 2-fold dimmer,
Type 17503000



2 x surface-mounted corner profile incl. opal
cover for custom assembly,
2500 mm x 30 mm x 30 mm

1 x driver 24 V DC / 100 W,
Type 17208000

1 x E-Net Aktor 1-10V,
preprogrammed: DINNER / OFFICE / OUTDOOR

1 x E-Net Sensor 4-way,
colour white, DINNER / OFFICE / OUTDOOR



Image similar

dim2warm



dim  warm

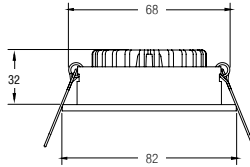
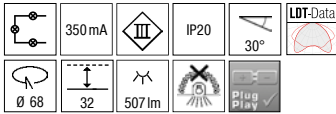


COSY ATMOSPHERE AT 2000 K

WARM WHITE IS NOW
EVEN WARMER

Until now, it was only possible to reduce the brightness by dimming the LEDs. The light became weaker but not 'warmer'. With dim2warm, the colour temperature now also changes in the lower dimming range. Depending on the type of lamp installed, the temperature can be dimmed from warm white 2800 K/3000 K to very warm white 2000 K. dim2warm thereby brings the enchantment of the desired comfortable atmosphere into your living room - like candlelight or by a cosy fireplace.

Single dim2warm inserts can be found in our main catalog.



12461... LED recessed spots dim2 Warm



Base model LED dim2warm 350 mA

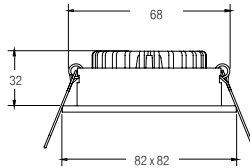
Incl. light source: 1x LED, power: 6 W, beam angle: 38°, material: aluminium / clear glass. When the lights are dimmed, the luminous colour changes from 2800 K to 2000 K.

Suitable dimmable drivers can be found from page 143.

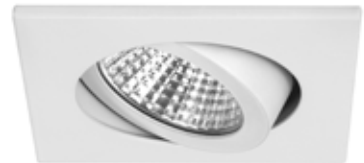
Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12461073	white	2800 K - 2000 K	58.90
12461253	alu satin	2800 K - 2000 K	62.90



12462... LED recessed spots dim2 Warm



Base model LED dim2warm 350 mA

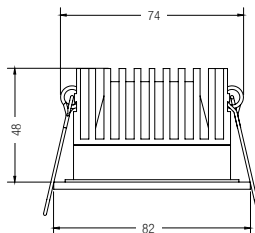
Incl. light source: 1x LED, power: 6 W, beam angle: 38°, material: aluminium / clear glass. When the lights are dimmed, the luminous colour changes from 2800 K to 2000 K.

Suitable dimmable drivers can be found from page 143.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

Article-no.	Colour of housing	Colour temperature	Price €
12462073	white	2800 K - 2000 K	61.90
12462253	alu satin	2800 K - 2000 K	65.90



12116... LED recessed spots dim2 Warm



Base model LED dim2warm 350 mA

Incl. light source: LED, power: 12 W, beam angle: 24°, CRI > 90, material: aluminium / plastic clear. When the lights are dimmed, the luminous colour changes from 3000 K to 2800 K.

Suitable dimmable drivers can be found from page 144.

Energy efficiency class: A++ to A

This luminaire contains incorporated and non-exchangeable LED light sources.

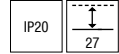
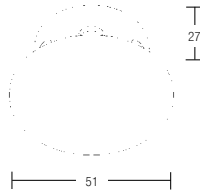
Article-no.	Colour of housing	Colour temperature	Price €
12116073	white	3000 K - 2000 K	93.00
12116253	alu satin	3000 K - 2000 K	102.20



Loudspeaker



3096... Ø51 mm speaker inlay without transformer

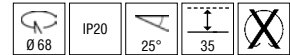
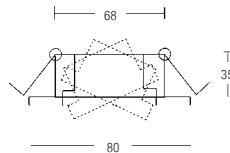


Specification

power rating:	3 / 4 W
impedance:	20 Ohm (it is possible to connect up to 5 speakers in parallel of one channel of a hifi-unit)
sound pressure level:	1 W / 1 m: 82 dB (by rated burden 87 dB)
frequency response: (-3 db):	200 - 16.000 Hz
frequency response: (-10 db):	150 - 20.000 Hz
specification:	perforated metal sheet Cover white or chrome-metalized
net weight:	0,06 kg
technical features:	Mounting by catch spring. Connection with 2-pole cord and terminal clamp.

Article-no.	Perforated cover	Price €	Suitable for most low-voltage-spots for QR-CBC51.
3096.02	chrome	61.60	
3096.07	white	58.80	

3093... Recessed speaker, cut-out 68 mm



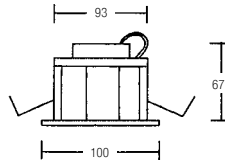
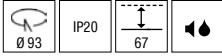
Specification

power rating:	3 / 4 W
impedance:	20 Ohm (it is possible to connect up to 5 speakers in parallel of one channel of a hifi-unit)
sound pressure level:	1 W / 1 m: 82 dB (by rated burden 87 dB)
frequency response: (-3 db):	200 - 16.000 Hz
frequency response: (-10 db):	150 - 20.000 Hz
specification:	front ring (steel) and perforated metal sheet Cover white or chrome-metalized
net weight:	0,14 kg
technical features:	Mounting by catch spring. Connection with 2-pole cord and terminal clamp.

Article-no.	Cover	Price €
3093.02	chrome	73.10
3093.07	white	69.20
3093.15	nickel satin	79.50

3090...

Recessed speaker with transformer 100V for ELA-installation



Specification

power rating: 6 W
 100V - transformer: 6 / 3 / 1,5 W
 sound pressure level: 1 W / 1m: 86 dB (by rated burden 94 dB)
 frequency response: (-3 db): 250 - 20.000 Hz
 frequency response: (-10 db): 170 - 21.000 Hz
 specification: Front ring (plastic) and perforated metal sheet Cover white or chrome-metalized

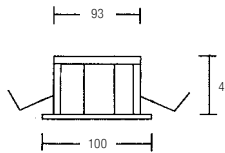
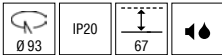
net weight: 0,6 kg
 technical features: Mounting by catch spring. Connection with 2-pole cord and terminal clamp.

Article-no.	Cover	Price €
3090.02	chrome	135.20
3090.07	white	114.10

Waterproof membrane:
 limited damp proofing.
 Not for permanent use in outdoor areas.

3092...

Recessed speaker without transformer



Specification

power rating: 6 / 8 W
 impedance: 8 Ohm
 sound pressure level: 1 W / 1m: 86 dB (by rated burden 94 dB)
 frequency response: (-3 db): 250 - 20.000 Hz
 frequency response: (-10 db): 170 - 21.000 Hz
 specification: Front ring (plastic) and perforated metal sheet Cover in chrome, white or steel satin

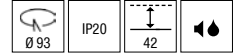
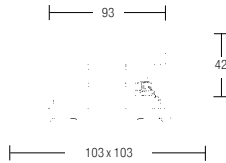
net weight: 0,4 kg
 technical features: Mounting by catch spring. Connection with 2-pole cord and terminal clamp.

Article-no.	Cover	Price €
3092.02	chrome	110.70
3092.07	white	79.60
3092.26	steel satin	115.20

Waterproof membrane:
 limited damp proofing.
 Not for permanent use in outdoor areas.

3083.07

Recessed speaker without transformer



Specification

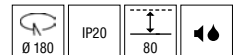
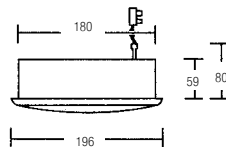
power rating:	6 / 8 W
impedance:	20 Ohm (it is possible to connect up to 5 speakers in parallel of one channel of a hi-fi-unit).
sound pressure level:	1 W / 1 m: 86 dB (by rated burden 94 dB)
frequency response: (-3 db):	250 - 20.000 Hz
frequency response: (-10 db):	170 - 21.000 Hz
specification:	Front ring and mounting ring consisting of plastic with perforated metal sheet Cover in white
net weight:	0,4 kg
technical features:	Mounting by catch spring. Connection with 2-pole cord and terminal clamp.

Article-no.	Cover	Price €
3083.07	white	98.00

Waterproof membrane:
limited damp proofing. Not for permanent use in outdoor areas.

3094.07

Recessed speaker without transformer



Specification

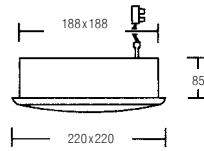
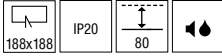
power rating:	40 / 50 W
impedance:	8 Ohm
sound pressure level:	1 W / 1 m: 90 dB (by rated burden 98 dB)
frequency response: (-3 db):	100 - 20.000 Hz
frequency response: (-10 db):	60 - 23.000 Hz
specification:	Front ring and mounting ring consisting of plastic with perforated metal sheet Cover in white
net weight:	1,0 kg
technical features:	Installation for ceiling thicknesses from 1-20 mm. Connection with 2-pole cord terminal clamp.

Article-no.	Cover	Price €
3094.07	white	170.10

Waterproof membrane:
limited damp proofing. Not for permanent use in outdoor areas.

3084.07

Recessed speaker without transformer



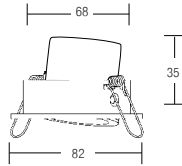
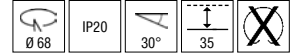
Specification

power rating:	40 / 50 W
impedance:	8 Ohm
sound pressure level:	1 W / 1 m: 89 dB (by rated burden 105 dB)
frequency response:(-3 db):	100 - 20.000 Hz
frequency response:(-10 db):	50 - 22.000 Hz
specification:	Front ring and mounting ring consisting of plastic with perforated metal sheet Cover in white
net weight:	1,0 kg
technical features:	Installation for ceiling thicknesses from 7-32 mm. Connection with 2-pole cord terminal clamp.

Article-no.	Cover	Price €
3084.07	white	198.50

Waterproof membrane:
limited damp proofing. Not for permanent use in outdoor areas.

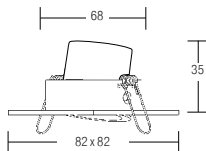
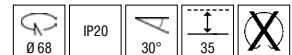


43003250**Recessed speaker, cut-out 68 mm****Specification**

power rating:	3 / 4 W
impedance:	20 Ohm (it is possible to connect up to 5 speakers in parallel of one channel of a hi-fi-unit)
sound pressure level:	1 W / 1 m: 82 dB (by rated burden 87 dB)
frequency response (-3 db):	200 - 16.000 Hz
frequency response (-10 db):	150 - 20.000 Hz
specification:	front ring consisting of aluminium and perforated metal sheet Cover in chrome - metalized.
net weight:	0,1 kg
technical features:	mounting by catch spring connection with 2-pole cord and terminal clamp

Article-no.	Cover	Price €
43003250	alu satin	79.90

Also available in white, champagne satin or titanium satin on request.

43004250**Recessed speaker, cut-out 68 mm****Specification**

power rating:	3 / 4 W
impedance:	20 Ohm (it is possible to connect up to 5 speakers in parallel of one channel of a hi-fi-unit)
sound pressure level:	1 W / 1 m: 82 dB (by rated burden 87 dB)
frequency response (-3 db):	200 - 16.000 Hz
frequency response (-10 db):	150 - 20.000 Hz
specification:	front ring consisting of aluminium and perforated metal sheet Cover in chrome-metalized.
net weight:	0,1 kg
technical features:	mounting by catch spring connection' with 2-pole cord and terminal clamp

Article-no.	Cover	Price €
43004250	alu satin	82.10

Also available in white, champagne satin or titanium satin on request.



HDO Druckguss u. Oberflächentechnik GmbH, Paderborn (Germany)

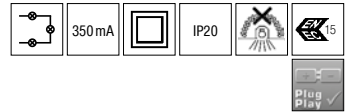


Accessories



17666000

LED driver constant current 350 mA, not dimmable



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

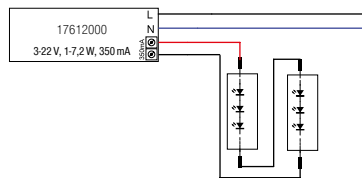
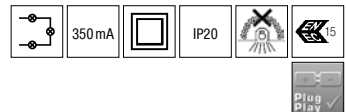
primary voltage: 120-370 V DC / 90-264 V AC, frequency: 50-60 Hz,
electrical feeding (in / out): 100/110 mm,
ambient temperature (ta): -20° C to +40° C,
case temperature (tc): max. 75° C,
dimensions: 53 mm x 30 mm x 24 mm, material: plastic housing

built-in device
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17666000	350 mA	1-5 W	28.60

17612000

LED driver constant current 350 mA, not dimmable



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

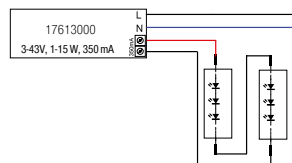
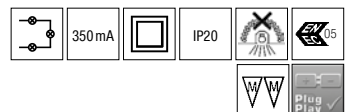
primary voltage: 120-370 V DC / 90-264 V AC, frequency: 50-60 Hz,
electrical feeding (out): 150 mm,
ambient temperature (ta): -20° C to +40° C,
case temperature (tc): max. 70° C,
dimensions: 68 mm x 35 mm x 21 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17612000	350 mA	1 - 7,2 W	26.20

17613000

LED driver constant current 350 mA, not dimmable



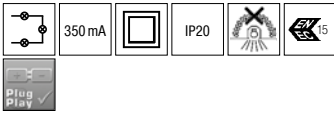
series connexion, max. length of connection cable, on the secondary side 10 m

Specification

primary voltage: 100-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 140mm,
ambient temperature (ta): -25° C to +45° C,
case temperature (tc): max. 75°,
dimensions: 115mm x 34mm x 19mm, material: plastic housing

with strain relief
not dimmable

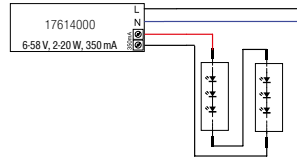
Article-no.	Secondary voltage	Power output	Price €
17613000	350 mA	1 - 15 W	37.00



series connexion, max. length
of connection cable, on the
secondary side 10 m

LED driver constant current 350 mA, not dimmable

17614000

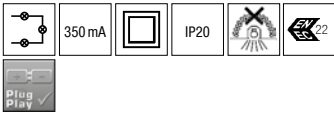


Specification

primary voltage: 180-264 V AC, frequency: 43-63 Hz,
electrical feeding (out): 140 mm,
ambient temperature (ta): -20° C to +50° C,
case temperature (tc): max. 85° C,
dimensions: 145 mm x 50 mm x 22 mm, material: plastic housing

with strain relief
not dimmable

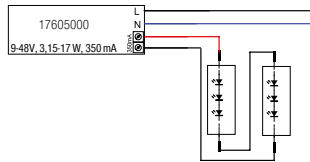
Article-no.	Secondary voltage	Power output	Price €
17614000	350 mA	2-20 W	57.10



series connexion, max. length
of connection cable, on the
secondary side 10 m

LED driver constant current 350 mA, not dimmable

17605000

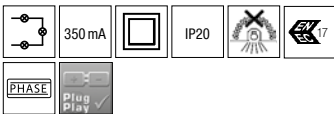


Specification

primary voltage: 190-265 V DC / 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 130 mm,
ambient temperature (ta): -20° C to +50° C,
case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
not dimmable

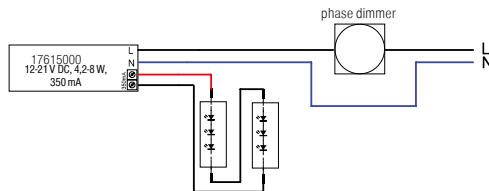
Article-no.	Secondary voltage	Power output	Price €
17605000	350 mA	3,15-17 W	73.00



series connexion, max. length
of connection cable, on the
secondary side 10 m

LED driver constant current 350 mA, dimmable by leading- or trailing edge

17615000



Specification

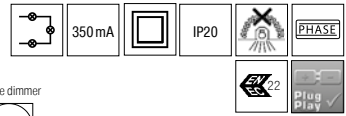
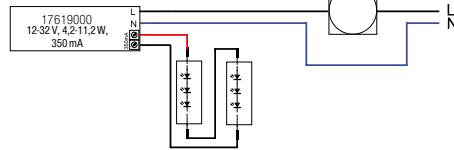
primary voltage: 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 150 mm,
ambient temperature (ta): 0° C to +50° C,
case temperature (tc): max. 85° C,
dimensions: 122 mm x 39 mm x 18 mm, material: plastic housing

with strain relief
dimmable via leading- or trailing edge

Article-no.	Secondary voltage	Power output	Price €
17615000	350 mA	4,2-8 W	51.90

17619000

LED driver 350 mA constant current,
dimmmable by leading- or trailing edge



series connexion, max. length
of connection cable, on the
secondary side 10 m

Specification

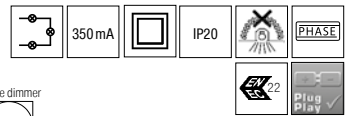
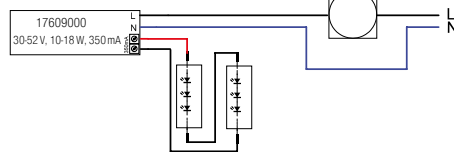
primary voltage: 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 130 mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 141 mm x 43 mm x 30 mm, material: plastic housing

with strain relief
dimmmable via leading- or trailing edge

Article-no.	Secondary voltage	Power output	Price €
17619000	350 mA	4,2-11,2 W	69.90

17609000

LED driver 350 mA constant current,
dimmmable by leading- or trailing edge



series connexion, max. length
of connection cable, on the
secondary side 10 m

Specification

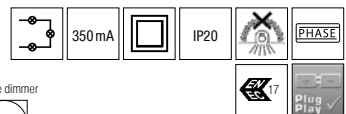
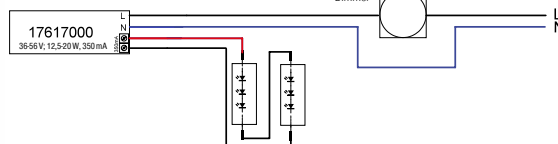
primary voltage: 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 130 mm, wire size: 0,5 - 1,5mm²,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 141 mm x 43 mm x 30 mm, material: plastic housing

with strain relief
dimmmable via leading- or trailing edge

Article-no.	Secondary voltage	Power output	Price €
17609000	350 mA	10-18 W	51.90

17617000

LED driver constant current 350 mA
dimmmable by leading- or trailing edge



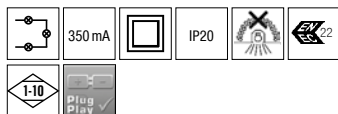
series connexion, max. length
of connection cable, on the
secondary side 10 m

Specification

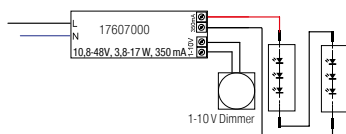
primary voltage: 220-240 V AC, frequency: 50-60 Hz
electrical feeding (out): 140 mm,
ambient temperature (ta): 0° C to +50° C, case temperature (tc): max. 85° C,
dimensions: 126 mm x 43 mm x 22 mm, material: plastic housing

with strain relief
dimmmable via leading- or trailing edge

Article-no.	Secondary voltage	Power output	Price €
17617000	350 mA	12,5-20 W	76.10



series connexion, max. length of connection cable, on the secondary side 10 m



17607000 LED driver constant current 350 mA, 1-10V dimmable (analogue)

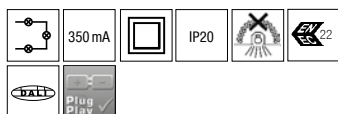


Specification

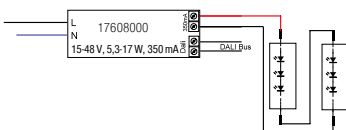
primary voltage: 220-240 V AC, frequency: 47-63 Hz
electrical feeding (out): 130 mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable 1-10 V (analogue)

Article-no.	Secondary voltage	Power output	Price €
17607000	350 mA	3,8-17 W	83.50



series connexion, max. length of connection cable, on the secondary side 10 m



17608000 LED driver constant current 350 mA, dimmable (digital)



Specification

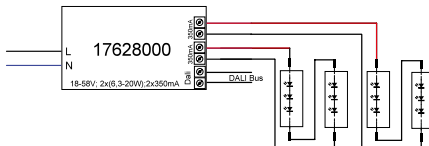
primary voltage: 175-275 V DC / 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 130 mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17608000	350 mA	5,3-17 W	83.50



series connexion, max. length of connection cable, on the secondary side 10 m



17628000 LED double driver constant current 350 mA, DALI dimmable (digital)



Specification

primary voltage: 220-240 V AC, frequency: 47-63 Hz,
electrical feeding (out): 130 mm, wire size: 0,5-1,5 mm²
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 143 x 82 x 35 mm, material: plastic housing

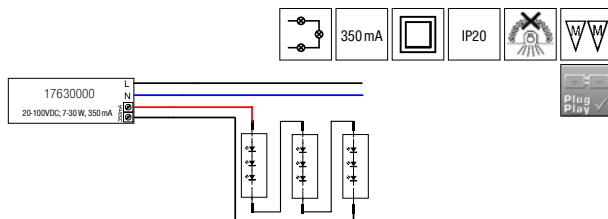
with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17628000	350 mA	2x (6,3-20W)	129.00

2 x LED-output 350 mA on one DALI address.
Both outputs should be used to avoid the risk of flicker.

17630000

LED driver 350mA constant current, not dimmable



Specification

primary voltage: 220-240 V AC, frequency: 50 Hz, electrical feeding (out): 130 mm, ambient temperature (ta): +50°C, case temperature (tc): max. 85°, dimensions: 136 mm x 42,5 mm x 26,5 mm, material: plastic

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17630000	350 mA	7-30 W	69.90

3835 / 3836 / 3837

Plug & Play extension cord 350 mA



Specification

Plug & Play extension cord 350 mA (series connexion)

Article-no.	Length	Price €
3835	500 mm	3.40
3836	1000 mm	4.30
3837	2000 mm	5.00

LED driver configuration for 350 mA LED luminaires in series connexion

LED power luminaire:	1 W	1,2 W	3 W	3,3 W	4 W	5 W	6 W	6,6 W	7 W	9 W	11 W	15 W	6 W	12 W
Art.-no.	dimmable												dim2warm	
17666000	-	1-5	1-4	1	1	1	1	-	-	-	-	-	-	-
17612000	-	1-7	1-6	1-2	1-2	1	1	1	1	-	-	-	-	-
17613000	-	1-14	1-12	1-5	1-4	1-3	1-3	1-2	1-2	1-2	1	1	1	-
17614000	-	2-19	2-18	1-6	1-6	1-5	1-4	1-3	1-3	1-2	1-2	1	1	-
17605000	-	4-16	3-14	2-5	1-5	1-4	1-3	1-2	1-2	1-2	1	1	1	-
17615000	Phase	5-7	4-6	2	2	2	1	1	1	1	-	-	-	-
17609000	Phase	11-18	9-15	4-6	4-5	3-4	3	2-3	2	2	2	1	1	2
17617000	Phase	13-19	11-16	5-6	4-6	4-5	3-4	3	2-3	2	2	-	1	-
17607000	1-10V	4-16	4-14	2-5	2-5	1-4	1-3	1-2	1-2	1-2	1	1	1	1-2
17608000	DALI	6-16	5-14	2-5	2-5	2-4	2-3	1-2	1-2	1-2	1	1	1	1-2
17619000	Phase	5-11	4-9	2-3	2-3	2	1-2	1	1	1	1	1	-	1
17628000	DALI	14-38	12-33	6-13	4-12	4-10	4-8	4-6	2-6	2-4	2-4	2	2	4-6*
17630000	-	8-30	6-26	3-10	3-9	2-7	2-6	2-5	2-4	1-4	1-3	1-2	1-2	-

In this overview we like to help you finding the suitable LED drivers for connecting our 350 mA LED. According to the power of LED luminaire you can see how many luminaires can be connected to the specific LED driver in series connection. Example: To LED driver 17607000 can be connected at least 2, but in maximum 5 luminaires with 3,3 W each.

*split into two lines.

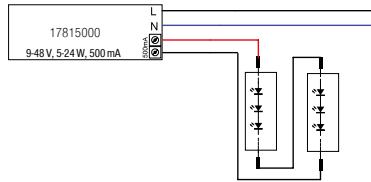
Important for the project planning of phase converters: For a uniform start-up and dimming behavior, phase converters of one model or item no. should absolutely be included per switching group and operated with the same load if possible.



17815000

LED driver 500mA constant current, not dimmable

series connexion, max. length
of connection cable, on the
secondary side 10 m



Specification

primary voltage: 190-245 V DC / 220-240 V AC, frequency: 50 Hz,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
not dimmable

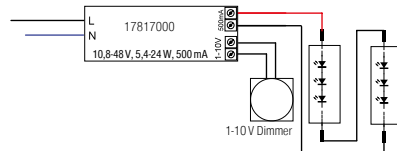
Article-no.	Secondary voltage	Power output	Price €
17815000	500 mA	5-24 W	73.00



17817000

LED driver 500mA constant current,
1-10V dimmable (analogue)

series connexion, max. length
of connection cable, on the
secondary side 10 m



Specification

primary voltage: 220-240 V AC, frequency: 47-63 Hz,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable 1-10 V (analogue)

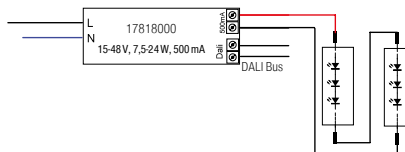
Article-no.	Secondary voltage	Power output	Price €
17817000	500 mA	5,4 - 24 W	83.50



17818000

LED driver constant current 500mA,
dimmable by DALI (digital)

series connexion, max. length
of connection cable, on the
secondary side 10 m



Specification

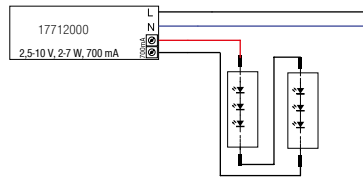
primary voltage: 175-275 V DC / 220-240 V AC, frequency: 50-60 Hz,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17818000	500 mA	7,5-24 W	83.50

17712000

LED driver constant current 700 mA, not dimmable



series connexion, max. length of connection cable, on the secondary side: 10 m

Specification

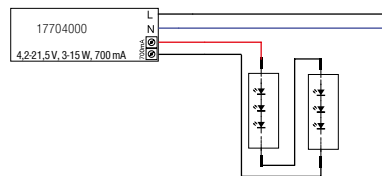
primary voltage: 120-370 V DC / 90-264 V AC, frequency: 47-63 Hz, electrical feeding (out): 145 mm, ambient temperature (ta): -20° C to +40° C, case temperature (tc): max. 70° C, dimensions: 68 mm x 35 mm x 21 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17712000	700 mA	2-7 W	28.50

17704000

LED driver constant current 700 mA, not dimmable



series connexion, max. length of connection cable, on the secondary side: 10 m

Specification

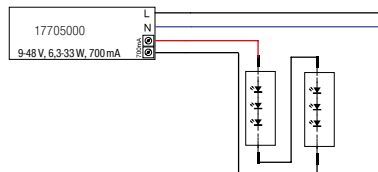
primary voltage: 220-240 V AC, frequency: 50-60Hz, electrical feeding (out): 130mm, ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C, dimensions: 141 mm x 43 mm x 30 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17704000	700 mA	3-15 W	44.40

17705000

LED driver constant current 700 mA, not dimmable



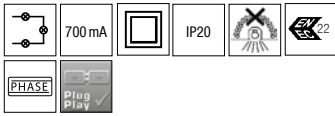
series connexion, max. length of connection cable, on the secondary side: 10 m

Specification

primary voltage: 190-265 V DC / 220-240 V AC, frequency: 50 Hz, electrical feeding (out): 135mm, wire size: 0,5-1,5mm², ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C, dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
not dimmable

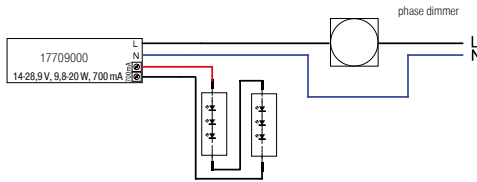
Article-no.	Secondary voltage	Power output	Price €
17705000	700 mA	6,3-33 W	73.00



17709000

LED driver 700 mA constant current
dimmable by leading- or trailing edge

series connexion, max. length
of connection cable, on the
secondary side 10 m

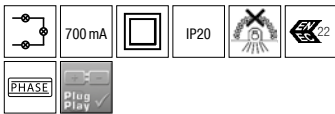


Specification

primary voltage: 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 135mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 141 mm x 43 mm x 30 mm, material:plastic housing

with strain relief
dimmable via leading- or trailing edge

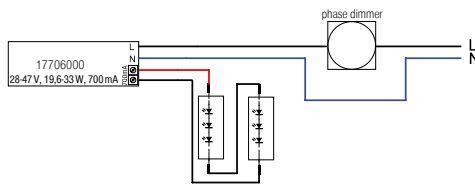
Article-no.	Secondary voltage	Power output	Price €
17709000	700 mA	9,8-20W	52.40



17706000

LED driver 700 mA constant current,
dimmable by leading- or trailing edge

series connexion, max. length
of connection cable, on the
secondary side 10 m

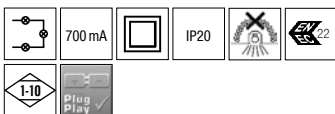


Specification

primary voltage: 220-240 V AC, frequency: 50-60Hz,
electrical feeding (out): 130mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable via leading or trailing edge

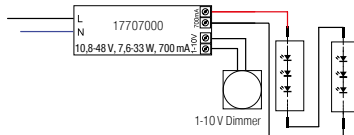
Article-no.	Secondary voltage	Power output	Price €
17706000	700 mA	19,6-33 W	83.50



17707000

LED driver constant current 700 mA,
dimmable 1-10V (analogue)

series connexion, max. length
of connection cable, on the
secondary side 10 m



Specification

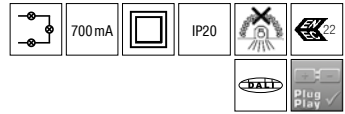
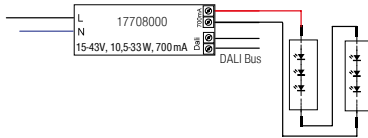
primary voltage: 220-240 V AC, frequency: 50-60 Hz,
electrical feeding (out): 130mm,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable 1-10V (analogue)

Article-no.	Secondary voltage	Power output	Price €
17707000	700 mA	7,6-33 W	83.50

17708000

LED driver constant current 700 mA, DALI dimmable (digital)



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

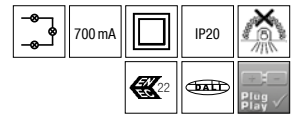
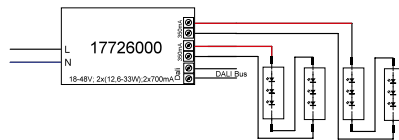
primary voltage: 175-275 V DC / 220-240 V AC, frequency: 50-60 Hz, electrical feeding (out): 135mm, ambient temperature (ta): -25°C to +50°C, case temperature (tc): max. 80°C, dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17708000	700 mA	10,5-33 W	83.50

17726000

LED double driver constant current 700 mA, DALI dimmable (digital)



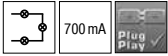
series connexion, max. length of connection cable, on the secondary side 10 m

Specification

primary voltage: 220-240 V AC, frequency: 50-60Hz, ambient temperature (ta): -25°C to +50°C, case temperature (tc): max. 80°C, wire size: 0,5-1,5mm², dimensions: 143 mm x 82 mm x 35 mm, material: plastic housing

with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17726000	2 x 700 mA	2 x 12,6-33 W	129.00



3838 / 3839 / 3840 Plug & Play extension cord 700 mA



Specification

Plug & Play extension cord 700 mA (series connection)

Article-no.	Length	Price €
3838	500 mm	3.70
3839	1000 mm	4.30
3840	2000mm	5.20

LED driver configuration for 700 mA LED luminaires in series connection

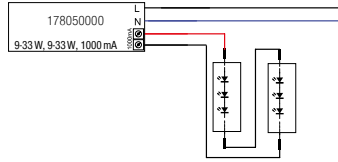
LED power luminaire:		2W	3W	4,5W	6,7W	7W	9W	10W	12W	13,6W	14W	15W
Art.-no.	dimmable											
17712000	-	1-3	1-2	1	1	1	-	-	-	-	-	-
17704000	-	2-7	1-5	1-3	1-2	1-2	1	1	1	1	1	1
17705000	-	4-16	3-11	2-7	1-4	1-4	1-3	1-3	1-2	1-2	1-2	1-2
17709000	Phase	5-10	4-6	3-4	2	2	2	1-2	1	1	1-2	1
17706000	Phase	10-16	7-11	5-7	3-4	3-4	3	2-3	2	2	2	2
17707000	1-10V	4-16	3-11	2-7	2-4	2-4	1-3	2-3	1-2	2	1-2	1-2
17708000	DALI	6-16	4-11	3-7	2-4	2-4	2-3	2-3	1-2	2	1-2	1-2
17726000	DALI	14-30	10-22	6-14	4-8	4-8	4-6	4-6	4	2-4	2-4	2-4

In this overview we like to help you finding the suitable LED drivers for connecting our 700 mA LED. According to the power of LED luminaire you can see how many luminaires can be connected to the specific LED driver in series connection. Example: To LED driver 17707000 can be connected at least 2, but in maximum 4 luminaires with 7 W each.

Important for the project planning of phase converters: For a uniform start-up and dimming behavior, phase converters of one model or item no. should absolutely be included per switching group and operated with the same load if possible.

17805000

LED driver constant current 1000 mA, not dimmable



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

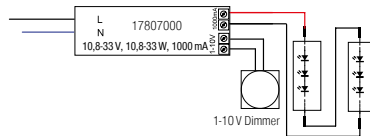
primary voltage: 190-265 V DC / 220-240 V AC, frequency: 50-60 Hz, ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C, dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17805000	1000 mA	9-33 W	73.00

17807000

LED driver constant current 1000 mA, DALI 1-10V dimmable (analogue)



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

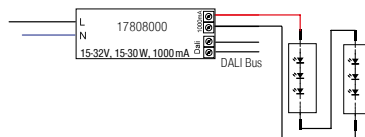
primary voltage: 220-240 V AC, frequency: 47-63 Hz, ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C, dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable 1-10V (analogue)

Article-no.	Secondary voltage	Power output	Price €
17807000	1000 mA	10,8-33 W	83.50

17808000

LED driver constant current 1000 mA, dimmable DALI (digital)



series connexion, max. length of connection cable, on the secondary side 10 m

Specification

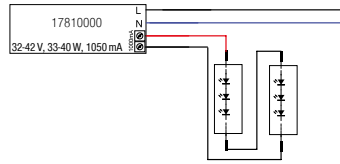
primary voltage: 175-275 V DC / 220-240 V AC, frequency: 50-60 Hz, ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C, dimensions: 180 mm x 32 mm x 32 mm, material: plastic housing

with strain relief
dimmable DALI (digital)

Article-no.	Secondary voltage	Power output	Price €
17808000	1000 mA	15-30 W	83.50

17810000

LED driver constant current 1050 mA, not dimmable



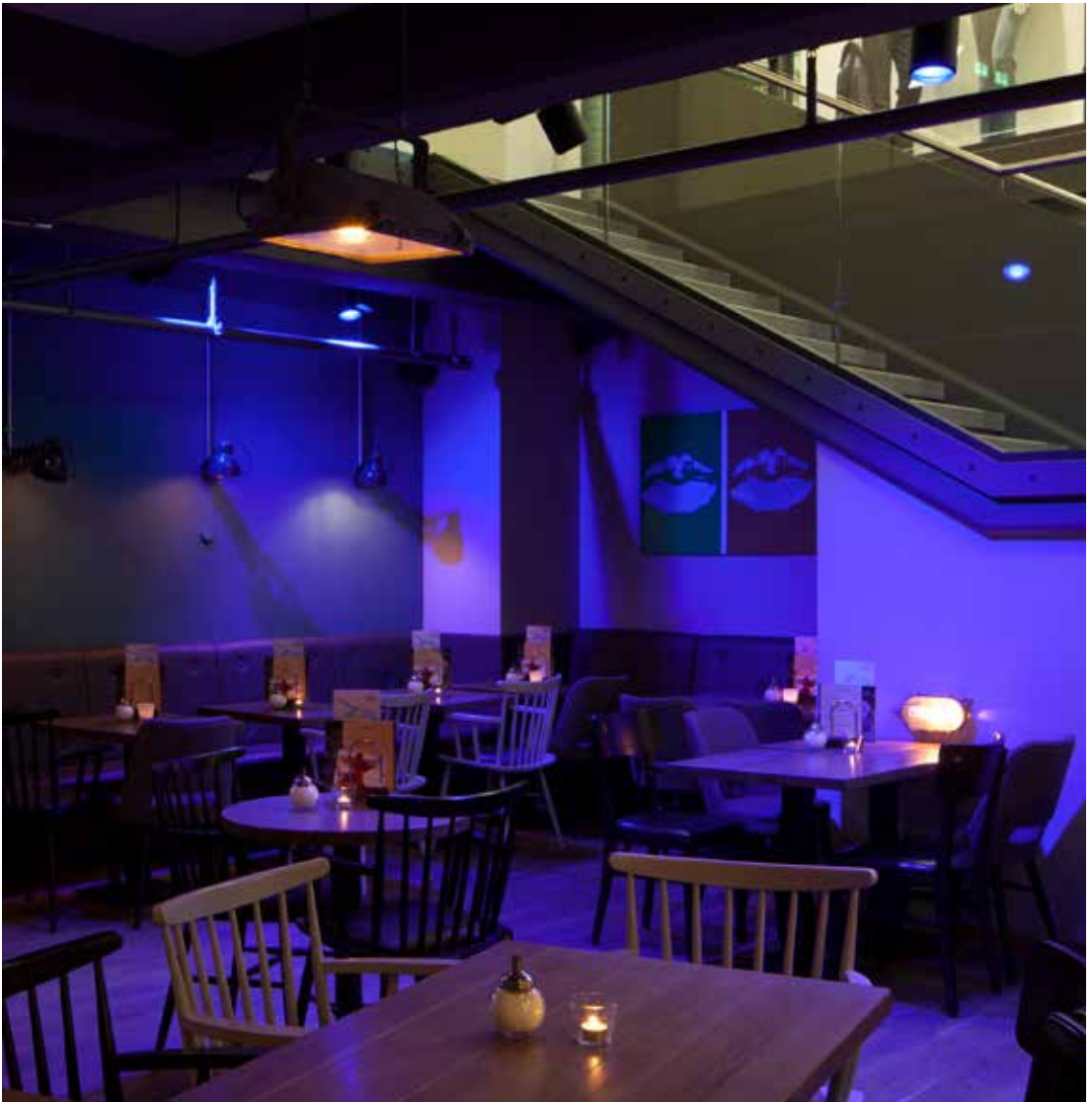
series connexion, max. length
of connection cable, on the
secondary side 0,6 m

Specification

primary voltage: 220-240V AC, frequency: 50-60 Hz,
ambient temperature (ta): 0°C to +45°C, case temperature (tc): max. 75°C,
dimensions: 105 mm x 68 mm x 32 mm, material: plastic housing

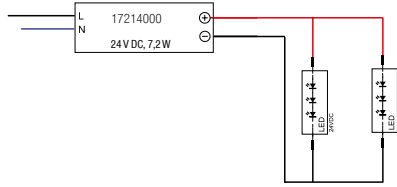
with strain relief
not dimmable
dimmable driver (DALI digital) on request

Article-no.	Secondary voltage	Power output	Price €
17810000	1050 mA	33-40 W	59.00



17214000

LED driver 24 VDC constant voltage, not dimmable



Specification

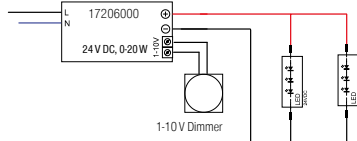
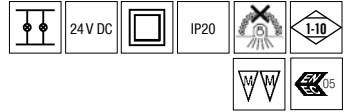
primary voltage: 120-370 V DC / 90-264 V AC, frequency: 47-63 Hz,
ambient temperature (ta): -20° C to +40° C, case temperature (tc): max. 70° C,
dimensions: 68 mm x 35 mm x 21 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17214000	24 V DC	1-7,2 W	25.10

17206000

LED driver 24 VDC constant voltage, 1-10V dimmable



Specification

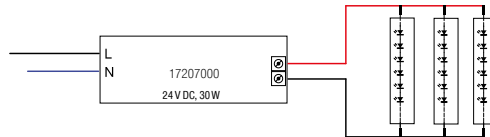
primary voltage: 176-264 V DC / 90-264 V AC, frequency: 50-60Hz,
ambient temperature (ta): -25° C to +50° C, case temperature (tc): max. 80° C,
dimensions: 146 mm x 55 mm x 19 mm, material: plastic housing

with strain relief
dimmable 1-10 V (analog)

Article-no.	Secondary voltage	Power output	Price €
17206000	24 V DC	0-20 W	50.70

17207000

LED driver 24 VDC constant voltage, not dimmable

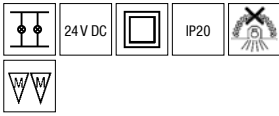


Specification

primary voltage: 140-370 V DC / 90-264 V AC, frequency: 47-63 Hz,
ambient temperature (ta): -20° C to +50° C, case temperature (tc): max. 75° C,
dimensions: 160 mm x 50 mm x 22 mm, material: plastic housing

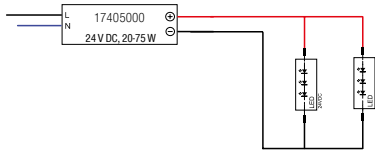
with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17207000	24 V DC	0-30 W	58.00



LED driver 24 V DC constant voltage, not dimmable

17405000



Specification

primary voltage: 200-240 V AC, frequency: 50 Hz,
ambient temperature (ta): -20° C to +45° C, case temperature (tc): max. 80° C,
dimensions: 200 mm x 63 mm x 30 mm, material: plastic housing

with strain relief
not dimmable

Article-no.	Secondary voltage	Power output	Price €
17405000	24 V DC	20-75 W	128,20



REG LED driver 24 V DC constant voltage, not dimmable

17220000



Specification

Primary voltage: 120 - 370 V DC / 85-264 V AC, 47-63 Hz
ambient temperature (ta): -10° C to +40° C,
dimensions [L x W x H]: 125.5 x 125.2 x 100 mm (7 division units),
material: aluminium housing

not dimmable

Article-no.	Secondary voltage	Output	Price €
17220000	24 V DC	120-240 W	169,00



REG LED driver 24 V DC constant voltage, not dimmable

17221000



Specification

Primary voltage: 250-370 V DC / 180-264 V AC, 47-63 Hz
ambient temperature (ta): -20° C to +40° C,
dimensions [L x W x H]: 227 mm x 125.2 mm x 100 mm (13 division units),
material: aluminium housing

not dimmable

Article-no.	Secondary voltage	Output	Price €
17221000	24 V DC	240-480 W	289,00

17208000 / 17209000 / 17210000

LED driver 24 V DC constant voltage, not dimmable



Specification

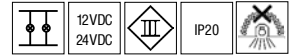
Primary voltage: 127 - 431 V DC / 90 - 305 V AC, 47-63 Hz
 electrical feeding (in / out): 300/300 mm,
 ambient temperature (ta): -40°C to +50°C, case temperature (tc): max 95°C,
 material: aluminium

not dimmable

Article-no.	Output	Dimensions [L x W x H]	Price €
17208000	50-100 W	220 x 68 x 39 mm	139.30
17209000	75-150 W	228 x 68 x 39 mm	149.00
17210000	120-240 W	244 x 68 x 39 mm	198.00

17501000

LED single dimmer



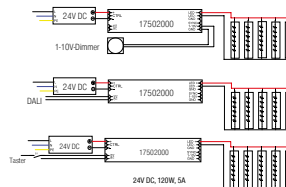
Specification

Voltage: 12-24 V DC, Current: max. 10 A, Power: max. 120 W / 240 W (12 V DC / 24 V DC), Dimensions: (L x W x H): 55 x 47,5 x 19 mm,
 Dimming interfaces: 1-10V (active / passive) / Potentiometer (10 Ohm),
 Fastening: DIN rail (REG / 3.5 horizontal pitches), Connection: screw terminals.

The single-channel control creates a PWM control signal
 for energizing LED with a constant voltage of 12 V DC / 24 V DC

Article-no.	Price €
17510000	125.70

17502000

Dimmer for 24V constant voltage,
DALI, 1-10V dimmable, push-button dimmer

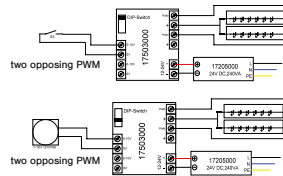
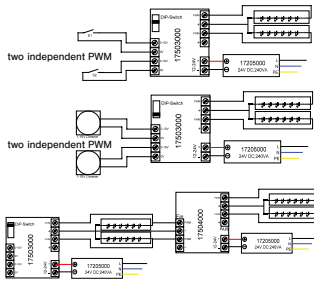
Specification

Dimmer for constant current 24 V DC, max. 5A (120 W),
 dimmable via DALI, 1-10V, push-button

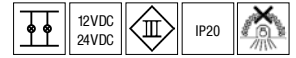
ambient temperature (ta): -20° to +45°, case temperature (tc): max. 55 °C,
 dimensions: 153 mm x 30 mm x 21 mm, material: plastic housing

Synchronisation of multiple units master/slave feasible via sync-link.

Article-no.	Power output	Price €
17502000	max. 120 W	94.10



17503000 / 17504000 TunableWhite LED double dimmer



Specification

Voltage: 12-24 V DC, Current: max. 5A per channel, power: max. 120 W / 240 W (12 VDC / 24 VDC), energisation: negative (common anode), adjustable dimming range: 1-10 V from 2-100% / switch from 10-100% dimensions (L x W x H): 57 x 52 x 21 mm, connection through screw terminals (max. 2.5 mm²), for fastening on DIN rail (REG / 3.5 horizontal pitches)

The 2-channel control occurs via two PWM control signals for energizing two separated channels or bi-colour LED modules in the white light range.

One of the following functions is locally adjustable via DIP switches:

1-10V Interface (active or passive):

- Two independent dimming channels for two 1-10 V interfaces
- Adjustable white light range (colour temperature) via a 1-10V interface
- Adjustable white light range (colour temperature) via one 1-10V, and dimming via the second 1-10V interface

Switch (control line / potential-free):

- Two independent dimming channels for two switches
- Adjustable white light range (colour temperature) via a switch
- Adjustable white light range (colour temperature) via the first switch and dimming via the second switch

Article-no.	Specification	Price €
17503000	LED double dimmer (Master)	105.50
17504000	Accessory: Slave LED double dimmer (output extension without dimming interface)	67.50





17505000 / 17508000

TunableWhite/ White light Controller incl. remote control

**Note:**

May be controlled with a remote control up to 4 switching groups (1 controller per switching group).

**Specification TunableWhite**

Voltage: 12-24 V DC, current: max. 6 A per channel, power: max. 144 W / 288 W (12 V DC / 24 V DC), energisation: negative (shared anode), 3-core wire, radio frequency: 2,4 GHz, range: ~30 m, controller connection through screw terminals, controller dimensions (L x W x H): 85 mm x 45 mm x 23 mm, radio remote control dimensions (L x W x H): 110 mm x 52 mm x 20 mm, battery for radio remote control: 3 V DC / 2x AAA (not included in delivery)

This purely white light radio control produces 2 PWM control signals for controlling bi-colour LED modules in the white light range.

The following functions are possible via remote operation:

- Variable adjustment of the colour temperature through +/- buttons.
- Brightness adjustment through +/- buttons.
- Up to 4 switch groups via remote control (multi-room operation).
- Separate on and off switch of all 4-switch groups of the lighting unit.

Article-no.	Specification	Price €
17505000	TunableWhite set (2 channel controller incl. remote control)	96.80
17506000	TunableWhite controller (individual components)	59.00
17507000	White light radio remote control (individual components)	37.80

Specification 1-channel White light

Voltage: 12-24 V DC, current: max. 2 x 6 A, power: max. 144 W / 288 W (12 V DC / 24 V DC), radio frequency 2.4 GHz, range: up to 30 m, controller connection through screw terminals, controller dimensions (L x W x H): 85 mm x 45 mm x 23 mm, Radio remote control dimensions (L x W x H): 110 mm x 52 mm x 20 mm, battery for radio remote control: 3 V DC / 2 x AAA (not included in delivery)

This 1 channel radio control produces 1 PWM control signal for controlling a single-colour LED module in the white light range.

Article-no.	Specification	Price €
17508000	White light set (1 channel controller incl. remote control)	96.80
17509000	1 channel controller (individual components)	59.00
17507000	White light radio remote control (individual components)	37.80

LIGHT FOR A WIDE VARIETY OF APPLICATIONS

Retail spaces presented in the best possible light

Food

In the food sector, we recommend using efficient LED technology in order to avoid thermal radiation. The quality of the food is upgraded using an innovative lighting concept.

Special food chips for meat (1800K-3000K), bread | baked goods (2400K), pasta | cheese | restaurant (2700K) as well as for fruit | vegetables (3000K) and fish (4000K-5000K) can be freely configured with the ModulMax® series.

Fashion

In the fashion sector, we avoid unnecessary UV radiation, since it causes the colours to fade. Instead, we let the colour fidelity and the high-quality materials of the textiles shine in the best light.

Special LED chips with 3000 Kelvin BBL (below black body locus) support the radiance of white clothing. LED light with 3500 Kelvin helps distinguish between dark clothing (e.g. suits).

Shop

For different types of shops – from car showroom to drugstore – we develop customised lighting solutions. In this way, the different zones and product ranges are presented in their best possible light.

Depending on the range of products, different types of lighting such as light strips, track spotlights, recessed luminaires or decorative luminaires can be integrated.

MODERN LIGHTING TECHNOLOGY

Well-balanced aesthetics and outstanding colour reproduction

We offer a wide selection of the latest lighting technology for food, fashion and shop applications. With this technology, we highlight the atmosphere of the store and bring retail spaces to life.

Coordinated lighting concept.

We pay close attention to matching our lighting concept to the character of the particular store. We always coordinate the design of our lights with the stylistic idiom of the interior. We create a well-balanced aesthetic using the homogeneous visual appearance of the lights. We also coordinate the lighting with the customer base by, for example, choosing higher levels of illumination for older target groups.

Outstanding colour reproduction.

Outstanding colour reproduction lets products appear in the desired look. Goods are presented in daylight in a "natural look", or they are deliberately staged in their intensive colourfulness.

Perfect light control.

We can selectively illuminate the different surfaces of the products. Matte and glossy looks are thus presented to their optimal advantage. An outstanding light control ensures that light falls on the products without blinding the customers or giving them the feeling of standing in the shadows.



Magic Store, Bielefeld (Germany)

SKILFULLY STAGING STORE AREAS

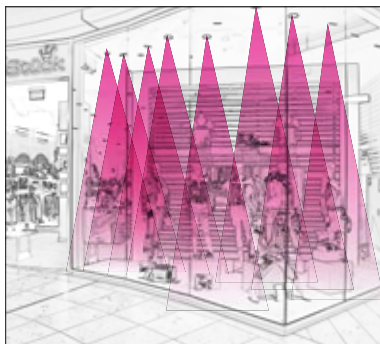


Entrance area

The first moments in the entrance area decide whether customer flows will be guided into the store. Light can create a welcoming atmosphere here that can have a positive effect on a customer's decision to buy.

Light in the entrance area should:

- Arouse interest and curiosity from a distance (long-distance impact)
- Offer a friendly and inviting appearance
- Create excitement by an interesting appearance (in the fashion segment)
- Approach the daylight spectrum
- Correspond to incident daylight with a high level of illumination

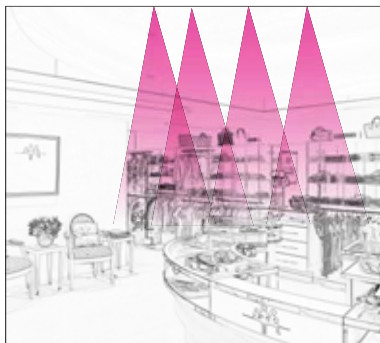


Shop windows

Shop windows should be illuminated day and night. The customer's attention should ideally be drawn to the store by an attractive design of the window display.

The illumination in the shop window should:

- Present the goods vividly and set focused accents
- Attract customer's attention and arouse their interest
- Create the extraordinary and thereby trigger emotions
- Offer a basic level of night-time lighting

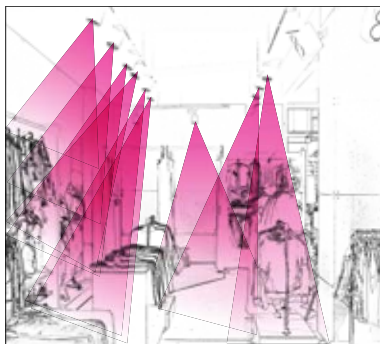


Opposite the entrance

A good level of illumination of the store's back wall is the basis of a good design. The depth effect that is created motivates the customer to enter the store.

The back of the store should:

- Be at least one third brighter than the retail space in order to achieve the depth effect.
- Creatively meet diverse requirements
- Offer a homogeneous and uniform illumination
- Set rhythmic or object-related focal points



Basic lighting

The basic lighting in the store creates an appealing lighting atmosphere that stimulates buying. The primary focus is a combination of a friendly basic lighting and a targeted lighting that highlights special products.

The general lighting in retail spaces should:

- Create a uniform basic brightness in the space
- Facilitate orientation for the customer
- Offer a good overview of the goods offered
- Radiate sufficient brightness in order to be able to easily recognise and examine the goods



Fascination points

Special accents can be set in order to highlight sales areas with exclusive goods. The highlights will often cause the customer to try something on.

The light on the fascination points should:

- Capture the customer's attention with a play of light and shadow
- Draw attention to the selected sales areas
- Highlight decorative zones and goods levels

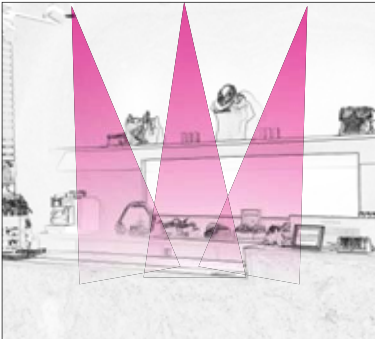


Peripheral zones

Correctly lit, peripheral zones create a striking contrast to the retail space. The range of goods is presented here, and customers can calmly make their selection.

The peripheral zones should:

- Be well lit
- Emphasise decorations and logos in particular

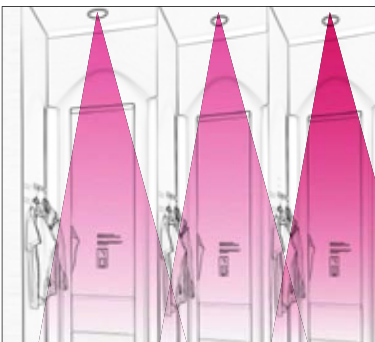


Checkout area

At checkout, the purchase decision is confirmed. Final doubts are allayed here. A pleasant and reassuring lighting contributes to this in the checkout area.

The checkout area should:

- Be uniformly lit
- Have a pleasant and reassuring effect
- Emphasise impulse-buy items
- Offer glare-free light for the cashier



Changing rooms

80% of decisions to buy are made when trying something on. Lighting scenarios are especially important here for a successful sale. The lighting in the changing rooms should be able to offer different lighting scenarios. It would be ideal if the clothing is optimally presented visually and the light can simulate the occasion for which the clothing will be worn when it is tried on.

Lighting in the changing rooms should:

- Generally favour a rather warm light to hide skin spots and wrinkles
- Be coordinated with the type of clothing: cool light for sports clothing, neutral light for children's clothing as well as leisure and office clothing, and warm light for evening attire
- Create a soothing atmosphere in the waiting area, since the person accompanying the customer will help decide on the purchase

SPECIAL REQUIREMENTS FOR FOOD



Fruit and vegetables

Special lighting make fruits and vegetables appear fresh and healthy. In addition, the quality of the products are highlighted.

Light for fruits and vegetables should:

- Use fresh lighting colours
- Illuminate advertising signs and high decorative effects
- Highlight the original colours of the goods
- Create a marketplace atmosphere

Recommended light engine: "Fruits | Vegetables"



Baked goods

The colours of bread and baked goods are ideally enhanced by a warm light.

Light for baked goods should:

- Accentuate the particular sales areas
- Divide the service counter and preparation spaces using lighting technology

Recommended light engines: "Bread | Baked goods" or "Cheese | Restaurant"



Meat counter

It is especially important at the meat counter to highlight the freshness of the products. Good light planning focuses on the choice of the correct light spectrum.

Light at the meat counter should:

- Use LED lighting in order to render additional cooling unnecessary by the reduced thermal radiation
- Divide the service counter and preparation spaces using lighting technology



Fish counter

At the fish counter like at the meat counter, the light is needed in particular to highlight the atmosphere of freshness. Good light planning focuses on the choice of the correct light spectrum.

Light at the fish counter should:

- Support the appearance of the freshness of the ice-cooled fish using targeted use of light
- Divide the service counter and preparation spaces using lighting technology

Recommended light engine: "Fish"



Frozen foods in general

Cool light colours are recommended for lighting frozen food on shelves. They emphasise the appearance of the frozen products. Good light planning focuses on the choice of the correct light spectrum.

Light for frozen foods should:

- Emphasise the appearance of freshness (see fish counter) by the use of cool light colours
- Choose linear light lines adapted to the shelf situation

Recommended light engines: "Fish" or 5000K



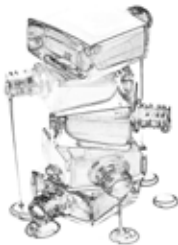
Wine & cheese

Warm light colours in combination with light accents create a cosy atmosphere.

Light for wine and cheese should:

- Use LED lighting in order to avoid a thermal radiation that is problematic for the wine
- Accentuate the particular sales areas
- Create a cosy (wine cellar) atmosphere with warm light colours

Recommended light engines: "Cheese | Restaurant" or 2700K



Beauty

The cosmetics department looks attractive when it radiates clarity. Decorative lights can be used in addition to create atmosphere.

Light for beauty products should:

- Radiate clarity with cool light colours
- Uniformly illuminate the sales area
- Create atmosphere with decorative lights

Recommended light engine: 3000K BBL

Individual "Food" light engines for ModulMax®



Specially for the food sector, we offer with our ModulMax® six different light engines, which are adapted to the special requirements of food lighting.



Configure these quickly and easily using the new BRUMBERG Online Configurator www.brumberg.com/ModulMax-Konfigurator

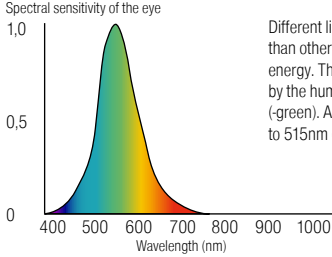
Light engine:	Colour temperature	Light flux module (27W)	Light flux module (40W)
Meat (marbled)	3000K	2147lm	3006lm
Meat (red)	1800K	1670lm	2338lm
Fruits Vegetables	3000K	3415lm	4780lm
Bread Baked goods	2400K	2700lm	3780lm
Cheese Restaurant	2700K	2685lm	3760lm
Fish	4000K	3348lm	4594lm

You can find additional information on ModulMax® on pages 10-15.

What is light?

Light is that small part of electromagnetic radiation, which can be perceived by the human eye. The actual wavelengths range from 380nm to 750nm.

Spectral sensitivity of the eye



Different light colours appear lighter than others at the same radiation energy. The maximum perceived by the human eye is about 555nm (-green). At twilight, the maximum falls to 515nm (blue shades).

Weighted light colour

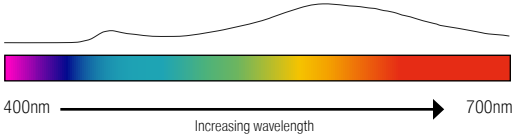
... indicates the light colour of the light source perceived by the eye of the spectator.

Weighted colour impression

... describes the colour impression experienced by the spectator.

Light spectrum

The light spectrum is the whole of all distinguishable spectral colours. The forms of representation contain information about wavelength and intensity of luminous power.

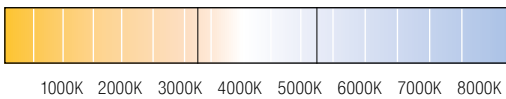


Light colour

The light colour, also described as spectral colour, specifies a colour impression of light in one single wavelength.

Colour temperature

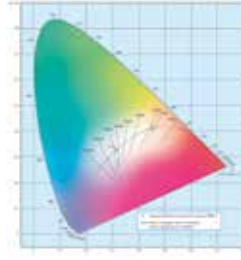
Describes the temperature at which a theoretically black body emits a weighted colour impression.



Planck's law

The black body curve, commonly also referred to as Planck's curve, depicts the colour temperatures as a curve in the CIE standard chromaticity diagram.

CIE standard chromaticity diagram



Since 1931, the CIE standard chromaticity diagram has been the most widely used, perception-related colour description system containing all of the perceivable colours. By reference to the colour space coordinates, the system is also called Xyy colour space or CIE Xyy.

UV light

UV light is electromagnetic radiation with a wavelength shorter than that of light perceivable by the human eye (less than 380nm). This range is further sub-divided into the sub-ranges of UV-A, UV-B and UV-C.

IR light

IR (infra-red) light is electromagnetic radiation with a wavelength longer than that of light perceivable by the human eye (more than 780nm). This radiation is also called thermal radiation.

Colour rendering

Colour rendering describes how natural an object illuminated by an artificial light source appears.

Colour rendering index

The colour rendering index contains light colours determined in accordance (CRI) with DIN 6169 14.



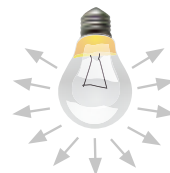
Rx specification

„x“ specifies the test colours (i.e. 1-12) measured for the determination of the colour rendering index.

Ra specification

Ra describes the general colour rendering index and specifies that only the first 8 (out of 14) test colours were measured for the determination of the colour rendering index.

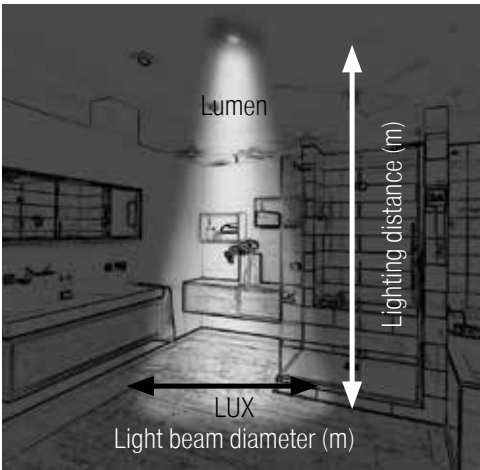
Light flux



The light flux describes the total radiation power of a light source irrespective of the radiation direction. Light flux is denominated in the unite lumen.

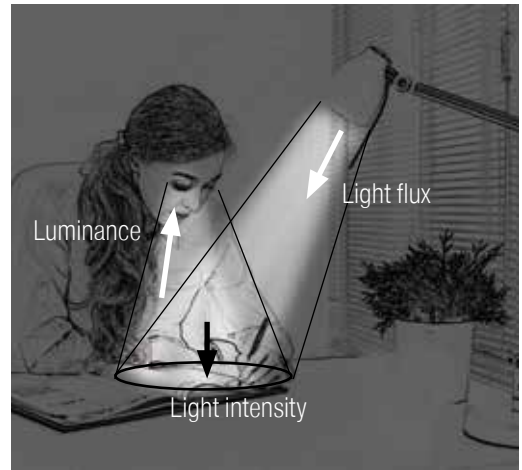
Light intensity

The light intensity is the measured light that actually reaches the area to be illuminated. Light intensity is denominated in the unite lux.



Luminance

Luminance is the photometric measure for the phenomenon that is perceived by the human eye as brightness of a surface in the unite candela per square meter.



Denomination	Unit	Abbr.
Light intensity	Lux	lux
Light flux	Lumen	lm
Colour temperature	Kelvin	K
Luminance	Candela per square metre	cd/m ²
Colour rendering index	Color Rendering Index	CRI
General colour rendering index	Test colours 1-8	Ra
Thermal radiation	Infrared radiation	IR
Chemical radiation	Ultraviolet radiation	UV

Reflection

Describes the relation between impinging light and reflected light. Both the amount of reflection and the content of reflection depend on the surface material. The direction of reflection depends on the type of surface.

Absorption

Describes the relation between impinging light and non-reflected light.

Electroluminescence

Electroluminescence is a type of optic radiation in which a solid body is excited to emit electromagnetic radiation by applying an electrical voltage.

Phosphorescence

Phosphorescence describes the conversion of monochromatic light into a wider light spectrum.

Zhaga

Name of an industrial consortium aiming at specifying standards for LED modules, thereby ensuring their easy replaceability.

DIE

A DIE is an LED flip chip.

T type

T types are the original LED designs, which today are still used in the field of signal lights and orientation lights.

SMD

Denotes a "Surface Mounted Device". SMD is a type of LED design in which the LED unit is directly soldered to a printed circuit board using soldering contact faces.

COB

"Chip On Board" (COB) This type of design is widely used for LED components with a great number of light diodes. It is a type of design, in which the light diode chip is attached directly to the printed circuit board using Die and wire bonding, after which the chip is covered with a phosphorescent layer.

LED module

Is the design of a COB LED with standardised terminals and mounting elements.

LLE

"LED Light Engine" LLE is a term derived from the standardisation of the Zharga consortium and denotes the combination of a LED module, a connecting cable and a suitable operational device.

Service life

The service life is the time during which a light source can be used until complete failure without being replaced.

Average service life

... denotes the service life during which a light source maintains up to 50% of the original luminous power without being replaced.

Useful service life

... denotes the service life during which a light source maintains the original luminous power – within the stated rate of degradation – without being replaced.

Degradation

... defines the light flux degradation across the stated service life.

Failure rate

... is the number of light sources expressed in percent that may exceed the light flux degradation within the stated service life.

Total failure rate

... is the number of light sources expressed in percent that may completely lose their luminous power within the stated service life.

Binning

... is the division of LED diodes into defined colour index and lighting intensities in so-called bins.

MacAdam ellipse

A MacAdam ellipse defines the area around a reference colour space, in which space the reference colours are perceived as being the same.

Denomination	Abbr.
Light flux degradation	L
Degradation	B
Total failure	C
General failure (combination of B and C)	F
MacAdam ellipse	SCM

Colour tolerance

... is the declaration of the different MacAdam ellipses of the light sources used in their condition at delivery.

Colour stability

... is the declaration of the different MacAdam ellipses of the light sources used at the end of their service lives.

Retrofitting

... describes the retrofitting of a luminaire with an illuminant that was originally not designed for this type of luminaire.

System power

... is the power consumption of a luminaire including illuminant and ballast.

System light flux

... is the light flux of a luminaire including reflector absorption and thermal influence.

Thermal management

... describes the dedicated direction and control of thermal fluxes.

Tc spot

The Tc spot is the most critical temperature spot of a device with heat development. "Tc" means "casing temperature".

Operational efficiency

The operational efficiency defines the distribution of incoming and outgoing energy.

Rail-mounted spotlights

... are spotlights mounted to a bus bar that can be freely arranged in the room.

Spots

... are recessed luminaires with at least one pivot axis that can be freely arranged in the room.

Wallwashers

... are luminaires with a homogeneous lighting of the wall.

Downlights

... are fixed recessed luminaires without pivot axis.

Pivot radius

... indicates the radius of movement around the pivot axis in degree.

Gimbal mounting

... describes the pivotability in two concurrent pivot axis that are placed rectangularly to each other.

Installation depth

The given installation depth refers to the physical dimensions of the recessed part of the luminaire. The factually required, overall installation depth is to be found in the mounting instruction

Ceiling / cut-out

... states the necessary opening diameter in the ceiling that is necessary for mounting a recessed luminaire.

Outer diameter

... denotes the outer diameter of the cover ring of recessed luminaires.

Alternating voltage

... is an electric current, the direction (polarity) of which alternates in regular intervals.

Direct current voltage

... is an electric current, the direction (polarity) of which does not alternate.

Reflector

... is the name of concave mirrors behind a light source to bundle light.

Lens

... is the name of transparent components in front of a light source to bundle light.

Collimator

... is a special form of a lens, which must ensure a parallel flow of the beams.

Radiation angle

... is the geometric angle resulting from the focal point of the illuminant and the emission point of the light. Commonly, the radiation angle is used equally under the name of angle of half intensity.

Angle of half intensity

The angle of half intensity is the angle at which the light intensity is only 50% of the maximum light intensity of the centre.

Calculation formula for light intensity

$$\text{Light intensity at distance } x = \frac{\text{Basic value at 1m}}{\text{Distance } x^2}$$

HotSpot

A HotSpot is the common denomination of the representation of the angle of half intensity in the light diagram.

Corona

A corona is the common denomination of the representation between the angle of half intensity and the radiation angle in the light diagram.

Light distribution curves

... are graphic representations of the light distribution in a room.

Beam diagram

... is the special representation of the light distribution with regard to light intensity.

Polar diagram

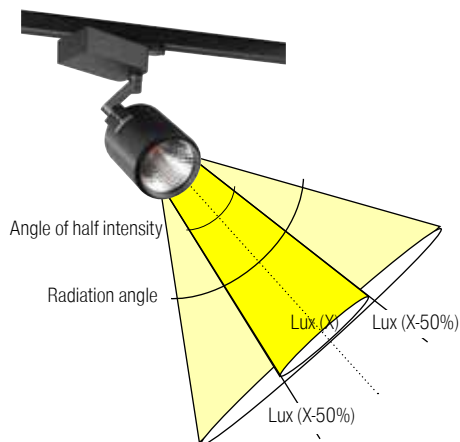
... is the special representation of the light distribution with regard to the direction in the room.






































Glare suppression

... describes the feature of reduced direct glaring of a human being with the help of the light source used.

LOR value (Light Output Ratio)

This value describes which part of the light generated within the luminaire can actually be used externally.



	to be installed in parallel connection (constant voltage)		to be installed in series connection (constant current)		the operating current is as indicated in mA (constant current)
	operating voltage 12 V, constant current (DC)		operating voltage 24 V, constant current (DC)		operating voltage 230 V, alternating current (AC)
	installation depth in mm The given installation depth refers to the physical dimensions of the recessed part of the luminaire. The factually required, overall installation depth is to be found in the mounting instruction			ceiling cut-out round shape (Ø) or angular in mm for the article	
	protection class I: with protectiv grounding (PE)		protection class II: protective insulation (e.g. plastic housing resp. increased or double insulation)		protection class III: safety extra-low voltage (SELV): voltages <=50 V AC; <=120 V DC
	degree of protection, see explanation on page 175		Partially made of AISI 316 stainless steel		membran impregnated against humidity
	VDE-Certification		ENEC - Certification		weight capacity up in kg 1000 kg
	Article ist not appropriate for covering with heat insulation material		Lights to be installed into furnitures consisting of material with unknown fire behaviour.		Not applicable for insertion into installation boxes
				Rotation angles for different directions in °	
	cardanic rotation this angle in ° 30°				
	pivoting angle in ° 25°		Fitting of illuminant without visible circlip		
	Code of shackle for this article. Attention: low-voltage lamps will generally be delivered without shackle. Please order separately! 5364		Code of cache-pot for article 5353		
	Dimmable via 1-10V interface		Dimmable via DALI bus		Dimmable via leading and/or trailing edge
	Article is equipped with our plug&play plug-in system. Incorrect wiring is impossible.				
	Max. flux in lumen. See exact values at request. Measurements DIN EN 13032 conform: this standard among other things regulates methods for measuring (e.g. by goniophotometers) and presentation of photometric data (light distribution curve) for lamps and luminaires. 2x180lm				
	LDT data for these articles are available as download at www.brumberg.com .				
	This article may be controlled via Bluetooth.				



*Special product. Attention! The product with the light colour red, green, blue or orange is a special product. This product with these light colours serves coloured lighting. The spectral distribution of the light serves to modify the appearance of illuminated scenes or illuminated objects in addition to their visualisation. The product is not intended for use in other applications. The special product is not suited for household room lighting.

LED - Technical data

Due to the permanent development of high-performance diodes operating with constant power, for diverse applications we can use a considerable increase in light efficiency in comparison to conventional light sources and a significant raise in efficiency up to 100 lumen per watt.



Serial connection

These LED are driven with constant current which is why multiple high performance LED have electrically to be stringed together in serial connection (all LED are driven by the same power „I“).

A parallel connection of these constant power LED is impossible.



Parallel connection

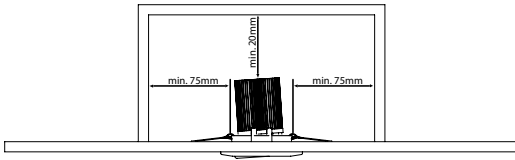
Products which the catalogue displays with 12V / 24V are driven by constant voltage which is why multiple LED have electrically to be stringed together in parallel connection (all LED are driven by the same voltage „U“).

Average Lifetime of an LED

Today's LED show an average lifetime of about 50.000 working hours at standard conditions. After this the LED is in fact not out of function but shows a luminous flux reduced to about 70%. Optimal conditions are achieved by the use of the available BRUMBERG components (driver, LED, luminaries) and well as an installation and operation corresponding to the BRUMBERG installation manuals.

Recommended mounting situation

The LED lights are not protected against humidity or dust. When using in situations with higher humidity or dust, make sure that each module is installed in an enclosure with appropriate protection. The LED lights should never be covered with any isolation material or anything similar. To avoid limiting the lifetime of the LED-lights, you should provide a circumferential clearance on all sides (see fig.1).



Mounting LED lights

Spots must be professionally installed by a competent person in accordance with DIN VDE 0100 Part 724 and Part 559. Also, DIN VDE 0108 and the Guidelines for Fire Protection (Electric Lights), Form 2005, issued by the Association of Property Insurers (VdS) eV Cologne must be observed. No liability claims will be entertained for spots that were not installed in accordance with European safety standards.

Safety instructions



Fire risk

The LED light is suitable for mounting on normally flammable surfaces, e.g. on wood and wood-based materials with more than 2 mm thickness. The enclosure must provide adequate space for the lights. The built-in LED light may not be covered by flammable materials.



Safe operation is only possible with constant external current/ voltage sources. Note the information on the lights' label.

To operate it is necessary to use constant current/ voltage drivers, for which the following protective measures should be ensured:

- Short circuit protection
- Overload protection
- Overheating protection
- SELV equivalent (Safety Extra Low Voltage)

LED – Binning

In contrary to ‚conventional‘ illuminants as halogene or ceramic lamps, the LEDs possess different colour temperatures within the achromatic spectrum, as well as different wavelengths within the spectrum of the coloured LEDs. Precisely in the field of RGB colour mixtures, there are partly colour differences concerning wavelengths of up to about 20nm.

Furthermore, the single LEDs have diverse forward biases from 2,31V up to 3,99V. To ensure an operating voltage of 12V, particularly adapted resistors are used for the RGB conductor boards per LED colour (red, green + blue).

A third criterion for the selection of single LEDs is the luminous flux (lumen), respectively the luminous intensity (candela). In addition, an achromatic colour can only nearly be simulated by colour mixtures, but not be guaranteed, exactly.

As far as not agreed otherwise, for conductor boards delivered by us, we generally guarantee the following:

- identical production lots per delivery
- identical wavelengths, respectively colour temperatures per delivery
- identical resistors which are particularly adapted per delivery

For projects with different construction stages it is absolutely essential to pay attention to this important fact on the customers side, to be able to ‚bloc‘ concerning stocks.

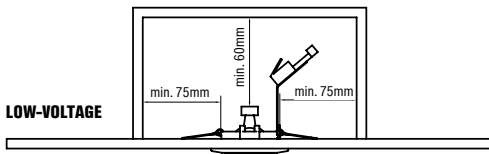
Driver instruction

The use of different driver types within the same switching group may cause varying activation times. We explicitly recommend to use only identical dimmable drivers with the same article number within the same switching group.

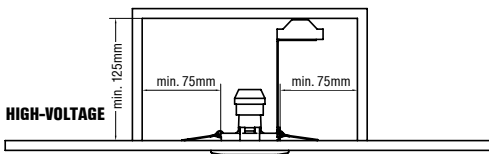
Installation instruction

Low-voltage and high-voltage spots have to be professionally mounted by an expert under installation instruction's conditions DIN VDE 0100 part 724 and part 559. Also, DIN VDE 0108 and the Guidelines for Fire Protection (Electric Lights), Form 2005, issued by the Association of Property Insurers (VdS) eV Cologne must be observed.

recommended mounting situation



Clamping units of non-fixed arranged lines have to be relieved of strain and thrust. Appropriate clamps with strain relief can be found in the Brumberg catalogue's accessories range.



Keep attention to a proper fixation of the high-voltage clamp at the spot in order to ensure an appropriate strain relief.

Installation

Installation of lamps

It has to be noted that in the case of low-voltage lamps about 85% of the electric energy supplied is converted into thermal energy.

As a result temperatures higher than 500 °C at the bulb and higher than 200 °C at the reflector may occur.

Insertion of lighting fixtures

Lighting fixtures must not be damaged when inserted. The proper insertion into the socket is mandatory. The lamp must always be inserted into the socket shortly. It is mandatory to insert lighting fixtures only with correct electric data (socket, voltage, wattage). Defective lighting fixtures have to be replaced immediately, but only when switched off (it's recommended to use a new socket).

Increasing the lifespan of a lamp

A reduction in electric currency for lighting of 10-15% increases the lifespan of a lamp considerably. The maximum permitted voltage, e.g. 12 V / 24 V, must under no circumstance be exceeded at the lighting fixtures. An even voltage drop in the wires leading to the lighting fixtures has to be ensured.

The measures for downlights indicated in the catalogue state the measures of the light and the bulb. The particular built-in standards in reference to the built-in depths must be followed.



00 = brass



08 = black



25 = alu satin



64 = titanium



01 = brass satin



09 = nobel chrome



26 = steel satin



67 = textured
graphit grey



02 = chrome



15 = nickel satin



27 = stainless steel
white powdered



68 = silver



03 = chrome satin



17 = textured white



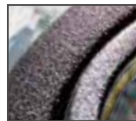
42 = stainless steel
A4/AISI 316



69 = textured silver



04 = bronze



18 = textured
black



51 = gold/white/gold



75 = white / gold



05 = gold



19 = copper



55 = black / white



85 = black/ gold



06 = gold satin



20 = stainless steel
clear powdered



61 = alu satin/gold



07 = white



22 = stainless steel



63 = champagne

The degree of protection characterises the protection against the infiltration of foreign bodies and dampness.

The designation follows this scheme: IP XX

The letters IP indicate „degree of protection“ and the double XX has to be replaced as following:

1st place: protection against solid particles

2nd place: protection against the ingress of moisture

Ratio for protection against contact / ingress of objects

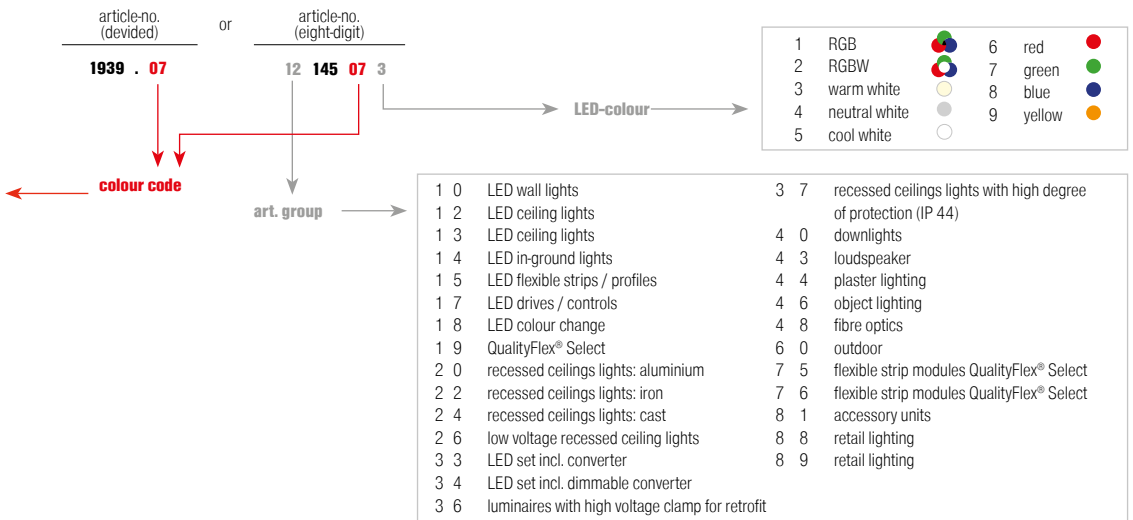
IP 0X	No protection
IP 1X	protection against objects sized >50mm diametre
IP 2X	protection against objects sized >12mm diametre
IP 3X	protection against objects sized >2,5mm diametre
IP 4X	protection against objects sized >1mm diametre
IP 5X	protection against harmful dust deposit insite
IP 6X	no ingress of dust

ratio for liquid ingress protection

IP X0	not protected against liquid ingress
IP X1	protected against drops of water falling vertically
IP X2	protected against drops of water from angles up to 15°
IP X3	protected against showers up to 60°
IP X4	protected against splash water
IP X5	protected against water jets
IP X6	protected against heavy downpours
IP X7	protected against immersion
IP X8	protected against submersion

Example:

IP44 means: protected against foreign bodies > 1 mm and against splash water.



Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
12013073	29	119,00	12401073	56	77,80	17630000	146	69,90
12013083	29	119,00	12414073	56	159,00	17666000	142	28,60
12019073	29	135,00	12423074	121	88,00	17704000	148	44,40
12019083	29	135,00	12424074	121	111,50	17705000	148	73,00
12116073	131	93,00	12425074	121	146,50	17706000	149	83,50
12116253	131	102,20	12461073	131	58,90	17707000	149	83,50
12132073	66	259,30	12461253	131	62,90	17708000	150	83,50
12132253	66	262,20	12462073	131	61,90	17709000	149	52,40
12133073	66	263,90	12462253	131	65,90	17712000	148	28,50
12133253	66	266,60	15215004	86,124	379,00	17726000	150	129,00
12157073	60	94,70	17206000	154	50,70	17805000	152	73,00
12157253	60	94,70	17207000	154	58,00	17807000	152	83,50
12158073	61	190,50	17208000	156	139,30	17808000	152	83,50
12158253	61	190,50	17209000	156	149,00	17810000	153	59,00
12159073	61	291,80	17210000	156	198,00	17815000	147	73,00
12159253	61	291,80	17214000	154	25,10	17817000	147	83,50
12161253	58	185,90	17220000	155	169,00	17818000	147	83,50
12162253	58	331,00	17221000	155	289,00	18153000	114	129,00
12163253	59	481,80	17405000	155	128,20	18300000	104	400,20
12261023	54	48,00	17502000	156	94,10	18301000	104	178,50
12261073	54	47,00	17503000	157	105,50	18302000	105	146,80
12261253	54	51,00	17504000	157	67,50	18304070	108	305,20
12261633	54	56,00	17505000	159	96,80	18304080	108	305,20
12261643	54	56,00	17506000	159	59,00	18304220	108	336,90
12262023	55	51,00	17507000	159	37,80	18304250	108	336,90
12262073	55	50,00	17508000	159	96,80	18305070	108	263,00
12262253	55	54,00	17509000	159	59,00	18305080	108	263,00
12262633	55	59,00	17510000	156	125,70	18305220	108	294,60
12262643	55	59,00	17605000	143	73,00	18305250	108	294,60
12361023	54	48,00	17607000	145	83,50	18306070	109	252,40
12361073	54	47,00	17608000	145	83,50	18306080	109	252,40
12361253	54	51,00	17609000	144	51,90	18306220	109	284,10
12361633	54	56,00	17612000	142	26,20	18306250	109	284,10
12361643	54	56,00	17613000	142	37,00	18307070	109	368,60
12362023	55	51,00	17614000	143	57,10	18307080	109	368,60
12362073	55	50,00	17615000	143	51,90	18307220	109	379,10
12362253	55	54,00	17617000	144	76,10	18307250	109	379,10
12362633	55	59,00	17619000	144	69,90	18309000	110	38,10
12362643	55	59,00	17628000	145	129,00	18310000	110	315,70

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
18312000	106	263,00	18421022	95	290,50	33161253	58	212,00
18313000	110	29,50	18421052	95	292,40	33162253	58	388,10
18314000	107	315,70	18421152	95	296,70	33163253	59	538,80
18318000	114	498,00	18421172	95	273,30	33261023	54	87,00
18402022	96	452,10	18421182	95	273,30	33261073	54	86,00
18402052	96	447,90	18421672	95	273,30	33261253	54	89,00
18402152	96	452,10	18426072	94	227,40	33261633	54	94,00
18402172	96	432,50	18426252	94	227,40	33261643	54	94,00
18402182	96	432,50	18427072	94	229,60	33262023	55	90,00
18402672	96	432,50	18427252	94	229,60	33262073	55	89,00
18403022	97	451,60	18503002	88,102	427,60	33262253	55	92,00
18403052	97	451,70	18523002	88,102	492,00	33262633	55	97,00
18403152	97	451,60	18900000	117	14,40	33262643	55	97,00
18403172	97	432,10	18901000	117	17,50	33361023	54	87,00
18403182	97	432,10	18902000	117	11,60	33361073	54	86,00
18403672	97	432,10	18903000	117	4,90	33361253	54	89,00
18406022	96	556,90	18904000	117	15,30	33361633	54	94,00
18406052	96	565,40	18905000	117	26,40	33361643	54	94,00
18406152	96	554,70	18906000	117	26,40	33362023	55	90,00
18406172	96	533,50	18909000	117	13,20	33362073	55	89,00
18406182	96	533,50	3083.07	136	98,00	33362253	55	92,00
18406672	96	533,50	3084.07	137	198,50	33362633	55	97,00
18407022	97	562,20	3090.02	135	135,20	33362643	55	97,00
18407052	97	571,00	3090.07	135	114,10	34261023	54	97,00
18407152	97	560,10	3092.02	135	110,70	34261073	54	96,00
18407172	97	538,80	3092.07	135	79,60	34261253	54	99,00
18407182	97	538,80	3092.26	135	115,20	34261633	54	104,00
18407672	97	538,80	3093.02	134	73,10	34261643	54	104,00
18413252	101	525,70	3093.07	134	69,20	34262023	55	100,00
18414252	101	530,20	3093.15	134	79,50	34262073	55	99,00
18415072	98	484,70	3094.07	136	170,10	34262253	55	102,00
18416072	99	516,40	3096.02	134	61,60	34262633	55	107,00
18417072	99	516,40	3096.07	134	58,80	34262643	55	107,00
18420022	95	284,80	33157073	60	120,90	34361023	54	97,00
18420052	95	287,20	33157253	60	120,90	34361073	54	96,00
18420152	95	291,00	33158073	61	247,60	34361253	54	99,00
18420172	95	267,60	33158253	61	247,60	34361633	54	104,00
18420182	95	267,60	33159073	61	348,90	34361643	54	104,00
18420672	95	267,60	33159253	61	348,90	34362023	55	100,00

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
34362073	55	99,00	75999000	88,102	15,30	88128680	35,37	51,90
34362253	55	102,00	88101070	34	35,00	88129070	35,37	51,90
34362633	55	107,00	88101080	34	35,00	88129080	35,37	51,90
34362643	55	107,00	88101250	34	35,00	88129680	35,37	51,90
3835	146	3,40	88102070	34	66,80	88130070	35,37	66,60
3836	146	4,30	88102080	34	66,80	88130080	35,37	66,60
3837	146	5,00	88102250	34	66,80	88130680	35,37	66,60
3838	151	3,70	88103070	34	96,90	88131070	35,37	41,20
3839	151	4,30	88103080	34	96,90	88131080	35,37	41,20
3840	151	5,20	88103250	34	96,90	88131680	35,37	41,20
40510223	77	183,80	88104070	34	128,70	88132070	35,37	2,10
40511223	77	204,90	88104080	34	128,70	88132080	35,37	2,10
40515073	70	94,00	88104250	34	128,70	88132680	35,37	2,10
40515074	70	94,00	88114070	35,37	10,90	88133070	35,37	9,50
40516073	71	136,90	88114080	35,37	10,90	88133080	35,37	9,50
40516074	71	136,90	88114680	35,37	10,90	88161070	36	49,10
40517073	71	170,60	88115070	35,37	6,80	88161080	36	49,10
40517074	71	170,60	88115080	35,37	6,80	88161250	36	49,10
40523073	72	66,00	88116250	35,37	8,50	88162070	36	88,70
40524073	72	99,50	88119250	35,37	7,10	88162080	36	88,70
40526073	72	107,20	88122070	35	15,80	88162250	36	88,70
40527073	73	188,70	88122080	35	15,80	88163070	36	132,10
40535073	73	88,50	88122680	35	15,80	88163080	36	132,10
40536073	73	133,50	88123070	35	15,80	88163250	36	132,10
40601074	122	495,30	88123080	35	15,80	88164070	36	177,40
40602074	122	526,90	88123680	35	15,80	88164080	36	177,40
40603074	122	526,90	88124070	35,37	31,70	88164250	36	177,40
43003250	138	79,90	88124080	35,37	31,70	88166070	37	17,50
43004250	138	82,10	88124680	35,37	31,70	88166080	37	17,50
75203020	84	2,20	88125070	35,37	6,80	88166680	37	17,50
75203024	84	2,20	88125080	35,37	6,80	88167070	37	17,50
75203028	84	2,20	88126070	35,37	33,80	88167080	37	17,50
75203030	84	2,20	88126080	35,37	33,80	88167680	37	17,50
75203038	84	2,20	88126680	35,37	33,80	88170003	19-25,41-49	93,70
75203040	84	2,20	88127070	35,37	33,80	88170004	19-25,41-49	93,70
75215004	86,124	4,55	88127080	35,37	33,80	88170027	19-25,41-49	93,70
75503002	88,102	10,30	88127680	35,37	33,80	88170035	19-25,41-49	93,70
75523002	88,102	11,85	88128070	35,37	51,90	88171001	19-25,41-49	23,60
75998000	84-102,124	10,20	88128080	35,37	51,90	88171002	19-25,41-49	23,60

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
88171003	19-25,41-49	23,60	88346074	19	339,00	88357683	21	339,00
88171006	19-25,41-49	23,60	88346083	19	339,00	88357684	21	339,00
88203020	84	275,00	88346084	19	339,00	88358073	21	339,00
88203024	84	275,00	88346683	19	339,00	88358074	21	339,00
88203028	84	275,00	88346684	19	339,00	88358083	21	339,00
88203030	84	275,00	88347073	19	339,00	88358084	21	339,00
88203038	84	275,00	88347074	19	339,00	88358683	21	339,00
88203040	84	275,00	88347083	19	339,00	88358684	21	339,00
88311073	32	389,70	88347084	19	339,00	88359073	21	339,00
88311074	32	389,70	88347683	19	339,00	88359074	21	339,00
88311083	32	389,70	88347684	19	339,00	88359083	21	339,00
88311084	32	389,70	88348073	19	339,00	88359084	21	339,00
88311683	32	389,70	88348074	19	339,00	88359683	21	339,00
88311684	32	389,70	88348083	19	339,00	88359684	21	339,00
88331073	33	284,10	88348084	19	339,00	88360073	21	339,00
88331074	33	284,10	88348683	19	339,00	88360074	21	339,00
88331083	33	284,10	88348684	19	339,00	88360083	21	339,00
88331084	33	284,10	88349073	19	339,00	88360084	21	339,00
88331683	33	284,10	88349074	19	339,00	88360683	21	339,00
88331684	33	284,10	88349083	19	339,00	88360684	21	339,00
88343073	19	339,00	88349084	19	339,00	88361073	21	339,00
88343074	19	339,00	88349683	19	339,00	88361074	21	339,00
88343083	19	339,00	88349684	19	339,00	88361083	21	339,00
88343084	19	339,00	88350073	19	339,00	88361084	21	339,00
88343683	19	339,00	88350074	19	339,00	88361683	21	339,00
88343684	19	339,00	88350083	19	339,00	88361684	21	339,00
88344073	19	339,00	88350084	19	339,00	88362073	21	339,00
88344074	19	339,00	88350683	19	339,00	88362074	21	339,00
88344083	19	339,00	88350684	19	339,00	88362083	21	339,00
88344084	19	339,00	88356073	21	339,00	88362084	21	339,00
88344683	19	339,00	88356074	21	339,00	88362683	21	339,00
88344684	19	339,00	88356083	21	339,00	88362684	21	339,00
88345073	19	339,00	88356084	21	339,00	88363073	21	339,00
88345074	19	339,00	88356683	21	339,00	88363074	21	339,00
88345083	19	339,00	88356684	21	339,00	88363083	21	339,00
88345084	19	339,00	88357073	21	339,00	88363084	21	339,00
88345683	19	339,00	88357074	21	339,00	88363683	21	339,00
88345684	19	339,00	88357083	21	339,00	88363684	21	339,00
88346073	19	339,00	88357084	21	339,00	88373173	28	189,00

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
88373174	28	189,00	88446073	78	173,20	88644683	41	299,00
88373183	28	189,00	88446074	78	173,20	88644684	41	299,00
88373184	28	189,00	88447073	79	173,20	88645073	41	299,00
88373683	28	189,00	88447074	79	173,20	88645074	41	299,00
88373684	28	189,00	88448073	79	199,70	88645083	41	299,00
88377173	31	229,00	88448074	79	199,70	88645084	41	299,00
88377174	31	229,00	88454173	62	146,80	88645683	41	299,00
88377175	31	229,00	88457173	63	294,60	88645684	41	299,00
88377183	31	229,00	88461173	64	389,70	88646073	41	299,00
88377184	31	229,00	88462173	64	389,70	88646074	41	299,00
88377185	31	229,00	88463173	64	389,70	88646083	41	299,00
88381173	26	189,00	88464173	65	685,30	88646084	41	299,00
88381174	26	189,00	88465173	65	685,30	88646683	41	299,00
88381175	26	189,00	88466173	65	685,30	88646684	41	299,00
88381183	26	189,00	88492073	57	442,40	88647073	41	299,00
88381184	26	189,00	88492083	57	442,40	88647074	41	299,00
88381185	26	189,00	88492683	57	442,40	88647083	41	299,00
88385173	27	129,00	88493073	57	442,40	88647084	41	299,00
88385183	27	129,00	88493083	57	442,40	88647683	41	299,00
88401073	75	315,70	88493683	57	442,40	88647684	41	299,00
88401683	75	315,70	88601070	41, 43	79,00	88648073	41	299,00
88402073	75	410,80	88601080	41, 43	79,00	88648074	41	299,00
88402683	75	410,80	88601680	41, 43	79,00	88648083	41	299,00
88405073	74	219,60	88602070	41, 43	89,00	88648084	41	299,00
88405683	74	219,60	88602080	41, 43	89,00	88648683	41	299,00
88406073	74	230,30	88602680	41, 43	89,00	88648684	41	299,00
88406683	74	230,30	88603070	41, 43	99,00	88649073	41	299,00
88415073	57	421,30	88603080	41, 43	99,00	88649074	41	299,00
88415683	57	421,30	88603680	41, 43	99,00	88649083	41	299,00
88431073	78	146,80	88643073	41	299,00	88649084	41	299,00
88431074	78	146,80	88643074	41	299,00	88649683	41	299,00
88432073	79	167,90	88643083	41	299,00	88649684	41	299,00
88432074	79	167,90	88643084	41	299,00	88650073	41	299,00
88433073	78	157,40	88643683	41	299,00	88650074	41	299,00
88433074	78	157,40	88643684	41	299,00	88650083	41	299,00
88434073	79	183,80	88644073	41	299,00	88650084	41	299,00
88434074	79	183,80	88644074	41	299,00	88650683	41	299,00
88445073	78	162,70	88644083	41	299,00	88650684	41	299,00
88445074	78	162,70	88644084	41	299,00	88656073	43	299,00

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
88656074	43	299,00	88662683	43	299,00	89092027	23	375,00
88656083	43	299,00	88662684	43	299,00	89092030	23	375,00
88656084	43	299,00	88663073	43	299,00	89092035	23	375,00
88656683	43	299,00	88663074	43	299,00	89092040	23	375,00
88656684	43	299,00	88663083	43	299,00	89093027	23	375,00
88657073	43	299,00	88663084	43	299,00	89093030	23	375,00
88657074	43	299,00	88663683	43	299,00	89093035	23	375,00
88657083	43	299,00	88663684	43	299,00	89093040	23	375,00
88657084	43	299,00	88673173	51	150,00	89094027	23	375,00
88657683	43	299,00	88673174	51	150,00	89094030	23	375,00
88657684	43	299,00	88673175	51	150,00	89094035	23	375,00
88658073	43	299,00	88673183	51	150,00	89094040	23	375,00
88658074	43	299,00	88673184	51	150,00	89095027	23	375,00
88658083	43	299,00	88673185	51	150,00	89095030	23	375,00
88658084	43	299,00	88677173	51	239,00	89095035	23	375,00
88658683	43	299,00	88677174	51	239,00	89095040	23	375,00
88658684	43	299,00	88677175	51	239,00	89096027	23	375,00
88659073	43	299,00	88677183	51	239,00	89096030	23	375,00
88659074	43	299,00	88677184	51	239,00	89096035	23	375,00
88659083	43	299,00	88677185	51	239,00	89096040	23	375,00
88659084	43	299,00	88681173	52	155,00	89097027	23	375,00
88659683	43	299,00	88681174	52	155,00	89097030	23	375,00
88659684	43	299,00	88681175	52	155,00	89097035	23	375,00
88660073	43	299,00	88681183	52	155,00	89097040	23	375,00
88660074	43	299,00	88681184	52	155,00	89098027	23	375,00
88660083	43	299,00	88681185	52	155,00	89098030	23	375,00
88660084	43	299,00	88687173	50	165,00	89098035	23	375,00
88660683	43	299,00	88687174	50	165,00	89098040	23	375,00
88660684	43	299,00	88687175	50	165,00	89099027	23	375,00
88661073	43	299,00	88687183	50	165,00	89099030	23	375,00
88661074	43	299,00	88687184	50	165,00	89099035	23	375,00
88661083	43	299,00	88687185	50	165,00	89099040	23	375,00
88661084	43	299,00	88947000	19-25,41-49	59,00	89100027	23	375,00
88661683	43	299,00	88948000	19-25,41-49	59,00	89100030	23	375,00
88661684	43	299,00	88990074	127	1998,00	89100035	23	375,00
88662073	43	299,00	89091027	23	375,00	89100040	23	375,00
88662074	43	299,00	89091030	23	375,00	89101027	23	375,00
88662083	43	299,00	89091035	23	375,00	89101030	23	375,00
88662084	43	299,00	89091040	23	375,00	89101035	23	375,00

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
89101040	23	375,00	89111035	25	375,00	89127030	49	349,00
89102027	23	375,00	89111040	25	375,00	89127035	49	349,00
89102030	23	375,00	89112027	25	375,00	89127040	49	349,00
89102035	23	375,00	89112030	25	375,00	89128027	49	349,00
89102040	23	375,00	89112035	25	375,00	89128030	49	349,00
89103027	25	375,00	89112040	25	375,00	89128035	49	349,00
89103030	25	375,00	89113027	25	375,00	89128040	49	349,00
89103035	25	375,00	89113030	25	375,00	89129027	49	349,00
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89104030	25	375,00	89114027	25	375,00	89129040	49	349,00
89104035	25	375,00	89114030	25	375,00	89130027	49	349,00
89104040	25	375,00	89114035	25	375,00	89130030	49	349,00
89105027	25	375,00	89114040	25	375,00	89130035	49	349,00
89105030	25	375,00	89121027	49	349,00	89130040	49	349,00
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89111030	25	375,00	89127027	49	349,00	89154040	45	349,00

Art.no.	Page	Price (€)	Art.no.	Page	Price (€)	Art.no.	Page	Price (€)
89155027	45	349,00	89164040	47	349,00	89174035	47	349,00
89155030	45	349,00	89165027	47	349,00	89174040	47	349,00
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89164030	47	349,00	89174027	47	349,00			
89164035	47	349,00	89174030	47	349,00			

§ 1 General - Scope

1. Our Terms and Conditions of Sale shall apply exclusively; contradicting conditions or conditions of the customer that deviate from our Terms and Conditions of Sale will not be accepted by us unless we have expressly agreed to their applicability in writing. Our Terms and Conditions of Sale shall also apply when we perform deliveries without objection while being aware of contradicting conditions or Terms and Conditions of Sale that differ from ours.

2. Decisive for the content and scope of deliveries and services shall be our written offer and, if we issue an order confirmation, our written order confirmation.

3. Our Terms and Conditions of Sale shall only be applicable to companies within the meaning of § 310 Par. 1 BGB (Bürgerliches Gesetzbuch - German Federal Civil Code).

4. Our Terms and Conditions of Sale shall also apply to all future business with customer. The following Terms and Conditions supersede customer's Terms and Conditions that differ in content. Customer's waiver of the applicability of any of their own Terms and Conditions shall also not be invalidated by our silence or our performance. A deviation from the following Terms and Conditions in an individual case shall require our written confirmation.

5. All technical data in our catalogues and other sales materials, lists and drawings as well as weight, measurement and mixing information has been carefully prepared, however, we reserve the right to later corrections.

6. It shall be customer's responsibility to check whether our product is suitable for customer's specified purpose.

§ 2 Quote - Quotation Documents

1. If the order is to be qualified as a quote in accordance with § 145 BGB, we shall have the right to accept it within four weeks.

2. We reserve property rights and intellectual property rights in depictions, drawings, calculations and other documents; they must not be made available to third parties. This shall also apply to any written documents labelled as confidential. Their disclosure to third parties by customer shall require our express written approval. Quotes shall only be valid if in written form. The prices stated shall apply subject to the condition that the order data on which the quote tendered was based remain unchanged.

3. We shall only prepare first samples and first sample test reports upon express written agreement, billed at cost.

4. For products ordered based on customer's drawings or samples, customer shall be obliged to check for possible property rights of third parties and to not infringe upon them. If, as a result of failure to comply with this obligation, we are enjoined from manufacturing due to a third party's assertion of its property right or we cannot use the product due to infringement of the property right, then we are entitled, without further examination of the legal situation and to the exclusion of all damage claims, regardless of the reason therefor, on the part of customer - to cease manufacturing and delivery until the fact situation is clarified as well as to request damages from customer, at least in the amount of 15% of the invoice value for the ordered product. Customer already now agrees to indemnify us against third party claims for damages and other third party claims for compensation, especially from holders of rights, at our first request therefor. Included in the scope of the damages shall also be such costs as we may incur due to having to defend against claims of third parties.

§ 3 Prices - Terms and Conditions of Payment

1. Unless stated otherwise in the order confirmation, our prices are ex works, including the packaging usually employed for our products plus the applicable VAT on the day of invoicing. Requested special packaging or outer packaging or special small packaging shall be billed to customer. The prices shall be applicable, respectively, only to the contractually agreed upon quantity and design. If customer requests changes that require higher processing than what the contract or typical production process is based on, we shall reserve the right to a reasonable adjustment of the price. We reserve the right to raise our prices proportionally in accordance with cost increases incurred if, after conclusion of this Contract, our costs unforeseeably increase, especially due to labour agreements or the costs of materials, especially those of raw materials or energy.

2. The statutory valueadded tax is not included in our prices; it will be specified separately on the invoice in the statutory amount applicable on the day the invoice is issued.

3. The deduction of a discount shall require a special written agreement.

4. Unless specified differently in the order confirmation, the purchase price shall be due net (without deduction) free of transaction charges and shall be payable within 10 days of the date of the invoice. If customer is in default, we shall be entitled to demand interest on arrears in the amount of 8 percentage points above the statutory base interest rate per year. If we are able to provide proof of higher damages due to this default, we shall be entitled to claim those. Customer, however, shall have the right to prove to us that we did not incur damages or did incur significantly lower damages as a result of this default.

5. Customer is only entitled to setoff rights if its counterclaims represent a final legal judgement, is uncontested, or has been acknowledged by us, or it has a mutual relationship (synallagmatic) to the principle claim. Customer only has a right of retention for claims that have been legally established, are uncontested, have been acknowledged by us, or constitute counterclaims that are in a mutual relationship (synallagmatic) to the principle claim. Furthermore, customer shall be entitled to the exercise of a right of retention insofar as its counterclaim is based on the same contractual relationship. Credit notes shall be issued explicitly for the purpose of setting off claims. There shall be no entitlement to payment.

6. In case of doubt regarding customer's ability to pay, we reserve the right to demand advance payments or that securities be rendered. If we obtain knowledge that the attachment could not be enforced at customer or if we receive any indication of a financial collapse of customer, we shall be entitled to withdraw from the contract subject to a charge for the expenses incurred.

§ 4 Delivery Schedule - Terms and Conditions of Delivery

1. The start of the delivery schedule stated by us or agreed upon with us presupposes that all technical questions have been addressed, all documents to be supplied by customer have been delivered, all necessary permits and releases have been obtained by customer, especially with respect to plans as well as the adherence to the agreed upon Terms and Conditions of Payment and the fulfilment of the other acts of cooperation by customer.

2. Furthermore, the adherence to our obligation to deliver presupposes the timely and proper fulfilment of customer's obligation as well as that we received proper delivery of the raw materials necessary for manufacturing the delivery product. The right to objection of non-fulfilled shall remain reserved.

3. If the non-fulfilment of delivery times is based on force majeure, e.g. strike, lockout, etc., the delivery times shall be extended appropriately. One such appropriate extension of the delivery times shall also occur when we are not supplied properly or on time (reservation of a proper and timely delivery by our suppliers).

4. If customer is defaulting on acceptance or if customer culpably violates other duties of cooperation, we shall be entitled to demand compensation of any resulting damages including any possible extra expenses to customer. We reserve the right to assert further claims and rights. If the delivery or shipment is postponed upon customer's request, we shall be entitled to bill the customer a storage fee in the amount of 0,05 % of the invoice total for each month started, up to a maximum of 5 % of the invoice total, 10 days after notifying customer that the goods are ready for shipment. Both parties to the contract shall have the right to prove higher or lower expenses.

5. If the prerequisites in Par. 4 exist, the risk of accidental loss or accidental deterioration of the goods shall pass to customer at the moment customer defaults on acceptance or payment.

6. In accordance with the statutory regulations, we shall be liable to the extent that the underlying purchasing contract is a fixed date transaction in the meaning of § 286 Par. 2 Nr. 4 BGB or of § 376 HGB [Handelsgesetzbuch - German Commercial Code]. In accordance with the statutory regulations, we shall also be liable if customer, due to a delayed delivery due to our fault, is entitled to claim that customer's interest in the continued fulfilment of the contract has ended.

7. Furthermore, in accordance with the statutory regulations, we shall be liable if the delayed delivery is due to a wilful or grossly negligent breach of contract for which we are responsible; culpability of our representatives or vicarious agents shall be attributed to us. If the default in delivery is due to a grossly negligent breach of contract for which we are responsible, our liability shall be limited to the foreseeable, typically occurring damages.

8. We shall also be liable in accordance with statutory provisions, insofar as the delay in delivery that was our fault is based on a culpable breach of a material contractual obligation; in this case, however, the liability for damages shall be limited to the foreseeable, typically occurring damages.

9. We shall be entitled to make partial deliveries within a reasonable scope. Deviations in measurements, weight, technical design, manufacturing and quantity of the goods to be delivered shall be allowed within customary, productrelated tolerances. Furthermore deemed as approved by the manufacturer shall be modifications that serve technical advancement and improvement of our products.

§ 5 Transfer of Risk - Packaging Costs

1. Unless the order confirmation specifies otherwise, the delivery shall be agreed upon ex works.

2. The return of packaging materials shall be subject to special agreements.

3. If requested by the ordering party, we will obtain transport insurance for the delivery; the costs caused by it shall be born by the ordering party.

4. Customer shall be required to name one or more people within a reasonable period before delivery of the goods who are authorised by customer to accept the goods and the accompanying documents, and to sign the delivery papers and accompanying documents on behalf of customer. This shall apply in particular if the goods are delivered to a location other than customer's place of business. If such information is

not provided, those persons who actually accept the goods shall be deemed authorised to accept the goods and to sign the transfer papers (delivery note and other accompanying papers).

5. If none of the people named by customer are present at the agreed upon time at the specified location or if this person or other persons are not willing to accept the goods, customer shall be in default of acceptance, with the consequence that the risk transfers to the customer. Furthermore, customer shall bear the extra costs arising from a renewed delivery.

6. Customer shall not be entitled to reject deliveries due to minor defects.

§ 6 Liability for Defects

1. Customer's claims for defects presuppose that customer properly fulfilled its inspection and complaint obligations owed in accordance with § 377 HGB.

2. If the purchased item has a defect, we shall be entitled to a rectification of our choice in the form of removing the defect or supplying a new item free of defects. In the case of removing the defect, we are obligated to bear all necessary expenses for the purpose of rectification, in particular, transport, road, work and material costs provided that these costs are not increased by the fact that the purchased item has been transported to a place other than the place of fulfillment. We may refuse rectification when the expenses for removing the defect are expected to exceed the sales price.

3. If the remedy fails, customer - at its discretion - shall have the right to demand withdrawal or reduction.

4. We shall be liable in accordance with the statutory stipulations insofar as customer makes claims for damages that are a result of intent or gross negligence, including intent of gross negligence of our representatives or vicarious agents. Unless we are claimed to be in deliberate breach of contract, our liability for damages shall be limited to the foreseeable, typically occurring damages.

5. In accordance with the statutory regulations, we shall be liable if we culpably violated a material contractual obligation; however, even in this case, the liability for damages shall be limited to the foreseeable, typically occurring damages. A material contractual obligation shall exist if the violation of the obligation refers to an obligation in whose fulfillment customer has trusted and could be expected to trust in.

6. Liability for culpable injury to life, limb or health shall remain unaffected; this shall also apply to mandatory liability in accordance with the German Product Liability Act (Produkthaftungsgesetz).

7. To the extent not otherwise specified above, any liability shall be excluded.

8. The period of limitation for claims for defects shall be 12 months, as from the transfer of risk.

§ 7 Liability for Defects

1. Any further liability for damages other than those stipulated in § 6 and § 4 shall be excluded - regardless of the legal nature of the claim being asserted. This applies in particular for damage claims from fault when the contract was concluded, due to other breaches of obligation or on account of claims in tort for compensation of material damages in accordance with § 823 BGB.

2. The period of limitation for all claims that are not subject to the period of limitation for defects of the item shall be an exclusion period of 18 months. It shall commence upon obtaining knowledge of the damage and of the person causing the damage.

3. The limitation pursuant to Par. 1 shall also apply, insofar as the customer demands compensation of useless expenses instead of performance.

4. Insofar as liability for damages against us is excluded or limited, this shall also apply with respect to the personal liability for damages of our employees, workers, associates, representatives and vicarious agents.

§ 8 Security of the Reservation of Title

1. We retain title to the item purchased until receipt of all payments resulting from the business relationship with the customer. Insofar as we agree with the customer on payment based on the check/bill of exchange procedure, the retention of title shall also extend to the customer cashing the bill of exchange accepted by us and shall not expire by crediting the check received by us. If customer breaches its contractual obligation or falls into default of payment, we may withdraw from the contract if, after a setting a reasonable deadline, customer fails to meet its obligations, or adhering to the contract even without a reminder notice cannot be reasonably expected. We may also declare our withdrawal from the contract by taking back the item purchased. After taking back the item purchased, we shall be entitled to dispose of it; the proceeds from the disposal shall be credited against the liabilities of customer - less reasonable disposal costs.

2. Customer is obligated until the final transfer of ownership to treat the item purchased with care; he is in particular obligated to insure the item at his own expense against damage by fire, water and theft sufficient to cover the replacement value. Insofar as maintenance or inspection should be necessary, the customer must carry this out in due time at his own expense.

3. In case of attachments or other encroachments by third parties, customer shall notify us immediately so that we can file a lawsuit in accordance with § 771 ZPO (German Code of Civil Procedure). Insofar as the third party is not able to reimburse us for the judicial and extra-judicial costs of such a lawsuit in accordance with § 771 ZPO, customer shall be liable for any losses we incur.

4. Customer shall be entitled to resell the purchased goods in the ordinary course of business; customer shall, however, now assign to us all accounts receivables in the amount of the final invoice amount (including VAT) of our account receivable that accrue to him against purchasers or third parties on resale, independently of whether the purchased goods were resold without or after processing it. Customer shall remain authorised to collect this account receivable even after assignment. Our authorisation to collect the account receivable ourselves shall remain unaffected by this. However, we agree not to collect the accounts receivable as long as customer complies with its payment obligations from the collected proceeds, does not default in payment and, in particular, no petition for the institution of insolvency or conciliation procedure is filed or cessations of payment exist. But if this is the case, we shall be entitled to demand that customer inform us about assigned receivables and the debtor of same, provide us with all information required for collection, hand out the pertinent documents and inform the debtor (third party) of the assignment. The claim already ceded to us in advance shall also apply to the acknowledged balance, as well as, in the case of an insolvency of the customer, to the then existing causal balance.

5. The processing or transformation of the purchased goods by customer shall always be done for us. If the purchased goods are processed together with other items not

belonging to us, we shall consequently acquire co-ownership of the new object in proportion to the value of the purchased goods (invoice total, including VAT) to the other processed items at the time at which processing took place. Incidentally, for the object resulting from the processing, the same shall apply as for the purchased goods under reservation.

6. If the purchased goods are combined with other objects not belonging to us such that they cannot be separated from one another, we then shall acquire joint ownership of the new object in proportion to the value of the purchased goods (invoice total, including VAT) and to the other processed items at the time at which combining took place. If the combining occurs such that customer's object is regarded as the principal item, then it is deemed agreed upon that customer shall transfer co-ownership to us proportionally. Customer shall keep safe the resulting sole ownership or co-ownership for us.

7. As security for our claims against it, customer shall assign to us all claims against a third party resulting from combining the purchased goods with real property.

8. We undertake to release the securities due to us at customer's request as long as the realisable value of our securities exceeds the secured accounts receivable by more than 10 %; the selection of the securities to be released shall be at our discretion.

§ 9 Place of Jurisdiction - Place of Performance - Severability Clause

1. If supplier is a merchant, then the place of jurisdiction - to the exclusion of all others - is Sondern (Sauerland) for all controversies that arise. However, we are also entitled to bring claims against supplier at its general place of jurisdiction.

2. The laws of the Federal Republic of Germany shall be applicable; the terms of the UN Convention on Contracts for the Sale of Goods shall be excluded.

3. Unless stated otherwise in the order confirmation, the place of performance for all performance and counter performance by us and supplier, including payment, is the headquarters of Brumberg Leuchten GmbH & Co. KG in Sondern (Sauerland).

4. These General Terms and Conditions of Sale shall remain in effect even if individual clauses should turn out to be invalid. The invalid clause shall be amended or interpreted by the parties in such a way that the commercial purpose intended by the invalid provision shall be achieved to the greatest extent possible. The same approach shall be taken if in the conduct of the contractual relationship a gap requiring supplementation results. If the invalidity is based upon a definition of performance or time, the statutorily permissible measure shall take its place.

If a provision of these General Terms and Conditions of Sale proves to be invalid in regard to mandatory foreign law then, upon request, supplier will reach agreement with us on those contractual supplements and make those declarations to third parties or officials that retain the validity of the affected provision and, if this is not possible, that preserve its economic content even in accordance with foreign law.

5. The German version of the General Terms and Conditions of Sale shall be the authoritative version. In case of translations, it shall prevail over the English translation and is designed based on German law.

Status: May 2016

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We assume no liability for misprints or errors.

Gross prices

All prices shall be understood as the recommended retail price (RRP) in euros plus the statutory VAT applicable on the date of delivery.

Price per piece/unit.

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