BETALIGHT
Information and product index

BETALIGHT
when reliability really counts

BETALIGHT

The history of Betalux™ Safety

In the 1940's, the English aerospace company Saunders-Roe manufactured flying boats and helicopters; later, it also produced jet aeroplanes. The company was located on the Isle of Wight. At the time, it was difficult - if not impossible - to supply uninterrupted power to aircraft instrumentation. This problem was solved by Saunders-Roe by putting an ionising gas (tritium; 3H) in small tubes. Tritium was discovered in 1934 by Lord Rutherford.

When Saunders-Roe was acquired by Westland Helicopters (now part of AgustaWestland, producer of the well-known WAH-64 Apache helicopter), the Betalight production was made independent under the name SRBT (Saunders-Roe Betalight Technology).

Today Betalights are used in self-luminous escape-route signs, under the product name Betalux™, initially in Britain and America, eventually expanding into global markets. Betalights are also used to illuminate corridors and escape lights of a wide range of commercial and military aircrafts.

In the form of a torch, Betalights were part of the personal belongings of all Apollo astronauts. NASA judged the quality of these torches to be so high that no spares were supplied. In December 2002, the Netherlands saw the implementation of Euratom 96/29, the regulation justifying the use of ionising radiation, of the Netherlands Ministry of VROM (Public Housing, Regional Planning and the Environment). This regulation allows the use of tritium gas (3H) for escape-route signs in buildings, aeroplanes and ships.

The Dutch ministry of economics decided on 1/1 - 2005 to give a tax deduction when purchasing Betalux™ escape signs in their energy savings program. Since then, Betalight B.V. has taken over marketing of the Betalux™ brand in Europe.

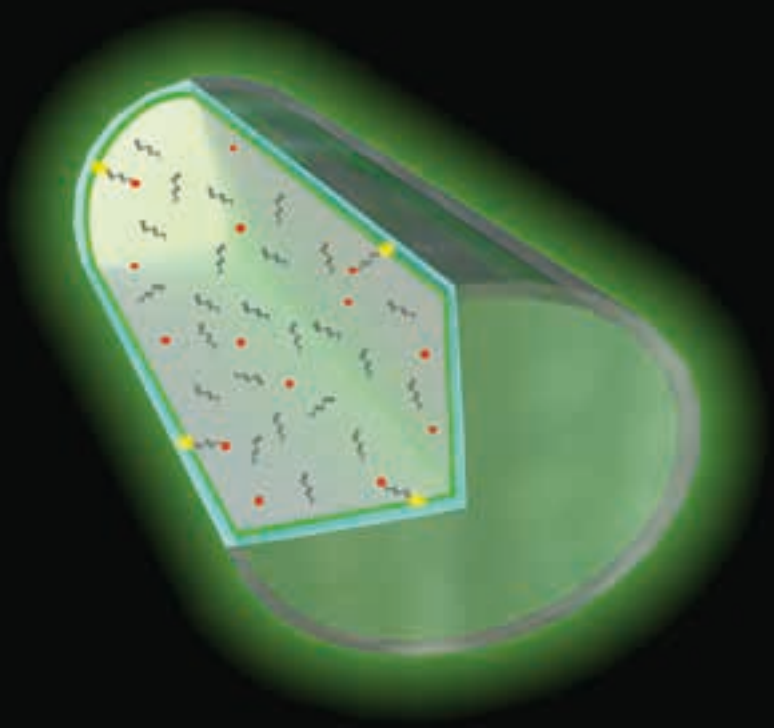
The Betalux™ exit signs produce enough light to be recognisable at a distance of 40 metres for 15 years. This form of escape-route signage is applied especially where uninterrupted power supplies are problematic, for instance in monuments, churches and castles (where you do not want to or cannot drill holes in the walls) and in explosion-sensitive spaces in refineries and such like.

Betalight b.v. defence division is active in the supply of Betalight lights for military purposes, for example, spot markers for minefields (showing safe lanes in the dark), illuminated rifle scopes, illuminated magnifying glasses (so that maps can be read in the dark), etc.

WHAT IS TRITIUM?

Tritium gas (chemical symbol 3H) is an isotope of hydrogen gas, and is colourless, odourless, and lighter than air. Most physical characteristics are the same as hydrogen, but the atoms in tritium are slightly different, causing them to emit low energy in the form of ionising radiation, or electrons. Tritium is considered "user friendly" because it has the lowest energy rating of any radioisotope. The energy of tritium electrons is much less than those generated in electrical lamps, which is why you cannot see tritium tubes glow except in dim light or darkness.

Betalux™ signs are lit by means of tubes of borosilicate glass filled with tritium gas. On the inside the tubes are coated with a fluorescent powder, which continuously emits light due to the ionising radiation of the tritium gas, for up to 131,000 hours. The entire tube is comparable to a fluorescent lamp, for which the current going through the lamp is replaced by tritium gas, therefore, no electrical connection is needed. This form of escape route marking has already been applied in aeroplanes, where reliability comes first, for over 50 years.



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Exit Signs

Betalux b.v. presents an innovative choice for exit signage: self-luminous signs and markers. The most energy efficient emergency exit signs currently on the market, these versatile, rugged and durable products are redefining the emergency signage sector.

IT'S EASY BEING "GREEN"

Betalight's self-luminous line of products is powered by a tritium light source that remains continuously illuminated. Betalight takes the waste product from the production of electricity used in homes and communities and turns it into an important life safety device.

Maintenance-free and 100% self-luminous, this line contains products with a useful lifespan up to 15 years. At the end of its life, the materials contained within these products can be recycled. Betalight self-luminous products meet all applicable fire and building codes, and are available in a variety of finishes that complement any location. Ideally suited for applications where a reliable emergency exit sign is required, the durable construction of Betalight's self-luminous products ensures constant, dependable operation for years to come.

HOW TO DETERMINE THE LIFE OF TRITIUM SIGNS

Tritium gas, like other radioisotopes, decays at a known rate. This rate is usually specified by the "half-life," which is the time taken to decay to half the initial energy. For tritium, this is 12.3 years. In addition, the minimum brightness required to meet national and local codes for exit signs is well known. With these two figures, the exact amount of tritium required to produce light above the minimum brightness specification can be calculated. Betalight B.V. offers signs with up to 20 years of guaranteed useful life before replacement is needed.

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Betalux™ Sign Features

DO NOT NEED AN ELECTRICAL OUTLET
Easy to install without the need for expensive cabling, the unit eliminates the need for damage to existing infrastructure. Ideal for monuments and heritage sites, continuous light is provided for up to 15 years.

DO NOT USE ELECTRICAL ENERGY
Used in the aerospace industry for decades, there is no more energy efficient technology. The bottom line is a considerable reduction of electricity bills.

ARE MAINTENANCE FREE
No regular replacement of lamps and batteries.
No possibility of defective electronics. No complicated self-test systems.

ARE EXPLOSION SAFE
No electrical components, no ignition circuits. Ideal for applying in explosive environments, such as drilling platforms, refineries and petrol stations.

ARE WATERPROOF
Due to the lack of electrical components Betalux™ signs can be applied in humid areas such as tunnels, along motorways - even under water if necessary!

ARE TEMPERATURE RESISTANT
The function is not affected by temperature variations. The temperature range is between -60 °C and +80 °C, therefore very suitable for application in e.g. refrigeration cells.

ARE VIBRATION RESISTANT
For this reason very suitable for application in ships, engine rooms, and aeroplanes.

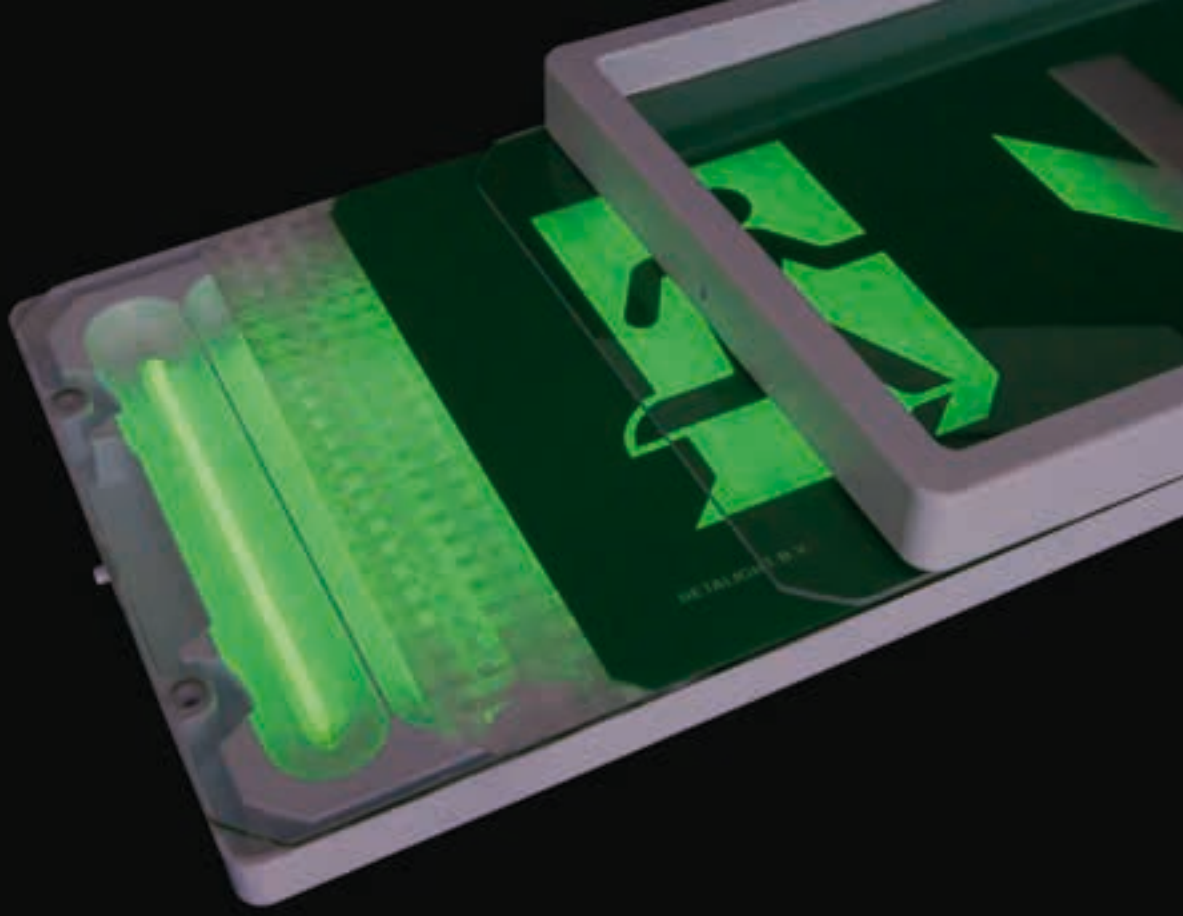
ARE EMC-INSENSITIVE
Causes no EMC interference (think of pacemakers and hearing aids). Not sensitive to EMC interferences from outside. Highly suitable for hospitals and aeroplanes.

ARE MULTIFUNCTIONAL
Betalux™ signs can be delivered with various legends and in different colours and sizes, also according to the client's wishes.

ARE TOUGH AND IMPACT-RESISTANT
Betalux™ signs are encased in tough, lightweight, corrosion and fire resistant ABS and sealed ultrasonically.

CERTIFICATES AND APPROVALS
Betalux™ signs are manufactured under ISO 9001 and comply with many regulations including:
NEN 6088; NEN-EN 7010; NEN-EN 1838; BS-5499 part 2; ANS N540; NFPA Life Safety Code 101 and Directive 92/58 EEG, are UL-listed and permitted by US-NRC and the Ministry of VROM reg. SAS/2001144917 nr. I.A.9.

Betalux™ signs are approved or tested by Underwriters Laboratories inc. (UL), Lloyds, Det Norske Veritas, TNO, Canadian & US Coast Guard and British Standard. Reports available on request.



BETALIGHT

Betalux™ Self-Luminous Exit Signs

KEY FEATURES

- Completely independent
- Maintenance free
- No external power, no additional light source, no batteries required
- Operate in temperatures from -60 °C to +80 °C
- Absolutely reliable light for up to 15 years
- Operation completely unaffected by immersion in water
- No heat is generated
- All products are suitable for use in hazardous atmospheres
- Legend can be changed in situ

PERFORMANCE

Sign text and legend are clearly legible in light, dark and twilight conditions. Standard products are available to meet a range of international regulations. A tough polycarbonate enclosure provides a high level of damage resistance.
In extreme conditions, accessories are available to increase the level of physical protection.

NICHE MARKETS

- Existing and new buildings
- Parking garages
- Heritage and Cultural buildings
- Remote and non-electrified locations
- Offshore and underground construction projects
- Hazardous atmospheres

PHYSICAL CHARACTERISTICS

Height	: 210 mm
Wide	: 325 mm
Depth	: 25 mm
Material	: Tough, fire resistant ABS
Weight	: 800 g

BETALIGHT

Self-Luminous Offshore Fire & Safety Signs

KEY FEATURES

- Absolute reliability in all environmental conditions
- Safe for use in hazardous atmospheres
- Unaffected by humidity, condensation and temperature
- Maintenance-free operation
- No electrical supply or wiring
- No batteries, bulbs or switches

PERFORMANCE

Legend can comprise text (in any language) and/or symbols. Sign legend is clearly legible in light, dark and twilight conditions. Standard products are available to meet a range of international regulations. A tough polycarbonate enclosure provides a high level of damage resistance.

TYPICAL APPLICATIONS

- Offshore platforms and structures
- Workboats and leisure craft
- Petrochemical production and process facilities
- Explosive atmospheres
- Inaccessible, remote or saturated environments
- Temporary signage on construction sites

ENERGY CONSERVATION

Betalight self-luminous signs make a significant contribution to energy conservation programmes.

PRODUCT APPROVAL

Signs are available in two standard sizes:
Regular (420 x 190 x 20 mm) and Compact (220 x 180 x 20 mm).
Product approvals include LRS, DnV, CCG and and USCG.
SRB Technologies (Canada) Inc. is ISO 9001 Certified.

BETALIGHT

Aircraft Signs

Innovative, self-powered and permanently illuminated signs and labels for use in passenger transport systems and vehicles.

KEY FEATURES

- Absolute reliability - operate even in catastrophic power failures
- Independent of electrical power and ambient lighting
- Lightweight, do not require wires, batteries, bulbs, or transformers
- Simple and quick installation procedure even in retrofits
- Maintenance-free operation

PERFORMANCE

Sign text and legend have excellent legibility in light, dark and twilight ambient lighting conditions. In the dark, signs can be viewed from distances of up to 50 metres. Sign brightness can be varied according to application and is not affected by temperature, humidity, altitude or fixing plane.

TYPICAL APPLICATIONS

- Escape route signs for passenger transport systems eg: aircraft, road and rail vehicles
- Instruction signs for emergency equipment eg: BG hammers, fire extinguisher pull and open signs

INSTALLATION

Signs are suitable for mounting directly to supporting surfaces. Conduit boxes and other interfacing devices are not required.

MATERIALS

Signs are encased in tough, lightweight, corrosion and fire resistant acrylic plastic (fabricated to provide maximum strength at minimum weight) and are ultrasonically sealed to prevent ingress of dust and moisture. A variety of colours and finishes are available to meet customers' specific needs.

COMPARATOR

Betalights do not emit photons the same way as other light sources. This is why the comparator methodology is still the only way to test tritium illuminated safety signs.
A comparison between the brightness of the lighted portion through the viewing slot and the calibrated light source will confirm whether the test sign is above or below the required brightness.

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Self-Luminous Door Handle

Self-Luminous door handle, indicating exits in low visibility and blackout conditions.

KEY FEATURES

- Unique design
- Visible up to 15 metres
- No batteries or bulbs required
- Maintenance-free, operational life of 15 years
- Guaranteed reliability in all environments and conditions
- Unaffected by humidity and temperature
- Fully waterproof
- Tough, impact resistant yet lightweight and integrated
- Range of colours, shapes, sizes available for multiple solutions

PERFORMANCE

Betalight b.v. provides a door handle with a continuous and secured light source that enables immediate identification in partial and complete darkness. The tritium illuminated door handle is visible at a distance of up to 15 metres, depending on the size and the colour of the Betalights. The door handles are available in different brightness levels and colours.

TYPICAL APPLICATIONS

- Marking/ illuminating fire / emergency exits
- Visualisation of door handle in a nursery
- Route safety in all conditions

BETALIGHT

Self-Luminous Multi-Purpose Markers

THEY GUIDE YOUR PATH WHEN THE LIGHTS GO OUT

- The perfect solution for hospitals, auditoriums, stairways, corridors, and theatres
- Always on - require no electricity or maintenance
- Rugged polycarbonate housing
- Available in different sizes

KEY FEATURES

- Absolute reliability in all environmental conditions
- Available in different sizes, shapes and colours
- Continue to operate under water
- No Batteries or bulbs required
- Maintenance-free, operational life of 10 to 15 years
- Tough, impact-resistant yet lightweight enclosures
- They are rated for operation in temperatures of -60 °C to +80 °C

PERFORMANCE

Route markers are available with a range of brightness levels, from 80 µL to 900 µL and in different colour options.

TYPICAL APPLICATIONS

- Survival scenarios: marking of vital portable equipment, torch, radio, keys, tents etc.
- Visualisation of important equipment in low light and no light conditions
- Fixed equipment: marking of switches, doors and alarm buttons
- Route safety: marking of ropes, paths, steps, hazards and obstacles
- Remote or un-serviced installations: reliable, long-term illumination and marking

PHYSICAL CHARACTERISTICS STANDARD MARKERS:

LINE (SURFACE) MP 166

Width : 12.7 mm
Height : 14.2 mm
Length : 95.3 mm

DOME (SURFACE) MP 152

Diameter : 66.8 mm
Height : 33.3 mm

LINE (SURFACE) MP 145

Wide : 12.7 mm
Height : 3.1 mm

FLAT TOP (SURFACE) MP 107

Diameter : 28.6 mm
Hight : 25.4 mm

Customised markers on request.

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BETALIGHT

Self-Luminous Route Markers

KEY FEATURES

- Absolute reliability in all environmental conditions
- Betalight luminance maintains night vision
- Limited viewing angle of 140° enhances security
- Colour options enable functional differentiation
- No batteries, bulbs or maintenance required
- Rugged, lightweight, portable and easy to deploy
- NATO stock number: Defile 6210-99-209-4968
- Service life of 10 years

PERFORMANCE

Standard Markers produce 400 µL-enabling visibility in starlight conditions with the naked eye at ranges of 100 metres and more. Recessed mounting of light sources limits the viewing angle to 140° (2500 mrads). Brightness is not affected by temperature, humidity, altitude, operational plane or vehicle vibration.

TYPICAL APPLICATIONS

- Minefield marking: to define the perimeter and safe lanes through a minefield
- Bridge marking: to indicate bridge width and length
- Elevation onto support poles enables clear visibility on low profile bridges
- Route marking: clear route indication by attachment of markers to poles, trees, wires or other supports
- Route designation: assignment of colours and configurations for specific route functions and designations

COLOUR OPTIONS

The Route marker is a standard unit comprising a black body, a white arrow and two green Betalights forming a chevron in the arrowhead. Route Markers are available in a range of body and arrow colours. In addition to two green Betalights in the arrowhead, a third is fitted in the arrow tail. The third Betalight colour is optional but routinely reflects the body colour. A choice of blue, red, orange, green, yellow and white colours are available.

MATERIALS

The Marker body, arrow and cover are manufactured in tough polycarbonate. The fixing bracket is zinc-plated steel coated with Crodalux polyester powder.

PHYSICAL CHARACTERISTICS

Length	: 130 mm
Width	: 72 mm
Depth	: 27 mm
Weight	: 170 g

BETALIGHT

Self-Luminous Equipment Markers

The Self-powered luminous markers are for locating portable and fixed equipment in low light and blackout conditions.

KEY FEATURES

- Absolute reliability in all environmental conditions
- Secure, low brightness option available
- Continue to operate under water
- No Batteries or bulbs required
- Maintenance-free, operational life of 15 years
- Tough, impact-resistant yet lightweight construction
- Range of colours and fixing solutions

PERFORMANCE

Standard markers are available with a range of brightness levels, from 80 µL to 550 µL. Markers can be supplied in a nine-colour option.

TYPICAL APPLICATIONS

- Kit location and identification in darkness
- For in-outdoor and general use
- Use as night-time bite indicator or for other finishing applications
- Zip, or exit marking
- Survival scenarios: clear yet secure marking of equipment, stores and positions
- Personal marking to enable visual contact during night patrols
- Safety marking of ropes, paths, hazards and obstacles
- Thousands of possibilities

VARIOUS MARKERS

Self-Luminous Kit-markers are available in different sizes and colours for multiple applications.

TYPE	LENGTH	DIAMETER	WEIGHT
Zipmarker	20 mm	10 mm	2 g
Kitmarker	30 mm	10 mm	3 g
Superkitmarker	40 mm	10 mm	6 g

BETALIGHT

Self-Luminous Spot Indicators

Indicating important spots in low visibility and blackout conditions.

KEY FEATURES

- Range of colours, shapes, sizes available for multiple solutions
- Visible up to 30 metres
- No batteries or bulbs required
- Maintenance-free, operational life of 10 years
- Unaffected by humidity and temperature
- Fully waterproof
- Tough, impact resistant yet lightweight and integrated
- Viewing angle 180°

PERFORMANCE

Betalight b.v. provides illuminated spot indicators with a continuous and secured light source that enables immediate identification in partial and complete darkness. The lens on top of the Betalight enhances visibility. Spot indicators can be placed on switches, around keyholes, or wherever preferred.

TYPICAL APPLICATIONS

- Illuminated essential equipment
- Illuminated door handles
- Illuminated Key holes
- Illuminated button
- Wherever reliable illumination is required

BETALIGHT

Survival Outdoor/Military

Betalight b.v. is the leading supplier of Gaseous Tritium Light Sources (GTLS), known also as Betalights and Gaseous Tritium Light Devices (GTLD). Betalights are unique, providing a highly reliable and continuous light source throughout a long service life without the need for any kind of electrical power. In this document, we provide you with an overview of the range of Betalight tactical devices. Each device described below is supported by a detailed, technical data sheet and can be identified by a NATO stock number.

LONG SERVICE LIFE

This unique and innovative light source is the solution for a wide range of lighting applications where the use of an electrical power supply is not possible or acceptable.

OPERATION

Illumination of our devices is provided by Betalights fixed securely within the units. Betalights use innovative technology that harnesses gaseous tritium activation of phosphor powder within a sealed tube to generate a continuous light-source. Betalights are self-illuminating, requiring no batteries or secondary light source. They require no maintenance or spare parts and provide absolutely reliable, continuous service. Betalights operate normally in temperatures from -60 °C to +80 °C and in adverse environmental conditions, even when immersed in water. No heat is generated, therefore, they are ideal for hazardous situations such as ammunition depots or fuel storage areas. Betalights provide absolutely reliable light for up to 15 years and are significant contribution to energy saving programs. Betalights are now the automatic solution where electric power is not available or acceptable.

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Betalight Military Equipment shows the way

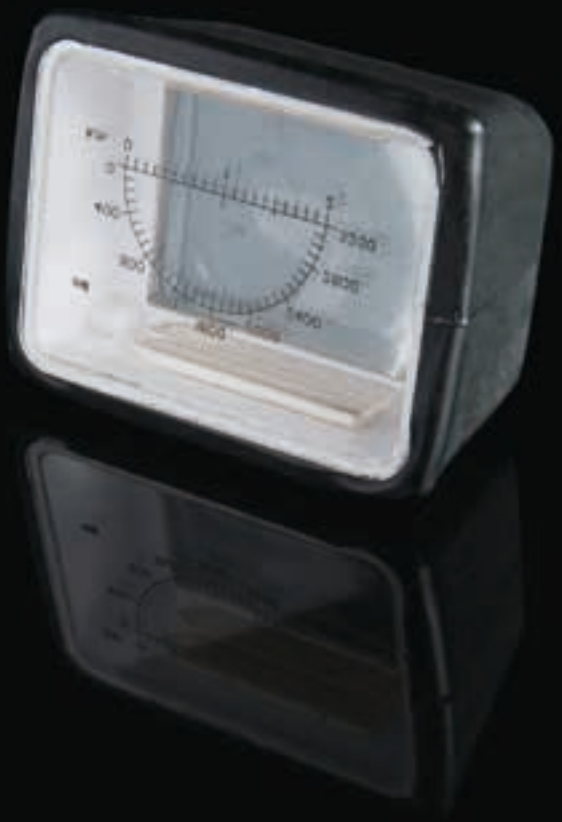
KEY FEATURES

- Operate in temperatures from -60 °C to +80 °C
- Absolutely reliable service-life up to 15 years
- Water resistant
- No heat is generated
- Self-illuminating, requires no batteries or secondary light source
- No maintenance

BETALIGHT

Self-Luminous Map Reader

Self-Luminous Map Readers provide a secure and effective means for map illumination and magnification in darkness, without affecting night vision.



KEY FEATURES

- Map reading with minimum light exposure
- White light preserves map legend colours
- Solid lens prevents ingress of moisture and condensation
- Betalight luminance maintains night vision
- Images are magnified X 1.5
- Options for clear or calibration in degrees, mill radians
- Range of NATO Stock Numbers
- No batteries, bulbs or maintenance required
- Lightweight and compact
- Absolute reliability in all environmental conditions

PERFORMANCE

White light is selected as standard and is highly recommended to preserve coloured legend. (Green light prevents differentiations of coloured legend). Map Readers are available with either two or four Betalights, each 600 µL brightness, depending on customer preference. Both versions enable maps to be read with clarity in twilight and darkness. Positioning of the lamps at the base of the unit increases security. The solid lens is a key feature in preventing ingress of moisture and accumulation of condensation over time in adverse environmental conditions. Light output is not affected by temperature, humidity, altitude or operational plane.

TYPICAL APPLICATIONS

Map reading applications, particularly in adverse climatic conditions and where security in forward areas is vital. Tactical map reading - the light stays inside the reader.

PHYSICAL CHARACTERISTICS

Length	: 85 mm
Width	: 65 mm
Depth	: 55 mm
Weight	: 200 g

MATERIALS

The solid lens and scale panel are fixed and sealed securely within a tough polycarbonate inner housing. A black rubber outer sleeve provides additional robust protection.

BETALIGHT

Self-Luminous Torch

The self-luminous Torch is a compact, lightweight light source with reliable and secure illumination that does not affect night vision.

Betalight torches were part of the personal belongings of all Apollo astronauts. NASA judged the quality of these betalight torches to be so high that no spares were supplied.

KEY FEATURES

- Optimised performance for reading
- Will continue work normally even when used or immersed in water
- Maintenance-free, no batteries or bulbs required
- Smooth non-slip casing and ergonomic design
- Recessed light source and hinged front cover increase security by enabling graduated light exposure
- Service life of 10 years
- NATO stock number 6260-99-965-3582
- Operation in temperatures between -60 °C and +70 °C.

PERFORMANCE

The Self-Illuminated Torch utilizes green light to a brightness of 1,000 µL providing practical illumination of an area of 10 cm^2. Brightness is not affected by temperature, humidity, altitude or operational plane.

TYPICAL APPLICATIONS

- Dark area illumination
- Diving illumination
- For in-outdoor and general use
- Military law enforcement around the world
- Night Navigation Aid: to enable map or compass readings in tactical situations
- AFV fire control equipment illumination

FIXING

The Torch incorporates a ring and neck cord for easy carrying, handling and temporary fixing to support structures/pickets.

MATERIALS

The inner housing is constructed of tough polycarbonate, the outer body and hinged front cover of black neoprene rubber. A nylon cord is attached to the fixing ring.

PHYSICAL CHARACTERISTICS

Overall length	: 77 mm
Diameter	: 35 mm
Weight	: 45 g

BETALIGHT

Self-Luminous Hand Bearing Compass

KEY FEATURES

- Long Service Life
- Supported by a 5 year warranty
- Absolutely reliable Betalight light source
- No Parallax errors, no bubbles or leaks
- Dual-use hand bearing and traditional compass
- No batteries, bulbs, spares or switches
- Smooth, non-slip casing and ergonomic design
- Neck cord for easy deployment
- Optimised performance for reading and bearings
- Operation temperature from -20 °C to +60 °C and underwater to a depth of 50 metres
- Available in green and desert

FEATURES

- Good protection against hard knocks: the smooth finish is soft to the touch and will not slip, even when wet
- Outstanding legibility of the card, with one-degree graduations
- No parallax error: a prism projects the reading of the bearing to infinity. This also contributes to a more comfortable operation, as there is no need to alternate close reading to read the card and infinite reading to take bearings
- Optimum conditions to take bearings, thanks to the superb card stability and the wide 20° field of view, which will accommodate the roughest sea conditions
- Most accurate bearing: the pivot and very hard stone are a guarantee of long life and shock resistance of the compass
- Soft bottom cell: engineered using ultrasonic welding, it acts like an expansion diaphragm, preventing the formation of bubbles and leaks
- Built-in tritium illumination, completely maintenance-free, impervious to corrosion, operates without batteries and a lifetime of more than 15 years
- Course reading from above the compass: readings can be taken in the standard fashion, without having to look through the prism

PHYSICAL CHARACTERISTICS

Diameter : 83 mm
Height : 33 mm
Weight : 105 g

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BETALIGHT

Self-Luminous Beta Marker

KEY FEATURES

- Absolute reliability in all environmental conditions
- Operational life of 10 years
- No maintenance, batteries, bulbs or switches
- Lightweight and robust
- Will not affect night vision
- Yellow panel enables use in darkness & dusk
- Colour options for function differentiation
- Single lamp unit, NSN 6260-99-797-8456
- Double lamp unit, NSN 6260-99-775-8649
- Low energy source at 1.0 GBq

PERFORMANCE

The standard beta marker incorporates green light to a brightness of 150 µL and is visible to the naked eye in starlight conditions at range of more than 10 metres. Brightness is not affected by temperature, humidity, altitude or operational plane.

TYPICAL APPLICATIONS

- IED marker
- Path and trench identification
- Mine marking
- Position marking
- Map pointer
- Tent peg
- Arc of fire marking

PHYSICAL CHARACTERISTICS

Material	: Tough, reinforced ABS
Overall length	: 200 mm
Maximum diameter	: 9 mm
Maximum weight	: 10 g
Viewing angle	: 90° (1600 mrads)

BETALIGHT

Self-Luminous Peg Light

The Self-Luminous Peg light is an efficient and durable ground-fixed demarcation system.

KEY FEATURES

- Absolute reliability in all environmental conditions
- Rugged construction enables penetration of hard ground
- Secure viewing angle of 90° (1600 mrads)
- Betalight luminance maintains night vision
- No batteries, bulbs or maintenance required
- Lightweight, portable, easy to deploy
- Extensive operational life
- Colour options available
- NATO Stock Number 5820-99-650-8640

PERFORMANCE

The standard Peg light incorporates green light to a brightness of 500 µL and is visible to the naked eye in starlight conditions at range of more than 35 metres. Brightness is not affected by temperature, humidity, altitude or operational plane. Available in orange body colour for indication of danger.

TYPICAL APPLICATIONS

- Minefield marking, for vehicle and personnel patrol lanes
- UXO (unexploded ordnance) marker in combination with a flashcard
- Marking weapons positions, deployed during daylight to enable rapid re-occupation at night
- Arc of fire definition, where two peg lights are positioned forwards to provide a clearly visible arc of fire
- Route marking for tactical replenishment of AFVs

FIXING

Peglights can be rapidly driven into earth, soft wood or tarmac. Spring and attachment clips are incorporated to enable easy attachement to a wide range of support structures.

MATERIALS

The Peglight body is cast in aluminium alloy and finished in Military green. The spring and attachment clip is sprung steel with black phosphate finish.

PHYSICAL CHARACTERISTICS

Overall length	: 200 mm
Cruciform diameter	: 12 mm
Maximum depth	: 25 mm (incl. clip)
Weight	: 72 g
Viewing angle	: 90º

BETALIGHT

Soldier's Personal Illuminator

The self-powered Soldier's Personal Illuminator (SPI) is a lightweight, compact multi-purpose light source capable of deployment as torch, map-reader, personnel marker, route marker, and aiming post.

KEY FEATURES

- Absolute reliability in all environmental conditions
- Rotating outer sleeve enables control of light output ensuring maximum security against detection
- Adjustable to four defined illuminated profiles
- Betalight luminance maintains night vision
- Maintenance-free, no batteries or bulbs required
- Lightweight, compact and rugged design
- NATO stock number 6260-99-781-4147

PERFORMANCE

The SPI utilizes green light to a nominal brightness of 750 µL. Rotating outer sleeve controls brightness and illuminated profile. Brightness is not affected by temperature, humidity, altitude or operational plane.

TYPICAL APPLICATIONS

- Infantry night aid: for reading target record charts, fuse or sight graduations
- Night navigation aid: to enable map and compass readings
- Aiming point light or arc of fire markers
- Directional route marker

FIXING

The SPI is fitted with a clip attachment and neck cord.

OPTIONAL

SPI's can also be supplied with white light.

MATERIALS

The SPI is constructed of robust, matt black finished acrylic plastic.

PHYSICAL CHARACTERISTICS

Length	: 67 mm
Diameter	: 30 mm
Weight	: 40 g

BETALIGHT

Self-Luminous Aiming Post Lamp

Self-Luminous Aiming Post Lamps enable establishment and maintenance of covert infantry and artillery weapons alignment in darkness.

KEY FEATURES

- Absolute reliability in all environmental conditions
- Differentiation enabled by colour and mask options
- Secure viewing angle of just 7.5° (133 mrads)
- No batteries, bulbs or maintenance required
- Lightweight, compact and easy to deploy
- Extensive operational life
- NATO Stock Number: Green 1290-99-960-8742
  Orange 1290-99-960-8743

PERFORMANCE

Standard green and amber Aiming Post Lamps produce 330 µL and 160 µL respectively enabling visibility with the naked eye at up to 200 m in starlight conditions when viewed directly through the lens. The lens limits the angle of viewing to 7.5° to ensure security. Lamp output is not affected by temperature, humidity or altitude.

TYPICAL APPLICATIONS

- Mortar alignment: using alternate green and orange Lamps, a series of mortars can be aligned by sitting a Lamp in front of each weapon on a reference bearing. Used with a Dial Sight, mortar alignment can be accurately maintained.
- Field artillery alignment: a pair of Lamps, together with a Dial sight is used to set up filed artillery in darkness. The Lamps are placed in line at measured distances from the weapon, enabling accurate maintenance of alignment.
- Gun aiming point for AFVs, readily established in daylight, with colours enabling differentiation between troops and weapons.

FIXING

The Lamp assembly can be supplied with a choice of robust, adjustable clamps to facilitate easy fixing to either round or square section supports from 13 mm to 38 mm in diameter.

MATERIALS

Lamps are encased in polyamide (DIN 7228) black, the lens is acrylic. Clamps are constructed in mild steel and finished in military green.

OUTPUT OPTIONS

To enable lamp differentiation and speculations, aluminium masks are available for clip fitting, directly onto the Lamp. Masks incorporate cut out legend in either '+' or '-' shapes and are finished matt black. Special legends can be produced to customer requirements.

PHYSICAL CHARACTERISTICS

Diameter	: 45 mm
Width (incl. clamp)	: 70 mm
Overall length	: 72 mm
Overall lenght (incl. mask)	: 75 mm
Lamp weight	: 81 g
Clamp weight (round)	: 138 g
Clamp weight (square)	: 115 g
Weight (nom)	: 28 g

BETALIGHT

Trilux Sight Inserts

Never before has such quick, accurate aiming been possible with such little effort. Just try it and see.

KEY FEATURES

- Low cost
- Night vision friendly
- Absolute reliability in all environmental conditions
- Secure, low brightness option available
- Unaffected by humidity and temperature
- Continue to operate under water
- No batteries or bulbs required
- Maintenance-free, operational life of 10 years
- Tough, impact-resistant yet lightweight construction
- Colour options available

OPERATION

Betalight b.v. is the provider of Trilux sights and can also supply source Betalights to manufacturers of optical equipment such as scopes and night sights for graticule and reticule illumination. Trilux Sights incorporate absolutely reliable Betalights and have a continuous, illuminated service life of 10 years. Rated for operation between -60 ˚C and +80 ˚C, (-94 ˚F to 250 ˚F) not only for a short period but for several years if needed. The lamps require no on/off switch, contain no moving parts and are maintenance-free.
When The Sun Sets....Trilux.

Aiming a pistol under normal daylight conditions and hitting the target requires minimum effort. But, under low light conditions, standard sights become ineffective. FBI statistics indicate that 80% of officer shooting injuries take place in low-light or no-light conditions. Painting three white dots on the sights offers only marginal improvement. Betalight's solution is to supplement or replace the painted white dots with small self-contained tritium lights that enhance shooter capability under low-light conditions.

PERFORMANCE

Trilux Tritium Sight Illumination offer a handgun sighting system for improved rapid instinctive aiming which requires no transition from day to night use. Day and night, the shooter's aiming reference is three solid dots, identical in appearance and location under all light conditions. Adding no weight and occupying zero extra space, they can withstand prolonged immersion in commonly used solvents and cleaning compounds.

BETALIGHT

Self-Luminous Spirit Level

KEY FEATURES

- Absolutely reliable Betalight light source
- Optimised performance for reading
- No batteries, bulbs, spares or switches
- Long service life
- Available in a wide range of sizes and sensitivities

Rated for operation in temperatures ranging from -20 °C to +60 °C and underwater to a depth of 50 m.

PERFORMANCE

Betalights provide the spirit level with a continuous and secure light source that preserves night-vision and enables readings to be taken quickly in partial and total darkness. Customised spirit levels on request.

OPERATION

Precision ground spirit level vials can be used in any application that requires precision levelling. In particular our vials are suited to applications where performance and reliability are of major importance. These are some of the areas they are currently used.

- Laser levels and surveying instruments
- Engineers levels, frame levels and machinist workshop levels
- Gun sights and targeting systems
- General-purpose instrument levels

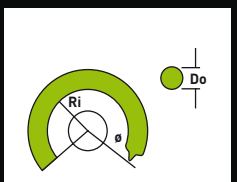
BETALIGHT

Light Sources

Betalight offer you total design flexibility. They can be produced in straight tubes, disk and spheres to suit all individual applications. Sizes vary from the smallest tube, with a diameter of 0,65 mm and 2,5 mm length, up to disks of 90mm diameter and tubes up to 200 mm in length. The brightness of a newly manufactured Betalight depends on the thickness of the coating, the geometric shape, the purity of gas used, and the filling pressure from the source.

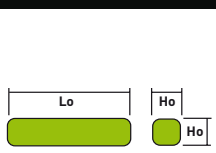
Through the paint on a reflective layer of the light can be further intensified. One of the main points; the colour of the light. A green Betalight with identical properties is always brighter than one colour in red or blue.

Green colour is normally recommended due to its efficient and visual brightness, Betalights can be produced in any colour within the visible spectrum.



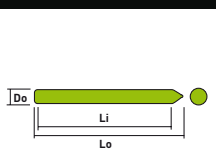
'A' Arc Cylinder

	MIN.	MAX.
Do	3.0	7.0
Ri	5.0	99.5
Angle of Arc dependent upon radius	10°	350°



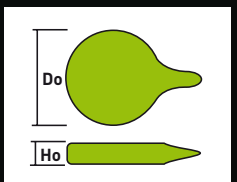
'BH' Square

	MIN.	MAX.
Ho	1.0	2.5
Lo	4.0	50.0



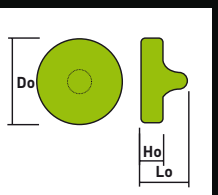
'C' Cylinder

	MIN.	MAX.
Do	3.0	7.0
Lo	15.0	200.0
Li	10.0	195.0



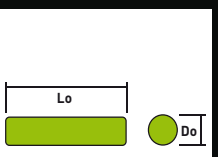
'D' Disc (radial pip)

	MIN.	MAX.
Do	5.0	22.0
Ho	2.0	6.0



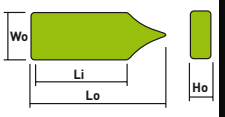
'F' Disc (axial pip)

	MIN.	MAX.
Do	6.5	22.0
Ho	2.0	8.0
Lo	8.0	12.5



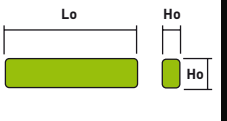
'MH' Miniature Cylinder

	MIN.	MAX.
Do	0.65	3.5
Lo	2.7	50.0



'R' Rectangular

	MIN.	MAX.
Wo	3.0	15.5
Ho	1.5	5.0
Lo	15.0	99.5
Li	10.0	93.0



'RH' Miniature Rectangular

	MIN.	MAX.
Wo	1.7	4.0
Ho	0.6	2.0
Lo	6.0	50.0

Do : Overall diameter
Ho : Overall height
WD : Window diameter

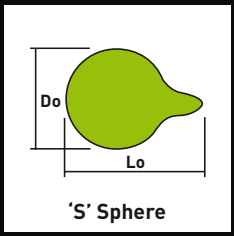
Ri : Inside radius
Li : Lit length

P : Pip height
Lo : Overall length

Wo : Overall width
Ø : Angle of arc

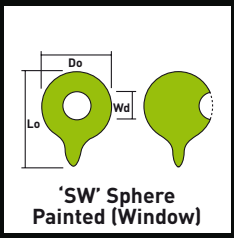
BETALIGHT

Light Sources



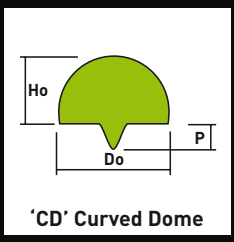
'S' Sphere

	MIN.	MAX.
Do	4.0	15.0
Lo	8.0	21.0



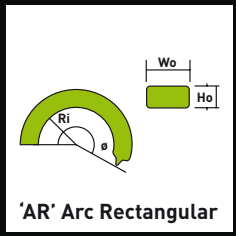
'SW' Sphere Painted (Window)

	MIN.	MAX.
Do	4.6	15.0
Lo	8.7	21.0
WD	1.5	6.5



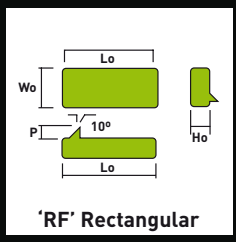
'CD' Curved Dome

	MIN.	MAX.
Do	12.5	21.5
Ho	6.2	12.8
P	4.0	8.5



'AR' Arc Rectangular

	MIN.	MAX.
Wo	3.0	5.5
Ho	1.5	3.0
Ri	5.0	99.5
Angle of Arc dependent upon radius	10°	350°



'RF' Rectangular

	MIN.	MAX.
Wo	5.0	15.5
Ho	2.5	8.0
Lo	10.0	99.5
P	nominal	7.0

Do : Overall diameter
Ho : Overall height
WD : Window diameter

Ri : Inside radius
Li : Lit length

P : Pip height
Lo : Overall length

Wo : Overall width
Ø : Angle of arc

NOTES

1. DIMENSIONS

All dimensions are in mm and refer to glasswork only. Paint should be allowed for separately and is normally 0.25 mm thick.

2. BRIGHTNESS

Betalight brightness is measured photopically in microlamberts. (1 microlambert = 9.29 x 10^4 foot lamberts and 3.18 x 10^3 candelas per square metre.

Details and Illustrations represent the Betalight basic range only. Betalights can be manufactured to suit individual requirements in any colour in the spectrum and to virtually any size or shape. Contact us with your lighting problems.

BETALIGHT
when reliability really counts

Infrared (IR) Betalight

Infrared light (IR) is a type of light only visible with special equipment such as night vision goggles.

KEY FEATURES

- Only visible with night vision equipment
- Maintenance-free, no batteries or bulbs required
- Lightweight, fully water proof, long operational life
- Absolute reliability in all environmental conditions
- The IR Betalight can be manufactured in every size and shape

TYPICAL APPLICATIONS

- Buzz saw for position marking: An infrared Betalight tied to a string, swung continuously in a 6 foot arc is more visible than a strobe light in air support situations
- Infantry Night Aid: personnel marking during night patrols
- Position marking for close air support
- Passive IR is recommended for Marines on the ground
- Landing site marking for helicopter

OPERATION

From the air, IR lamps are usually more visible than coloured lights. IR Betalights are not as visible on high-light-level nights.

FIXING

IR Betalights can be assembled into the torch, helmet markers, Soldier Personal Illuminator, kitmarkers and multipurpose markers.

Tritium Recycling Or Disposal

Our goal is to make the process of Recycling or Disposal of Tritium light sources or light devices fast and easy.

WE ACCOMPLISH THIS BY PROVIDING

1. Our staff are well versed in the regulatory requirements related to Self-Luminous tritium disposal.
2. Step by step assistance. From completing the initial paperwork until the shipment of tritium products leaves your facility, we're here to help.
3. The most competitive prices in the tritium disposal industry.
4. Quick turnaround. Betalight will process your request for tritium disposal and have you ready to ship within days rather than weeks.
5. A fully licensed shipping destination. Whether you need to process just one sign, or thousands of raw light sources, let the knowledgeable staff of Betalight b.v. help you perform your tritium disposal quickly, easily and affordably.

We are specialised in recycling, supplying and refurbishment of gaseous tritium light sources and light devices.

NATO Maintenance & Supply Agency
NATO CAGE Code H1U51
NAMSA registration code 4000049917
D.U.N.S.no.416901775

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