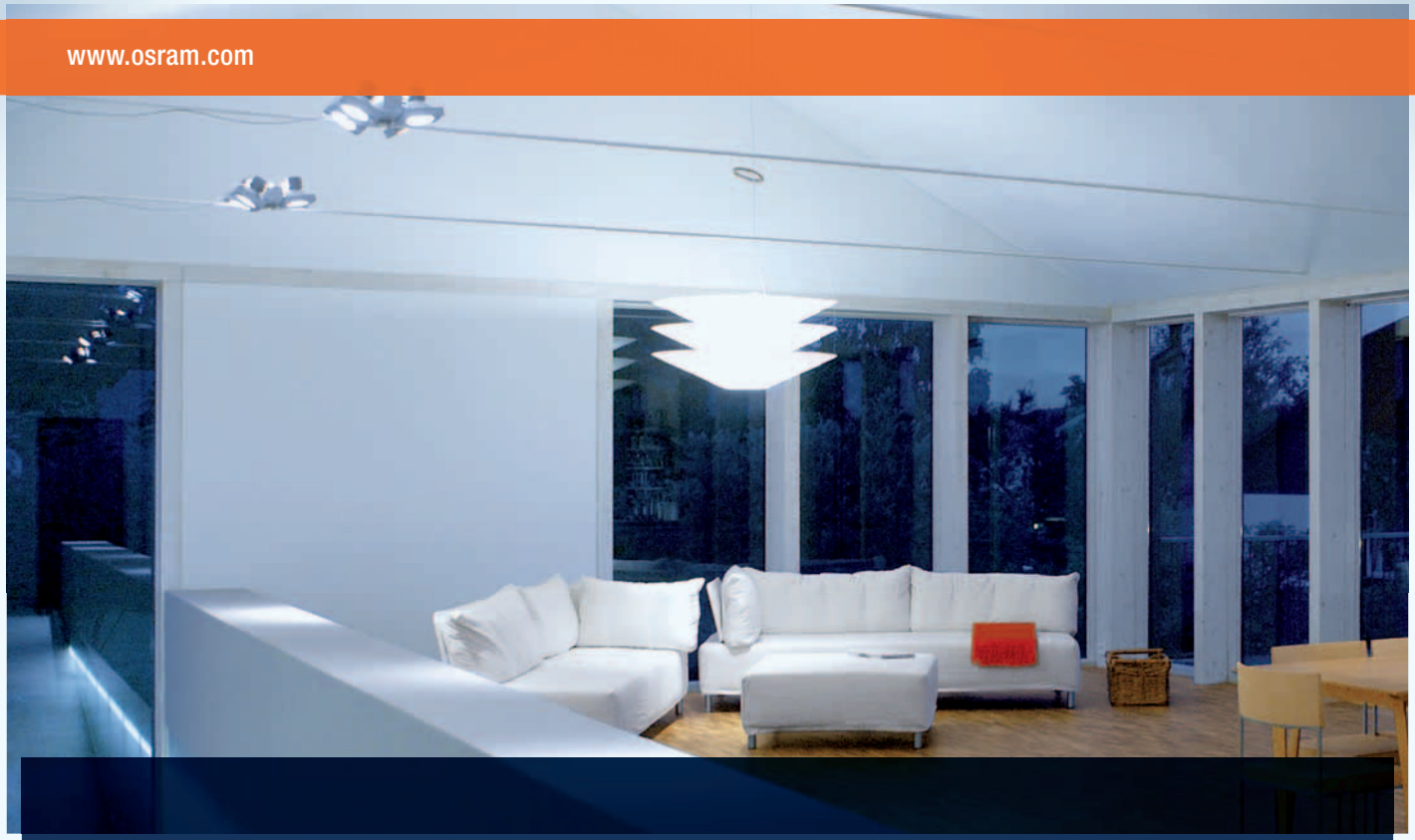
www.osram.com

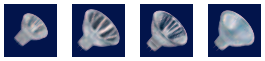


Bright ideas with OSRAM halogen lamps.

SEE THE WORLD IN A NEW LIGHT

OSRAM

CONTENTS

		Page	
HALOGEN ENERGY SAVER	HALOGEN ENERGY SAVER CLASSICS	6	
	HALOLINE® ENERGY SAVER OSRAM HALOPAR® ENERGY SAVER HALOPIN® ENERGY SAVER DECOSTAR® ENERGY SAVER HALOSTAR® ENERGY SAVER HALOSPOT® 111 ENERGY SAVER	7	
Low-voltage	MINISTAR® Axial-Reflektor MINISTAR® Side-Reflektor	9	
	DECOSTAR® ENERGY SAVER DECOSTAR® 35/51 TITAN	11	
	DECOSTAR® 35/51/51S STANDARD DECOSTAR® 51 ALU DECOSTAR® 51 COOL BLUE®	11	
	HALOSTAR® ENERGY SAVER HALOSTAR STARLITE® HALOSTAR® STANDARD	12	
	HALOSPOT® 111 ENERGY SAVER HALOSPOT® 111 HALOSPOT® 48/70	13	
Electronic transformers	HALOTRONIC® HALOTRONIC® HT 120 LF HALOTRONIC® NANO 75	14	
	HALOTRONIC MOUSE® 70 HALOTRONIC MOUSE® 105 HALOTRONIC MOUSE® 150	15	

		Page
Mains voltage	HALOPIN® ENERGY SAVER HALOPIN®	16
	DECOPIN®	17
	OSRAM HALOPAR® ENERGY SAVER OSRAM HALOPAR® 16 GU10/GZ10 OSRAM HALOPAR® 20 GU10	18
	HALOLINE® HALOLINE® ENERGY SAVER	19
	HALOGEN ENERGY SAVER CLASSIC A E27 HALOGEN ENERGY SAVER CLASSIC B E14 HALOGEN ENERGY SAVER CLASSIC BW E27	21
	HALOGEN ENERGY SAVER SPOT R50 E14/ R63 E27	21
	HALOLUX® BT E27 HALOLUX® T E14 HALOLUX CERAM® E27/B15d	22
	OSRAM HALOPAR® 16/20/30 E14/E27	23
Information	Halogen technology	24
	Dimming Environment Standards	26
	Technical data	28
	Symbols in the tables	39

Bright ideas for a bright future.

Halogen lamps.
The mere sight of the cake placed on the credenza to cool down makes the guys' mouths water. All the while mom, standing in front of the mirror, is falling in love all over again with the deep red of her new dress. And upstairs, in the office? Dad, fully satisfied with his presentation documents, is beaming with joy. Well, things simply do look better when viewed in the proper light. The main reason is the beautiful light from the halogen lamps, which conjures wonderful effects on all illuminated objects and satisfies anything your demanding eye expects of design. Whether at home, while traveling, or at work – beautify your surroundings with the attractive and effective latest-generation light from OSRAM halogen lamps.

Saving energy in a more beautiful way.

Less CO_2, more environmental protection – the HALOGEN ENERGY SAVER from OSRAM.
Have the lamps replaced now. Just by exchanging one standard 60 W lightbulb for a 42 W HALOGEN ENERGY SAVER lamp, you will save 12 kg of CO_2. Think how much refitting entire households or companies with OSRAM HALOGEN ENERGY SAVER will save in energy and CO_2!

With our innovative products we contribute to improving the efficient and economical use of energy throughout the world. For example, we already meet the criteria for environmentally conscious technologies and for climate protection, which will become drastically stricter and more important in the future. After all, preserving our environment and the high energy efficiency and service life of our products is a clear corporate principle of ours – from the first idea by our staff to the production process and the final component. How nice that not only our customers and partners, but the environment, too, have a reason to be pleased.

ENERGY SAVER

- Up to 65 % lower costs[1]
- Product life time of up to 5000 h
- Attractive, beautiful halogen light
- Energy savings of up to 30 %
- CO_2 savings of up to 100 kg/lamp
- No blackening of the bulb, i. e., constant brightness throughout the service life
- Dimmable

SAVINGS.

Comparing a HALOGEN ENERGY SAVER to an ordinary lightbulb.

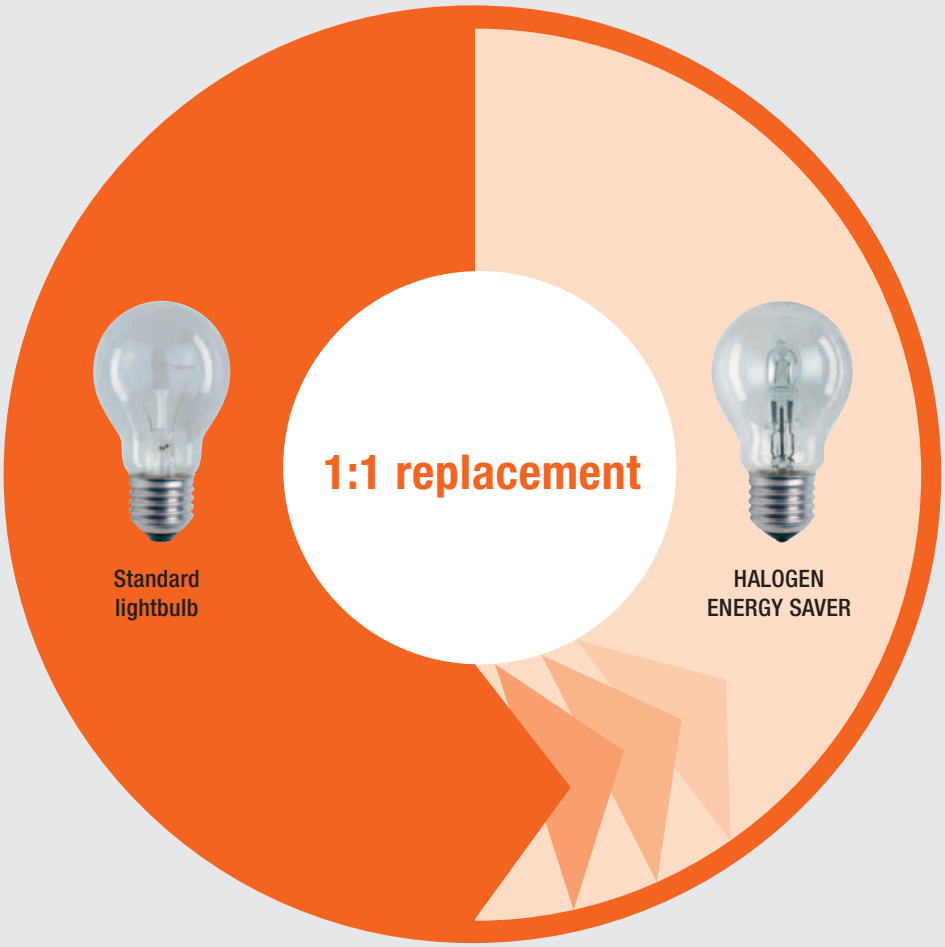
OSRAM HALOGEN ENERGY SAVER CLASSIC A, in watts	28	42
Ordinary lightbulb, in watts	40	60
Saving in kWh	24	36
Saving in EUR[1]	4.08	6.12
CO_2 saving in kg[2]	12	18
CO_2 saving in tree index[3]	0.3 x	0.45 x

[1] At an electricity tariff of 0.17 ct/kWh and a product life of up to 2000 h.
[2] At an energy mix of 0.5 kg CO_2/kWh.
[3] According to the amount of CO_2 a tree bonds annually.

[1] Up to 65 % savings compared to standard lamps (depending on electricity rate).
www.osram.com/irc

Simple 1:1 replacement with OSRAM ENERGY SAVER halogen bulbs.

OSRAM produces a wide assortment of HALOGEN ENERGY SAVER bulbs in many versions and wattages. Simply replaced standard bulbs with an OSRAM HALOGEN ENERGY SAVER bulb and immediately reduce costs and CO_2 emissions.



ENERGY SAVER

–30 % ENERGY

High-voltage series

HALOGEN ENERGY SAVER CLASSIC A with base E27

Standard-lightbulb		HALOGEN ENERGY SAVER CLASSIC A
25 W	→	18 W ES
40 W	→	28 W ES
60 W	→	42 W ES
75 W	→	52 W ES
100 W	→	70 W ES
150 W	→	105 W ES

HALOGEN ENERGY SAVER CLASSIC B with base E14

Standard-lightbulb candle shape		HALOGEN ENERGY SAVER CLASSIC B
25 W	→	18 W ES
60 W	→	42 W ES

HALOGEN ENERGY SAVER CLASSIC BW with base E14

Standard-lightbulb candle shape		HALOGEN ENERGY SAVER CLASSIC BW
40 W	→	28 W ES

HALOGEN ENERGY SAVER SPOT R50 with base E14

Standard-spotlight bulbs		HALOGEN ENERGY SAVER SPOT R50
40 W	→	28 W ES

HALOGEN ENERGY SAVER SPOT R63 with base E27

Standard-spotlight bulbs		HALOGEN ENERGY SAVER SPOT R63
60 W	→	42 W ES

ENERGY SAVER

–20 % ENERGY

High-voltage series

HALOLINE® ENERGY SAVER pen light

Standard-HALOLINE® 74.9 mm		HALOLINE® ENERGY SAVER
100 W	→	80 W ES
150 W	→	120 W ES

Standard-HALOLINE® 114.2 mm		HALOLINE® ENERGY SAVER
300 W	→	230 W ES
500 W	→	400 W ES

OSRAM HALOPAR® ENERGY SAVER reflector lamp

Standard-HALOPAR®		OSRAM HALOPAR® ENERGY SAVER
35 W	→	28 W ES
50 W	→	40 W ES

HALOPIN® ENERGY SAVER pin-base lamp

Standard-HALOPIN®		HALOPIN® ENERGY SAVER
40 W	→	33 W ES

ENERGY SAVER

–30 % ENERGY

Low-voltage series

DECOSTAR® ENERGY SAVER dichroic reflector lamp

Standard-DECOSTAR®		DECOSTAR® ENERGY SAVER
35 W	→	20 W ES
50 W	→	35 W ES
65 W	→	50 W ES

NEW!

HALOSTAR® ENERGY SAVER pin-base lamp

Standard-HALOSTAR®		HALOSTAR® ENERGY SAVER
20 W	→	14 W ES G4
35 W	→	25 W ES GY6.35
50 W	→	35 W ES GY6.35
75 W	→	50 W ES GY6.35
90 W	→	65 W ES GY6.35

HALOSPOT® 111 ENERGY SAVER reflector lamp

Standard-HALOSPOT® 111		HALOSPOT® 111 ENERGY SAVER
50 W	→	35 W ES
75 W	→	50 W ES
100 W	→	65 W ES

The smallest halogen reflector lamp in the world.

Light in a new dimension.
MINISTAR® follows the trend towards miniaturization in luminaires and opens up new horizons for impressive and revolutionary luminaire designs. For the first time on a halogen reflector lamp, the reflector is integrated in the pin-base lamp itself. The secret is a silver high-tech coating that not only looks brilliant but also, among other things, greatly reduces the thermal load in the luminaire.

MINISTAR® Axial Reflector finally brings much-needed directional light to existing pin-base luminaires. MINISTAR® Axial Reflector performs all the functions of modern spot lighting in a form that is more compact than ever before; available with GY6.35 and G4 bases. Recessed ceiling luminaires and flexible lighting systems are just two examples in which the benefits of these products really shine through.

With MINISTAR® Side Reflector you can now illuminate rectangular surfaces. It is therefore ideal for in-built furniture luminaires and desktop luminaires. MINISTAR® Side Reflector makes the luminaire reflector superfluous as the reflector is integrated in the lamp, and luminaires can therefore be made much more compact with new design approaches.


Source: Linea Light Srl.

G4 base

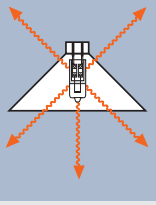
GY6.35 base

G4 base

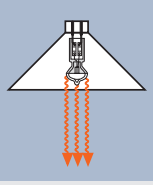
MINISTAR® Axial Reflector low-voltage pin-base lamp and MINISTAR® Side Reflector low-voltage pin-base lamp

- The smallest halogen reflector lamp in the world
- Average life of 2000 h
- Special coating for reduced thermal load in the luminaire
- Approved for use in open luminaires to IEC 60598-1
- UV-FILTER
- Dimmable
- Color temperature 3000 K
- G4 base and GY6.35 base

Pin-base lamp GY6.35



MINISTAR® GY6.35



Precise spotlights in no time: simple luminaires easily transform into luminaires with a spot effect.

Bright light for bright people.

Five types, five benefits.
The more demanding your project, the simpler, more economical, and more effective lamp solutions and light design should be nowadays. OSRAM combines it all – with the low-voltage DECOSTAR® reflector lamps. We offer you these modern lamp types in many variants.

Depending on what they are used for, five different type series offer you the perfect solution – and will satisfy every demand you have as a room designer or architect.

The Energy Saver Light: DECOSTAR® ES.
Energy Saver Lights combine economy, luminous intensity, and quality – with a product life of up to 5000 h.
The long-life coating of the reflector ensures constant luminous intensity and chromaticity coordinates. Thanks to the innovative technology and IRC infrared coating, you save a great deal of electricity, and therefore up to 65 % of the costs for standard lights. And this pleases the environment as well.

DECOSTAR®

Applies to all OSRAM DECOSTAR®

- UV-FILTER
- Dimmable
- For operation in open lamps in accordance with IEC 60598-1
- Color temperature 3000 K

DECOSTAR®
ENERGY SAVER

- Up to 65 % cost savings, thanks to IRC technology[1]
- Extra-long average life time of 5000 h
- Constant luminous intensity and chromaticity coordinates throughout the service life
- Significantly reduced CO_2 emission due to energy savings

DECOSTAR®
35/51 TITAN low-voltage dichroic reflector lamp

- Long average life time of 4000 h
- Constant luminous intensity and chromaticity coordinates throughout the service life
- Constant bluish color impression of the light emitted through the back of the reflector
- Dichroic reflector reduces the heat in the light beam by up to 66 %

[1] Up to 60 % savings compared to standard lamps (depending on electricity tariff).

DECOSTAR® 35/51
STANDARD
low-voltage reflector lamp

- Average life time of 2000 h
- Dichroic reflector reduces the heat in the light beam by 66 %

DECOSTAR® 51 ALU
low-voltage reflector lamp

- Average life time of 3000 h
- Aluminum-coated reflector without cover disc reduces heat radiation in the lamp by ~ 60 % compared to aluminum-coated reflector with cover disc and ~ 80 % compared to dichroic reflector with cover disc
- No light emission through the back of the reflector
- Color-neutral light throughout the product life

DECOSTAR® 51 COOL BLUE®
low-voltage reflector lamp

- Long average life time of 4000 h
- Dichroic reflector reduces the heat in the light beam by 66 %
- Particularly white light at 4500 K

Unlimited possibilities for individual lighting design.

Precise performance and light.
"Starry sky," recessed luminaires for furniture, and chandeliers: HALOSTAR® lamps make open lamps without protective cover possible.

Plus, thanks to IRC technology, the HALOSTAR® ES uses considerably less energy with the same light output.

HALOSTAR®

Applies to all OSRAM HALOSTAR®

- Approved for use in open luminaires to IEC 60598-1
- UV-FILTER
- Dimmable
- Color temperature 3000 K

ENERGY SAVER

HALOSTAR® ENERGY SAVER Low-voltage pin-base lamp

- Up to 60 % cost savings, thanks to IRC technology[1]
- Long average life time of 4000 h
- High luminous efficacy of up to 26 lm/W
- Significantly lower CO_2 emissions due to energy savings
- GY6.35 and G4 pin-base

NEW!

HALOSTAR STARLITE® Low-voltage pin-base lamp

- Long average life time of 4000 h
- Axial filament for optimum directional light
- Special pins for corrosion protection

HALOSTAR® STANDARD Low-voltage pin-base lamp

- The low-cost solution for pin-base applications
- Average life time of 2000 h
- Clear or frosted

[1] Up to 60 % savings compared to standard lamps (depending on electricity tariff).

Enormous luminous intensity and cool design all in one.

Beauty is there to be seen and admired. How lovely that you can now make beautiful things even more beautiful: with OSRAM HALOSPOT®. You receive an excellent light package which combines economy and outstanding quality of light.

Reflector, lamp and cap are available in one product as an optimized system. This ensures ease of operation and perfect illumination with radiation angles of 4° to 45°. This lets you highlight objects even in a bright environment, providing light in its most beautiful form – not only in the professional field but in the home as well.

HALOSPOT®

Applies to all OSRAM HALOSPOT®

- Approved for use in open luminaires to IEC 60598-1
- Cap for reduced glare and easy handling
- UV-FILTER
- Dimmable
- Color temperature 3000 K

HALOSPOT® 111 low-voltage halogen lamp with large aluminium reflector

- Long average life of 3000 h
- Powerful light
- Bulb with axial coil for optimum distribution of light

ENERGY SAVER

HALOSPOT® 111 ENERGY SAVER low-voltage reflector lamp

- Up to 48 % cost savings thanks to IRC technology[2]
- Long average life of 4000 h
- New high-tech reflector for optimum illumination and less scattered light
- Significantly lower CO_2 emissions due to energy savings

HALOSPOT® 48/70 low-voltage halogen lamp with aluminium reflector

- Excellent distribution of light, thanks to the faceted reflector
- Heat is emitted to the front

[2] Up to 48 % savings compared to standard lamps (depending on electricity tariff).

High-tech for new highlights.

Comfort family

HALOTRONIC®
HT 70/230-240/12 L
HT 105/230-240/12 L
HT 150/230-240/12 L
HT 210/230-240/12 L

- Extremely easy to install
- Can be dimmed with trailing-edge phase dimmers
- Can be through-wired on the primary side
- Three pairs of terminals on the secondary side
- Short-circuit protection: electronically reversible
- Overload protection: electronically reversible
- Overtemperature protection: electronically reversible

Comfort family low-profile

HALOTRONIC®
HT 120/230-240/12 LF

- Low-profile design
- Can be dimmed with trailing-edge phase dimmers
- Can be through-wired on the primary side
- Two pairs of terminals on the secondary side
- Short-circuit protection: electronically reversible
- Overload protection: electronically reversible
- Overtemperature protection: electronically reversible

Extremely small

HALOTRONIC® NANO
HTN 75/230-240 I
HTN 75/230-240 S

NEW!

- Very small high-performance transformer for tight spaces
- I version with cable clamp for separate installation
- S version without cable clamp for installation in luminaires
- Dimensions l x w x h (mm) with mounting brackets: 104 x 33 x 22
- Ideal in combination with OSRAM MINISTAR® lamps
- Compact design
- Full output even at high ambient temperatures: genuine white halogen lamp
- Reversible cut-out circuits

Reliable and easy to install.
Due to the low power dissipation of HALOTRONIC®, much less heat is generated than with conventional transformers. Thanks to the gentle partial load operation, the lamp has a long life. HALOTRONIC® is ideal for recessed and surfacemounted ceiling luminaires, tube lighting systems, and domestic lighting (lighting installed in and on furniture).

Glad to work behind the scenes.
HALOTRONIC® LF shows its strengths particularly in low-voltage installations in furniture. It can be easily hidden behind cabinets, pelmets, or blinds. You can even have tiny lights around mirrors or pictures because the HALOTRONIC® LF can simply be hidden behind them.

Ergonomic and extremely versatile.
HALOTRONIC MOUSE® is an electronic transformer that is enormously popular because it can be fitted in the tightest of spaces, thanks to its extremely compact design, and because it has built up a reputation for quality and reliability. Its unique design and memorable name make this electronic transformer unmistakable in its class. The successful HTM models are available with ratings of 70 W, 105 W and 150 W.

MOUSE family

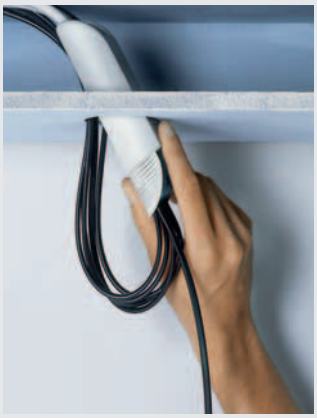
HALOTRONIC® HTM 70/230-240 HTM 105/230-240

- Two luminaires can be connected on the secondary side
- Compact functional design for shallow suspended ceilings
- Can be used with trailing-edge or leading-edge phase dimmers for inductive loads
- Cable clamp for reliable strain relief for various connecting cables
- Short-circuit protection: electronically reversible
- Overload protection: electronically reversible
- Overtemperature protection: electronically reversible

HALOTRONIC® HTM 150/230-240

- Compact functional design for shallow suspended ceilings
- Can be used with trailing-edge or leading-edge phase dimmers for inductive loads
- Up to six luminaires can be connected on the secondary side
- Can be through-wired on the primary side
- Short-circuit protection: electronically reversible
- Overload protection: electronically reversible
- Overtemperature protection: electronically reversible

Its asymmetrical shape means the transformer can be easily installed in shallow suspended ceilings.



The wired 150 W Mouse is inserted in the opening with the primary side first.

NEW!

For more information on the system guarantee for OSRAM HALOTRONIC® and OSRAM ENERGY SAVER halogen lamps, and the terms and conditions of the guarantee, go to: www.osram.com/system-guarantee

Compliance with standards:

- Safety to EN 61347
- Harmonic content to EN 61000-3-2
- Radio interference suppression to EN 55015
- Immunity to EN 61547/61047

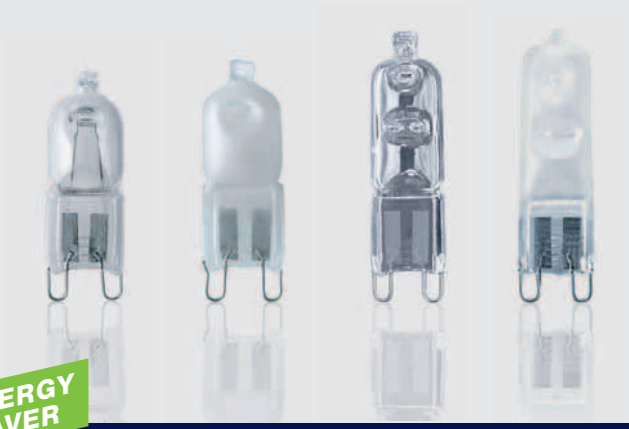
Small light source for big effects.

HALOPIN® and DECOPIN®:
The revolution of the lightbulb.
With the invention of the halogen HALOPIN® with G9 base, OSRAM has reinvented the 100-year-old lightbulb in a new, compact shape. This light has launched the development of a new, modern generation of luminaires, especially at home. The advantages of halogen have also convinced the manufacturers of luminaires with a conventional design to choose G9 and HALOPIN® rather than E14/E27 bases. A standard has been established which all manufacturers of lamps and luminaires use throughout the world.

With its total length of only 43 mm (25 W/40 W) and 51 mm (60 W/75 W), respectively, HALOPIN® is very short, making a generation of filigree and simply structured halogen lamps possible: more economical and with a new freedom of design because no transformer has to be integrated into the construction. This opens up new perspectives for creative lighting solutions for light planners, architects, and luminaire designers.

OSRAM is continuing the trend towards miniaturization with DECOPIN® – the smallest and lightest halogen high-voltage reflector lamp in the world. This innovation makes additional attractive luminaire designs possible.

Thanks to its bulb pinch technology and integral safety fuse, HALOPIN® and DECOPIN® satisfy the strict safety requirements of IEC 60432-2 because they safely and reliably shut down at the end of their lives. They can also be used in unshielded luminaires (in accordance with IEC 60598-1).



Applies to all OSRAM HALOPIN® and DECOPIN®

HALOPIN® and DECOPIN®

- Sturdy coil design, thanks to the innovative, unique bulb pinch technology
- Complies with the safety requirements of IEC 60432-2: the lamp shuts down reliably and safely
- Approved for use in open luminaries to IEC 50598-1
- No transformer required
- Simple handling, thanks to the standardized G9 base
- Color temperature approx. 2800 K
- Average life of 2000 h
- Dimmable
- Extremely compact dimensions

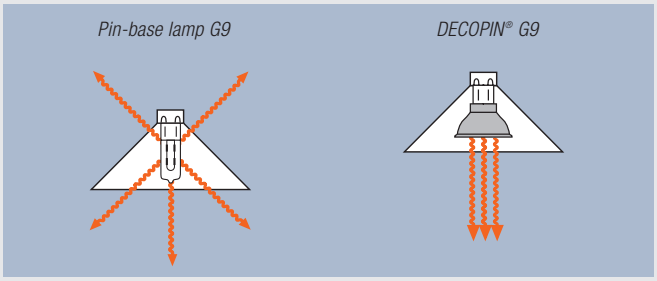
ENERGY SAVER

HALOPIN® ENERGY SAVER

- Energy savings of up to 20 %
- Available in 33 W, clear

HALOPIN®

- Available in 25 W, 40 W, 60 W and 75 W
- Clear and frosted



Illuminate the precise spots you want to highlight with DECOPIN®.

DECOPIN® reflector lamp with G9 base for mains voltage

- Brilliantly small dimensions for new, revolutionary lamp designs
- Elegant aluminum reflector with light-optimizing faceting
- Total weight just barely 9 g


Source: Casablanca.

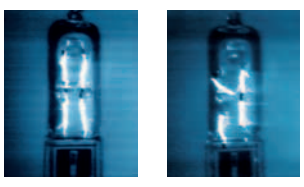
Safety with high-voltage lights – patented by OSRAM.

The above illustration shows the obvious difference at the end of product life between OSRAM high-voltage halogen lights (e. g. HALOPIN®, DECOPIN®, and HALOPAR®) with integrated fuse – developed and patented by OSRAM – and a conventional design halogen light without fuse: with the OSRAM lamp, the arc in the body of the lamp extinguishes very quickly and without any hazard, with a blowing-out effect. In contrast, the other light flickers strongly and finally explodes unimpeded at the bulb pinch – its hot glass splinters can therefore cause severe damage.

Conventional design without fuse:

Arc begins to form *Arc flickers* *End of product life – the lamp explodes*

OSRAM high-voltage light with integrated fuse:



Arc begins to form *End of product life – the light extinguishes safely without any hazard*

A shining example.

Halogen light without a transformer.
With its OSRAM HALOPAR® mains voltage halogen lamps, OSRAM offers a real alternative to low-voltage reflector lamps. Because they do not need a transformer they are more cost-effective, yet still offer attractive halogen light. They are available in various wattages and with different beam angles, making them ideal for revitalizing rooms and providing accent lighting.

OSRAM HALOPAR® 16 is ideal for modern small and stylish halogen luminaires and is the counterpart of the DECOSTAR®. It is available with an aluminum or dichroic reflector.

The new 75 W OSRAM HALOPAR® 20 GU10 is a real powerhouse. With its compact dimensions, attractive wholeglass reflector, and integral safety fuse, the new OSRAM HALOPAR® 20 GU10 is perfect for modern open luminaires.

Applies to all OSRAM HALOPAR®

OSRAM HALOPAR®

- Average life of 2000 h
- With whole glass reflector for bright lighting effects
- Innovative bulb pinch technology for the discharge vessel and with integrated fuse function: complies with the safety requirements of IEC 60432-2
- Approved for use in open luminaires to IEC 60598-1
- UV-FILTER
- Color temperature approx. 2800 K
- Dimmable

OSRAM HALOPAR® 16 ENERGY SAVER

ENERGY SAVER

- Energy savings of up to 20 %
- Available in 28 W and 40 W

OSRAM HALOPAR® 16 GU10/GZ10 OSRAM HALOPAR® 20 GU10

- OSRAM HALOPAR® 16 GU10/GZ10 available in 35, 50 W
- OSRAM HALOPAR® 20 GU10 available in 50 W and 75 W
- Aluminum and dichroic reflectors

Innovative design for a new look.

HALOLINE® extremely variable.
HALOLINE® can be used universally and is suitable for a wide range of applications. It is the classic lamp for small outdoor systems for floodlighting buildings and sports arenas and for security lighting. It is also experiencing a renaissance in the home, where it is being used above all for indirect lighting to emphasize and accentuate the structure of rooms. HALOLINE® is also reconquering classic applications, providing wide-area lighting from pendant luminaires in an extensive range of new and exciting designs.

Applies to all OSRAM HALOLINE®

HALOLINE®

- Bright halogen light
- Ideal for emphasizing and accentuating the structure of a room
- 100 % dimmable for a variable atmosphere
- Can be plugged in anywhere
- Universal burning position up to and including 500 W
- Average life of 2000 h
- Can be operated simply on mains voltage without the need for a transformer
- Color temperature approx. 3000 K

HALOLINE® ENERGY SAVER

- Energy savings of 20 %

ENERGY SAVER

Green light.

HALOGEN ENERGY SAVER: Less energy consumption. Longer lasting light.
The idea that there's nothing better than a standard light bulb has been old news ever since the new HALOGEN ENERGY SAVER bulbs from OSRAM! This new generation of halogen bulbs in many different versions is the clever alternative to standard light bulbs. What all of them have in common is the pleasant light that they immerse every atmosphere in. And there's still more to say about the new HALOGEN ENERGY SAVER: With less electricity needed to produce the same amount of light and a lifetime almost double that of standard light bulbs and halogen lamps, you can save up to 30 % in energy costs. The HALOGEN ENERGY SAVER are the proof that you can make just as attractive a contribution to environmental protection with bright halogen bulbs.

HALOGEN ENERGY SAVER bulbs care for a constant light over the entire lifetime. Just replace your standard light bulbs or halogen lamps with the HALOGEN ENERGY SAVER from OSRAM. Regardless of what type of bulb you need, they are available in all normal sizes and wattages with screw bases for the simple replacement of standard light bulbs or with uncomplicated pin bases.

ENERGY SAVER

HALOGEN ENERGY SAVER CLASSIC A with base E27

- Easy 1:1 replacement
- Wide assortment enables the replacement of classic light bulbs of any wattage
- Energy savings of 30 %
- Twice average life: 2000 h
- White, bright halogen light as a GLS
- Dimmable
- Simple operation with mains voltage without transformer
- Color temperature approx. 2800 K

HALOGEN ENERGY SAVER CLASSIC B with base E14 and BW with base E27

- Easy 1:1 replacement
- Energy savings of 30 %
- Twice average life: 2000 h
- White, bright halogen light as a GLS
- Dimmable
- Simple operation with mains voltage without transformer
- Color temperature approx. 2800 K

HALOGEN ENERGY SAVER SPOT R50 with base E14 and R63 with base E27

- Easy 1:1 replacement
- Energy savings of 30 %
- Twice average life: 2000 h
- White, bright halogen light as a GLS
- Dimmable
- Simple operation with mains voltage without transformer
- Color temperature approx. 2800 K

HALOLUX®

Applies to all OSRAM HALOLUX®

- Attractive white halogen light
- Simple operation on mains voltage without a transformer
- Dimmable
- Color temperature approx. 2900 K
- Average life 2000 h

HALOLUX® BT with base E27

HALOLUX® BT with its E27 base and unique shape is ideal for meeting special requirements.

- Decorative bulb shape

HALOLUX® T with base E14

HALOLUX® T are the decorative halogen alternatives to conventional candle, round, and tubular lamps.

- HALOLUX T, small and compact with cylindrical jacket

HALOLUX CERAM® with base E27 and base B15d

HALOLUX CERAM® with an E27 base and B15d base has been designed specifically for small slimline luminaires, and is suitable for special requirements because of its narrow cylindrical shape.

- Compact design, also suitable for small narrow luminaires
- Available in a wide range of wattages up to 230 W

OSRAM HALOPAR® 16/20/30 with base E14/E27

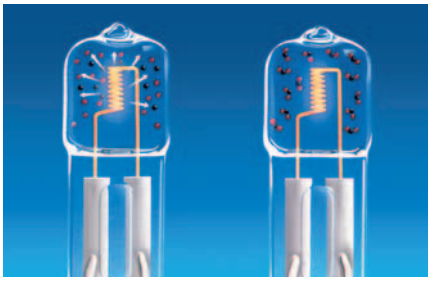
With its OSRAM HALOPAR® mains voltage halogen lamps, OSRAM offers a modern alternative to conventional reflector lamps. With their standard E14 and E27 screw bases, they are quick and easy to install. Furthermore, they provide more light than standard reflector lamps and last twice as long. They are therefore ideal for effective spotlighting in shops, art galleries, and the home.

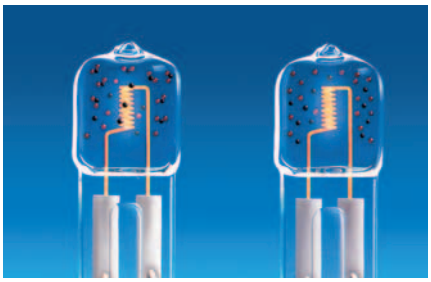
- The attractive alternative to conventional incandescent reflector lamps
- OSRAM HALOPAR® 16 GU10/GZ10 available in 35 W and 50 W
- OSRAM HALOPAR® 20 GU10 available in 50 W and 75 W
- Aluminum or cold light reflectors

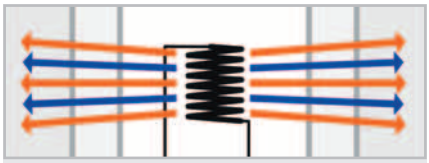
Displayed in the right light: modern lighting solutions with energy-saving halogen light.

OSRAM lamp and halogen technologies under the spotlight.

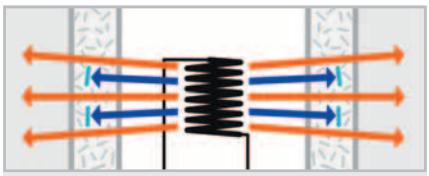
Innovations that light the way forward.
Halogen lamps have conquered the world in only a short time. There are good reasons for this. They include the quality of light, the directability of the light, and the “freedom of expression” that this offers. The innovative products developed and used by OSRAM have helped to guide developments in halogen light along the right lines. The technologies we use are explained on the next few pages.



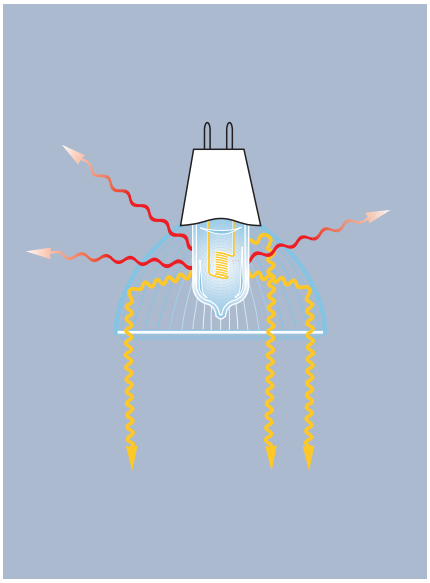




Conventional quartz allows UV radiation and visible light to pass through unchecked.



Doped quartz filters out UV radiation. Visible light is virtually the only radiation to leave the lamp.



The halogen cycle.
The bulb on a halogen lamp always remains clear. This is due to the halogen in the filler gas which prevents the vaporized tungsten from being deposited on the bulb by combining with it and flowing back to the hot filament. The tungsten is then deposited back on the filament and the halogen released in the process returns to the cycle.

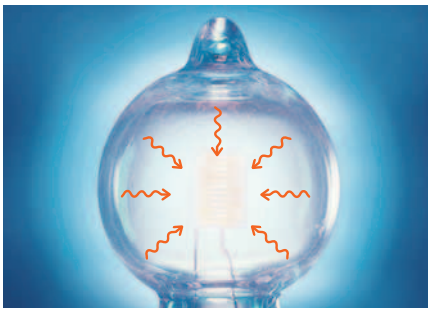
UV protection as standard.
OSRAM is the first lamp manufacturer to commit fully to UV-FILTER technology. Almost the entire halogen lamp range has been converted to UV-FILTER quartz. The so-called “doped” quartz is enriched with UV-absorbent materials to prevent unwanted UV components from being emitted. This applies in particular to harmful high-energy UV-C and UV-B radiation. Less harmful, low-energy UV-A radiation is reduced by half.

Benefits:
- Easily complies with the strictest UV protection thresholds
- Reduced UV-related bleaching effect

Cool Beam technology.
Dichroic reflector lamps are ideal if heat-sensitive objects have to be well lit. Most of the heat produced by the lamp is emitted through the rear of the reflector. This reduces the amount of heat in the light beam by up to 66 %. You can therefore place sensitive objects even in high intensity lighting. In addition, decorative light for special lighting accents is emitted at the back.

The Energy Saver principle.
OSRAM ENERGY SAVER lamps achieve energy savings of up to 30 %. This is possible because of two different technical principles:

- A special coating on the bulb (infrared coating) reflects the heat back to the coil. This means that less external energy has to be used to keep the coil at operating temperature. Due to the optimal geometric conditions, this technology will be used in all ENERGY SAVER low volt bulbs (12 V).



- Reduction of heat loss via the gas fill (xenon): with increasing size (mass and diameter) of the gas atoms, the heat conductivity of the gas fill decreases. The heat loss of the tungsten coil can be reduced through the gas by choosing the proper lamp gas fill. Thanks to this effect, less electrical energy is required for heating the coil. Plus, using fill gas with atoms that are as heavy as possible slows down the evaporation of the coil's tungsten atoms. This can extend the life of the lamps. Of all inert gases, xenon meets these requirements best. Therefore, we use xenon as lamp gas fill for all highvolt ENERGY SAVER lamps from OSRAM, despite its considerable cost.

- Additional effects: if the resulting lower costs for air-conditioning as well as the likewise reduced replacement costs – due to the longer life of the ENERGY SAVER lamps – are considered, savings can be as high as 65 % compared to standard lamps (depending on the electricity tariff).

The low-voltage effect.
Low-voltage halogen lamps is the name for lamps which are operated at a voltage of 12 V. Due to the laws of physics, the coil wire of a low-voltage lamp is five times as thick as that of a high-voltage lamp with the same output. In addition, the length of the coil wire of a low-voltage lamp is only about one-fifth of the length of a comparable high-voltage coil. This results in the significantly higher thermal resistance of the low volt coils. This in turn leads to higher light efficiency and a considerably longer product life than is true for high-voltage lamps.

Pinch technology.
The bulb pinch technology is an entirely new method for the manufacture of line voltage halogen lamps which was developed by OSRAM. A thin and extremely sensitive filament wire is fixed directly in the bulb by "glass knobs". The lamp construction is more robust as a result. The lamp has a higher life expectancy – even if exposed to vibrations or jolts.

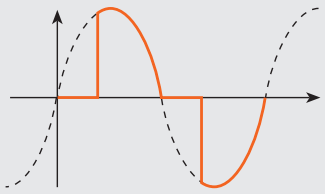
A patented fuse system ensures that the lamp is instantly switched off in critical situations. The lamp can therefore also be used in unshielded luminaires (according to IEC 60598-1); except for HALOLINE®, due to standardization.

Dimming, environment protection, and standards.

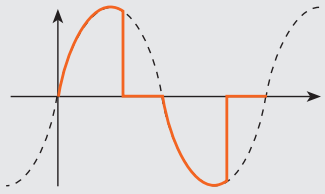
Dimming with convenience and efficiency.
Dimmers for individual brightness control have a number of advantages. For example, they reduce energy costs since the lamps are supplied only with the power that is actually needed. Conventional transformers have to be operated with leading-edge phase dimmers for inductive loads. Electronic transformers, however, mostly need trailing-edge phase dimmers. The electronic HALOTRONIC MOUSE® transformer is an exception; it can also be dimmed with a leading-edge phase dimmer for inductive loads.

Suitable for trailing-edge phase dimmers for inductive loads.

Suitable for leading-edge phase dimmers.



a) Leading-edge phase control: a freely definable portion of the ac voltage reaches the ECG.



b) Trailing-edge phase control: a freely definable portion of the ac voltage reaches the ECG after passing through the zero crossing point.

Leading-edge and trailing-edge phase control.
Depending on the type of control, an appropriate electronic dimmer circuit is included in the power circuit.
a) In the case of leading-edge phase control, a freely determinable portion of the sinusoidal ac voltage reaches the load.

b) The trailing-edge phase control circuit on the other hand switches at the zero crossing point of the sine halfwave and then simply cuts off the rest of the ac voltage curve.

Both circuits have advantages and disadvantages, but if adequately dimensioned and appropriately used they can meet all relevant requirements. As a general rule, leading-edge phase dimmers for inductive loads are the more cost-effective solution. The higher-quality trailing-edge phase dimmers are quieter in operation even in critical situations.

Perfection and high-quality standards.
Quality is the prime consideration at OSRAM – the key concept is Total Quality Management. OSRAM has been certified to DIN ISO 9001 since 1994.

To ensure that OSRAM products meet consistently high-quality standards in series production, the quality assurance systems and the machines used to manufacture the lamps have been developed and produced by OSRAM itself. This enables us to ensure the reliability of our technical data.

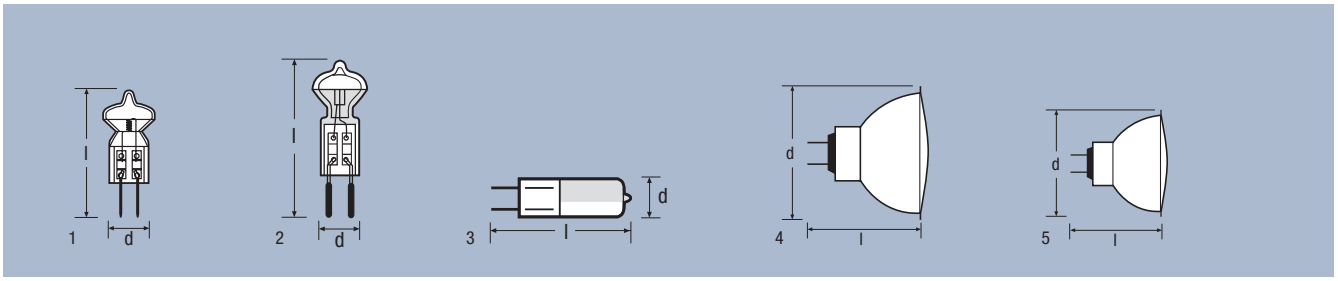
Our environmental objectives are clearly defined.
You cannot know where you are going unless you have a clear destination in mind. This also applies in environmental management. OSRAM has set itself a number of objectives for the next few years. For example, every factory is committed to reducing its production-related environmental impact still further.

OSRAM has achieved one of its objectives at its Bruntal site within the timescale envisaged. There, an installation that produces virtually no waste water has been developed for manufacturing filaments. All the acids and wash water used is kept fully within the process cycle. The first waste-water-free installation is a great plus for the environment. And OSRAM has undertaken to keep the public informed of the measures taken and the results achieved, for example in its Environmental Report.

GLOBAL CARE

Please note:
- In outdoor areas and damp rooms, halogen lamps may only be used in luminaires for which they have been approved.
- High-voltage halogen lamps are also available with country-specific base types and/or voltages upon request.

TECHNICAL DATA



Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
MINISTAR® Axial Reflector, ∅ 12 mm											
50210	4008321**909275**	10	12	20	250	12	33	2000	G4	1	40
50220	4008321**909299**	20	12	20	450	12	33	2000	G4	1	40

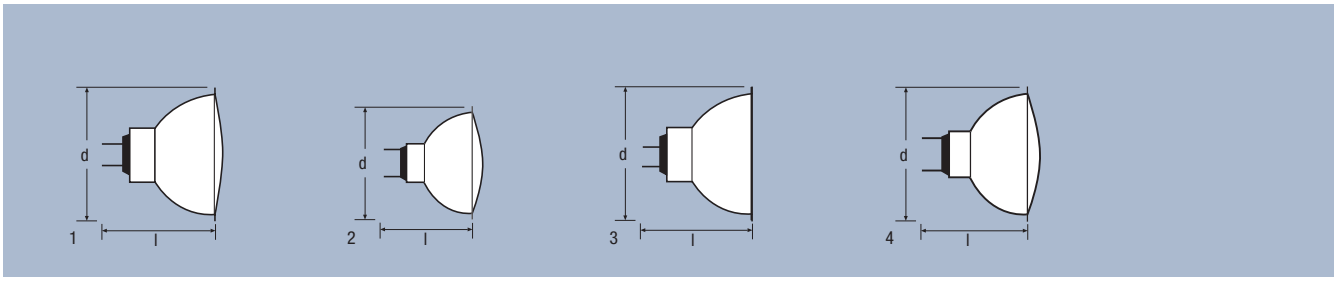
Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
MINISTAR® Axial Reflector, ∅ 16 mm											
50020	4050300**987217**	20	12	20	800	16	44	2000	GY6.35	2	40
50035	4050300**987224**	35	12	30	1000	16	44	2000	GY6.35	2	40
50050	4050300**987231**	50	12	30	1400	16	44	2000	GY6.35	2	40

Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
MINISTAR® Side Reflector, ∅ 9.5 mm											
50110	4050300**987248**	10	12	35/60	90	9.5	33	2000	G4	3	40
50120	4050300**987255**	20	12	35/60	180	9.5	33	2000	G4	3	40

Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
ENERGY SAVER **DECOSTAR® ENERGY SAVER, ∅ 51 mm**											
48860ESSP	4050300**620169**	20	12	10	6000	51	45	5000	GU5.3	4	20
48860ESFL	4050300**620183**	20	12	24	2300	51	45	5000	GU5.3	4	20
48860ESWFL	4050300**620206**	20	12	36	1000	51	45	5000	GU5.3	4	20
48860ESVWFL	4050300**620220**	20	12	60	450	51	45	5000	GU5.3	4	20
48865ESSP	4050300**516592**	35	12	10	12500	51	45	5000	GU5.3	4	20
48865ESFL	4050300**516615**	35	12	24	4400	51	45	5000	GU5.3	4	20
48865ESWFL	4050300**516639**	35	12	36	2200	51	45	5000	GU5.3	4	20
48865ESVWFL	4050300**516653**	35	12	60	1100	51	45	5000	GU5.3	4	20
48870ESSP	4050300**516677**	50	12	10	15000	51	45	5000	GU5.3	4	20
48870ESFL	4050300**516691**	50	12	24	5700	51	45	5000	GU5.3	4	20
48870ESWFL	4050300**516714**	50	12	36	2850	51	45	5000	GU5.3	4	20
48870ESVWFL	4050300**516738**	50	12	60	1430	51	45	5000	GU5.3	4	20

Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 35 TITAN, ∅ 35.3 mm											
46890SP	4050300**529301**	20	12	10	4000	35.3	37	4000	GU4	5	10
46890WFL	4050300**529325**	20	12	36	700	35.3	37	4000	GU4	5	10
46892SP	4050300**529349**	35	12	10	6200	35.3	37	4000	GU4	5	10
46892WFL	4050300**529363**	35	12	36	1350	35.3	37	4000	GU4	5	10

TECHNICAL DATA



Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 51 TITAN reflector lamp, ∅ 51 mm											
46860SP	4050300**428635**	20	12	10	5000	51	45	4000	GU5.3	1	20
46860WFL	4050300**428659**	20	12	36	780	51	45	4000	GU5.3	1	20
46860VWFL	4050300**428673**	20	12	60	350	51	45	4000	GU5.3	1	20
46865SP	4050300**428697**	35	12	10	9100	51	45	4000	GU5.3	1	20
46865FL	4050300**476414**	35	12	24	3100	51	45	4000	GU5.3	1	20
46865WFL	4050300**428710**	35	12	36	1500	51	45	4000	GU5.3	1	20
46865VWFL	4050300**428734**	35	12	60	700	51	45	4000	GU5.3	1	20
46870SP	4050300**428758**	50	12	10	12500	51	45	4000	GU5.3	1	20
46870FL	4050300**465708**	50	12	24	4400	51	45	4000	GU5.3	1	20
46870WFL	4050300**428772**	50	12	36	2200	51	45	4000	GU5.3	1	20
46870VWFL	4050300**428796**	50	12	60	1100	51	45	4000	GU5.3	1	20

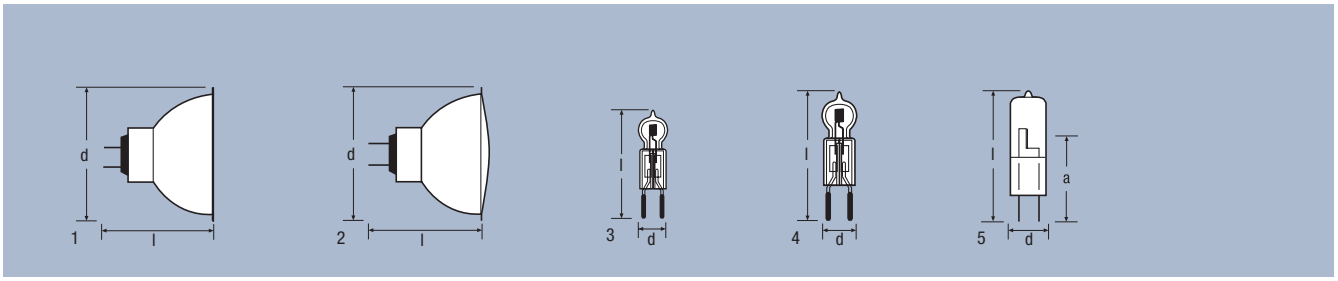
Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 35 STANDARD, low-voltage halogen reflector lamp, ∅ 35.3 mm											
44888WFL	4050300**443935**	10	12	36	300	35.3	37	2000	GU4	2	10
44890SP	4050300**346090**	20	12	10	3200	35.3	37	2000	GU4	2	10
44890WFL	4050300**346168**	20	12	36	500	35.3	37	2000	GU4	2	10
44892SP	4050300**346182**	35	12	10	5000	35.3	37	2000	GU4	2	10
44892WFL	4050300**346229**	35	12	36	900	35.3	37	2000	GU4	2	10

Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 51 STANDARD, ∅ 51 mm, without DECO shield											
41860SP[1]	4050300**012612**	20	12	10	3150	51	45	2000	GU5.3	3	20
41860WFL[1]	4050300**012629**	20	12	36	510	51	45	2000	GU5.3	3	20
41865SP[1]	4050300**026527**	35	12	10	6300	51	45	2000	GU5.3	3	20
41865WFL[1]	4050300**026541**	35	12	36	1050	51	45	2000	GU5.3	3	20
41870SP[1]	4050300**012636**	50	12	10	8200	51	45	2000	GU5.3	3	20
41870WFL[1]	4050300**012575**	50	12	36	1500	51	45	2000	GU5.3	3	20
DECOSTAR® 51S STANDARD, ∅ 51 mm, with DECO shield											
44860SP	4050300**272474**	20	12	10	3000	51	45	2000	GU5.3	4	20
44860WFL	4050300**272511**	20	12	36	480	51	45	2000	GU5.3	4	20
44865SP	4050300**272559**	35	12	10	6000	51	45	2000	GU5.3	4	20
44865WFL	4050300**272634**	35	12	36	1000	51	45	2000	GU5.3	4	20
44870SP	4050300**272672**	50	12	10	7800	51	45	2000	GU5.3	4	20
44870WFL	4050300**272795**	50	12	36	1450	51	45	2000	GU5.3	4	20

For successor models for 44860VWFL, 44865FL, 44865VWFL, 44870FL and 44870VWFL see TITAN product range, see page 28/29.

[1] Discontinued.

TECHNICAL DATA



Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 51 ALU, ∅ 51 mm, with aluminum-coated reflector, without DECO shield											
41861WFL	4050300**428819**	20	12	36	700	51	45	3000	GU5.3	1	20
41866WFL	4050300**428833**	35	12	36	1100	51	45	3000	GU5.3	1	20
41871WFL	4050300**428857**	50	12	36	1800	51	45	3000	GU5.3	1	20

Product reference	Product number	W	V	∠	cd	d max. [mm]	l max. [mm]	t [h]		No.	
DECOSTAR® 51 COOL BLUE® reflector lamp, ∅ 51 mm											
46871WFL	4050300**816661**	50	12	36	1200	51	45	4000	GU5.3	2	20

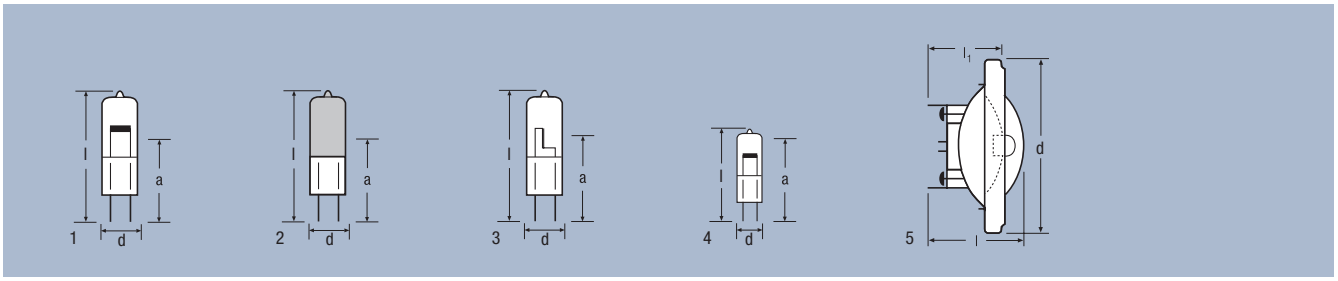
Product reference	Product number	W	V	lm	a	d max. [mm]	l max. [mm]	t [h]		No.	
ENERGY SAVER											
HALOSTAR® ES low-voltage halogen pin-base lamp, ∅ 12 mm											
NEW 64427ES[1,2]	4008321**932655**	14	12	320	22	10	33	4000	G4	3	40
64429ES	4050300**987262**	25	12	500	30	12	44	4000	GY6.35	4	40
64432ES	4050300**615905**	35	12	900	30	12	44	4000	GY6.35	4	40
64440ES	4050300**615936**	50	12	1250	30	12	44	4000	GY6.35	4	40
64447ES	4050300**785400**	65	12	1700	30	12	44	4000	GY6.35	4	40

[1] Available 08/2008.
[2] Technical data are subject to change.

Product reference	Product number	W	V	lm	a	d max. [mm]	l max. [mm]	t [h]		No.	
HALOSTAR STARLITE® low-voltage halogen pin-base lamp, ∅ 9.5 and 12 mm											
64405S[3]	4050300**335032**	5	12	60	22	9.5	33	4000	G4	5	40
64410S	4050300**335131**	10	6	110	22	9.5	33	4000	G4	5	40
64415S	4050300**335087**	10	12	130	22	9.5	33	4000	G4	5	40
64425S	4050300**335162**	20	12	320	22	9.5	33	4000	G4	5	40
64427S	4050300**328171**	20	12	320	30	12	44	4000	GY6.35	5	40
64432S	4050300**017426**	35	12	600	30	12	44	4000	GY6.35	5	40
64440S	4050300**328201**	50	12	910	30	12	44	4000	GY6.35	5	40
64450S	4050300**490151**	75	12	1450	30	12	44	4000	GY6.35	5	40
64458S	4050300**490182**	90	12	1800	30	12	44	4000	GY6.35	5	40

[3] With transversal filament.

TECHNICAL DATA



Product reference	Product number	W	V	lm	a	d max. [mm]	l max. [mm]	t [h]		No.	
HALOSTAR® STANDARD low-voltage pin-base lamp, ∅ 9.5 and 12 mm											
klar											
64415	4050300**010717**	10	12	140	22	9.5	33	2000	G4	1	40
64425	4050300**003924**	20	12	320	22	9.5	33	2000	G4	1	40
64432	4050300**364629**	35	12	600	30	12	44	2000	GY6.35	1	40
64440	4050300**324432**	50	12	910	30	12	44	2000	GY6.35	1	40
mattiert											
64415F	4050300**269047**	10	12	130	22	9.5	33	2000	G4	2	40
64425F	4050300**324388**	20	12	300	22	9.5	33	2000	G4	2	40
64432F	4050300**277332**	35	12	570	30	12	44	2000	GY6.35	2	40
64440F	4050300**325170**	50	12	830	30	12	44	2000	GY6.35	2	40

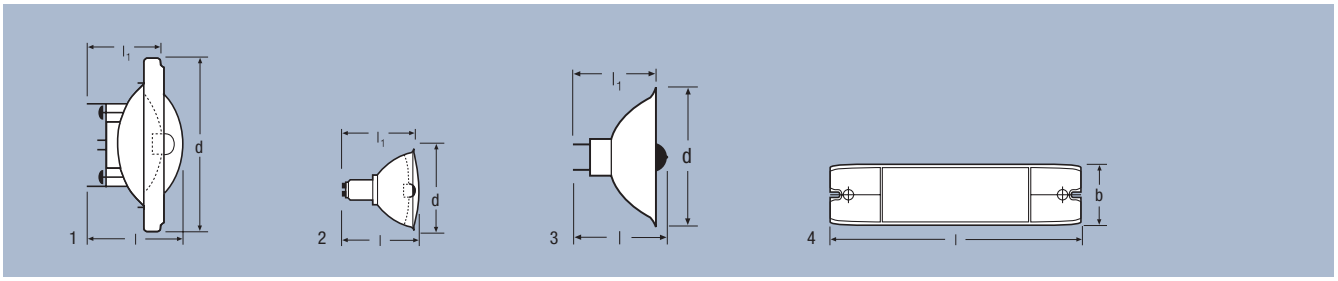
Product reference	Product number	W	V	lm	a	d max. [mm]	l max. [mm]	t [h]		No.	
HALOSTAR® 24 V series											
64435[1]	4050300**335513**	20	24	320	22	9.5	33	1000	G4	3	40
64445[1]	4050300**335544**	50	24	900	30	12	44	2000	GY6.35	3	40
64460[1]	4050300**335667**	100	24	2200	30	12	44	2000	GY6.35	3	40
64465[1]	4050300**335698**	150	24	3200	32	16	50	2000	GY6.35	3	40
HALOSTAR® low-voltage tungsten-halogen lamp for oven lighting											
64408[2]	4050300**308029**	5	12	60	21.5	9.5	31	2000[3]	G4	4	40
64418	4050300**308081**	10	12	140	21.5	9.5	31	2000[3]	G4	4	40
64428	4050300**308050**	20	12	320	21.5	12	31	2000[3]	G4	4	40

[1] For HALOSTAR® 24 V a miniature fuse is needed (on the secondary side if a transformer is used): 2 A quick-acting for 64435 U, 4 A quick-acting for 64445 U, 6.3 A quick-acting for 64460 U and 10 A quick-acting for 64465 U.
[2] Discontinued.
[3] At room temperature. At high ambient temperatures the life of the lamp is likely to be shortened.

Product reference	Product number	W	V		cd	d max. [mm]	l max. [mm]	l1 max. [mm]	t [h]		No.	
ENERGY SAVER												
HALOSPOT® 111 ENERGY SAVER, high-tech reflector, ∅ 111 mm, Advanced Technology												
48832ESSP	4050300**656823**	35	12	8	22500	111	67	51	4000	G53[4]	5	6
48832ESFL	4050300**656847**	35	12	24	4500	111	67	51	4000	G53[4]	5	6
48835ESSP	4050300**656861**	50	12	8	33000	111	67	51	4000	G53[4]	5	6
48835ESFL	4050300**656885**	50	12	24	5800	111	67	51	4000	G53[4]	5	6
48835ESWFL	4008321**909237**	50	12	45	2000	111	67	51	4000	G53[4]	5	6
48837ESSP	4050300**786070**	65	12	8	45000	111	67	51	4000	G53[4]	5	6
48837ESFL	4050300**786094**	65	12	24	8500	111	67	51	4000	G53[4]	5	6
48837ESWFL	4008321**909251**	65	12	45	2800	111	67	51	4000	G53[4]	5	6

[4] If connection elements are used, additional support is needed on the edge of the reflector.

TECHNICAL DATA



Product reference	Product number	W	V	∠°	cd	d max. [mm]	l max. [mm]	l1 max. [mm]	t [h]		No.	
HALOSPOT® 111 ENERGY SAVER, aluminum reflector, ∅ 111 mm												
41830SSP	4050300**011141**	35	6	4	30000	111	67	51	3000	G53[1]	1	6
41832SSP	4050300**335728**	35	12	4	35000	111	67	51	3000	G53[1]	1	6
41832FL	4050300**335766**	35	12	24	2500	111	67	51	3000	G53[1]	1	6
41835SSP	4050300**011165**	50	12	4	40000	111	67	51	3000	G53[1]	1	6
41835SP	4050300**011752**	50	12	8	20000	111	67	51	3000	G53[1]	1	6
41835FL	4050300**011769**	50	12	24	4000	111	67	51	3000	G53[1]	1	6
41835WFL	4008321**909213**	50	12	45	1400	111	67	51	3000	G53[1]	1	6
41840SP	4050300**011776**	75	12	8	30000	111	67	51	3000	G53[1]	1	6
41840FL	4050300**011783**	75	12	24	5300	111	67	51	3000	G53[1]	1	6
41840WFL	4050300**011790**	75	12	45	2000	111	67	51	3000	G53[1]	1	6
41850SP	4050300**358604**	100	12	8	48000	111	67	51	3000	G53[1]	1	6
41850FL	4050300**358628**	100	12	24	8500	111	67	51	3000	G53[1]	1	6
41850WFL	4050300**358642**	100	12	45	2800	111	67	51	3000	G53[1]	1	6

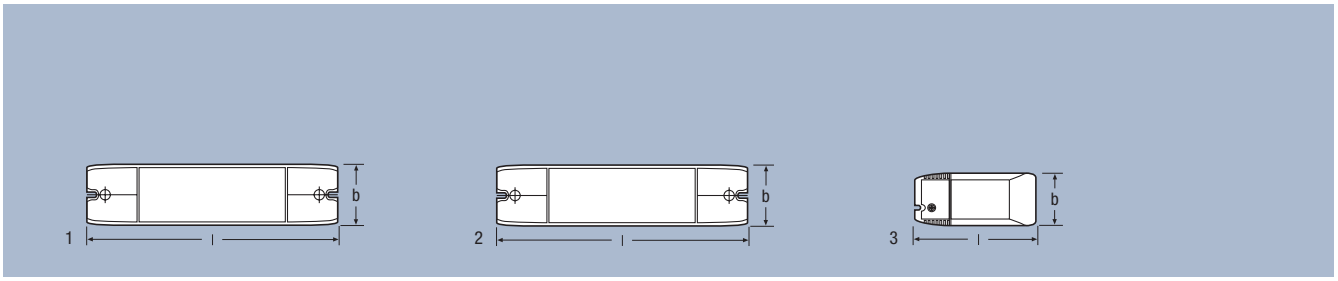
[1] If connection elements are used, additional support is needed on the edge of the reflector.

Product reference	Product number	W	V	∠°	cd	d max. [mm]	l max. [mm]	l1 max. [mm]	t [h]		No.	
HALOSPOT® 48, aluminum reflector, ∅ 48 mm												
41900SP	4050300**003962**	20	12	8	3100	48	36	31	2000	GY4	2	10
HALOSPOT® 48, aluminum reflector, ∅ 48 mm[2]												
41930SP[3]	4050300**003979**	20	24	8	2600	48	36	31	1000	GY4	2	10
HALOSPOT® 70, aluminum reflector, ∅ 70 mm												
41970SP	4050300**010656**	20	12	8	7700	70	50	47	3000	BA15d	3	10
41970FL	4050300**011110**	20	12	24	900	70	50	47	3000	BA15d	3	10
41990SP	4050300**011158**	50	12	8	12500	70	50	47	3000	BA15d	3	10
41990FL	4050300**004020**	50	12	24	2600	70	50	47	3000	BA15d	3	10

[2] The high-pressure 24 V version requires a shield.
[3] Fine fuse 2 A quick-acting needed – on secondary side for transformer operation.

Product reference	Product number	V	Hz	kHz EVG	A	λ	W LAMP max.	W LOSS	W min.–max.	No.
HALOTRONIC® Comfort family, oblong with casing										
HT 70/230/12L	4050300**297453**	230 + 6 % –10 %	0/50	45	0.29	0.95	70	3	20 – 70	4
HT 105/230/12L	4050300**299662**	230 + 6 % –10 %	0/50	32	0.46	0.95	105	6	20 – 105	4
HT 150/230/12L	4050300**332123**	230 + 6 % –10 %	0/50	35	0.65	0.95	150	7	50 – 150	4
HT 210/230/12L	4050300**462257**	230 + 6 % –10 %	0/50	35	0.90	0.95	210	9	50 – 210	4

TECHNICAL DATA



Product reference	Product number	V_{OUT}	°C min.–max.	W	
HALOTRONIC® Comfort family, oblong with casing					
HT 70/230/12L	4050300**297453**	11.6 (70 W)/ 12.0 (20 W)	–20 to +60	trailing-edge phase dimmer	
HT 105/230/12L	4050300**299662**	11.6 (105 W)/ 12.0 (20 W)	–20 to +50	trailing-edge phase dimmer	
HT 150/230/12L	4050300**332123**	11.6 (150 W)/ 12.0 (50 W)	–20 to +55	trailing-edge phase dimmer	
HT 210/230/12L	4050300**462257**	11.6 (210 W)/ 11.8 (50 W)	–20 to +50	trailing-edge phase dimmer	

Product reference	Product number	l [mm]	b [mm]	h [mm]	No.	g
HT 70/230/12L	4050300**297453**	175	42	34	1	170
HT 105/230/12L	4050300**299662**	175	42	34	1	200
HT 150/230/12L	4050300**332123**	220	47	44	1	270
HT 210/230/12L	4050300**462257**	220	47	44	1	300

Product reference	Product number		V	Hz	kHz EVG	A	λ	W LAMP max.	W LOSS
HALOTRONIC® Comfort family, flat									
HT 120/230-240/12LF	4050300**461342**	flat, with casing	230 – 10 %/240 + 6 %	50	approx.50	0.48	0.95	120	max. 6

Product reference	Product number	W min.–max.	V_{OUT}	°C min.–max.	W	
HT 120/230-240/12LF	4050300**461342**	35 – 120	11.3 (120 W)/11.5 (35 W)	–20 to +45	trailing-edge phase dimmer	

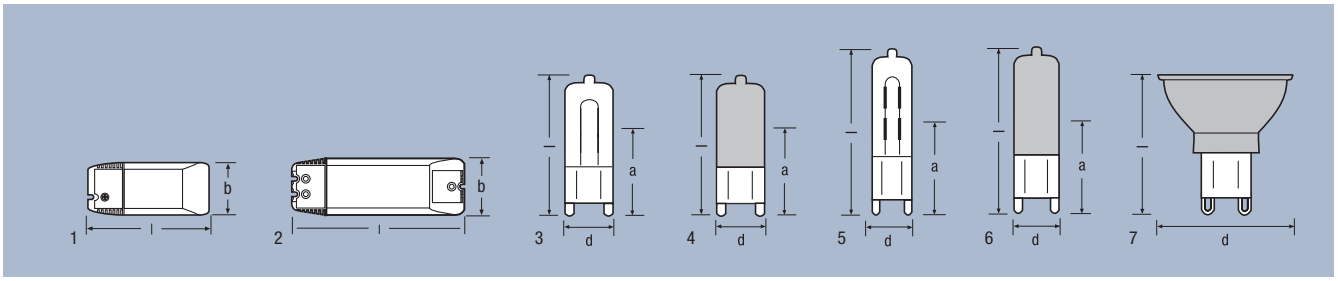
Product reference	Product number	l [mm]	b [mm]	h [mm]	No.	g
HT 120/230-240/12LF	4050300**461342**	172	42	20	2	170

Product reference	Product number		V	Hz	kHz EVG	A	λ	W LAMP max.	W LOSS
HALOTRONIC® NANO									
HTN 75/230-240 I	4008321**073037**	very little	230 – 10 %/240 + 6 %	50/60	approx.50	0.32	0.95	75	max. 4
HTN 75/230-240 S	4008321**909329**	very little	230 – 10 %/240 + 6 %	50/60	approx.50	0.32	0.95	75	max. 4

Product reference	Product number	W min.–max.	V_{OUT}	°C min.–max.	W
HTN 75/230-240 I	4008321**073037**	20 – 75	11.5 (75 W)/11.7 (20 W)	0 to +50	trailing-edge phase dimmer
HTN 75/230-240 S	4008321**909329**	20 – 75	11.5 (75 W)/11.7 (20 W)	0 to +50	trailing-edge phase dimmer

Product reference	Product number		l [mm]	b [mm]	h [mm]	No.	g
HTN 75/230-240 I	4008321**073037**		104	33	22	3	70
HTN 75/230-240 S	4008321**909329**		94	33	22	3	65

TECHNICAL DATA



Product reference	Product number		V	Hz	kHz EVG	A	λ	W LAMP max.	W LOSS
HALOTRONIC MOUSE® family									
HTM 70/230-240[1]	4050300**442310**	compact	230 – 10 %/240 + 6 %	50/60	approx.48	0.27	0.95	70	max. 4
HTM 105/230-240[1]	4050300**442334**	compact	230 – 10 %/240 + 6 %	50/60	approx.40	0.42	0.95	105	max. 6
HTM 150/230-240[2]	4050300**581415**	compact	230 – 10 %/240 + 6 %	50/60	approx.35	0.57	0.95	150	max. 7

		W min.–max.	V_{OUT}	°C min.–max.	W					
HTM 70/230-240[1]	4050300**442310**	20 – 70	11.2 (70 W)/11.2 (20 W)	0 to +50	trailing-edge phase dimmer or leading-edge phase dimmer[3]					
HTM 105/230-240[1]	4050300**442334**	35 – 105	11.3 (105 W)/11.4 (35 W)	0 to +45	trailing-edge phase dimmer or leading-edge phase dimmer[3]					
HTM 150/230-240[2]	4050300**581415**	50 – 150	11.4 (150 W)/11.5 (50 W)	0 to +45	trailing-edge phase dimmer or leading-edge phase dimmer[3]					

			l [mm]	b [mm]	h [mm]	g	No.
HTM 70/230-240[1]	4050300**442310**		108	52	33	110	1
HTM 105/230-240[1]	4050300**442334**		108	52	33	120	2
HTM 150/230-240[2]	4050300**581415**		153	54	36	200	2

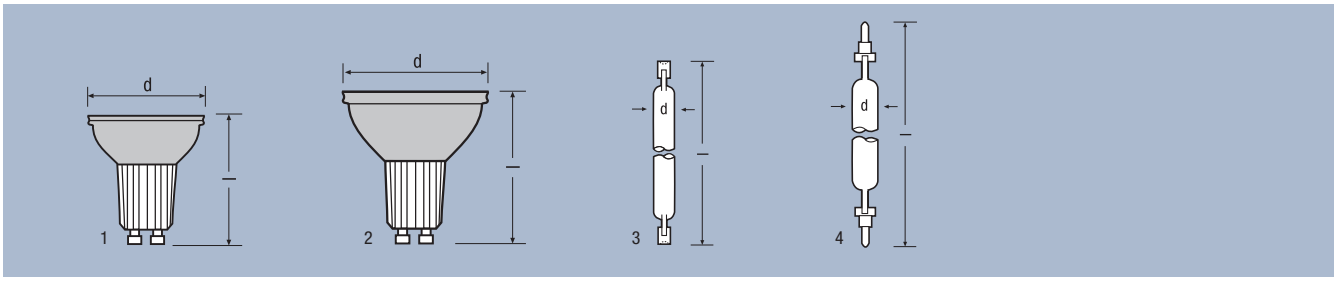
[1] Installation comfort for HTM 70 and 105.
[2] Simple installation of HTM 150: two terminal pairs on primary side for looping from unit to unit, three terminal pairs on the secondary side for connecting up to six luminaires.
[3] For inductive charges.

Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
ENERGY SAVER											
HALOPIN® ENERGY SAVER											
66733	4008321**208668**	33	460	22	14	43	2000	G9	20	3	D

Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
HALOPIN® halogen lamps for mains voltage, G9 base, ∅ 43 and 51 mm											
clear											
66725	4050300**791777**	25	260	22	14	43	2000	G9	20	3	D
66740	4050300**791791**	40	490	22	14	43	2000	G9	20	3	D
66660	4050300**198286**	60	820	26.5	14	51	2000	G9	20	5	D
66675	4050300**198323**	75	1100	26.5	14	51	2000	G9	20	5	D
frosted											
66725 AM	4050300**791920**	25	230	22	14	43	2000	G9	20	4	E
66740 AM	4050300**791753**	40	460	22	14	43	2000	G9	20	4	E
66660 AM	4050300**198309**	60	790	26.5	14	51	2000	G9	20	6	D
66675 AM	4050300**198347**	75	1050	26.5	14	51	2000	G9	20	6	D

Product reference	Product number	W		cd	d max. [mm]	l max. [mm]	t [h]			No.
DECOPIN® halogen reflector light for mains voltage G9 base, ∅ 43 mm										
60040 FL	4008321**907189**	40	40	550	41.5	43	2000	G9	20	7

TECHNICAL DATA



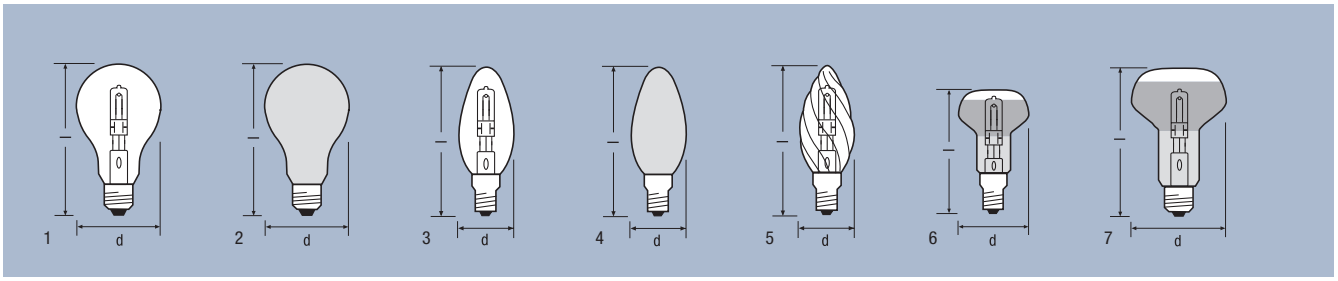
Product reference	Product number	W		cd	d max. [mm]	l max. [mm]	t [h]		No.	
ENERGY SAVER	**OSRAM HALOPAR® 16 ENERGY SAVER**									
NEW 64819 ES FL	4008321**927767**	28	30	550	50.7	55	2000	GU10	1	20
64823 ES FL	4008321**208767**	40	30	900	50.7	55	2000	GU10	1	20

Product reference	Product number	W		cd	d max. [mm]	l max. [mm]	t [h]		No.	
OSRAM HALOPAR® 16 aluminum reflector lamp for mains voltage, GU10 base, ∅ 50.7 mm										
64824 FL	4050300**580111**	50	35	950	50.7	55	2000	GU10	1	20
64820 FL	4050300**727165**	35	35	600	50.7	55	2000	GU10	1	20
OSRAM HALOPAR® 16 dichroic reflector lamp for mains voltage, GZ10 base, ∅ 50.5 mm										
64826 FL	4050300**501857**	50	35	900	50.7	55	2000	GZ10	1	20
OSRAM HALOPAR® 20 aluminium reflector lamp for mains voltage, GU10 base, ∅ 64 mm										
64830 FL/SP	4050300**856971**	75	30	1900	64	61	2000	GU10	2	20

Product reference	Product number	W	lm	l [mm]	d [mm]	A	t [h]			No.	
ENERGY SAVER	**HALOLINE® ENERGY SAVER**										
64690 ES	4008321**927743**	80	1500	74.9	12	2	2000	R7s	20	3	C
NEW 64695 ES	4008321**927729**	120	2450	74.9	12	2	2000	R7s	20	3	C
NEW 64701 ES	4008321**207692**	230	5060	114.2	12	2	2000	R7s	20	3	C
64702 ES	4008321**207715**	400	9200	114.2	12	2	2000	R7s	20	3	C

Product reference	Product number	W	lm	l [mm]	d [mm]	A	t [h]			No.	
HALOLINE® halogen lamps for mains voltage – double-ended, ∅ 12 mm											
Universal burning position											
64688	4050300**944425**	60	840	74.9	12	2	2000	R7s	20	3	D
64690	4050300**944340**	100	1600	74.9	12	2	2000	R7s	20	3	D
64695	4050300**944364**	150	2500	74.9	12	2	2000	R7s	20	3	D
64696	4050300**274744**	150	2400	114.2	12	2	2000	R7s	20	3	D
64698	4050300**004136**	200	3500	114.2	12	2	2000	R7s	20	3	D
64701	4050300**004143**	300	5300	114.2	12	2	2000	R7s	20	3	D
64702	4050300**004150**	500	9500	114.2	12	4	2000	R7s	20	3	–
Burning position horizontal p 15											
64560	4050300**004167**	750	16500	185.7	12	6.3	2000	R7s	12	3	–
64740	4050300**004174**	1000	22000	185.7	12	6.3	2000	R7s	12	3	–
64760	4050300**004181**	1500	33000	250.7	12	10	2000	R7s	12	3	–
64783	4050300**004198**	2000	44000	max. 334.4	12	10	2000	Fa4	12	4	–
64784	4050300**004204**	2000	44000	327.4	12	10	2000	R7s	12	3	–

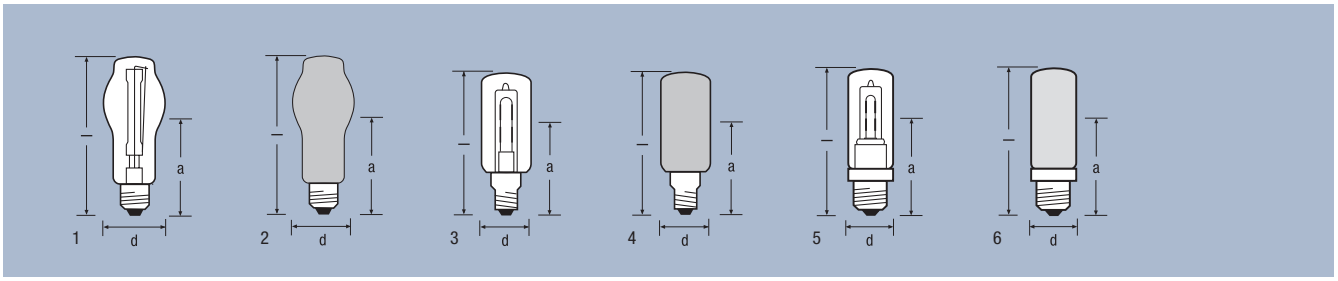
TECHNICAL DATA



	Product reference	Product number	W	lm	a	d [mm]	l max. [mm]	t [h]			No.	
ENERGY SAVER	**HALOGEN ENERGY SAVER CLASSIC A, E27 base, ∅ 55 mm**											
	clear											
NEW	64541 ES A	4008321**927163**	18	200	72	55	97	2000	E27	20	1	D
	64542 ES A	4008321**211828**	28	345	72	55	97	2000	E27	20	1	D
	64543 ES A	4008321**212078**	42	630	72	55	97	2000	E27	20	1	D
NEW	64544 ES A	4008321**927187**	52	840	72	55	97	2000	E27	20	1	C
NEW	64547 ES A	4008321**927200**	70	1240	72	55	97	2000	E27	20	1	C
NEW	64548 ES A	4008321**928153**	105	1900	72	55	97	2000	E27	20	1	C
	frosted, inside											
NEW	64541 FR ES A	4008321**927224**	18	200	72	55	97	2000	E27	20	2	D
	64542 FR ES A	4008321**917287**	28	345	72	55	97	2000	E27	20	2	D
	64543 FR ES A	4008321**917300**	42	630	72	55	97	2000	E27	20	2	D
NEW	64544 FR ES A	4008321**927248**	52	840	72	55	97	2000	E27	20	2	C
NEW	64547 FR ES A	4008321**927262**	70	1240	72	55	97	2000	E27	20	2	C
NEW	64548 FR ES A	4008321**928177**	105	1900	72	55	97	2000	E27	20	2	C
ENERGY SAVER	**HALOGEN ENERGY SAVER CLASSIC B, E14 base, ∅ 35 mm**											
	clear											
NEW	64541 ES B	4008321**927286**	18	200	64	35	104	2000	E14	20	3	D
	64542 ES B	4008321**212153**	28	345	64	35	104	2000	E14	20	3	D
NEW	64543 ES B	4008321**927309**	42	630	64	35	104	2000	E14	20	3	C
	frosted, inside											
NEW	64541 FR ES B	4008321**927330**	18	200	64	35	104	2000	E14	20	4	D
	64542 FR ES B	4008321**917324**	28	345	64	35	104	2000	E14	20	4	D
NEW	64543 FR ES B	4008321**927354**	42	630	64	35	104	2000	E14	20	4	C
ENERGY SAVER	**HALOGEN ENERGY SAVER CLASSIC BW, E27 base, ∅ 34 mm**											
NEW	64542 ES BW	4008321**928191**	28	304	64	34	104	2000	E27	20	5	D

	Product reference	Product number	W	°	cd	d max. [mm]	l max. [mm]	t [h]			No.	
ENERGY SAVER	**HALOGEN ENERGY SAVER SPOT R50, E14 base, ∅ 50 mm**											
	64545 ES R50	4008321**212115**	28	30	430	51	86.5	2000	E14	20	6	–
ENERGY SAVER	**HALOGEN ENERGY SAVER SPOT R63, E27 base, ∅ 63 mm**											
	64546 ES R63	4008321**212139**	42	30	960	64	105	2000	E27	20	7	–

TECHNICAL DATA



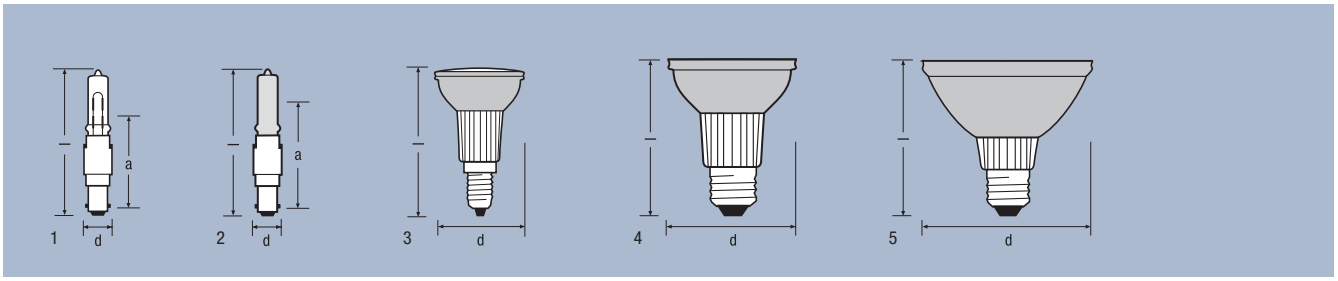
Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
HALOLUX® BT halogen lamps for mains voltage, E27 base, ∅ 48 mm											
clear											
64470 BT[1]	4050300**588957**	40	490	75	48	117	2000	E27	10	1	D
64472 BT	4050300**100753**	60	840	75	48	117	2000	E27	10	1	D
64476 BT	4050300**100838**	100	1600	75	48	117	2000	E27	10	1	D
64478 BT	4050300**100913**	150	2550	75	48	117	2000	E27	10	1	D
Tabular/frosted											
64470 BT SIL[1]	4050300**598154**	40	460	75	48	117	2000	E27	10	2	E
64472 BT SIL	4050300**348711**	60	780	75	48	117	2000	E27	10	2	E
64476 BT SIL	4050300**348797**	100	1450	75	48	117	2000	E27	10	2	E
64478 BT SIL	4050300**348872**	150	2100	75	48	117	2000	E27	10	2	E

[1] Available only in blister packs.

Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
HALOLUX® T, halogen lamps for mains voltage, E14 base, ∅ 26 mm											
Tubular/clear											
64860 T	4050300**500942**	25	260	55	26	80	1500	E14	15	3	D
64861 T	4050300**363707**	40	490	55	26	80	1500	E14	15	3	D
64862 T	4050300**331638**	60	820	55	26	80	2000	E14	15	3	D
Tubular/frosted											
64861 T IM	4050300**394015**	40	460	55	26	80	1500	E14	15	4	E
64862 T IM	4050300**386362**	60	790	55	26	80	2000	E14	15	4	D

Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
HALOLUX CERAM® halogen lamps for mains voltage, E27 base, ∅ 32 mm											
clear											
64472	4008321**035318**	60	820	75	32	105	2000	E27	12	5	D
64474	4008321**035530**	75	1100	75	32	105	2000	E27	12	5	D
64476	4008321**035837**	100	1500	75	32	105	2000	E27	12	5	D
64478	4008321**035974**	150	2500	75	32	105	2000	E27	12	5	D
64480	4008321**036155**	230	4350	75	32	105	2000	E27	12	5	D
frosted, inside											
64472 IM	4008321**035431**	60	790	75	32	105	2000	E27	12	6	D
64474 IM	4008321**035554**	75	1050	75	32	105	2000	E27	12	6	D
64476 IM	4008321**035714**	100	1470	75	32	105	2000	E27	12	6	D
64478 IM	4008321**035998**	150	2400	75	32	105	2000	E27	12	6	D
64480 IM	4008321**036179**	230	4210	75	32	105	2000	E27	12	6	D

TECHNICAL DATA



Product reference	Product number	W	lm	a	d max. [mm]	l max. [mm]	t [h]			No.	
HALOLUX CERAM® halogen lamps for mains voltage, B15d base, ∅ 15 mm											
clear											
64466	4008321**035233**	25	260	39	18	67	1500	B15d	12	1	D
64467	4008321**035271**	40	490	39	18	67	1500	B15d	12	1	D
64481	4008321**035493**	60	820	39	18	67	2000	B15d	12	1	D
64469	4008321**035455**	60	820	55	18	86	2000	B15d	12	1	D
64473	4008321**035578**	75	1100	55	18	86	2000	B15d	12	1	D
64475	4008321**035851**	100	1500	55	18	86	2000	B15d	12	1	D
64471	4008321**036056**	150	2500	55	18	86	2000	B15d	12	1	D
64477	4008321**036018**	150	2500	67	18	98	2000	B15d	12	1	D
64479	4008321**036193**	230	4350	67	18	98	2000	B15d	12	1	D
frosted, outside											
64466 AM	4008321**035257**	25	230	39	18	67	1500	B15d	12	2	E
64467 AM	4008321**035295**	40	460	39	18	67	1500	B15d	12	2	E
64481 AM	4008321**035516**	60	790	39	18	67	2000	B15d	12	2	D
64469 AM	4008321**035479**	60	790	55	18	86	2000	B15d	12	2	D
64473 AM	4008321**035592**	75	1050	55	18	86	2000	B15d	12	2	D
64475 AM	4008321**035875**	100	1470	55	18	86	2000	B15d	12	2	D
64471 AM	4008321**036070**	150	2400	55	18	86	2000	B15d	12	2	D
64477 AM	4008321**036032**	150	2400	67	18	98	2000	B15d	12	2	D
64479 AM	4008321**036216**	230	4210	67	18	98	2000	B15d	12	2	D

Product reference	Product number	W		cd	d max. [mm]	l max. [mm]	t [h]		No.	
OSRAM HALOPAR® halogen reflector light for mains voltage										
OSRAM HALOPAR® 16 aluminum reflector, E14 base, ∅ 50.7 mm										
64822 FL	4050300**938479**	40	35	650	50.7	75	2000	E14	3	20
OSRAM HALOPAR® 20 aluminum reflector, E27 base, ∅ 64.5 mm										
64832 SP	4050300**406800**	50	10	3000	64.5	91	2000	E27	4	15
64832 FL	4050300**406824**	50	30	1000	64.5	91	2000	E27	4	15
OSRAM HALOPAR® 20 dichroic reflector, E27 base, ∅ 64.5 mm										
64836 SP	4050300**406848**	50	10	3200	64.5	91	2000	E27	4	15
64836 FL	4050300**406862**	50	30	1100	64.5	91	2000	E27	4	15
OSRAM HALOPAR® 30 aluminum reflector, E27 base, ∅ 97 mm										
64841 SP	4050300**338460**	75	10	6900	97	91	2000	E27	5	15
64841 FL	4050300**338484**	75	30	2200	97	91	2000	E27	5	15
OSRAM HALOPAR® 30 dichroic reflector, E27 base, ∅ 97 mm										
64845 SP	4050300**338521**	75	10	7500	97	91	2000	E27	5	15
64845 FL	4050300**338507**	75	30	2400	97	91	2000	E27	5	15

The Symbols in the tables.

Halogen lamps.

Rated wattage in W

Voltage in V

Luminous flux in lumen

Luminous intensity cd


Base

Fuse quick-acting

Max. length l in mm

Max. length l_1 in mm


Energy efficiency

Diameter d in mm

Max. diameter d in mm


Beam angle in degrees

Average period of use/life

Light centre length in mm


Standard pack/pcs.

Picture number

Electronic control gear.


Shape/model

Voltage in V

Mains frequency Hz

Operating frequency kHz

Mains current at 230 V/240 V in lamps

Power factor

Max. lamp wattage in W

Power loss

Part load range

Secondary voltage

Temperature range

Dimming range


Approval marks

Length l in mm

Width b in mm

Height h in mm

Weight

101W002GB OSRAM CSM CC 03/08 PD Subject to modification without notice. Errors and omissions excepted. Printed on paper treated with chlorine-free bleach.

OSRAM GmbH

Head Office
Hellabrunner Strasse 1
81543 Munich
Germany
Fon +49 (0)89-6213-0
Fax +49 (0)89-6213-20 20
www.osram.com
catalog.myosram.com/DE
catalog.myosram.com/EN