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22 Flush-mounted Lens Series with trim



Suitable for assembly in technical ceiling. Available with trim in white and silver-grey colours. Autonomies of 1h, 2h and 3h.

26 Flush-mounted Lens Series without trim



Suitable for assembly in technical ceiling, plaster. Autonomies of 1h, 2h and 3h.

30 Semi-recessed Lens Series



Suitable for assembly in technical ceiling. Autonomies of 1h, 2h and 3h.



34 Ceiling-mounted Lens Series

Suitable for surface mounting.

Available in white, black and silver-grey colours. Autonomies of 1h, 2h and 3h.



38 Suspended Lens Series

Suitable for suspended mounting on ceilings.

Available in white, black and silver-grey colours. Autonomies of 1h, 2h and 3h.



42 Sealed Lens Series

Suitable for surface mounting on ceilings. Available in industrial grey colour. Autonomies of 1h, 2h and 3h. IP66 IK04



46 Semi-recessed Sealed Lens Series

Suitable for mounting in all types of ceilings. Autonomies of 1h, 2h and 3h. IP66 IK04

50 Luminary Lens Series

LED Technology

■ LED Technology

An LED (Light-Emitting Diode): is a semiconductor (diode) device that issues incoherent light in a reduced spectrum, when the PN connection of the same is directly polarized and electric current passes through it.

This phenomenon is a type of electroluminescence.

The colour depends on the semiconductor material used in the diode and can vary from ultraviolet, through visible, to infrared.

In the case of lighting usually white light LED's are used. This can be obtained by one of two processes:

- based on a mixture of light from primary colour diodes (red, green and blue)
- based on a blue or ultraviolet diode that is submitted to a phosphorus depositing process on the semiconductor (superficially or on the silicone that protects it).

This description is centred on single-chip HB (High Brightness) LED (power up to 5W) for white light illumination; this technology being the most adequate for Emergency Lighting applications.



LED for assembly in SMT

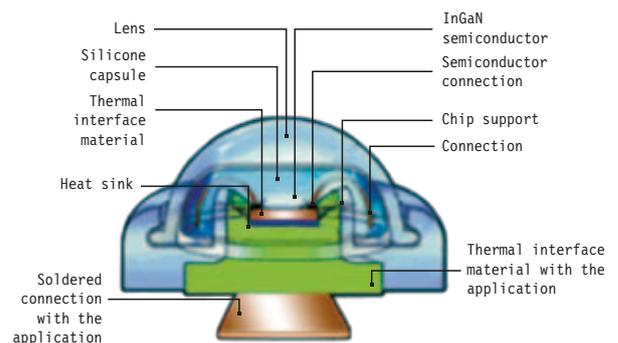
■ Structure of an LED

Basically, the base semiconductor of a light-issuing LED is placed on a substrate that acts as a support, a heat sink and electrical, thermal interface for the application.

The electrical interface allows the joining of the component pads to the semiconductor base pads through a connection based on wires bond, integrated connections on substrate or any other alternative that the manufacture of the component can introduce.

The thermal interface between base semiconductor, support, a heat sink and the application is done by using high thermal conductivity materials. The unit established the thermal resistance of the component that is later taken into account for the correct thermal design of the luminary.

A silicone capsule or similar is used for protecting the semiconductor and a lens forms the radiation pattern of the component. The silicone is also used as the lens on many of the commercial components.



Construction structure of LED for SMT

Application of HB LED technology in Emergency Lighting

■ Development of the *Lens Series*

The basic technical concepts used in Emergency Lighting are similar to those used in Interior Lighting. However, in spite of these similarities, the light-emitting objectives are very different: in emergency lighting minimal lighting is required in order to allow a safe escape route from an area is required: and always in the most efficient way possible in order to minimise the sources of support energy, generally batteries, located inside the luminaires.

In line with this, special importance is given to the light-emitting efficiency of low power light (normally <10W): the new HB LED developments offering technical solutions

to optimise this Emergency Lighting.

The use of a light source with high light-emitting efficiency, complemented with lens units that adequately use the light-emitting energy, lead us to highly energy efficient solutions. This efficiency allows the use of optimised batteries in capacity and size for the same requirements of autonomy.

Summarising, the use of HB LED technology is -fundamentally- justified by the following facts:

- Improvement of the energy efficiency in both the mains supply of light source itself as in the charging of the support batteries.
- Size optimisation of the autonomous emergency

lighting, both from the light source itself and from the reduced dimensions of the batteries.

- Environmental improvement related to use or raw materials to achieve the same quality service.

As a result of incorporating LED as a source of lighting, and with the purpose of using all its advantages, Daisalux has developed a series of technologies that derive from a new concept of emergency lighting: *Lens Series*.



Application of HB LED technology in Emergency Lighting

■ Thermal management of the LED

As with any other light sources, LED dissipates non-light emitting energy caused by the movement of electric current in the form of heat. The difference between this and other light sources is that the LED mainly releases this heat towards the rear part of the semiconductor through the substrate and the thermal interface with the application. It practically does not produce infrared radiation toward the illuminated area.

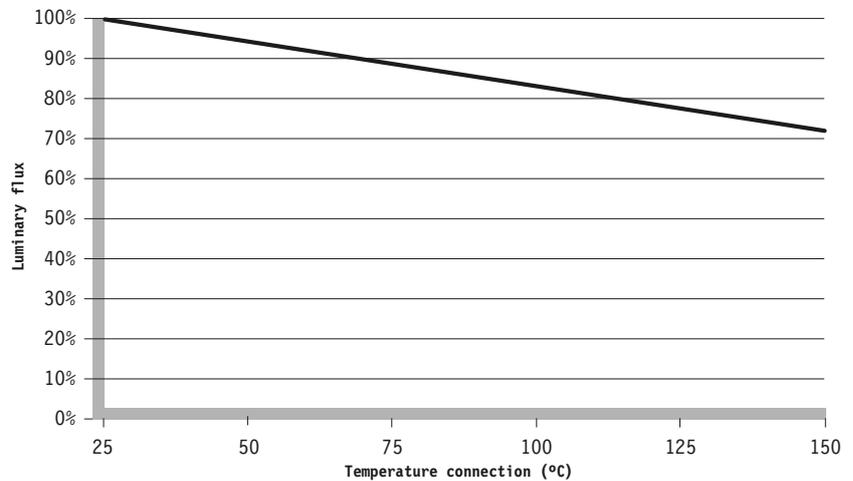
This heat is generated at the connection of the semiconductor, a very small area. Poor dissipation and, therefore, a temperature increase in this area, having two negative effects:

- Reduction of LED performance: lumens emitted in regard to used power (lm/W)
- Drastic reduction in the life time of the LED.

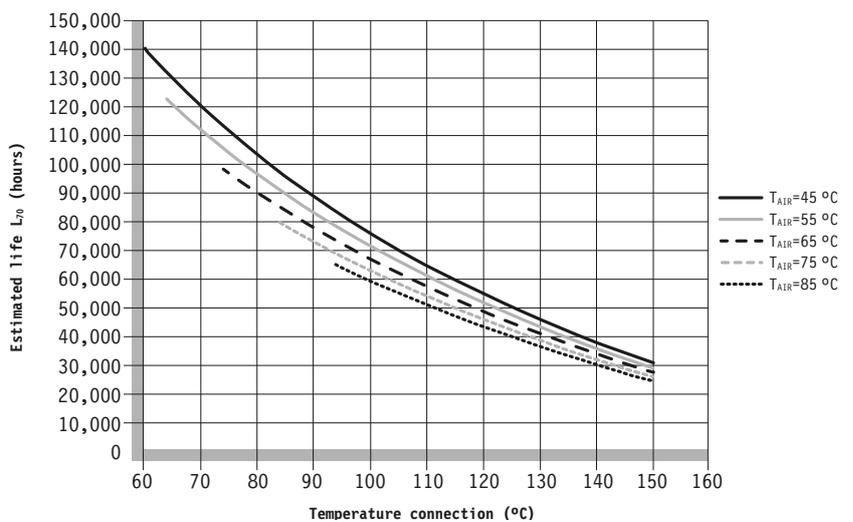
As the temperature increases, the luminary flux can be reduced by up to 70%.

An LED is considered to have reached the end of its life (life cycle) when its nominal luminary flux is reduced by 70% (L_{70}).

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Luminary flux emitted by LED in regard to the temperature of its connection.



Estimated life of the LED regarding the temperature of its connection.

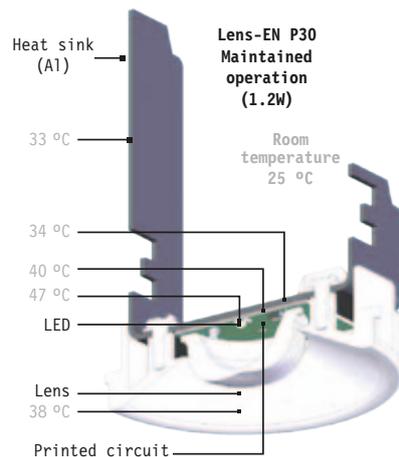
■ Thermal management in the Lens Series

Thermal management of the LED in the *Lens Series* emergency luminaires has been treated very specially, adopting different technologies that allow us to maintain an adequate temperature at the junction and therefore obtain a life expectancy above **80,000** hours at a room temperature of 25 °C.

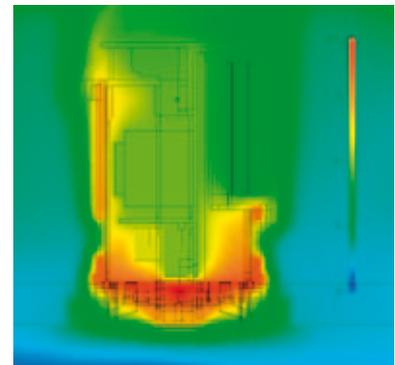
Some of the adopted solutions are:

- **High heat dissipation at the soldering area:** The LED is mounted on a double sided metallic printed circuit, increasing the contact surface with the heat sink and reducing the points of thermal breakage.
- **High heat dissipation toward the atmosphere:** cooling by natural convection through an anodised aluminium heat sink to dissipate the heat in areas furthest from the batteries has been chosen, so the dissipation will be as efficient as possible.

- **Heat dissipation through the front:** although the LED mainly dissipates heat through the rear, it is important to allow dissipation through the front. The Lens Series has been designed so that there is an important volume of air between the LED and the different lenses. This allows optimal dissipation of the generated heat, considerably reducing the atmosphere temperature around the LED.



Cross-section of the optical and cooling system, with the temperatures seen at the different points, at room temperature of 25 °C.



Thermal simulation of a maintained Lens Series Self-contained Emergency Lighting (the view corresponds to the central section). LED supplied at maximum power. Device mounted in a technical ceiling.

Optical solutions applied to the *Lens Series*

■ Radiation of an LED

LEDs with high *temperature colours* (ranges of cold white) are used in Emergency Lighting applications, due to their better light-emitting efficiency.

A light source colour temperature is used to denominate that obtained by comparing the colour within its light spectrum with the light that will be emitted by a black body heated to a given temperature, expressed in Kelvin.

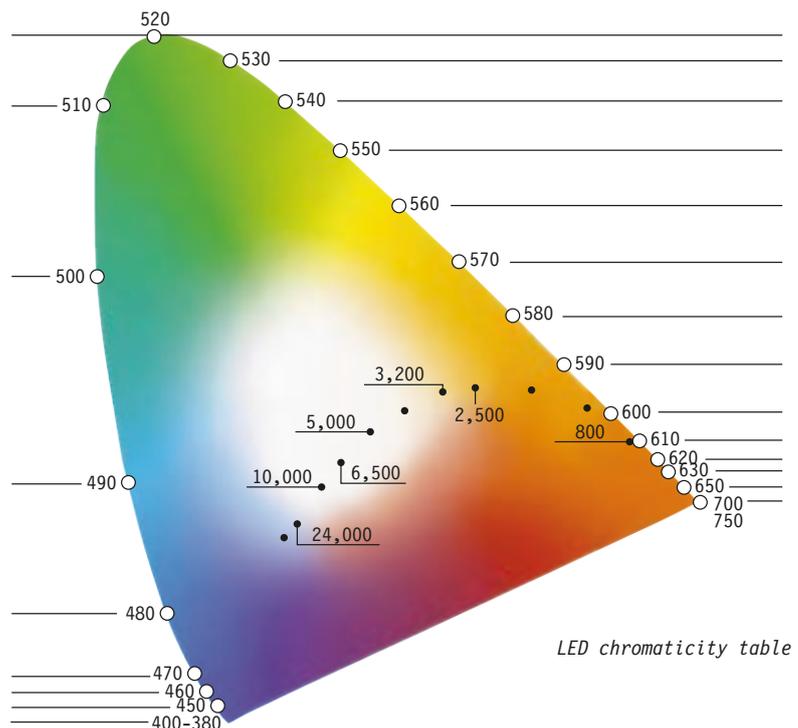
This colour system called CIE accurately establishes three primary colours (red, green, blue) from which all the others can be created.

In lighting the most commonly used white tones are: warm white (3000-4500K), neutral white (4500-5500K) and cold white (5500-7000K).

Another parameter to be taken into account is the colour rendering index (CRI).

This is an important aspect in artificial lighting systems, as it indicates the capacity of a light source to reproduce colours.

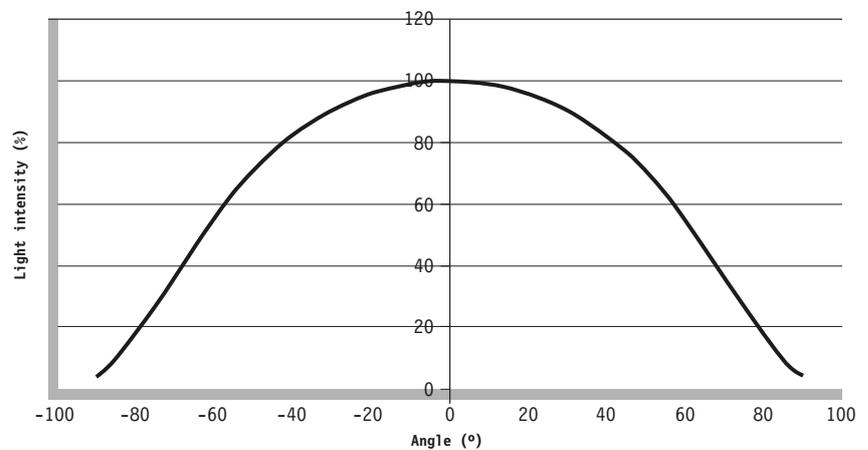
The CRI improves as the colour temperature decreases (towards warmer white). Nevertheless, the light-emitting efficiency of an LED in cold white is higher than in a warmer white (mainly due to the fact that the colour temperature decreases increasing the amount of phosphorous on the semiconductor). Therefore, there is a compromise between the best colour rendering index and the light-emitting efficiency of the component that justifies the use of a cold white colour in emergency lighting.



■ Radiation Pattern of an LED

The HB LED offers a light radiation pattern that depends on the optical system. Normally this pattern corresponds to the Lambertian one and the viewing angle may vary (The opening angle is measured at 50% of the maximum radiation).

Taking this factor into account, the use of adequate optical systems is necessary to adjust the photometry of the luminary to the desired application. These optical units will normally be based on the combination of lenses, reflectors, diffusers, etc.



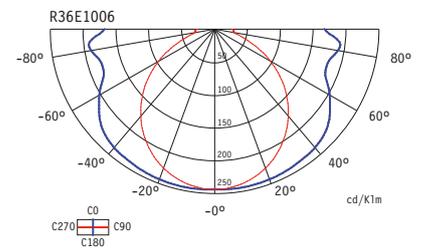
Light intensity for different viewing angles of an LED (general)

Optical solutions Lens applied to the *Lens Series*

■ **Light-emitting efficiency in a traditional luminary**

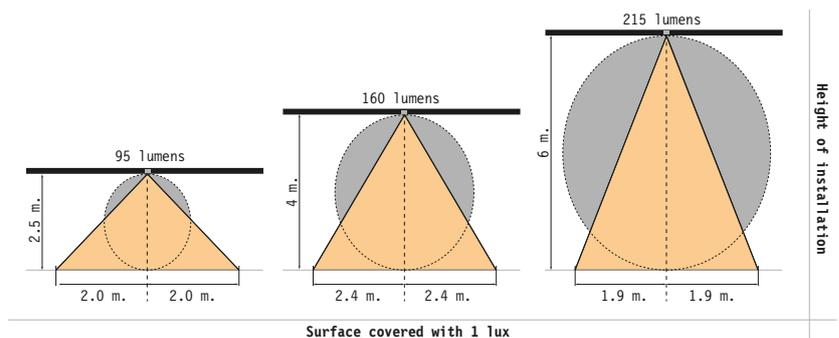
The optical system in a traditional emergency luminary is fitted with a fluorescent tube, and therefore the light distribution in the space remains constant varying the lumens from the light source for different heights of installation.

Photometric curve of polar emission of a traditional emergency luminary.

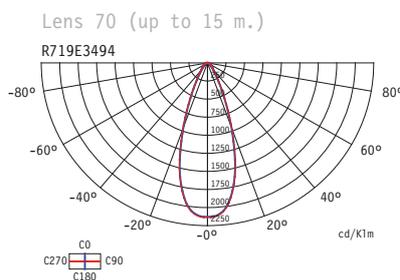
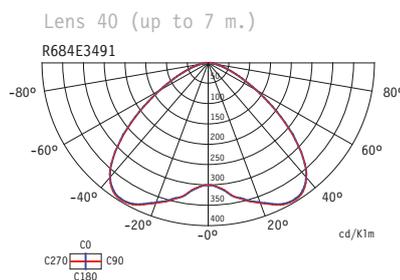
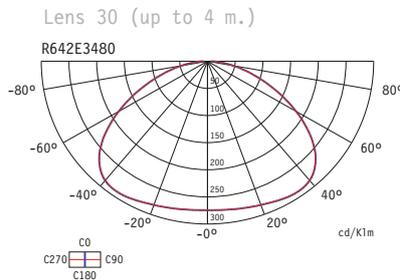
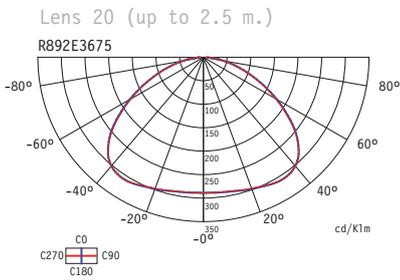


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Light emitting usage chart of a traditional emergency luminary.



- Useful luminous flux.
- Inefficient luminous flux.

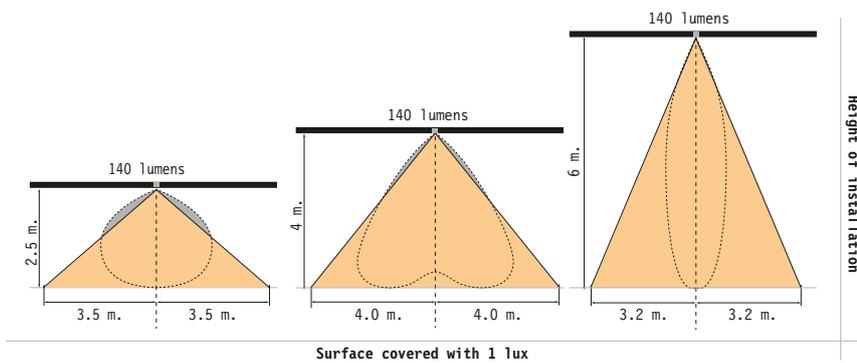


Different photometric curves of polar emission for Lens luminaires depending on the height of installation.

■ Light emitting efficiency in the Lens Series

An optical system has been designed for the Lens Series that allows the use of the luminaires to be optimized according to the height of their installation, keeping a constant luminous flux from the luminaire.

By adapting the distribution of the light to the characteristics of the space and obtaining the required luminance values on the floor, better light-emitting efficiency is obtained.



Light-emitting usage chart of the Lens Series.

- Useful luminous flux.
- Inefficient luminous flux.

Optical solutions applied to the *Lens Series*

■ **Optical Technology used in the *Lens Series***

The optical system solution used for the *Lens Series* consists of using a specific lens according the height of the luminary installation, as well as a diffuser and fixed reflector.

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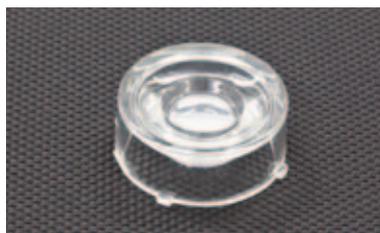
These lenses have been developed by the Daisalux Optical Design Department, taking maximum light-emitting efficiency criteria according to the different applications into consideration.



Lens N30



Lens N40



Lens N70

Specific lens

The viewing angle degree of the LED is generally 120°; it being necessary to modify this value with external elements to achieve an efficient photometric curve.

To achieve an adequate viewing angle there are 3 lenses that optimize the light-emitting performance up to installation heights of 15 m.

	Installation height (m)
Lens 30	2.0 - 4.0
Lens 40	4.0 - 7.0
Lens 70	7.0 - 15.0

Diffuser

The emission of light in the LED is generated from a very small surface. This particularity has the inconvenience of excessive brightness, much higher than that recommended for correct visual comfort and with the risk of dazzle. The use of a lens does not reduce this problem.

An opal or textured transparent diffuser allows the brightness to be reduced by 90%, completely eliminating the risk of dazzle.

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Without diffuser/High brightness



Light-emitting surface



With diffuser/Less brightness

Electronic solutions applied to the *Lens Series*

■ Power supply of the HB LED

The luminous flux provided by an LED is proportional to the electric current that goes through its junction.

The power supply of the HB LED component is made with constant current (FC) by means of an external power source. Excessive current ripple can provoke blinking effects, therefore it is important to reduce this rippling or make it of a very high frequency.

A diode power supply from a continuous current source obtained from a continuous power source (batteries or mains) has been designed for the *Lens Series* using high performance buck topology in PWM high frequency technology.

This technology allows less consumption which means a reduction of battery size and an increase in energy efficiency.



Application of Ecodesign and Sustainability principles

Emergency luminaires have intrinsic characteristics that force their effects to be minimized in terms of sustainability, applying the principles of Ecodesign:

- They permanently consume energy in order to keep the batteries charged and available for any emergency situation.
- They require maintenance and generate potentially contaminating waste, such as batteries and light sources.

The use of LED as a light source minimises these effects by allowing the development of luminaires with high light-emitting and energy efficiency. In addition it allows better maintenance and recycling.

■ Use of raw materials

One of the advantages of LED over fluorescent lighting is its reduced size. This particularity, together with the use of adequate lenses, allows luminaires to be designed to a much smaller volume and allows better integration into different architectonic environments and an optimised use of raw materials.

	Fluorescent luminary	Lens (LED)	
Volume (cm ³)	2,500	1,330	-46%
Weight (gr)	1,000	475	-52%
Synthetic material	500	160	-68%
Electronic components	240	150	-37%
Batteries	182	94	-48%

Application of Ecodesign and Sustainability principles

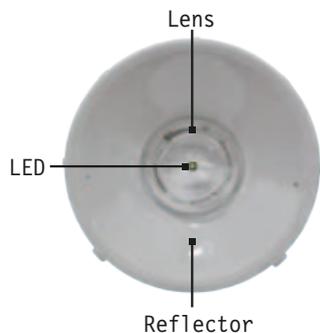
■ Energy consumption

Self-contained emergency luminaires use batteries to store energy. They only need maintained electric energy consumption to keep their charge, independently of the use of the light source.

Energy savings can come from two ways: higher light-emitting efficiency and improved battery charge management.

Light-emitting efficiency

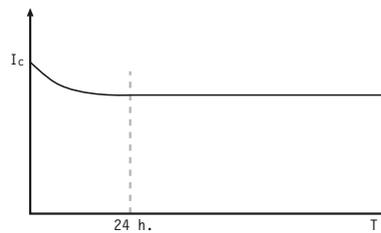
Using an optical system formed by a reflector + lens + diffuser in the Lens Series allows the necessary luminous objectives to be achieved with 25% less flux. This detail, together with higher performance of the LED in regard to a fluorescent luminaire, allows the size of the battery and therefore the consumption of the luminaire to be reduced.



Battery charge management

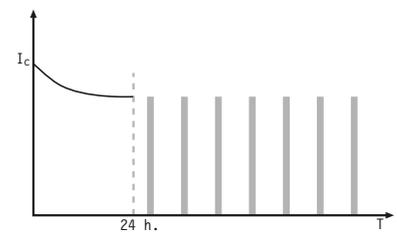
The *Lens Series* self-contained emergency luminaires include NiMH technology batteries. In addition to the environmental advantages in regard to the widely used NiCD technology ones, these batteries allow more efficient management of the charge profile.

Continuous charge for NiCD batteries.



The "pulsating" charge mode in NiMH batteries allows the charging to not be continuous, thus considerably reduces the consumption of the luminaires. The battery only receives the energy associated with its own self-discharge, reducing the heat caused by the permanent charge of the traditional NiCD technology ones and increasing their life-expectancy.

Pulsating charge for NiMH batteries.



Reduction of consumed energy

All these technical solutions adopted in the *Lens Series* allow a considerable reduction of consumed energy, improving performance with regard to the same luminous objectives as a luminaire using a fluorescent lamp.

The real reduction is **70%** in all the compared values based on Spanish Electrical System.

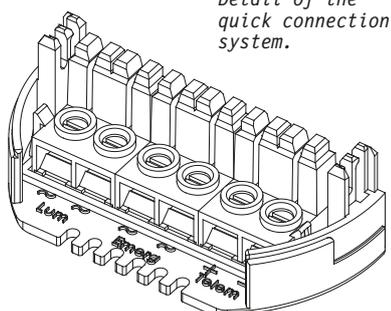
	Power	Yearly consumption	Yearly CO ₂	Yearly Radioactive Residues
FL + NiCd *	3.27 W	28.65 Kwh	7.73 Kg.	16.62 mg.
LED + NiMH *	0.979 W	8.58 Kwh	2.32 Kg.	4.98 mg.

* This comparison was made using two luminaires as reference points that cover the same surface with 1 lux installed at a given height.

Switch-on control in maintained models

To be able to switch the maintained luminaire with mains supply on and off, there should be an additional mains supply (LUM) apart from the emergency mains supply (EMERG).

Therefore, it can be treated as another luminaire in the general lighting installation.



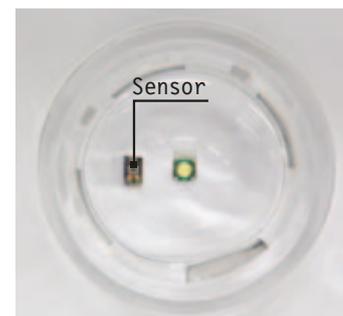
Detail of the quick connection system.

■ Eco-Permanent Function

The thermal management of the LED in the *Lens Series* allows it to be permanently on, thus guaranteeing a life-time above 80,000 hours at 25 °C.

This feature has allowed emergency luminaire models that are maintained in operation to be developed, allowing them to be used as another luminaire in the installation.

The use of a light sensor integrated inside the luminaire allows its operation to be inhibited when there is sufficient environmental light. This option allows consumption without using external control elements to be minimized.

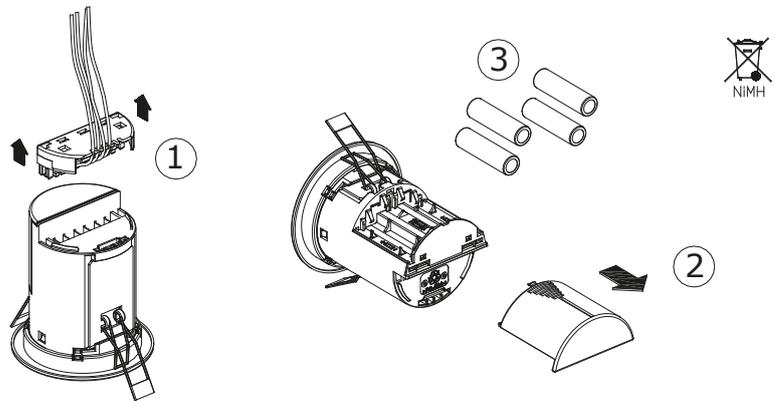


- Energy saving.
- No accessories required.
- DaisiTest controllable.

Technology applied to Maintenance

■ Maintenance

Traditional self-contained emergency luminaires have two elements that should be regularly replaced to ensure correct performance: light source and batteries. The *Lens Series* design allows the batteries to be changed easily and avoids changing the light source.



Light source

The thermal management of the HB LED allows a useful life-time above 80,000 hours, much higher than the 8,000 hours of a typical fluorescent lamp. This means that maintenance of the light source is virtually unnecessary in the *Lens Series*.

Batteries

The operational temperature of the batteries is essential to ensure their service life. The batteries in the *Lens Series* are located in an independent compartment and far from any heat source, thus minimising the heat effects generated by the luminaire itself.



Detail of the batteries far from any heat source.

■ **EN-50172 Standard**

This is a basic tool to ensure adequate maintenance. This standard determines the tests to ensure correct operation of the luminaires:

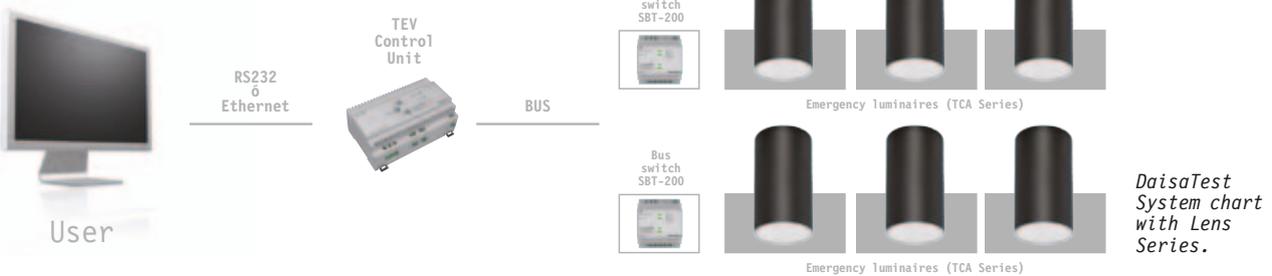
- Light source switch-on test.
- Autonomy Test
- Record of the tests and incidents produced in the installation.

All the emergency luminaires of the Lens Series are available in their Autotest and TCA models. These options allow the luminaires to carry out tests according to the aforementioned standard, notifying the results in two possible ways: Autotest mode and Central Test mode.

Autotest mode

The Autotest emergency luminaires notify the results of the tests by means of a green and amber LED on the luminaire itself.

CONTROL VIA SOFTWARE

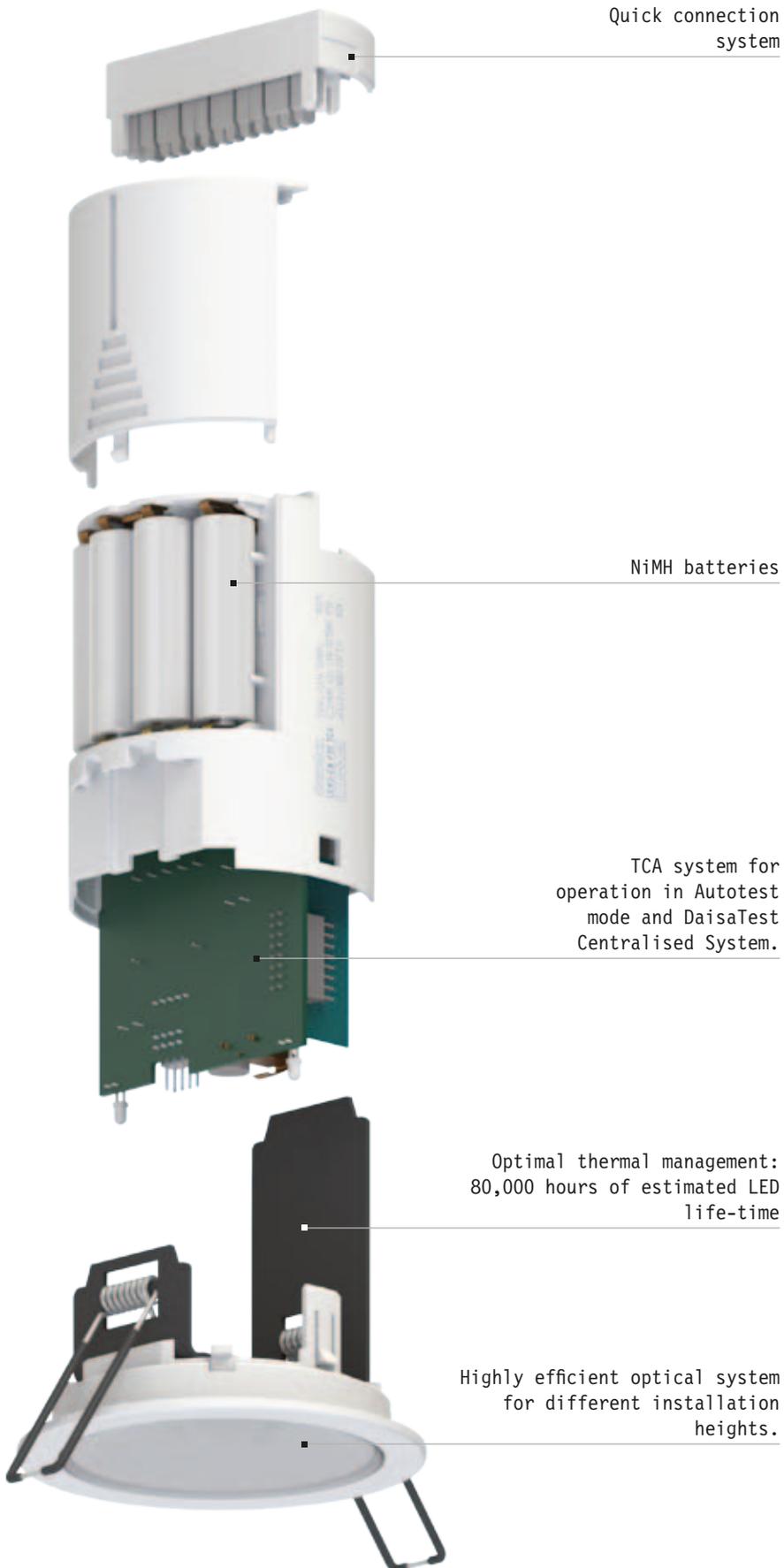


Central Test

Besides notifying the results of the tests by means of LED, the TCA luminaires can communicate through a communication bus with a TEV Series central that in turn communicates with the DAISATEST platform installed in a PC computer. In this case, the tests are programmed and the results are shown in a user-friendly and intuitive graphic environment that allows –at a glance– the elements that need maintenance to be visualized. Likewise it directly proposes corrective maintenance actions, unmistakably indicating the references of the required parts.



Lens Series structure



Lens Series operation

■ Non maintained

Self-contained Emergency luminaires that supply the specified lumens with a given autonomy (1h, 2h, 3h) when the mains voltage drops below 70%.

■ Maintained

Self-contained Emergency luminaires with two functions:

- Supplying the specified lumens with a given autonomy (1h, 2h, 3h) when the mains voltage drops below 70%.
- Having an independent connection (LUM) to use them as luminaires.

In this case they supply 60% of the nominal luminous flux, with an estimated LED life-time above 80,000 hours.

■ Non maintained A and TCA

Self-contained Emergency luminaires that supply the specified lumens with a given autonomy (1h, 2h, 3h) when the mains voltage drops below 70%.

A: They include a microprocessor for operation in Self-test mode.

TCA: They include a microprocessor for operation in Self-test mode and DaisaTest Centralised System.

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■ Maintained A and TCA

Self-contained Emergency luminaires with two functions:

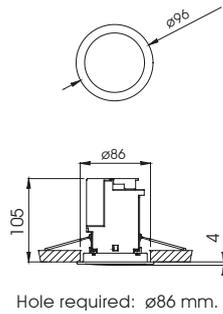
- Supplying the specified lumens with a given autonomy (1h, 2h, 3h) when the mains voltage drops below 70%.
- Having an independent connection (LUM) to use them as luminaires.

In this case they supply 60% of the nominal luminous flux, with an estimated LED life-cycle above 80,000 hours.

A: They include a microprocessor for operation in Self-test mode.

TCA: They include a microprocessor for operation in Self-test mode and DaisaTest Centralised System.

They have a sensor integrated in the reflector that allows maintained activation-deactivation according to the level of environmental light, optimising consumption of the luminary. This option can be complemented in TCA models with a time switch managed by the DaisaTest management software.



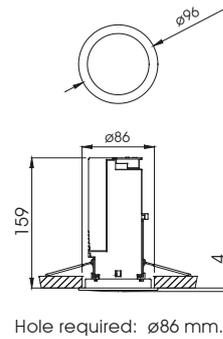
Short body

The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.



Long body

The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



Available in two colours



Flush-mounted Lens with trim

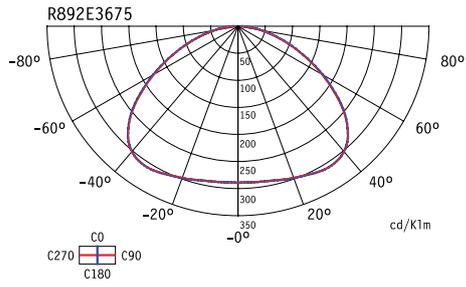
Synthetic material body.
 Double textured opal or transparent polycarbonate diffuser.
 Synthetic material trim.
 Fixing system by means of metallic spring.
 Suitable for assembly in technical ceiling.



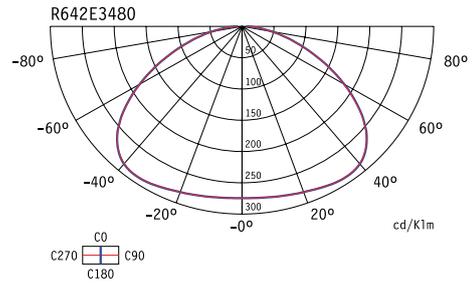
Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP20 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.

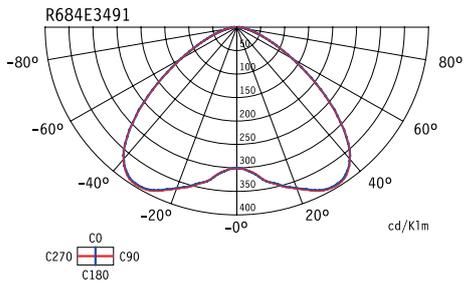
Flush-mounted Lens with trim N20/P20



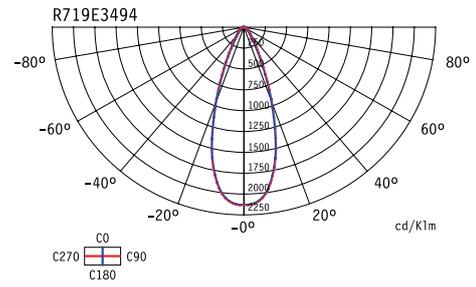
Flush-mounted Lens with trim N30/P30



Flush-mounted Lens with trim N40/P40



Flush-mounted Lens with trim N70/P70



Flush-mounted Lens with trim

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-EN N20	2.0 a 2.5	1h	Short	Opal
Lens-EN N30	2.5 a 4.0	1h	Short	Opal
Lens-EN N40	4.0 a 7.0	1h	Short	Transparent
Lens-EN N70	7.0 a 15.0	1h	Short	Transparent
Lens-EN 2N20	2.0 a 2.5	2h	Long	Opal
Lens-EN 2N30	2.5 a 4.0	2h	Long	Opal
Lens-EN 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-EN 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-EN 3N20	2.0 a 2.5	3h	Long	Opal
Lens-EN 3N30	2.5 a 4.0	3h	Long	Opal
Lens-EN 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-EN 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-EN P20	2.0 a 2.5	1h	Short	Opal
Lens-EN P30	2.5 a 4.0	1h	Short	Opal
Lens-EN P40	4.0 a 7.0	1h	Short	Transparent
Lens-EN P70	7.0 a 15.0	1h	Short	Transparent
Lens-EN 2P20	2.0 a 2.5	2h	Long	Opal
Lens-EN 2P30	2.5 a 4.0	2h	Long	Opal
Lens-EN 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-EN 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-EN 3P20	2.0 a 2.5	3h	Long	Opal
Lens-EN 3P30	2.5 a 4.0	3h	Long	Opal
Lens-EN 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-EN 3P70	7.0 a 15.0	3h	Long	Transparent

Flush-mounted Lens with trim A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-EN N20 A	2.0 a 2.5	1h	Short	Opal
Lens-EN N30 A	2.5 a 4.0	1h	Short	Opal
Lens-EN N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-EN N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-EN 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-EN 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-EN 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-EN 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-EN 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-EN 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-EN 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-EN 3N70 A	7.0 a 15.0	3h	Long	Transparent

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Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-EN P20 A	2.0 a 2.5	1h	Short	Opal
Lens-EN P30 A	2.5 a 4.0	1h	Short	Opal
Lens-EN P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-EN P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-EN 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-EN 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-EN 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-EN 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-EN 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-EN 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-EN 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-EN 3P70 A	7.0 a 15.0	3h	Long	Transparent

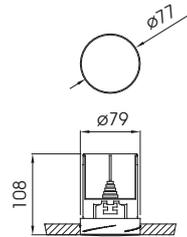
Flush-mounted Lens with trim TCA.Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com**Finishes**

Finish of	Description	Marking
Trim colour	White (RAL9016) Silver grey	----- (RAL9006)

Operation, common data and notes:

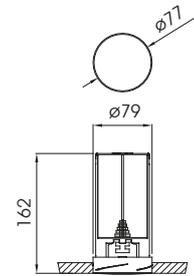
(1) The Maintained models have an independent mains connection that allows switching the luminaire on and off as required up to 60% of its nominal flux. See page 21.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP20 IK04**.



Hole required: ø79 mm.

Short body
The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.



Hole required: ø79 mm.

Long body
The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



Flush-mounted Lens without trim

Synthetic material body.
Double textured opal or transparent polycarbonate diffuser.

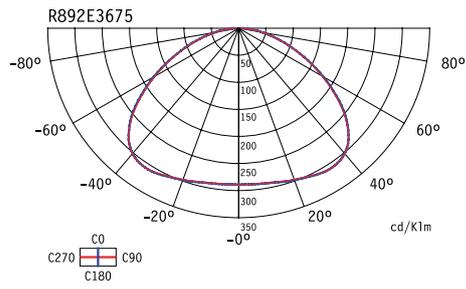
Fixing system by means of white aluminium ring.

Suitable for assembly in technical ceiling of plaster.

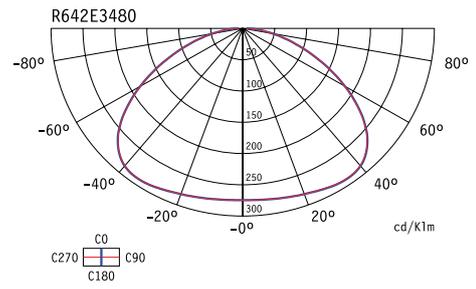
Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP20 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems. 27

Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.

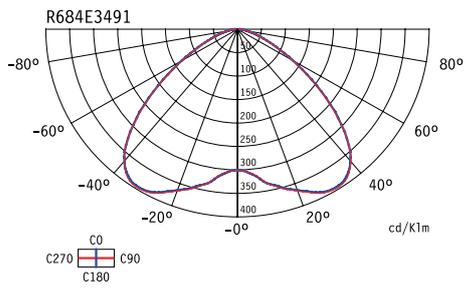
Flush-mounted Lens without trim N20/P20



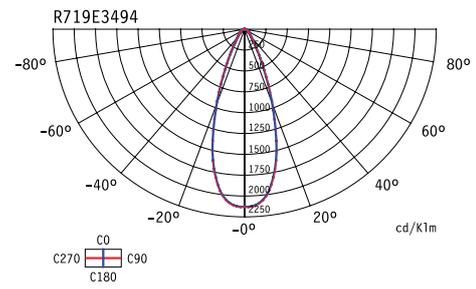
Flush-mounted Lens without trim N30/P30



Flush-mounted Lens without trim N40/P40



Flush-mounted Lens without trim N70/P70



Flush-mounted Lens without trim

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-SEN N20	2.0 a 2.5	1h	Short	Opal
Lens-SEN N30	2.5 a 4.0	1h	Short	Opal
Lens-SEN N40	4.0 a 7.0	1h	Short	Transparent
Lens-SEN N70	7.0 a 15.0	1h	Short	Transparent
Lens-SEN 2N20	2.0 a 2.5	2h	Long	Opal
Lens-SEN 2N30	2.5 a 4.0	2h	Long	Opal
Lens-SEN 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-SEN 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-SEN 3N20	2.0 a 2.5	3h	Long	Opal
Lens-SEN 3N30	2.5 a 4.0	3h	Long	Opal
Lens-SEN 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-SEN 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-SEN P20	2.0 a 2.5	1h	Short	Opal
Lens-SEN P30	2.5 a 4.0	1h	Short	Opal
Lens-SEN P40	4.0 a 7.0	1h	Short	Transparent
Lens-SEN P70	7.0 a 15.0	1h	Short	Transparent
Lens-SEN 2P20	2.0 a 2.5	2h	Long	Opal
Lens-SEN 2P30	2.5 a 4.0	2h	Long	Opal
Lens-SEN 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-SEN 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-SEN 3P20	2.0 a 2.5	3h	Long	Opal
Lens-SEN 3P30	2.5 a 4.0	3h	Long	Opal
Lens-SEN 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-SEN 3P70	7.0 a 15.0	3h	Long	Transparent

Flush-mounted Lens without trim A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-SEN N20 A	2.0 a 2.5	1h	Short	Opal
Lens-SEN N30 A	2.5 a 4.0	1h	Short	Opal
Lens-SEN N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-SEN N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-SEN 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-SEN 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-SEN 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-SEN 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-SEN 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-SEN 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-SEN 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-SEN 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-SEN P20 A	2.0 a 2.5	1h	Short	Opal
Lens-SEN P30 A	2.5 a 4.0	1h	Short	Opal
Lens-SEN P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-SEN P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-SEN 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-SEN 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-SEN 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-SEN 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-SEN 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-SEN 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-SEN 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-SEN 3P70 A	7.0 a 15.0	3h	Long	Transparent

Flush-mounted Lens without trim TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

Accessories

Reference	Description
HMT Lens-SEN	Tool for ring assembly.
MNT Lens-SEN	Manual accessory for ring assembly.

Operation, common data and notes:

(1) The Maintained models have an independent mains connection that allows switching the luminary on and off as required up to 60% of its nominal flux. See page 21.

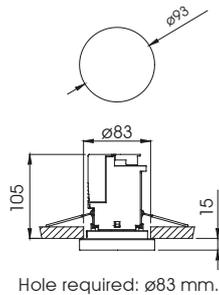
Only for assembly in technical ceilings of gypsum panels or plaster with a minimum thickness of 10 mm.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP20 IK04**.



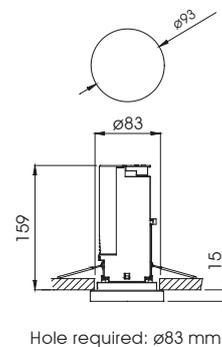
Semi-recessed Lens

Synthetic material external body.
 Textured opal or transparent polycarbonate diffuser.
 Fixing system by means of metallic spring.
 Suitable for assembly in technical ceiling.



Short body

The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.



Long body

The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



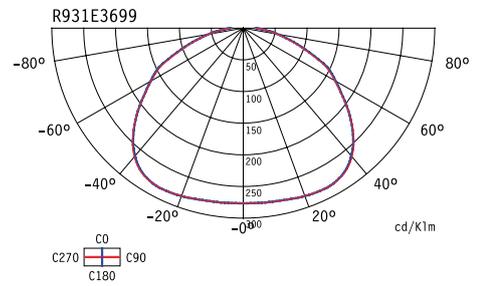


Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP20 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

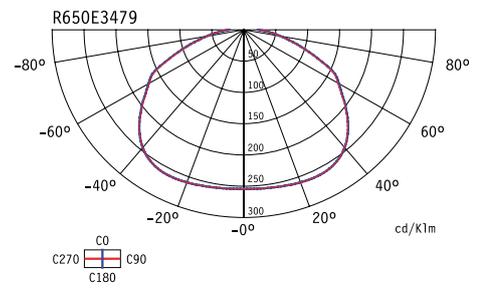
Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.



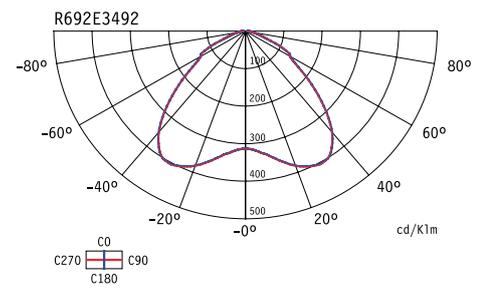
Semi-recessed Lens N20/P20



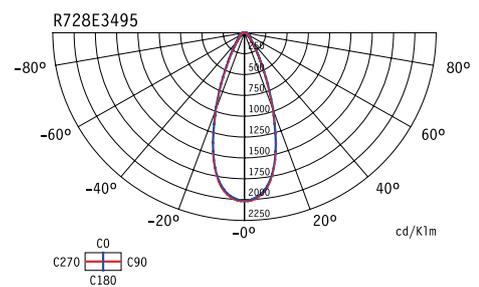
Semi-recessed Lens N30/P30



Semi-recessed Lens N40/P40



Semi-recessed Lens N70/P70



Semi-recessed Lens

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-SM N20	2.0 a 2.5	1h	Short	Opal
Lens-SM N30	2.5 a 4.0	1h	Short	Opal
Lens-SM N40	4.0 a 7.0	1h	Short	Transparent
Lens-SM N70	7.0 a 15.0	1h	Short	Transparent
Lens-SM 2N20	2.0 a 2.5	2h	Long	Opal
Lens-SM 2N30	2.5 a 4.0	2h	Long	Opal
Lens-SM 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-SM 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-SM 3N20	2.0 a 2.5	3h	Long	Opal
Lens-SM 3N30	2.5 a 4.0	3h	Long	Opal
Lens-SM 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-SM 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-SM P20	2.0 a 2.5	1h	Short	Opal
Lens-SM P30	2.5 a 4.0	1h	Short	Opal
Lens-SM P40	4.0 a 7.0	1h	Short	Transparent
Lens-SM P70	7.0 a 15.0	1h	Short	Transparent
Lens-SM 2P20	2.0 a 2.5	2h	Long	Opal
Lens-SM 2P30	2.5 a 4.0	2h	Long	Opal
Lens-SM 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-SM 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-SM 3P20	2.0 a 2.5	3h	Long	Opal
Lens-SM 3P30	2.5 a 4.0	3h	Long	Opal
Lens-SM 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-SM 3P70	7.0 a 15.0	3h	Long	Transparent

Semi-recessed Lens A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-SM N20 A	2.0 a 2.5	1h	Short	Opal
Lens-SM N30 A	2.5 a 4.0	1h	Short	Opal
Lens-SM N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-SM N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-SM 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-SM 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-SM 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-SM 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-SM 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-SM 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-SM 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-SM 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-SM P20 A	2.0 a 2.5	1h	Short	Opal
Lens-SM P30 A	2.5 a 4.0	1h	Short	Opal
Lens-SM P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-SM P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-SM 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-SM 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-SM 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-SM 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-SM 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-SM 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-SM 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-SM 3P70 A	7.0 a 15.0	3h	Long	Transparent

Semi-recessed Lens TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

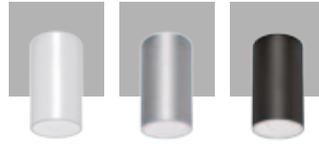
Operation, common data and notes:

(1) The Maintained models have an independent mains connection that allows switching the luminaire on and off as required up to 60% of its nominal flux. See page 21.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP20 IK04**.



Available in three colours

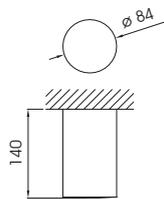


Ceiling-mounted Lens

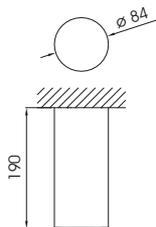
External body of painted aluminium.

Textured opal or transparent polycarbonate diffuser.

Suitable for surface mounting.



Short body
The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.



Long body
The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.

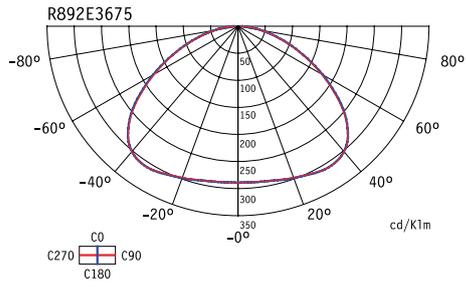




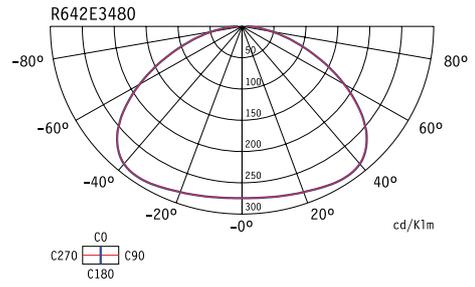
Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP40 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.

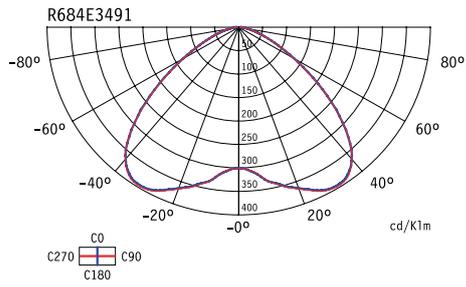
Ceiling-mounted Lens N20/P20



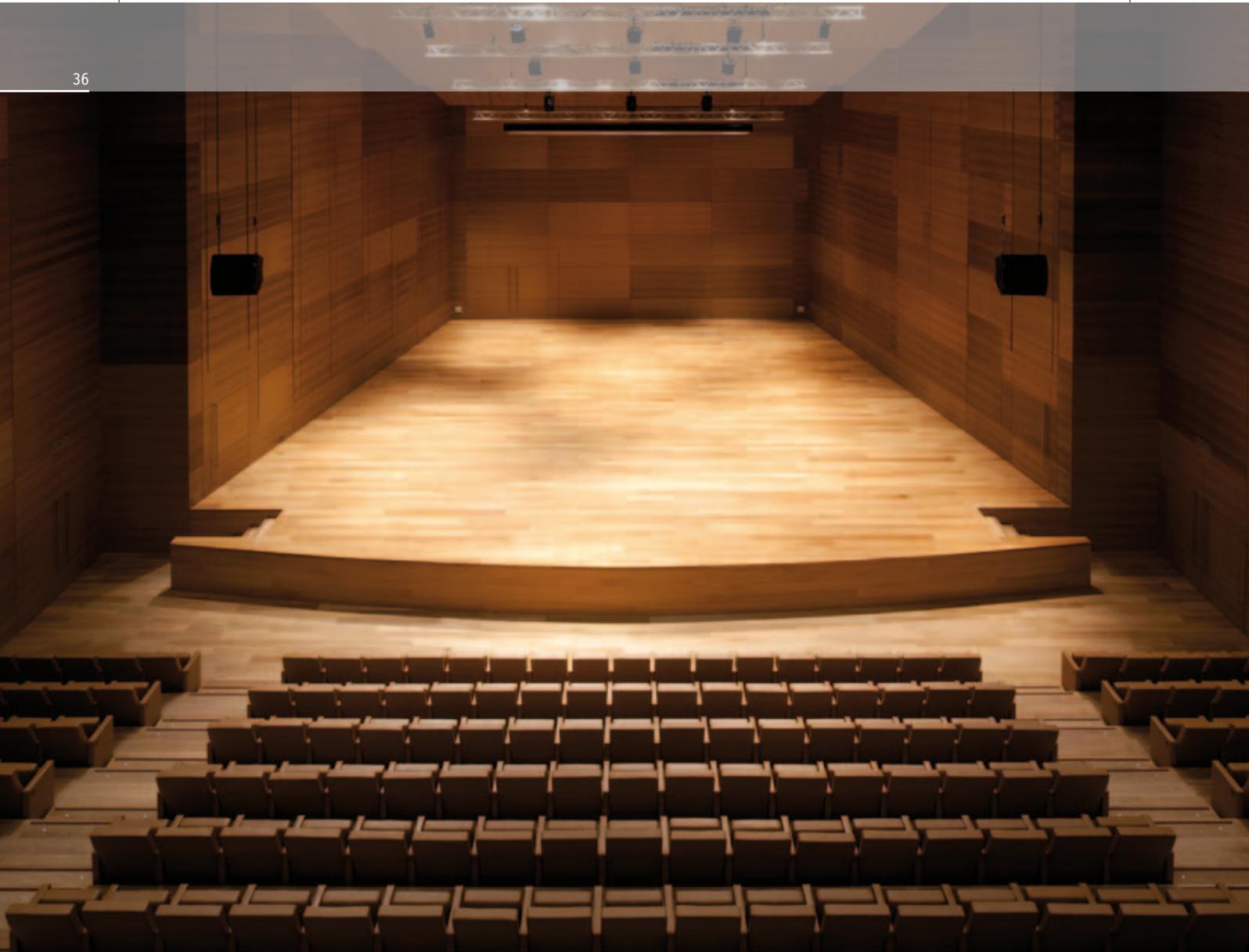
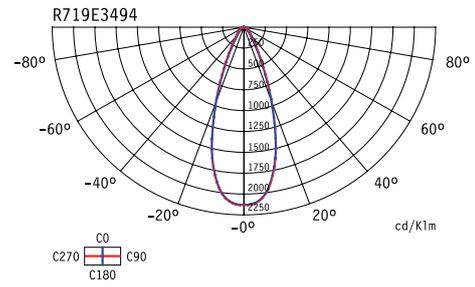
Ceiling-mounted Lens N30/P30



Ceiling-mounted Lens N40/P40



Ceiling-mounted Lens N70/P70



Ceiling-mounted Lens

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-AD N20	2.0 a 2.5	1h	Short	Opal
Lens-AD N30	2.5 a 4.0	1h	Short	Opal
Lens-AD N40	4.0 a 7.0	1h	Short	Transparent
Lens-AD N70	7.0 a 15.0	1h	Short	Transparent
Lens-AD 2N20	2.0 a 2.5	2h	Long	Opal
Lens-AD 2N30	2.5 a 4.0	2h	Long	Opal
Lens-AD 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-AD 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-AD 3N20	2.0 a 2.5	3h	Long	Opal
Lens-AD 3N30	2.5 a 4.0	3h	Long	Opal
Lens-AD 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-AD 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-AD P20	2.0 a 2.5	1h	Short	Opal
Lens-AD P30	2.5 a 4.0	1h	Short	Opal
Lens-AD P40	4.0 a 7.0	1h	Short	Transparent
Lens-AD P70	7.0 a 15.0	1h	Short	Transparent
Lens-AD 2P20	2.0 a 2.5	2h	Long	Opal
Lens-AD 2P30	2.5 a 4.0	2h	Long	Opal
Lens-AD 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-AD 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-AD 3P20	2.0 a 2.5	3h	Long	Opal
Lens-AD 3P30	2.5 a 4.0	3h	Long	Opal
Lens-AD 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-AD 3P70	7.0 a 15.0	3h	Long	Transparent

Ceiling-mounted Lens A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-AD N20 A	2.0 a 2.5	1h	Short	Opal
Lens-AD N30 A	2.5 a 4.0	1h	Short	Opal
Lens-AD N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-AD N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-AD 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-AD 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-AD 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-AD 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-AD 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-AD 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-AD 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-AD 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-AD P20 A	2.0 a 2.5	1h	Short	Opal
Lens-AD P30 A	2.5 a 4.0	1h	Short	Opal
Lens-AD P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-AD P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-AD 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-AD 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-AD 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-AD 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-AD 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-AD 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-AD 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-AD 3P70 A	7.0 a 15.0	3h	Long	Transparent

Ceiling-mounted Lens TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

Finishes

Finish of	Description	Marking
Colour	White (RAL9016)	----
	Black (RAL9005)	(BLACK)
	Silver grey	(RAL9006)

Operation, common data and notes:

(1) The Maintained models have an independent mains connection that allows switching the luminaire on and off as required up to 60% of its nominal flux. See page 21.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP40 IK04**.



Short body

The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.

Long body

The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



Available in three colours

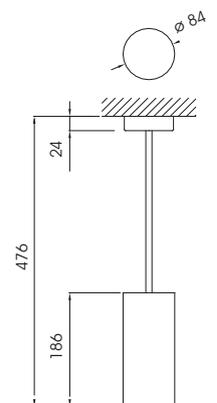
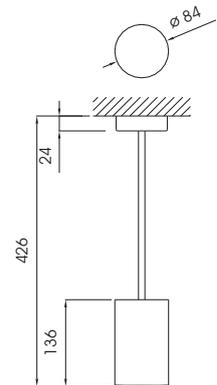
Suspended Lens

External body of painted aluminium.

Textured opal or transparent polycarbonate diffuser.

Suspended element in painted steel.

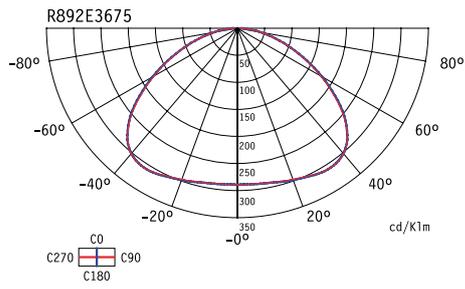
Synthetic fibre fixing system to the ceiling.



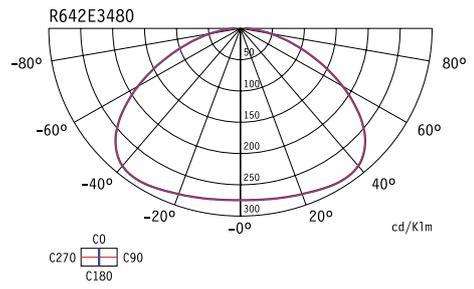
Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP40 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.

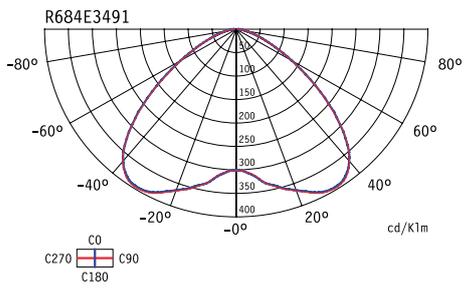
Suspended Lens N20/P20



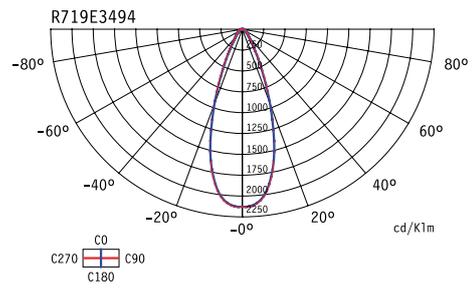
Suspended Lens N30/P30



Suspended Lens N40/P40



Suspended Lens N70/P70



Suspended Lens

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-S N20	2.0 a 2.5	1h	Short	Opal
Lens-S N30	2.5 a 4.0	1h	Short	Opal
Lens-S N40	4.0 a 7.0	1h	Short	Transparent
Lens-S N70	7.0 a 15.0	1h	Short	Transparent
Lens-S 2N20	2.0 a 2.5	2h	Long	Opal
Lens-S 2N30	2.5 a 4.0	2h	Long	Opal
Lens-S 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-S 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-S 3N20	2.0 a 2.5	3h	Long	Opal
Lens-S 3N30	2.5 a 4.0	3h	Long	Opal
Lens-S 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-S 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-S P20	2.0 a 2.5	1h	Short	Opal
Lens-S P30	2.5 a 4.0	1h	Short	Opal
Lens-S P40	4.0 a 7.0	1h	Short	Transparent
Lens-S P70	7.0 a 15.0	1h	Short	Transparent
Lens-S 2P20	2.0 a 2.5	2h	Long	Opal
Lens-S 2P30	2.5 a 4.0	2h	Long	Opal
Lens-S 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-S 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-S 3P20	2.0 a 2.5	3h	Long	Opal
Lens-S 3P30	2.5 a 4.0	3h	Long	Opal
Lens-S 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-S 3P70	7.0 a 15.0	3h	Long	Transparent

Suspended Lens A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-S N20 A	2.0 a 2.5	1h	Short	Opal
Lens-S N30 A	2.5 a 4.0	1h	Short	Opal
Lens-S N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-S N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-S 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-S 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-S 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-S 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-S 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-S 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-S 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-S 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-S P20 A	2.0 a 2.5	1h	Short	Opal
Lens-S P30 A	2.5 a 4.0	1h	Short	Opal
Lens-S P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-S P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-S 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-S 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-S 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-S 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-S 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-S 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-S 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-S 3P70 A	7.0 a 15.0	3h	Long	Transparent

Suspended Lens TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

Finishes

Finish of	Description	Marking
Colour	White (RAL9016)	----
	Black (RAL9005)	(BLACK)
	Silver grey	(RAL9006)

Operation, common data and notes:

(1) The Maintained models have an independent mains connection that allows switching the luminary on and off as required up to 60% of its nominal flux. See page 21.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP40 IK04**.

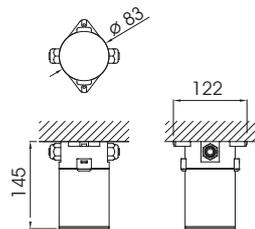


Sealed Lens

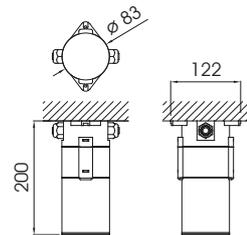
Synthetic material external body.

Synthetic material glands integrated in the body.

Textured opal or transparent polycarbonate diffuser.



Short body
The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.



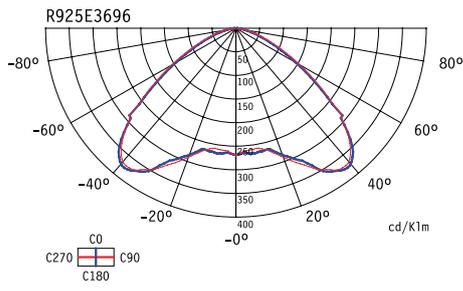
Long body
The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



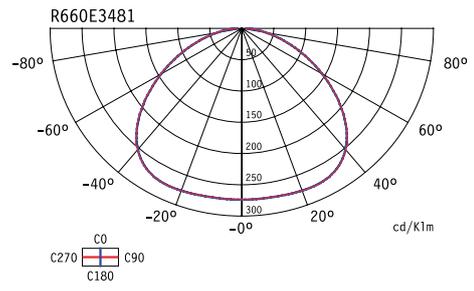
Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP66 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.

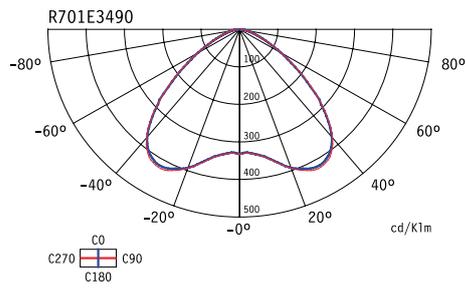
Sealed Lens N20/P20



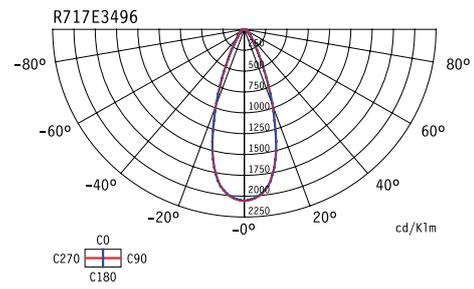
Sealed Lens N30/P30



Sealed Lens N40/P40



Sealed Lens N70/P70



Sealed Lens

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-ES N20	2.0 a 2.5	1h	Short	Opal
Lens-ES N30	2.5 a 4.0	1h	Short	Opal
Lens-ES N40	4.0 a 7.0	1h	Short	Transparent
Lens-ES N70	7.0 a 15.0	1h	Short	Transparent
Lens-ES 2N20	2.0 a 2.5	2h	Long	Opal
Lens-ES 2N30	2.5 a 4.0	2h	Long	Opal
Lens-ES 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-ES 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-ES 3N20	2.0 a 2.5	3h	Long	Opal
Lens-ES 3N30	2.5 a 4.0	3h	Long	Opal
Lens-ES 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-ES 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-ES P20	2.0 a 2.5	1h	Short	Opal
Lens-ES P30	2.5 a 4.0	1h	Short	Opal
Lens-ES P40	4.0 a 7.0	1h	Short	Transparent
Lens-ES P70	7.0 a 15.0	1h	Short	Transparent
Lens-ES 2P20	2.0 a 2.5	2h	Long	Opal
Lens-ES 2P30	2.5 a 4.0	2h	Long	Opal
Lens-ES 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-ES 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-ES 3P20	2.0 a 2.5	3h	Long	Opal
Lens-ES 3P30	2.5 a 4.0	3h	Long	Opal
Lens-ES 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-ES 3P70	7.0 a 15.0	3h	Long	Transparent

Sealed Lens A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-ES N20 A	2.0 a 2.5	1h	Short	Opal
Lens-ES N30 A	2.5 a 4.0	1h	Short	Opal
Lens-ES N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-ES N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-ES 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-ES 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-ES 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-ES 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-ES 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-ES 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-ES 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-ES 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-ES P20 A	2.0 a 2.5	1h	Short	Opal
Lens-ES P30 A	2.5 a 4.0	1h	Short	Opal
Lens-ES P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-ES P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-ES 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-ES 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-ES 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-ES 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-ES 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-ES 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-ES 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-ES 3P70 A	7.0 a 15.0	3h	Long	Transparent

Sealed Lens TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

Operation, common data and notes:

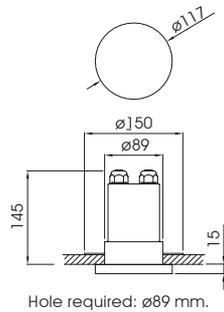
(1) The Maintained models have an independent mains connection that allows switching the luminaire on and off as required up to 60% of its nominal flux. See page 21.

All the models are INDUSTRIAL GREY colour (injected synthetic material).

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP66 IK04**.

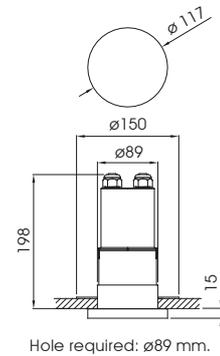
Semi-recessed Sealed Lens

Synthetic material external body.
 Synthetic material glands integrated in the body.
 Textured opal or transparent polycarbonate diffuser.
 Synthetic fibre fixing system to the ceiling.
 Suitable for surface mounting.
 Use the KSP Lens accessory for assembly in solid ceilings.



Short body

The length of the body has been minimised maintaining one hour autonomy, in both Maintained and Non Maintained models.

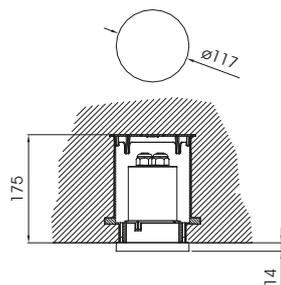


Long body

The longer length of the body allows the space available for batteries to be duplicated, thus achieving autonomies of two and three hours.



KSP accessory for assembly in concrete, brick or block ceilings.

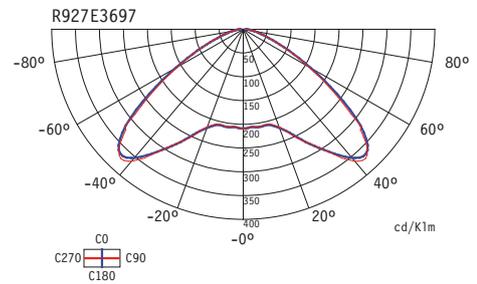


Construction details: Manufactured according to EN 60598-2-22 (IEC 60598-2-22) standard / According to Community Directives of Electromagnetic Compatibility, of Low Voltage and RoHS 2004/108/EC, 2006/95/EC and 2002/95/EC / NiMH battery protected against deep discharges / Remote stand-by / Remote control circuit protected against connection errors / Electric shock protection: Class II / Luminary suitable for normally inflammable surface installation / **IP66 IK04** / Thermal protection for mains input / 100% functional testing of production with computer-electronic systems.

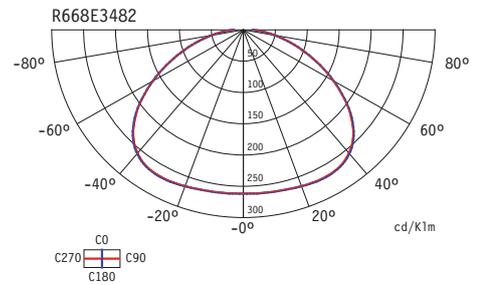
Functional options: "N" Non Maintained / "P" Maintained with independent incoming connection for the maintained function / "A" Operation in Self-test mode / "TCA" Operation in Self-test mode and DaisaTest centralised management System.



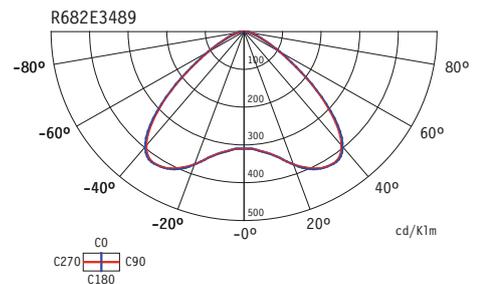
Semi-recessed Sealed Lens N20/P20



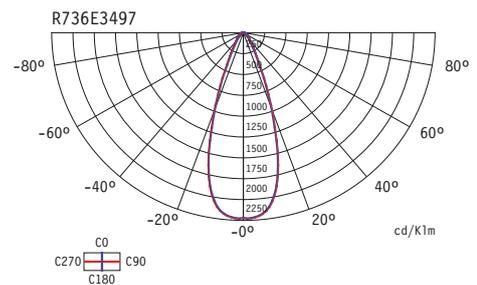
Semi-recessed Sealed Lens N30/P30



Semi-recessed Sealed Lens N40/P40



Semi-recessed Sealed Lens N70/P70



Semi-recessed Sealed Lens

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained:				
Lens-ESM N20	2.0 a 2.5	1h	Short	Opal
Lens-ESM N30	2.5 a 4.0	1h	Short	Opal
Lens-ESM N40	4.0 a 7.0	1h	Short	Transparent
Lens-ESM N70	7.0 a 15.0	1h	Short	Transparent
Lens-ESM 2N20	2.0 a 2.5	2h	Long	Opal
Lens-ESM 2N30	2.5 a 4.0	2h	Long	Opal
Lens-ESM 2N40	4.0 a 7.0	2h	Long	Transparent
Lens-ESM 2N70	7.0 a 15.0	2h	Long	Transparent
Lens-ESM 3N20	2.0 a 2.5	3h	Long	Opal
Lens-ESM 3N30	2.5 a 4.0	3h	Long	Opal
Lens-ESM 3N40	4.0 a 7.0	3h	Long	Transparent
Lens-ESM 3N70	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained (1):				
Lens-ESM P20	2.0 a 2.5	1h	Short	Opal
Lens-ESM P30	2.5 a 4.0	1h	Short	Opal
Lens-ESM P40	4.0 a 7.0	1h	Short	Transparent
Lens-ESM P70	7.0 a 15.0	1h	Short	Transparent
Lens-ESM 2P20	2.0 a 2.5	2h	Long	Opal
Lens-ESM 2P30	2.5 a 4.0	2h	Long	Opal
Lens-ESM 2P40	4.0 a 7.0	2h	Long	Transparent
Lens-ESM 2P70	7.0 a 15.0	2h	Long	Transparent
Lens-ESM 3P20	2.0 a 2.5	3h	Long	Opal
Lens-ESM 3P30	2.5 a 4.0	3h	Long	Opal
Lens-ESM 3P40	4.0 a 7.0	3h	Long	Transparent
Lens-ESM 3P70	7.0 a 15.0	3h	Long	Transparent

Semi-recessed Sealed Lens A. Specific for Autotest

Includes microprocessor for Self-test functions.

Model	Installation height (m)	Autonomy	Format	Diffuser
Non maintained A:				
Lens-ESM N20 A	2.0 a 2.5	1h	Short	Opal
Lens-ESM N30 A	2.5 a 4.0	1h	Short	Opal
Lens-ESM N40 A	4.0 a 7.0	1h	Short	Transparent
Lens-ESM N70 A	7.0 a 15.0	1h	Short	Transparent
Lens-ESM 2N20 A	2.0 a 2.5	2h	Long	Opal
Lens-ESM 2N30 A	2.5 a 4.0	2h	Long	Opal
Lens-ESM 2N40 A	4.0 a 7.0	2h	Long	Transparent
Lens-ESM 2N70 A	7.0 a 15.0	2h	Long	Transparent
Lens-ESM 3N20 A	2.0 a 2.5	3h	Long	Opal
Lens-ESM 3N30 A	2.5 a 4.0	3h	Long	Opal
Lens-ESM 3N40 A	4.0 a 7.0	3h	Long	Transparent
Lens-ESM 3N70 A	7.0 a 15.0	3h	Long	Transparent

Model	Installation height (m)	Autonomy	Format	Diffuser
Maintained A (1):				
Lens-ESM P20 A	2.0 a 2.5	1h	Short	Opal
Lens-ESM P30 A	2.5 a 4.0	1h	Short	Opal
Lens-ESM P40 A	4.0 a 6.0	1h	Short	Transparent
Lens-ESM P70 A	7.0 a 15.0	1h	Short	Transparent
Lens-ESM 2P20 A	2.0 a 2.5	2h	Long	Opal
Lens-ESM 2P30 A	2.5 a 4.0	2h	Long	Opal
Lens-ESM 2P40 A	4.0 a 6.0	2h	Long	Transparent
Lens-ESM 2P70 A	7.0 a 15.0	2h	Long	Transparent
Lens-ESM 3P20 A	2.0 a 2.5	3h	Long	Opal
Lens-ESM 3P30 A	2.5 a 4.0	3h	Long	Opal
Lens-ESM 3P40 A	4.0 a 6.0	3h	Long	Transparent
Lens-ESM 3P70 A	7.0 a 15.0	3h	Long	Transparent

Semi-recessed Sealed Lens TCA.

Includes microprocessor for operating in Self-test mode and DaisaTest centralized management System. TCA models can be supplied on request. Check with the factory or our web site: www.daisalux.com

Accessories

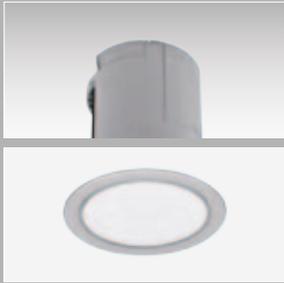
Reference	Description
KSP Lens	Semi-recessed housing for concrete ceilings only with short format.

Operation, common data and notes:

(1) The Maintained models have an independent mains connection that allows switching the luminaire on and off as required up to 60% of its nominal flux. See page 21.

Built in compliance with EN 60598-2-22 (IEC 60598-2-22) standard. Protection class: **IP66 IK04**.

Lens Series as Luminary



Flush-mounted
Lens with
trim



Semi-recessed
Lens



Flush-mounted
Lens without
trim



Semi-recessed
Sealed Lens



Ceiling-mounted Lens



Sealed
Lens



Suspended Lens

Luminary Lens Series

Model (1)	Installation height (m)	Lumens (lm)	Format	Diffuser
Flush-mounted with trim				
Lens-EN L20	2.0 a 2.5	100	Short	Opal
Lens-EN L30	2.5 a 4.0	140	Short	Opal
Lens-EN L40	4.0 a 7.0	140	Short	Transparent
Lens-EN L70	7.0 a 15.0	140	Short	Transparent
Flush-mounted without trim				
Lens-SEN L20	2.0 a 2.5	100	Short	Opal
Lens-SEN L30	2.5 a 4.0	140	Short	Opal
Lens-SEN L40	4.0 a 7.0	140	Short	Transparent
Lens-SEN L70	7.0 a 15.0	140	Short	Transparent
Semi-recessed				
Lens-SM L20	2.0 a 2.5	100	Short	Opal
Lens-SM L30	2.5 a 4.0	140	Short	Opal
Lens-SM L40	4.0 a 7.0	140	Short	Transparent
Lens-SM L70	7.0 a 15.0	140	Short	Transparent
Ceiling-mounted				
Lens-AD L20	2.0 a 2.5	100	Short	Opal
Lens-AD L30	2.5 a 4.0	140	Short	Opal
Lens-AD L40	4.0 a 7.0	140	Short	Transparent
Lens-AD L70	7.0 a 15.0	140	Short	Transparent
Suspended				
Lens-S L20	2.0 a 2.5	100	Short	Opal
Lens-S L30	2.5 a 4.0	140	Short	Opal
Lens-S L40	4.0 a 7.0	140	Short	Transparent
Lens-S L70	7.0 a 15.0	140	Short	Transparent
Sealed				
Lens-ES L20	2.0 a 2.5	100	Short	Opal
Lens-ES L30	2.5 a 4.0	140	Short	Opal
Lens-ES L40	4.0 a 7.0	140	Short	Transparent
Lens-ES L70	7.0 a 15.0	140	Short	Transparent
Semi-recessed Sealed				
Lens-ESM L20	2.0 a 2.5	100	Short	Opal
Lens-ESM L30	2.5 a 4.0	140	Short	Opal
Lens-ESM L40	4.0 a 7.0	140	Short	Transparent
Lens-ESM L70	7.0 a 15.0	140	Short	Transparent

Finishes

Finish of:	Description	Marking
Supply voltage	230V AC/DC 24V AC/DC	----- (24V)

Operation, common data and notes:

(1) See the finishes and accessories of each series on the corresponding page.
Built in compliance with EN 60598-1 (IEC 60598-1) standard.



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Emergency Lighting

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