CATALOGUE

EMERGI-LITE

Emergency lighting & central power supply systems

Emergi-Lite is a leading life safety solutions provider, delivering state-of-the-art systems and products into the emergency lighting marketplace.

We focus on supporting our customers at all points of the emergency lighting life-cycle, whether planning, installing, managing or renewing.

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Emergi-Lite

Experts in emergency lighting

- Efficient emergency lighting solutions
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Emergi-Lite
Experts in emergency lighting

By choosing Emergi-Lite as your emergency lighting partner, you'll be placing your projects, your systems, and essentially your people, in safe hands.

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01 We support emergency lighting projects on all scales

When choosing a partner for emergency lighting, you need a supplier capable of delivering a solution whenever the need arises, whether you're planning a new build project, overseeing an installation, or considering renewal of a long-standing system.

Emergi-Lite is a leading life safety solutions provider, delivering state-of-the-art systems and products into the emergency lighting marketplace.

We focus on supporting our customers at all points of the emergency lighting life-cycle, whether planning, installing, managing or renewing.

Years of experience
Supporting emergency lighting projects on all scales, backed by friendly service, technical expertise and our continual drive towards new product innovation makes Emergi-Lite the number one choice for emergency lighting.

Construction engineers and installers are assured that orders can be easily placed, deliveries arrive promptly, and that any issues are resolved quickly to a satisfactory outcome.

Our products and services are specifically designed to provide the most effective protection and safety, in line with customer needs, relevant standards and industry regulations. These solutions start at the planning stage for emergency lighting systems, with advice on product selection and system requirements, through to delivery of certified technical drawings.

With project time-lines tight and budgets constrained, choosing the right partner for emergency lighting system design is imperative. By choosing Emergi-Lite , you'll be making the right start.

Emergi-Lite works at the heart of this complex process, assisting designers, specifiers, and final customers with all manner of emergency lighting needs.

Efficient emergency lighting solutions Life-cycle

The Emergi-Lite concept is clear and simple. Providing you a reliable, total solution for safe evacuation. The way in which we do this is what makes the difference. We offer advantages to everybody involved throughout the life-cycle process. That way, you know that Emergi-Lite is always the right choice, for both you and your customers.

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01 ABB Emergi-Lite office and support center

Advice and information during the design phase
Each phase requires different input from us. In the design phase, it is important for you to have all the information. If desired, we can provide you with that in the form of specific project advice, based on the most recent regulations, standards and safety requirements. Emergi-Lite always offers you the necessary information in the most compact form, so that you quickly have an overview of all the available information.

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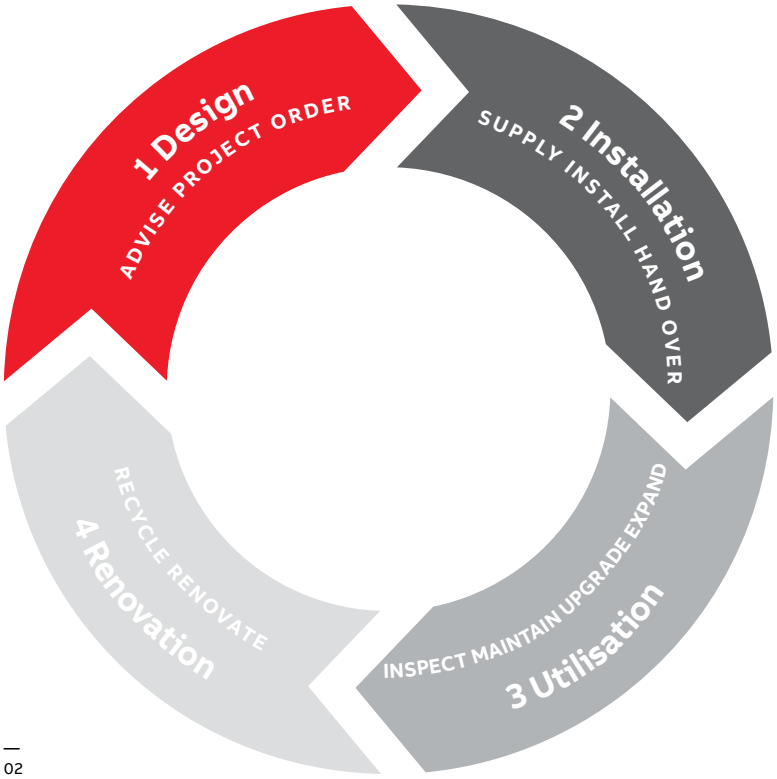
Speed and materials during the installation phase
Speed and timing are essential during the installation phase, because the easy-to-install materials must be at the construction site at the right time. That is why luminaires are always in stock, or short lead time from the manufacturing facility. If you perform the installation yourself, clear assembly instructions, packaging instructions and a modular system give you a head start.

Emergi-Lite offers you practical solutions to give you an immediate advantage, which only makes everything so much easier for you.

Support during the utilisation phase
During the utilisation phase, we can advise on your emergency lighting installation and make sure it is aligned with the latest standards. That way, you guarantee optimal safety at minimum utilisation costs, thanks to low energy consumption and easy-to-replace parts and, if necessary, the people who are working, shopping, relaxing or sleeping in the building can quickly and safely find their way out.

Altering and separating during the renovation phase
The new generation of Emergi-Lite products is ready for the renovation phase. We go further than the normal use of durable, environmentally-friendly, recyclable materials. The products are easy to disassemble and easy to dispose of separately in the legally required return and recycling flows. It is also easy to alter the new generation of luminaires using the individual modules.

Renewal and refurbishment completes the emergency lighting life-cycle. Inevitably, all emergency lighting systems require renewal, as new products develop, standards change, and the ongoing cost of maintaining the current system becomes excessive.



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02 The Emergi-Lite concept

At this point our products and services continue to play a major part. In addition to keeping you up-to-date with new industry developments, our sales and technical teams are happy to review existing plans and specifications to advise on new and better product options.

Emergency lighting commissioning
Emergency lighting systems must be commissioned following installation, prior to use.

Emergi-Lite can provide advice and assistance for commissioning self-contained emergency lighting systems. Furthermore, our service team provides a commissioning service for our central addressable testing and central power supply systems, to ensure the installation meets with the necessary approvals.

Product development & recycling
Emergi-Lite products are designed with the future in mind. Our focus on new product development ensures we're always in a strong position to deliver new innovations into the emergency lighting marketplace.

Our products are manufactured using sustainable, environmentally friendly materials and many now benefit from modular construction and LED technology, promoting longer lifetimes and lower recycling demand.

In addition, since we're a member of Lumicom, recycling of our luminaires is a quick and easy process (see www. lumicom.com).

Emergi-Lite also has battery recycling registration to meet the requirements of the Battery Directive (Battery Producer registration number BPRN00373).

Emergi-Lite official WEEE Registration number: WEE/DH0073UQ
Waste Electrical and Electronic Equipment Regulations 2006 ("the WEEE Regulations")

This applies to emergency lighting luminaires supplied in UK, and those other territories where ABB Ltd Emergi-Lite has responsibility as a producer.

Producer Responsibility
The Company meets the producer responsibility via membership of the Lumicom Producer Compliance Scheme (registration no. WEEE/DH0073UQ). Under this scheme, de-polluted luminaires (i.e. those with the lamps, batteries and liquid filled capacitors removed), which are being replaced by our fittings, will be recycled in an environmentally sound manner.

Recycling Cost
Producers are required to finance the environmentally sound disposal of non-household luminaires and the gas discharge lamps within them. Therefore there will be a recycling charge, which may vary from time to time.

Battery Directive
Battery Producer recycling registration number: BPRN00373.

FM09470

Hq assessed to bs en iso9001: 2000 for the management of emergency lighting and fire detection equipment and the modification of mains luminaires for emergency lighting applications. Cert no: FM09470.

Emergi-Lite

With you every step of the emergency lighting process

During building construction or refurbishment, the focus for emergency lighting shifts from planning and design, to delivery and installation. Emergi-Lite provides solutions that impact at all points of the emergency lighting life-cycle.

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01 Easy-to-install product range
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02 Certified technical design

Easy-to-install product range
Many of our products are engineered to a modular design format, which promotes straightforward, cost-effective installation and maintenance.

Modular design enables First-Fix installation of the key wiring components with later connection of geartrays, diffusers and legends etc, for easy management and replacement of parts.

Certified technical design
Central to emergency lighting is the technical design drawing. It defines luminaire positioning and spacing, drives the installation effort and provides the key control for commissioning and approval.

Our technical design team is on hand to advise and assist with design drawings for all types of emergency lighting system, to the latest relevant standards, with full certification for added confidence and peace of mind.

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03 Project support
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04 Project consultation

Project support
Our project engineers and internal sales support teams are available to provide guidance on products and project updates/delivery schedules etc. This catalogue makes for a great starting point when considering emergency lighting, but is only a small part of our service.

Project consultation
You can count on us to help with your emergency lighting planning. We offer expert assistance in emergency lighting scheme design, as well as clear, concise advice on product selection.
Our dedicated team are able to assist you at your premises, and arrange for emergency lighting schemes to be prepared at our design office.

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The purpose of an emergency lighting system is to protect and safeguard life. Once commissioned and in operation, the emergency lighting system must function correctly throughout its lifetime and therefore requires ongoing management, maintenance and testing.

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05 Easy-to-install product range

Standards and legislation
The need for testing and servicing is enforced by legislation, with both The Regulatory Reform (Fire Safety) Order 2005/ Fire (Scotland) Act 2005 and The Work Place Directive 89/654 making reference to proper maintenance of emergency lighting systems.

Any faults found need to be rectified as quickly as possible. For many building owners/occupiers, who have legal responsibility for these systems, maintenance, testing and access to replacement parts are of paramount importance. With this in mind, it's clear to see that maintaining the partnership with your emergency lighting supplier, even after commissioning, is highly important.

Our fully certified engineering team can provide, support and advice on maintenance and servicing of emergency lighting.

Maintenance & servicing
Our team of qualified and experienced service engineers is available to service emergency lighting systems and to ensure full working order, in line with appropriate British Standards.

Term maintenance contracts are available. Contact our service team today to discuss your maintenance needs.

System testing & upgrades
Owner/occupiers are legally obliged to test and maintain emergency lighting to BS 5266-1 and -8 (Simplified Testing Regime EN 50172).

Emergi-Lite manufactures a range of testing solutions for self-contained emergency lighting - Self-test, Dali, Naveo®Pro and Emex test addressable testing - to accommodate all levels of testing requirement.

Emergi-Lite
Guidance for emergency lighting

We can provide guidance to improve understanding of emergency lighting and central power supply standards and practices, determining both the design and implementation of these systems.

Emergency lighting
We maintain up to date knowledge and materials related to the latest emergency lighting requirements, regulations and standards.

During meetings and in site visits, a member of our field sales team will be able to provide expert and in-depth understanding of emergency lighting legislative and testing requirements.

The imperative is to highlight the correct procedures for testing and monitoring all emergency lighting, in accordance with British Standards, Codes of Practice and current Working Directives, along with the methodologies best used to maximise effectiveness and efficiency of your installations.

Product & standards awareness
We endeavour to provide seminars/sessions with clients to help improve understanding of emergency lighting and central power systems.

Topics include:
- Emergency lighting, testing & monitoring
- Central power supply systems
- ICEL risk assessment

Emergency lighting configurator

Use our **configurator too**l to assist with simple Emergency Lighting designs and Central Battery System power size calculations. Instructions to connect to the web based tool are on page 11.

Emergency lighting configurator

Speed up your emergency lighting projects

3 **available modules** for your system design

Prepare and Select

Be guided through the definition of your project needs. By answering a few questions, the Configurator will suggest the most suitable products.

Central Power Supply Calculation

Select products and quantities, the tool will calculate and indicate the best fitting Central Power Supply for your project.

Click and Select

A poweful search engine and several refining features (function, IP, IK, etc.) allow a quick product selection from the wide ABB offer.

Benefits

Time saving

Autonomy

Free

- **Integrate** products on your floorplans

  Upon products selection, import buildings floorplans and virtually position devices.

- **Download** documents

  When configuration is done, save a summary of selected products with their respective documents (Product datasheets, certificates, installation instructions, etc.).

- **Share** your project

  Once project is finished, share it online with your ABB referent, who can eventually adjust the layout and create the offer.

emergency-lighting-configurator.abb.com

Making your building safer than ever.

Serenga 2

Project covering & stylish

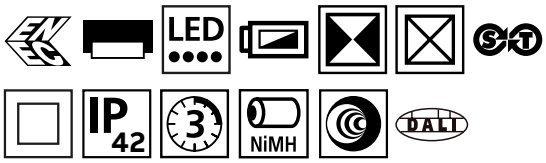
- High power, low energy consumption LED solutions
- Specially designed lenses for optimised light distribution
- Modular, First-Fix installation
- Round or square shapes to suit design requirements

Serenga 2

Project covering & stylish

Recessed downlight

- Metal heatsink - high grade polycarbonate body
- Specially designed lens for optimised light distribution
- Modular, First-Fix installation
- Round or square trim shapes are available as interior design choices
- Escape route supplied as standard



Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)	Version
CTSR2-DEA-M3	REC M3 CT-NAVEO ESC-L4M WH	220-240 AC 50Hz	1 x LED 2W	203	3.5 / 3	3	5-40	0.6	○
CTSR2Q-DEA-M3	REC-SQ M3 CT-NAVEO ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	0.6	□
SR2-DEA-230	REC 230V ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.4	○
SR2-DEA-230LT	REC 230V EMEX ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.4	○
SR2-DAC-230LT*	REC 230V EMEX ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.4	○
SR2-DEA-M3	REC M3 AUTOTST ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	0.6	○
SR2Q-DEA-230	REC-SQ 230V ESC L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.4	□
SR2Q-DEA-230LT	REC-SQ 230V EMEX ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.4	□
SR2Q-DEA-M3	REC-SQ M3 AUTOTST ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	0.6	□
DASR2-DEA-M3	REC M3 DALI ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	0.6	○

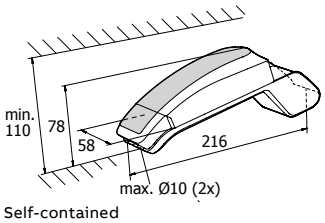
* Suitable for application requirements of NFPA101
Includes lens A

Select optical lens for application required

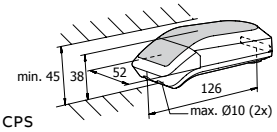
Code	Lens	Type	Application
SR2-LENS1*	A	Escape route	2-4m corridor use, ceiling mount
SR2-LENS2	B	Escape route, or object	4-8m corridor use, ceiling mount. Or spot light at 2-4m (ceiling mount)
SR2-LENS3	C	Escape route	8-12m corridor use, ceiling mount
SR2-LENS4	D	Open area	2-4m, open area space
SR2-LENS5	E	Open area	4-8m, open area space
SR2-LENS6	F	Open area	8-12m, open area space
SR2-LENS7	G	Escape route	2-4m corridor use, wall mount

*Lens included in the box
See spacing tables on pages 128-129

IP Rating	Product type
IP20	flush mount from above
IP42	flush mount from below

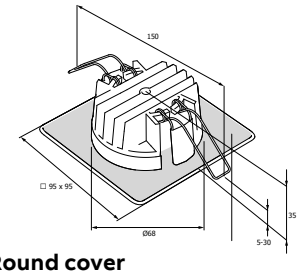


Self-contained

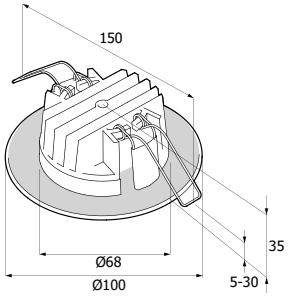


CPS

Square cover



Round cover



Serenga 2

Project covering & stylish

Surface mount downlight

- Injection moulded - high grade polycarbonate body
- Specially designed lens for optimised light distribution
- Modular, First-Fix installation
- Ease of installation - unique moulded construction to retain IP rating without additional protection
- Escape route supplied as standard

Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTSR2-SEM3-A1	SFC M3 CT-NAVEO ESC-L4M WH	220-240 AC 50Hz	1 x LED 2W	203	3.5 / 3	3	5-40	1.0
SR2-SE230-A1	SFC 230V ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.7
SR2-SE230LT-A1	SFC 230V EMEX ESC-L4M WH	220-240 AC/DC 0-60Hz			5.5 / 5	230V	0-40	0.7
SR2-SEM3-A1	SFC M3 AUTOTST ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	1.0
DASR2-SEM3-A1	SFC M3 DALI ESC-L4M WH	220-240 AC 50Hz			3.5 / 3	3	5-40	1.0

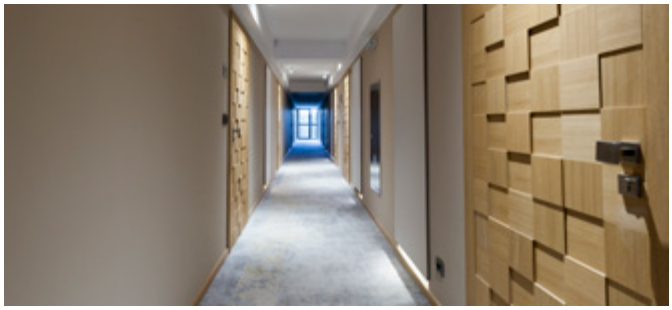
Includes lens A

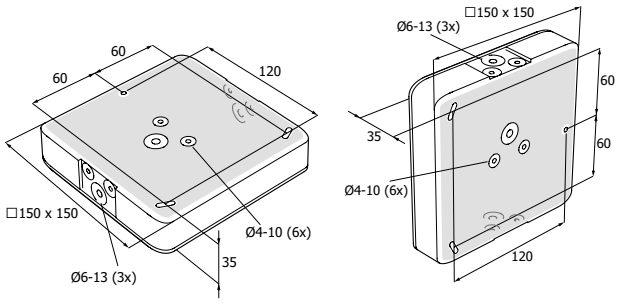
Select optical lens for application required

Code	Lens	Type	Application
SR2-LENS1*	A	Escape route	2-4m corridor use, ceiling mount
SR2-LENS2	B	Escape route, or object	4-8m corridor use, ceiling mount. Or spot light at 2-4m (ceiling mount)
SR2-LENS3	C	Escape route	8-12m corridor use, ceiling mount
SR2-LENS4	D	Open area	2-4m, open area space
SR2-LENS5	E	Open area	4-8m, open area space
SR2-LENS6	F	Open area	8-12m, open area space
SR2-LENS7	G	Escape route	2-4m corridor use, wall mount

*Lens included in the box

See spacing tables on pages 128-129



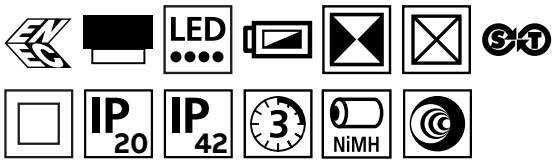


Serenga 2

Project covering & stylish

Recessed downlight in black

- Injection moulded - high grade polycarbonate body
- Specially designed lens for optimised light distribution
- Modular, First-Fix installation
- Round or square trim shapes are available as interior design choices
- Ease of installation - unique moulded construction to retain IP rating without additional protection
- Escape route supplied as standard



Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTSR2-DEA-M3B	REC M3 CT-NAVEO ESC-L4M BLK	220-240 AC 50Hz	1 x LED 2W	203	3.5 / 3	3	5-40	0.6
SR2-DEA-M3B	REC M3 AUTOTST ESC-L4M BLK	220-240 AC 50Hz			3.5 / 3	3	5-40	0.6
SR2-DEA-230LTB	REC 230V EMEX ESC-L4M BLK	220-240 AC/DC 0-60Hz			3.5 / 3	230V	5-40	0.4
SR2-DEA-230B	REC 230V SL ESC-L4M BLK	220-240 AC/DC 0-60Hz			3.5 / 3	230V	5-40	0.4

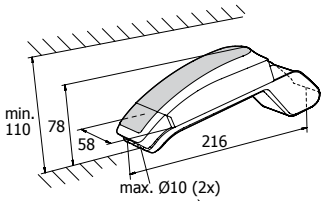
Select optical lens for application required

Code	Lens	Type	Application
SR2-LENS1	A	Escape route	2-4m corridor use, ceiling mount
SR2-LENS2*	B	Escape route, or object	4-8m corridor use, ceiling mount. Or spot light at 2-4m (ceiling mount)
SR2-LENS3	C	Escape route	8-12m corridor use, ceiling mount
SR2-LENS4	D	Open area	2-4m, open area space
SR2-LENS5	E	Open area	4-8m, open area space
SR2-LENS6	F	Open area	8-12m, open area space
SR2-LENS7	G	Escape route	2-4m corridor use, wall mount

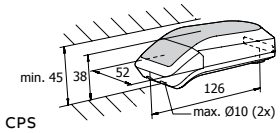
*Lens included in the box

See spacing tables on pages 128-129

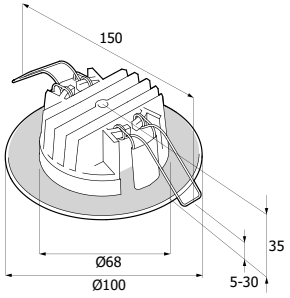
IP Rating	Product type
IP20	flush mount from above
IP42	flush mount from below



Self-contained



CPS

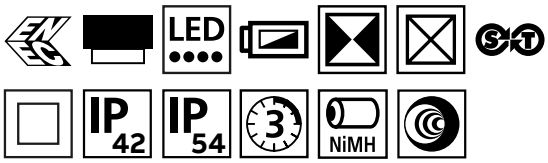


Serenga 2

Project covering & stylish

Surface mount downlight in black

- Injection moulded - high grade polycarbonate body
- Specially designed lens for optimised light distribution
- Modular, First-Fix installation
- Ease of installation - unique moulded construction to retain IP rating without additional protection
- Escape route supplied as standard



Luminaire

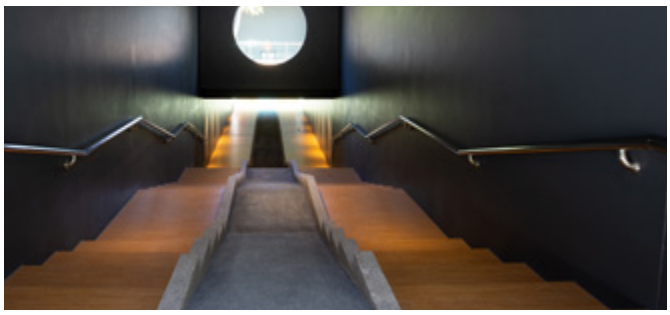
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTSR2-SEM3-A1B	SFC M3 CT-NAVEO ESC-L4M BLK	220-240 AC 50Hz			3.5 / 3	3	5-40	1.0
SR2-SEM3-A1B	SFC M3 AUTOTST ESC-L4M BLK	220-240 AC 50Hz			3.5 / 3	3	5-40	1.0
SR2-SE230LT-A2	SFC 230V EMEX ESC-L4M BLK	220-240 AC/DC 0-60Hz			3.5 / 3	230V	0-40	0.7
SR2-SE230-A2	SFC 230V SL 230V50HZ BLK ESC-L4M 2L	220-240 AC/DC 0-60Hz			3.5 / 3	230V	0-40	0.7

Select optical lens for application required

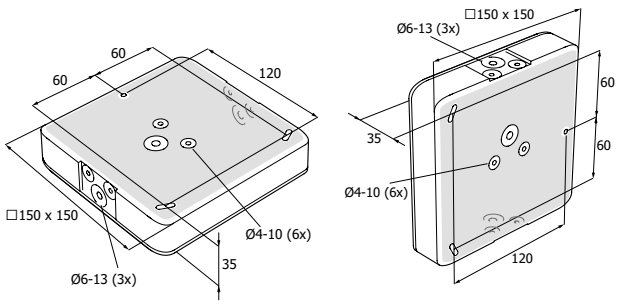
Code	Lens	Type	Application
SR2-LENS1*	A	Escape route	2-4m corridor use, ceiling mount
SR2-LENS2	B	Escape route, or object	4-8m corridor use, ceiling mount. Or spot light at 2-4m (ceiling mount)
SR2-LENS3	C	Escape route	8-12m corridor use, ceiling mount
SR2-LENS4	D	Open area	2-4m, open area space
SR2-LENS5	E	Open area	4-8m, open area space
SR2-LENS6	F	Open area	8-12m, open area space
SR2-LENS7	G	Escape route	2-4m corridor use, wall mount

*Lens included in the box

See spacing tables on pages 128-129



IP Rating	Product type
IP42	wall mount
IP54	ceiling mount

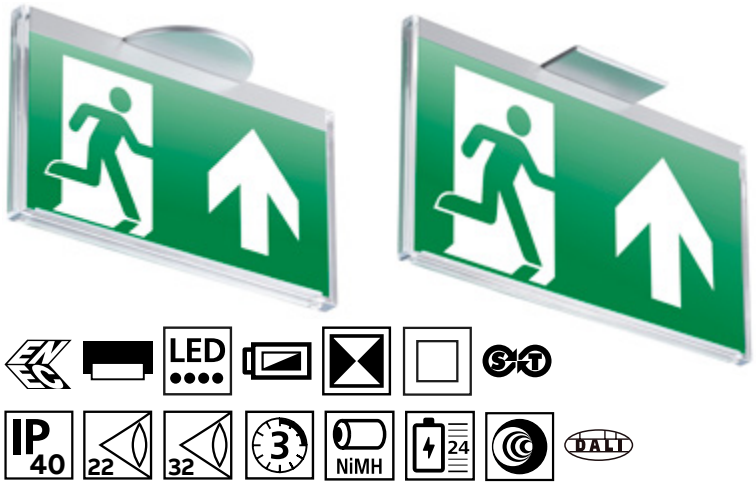


Guideway
Innovative & stylish

- Injection moulded - aluminium base construction
- Bright & uniformed light distribution with 500 cd/m²
- Versatile mounting options with First-Fix control gear
- Unique frameless legend design with click-lock assembly

Guideway

Innovative & stylish



Guideway 22m and 32m - Recessed

- Bright and uniformed light distribution with 500 cd/sq.m
- Versatile mounting options with First-Fix control gear
- Unique frameless legend design with click-lock assembly
- Quick release legend panels

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)	Including
CTEGR3LS1-S22	REC LED SIGN M3 CT-TST 22M	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.2	
CTEGR3LS1-S32	REC LED SIGN M3 CT-TST 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.5	
EGR1LS1D-S22	REC LED SIGN 230DIM 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2	
EGR1LS1D-S32	REC LED SIGN CPS 230DIM 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5	
EGR1LS1LTC-S22	REC LED SIGN CPS LTC 230VAC 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2	
EGR1LS1LTC-S32	REC LED SIGN CPS LTC 230VAC 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5	
EGR1LS1-S22	REC LED SIGN CPS 230VAC 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2	
EGR1LS1-S32	REC LED SIGN CPS 230VAC 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5	
EGR3LS1-S22	REC LED SIGN M3 22M	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.2	
EGR3LS1-S32	REC LED SIGN M3 32M	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.5	
DAEGR3LS1-S22	REC LED SIGN M3 22M DALI	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.2	
DAEGR3LS1-S32	REC LED SIGN M3 32M DALI	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.5	

60 hrs charge at first commissioning, 24 hrs re-charge thereafter
Add '-00' for product without legends

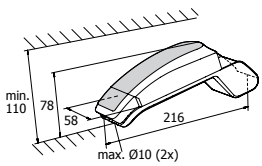
Single sided

Part No.	Legends
ISO 7010 legend format	
XEN2EG22 or XEN2EG32	
XEN3EG22 or XEN3EG32	
XEN6EG22 or XEN6EG32	
XEN5EG22 or XEN5EG32	
XEN0G22 or XEN0G32	
Arabic legend format	
XBN1EG22 or XBN1EG32	

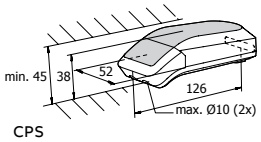
Flag mounted

Part No.	Legends
ISO 7010 legend format	
XEN602EG22 or XEN602EG32	
XEN603EG22 or XEN603EG32	
XEN606EG22 or XEN606EG32	
XEN605EG22 or XEN605EG32	

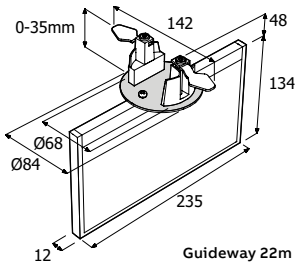
ISO 7010 pictogram legends are shown
Euro format & Special legends are available to order see pages 137-139



Self-contained



CPS



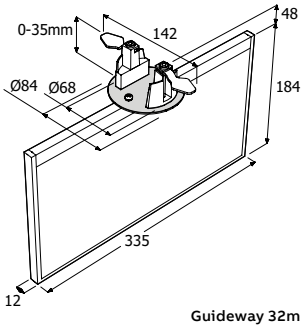
Guideway 22m

Accessories

Order code	Description	Colour
EG-T4SG	Alu Cover discs, 2+2 self contained	
EG-T4VG	Alu Cover discs, 2+2 CPS	

Suspension kit accessories

Order code	Description
EG-TKIT50	Pendant 500
EG-TKIT100	Pendant 1000
EG-WKIT150	Wire suspension kit



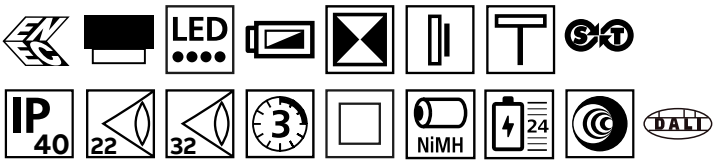
Guideway 32m

Guideway

Innovative & stylish

Guideway 22m and 32m - Surface

- Bright and uniformed light distribution with 500 cd/sq.m
- Versatile mounting options with First-Fix control gear
- Unique frameless legend design with click-lock assembly
- Quick release legend panels



Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)	Including
CTEG3LS1-S22	LED SIGN M3 CT-TST 22M	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.5	
CTEG3LS1-S32	LED SIGN M3 CT-TST 32M	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.6	
EG1LS1D-S22	LED SIGN CPS 230VAC DIM 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5	
EG1LS1D-S32	LED SIGN CPS 230VAC DIM 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6	
EG1LS1LTC-S22	LED SIGN CPS LTC 230VAC 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5	
EG1LS1LTC-S32	LED SIGN CPS LTC 230VAC 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6	
EG1LS1-S22	LED SIGN CPS 230VAC 22M	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5	
EG1LS1-S32	LED SIGN CPS 230VAC 32M	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6	
EG3LS1-S22	LED SIGN M3 22M	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.5	
EG3LS1-S32	LED SIGN M3 32M	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.6	
DAEG3LS1-S22	LED SIGN M3 22M DALI	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.5	
DAEG3LS1-S32	LED SIGN M3 22M DALI	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.6	

Includes back to wall mounting accessory as standard. 60 hrs charge at first commissioning, 24 hrs re-charge thereafter. Add '-00' for product without legends

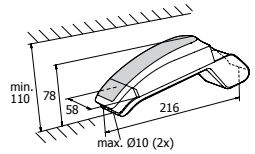
Single sided

Part No.	Legends
ISO 7010 legend format	
XEN2EG22 or XEN2EG32	
XEN3EG22 or XEN3EG32	
XEN6EG22 or XEN6EG32	
XEN5EG22 or XEN5EG32	
XEN0G22 or XEN0G32	
Arabic legend format	
XBN1EG22 or XBN1EG32	

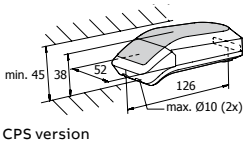
Flag mounted

Part No.	Legends
ISO 7010 legend format	
XEN602EG22 or XEN602EG32	
XEN603EG22 or XEN603EG32	
XEN606EG22 or XEN606EG32	
XEN605EG22 or XEN605EG32	

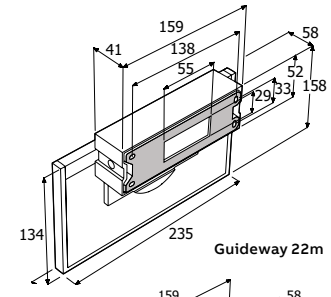
ISO 7010 pictogram legends are shown
Euro format & Special legends are available to order see pages 137-139



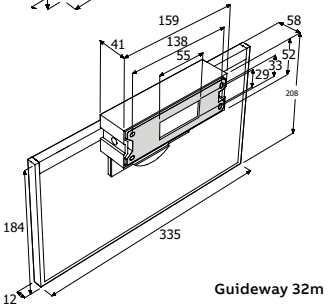
Self-contained



CPS version



Guideway 22m



Guideway 32m

Accessories

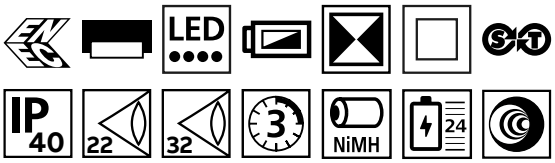
Order code	Description
EG-TKIT50	Pendant 500
EG-TKIT100	Pendant 1000
EG-WKIT150	Wire suspension kit

Guideway

Innovative & stylish

Guideway 22m & 32m - Recessed in black

- Bright and uniformed light distribution with 500 cd/sq.m
- Versatile mounting options with First-Fix control gear
- Unique frameless legend design with click-lock assembly
- Quick release legend panels



Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTEGR3LS1-S22B	REC LED SIGN M3 CT-NAVEO 22M BLK	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.2
CTEGR3LS1-S32B	REC LED SIGN M3 CT-NAVEO 32M BLK	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.5
EGR3LS1-S22B	REC LED SELF-TEST SIGN M3 22M BLK	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.2
EGR3LS1-S32B	REC LED SELF-TEST SIGN M3 32M BLK	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.5
EGR1LS1LTC-S22B	REC LED SIGN 230VAC EMEX 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2
EGR1LS1LTC-S32B	REC LED SIGN 230VAC EMEX 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5
EGR1LS1D-S22B	REC LED SIGN SL 230DIM 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2
EGR1LS1D-S32B	REC LED SIGN SL 230DIM 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5
EGR1LS1-S22B	REC LED SIGN SL 230VAC 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.2
EGR1LS1-S32B	REC LED SIGN SL 230VAC 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.5

60 hrs charge at first commissioning, 24 hrs re-charge thereafter
Includes back to the wall mounting accessory as standard
Add '-00' for product without legends

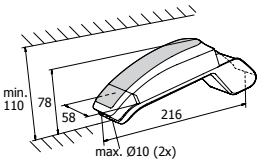
Single sided

Part No.	Legends
ISO 7010 legend format	
XEN2EG22 or XEN2EG32	
XEN3EG22 or XEN3EG32	
XEN6EG22 or XEN6EG32	
XEN5EG22 or XEN5EG32	
XEN0G22 or XEN0G32	
Arabic legend format	
XBN1EG22	

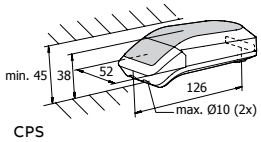
ISO 7010 pictogram legends are shown
Euro format & Special legends are available
to order see pages 137-139

Flag mounted

Part No.	Legends
ISO 7010 legend format	
XEN602EG22 or XEN602EG22	
XEN603EG22 or XEN603EG32	
XEN606EG22 or XEN606EG32	
XEN605EG22 or XEN605EG32	

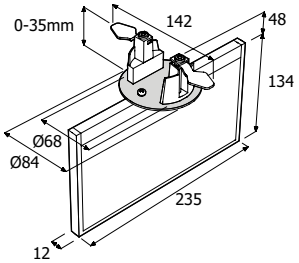


Self-contained

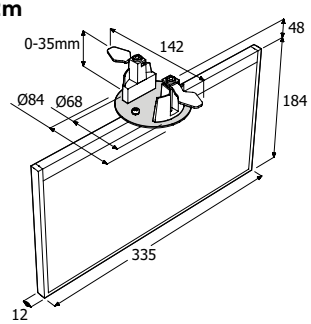


CPS

22m



32m

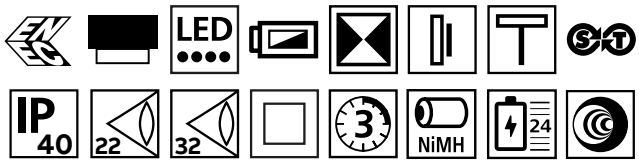


Guideway

Innovative & stylish

Guideway 22m & 32m - Surface mount in black

- Bright and uniformed light distribution with 500 cd/sq.m
- Versatile mounting options with First-Fix control gear
- Unique frameless legend design with click-lock assembly
- Quick release legend panels



Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTEG3LS1-S22B	LED SIGN M3 CT-NAVEO 22M BLK	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.5
CTEG3LS1-S32B	LED SIGN M3 CT-NAVEO 32M BLK	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.6
EG3LS1-S22B	LED SIGN SELF-TEST M3 22M BLK	220-240 AC 50Hz	1 x LED 2W	4.4 / 4	3	5-35	1.5
EG3LS1-S32B	LED SIGN SELF-TEST M3 32M BLK	220-240 AC 50Hz	1 x LED 4W	7.1 / 6.5	3	5-35	1.6
EG1LS1LTC-S22B	LED SIGN 230VAC EMEX LTC 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5
EG1LS1LTC-S32B	LED SIGN 230VAC EMEX LTC 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6
EG1LS1D-S22B	LED SIGN SL 230VAC DIM 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5
EG1LS1D-S32B	LED SIGN SL 230VAC DIM 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6
EG1LS1-S22B	LED SIGN SL 230VAC 22M BLK	220-240 AC/DC 0-60Hz	1 x LED 2W	4.4 / 4	230V	0-35	1.5
EG1LS1-S32B	LED SIGN SL 230VAC 32M BLK	220-240 AC/DC 0-60Hz	1 x LED 4W	7.1 / 6.5	230V	0-35	1.6

60 hrs charge at first commissioning, 24 hrs re-charge thereafter
Includes back to the wall mounting accessory as standard
Add '-00' for product without legends

Single sided

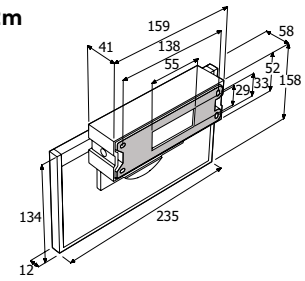
Part No.	Legends
ISO 7010 legend format	
XEN2EG22 or XEN2EG32	
XEN3EG22 or XEN3EG32	
XEN6EG22 or XEN6EG32	
XEN5EG22 or XEN5EG32	
XEN0G22 or XEN0G32	
Arabic legend format	
XBN1EG22 or XBN1EG32	

ISO 7010 pictogram legends are shown
Euro format & Special legends are available
to order see pages 137-139

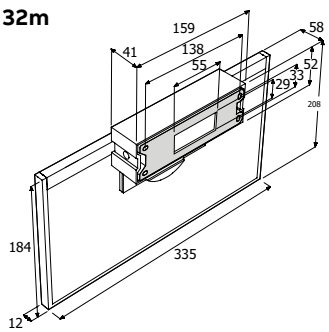
Flag mounted

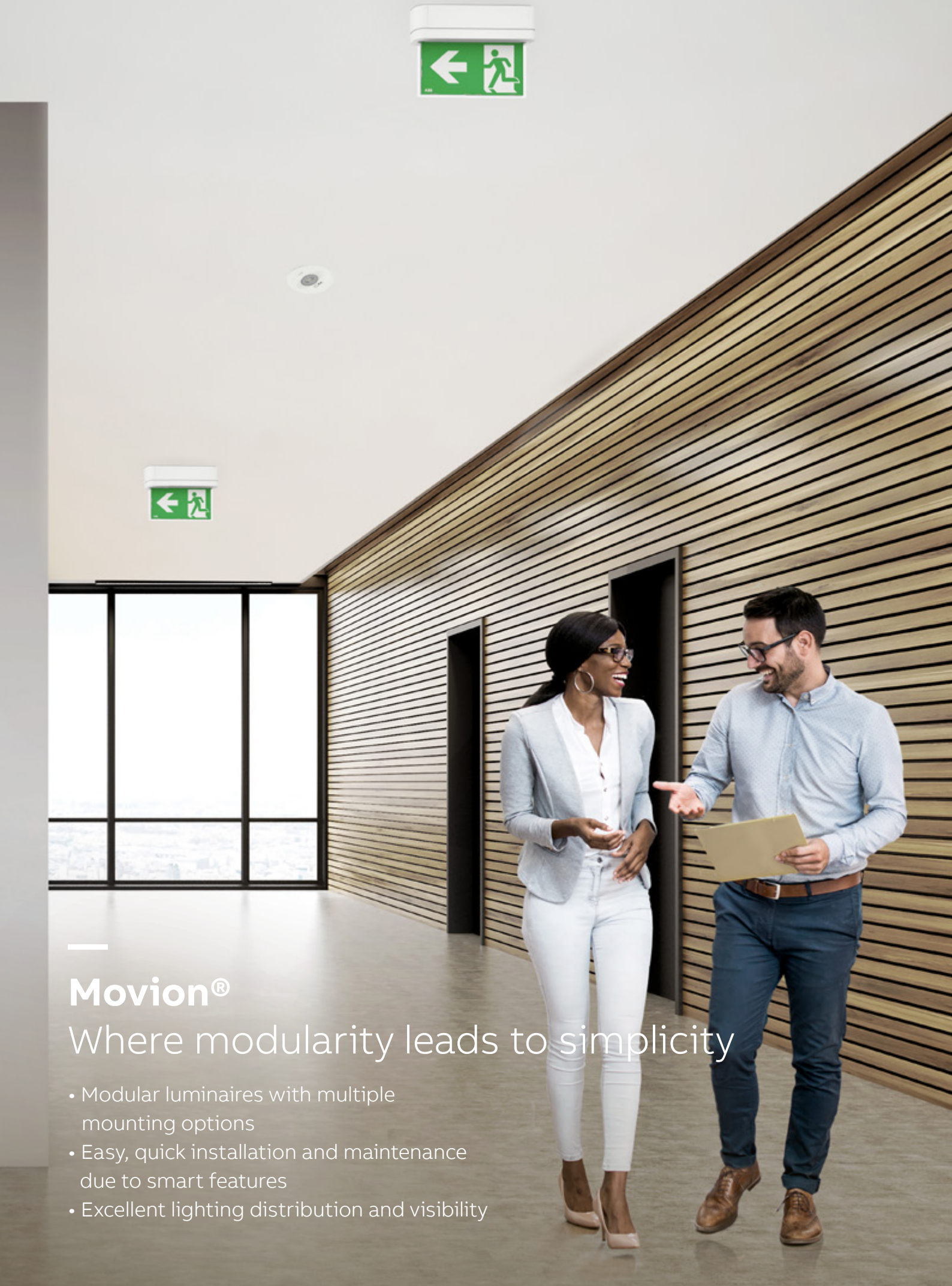
Part No.	Legends
ISO 7010 legend format	
XEN602EG22 or XEN602EG32	
XEN603EG22 or XEN603EG32	
XEN606EG22 or XEN606EG32	
XEN605EG22 or XEN605EG32	

22m



32m





Movion®

Where modularity leads to simplicity

- Modular luminaires with multiple mounting options
- Easy, quick installation and maintenance due to smart features
- Excellent lighting distribution and visibility

Movion®

Modular & versatile

Escape route lighting - Recessed

- Round shaped design fitting any ceiling
- Specially designed lens for optimal light distribution - long and wide beam
- Quick installation and parallel wiring option with the smart loop-in, loop-out system

Luminaire

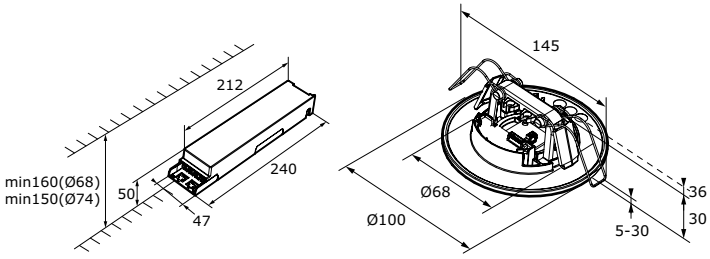
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Light optics	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
511013121/50	EL800R-M3/ST ER	230-240 AC 50/60Hz	1 x LED 1W	101	Escape route	3.33 / 3.19	3	5-35	0.31
511013221/50	EL800R-M3/DALI ER	230-240 AC 50/60Hz		101		3.33 / 3.19	3	5-35	0.31
511013321/50	EL800R-M3/COM ER	230-240 AC 50/60Hz		101		3.33 / 3.19	3	5-35	0.31
511012821/50	EL800R-230 ER	220-240 AC/DC 0-60Hz		124		3.21 / 3.05	230V	0-40	0.21
511012621/50	EL800R-230/LTC ER	220-240 AC/DC 0-60Hz		124		3.21 / 3.05	230V	0-40	0.21
511013122/50	EL800R-M3/ST OA	230-240 AC 50/60Hz		109	Open area	3.33 / 3.19	3	5-35	0.31
511013222/50	EL800R-M3/DALI OA	220-240 AC 50/60Hz		109		3.33 / 3.19	3	5-35	0.31
511013322/50	EL800R-M3/COM OA	230-240 AC 50/60Hz		109		3.33 / 3.19	3	5-35	0.31
511012822/50	EL800R-230 OA	220-240 AC/DC 0-60Hz		134		3.21 / 3.05	230V	0-40	0.21
511012622/50	EL800R-230/LTC OA	220-240 AC/DC 0-60Hz		134		3.21 / 3.05	230V	0-40	0.21

Accessories

Order code	Description	Product type
11160111/50	RENO 2200-3300	Renovation kit for recess mounted, white escape route ligthing

See spacing tables on pages 134-136

IP Rating	Product type
IP20	flush mount from above
IP42	flush mount from below



Movion®

Modular & versatile

Escape route lighting - Surface mount

- Square shaped design fitting any ceiling
- Specially designed lens for optimal light distribution - long and wide beam
- Quick installation and parallel wiring option with the smart loop-in, loop-out system
- Light track mountable with 3C adapter included

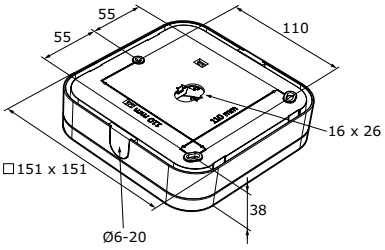
Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Light optics	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
511013111/50	EL800S-M3/ST ER	230-240 AC 50/60Hz	1 x LED 1W	101	Escape route	3.33 / 3.19	3	5-35	0.39
511013211/50	EL800S-M3/DALI ER	230-240 AC 50/60Hz		101		3.33 / 3.19	3	5-35	0.39
511013311/50	EL800S-M3/COM ER	230-240 AC 50/60Hz		101		3.33 / 3.19	3	5-35	0.39
511012811/50	EL800S-230 ER	220-240 AC/DC 0-60Hz		124		3.21 / 3.05	230V	0-40	0.29
511012611/50	EL800S-230/LTC ER	220-240 AC/DC 0-60Hz		124		3.21 / 3.05	230V	0-40	0.29
511013112/50	EL800S-M3/ST OA	230-240 AC 50/60Hz		109	Open area	3.33 / 3.19	3	5-35	0.39
511013212/50	EL800S-M3/DALI OA	230-240 AC 50/60Hz		109		3.33 / 3.19	3	5-35	0.39
511013312/50	EL800S-M3/COM OA	230-240 AC 50/60Hz		109		3.33 / 3.19	3	5-35	0.39
511012812/50	EL800S-230 OA	220-240 AC/DC 0-60Hz		134		3.21 / 3.05	230V	0-40	0.29
511012612/50	EL800S-230/LTC OA	220-240 AC/DC 0-60Hz		134		3.21 / 3.05	230V	0-40	0.29

Accessories

Order code	Description	Product type
5110007/50	PK EL800	Pendant kit surface mounted escape route lighting

Modular pendant tubes and accessories to be used in combination with the pendant kit
See spacing tables on pages 134-136



Movion®

Modular & versatile

Escape route signalisation - 22m

- One version available for wall and ceiling mount
- Strong light distribution with 500 cd/m²
- Light track mountable with 3C adapter included
- Recess kit for flush mounting available

Luminaire

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
411013111/50	XT800S-M3/ST 22M	230-240 AC 50/60Hz	1 x LED 2W	4.38 / 4.14	3	5-35	0.53
411013211/50	XT800S-M3/DALI 22M	230-240 AC 50/60Hz		4.38 / 4.14	3	5-35	0.53
411013311/50	XT800S-M3/COM 22M	230-240 AC 50/60Hz		4.38 / 4.14	3	5-35	0.53
411012811/50	XT800S-230 22M	220-240 AC/DC 0-60Hz		4.04 / 3.82	230V	0-40	0.48
411012611/50	XT800S-230/LTC 22M	220-240 AC/DC 0-60Hz		4.04 / 3.82	230V	0-40	0.48

Configurable pictograms included

Legends

Part No.	
ISO 7010	**Pictogram**
1522251/50	
1522252/50	
1522253/50	
1522258/50	
1522250/50	
1522210/50	
1522211/50	

Euro	
Part no.	**Pictogram**
1522214/50	
1522205/50	
1522206/50	
1522204/50	

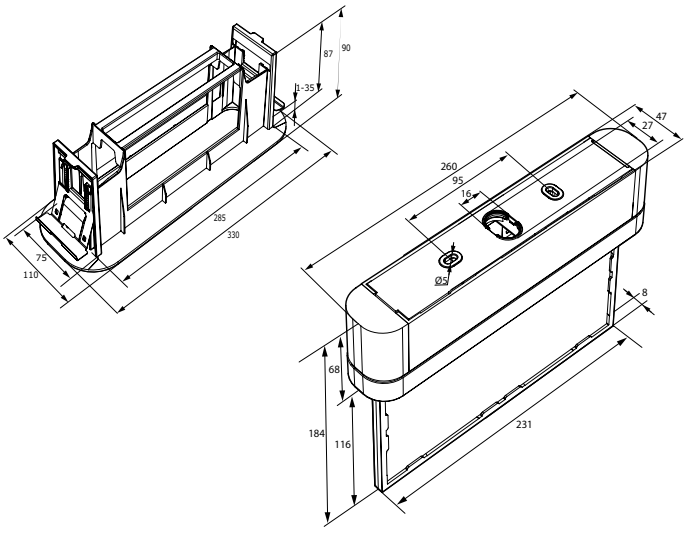
IP Rating	Product type
IP20*	flush mount from above
IP42*	flush mount from below

*Only applicable when the recess kit is used

Accessories

Order code	Description	Product type
4110001/50	RK XT800	Recess kit for exit signs
4110003/50	PK XT800*	Pendant kit surface mounted exit signs
4100007/50	RENO XT800**	Renovation kit for exit signs

*Modular pendant tubes and accessories to be used in combination with the pendant kit
** Use the RENO XT800 in combination with RK XT800
See spacing tables on pages 134-136



Movion®

Modular & versatile

Hybrid - 22m

- All-in-one escape route lighting and signalisation luminaire for wall and ceiling mount
- Available lenses for escape route lighting and 5 lux illumination of safety equipment
- Light track mountable with 3C adapter included
- Recess kit for flush mounting available

Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
411113111/50	XTH800S-M3/ST 22M	230-240 AC 50/60Hz	1 x LED 2W + 1 x LED 1W	67	5.02 / 4.89	3	5-35	0.6
411113211/50	XTH800S-M3/DALI 22M	230-240 AC 50/60Hz		67	5.02 / 4.89	3	5-35	0.6
411113311/50	XTH800S-M3/COM 22M	230-240 AC 50/60Hz		67	5.02 / 4.89	3	5-35	0.6
411112811/50	XTH800S-230 22M	220-240 AC/DC 0-60Hz		82	4.97 / 4.74	230V	0-40	0.5
411112611/50	XTH800S-230/LTC 22M	220-240 AC/DC 0-60Hz		82	4.97 / 4.74	230V	0-40	0.5

Configurable pictograms included

Legends

Part No.	
ISO 7010	**Pictogram**
1522251/50	
1522252/50	
1522253/50	
1522258/50	
1522250/50	
1522210/50	
1522211/50	

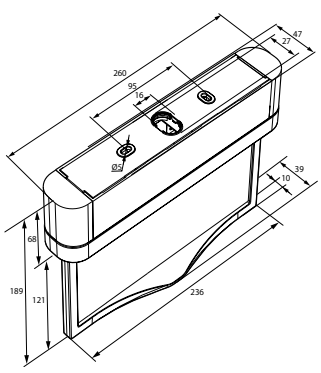
Euro	
Part no.	**Pictogram**
1522214/50	
1522205/50	
1522206/50	
1522204/50	

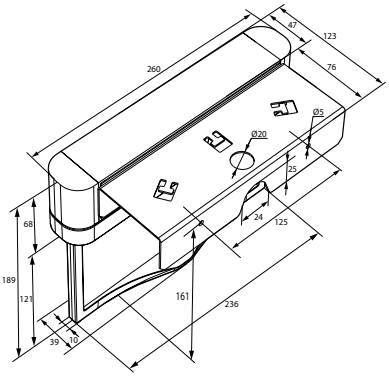
IP Rating	Product type
IP20*	flush mount from above
IP42*	flush mount from below

Accessories

Order code	Description	Product type
4110001/50	RK XT800	Recess kit for exit signs
4110003/50	PK XT800*	Pendant kit surface mounted exit signs
4110004/50	WB XTH 800	Wall bracket for Hybrid exit signs
4100007/50	RENO XT800**	Renovation kit for exit signs

*Modular pendant tubes and accessories to be used in combination with the pendant kit
** Use the RENO XT800 in combination with RK XT800
See spacing tables on pages 134-136





Horizon
Traditional & versatile

- Clip on legend with frame
- Shaped diffuser and contoured reflector
- First-Fix aluminium base, polycarbonate body
- Available for surface and recessed mounting

Horizon

Traditional & versatile

Back-lit LED exit sign

- Choice of IP40 surface mount (OH) or IP20 recessed (OZ)
- Shaped diffuser and contoured reflector
- First-Fix aluminium base with white polycarbonate luminaire body
- Clip-on legend panel
- Complies to IEC 60598.2.22

LED base unit

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTOH3L261	CT 2LED SIGN M3	220-240 AC 50Hz	2 x LED 1W	9.9 / 5.1	3	0-25	1.3
OH3L261	2LED SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
OH1L261HF	2XLED SIGN 230VHF	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OH1L261LTC	2XLED SIGN 230VLTC	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
CTOZ3L261	CT 2LED REC-SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
OZ3L261	2LED REC-SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
OZ1L261HF	2XLED REC-SIGN 230VHF	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OZ1L261LTC	2XLED REC-SIGN 230VLTC	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OH3L261V2	2LEDS SIGN M3 220V60HZ	220-240 AC 50/60Hz		9.9 / 5.1	3	0-25	1.3
OZ3L261V2	2LED REC-SIGN M3 60HZ	220-240 AC 50/60Hz		9.9 / 5.1	3	0-25	1.3

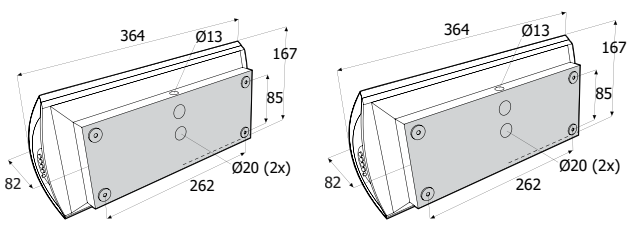
Legends

Part No.	Pictogram
XEN2H	
XEN3H	
XEN6H	
XEN5H	
XLF802H	
XLF803H	
Arabic legend format	
XB01H	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 137-139

Accessories

Order code	Description
OH/BCM	Ceiling bracket, vertical mount, for back-lit sign
OH/WG	Protective wire guard



Horizon

Traditional & versatile

Edge-lit LED exit sign

- Choice of IP40 surface mount (OHD) or IP20 recessed (OZD)
- Shaped diffuser and contoured reflector
- First-Fix aluminium base with white polycarbonate luminaire body
- Legend panel with slotted aluminium frame
- Complies to IEC 60598.2.22

LED base unit

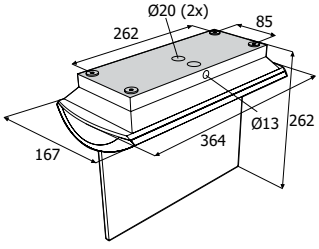
Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
OZD3LS61V2	LEDS REC-EDGE SIGN M3 60HZ	220-240 AC 50/60Hz	2 x LED 2W	9.9 / 5.1	3	0-25	1.3
CTOHD3LS61	CT LEDS EDGE SIGH M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
CTOZD3LS61	CT LED REC-EDGE SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
OHD1LS61HF	LEDS EDGE SIGN 230VHF	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OHD1LS61LTC	LEDS EDGE SIGN 230VLTC	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OHD3LS61	LEDS EDGE SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3
OZD1LS61HF	LEDS REC-EDG SIGN 230HF	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OZD1LS61LTC	LEDS REC-EDG SIGN 230LTC	220-240 AC/DC 0-60Hz		6.8 / 3.1	230V	0-40	1.1
OZD3LS61	LEDS REC-EDGE SIGN M3	220-240 AC 50Hz		9.9 / 5.1	3	0-25	1.3

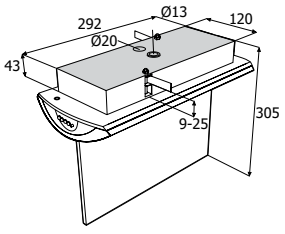
Legends

Single sided	
Part No.	**Pictogram**
XEN20HS	
XEN30HS	
XEN60HS	
XEN50HS	
XLF802HS	
XLF803HS	
Arabic legend format	
HB01HS	

Double sided	
Part No.	**Pictogram**
XEN22HD	
XEN36HD	
XEN55HD	

ISO 7010 pictogram legends are shown.
Euro format & Special legends are available to order see pages 137-139
For further information on Naveo®Pro and emergency luminaire testing formats, see pages 66-70





Accessories

Order code	Description
OH/BWM	Wall bracket for edge-lit sign/luminaire

Lutia

Versatile lighting solution for safety outdoors

- Easy to install, tough and attractive
- One product suits all installation needs (wall and ceiling mounted)
- Reliable in extreme conditions

Lutia

Reliable & robust

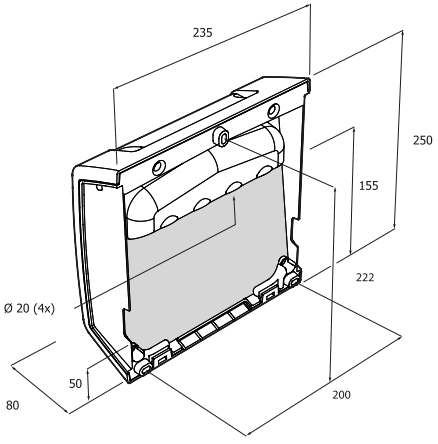
Ceiling and wall mounted luminaire

- First-fix and loop-in, loop-out systems minimalise installation time
- One product concept for both wall and ceiling mounted
- Robust design developed for outdoor applications
- Complies to IEC 60598.2.22

Luminaire

Order Code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp (°C)	Weight (kg)
STLU3LB1E	Lutia LED ESC M3 ST	230-240 Vac, 50/60 Hz	2 x 0.95W	97	6.1 / 5.5	3	-20 +40	1.6
LU1LB1E	Lutia LED ESC 230V	230-240 Vac, 50/60 Hz		206	5.6 / 5	230V	-40 +40	1.3
LTCLU1LB1E	Lutia LED ESC 230V LTC	220-240 AC/DC 0-60Hz		206	5.6 / 5	230V	-40 +40	1.3
CTLU3LB1E	Lutia LED ESC M3 CT-Naveo	230-240 Vac, 50/60 Hz		97	6.1 / 5.5	3	-20 +40	1.4
DALU3LB1E	Lutia LED ESC M3 DALI	230-240 Vac, 50/60 Hz		97	6.1 / 5.5	3	-20 +40	1.4

See spacing tables on page 133



MirEvo Twinspot

Ultra slimline LED design with high lumen output

- Unique LED twinspot with adjustable heads
- High performance with 500 lumens output
- Lithium Ferrophosphate (LiFePO4) battery technology
- Designed for high ceilings and/or large applications

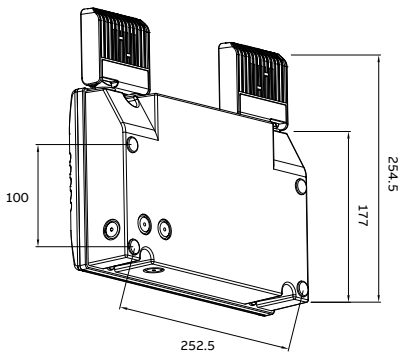
MirEvo Twinspot
Compact & reliable

Surface mount luminaire
- Full adjustable heads with 140° beam angle
- Available with Lithium Ferrophosphate (LiFePO4) battery technology for a longer service life
- Suitable for commercial and industrial environments

Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp (°C)	Weight (kg)
TW500ST	Twinspot 500Lm Ip65 Self-test Wht	220-240 AC, 50/60 Hz	8x LED 1W	500	5.5 / 4	3	0-40	1.45
TW500DA	Twinspot 500Lm Ip65 DALI Wht	220-240 AC, 50/60 Hz		500	5.5 / 4	3	0-40	1.45
TW500230V*	Twinspot 500Lm Ip65 CPS Wht	220-240 AC, 50/60 Hz		500	7.5 / 6	–	-20 -40	1.25
TW500230VLTC*	Twinspot 500Lm Ip65 CPS Emex test LTC Wht	220-240 AC/DC 0-60Hz		500	7.5 / 7	–	-20 -40	1.25

* Operates in extreme low temperatures
See spacing tables on page 134



Aqualux

Durable & high performance

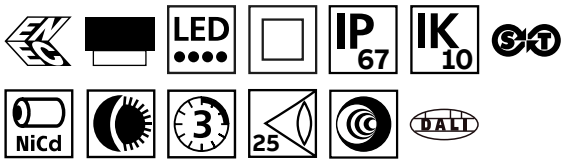
- Waterproof enclosures to IP65 & IP67
- Optimal LED performance
- Ease of maintenance with in-built Self-test

Aqualux

Durable & high performance

Back-lit LED exit sign

- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser
- Intelligent self-test as standard
- Complies to IEC 60598.2.22



LED base unit

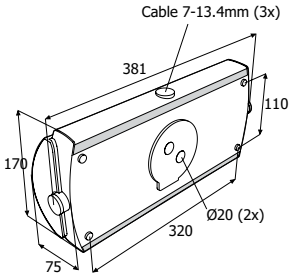
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTOW3L261	CT 2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW1L261HF	2XLED SIGN 230VHF	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW1L261LTC	2XLED 230V LTC	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW3L261	2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261LS*	2LEDM3 LSENS	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261V2	2LED M3 220V60HZ	220-240 AC 50/60Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
DLOW3LS60	3W LED DALI M3	220-240 AC 50Hz	1 x LED 3W	79	9.9 / 5.1	3	0-25	1.7

* Includes daylight sensor

Legends

Part No.	Pictogram
XEN2W	
XEN3W	
XEN6W	
XEN5W	
Arabic legend format	
On request	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 137-139



Accessories

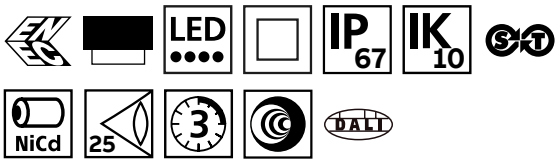
Order code	Description
OW/BCM	Ceiling bracket, vertical mount
OW/BWA	Wall bracket, angled mount

Aqualux

Durable & high performance

Edge-lit LED exit sign

- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser
- Intelligent self-test as standard
- Complies to IEC 60598.2.22



LED base unit

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTOW3L261	CT 2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW1L261HF	2XLED SIGN 230VHF	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW1L261LTC	2XLED 230V LTC	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW3L261	2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261LS*	2LEDM3 LSENS	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261V2	2LED M3 220V60HZ	220-240 AC 50/60Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
DLOW3LS60	3W LED DALI M3	220-240 AC 50Hz	1 x LED 3W	79	9.9 / 5.1	3	0-25	1.7

* Includes daylight sensor

Legends

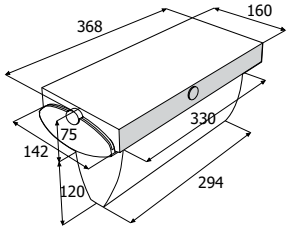
Single sided	
Part No.	**Pictogram**
RSEN2W	
RSEN3W	
RSEN6W	
RSEN5W	
Arabic legend format	
On request	

Double sided	
Part No.	**Pictogram**
RSEN2W + RSEN6W	
RSEN2W + RSEN2W	

ISO 7010 pictogram legends are shown
Euro format & Special legends are available
to order see pages 137-139

Accessories

Order code	Description
OW/BWM	Wall mount end cantilever bracket
OW/DSC	Blank double sided diffuser
OW/BCR	Recessing kit



Aqualux

Durable & high performance

High power open area luminaire

- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser
- Intelligent Self-test as standard
- Complies to IEC 60598.2.22

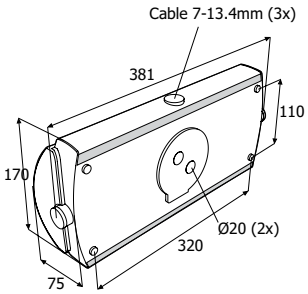
Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTOW3L261	CT 2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW1L261HF	2XLED SIGN 230VHF	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW1L261LTC	2XLED 230V LTC IP65	220-240 AC/DC 0-60Hz	2 x LED 1W	89	8 / 3.5	230V	0-40	1.5
OW3L261	2LED M3	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261LS*	2LEDM3 LSENS IP65	220-240 AC 50Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
OW3L261V2	2LED M3 220V60HZ	220-240 AC 50/60Hz	2 x LED 1W	59	9.9 / 5.1	3	0-25	1.7
DLOW3LS60	3W LED DALI M3	220-240 AC 50Hz	1 x LED 3W	79	9.9 / 5.1	3	0-25	1.7

* Includes daylight sensor

Accessories

Order code	Description
OW/BCM	Ceiling bracket, vertical mount
OW/BWA	Wall bracket, angled mount
OW/BWM	Wall mount end cantilever bracket
OW/BCR	Recessing kit

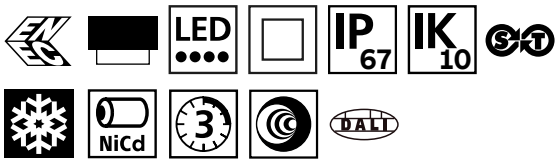


Aqualux Freez-Lite

Durable & high performance

High power open area luminaire

- Attractive aluminium modular enclosure
- Clear polycarbonate broad delivery diffuser
- Intelligent self-test as standard
- Complies to IEC 60598.2.22



Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTSTF3L261	CT 2LED M3	220-240 AC 50Hz	2 x LED 1W	59	17.2/11.2	3	-25-+30	1.7
STF3L261	2LED M3	220-240 AC 50Hz	2 x LED 1W	59	17.2/11.2	3	-25-+30	1.7
DLSTF3LS60	3W LED DALI M3	220-240 AC 50Hz	1 x LED 3W	79	17.2/11.2	3	-25-+30	1.7

Legends

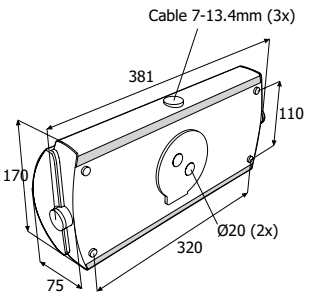
Part No.	Pictogram
XEN2W	
XEN3W	
XEN6W	
XEN5W	
Arabic legend format	
On request	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 137-139

Accessories

Order code	Description
OW/BCM	Ceiling bracket, vertical mount
OW/BWA	Wall bracket, angled mount
OW/BWM	Wall mount end cantilever bracket
OW/BCR	Recessing kit

For blank double sided diffuser and legends please see page 37



Optima

Durable & high performance

Highly flexible escape route lighting and signage range

- One product for escape route signage and lighting
- Increased flexibility by adjusting the pictogram to the application
- IP65 version available for heavy duty applications
- Wide variety of mounting options by using accessories
- Suitable for application requirements of NFPA101

Luminaire

Order code	Description	Input voltage	Lamp type	Viewing distance	Lamp output (lm)	Power consumption (VA/W)	Duration (hrs)	Test system	Environ. temp. (°C)	Weight (kg)
6017618/50	XTE350S-M3/ST	220-240 Vac, 50Hz	1 x LED 7,2W	20m	150 lm	8/3	3	Self-test	0-+35	0.6 kg
6017621/50	XTE350S-M3/ST*	220-240 Vac, 50Hz	1 x LED 7,2W	20m	150 lm	8/3	3	Self-test	0-+35	0.6 kg
442350S	EL350S-230/LTC/1000L	220-240 AC/DC 0-60Hz	40 x LED 0,2W	20m	950 lm	11/10.5	230V CPS	Emex Test	0-+40	0.6 kg
442352S	XTE350S-230/LTC*	220-240 AC/DC 0-60Hz	40 x LED 0,2W	20m	950 lm	11/10.5	230V CPS	Emex Test	0-+40	0.6 kg
442351S	EL350S-230/1000L	220-240 AC/DC 0-60Hz	40 x LED 0,2W	20m	950 lm	11/10.5	230V CPS	Manual	0-+40	0.6 kg
442353S	XTE350S-230*	220-240 AC/DC 0-60Hz	40 x LED 0,2W	20m	950 lm	11/10.5	230V CPS	Manual	0-+40	0.6 kg

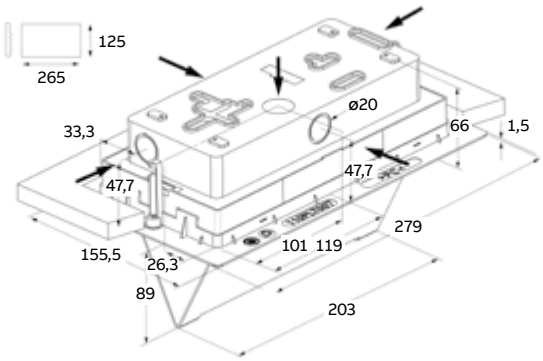
* Includes pictogram

Legends

Part No.	Description	Pictogram
01101E51/50	PS 350 20M/U Pictogram sticker	
01101E54/50	PS 350 20M/DL Pictogram sticker	
01101E55/50	PS 350 20M/DR Pictogram sticker	
01101E56/50	PS 350 20M/UL Pictogram sticker	
01101E57/50	PS 350 20M/UR Pictogram sticker	
01101E58/50	PF 350 20M/45 Pictogram foil	

Order code	Description
642202/50	RK 350 Recess kit
663325/50	DS KIT 350 for double sided escape route signage

*Products delivered including pictograms



Decorative Hy-Lite
Elegant LED lighting

- Simple installation
- High output LED luminaires
- Aesthetically pleasing designs

Camarque

Elegant LED lighting

Aesthetically pleasing, decorative emergency LED luminaire

- Fire-resistant polycarbonate luminaire body with opal diffuser
- ELR/SLR exemption for luminaires with Emergency as the primary function
- Semi-recessing accessory available
- Complies to IEC 60598.2.22 and IEC 60598-1

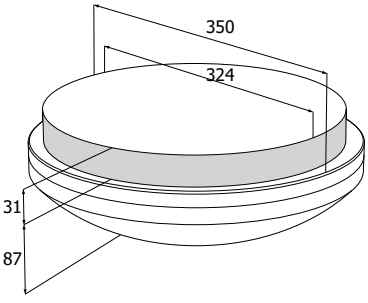
Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CLQ1LA1	CLQ LED 2D WH/OPAL HF	110-230 AC/DC 0-60Hz	1 x LED 20W	1830	20.8 / 19.5	230V	0-40	1.7
CTCLQ4LA1	CLQ LED 2D WH/OPAL CT	220-240 AC 50/60Hz	1+1 LED 20+2W	1830/207	25.8 / 23	3	0-30	2.2
LTCCLQ1LA1	CLQ LED 2D WH/OPAL LTC	220-240 AC/DC 0-60Hz	1 x LED 20W	1830	20.8 / 19.5	230V	0-40	1.8
STCLQ4LA1	CLQ LED 2D WH/OPAL SLFTST	220-240 AC 50/60Hz	1+1 x LED 20+2W	1830/207	25.8 / 23	3	0-30	2.1

Accessories

Order code	Description
CLQ/SR	Semi-recessing kit

See spacing tables on pages 130



Cable entry via 20 mm hole on rear of unit.
Ceiling cutout 330 mm when semi-recessing.

Cordona

Elegant LED lighting

IP65 decorative emergency LED luminaire

- LED light source/optional fluorescent
- Designed for escape route and open area lighting
- Polycarbonate luminaire body with clear or translucent diffuser
- ELR/SLR exemption for luminaires with Emergency as the primary function
- Semi-recessing accessory available
- Complies to IEC 60598.2.22 and IEC 60598-1
- Available in Opal and Clear diffuser

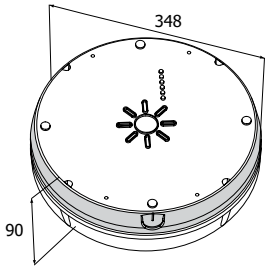
Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CPW1LA1	LED 2D WH/OPL-OPT HF	110-230 AC/DC 0-60Hz	1 x LED 20W	1830	20.8 / 19.5	230V	0-40	1.8
CPW1LA11	LED 2D WH/CLR-OPT HF	110-230 AC/DC 0-60Hz	1 x LED 20W	2355	20.8 / 19.5	230V	0-40	1.8
CTCPW4LA1	LED 2D M3 WH/OPL-OPT CT	220-240 AC 50/60Hz	1+1 x LED 20+2W	1830/207	25.8 / 23	3	0-30	2.2
CTCPW4LA11	LED 2D M3 WH/CLR-OPT CT	220-240 AC 50/60Hz	1+1 x LED 20+2W	2355/207	25.8 / 23	3	0-30	2.2
LTCCPW1LA1	LED 2D WH/OPL-OPT LTC	220-240 AC/DC 0-60Hz	1 x LED 20W	1830	20.8 / 19.5	230V	0-40	1.9
LTCCPW1LA11	LED 2D WH/CLR-OPT LTC	220-240 AC/DC 0-60Hz	1 x LED 20W	2355	20.8 / 19.5	230V	0-40	1.9
STCPW4LA1	LED 2D M3 WH/OPL-OPT SLFTST	220-240 AC 50/60Hz	1+1 x LED 20+2W	1830/207	25.8 / 23	3	0-30	2.2
STCPW4LA11	LED 2D M3 WH/CLR-OPT SLFTST	220-240 AC 50/60Hz	1+1 x LED 20+2W	2355/207	25.8 / 23	3	0-30	2.2

Accessories

Order code	Description
CPW/BZ	Semi-recessing bezel

See spacing tables on pages 130



Ceiling cutout 346 mm when semi-recessing.

Escape Line
Practical & durable

- High performance LED modules
- Slim, functional emergency luminaires
- High grade polycarbonate enclosures
- Light optimised diffusers

Day-Lite Ex-cel

Practical & durable

Surface mounted luminaire

- Sturdy, general use luminaire with screw-fix diffuser
- Light optimised diffuser
- LED version is suitable for fluorescent replacement requirements
- Complies to IEC 60598.2.22

Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTXXW3LS1	LED 2W M3 DAYLITE WHT/OPL CT	220-240 AC 50/60Hz	1 x LED 2W	214	6.1 / 3.9	3	0-30	0.9
CTXXW3LS11	LED 2W M3 DAYLITE WHT/CLR CT	220-240 AC 50/60Hz	1 x LED 2W	251	6.1 / 3.9	3	0-30	0.9
LTCXXW1LS1	LED 2W LTC DAYLITE WHT/OPL	220-240 AC/DC 0-60Hz	1 x LED 2W	214	4.6 / 4.4	230V	0-40	0.7
LTCXXW1LS11	LED 2W LTC DAYLITE WHT/CLR	220-240 AC/DC 0-60Hz	1 x LED 2W	251	4.6 / 4.4	230V	0-40	0.7
STXXW3LS1	LED 2W M3 DAYLITE WHT/OPL SLFTST	220-240 AC 50/60Hz	1 x LED 2W	214	6.1 / 3.9	3	0-30	0.8
STXXW3LS11	LED 2W M3 DAYLITE WHT/CLR SLFTST	220-240 AC 50/60Hz	1 x LED 2W	251	6.1 / 3.9	3	0-30	0.8
XW8LS1	LED 1W 50V ACDC DAYLITE WHT/OPL	24-50 AC/DC 0-60Hz	1 x LED 1W	214	3.4 / 2.1	Central Battery	0-40	0.6
XW8LS11	LED 1W 50V ACDC DAYLITE WHT/CLR	24-50 AC/DC 0-60Hz	1 x LED 1W	251	3.4 / 2.1	Central Battery	0-40	0.6
XXW1LS1	LED 2W HF DAYLITE WHT/OPL	110-230 AC/DC 0-60Hz	1 x LED 2W	214	3.4 / 2.1	230V	0-40	0.6
XXW1LS11	LED 2W HF DAYLITE WHT/CLR	110-230 AC/DC 0-60Hz	1 x LED 2W	251	3.4 / 2.1	230V	0-40	0.6

Legends

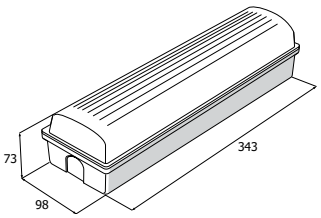
Part No.	Pictogram
RSEN2X	
RSEN3X	
RSEN6X	
RSEN5X	
Arabic legend format	
RSB1X	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 137-139

Accessories

Order code	Description
XTR	Semi-recessing bezel in white

See Silver-Scape (pages 46-47) for recessed version



Cable entry via BESA on rear and 20 mm drill holes on rear and ends of unit. Ceiling cutout 342 mm x 95 mm when semi-recessing.

Silver-Scape

Practical & everyday

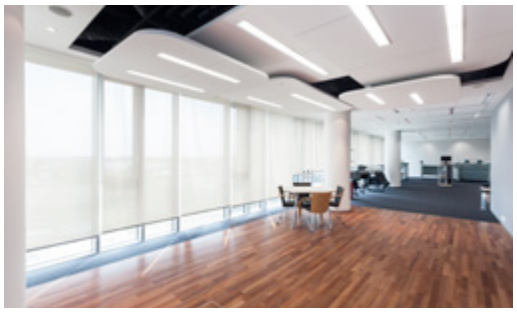
Recessed emergency luminaire

- Suitable for application in suspended ceilings
- Polycarbonate enclosure with wing fixings for recessed application
- Optically engineered diffuser
- Complies to IEC 60598.2.22

Recessed unit

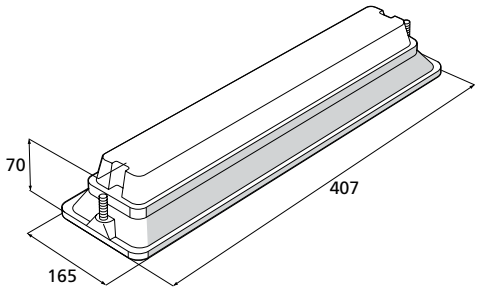
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTRRB3LS1X	RECSD B/HEAD 2W M3 LED WHT CT	220-240 AC 50/60Hz	1 x LED 2W	241	6.1 / 3.9	3	0-30	1.09
LTCRRB1LS1X	LED 2W LTC SILVERSCAPE RECESS	220-240 AC/DC 0-60Hz	1 x LED 2W		4.6 / 4.4	230V	0-40	0.9
RB8LS1X	LED 1W 50V ACDC SILVERSCAPE RECESS	24-50 AC/DC 0-60Hz	1 x LED 1W		3.4 / 2.1	Central Battery	0-40	0.79
RRB1LS1X	LED 2W HF SILVERSCAPE RECESS	110-230 AC/DC 0-60Hz	1 x LED 2W		3.4 / 3.2	230V	0-40	0.81
STRRB3LS1X	RECSD B/HEAD 2W M3 LED WHT SLFTST	220-240 AC 50/60Hz	1 x LED 2W		6.1 / 3.9	3	0-30	1.09

Order recess unit and diffuser panel separately



Accessories

Order code	Description
RB00	Recessed diffuser panel
RB011	Rb metal diffuser trim - white
RB041	Rb metal diffuser diff trim - gold/brass
RB051	Rb metal diffuser diff trim - stainless steel
RB061	Rb metal diffuser diff trim - silver



Cable entry via 20 mm knockouts on rear of unit.
Ceiling cutout 380 mm x 136 mm.

Silver-Scape

Practical & everyday

Recessed emergency exit sign

- Suitable for application in suspended ceilings
- Polycarbonate enclosure with wing fixings for recessed application
- Diffuser panel with slot for exit sign legend
- Complies to IEC 60598.2.22
- Metal trims designed to fit existing Silverlite aperture

Recessed unit

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environ. temp. (°C)	Weight (kg)
CTRRB3LS1X	RECSD B/HEAD 2W M3 LED WHT CT	220-240 AC 50/60Hz	1 x LED 2W	6.1 / 3.9	3	0-30	1.09
LTCRRB1LS1X	LED 2W LTC SILVERSCAPE RECESS	220-240 AC/DC 0-60Hz	1 x LED 2W	4.6 / 4.4	230V	0-40	0.9
RB8LS1X	LED 2W 50V ACDC SILVERSCAPE RECESS	24-50 AC/DC 0-60Hz	1 x LED 1W	3.4 / 2.1	Central Battery	0-40	0.79
RRB1LS1X	LED 1W HF SILVERSCAPE RECESS	110-230 AC/DC 0-60Hz	1 x LED 2W	3.4 / 3.2	230V	0-40	0.81
STRRB3LS1X	RECSD B/HEAD 2W M3 LED WHT SLFTST	220-240 AC 50/60Hz	1 x LED 2W	6.1 / 3.9	3	0-30	1.09

Order recess unit, diffuser panel, trim and legend separately

Legends

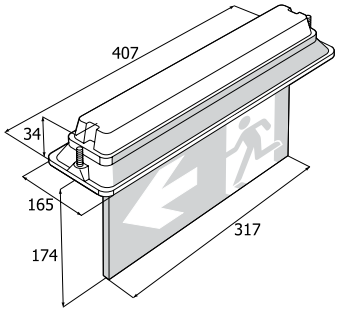
Single sided	
Part no.	**Pictogram**
XEN2A31	
XEN3A31	
XEN6A31	
XEN5A31	
Arabic legend format	
XB01A31	

Double sided	
Part no.	**Pictogram**
XEN36A32	
XEN22A32	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 137-139

Accessories

Order code	Description
RE01	Recessed diffuser panel with sign panel slot
RE01P	Re plastic slot trim - white
RE04	Re metal slot trim - gold/brass
RE05	Re metal slot trim - stainless steel
RE06	Re metal slot trim - silver



Cable entry via 20 mm knockouts on rear of unit.
Ceiling cutout 380 mm x 136 mm.

Navigator compact

Practical & everyday

Compact, folded metal emergency exit sign

- Downlight panel provides additional illumination at floor level
- Available in white, gold and stainless steel colours
- Complies to IEC 60598.2.22.

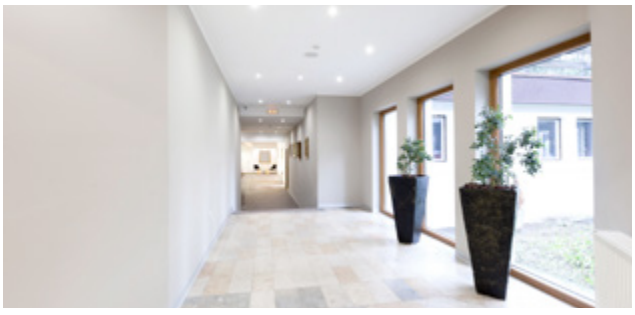
Base unit

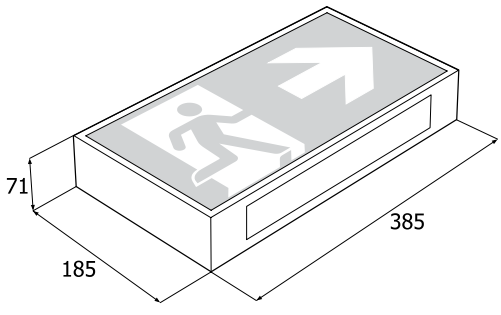
Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTVVE3LS1X	LED 2W M3 NAVI COMPACT WHT CT	220-240 AC 50/60Hz	LED strip 2W	6.1 / 3.9	3	0-30	1.97
LTCVVE1LS1X	LED 2W LTC NAVI COMPACT WHT	220-240 AC 50/60Hz		4.6 / 4.4	230V	0-40	1.78
STVVE3LS1X	LED 2W M3 NAVI COMPACT WHT SLFTST	220-240 AC 50/60Hz		6.1 / 3.9	3	0-30	1.86
VVE1LS1X	LED 2W HF NAVI COMPACT WHT	110-230 AC/DC 0-60Hz		3.4 / 3.2	230V	0-40	1.69
VVE8LS1X	LED 1W 24-50V ACDC NAVI COMPACT WHT	24-50V		3.4 / 2.1	Central Battery	0-40	1.69

Legends

Part no.	Pictogram
XEN2V31	
XEN3V31	
XEN6V31	
XEN5V31	
Arabic legend format	
XB01V31	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 141-143





Cable entry via 20 mm knockouts on rear of unit.

Weatherforce

Practical & durable

Practical, robust double sided exit sign

- High grade polycarbonate enclosure with fixed legends
- Semi-recessing accessory available
- Complies to IEC 60598.2.22
- Cast aluminum base

Exit sign

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTWWA3LS1X	LED 2W M3 W/FORCE WHT/NO DIFF CT	220-240 AC 50/60Hz	1 x LED 2W	207	6.1 / 3.9	3	0-30	1.5
LTCWWA1LS1X	LED 2W LTC W/FORCE WHT/NO DIFF LTC	220-240 AC/DC 0-60Hz	1 x LED 2W		4.6 / 4.4	230V	0-40	1.3
STWWA3LS1X	LED 2W M3 W/FORCE WHT/NO DIFF SLFTST	220-240 AC 50/60Hz	1 x LED 2W		6.1 / 3.9	3	0-30	1.5
WWA1LS1X	LED 2W HF W/FORCE WHT/NO DIFF	110-230 AC/DC 0-60Hz	1 x LED 2W		3.4 / 3.2	230V	0-40	1.2
WWA8LS1X	LED 1W 24-50VACDC W/FORCE WHT/NO DIFF	24-50 AC/DC 0-60Hz	1 x LED 1W		3.4 / 2.1	*CB	0-40	1.2

*Central Battery

Legends

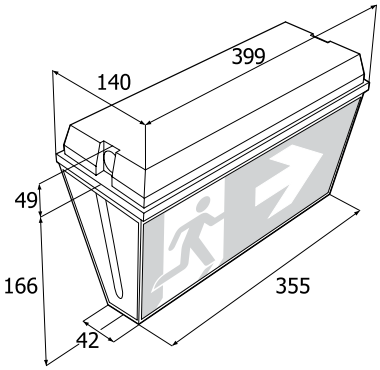
ISO7010		
Part no.	**Description**	**Pictogram**
XEN2/2DV32	DV COVER 7010 ARR DN EA SIDE	
XEN3/6DV32	DV COVER 7010 ARR L 1-S,RT 2-S	
XEN5/5DV32	DV COVER 7010 ARR UP EA SIDE	

Euro		
Part no.	**Description**	**Pictogram**
XE02/2DV32	EURO PICT DV ARR DOWN/DOWN D/S	
XE03/6DV32	EURO PICT DV ARR LEFT/RGT D/S	
XE05/5DV32	EURO PICT DV ARR UP/UP D/S	
XE06/0DV32	EURO PICT DV ARR RIGHT ONE SIDE ONLY	

Arabic		
Part no.	**Description**	**Pictogram**
XB10DV32	DV LEG EXIT EN ARBC - BLNK GRN OVER	
XB11DV32	DV COVER EXIT-EN ARABIC DSD	
XB23DV32	DV DIFF EXIT EN-ARB AR L/R OVER	
XB50DV32	DV LEG EXIT EN ARBC - UP-BLNK	
XB66DV32	DV DIFF EXIT EN-ARB ARR DN D/S	

Accessories

Order code	Description
BBZ	Semi-recessing bezel kit in white



Ceiling cutout 390 mm x 130 mm
when semi-recessing.

Weatherforce

Practical & durable

Surface mounted luminaire

- Simple, vandal resistant design
- Cast aluminium enclosure
- Opal diffuser as standard with clear polycarbonate diffuser option available
- Converts easily to exit sign with addition of self-adhesive legend
- Complies to IEC 60598.2.22

Luminaire

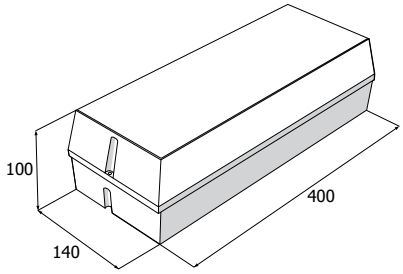
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTWWA3LS1	LED 2W M3 W/FORCE WHT/OPL CT	220-240 AC 50/60Hz	1 x LED 2W	207	6.1 / 3.9	3	0-30	1.8
CTWWA3LS11	LED 2W M3 W/FORCE WHT/PRIS CT	220-240 AC 50/60Hz			6.1 / 3.9	3	0-30	1.8
LTCWWA1LS1	LED 2W LTC W/FORCE WHT/OPL LTC	220-240 AC/DC 0-60Hz			4.6 / 4.4	230V	0-40	1.6
LTCWWA1LS11	LED 2W LTC W/FORCE WHT/PRIS LTC	220-240 AC/DC 0-60Hz			4.6 / 4.4	230V	0-40	1.6
STWWA3LS1	LED 2W M3 W/FORCE WHT/OPL SLFTST	220-240 AC 50/60Hz			6.1 / 3.9	3	0-30	1.7
STWWA3LS11	LED 2W M3 W/FORCE WHT/PRIS SLFTST	220-240 AC 50/60Hz			6.1 / 3.9	3	0-30	1.7
WWA1LS1	LED 2W HF W/FORCE WHT/OPL	110-230 AC/DC 0-60Hz			3.4 / 3.2	230V	0-40	1.5
WWA1LS11	LED 2W HF W/FORCE WHT/PRIS	110-230 AC/DC 0-60Hz			3.4 / 3.2	230V	0-40	**1.5**
WWA8LS1	LED 1W 24-50VACDC W/FORCE WHT/OPL	24-50 AC/DC 0-60Hz	1 x LED 1W		3.4 / 2.1	*CB	0-40	**1.5**
WWA8LS11	LED 1W 24-50VACDC W/FORCE WHT/PRIS	24-50 AC/DC 0-60Hz			3.4 / 2.1	*CB	0-40	1.5

*Central Battery

Legends

Part no.	Pictogram
RSEN2120	
RSEN3120	
RSEN6120	
RSEN5120	
RSEN120	
Arabic legend format	
RSB1B	

ISO 7010 pictogram legends are shown. Euro format & Special legends are available to order see pages 141-143



Cable entry via BESA on rear and 20 mm drill holes on ends of unit.
Ceiling cutout 390 mm x 130 mm when semi-recessing.

PrimEvo

For optimised productivity and reliability

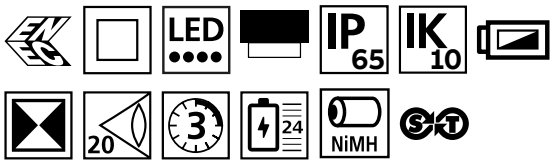
- Complete LED emergency lighting range
- Quick and easy to install
- Designed for all kinds of small businesses like small shops, restaurants or lunchrooms

PrimEvo XT100

Productivity & reliability

PrimEvo XT100

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test



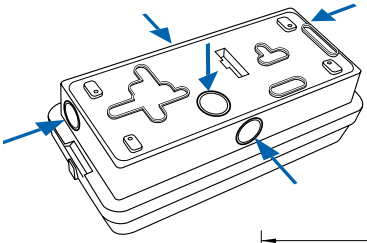
Luminaire

Order Code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
XT100E	PrimEvo Bulkhead	220 - 240 Vac, 50/60Hz	2 x LED 0.5W	110	5/2	3	0 - 40	0.6
XT100ST	PrimEvo Bulkhead Self-test	220 - 240 Vac, 50/60Hz	2 x LED 0.5W	110	5/2	3	0 - 40	0.6

Configurable pictograms included

Accessories

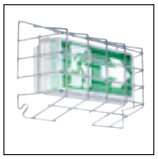
Order Code	Description
642 202	Recess Kit 100% – Wall/Ceiling[1]
642 102	Recess Kit 50% - Wall/Ceiling [2]
663 325	Pictogram holder with 3 legends
663 330	Pack of 3 legends for signaling (Left, right and down arrow)
642 015	Protective grid cover[3]

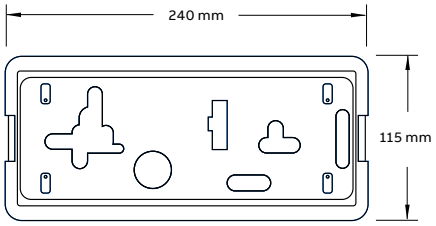


01

02

03



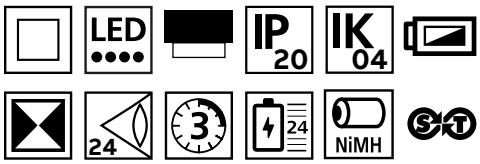


PrimEvo XT200

Productivity & reliability

PrimEvo XT200

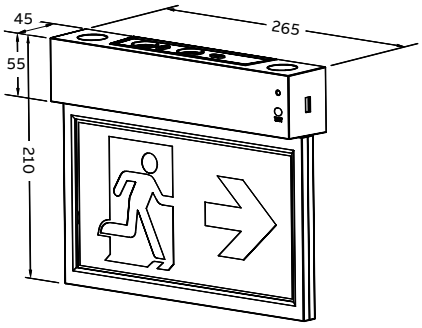
- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test

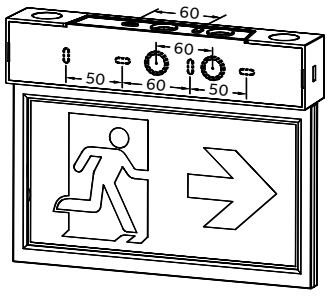


Luminaire

Order Code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
XT200E	PrimEvo Exit Sign	220 - 240 Vac, 50/60Hz	1 x LED 2W	120	5.2/2.4	3	-5 - 45	0.95
XT200ST	PrimEvo Exit Sign Self-test	220 - 240 Vac, 50/60Hz	1 x LED 2W	120	5.2/2.4	3	-5 - 45	0.95

Configurable pictograms included





PrimEvo RS100 & SM100

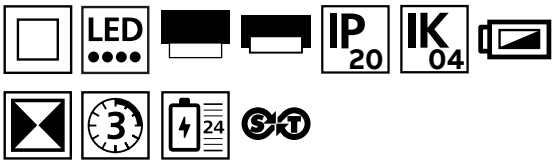
Productivity & reliability

RS100

SM100

PrimEvo RS100 & SM100

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio
- Manual and Self-test

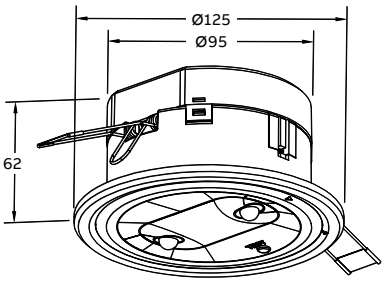


Luminaire

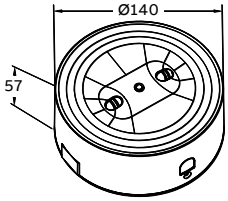
Order Code	Description	Input voltage	Lamp type	Power consumption** (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
RS100E	PrimEvo Recessed downlite	220 - 240 Vac, 50/60Hz	2 x LED 1.5W*	10/4.8	3	0 - 25	0.425
RS100ST	PrimEvo Recessed downlite self-test	220 - 240 Vac, 50/60Hz		10/4.8	3	0 - 25	0.425
SM100E	PrimEvo Surface downlite	220 - 240 Vac, 50/60Hz		9/4.5	3	0 - 25	0.425
SM100ST	PrimEvo Surface downlite self-test	220 - 240 Vac, 50/60Hz		9/4.5	3	0 - 25	0.425

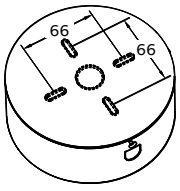
* = 3W LED

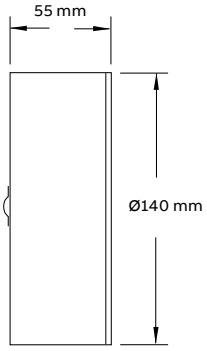
PrimEvo RS100



PrimEvo SM100





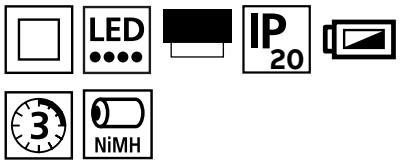


PrimEvo Twinspot

Productivity & reliability

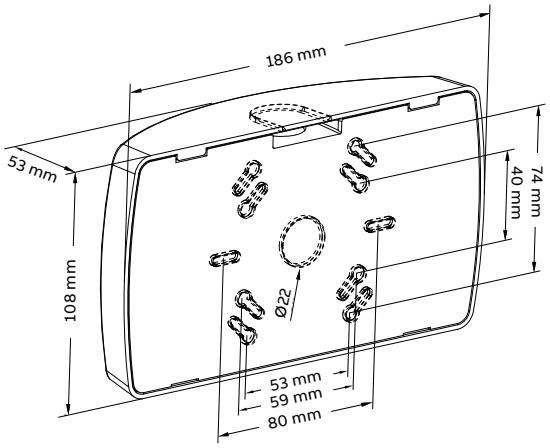
PrimEvo Twinspot

- Available at your local wholesaler
- Plug and play, maintained and non-maintained in one
- Full LED range with best price/performance ratio



Luminaire

Order Code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation duration (hrs)	Environment temperature (°C)	Weight (kg)
TW220E	PrimEvo Twinspot	220 - 240 Vac, 50/60Hz	1 x LED 2W	220	15.5/6.5	3	0 - 40	0.5



Industrial & hazardous area

Resilient emergency lighting for unique applications

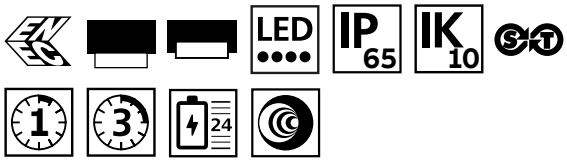
- Robust ingress protection designs
- Energy saving LED technology
- Ideal for indoor or outdoor open areas
- Designed to cope with the most demanding environments

HyLED

Powerful & reliable

Energy efficient, high output LED luminaire

- 360 degrees turnable lamp unit, steady in position
- High ceilings industrial environments
- Sealed IP65 loop in, loop out cabling system
- Mounting and assembly flexibility onto pillars, ceilings, etc.



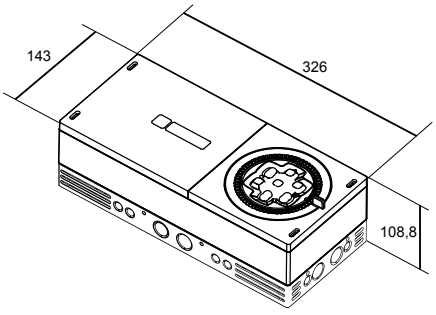
Luminaire

Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
3 hour								
CTHY3LA2	HY-LED CT-M/NM3 OA GY PC IP65	220-240 AC 50Hz	1 x LED 7W	400	15 / 7	3	0-25	1.7
CTHY3LE2	HY-LED CT-M/NM3 ESC GY PC IP65	220-240 AC 50Hz	1 x LED 7W	400	15 / 7	3	0-25	1.7
HY3LA2	HY-LED M/NM3 OA GY PC IP65	220-240 AC 50Hz	1 x LED 7W	400	15 / 7	3	0-25	1.7
HY3LE2	HY-LED M/NM3 ESC GY PC IP65	220-240 AC 50Hz	1 x LED 7W	400	15 / 7	3	0-25	1.7
1 hour								
11170052	HY-LED CT-Naveo OA 1HR IP65	220-240 AC 50Hz	1 x LED 7W	1000	15 / 7	1	0-25	1.7
11170042	HY-LED CT-Naveo ESC 1HR IP65	220-240 AC 50Hz	1 x LED 7W	1000	15 / 7	1	0-25	1.7
11170050	HY-LED Self-Test OA 1HR IP65	220-240 AC 50Hz	1 x LED 7W	1000	15 / 7	1	0-25	1.7
11170040	HY-LED Self-Test ESC 1HR IP65	220-240 AC 50Hz	1 x LED 7W	1000	15 / 7	1	0-25	1.7
Central battery (230V)								
HY1LA2HF	HY-LED 230V50HZ HF OA PC IP65	220-240 AC/DC 0-60Hz	1 x LED 7W	1000	15.5 / 14	230V	0-40	1.7
HY1LA2LTC	HY-LED 230V50HZ LTC OA PC IP65	220-240 AC/DC 0-60Hz	1 x LED 7W	1000	15.5 / 14	230V	0-40	1.7
HY1LE2HF	HY-LED 230V50HZ HF ESC PC IP65	220-240 AC/DC 0-60Hz	1 x LED 7W	1000	15.5 / 14	230V	0-40	1.7
HY1LE2LTC	HY-LED 230V50HZ LTC ESC PC IP65	220-240 AC/DC 0-60Hz	1 x LED 7W	1000	15.5 / 14	230V	0-40	1.7

60 hrs charge at first commissioning, 24 hrs re-charge thereafter.

Accessories

Order code	Description
HY-MBK	Wall mounting/coupling bracket kit
HY-RKIT	Recessing kit

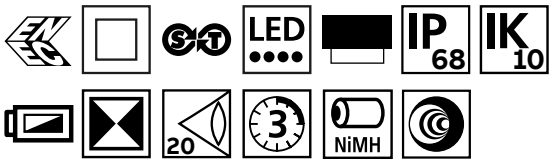


Indulux escape route signalisation

Industrial & design

All-in-one tubular emergency lighting

- Mounting, wiring and expanded flexibility
- Stainless steel solution resisting dust and water (IP68)
- Rapid maintenance with sliding electronic base module



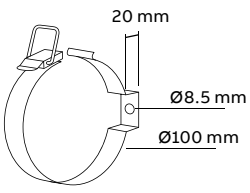
Luminaire

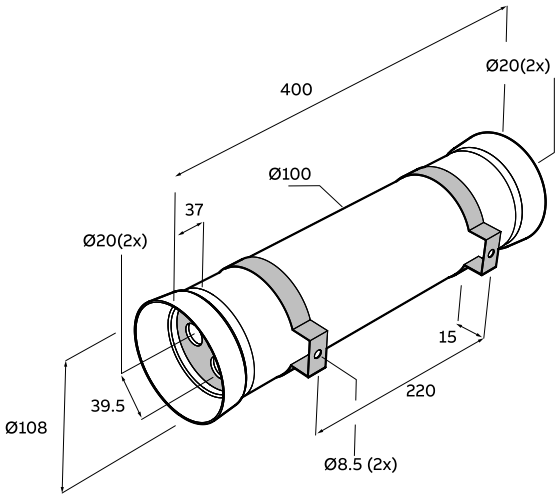
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTIND3LS5	Indulux LED S/S M3 CT	220-240 AC 50Hz	1 x LED 4W	200	7.5 / 3.5	3	0-40	1.6
CTIND3LS5DS	Indulux LED D/S M3 CT	220-240 AC 50Hz	2 x LED 4W	400	15 / 7	3	0-40	2.0
IND1LS5	Indulux LED S/S 230V CPS	220-240 AC/DC 0-60Hz	1 x LED 4W	400	7 / 6.5	230V	-25-40	1.4
IND1LS5DS	Indulux LED D/S 230V CPS	220-240 AC/DC 0-60Hz	2 x LED 4W	800	14 / 13	230V	-25-40	1.4
IND1LS5DSLTC	Indulux LED D/S 230V LTC	220-240 AC/DC 0-60Hz	2 x LED 4W	800	14 / 13	230V	-25-40	1.4
IND1LSLTC	Indulux LED S/S 230V LTC	220-240 AC/DC 0-60Hz	1 x LED 4W	400	7 / 6.5	230V	-25-40	1.4
IND3LS5	Indulux LED S/S M3 ST	220-240 AC 50Hz	1 x LED 4W	200	7.5 / 3.5	3	0-40	1.6
IND3LS5DS	Indulux LED D/S M3 ST	220-240 AC 50Hz	2 x LED 4W	400	15 / 7	3	0-40	2.0

Pictograms included = Left, right, up, down and blank

Accessories

Order Code	Description
102601K	Indulux Cable Entry Cover Kit
102702K	Indulux Battery replacement



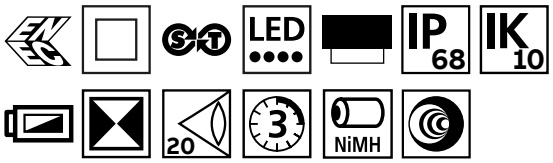


Indulux escape route lighting

Industrial & design

All-in-one tubular emergency lighting

- Mounting, wiring and expanded flexibility
- Stainless steel solution resisting dust and water (IP68)
- Rapid maintenance with sliding electronic base module



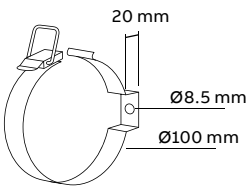
Luminaire

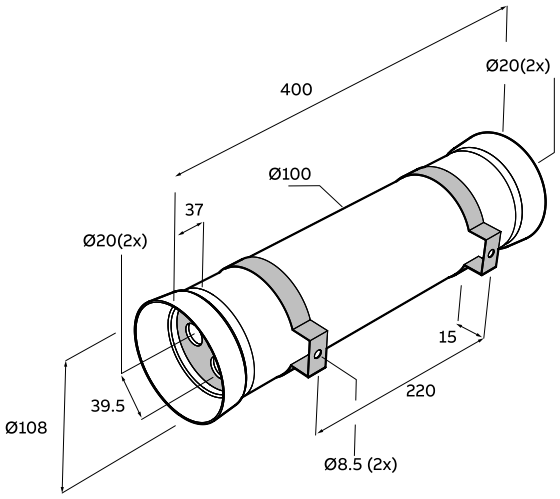
Order code	Description	Input voltage	Lamp type	Lamp output (lm)	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
CTIND3LS5	Indulux LED S/S M3 CT	220-240 AC 50Hz	1 x LED 4W	200	7.5 / 3.5	3	0-40	1.6
CTIND3LS5DS	Indulux LED D/S M3 CT	220-240 AC 50Hz	2 x LED 4W	400	15 / 7	3	0-40	2.0
IND1LS5	Indulux LED S/S 230V CPS	220-240 AC/DC 0-60Hz	1 x LED 4W	400	7 / 6.5	230V	-25-40	1.4
IND1LS5DS	Indulux LED D/S 230V CPS	220-240 AC/DC 0-60Hz	2 x LED 4W	800	14 / 13	230V	-25-40	1.4
IND1LS5DSLTC	Indulux LED D/S 230V LTC	220-240 AC/DC 0-60Hz	2 x LED 4W	800	14 / 13	230V	-25-40	1.4
IND1LSLTC	Indulux LED S/S 230V LTC	220-240 AC/DC 0-60Hz	1 x LED 4W	400	7 / 6.5	230V	-25-40	1.4
IND3LS5	Indulux LED S/S M3 ST	220-240 AC 50Hz	1 x LED 4W	200	7.5 / 3.5	3	0-40	1.6
IND3LS5DS	Indulux LED D/S M3 ST	220-240 AC 50Hz	2 x LED 4W	400	15 / 7	3	0-40	2.0

Pictograms included = Left, right, up, down and blank

Accessories

Order Code	Description
102601K	Indulux Cable Entry Cover Kit
102702K	Indulux Battery replacement





Emergency lighting
Inspection, maintenance & testing solutions

- Simplified testing regime
- Customisable testing solutions
- Pre-programmable emergency lighting testing
- Cloud based electronic record keeping

DALI emergency lighting
Testing & monitoring

ABB DALI emergency lighting offers automatic test functions from either a central controller or from the luminaire itself. This ensures you will always know the status of your emergency fitting. Effective monitoring helps to ensure the safety of building occupants and give building owners the peace of mind they require.

—
01 DALI emergency lighting and control system - Normal
—
02 DALI emergency lighting and control system - Error detected

Automatic testing & monitoring
Automatic monitoring includes the status of battery charging and the status of the main power supply. Central testing includes the current battery charge condition, functional tests and duration tests. Test frequencies can be adjusted to meet the requirements of the building or the local regulations. Testing periods can vary from weekly to monthly in the case of function tests, or annually for duration tests.

Function test
A function test that simulates a mains failure and checks the operation of the emergency light from the battery supply. If there is a failure during a function test, the local indicator LED changes its status on the luminaire.

Duration test
A duration test simulates a power failure and checks the operation of the emergency light from the battery supply for the rated duration of the product. Duration tests can be one, three hours or more depending on the local regulations. If there is a failure during a duration test, the local indicator LED alerts you to a problem or, in the case of a system monitored from a central location, the emergency lighting DALI control unit (DCU) will alert by showing an error message. As with all central test systems that require annual duration testing, this is only started after the battery has had an initial uninterrupted 24 hour+ charge period.

Local testing
Function and duration tests are initiated by the emergency light fitting. It performs automatic testing according to the locally stored settings.

Central testing
Function and duration tests are initiated by the DALI control unit and displays results on the screen.

Switching
Maintained luminaires can be switched and grouped.

Emergency lighting and control unit

—
01

—
02

ABB DALI emergency lighting control unit

The ABB DALI emergency lighting control system provides a user-friendly touch screen panel that can control, monitor and perform regularly scheduled tests. The standard function and duration test scan be performed at regular or planned intervals.

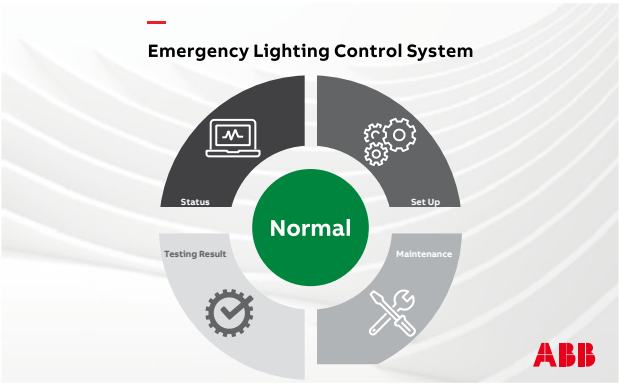
01 Dali control unit home Screen
02 Dali control unit descriptive screens
03 Dali control unit spreadsheet

Each control unit can control and monitor up to 2 lines of DALI (128 maximum devices). Additional touch screen panels need to be added to control more than 128 luminaires. Test results and logs from each panel need to be transferred to an excel file to a computer LAN and then printed or stored for later reference.

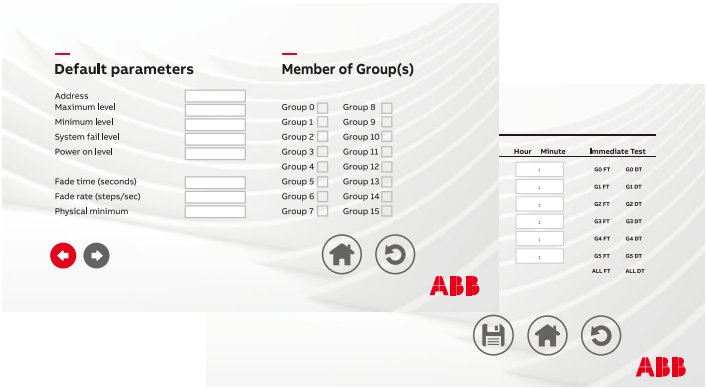
- 2 Built-in DALI lines allow for 128 DALI luminaires
- Function and duration tests conducted in accordance with local regulations
- 7" Colour touch screen
- Smart graphical interface for client operation
- Easy, system driven, DALI addressing and grouping
- Individual indication of groups and devices
- Calendar-controlled function and service life test
- Easily read system status
- Simple download of test report to a PC

The DALI control unit has easy-to-use descriptive screens that lead the system user screen by screen. The luminaire on the DALI network are found after initialisation and are displayed on the device with a list of the addresses. Each luminiare can be given a name and location so it can be easily located in the event of a fault. Faults are clearly displayed on the home screen.

The product features an ethernet port, which allows for the download of a spreadsheet that can prove the status of the emergency lighting system.



01



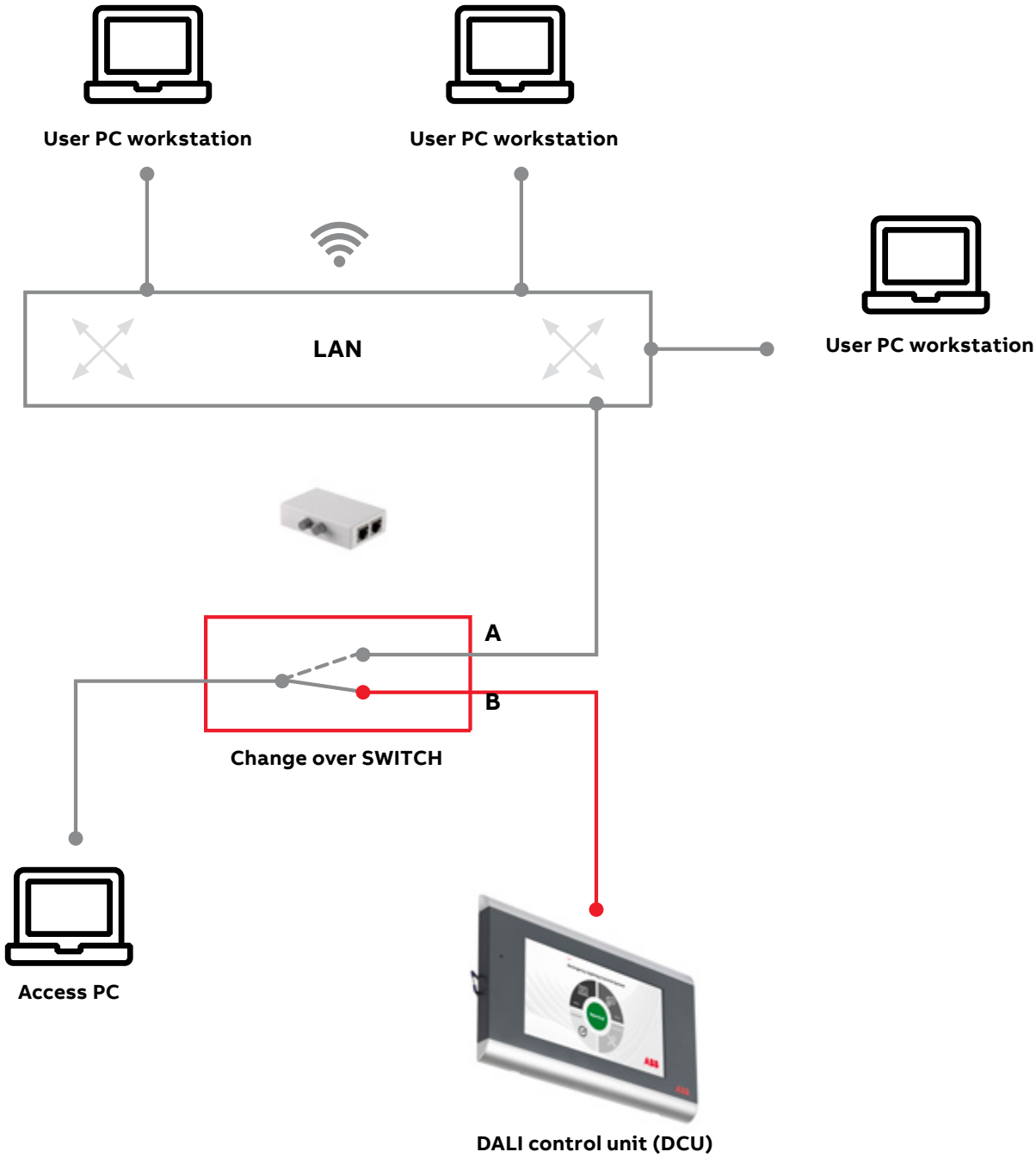
02

DALI Address	Name	Location	Test Date	Type	Result
A0	Exit Sign	Reception	2017/10/28 10:39:53	DT	OK
A1	Exit Sign	Entry Foyer001	2017/10/22 09:22:44	DT	OK
A2	Exit Sign	Entry Foyer002	2017/10/28 10:39:52	DT	NULL
A3	Escape Lighting	Entry Foyer003	2017/10/28 10:39:52	DT	OK
A4	Exit Sign	Corridor 1	2017/10/28 10:39:53	DT	OK
A5	Escape Lighting	Corridor 2	2017/10/28 10:39:52	DT	OK
A6	Escape Lighting	Corridor 3	2017/10/28 10:39:53	DT	OK
A7	Exit Sign	Corridor 4	2017/10/22 09:22:44	DT	OK
B0	Escape Lighting	Front Stairwell	2017/10/28 10:39:53	DT	OK
B1	Exit Sign	Front Stairwell	2017/10/28 10:39:52	DT	OK
B2	Escape Lighting	Rear Stairwell	2017/10/28 10:39:52	DT	OK
B3	Exit Sign	Rear Stairwell	2017/10/28 23:00:00	FT	OK
B4	Escape Lighting	Main Office	2017/10/28 10:39:53	DT	OK
B5	Exit Sign	Main Office	2017/10/28 10:39:52	DT	OK
B6	Escape Lighting	Meeting Room 1	2017/10/28 10:39:52	DT	OK
B7	Escape Lighting	Meeting Room 2	2017/10/28 10:39:52	DT	OK

03

DALI LAN Connection

The DALI control Unit (DCU) can be connected to the user PC or laptop designated for access to the emergency lighting central control via the ethernet port and through a network switch. In a managed network switch, the cables from the DALI control Unit (DCU) and the access user PC or laptop can be passed through the main network switch and combined with good internal protection used to prevent and reduce vulnerability whilst on the LAN network.



DALI control unit (DCU)

Productivity & reliability

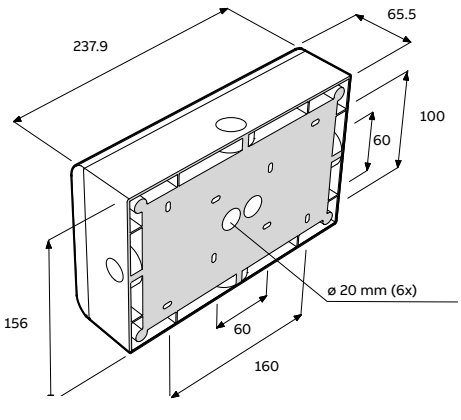
DALI emergency lighting control panel

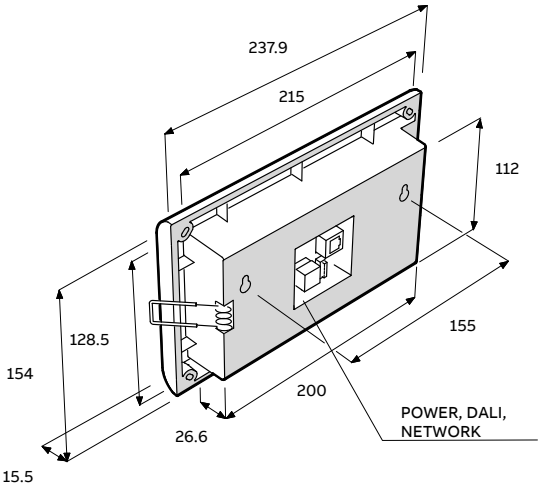
- Ensuring building occupant safety
- Touch screen to control, test and monitor emergency lighting
- Simple to group and easy to install

Control unit

Order code	Description	Input voltage	Lamp type	Power consumption (VA/W)	Operation / duration (hrs)	Environment temp. (°C)	Weight (kg)
ELDCS1/DALI/EL	DALI emergency control unit	220-240 AC 50 Hz	N/A	6	N/A	0 - 50	1.1

Note. The manual, pre-commissioning documents, device location record sheet, test record sheet and download software for spreadsheet are available on the ABB low voltage website
DALI bus power supply 12V DC included





Naveo®Pro
Smart monitoring system

- Control your emergency lighting system
- Innovative user-friendly emergency lighting mobile application
- Digital overview via the cloud

Naveo®Pro
The emergency lighting inspection and maintenance solution

The Naveo®Pro inspection and maintenance system provides a digital overview via the cloud – providing ready information to assist resource planning and enhance building safety. This information can be processed directly using a mobile device.

—
01 The ABB Ability™ platform is an integrated Internet platform and cloud infrastructure.

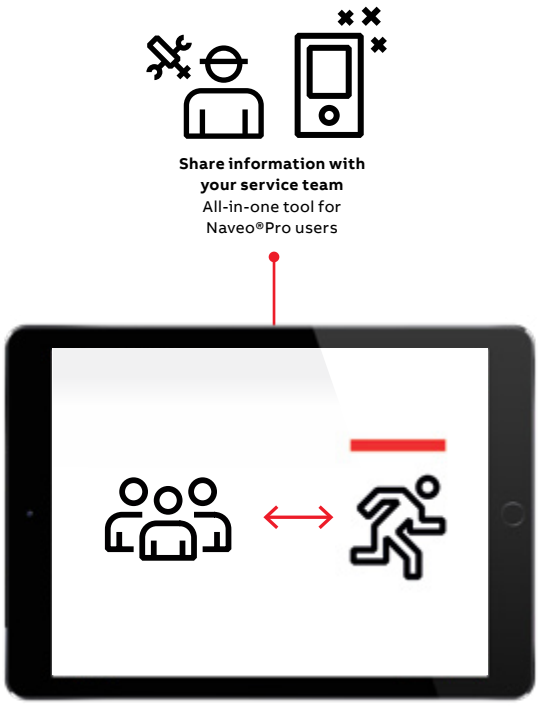
In practice, this will save you time on collecting and entering information. Utilising the ABB Ability™ platform gives you integrated cyber security for safety and reliability, enables better maintenance planning, and reduces operating costs.

Overview in inspection and maintenance
In practice, ongoing inspection, maintenance and testing of emergency lighting is a time-consuming process with a great deal of work that has to be carried out regularly during every year that the installation is in place. These costs can be out weighed with a centralised automatic test system.

With Naveo®Pro you can concentrate on what matters: letting your emergency lighting luminaire system manage itself and reduce the amount of time monitoring it. This will quickly save you a considerable amount of money on maintenance time, allowing you to focus on problems quickly and as they happen. In figures, this could have potential savings of up to 30% on costs each and every year.

An overview of the advantages
- Inspection and maintenance software for mobile device
- Save time in planning maintenance ahead
- 24/7 overview of all monitored buildings via google maps
- Save administration time with on-site data entry using your mobile app
- Status alerts pushed to your mobile device
- Automatic list of (replacement) parts, including article numbers
- Ensuring that intended design of the emergency lighting installation is never compromised
- Documents can be used to prove safety of building to insurance companies, e.g. Liability and Buildings Insurance

ABB Ability™ enables Intelligent Buildings
ABB Ability™ connects our customers to the power of the Internet of Things and, through our services and expertise, goes further by turning data insights into the direct action that "closes the loop" and generates customer value in the physical world.



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01

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01 The Naveo®Pro architecture for emergency lighting consists of three tiers; emergency lighting luminaires, the ABB gateway and the cloud.

Connecting your emergency lighting luminaires to the ABB gateway is simple and makes real time system status information readily available and easy to process via the cloud. Having this information enables you to get status directly to your mobile device. This method of accessing controlling, and monitoring the status of your installation, makes maintenance of your installation a great deal easier.

How does it work?
With Naveo®Pro being connected all the time, your emergency lighting system is always fully up to date. You can easily set up the connection:

- The Gateway continuously receives all luminaires data and pushes this information to the Naveo®Pro app.
- On continuous request from the cloud the Gateway automatically sends all (test) data to the Naveo®Pro app. With Naveo®Pro you are therefore constantly in touch with your system status anytime and anywhere.
- During a visual inspection of your building you can add notes directly into the app which means you can record your visual risk assessments in one place.

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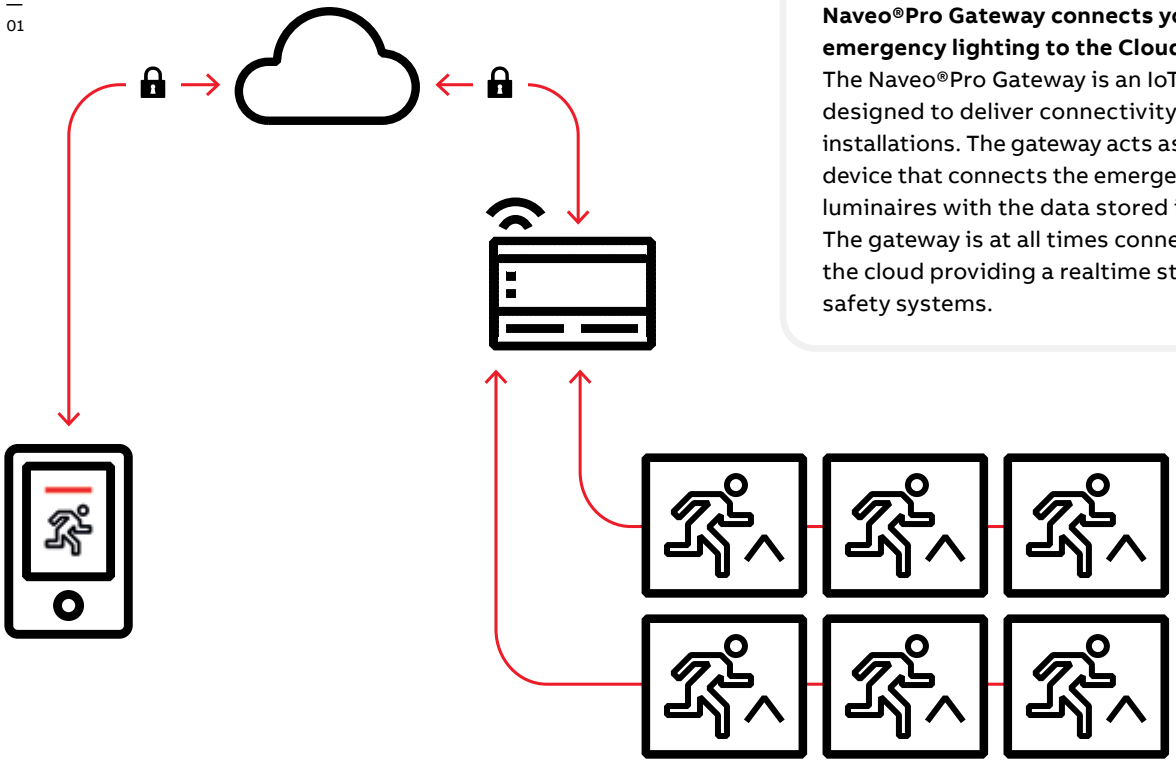


Naveo®Pro Gateway connects your emergency lighting to the Cloud
The Naveo®Pro Gateway is an IoT Gateway designed to deliver connectivity to all types of installations. The gateway acts as a networking device that connects the emergency lighting luminaires with the data stored in the cloud. The gateway is at all times connected to the cloud providing a realtime status of your safety systems.

—
* Up to 500 luminaires per gateway

The Naveo®Pro app

Set up, maintain and fully control your entire emergency lighting installation with a new mobile app.

The Naveo®Pro App provides a real time overview of all systems, saving time, enabling better maintenance planning and enhancing building safety.

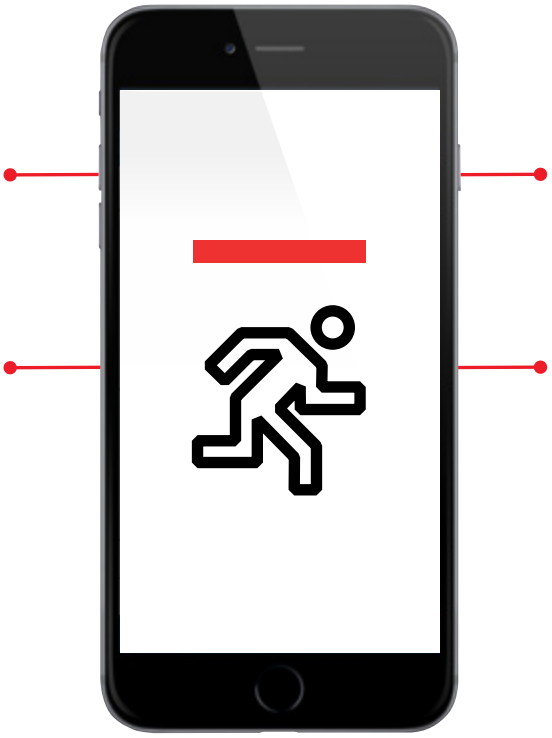
With the Naveo®Pro app, all types of emergency luminaires can be easily installed and programmed into a building in a fast and intuitive way using a QR code.

Through the ABB Ability™ platform, the system provides a digital overview via the cloud, giving instant information to assist resource planning and enhance building safety, which can be processed directly from a mobile device.

With emergency luminaire data stored in the cloud, the mobile app provides a 24/7 overview of all smart monitored buildings via Google maps. Building maps can be uploaded and overlaid onto Google maps, showing its current status and providing a clear and precise location of the emergency lighting luminaire.

Set-Up
Easily install and add new devices to your building through a list or map

Maintain
Defective devices are automatically detected and reported on your interface in addition to push notifications



Test
Run test instantly or program them to ensure that all your devices are working properly

Share
Easily share the results of tests with other people on your team

—
Naveo®Pro system components

Order Code	Description
51000040	Naveo®Pro GW 1.0
51000041	Naveo®Pro GW 1.0 wired and iPad wifi
51000042	Naveo®Pro GW 1.0 wired and iPad cell
51000060	Naveo®Pro wired and 4G router-R/SIM card
51000061	Naveo®Pro wired and 4G router-T/SIM card
758730	Naveo®Pro antenna 5 GHZ wifi
758740	Naveo®Pro Gateway mounting plate

Testing solutions
Self test

Current regulations stipulate mandatory periodic testing of an emergency lighting system to ensure the correct operation of the system in the event of a mains failure, together with compilation of all corresponding documentation.

—
01 Green LED indicates normal operation

The Regulatory Reform (Fire Safety) Order 2005 and Fire (Scotland) Act 2005 place responsibility for the testing of emergency lighting systems firmly with the owner or occupier of the building.

Manual testing and the compilation of records can prove expensive, time-consuming, and disruptive to commercial activities.

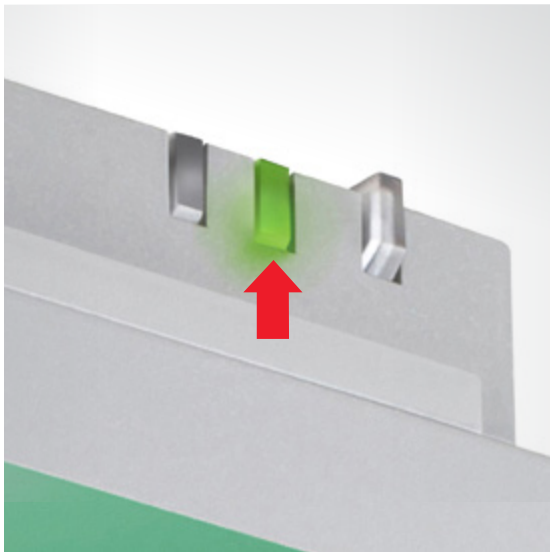
Emergi-Lite Self-test offers an easy and cost effective solution for regular testing of emergency lighting, without requiring programming or complex set-up procedures.

It provides continuous monitoring of the mains and battery status, together with a regular testing regime designed to meet mandatory requirements.

Key features of Self-test
- Simple and dependable automatic testing
- Easy installation
- Tests the battery, charger and lamp
- Each luminaire works independently in the event of an emergency
- Available in a variety of luminaire types
- Visual fault identification
- Runs tests in background mode
- Ability to stagger luminaire testing

Automatic compliance to prescribed intervals
An Emergi-Lite Self-test automatically runs a commissioning routine when the mains is switched on initially. An onboard clock/calendar microprocessor ensures the appropriate tests are carried out at the allocated time-period. Test functions include continuous monitoring, monthly, annual and staggered periodic testing plus a push-button test.

Product example - Guideway Escape
The illustration (right) highlights the intelligent Self-test testing facility built in the base of all Guideway Escape exit signs.



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Test operation
Most of the Emergi-Lite self-contained models have self-test fitted as standard. A self-test feature is available with other products including Escapeline.

EMEX Power

Central power supply solutions

- Reliable central back up power
- Available for AC/AC and AC/DC power supply systems
- Exceptional overload performance
- Entire modular build for quick and simple component replacement

Emergi-Lite
Experts in central power supply systems

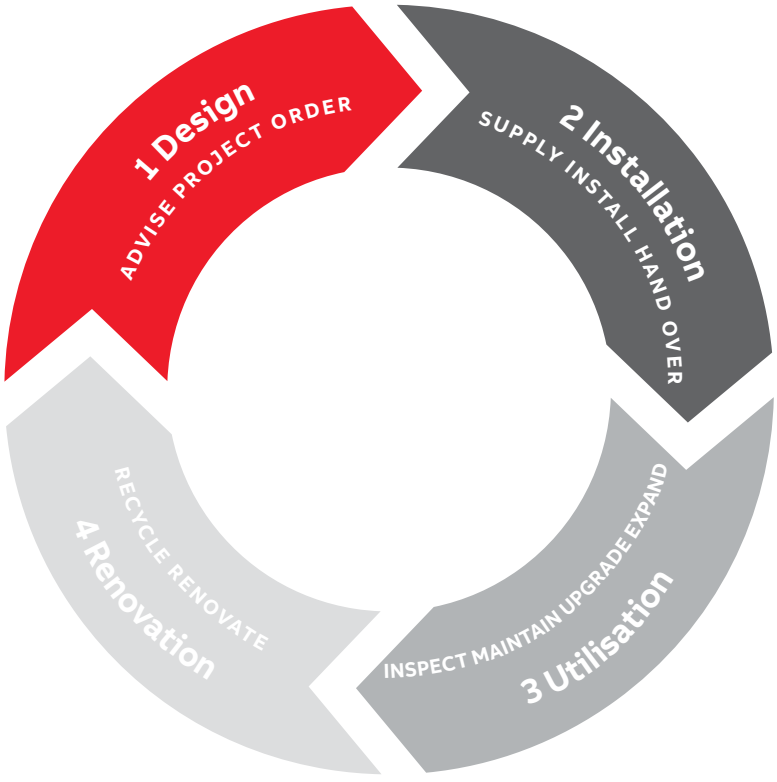
When choosing a partner for emergency lighting, you need a supplier capable of delivering a solution whenever the need arises. Emergi-Lite focuses on supporting our customers at all points of the emergency lighting life-cycle, whether planning, installing, managing or renewing.

—
01 Emergi-Lite delivers state-of-the-art systems and products into the emergency lighting marketplace.

By choosing Emergi-Lite as your emergency lighting partner, you'll be placing your projects, your systems,and essentially your people, in safe hands. As a leading life safety solutions provider, we deliver state-of-the-art systems and products into the emergency lighting marketplace.

1. Advice and information during the design phase
From project consultations at customer premises, to drafting certified technical drawings, Emergi-Lite is ready to support all your emergency lighting needs.

In the design phase, it is important for you to have all the information. If desired, we can provide you with that in the form of specific project advice, based on the most recent regulations, standards and safety requirements.



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2. Speed and materials during the installation phase
The right products, delivered at the right time, to ensure your installations run smoothly - on time and within budget. Emergi-Lite offers you practical solutions to give you an immediate advantage, which only makes everything so much easier for you.

3. Support during the utilisation phase
The clear and precise after-sales support you would expect from a leading emergency lighting supplier, including servicing, maintenance and readily-available replacement parts.

4. Altering and separating during the renovation phase
Keeping you up-to-date with the latest standards, industry developments and new product innovations, making renewing your emergency lighting a simple, straightforward process.

Introduction

What is a central power supply system?

A Central Power Supply system (CPS) is essentially a large set of batteries at a single central location. In the event of a mains failure in the building, the batteries are used to provide reliable power for emergency lighting purposes.

Central Power Supply System (CPS):
This is essentially a large set of batteries at a single central location.

Features:

- The CPS output will typically be 24V, 50V, 110V, or 220 for AC DC systems and 230/240,380/400V for AC/AC systems according to the type & regional requirement.
- Output is usually AC/DC or AC/AC when mains voltage is needed.
- The CPS will be sized according to the load required.
- The battery will be rated to achieve a specified duration, typically 1, 2, or 3 hours.
- A larger project may use one single large CPS, or a number of smaller CPS units.

How does it work?
The CPS effectively stores energy in the battery set whilst the mains supply is healthy, and draws upon this reserve when required in times of mains failure. If the failure is limited to part of the building (local), the CPS may provide power using its incoming supply without discharging the battery.

Mains failures are detected by sub-circuit monitoring relays to ensure the automatic, fail-safe operation of the emergency lighting. These are situated around the building where required, or may be located within the CPS itself.

Power from the CPS is distributed to dedicated emergency luminaires and exit signs, or converted CPS 230V luminaires. Standard, unmodified CPS 230V luminaires can be used on a mains-voltage CPS. Distribution cables need to be fire protected, according to local regulations and/or risk assessment.

Who decides?
The type of CPS is influenced by the size and nature of the project. The final decision may be taken by the consultant, end user, or contractor.

The duration or autonomy of the CPS is often dictated by national Standards (e.g. BS 5266), or local authority requirements.

What are its benefits?
A CPS system can provide a higher light output per point when compared to a self-contained installation, and therefore will use fewer emergency lights per area.

A CPS solution offers great savings in ongoing testing, maintenance, and replacement battery costs when compared to a self-contained emergency lighting installation.

Introduction
Which category fits your needs?

Central systems fall into two categories: AC/AC static inverter systems and AC/DC power supply systems. Both types of central system operate on the same principle. The luminaire is fed, via emergency sub-distribution, from the central system.

— 01 Static Inverter Systems (AC/AC)
— 02 Central Power Supply Systems (AC/DC/EMEX 220)
— 03 Central power supply system (AC/DC EMEX 110)
— 04 EMEX Mini Central Power Supply System

Two categories central systems:
- AC/AC static inverter systems EMEX Power & EMEX Mini
- AC/DC power supply systems EMEX220 & EMEX110

Same principal:
The luminaire is fed, via emergency sub-distribution, from a single supply source (the central power supply system).

Static inverter:
The term ‘static inverter’ is derived from the lack of moving parts within the equipment, as opposed to rotary motor / generator converter designs.

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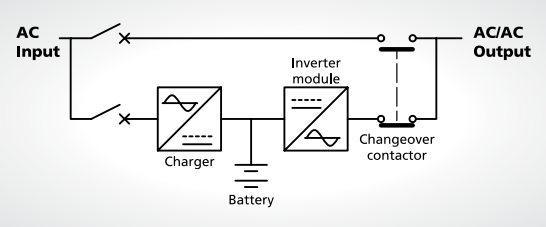

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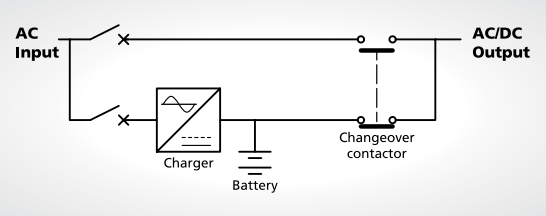

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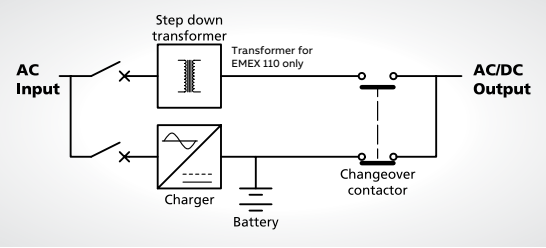

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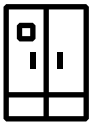

Static Inverter Systems (AC/AC)
Static inverter systems operate in a similar manner to AC/DC Central Power Supply Systems, with the exception that the system constantly gives a 230V or 400V AC output. The advantages of this approach are numerous. Firstly, luminaires do not need to be converted, as any CPS 230V luminaire can be used (there are some restrictions to this on the grounds of suitability for emergency lighting applications and product compliance). Luminaires also operate at full light output, as they are being fed from a full mains voltage supply, meaning fewer luminaires are required for equivalent light outputs.

Advantages
- Designed specifically for emergency lighting
- Suitable for medium to large or special installations
- Almost any luminaire may be used
- Easy to maintain
- 10 to 25 year design life batteries
- Distribution is standard 230V AC (standard Distribution Boards DBs)
- Reduced volt-drop problems on output cabling
- Luminaires operate at full light output
- Ideal for modern LED lighting installations to capitalise on energy reduction

Disadvantages
- Bigger systems are physically large and may require a special battery room
- Smaller installations are ideal for EMEX mini installations (See EMEX mini section for suitable solution)

Central Power Supply Systems (AC/DC)
Central Power Supply Systems provide low voltage AC power (nominally 110V or 220V AC) whilst mains to the system is healthy, and DC voltage (of the same value) when mains fails. The battery voltage selected will depend upon the type of product and system and applications requirements and number of luminaires, the rating, their type and their distance from the central system. 110V Central Power Supply Systems require each emergency luminaire to be converted for use on the low voltage supply. The cost of this conversion may be prohibitive on larger installations. Another important factor is that converted luminaires only provide a small percentage of their normal light output when running in emergency mode. 220V AC/DC systems can mirror the same principal as AC/AC inverter systems without the inverter component, However these system will require dedicated distribution solutions for control and luminaire monitoring.

Advantages
- Designed specifically for emergency lighting
- Reduced cost for smaller installations
- Reduced power electronics
- Easy to maintain
- 10 to 25 year design life batteries

Disadvantages
- Cable restrictions to avoid volt-drop
- Luminaires must be compatible for use on AC/DC
- Voltage not regulated in emergency mode

Introduction
Practical insights on self contained battery life

Principle types of emergency lighting system are ‘self-contained’ or ‘centrally fed’. In a self-contained system, each emergency luminaire has an on-board battery and charger unit. A Central power supply system operates on the principle that the luminaires are fed, via sub-distribution, from a single supply source.

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01 Cost of ownership
(CBS vs Self-contained)

Self-contained System
Batteries/charger contained in individual luminaires

Advantages
- Simple installation
- No special cabling
- Economic for smaller installations with a limited total number of luminaires

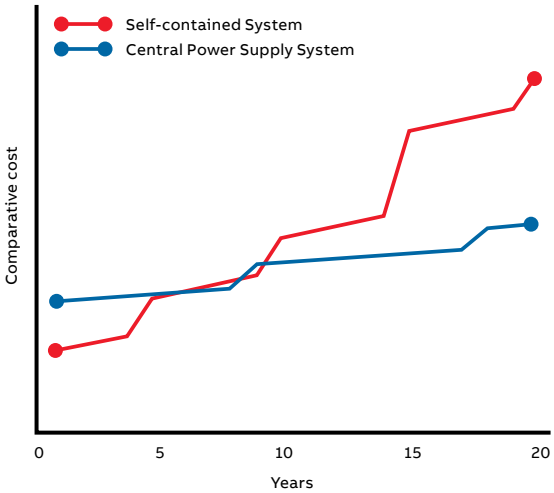
Disadvantages
- Limited light output
- Multi-point maintenance
- Battery replacement 3 – 5 years (up to 8 years with premium or newer cell technologies)
- System design life 15 years maximum

Insights on battery replacement
A typical self-contained emergency power pack has an operational design life of 10 – 15 years, and will require a replacement battery every 3 – 5 years. The installation is straightforward and, by definition, each luminaire is installed and maintained independently of all others on the site.

Battery life 3-5 years:
The instance of battery failures may increase, resulting in the possibility of further unplanned maintenance visits to replace battery sets.

Battery life after 5 years:
It is recommended that battery condition is reviewed on a regular basis. Typically following 5 years use, a full battery replacement should be carried out.

Considerations
It can be considered that self-contained products will require 2 or more complete sets of replacement batteries during the first 10 years of operation. Approaching 15 years, it is likely that the luminaires within a self-contained system will need to be changed. It should be noted, that a more rigorous and beneficial planned maintenance schedule can be achieved, utilising a suitable automatic or controlled test and monitoring system, to check the luminaires and their batteries (Dali, Naveo®Pro: available from Emergi-Lite).



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EMEX Central power supplies
Reliable emergency power solutions

Our Central Power Supply Systems division offers a choice of reliable and high quality products which are designed to meet the relevant standards and specifications for both AC/AC and AC/DC applications. The 'EMEX' Family central power supply systems are manufactured in our United Kingdom, Leeds manufacturing facility, supported by an experienced engineering, sales and commissioning team.

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01 EMEX Central power supply
—
02 EMEX Mini Low power supply
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03 EMEX 220 AC/DC Modular AC/DC central power supply system

EMEX – AC/AC & AC/DC Range:
EMEX Power, EMEX 220, EMEX TS static inverters and EMEX Mini power systems offer a low maintenance and extremely reliable central power supply solution with low running costs and a high degree of functionality to serve individual customer needs. Static inverters in this range are true passive stand-by emergency lighting units, designed and built to exceed current emergency lighting standards and technical requirements, something with which most UPS based central power products do not comply.

EMEX 220 AC/DC Central power supply systems EMEX Mini power systems offer a low maintenance and extremely reliable central power supply solution with low running costs and a high degree of functionality to serve individual customer needs when connected in conjunction with the EMEX TS and EMEX MXCDB Distribution solutions.

EMEX power & DALI functionality
DALI can be used with our Central Power System by connecting the DALI devices to a DALI bus that is powered by the CPS. The CPS can communicate with the DALI via the DALI protocol, such as BACnet, KNX, Modbus or our built in relays. This way, DALI can monitor and control the CPS and the DALI devices, as well as coordinate them with other systems, such as HVAC, security, and fire alarm.

- Modular design, which makes maintenance or repair a simple task
- Manufactured in the UK
- Normal mains luminaires with electronic starters/high frequency ballasts may be driven by the system (glow wire starters cannot be used in accordance with BS EN 60598.2.22)
- Ideal for task, standby or stay put lighting projects where normal (high) lighting levels are required to minimise business disruption
- High efficiency: Low running cost. EMEX family systems are designed for an inherently long service life with associated significant cost benefits over alternative emergency lighting solutions
- Cost conservancy and design:
  1. Ventilation fan life is maximised, as they will only operate when required, during 'battery charge' or 'inverter active' cycles
  2. Battery life conserved by a temperature compensated constant voltage charger circuit in conjunction with passive stand-by inverter operation
- Functional features include sub-circuit monitoring, final exit input, MCB monitoring, M/NM operation (user selectable), fire alarm input and two volt-free common alarm outputs
- MCB protection devices are used throughout the equipment, eliminating the need for fuse spares
- Digital display for battery and output metering V & I
- Fully compliant with EN 50171
- **EMEX TS** includes integral touch-screen with EMEX Test capability

BS EN 50171
KM542294

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EMEX Power

Modular Static Inverter AC/AC & AC/DC central power supply system

The EMEX Power inverter and charger modules utilise solid state electronics of the highest reliability to provide a rugged, easy to maintain system with exceptional performance for emergency lighting use.

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01 EMEX Power central supply system

System design
The system has been designed solely for emergency lighting, and not modified from other less essential power supply requirements. As such, the system has exceptional overload performance without the need to over-specify the rating of the inverter to ensure faults can be cleared.

Each module has input and output protection and each module measures and limits its own current, making it a self-contained unit. Both the inverter and the charger utilise this modular approach, allowing a much higher power density than similar non-modular systems. The number of modules fitted, together with the appropriate sized battery, determines the rating of the system.

All modules connect to a common control bus via IDC connectors. Main connections to modules are via five front panel terminals giving quick and easy access to terminations, allowing a module to be changed in a matter of minutes. Each module has two recessed handles to aid lifting. No side or rear access is required.

Alarms and status indicators are provided on the front panel display, which provides clear and concise information.

System performance
EMEX Power has been designed to operate solely as an emergency lighting power supply, and as such is equipped with the following features:

- An overload performance of 120% continuous, 125% for 20 minutes with full output, 150% for 1 minute and 200% for 10 seconds without reduction in output voltage
- Short-circuit currents of 350% for 5 seconds
- Response time for luminaire power (Strike) up <0.5 Seconds
- The ability to strike the full load on mains failure without using a bypass supply
- Four pole contactor complying with EN 60947-4-1 (BS 5424)
- Available in single phase input/output, true three phase input – three phase output (4 wire)
- Modular Inverter
- Modular Charger
- MCB protection (No fuses)
- 4 main components for simple maintenance

BS EN 61508 Functional Safety (Safety Integrity Level 2 Certified) KM 673347. See certificates for applicable systems.

Systems Certified to:
BS EN 50171 2021, BS EN 61508 & IEC 62477

EMEX Power
System overview

EMEX Power offers a host of standard features and benefits, as listed below*:

—
*** Note:** that some items will be optional, extra cost items on other systems, or may not be available at all if the system is not designed specifically and solely for emergency lighting use.

Standard features: EMEX Power system overview
For further detail, please refer to the 'EMEX Power detailed specification'.

Performance
- True AC/AC 50/60 Hz output
- Ability to use remote standard proprietary AC distribution and protection devices on outgoing circuits
- Rated for any load power factor, zero to unity, at any output power up to the maximum rated kVA
- Compatibility with addressable test package using EMEX technology
- Excellent overload capability in full emergency mode: 350% for 10 seconds without reduction in output voltage
- Excellent recharge capability: 80% after 12 hours following rated discharge
- MCB protection throughout – no fuses
- EMEX Power true modular construction with common spares (inverter, charger, control PCB, and system interface common across the full system range)
- Individual MCB protection for each module - AC and DC circuits
- Individual cooling fans for each module with on-demand operation (not continuously running)
- Split parallel charger above 10 amps – enhanced integrity with the ability to operate with one or more charger modules isolated (subject to increased recharge
- Integral maintenance bypass facility (ability to support output load in bypass mode whilst maintenance is performed)
- Temperature compensated charger
- Maintained output as standard (switchable to non-maintained)

Alarms and instrumentation
- Comprehensive display
- Charger and inverter alarm pack
- Momentary "push to test" button
- Fire alarm interface
- Final exit interlock
- Internal and external MCB monitoring
- Local/remote maintained circuit control
- Sub-circuit monitor connection
- Two sets of volt-free alarm relay contacts
- Inverter-inhibit engineers' switch
- Remote alarm unit option

Mechanical
IP21 & IP31 System as standard, IP41 available on request
- Easy front panel access
- Inter-cabinet trunking for battery cables
- Fork-lift plinth
- Lifting eyes for crane lift as standard
- Installation pack with all tools required
- Detailed instruction manual

Batteries
Standard systems are supplied with Valve Regulated Lead Acid (VRLA) batteries, also known as 'Sealed Lead Acid'. These batteries are sealed for their design life of 10 years. Longer design life VRLA and Nickel Cadmium batteries are available upon request, however, these batteries require a much larger physical area, and emit potentially explosive gases, meaning the battery room must be adequately ventilated.

These reasons, along with the additional capital cost, generally outweigh the additional life obtained, as demonstrated below.

Battery	Initial cost	Design life	Maintenance
VRLA	££	YY	££
Ni-CAD	£££££	YYYYY	£££££
Planté	££££	YYY	££££

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02 EMEX power measurements

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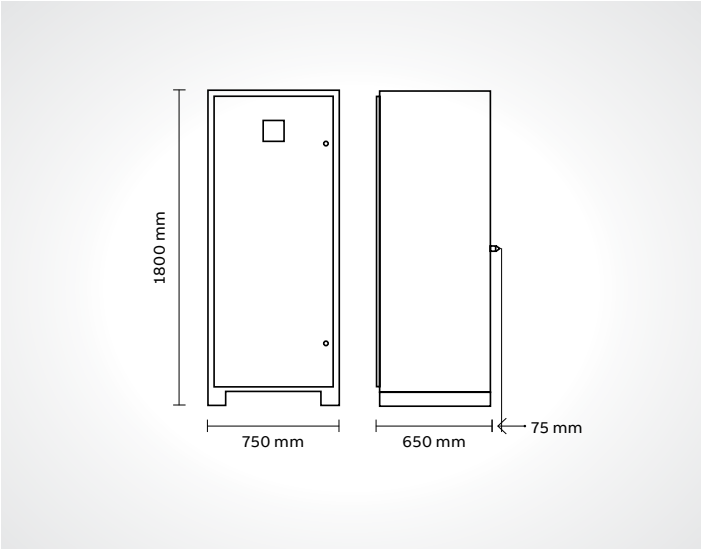

Technical reference AC/AC system
Specification & certification

01 Emergency lighting system reference

Central power supply & Static inverter specification

LED indications	
Mains healthy	Green
Maintained circuit on	Green
Battery high volts	Amber
Battery low volts	Amber
Supply from battery	Red
Charge fail	Red
System fault	Red
Common alarm	Red
Battery discharged	Red
System inhibited	Red

Inverter modules (EMEX Power, EMEX Mini only)	
Nominal output	220V – 240V 50/60Hz AC
Rating	1.5kVA or 3kVA rating with Primary / secondary configuration CPS
Overload	120% continuous with full output
	125% for 20 minutes with full output
	150% for 1 minute with full output
	200% for 10 seconds with full output
Short circuit	350% for 5 seconds
Cooling	Integral fan (on-demand operation)
Protection	AC 2 pole type D
	DC 2 pole type B
Module dimensions	360mm x 170mm x 575mm
Handling	Recessed handles front and rear
Weight	50kg

Charger modules	
Constant voltage current limited with temperature compensation. Voltage control to ±1% with full mains supply variations.	
Rating	10 amp minimum
Cooling	Integral fan (on-demand operation)
Protection	AC 2 pole type D
	DC 2 pole type B
Module dimensions	360mm x 170mm x 575mm
Handling	Recessed handles front and rear
Weight	50kg

Metering	
DC metering	Combined digital battery voltage and charge/ discharge current
AC metering	Combined digital AC output Voltage and current

Controls	
Final exit interlock	Requires volt-free contact
Sub-circuit monitor	24V control loop
Maintained circuit control	24V control loop
Fire alarm control	12/24V DC from fire panel
Remote MCB monitoring	24V control loop
Changeover device	Four pole contactor to BS 5424 and EN 60947
Battery Earth leakage monitor	

Mechanical	
Input / output terminals	10mm/50mm dependant on rating
Control terminals 2.5mm	

Transient over voltage protection

The charger has a surge protection device of 190J and 10kA peak current (single pulse).

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Battery
Battery should be comprised of one or more strings of no more than 120V nominal voltage.

The batteries are maintenance free sealed lead acid, gas recombination type with a minimum design life of 10 years. They shall have extremely low gas generation, low self-discharge and have sealed pressure release vents. Other battery technologies to be available upon special request.

The batteries shall be sized to power the complete system for the rated duration following mains failure at 100% light output of all emergency lamps.

Environmental conditions
Ambient temperature of the installation (switch room) should be in the range 15 – 25°C. Air conditioning is required where normal ambient will exceed 25°C. This is to achieve optimum battery life expectations.

NOTE: Batteries must not be subject to prolonged extreme temperatures prior to installation and must be stored in a suitable environment.

Indoor equipment categorized	
Ambient temperature (Nominal)	5°C – 35°C
Extreme temperature	0 – 40°C
Humidity (non-condensing)	40 – 85%
Noise level at 1 metre	55 dBA
Altitude without extra ventilation	1000 metres

Cabinets	
Nominal output	220V – 240V 50/60Hz AC
Construction	Modular without welds; battery cubicles can be flat-packed for ease of access to site
Ingress protection	IP2X standard, options up to IP41
Colour	RAL 7016 (Anthracite grey) Other RAL colour finishes available to special order
Lifting & handling	M12 lifting eyes and 110mm plinth
Levelling	Levelling feet available
Access	Single door with 8mm square block key. Front access only required - opening angle 180° Key lockable doors on request. Removable top gland plate.
Ventilation	Ventilation in rear and front only – cubicles can be mounted adjacent to each other (no side ventilation)
Dimensions	1800mm x 750mm x 725mm (Dimensions are inclusive of 75mm ventilation back-stop)

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EMEX Power
System selection

Design of centrally-powered emergency lighting systems is a complex process. For each system, it is imperative that sufficient battery power is made available to operate all emergency luminaires in the event of a mains failure.

—
01 Institutional building with EMEX power system

Fully compatible with EMEX Test software and components, EMEX offers a comprehensive solution to providing emergency power to large and complex installations.

EMEX TS range of systems
EMEX TS offers all the benefits of the EMEX Power range of central power supplies with the added benefit of an on-board EMEX Test monitoring capability.

EMEX TS is supplied complete with MXKP addressable interfaces, panel mount touch screen monitor (pre-loaded with EMEX Test software).

To select an EMEX TS product, simply add suffix / TS to the standard product order codes (part numbers) on pages 85-87

EMEX Power: EMEX 230V AC/AC and EMEX 400V AC/AC

EMEX Power system installed codes:

Part Code Key:
ELD A B C D . E F G H

A	Power factor - 9 for 0.85PF or 8 for 1.0 Unity PF
B (C)	Duration: 1 for 1hr, 15 for 1.5 hr, 2 for 2 hr and 3 for 3hr
C (D)	Phase - 1 for single and 3 for 3 phase
EFG	kVA (multiplied by 0.1)
H	additional suffix below, e.g. TS

Example:
ELD9110.015 = 0.85PF, 1 hr, 1 Phase @ 1.5 kVA
ELD9151.015 = 0.85PF, 1.5 hr, 1 Phase @ 1.5 kVA

Note: X & B suffix code will be used to allow the phasing of battery deliveries and will not show on product documentation or product. The X &B codes will only be used for order processing and logistics and will show on and will show on the Shipping and invoice document.

0.85 PF designed systems
EMEX Power - Single phase 220-240 V 50/60 Hz

Suffix Description:

X	Excluding batteries
B	Battery Kit
60	60 Hz system
N	Nicad cells
TS	Touch screen EMEX Test control GUI

Note: adding this Suffix TS the EMEX power central batter system contains the full hardware to communicate and operate the EMEX Test Automatic testing system.

Example:
ELD9110.015NTS
ELD9110.01560TS
ELD9110.015X
ELD9110.015B

The new EMEX order codes have the Machine and Batteries split into two codes, to allow the control to customers during project execution. So to explain the process with this as an example the new codes will be quoted as: Full System Code ELD9110.015 as declared in the following tables this code is the installed machine including the batteries, this is a descriptive code for certification compliance and product identification, etc. ELD9110.015 = Total Price of installed system.

Actual order codes for processing with GID codes are as below:
- ELD9110.015X – Machine
- ELD9110.015B – Battery

0.85 PF designed systems
EMEX Power - Single phase 220-240 V 50/60 Hz

Commercial rating		ICEL rating		1 hour duration	1.5 hour duration	2 hour duration	3 hour duration
VA	Watts	VA	Watts	EMEX Power part no.	EMEX Power part no.	EMEX Power part no.	EMEX Power part no.
1500	1275	1250	1063	ELD9110.015	ELD9151.015	ELD9210.015	ELD9310.015
3000	2550	2500	2125	ELD9110.030	ELD9151.030	ELD9210.030	ELD9310.030
4500	3825	3750	3188	ELD9110.045	ELD9151.045	ELD9210.045	ELD9310.045
6000	5100	5000	4250	ELD9110.060	ELD9151.060	ELD9210.060	ELD9310.060
7500	6375	6250	5313	ELD9110.075	ELD9151.075	ELD9210.075	ELD9310.075
9000	7650	7500	6375	ELD9110.090	ELD9151.090	ELD9210.090	ELD9310.090
10500	8925	8750	7438	ELD9110.105	ELD9151.105	ELD9210.105	ELD9310.105
12000	10200	10000	8500	ELD9110.120	ELD9151.120	ELD9210.120	ELD9310.120
13500	11475	11250	9563	ELD9110.135	ELD9151.135	ELD9210.135	ELD9310.135
15000	12750	12500	10625	ELD9110.150	ELD9151.150	ELD9210.150	ELD9310.150
16500	14025	13750	11688	ELD9110.165	ELD9151.165	ELD9210.165	ELD9310.165
18000	15300	15000	12750	ELD9110.180	ELD9151.180	ELD9210.180	ELD9310.180
19500	16575	16250	13813	ELD9110.195	ELD9151.195	ELD9210.195	ELD9310.195
21000	17850	17500	14875	ELD9110.210	ELD9151.210	ELD9210.210	ELD9310.210
22500	19125	18750	15938	ELD9110.225	ELD9151.225	ELD9210.225	ELD9310.225
24000	20400	20000	17000	ELD9110.240	ELD9151.240	ELD9210.240	ELD9310.240

All EMEX systems are subject to price on application so to obtain a quotation and the correct part order codes or to order an EMEX Power sytem please contact your local ABB Emergilite sales office / representative.

EMEX Power: EMEX 230V AC/AC and EMEX 400V AC/AC

EMEX Power system codes:

EMEX Power - Three phase 380-415 V 50/60 Hz

Commercial rating		ICEL rating		1 hour duration	1.5 hour duration	2 hour duration	3 hour duration
VA	Watts	VA	Watts	EMEX Power part no.	EMEX Power part no.	EMEX Power part no.	EMEX Power part no.
4500	3825	3750	3188	ELD9130.045	ELD9153.045	ELD9230.045	ELD9330.045
9000	7650	7500	6375	ELD9130.090	ELD9153.090	ELD9230.090	ELD9330.090
13500	11475	11250	9563	ELD9130.135	ELD9153.135	ELD9230.135	ELD9330.135
18000	15300	15000	12750	ELD9130.180	ELD9153.180	ELD9230.180	ELD9330.180
22500	19125	18750	15938	ELD9130.225	ELD9153.225	ELD9230.225	ELD9330.225
27000	22950	22500	19125	ELD9130.270	ELD9153.270	ELD9230.270	ELD9330.270
31500	26775	26250	22313	ELD9130.315	ELD9153.315	ELD9230.315	ELD9330.315
36000	30600	30000	25500	ELD9130.360	ELD9153.360	ELD9230.360	ELD9330.360
40500	34425	33750	28688	ELD9130.405	ELD9153.405	ELD9230.405	ELD9330.405
45000	38250	37500	31875	ELD9130.450	ELD9153.450	ELD9230.450	ELD9330.450
49500	42075	41250	35063	ELD9130.495	ELD9153.495	ELD9230.495	ELD9330.495
54000	45900	45000	38250	ELD9130.540	ELD9153.540	ELD9230.540	ELD9330.540
58500	49725	48750	41438	ELD9130.585	ELD9153.585	ELD9230.585	ELD9330.585
63000	53550	52500	44625	ELD9130.630	ELD9153.630	ELD9230.630	ELD9330.630
67500	57375	56250	47813	ELD9130.675	ELD9153.675	ELD9230.675	ELD9330.675
72000	61200	60000	51000	ELD9130.720	ELD9153.720	ELD9230.720	ELD9330.720
76500	65025	63750	54188	ELD9130.765	ELD9153.765	ELD9230.765	ELD9330.765
81000	68850	67500	57375	ELD9130.810	ELD9153.810	ELD9230.810	ELD9330.810

Unity PF Designed Systems
EMEX Power - Single phase 220-240 V 50/60 Hz

Commercial rating		ICEL rating		1 hour duration	1.5 hour duration	2 hour duration	3 hour duration
VA	Watts	VA	Watts	EMEX Power Part no.	EMEX Power Part no.	EMEX Power Part no.	EMEX Power Part no.
1500	1500	1250	1250	ELD8110.015	ELD8151.015	ELD8210.015	ELD8310.015
3000	3000	2500	2500	ELD8110.030	ELD8151.030	ELD8210.030	ELD8310.030
4500	4500	3750	3750	ELD8110.045	ELD8151.045	ELD8210.045	ELD8310.045
6000	6000	5000	5000	ELD8110.060	ELD8151.060	ELD8210.060	ELD8310.060
7500	7500	6250	6250	ELD8110.075	ELD8151.075	ELD8210.075	ELD8310.075
9000	9000	7500	7500	ELD8110.090	ELD8151.090	ELD8210.090	ELD8310.090
10500	10500	8750	8750	ELD8110.105	ELD8151.105	ELD8210.105	ELD8310.105
12000	12000	10000	10000	ELD8110.120	ELD8151.120	ELD8210.120	ELD8310.120
13500	13500	11250	11250	ELD8110.135	ELD8151.135	ELD8210.135	ELD8310.135
15000	15000	2500	12500	ELD8110.150	ELD8151.150	ELD8210.150	ELD8310.150
16500	16500	13750	13750	ELD8110.165	ELD8151.165	ELD8210.165	ELD8310.165
18000	18000	15000	15000	ELD8110.180	ELD8151.180	ELD8210.180	ELD8310.180
19500	19500	16250	16250	ELD8110.195	ELD8151.195	ELD8210.195	ELD8310.195
21000	21000	17500	17500	ELD8110.210	ELD8151.210	ELD8210.210	ELD8310.210
22500	22500	18750	18750	ELD8110.225	ELD8151.225	ELD8210.225	ELD8310.225
24000	24000	20000	20000	ELD8110.240	ELD8151.240	ELD8210.240	ELD8310.240

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EMEX Power - Three phase 380-415 V 50/60 Hz

Commercial rating		ICEL rating		1 hour duration	1.5 hour duration	2 hour duration	3 hour duration
VA	Watts	VA	Watts	EMEX Power Part no.	EMEX Power Part no.	EMEX Power Part no.	EMEX Power Part no.
4500	4500	3750	3750	ELD8130.045	ELD8153.045	ELD8230.045	ELD8330.045
9000	9000	7500	7500	ELD8130.090	ELD8153.090	ELD8230.090	ELD8330.090
13500	13500	11250	11250	ELD8130.135	ELD8153.135	ELD8230.135	ELD8330.135
18000	18000	15000	15000	ELD8130.180	ELD8153.180	ELD8230.180	ELD8330.180
22500	22500	18750	18750	ELD8130.225	ELD8153.225	ELD8230.225	ELD8330.225
27000	27000	22500	22500	ELD8130.270	ELD8153.270	ELD8230.270	ELD8330.270
31500	31500	26250	26250	ELD8130.315	ELD8153.315	ELD8230.315	ELD8330.315
36000	36000	30000	30000	ELD8130.360	ELD8153.360	ELD8230.360	ELD8330.360
40500	40500	33750	33750	ELD8130.405	ELD8153.405	ELD8230.405	ELD8330.405
45000	45000	37500	37500	ELD8130.450	ELD8153.450	ELD8230.450	ELD8330.450
49500	49500	41250	41250	ELD8130.495	ELD8153.495	ELD8230.495	ELD8330.495
54000	54000	45000	45000	ELD8130.540	ELD8153.540	ELD8230.540	ELD8330.540
58500	58500	48750	48750	ELD8130.585	ELD8153.585	ELD8230.585	ELD8330.585
63000	63000	52500	52500	ELD8130.630	ELD8153.630	ELD8230.630	ELD8330.630
67500	67500	56250	56250	ELD8130.675	ELD8153.675	ELD8230.675	ELD8330.675
72000	72000	60000	60000	ELD8130.720	ELD8153.720	ELD8230.720	ELD8330.720
76500	76500	63750	63750	ELD8130.765	ELD8153.765	ELD8230.765	ELD8330.765
81000	81000	67500	67500	ELD8130.810	ELD8153.810	ELD8230.810	ELD8330.810

EMEX Mini

Space saving & high performance central power supply system

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01

Features and benefits

- True AC/AC 50Hz output
- 1.5kVA rating with 525W for 3 hours, 700W for 2 hours and 1200W for 1 hour
- Ability to use standard proprietary AC distribution and protection devices on outgoing circuits
- Compatibilities with addressable test package using EMEX technology
- Excellent overload capability in full emergency mode
- Excellent recharge capability: 80% after 12-14 hours following rated discharge
- MCB protection throughout – no fuses
- Individual MCB protection for AC and DC circuits
- Cooling with on-demand operation (not continuously running)
- Integral maintenance bypass facility (ability to support output load in bypass mode whilst maintenance is performed)
- Maintained output as standard (switchable to non maintained)
- IP21 rate cabinet as standard
- Easy front panel access
- Simple installation
- Dimensions: H:1210 mm x D: 240 mm x W: 610 mm

BS EN 61508 Functional Safety
(Safety Integrity Level 2 Certified)
KM 673347

—
01 EMEX Mini central power supply system

EMEX Mini
Specification

Emex mini specification

Part no.	ELD8000.015
Description	Static Inverter EMEX Mini 1.5kVA 1-3H SPN
Mains supply	
Voltage / Frequency	230V. 50/60Hz
Phase	1 phase
Current	10A Max
Output (mains healthy)	
Voltage	230V (as supply)
Power	1500VA
Phase	1
Inverter output	
Voltage / Frequency	230V. 50/60Hz
Duration	1, 2 or 3 hour(s)
THD	< 5%
Waveform	Sinusoidal
Power factor range	0.9 lead to 0.7 lag
Phase	1
Over load	350 % for 5 sec @ 1 hour, 1000 % for 5 sec @ 3 hour
Inverter nominal rating	
VA	1,500 VA
Wattage	1200W 1 hour / 1000W 1.5 hours / 700W 2 hours / 525W 3 hours
Battery	
Ampere hour	24 Ah
Type	10 year design life - valve regulated lead acid (VRLA)
Physical dimensions	
Input / Output/ Auxiliary terminals	2.5mm
Cabinet	610mm wide x 240mm deep x1210mm tall
Weight (Including battery)	166kg Top entry gland plate
LED indications	
Mains healthy	
Supply from battery (mains failure or fault)	

EMEX Mini - Single phase 220-240 V 50/60 Hz

Commercial rating	ICEL rating	1 hour duration	2 hour duration	3 hour duration	Emex mini part no.
1500VA	1250VA	1200W	725W	525W	ELD8000.015

Note: EMEX Mini is a standard rated system for all autonomys shown above, the higher the load the shorter the Autonomy.

Central power supplies
Reliable emergency power solutions

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01

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01 EMEX110 – AC/DC Central Power Supply Systems: 110 V

EMEX220 – AC/DC Central Power Supply Systems: 220 V
EMEX220– AC/DC Central Power Supply Systems: 220 V The ‘EMEX220’ range is available where the user preference is for an AC/DC system powering CPS luminaires fitted with compatible AC/DC driver modules. The 220V range is suitable for medium to large premises, including schools, supermarkets and other commercial or local authority properties. also can be used with latest version of the EMEX test emergency lighting monitoring software and accessories.

EMEX110 – AC/DC Central Power Supply Systems: 110 V
EMEX110 – AC/DC Central Power Supply Systems: 110 V The ‘EMEX110’ range is available where the user preference is for an AC/DC system powering CPS luminaires fitted with compatible inverter modules. The 110 V range is suitable for earlier generation or manual control systems in medium to large premises, including schools, supermarkets and other commercial or local authority properties.

EMEX 220 AC/DC
Modular AC/DC central power supply system

The EMEX Power charger modules utilise solid state electronics of the highest reliability to provide a rugged, easy to maintain system with exceptional performance for emergency lighting use.

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02

System design
The system has been designed solely for emergency lighting, and not modified from other less essential power supply requirements. As such, the system has exceptional overload performance without the need to over-specify the rating to ensure faults can be cleared.

The charger utilises this modular approach, allowing a much higher power density than similar non-modular systems. The number of modules fitted, together with the appropriate sized battery, determines the rating of the system. All modules connect to a common control bus via IDC connectors. Main connections to modules are via five front panel terminals giving quick and easy access to terminations, allowing a module to be changed in a matter of minutes. Each module has two recessed handles to aid lifting. No side or rear access is required.

Alarms and status indicators are provided on the front panel display, which provides clear and concise information.

System performance
EMEX 220 has been designed to operate solely as an emergency lighting power supply, and as such is equipped with the following features:

- Four pole contactor EN60947-4-1 (BS5424 Compliant)
- Modular Charger
- DC Earth leakage alarm
- MCB protection (No fuses)
- 3 main components for simple maintenance

Systems Certified to:
BS EN 50171 2021, BS EN 61508 & IEC 62477

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03

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02 EMEX 220 AC/DC central supply system
—
03 EMEX charger module

EMEX 220 AC/DC
System overview

EMEX 220 offers a host of standard features and benefits, as listed below:

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*** Note:** that some items will be optional, extra cost items on other systems, or may not be available at all if the system is not designed specifically and solely for emergency lighting use.

Standard features: EMEX 220 system overview
For further detail, please refer to the 'EMEX Power detailed specification'.

Performance
- Compatibility with addressable test package using EMEX technology
- Excellent overload capability in full emergency mode without reduction in output voltage
- Excellent recharge capability: 80% after 12 hours following rated discharge
- MCB protection throughout – no fuses
- EMEX true modular construction with common spares (charger, control PCB, and system interface common across the full system range)
- Individual MCB protection for each module - AC and DC circuits
- Individual cooling fans for each module with on-demand operation (not continuously running)
- Split parallel charger above 5 amps – enhanced integrity with the ability to operate with one or more charger modules isolated (subject to increased recharge
- Integral maintenance bypass facility (ability to support output load in bypass mode whilst maintenance is performed)
- Temperature compensated charger
- Maintained output as standard (switchable to non-maintained)

Alarms and instrumentation
- Comprehensive display
- Charger alarm pack
- Momentary "push to test" button
- Fire alarm interface
- Final exit interlock
- Internal and external MCB monitoring
- Local/remote maintained circuit control
- Sub-circuit monitor connection
- Two sets of volt-free alarm relay contacts
- Inhibit engineers' switch
- Remote alarm unit option

Mechanical
- IP21 & IP31 Systems as standard, options for IP42 available on request
- Easy front panel access
- Inter-cabinet trunking for battery cables
- Fork-lift plinth
- Lifting eyes for crane lift as standard
- Installation pack with all tools required
- Detailed instruction manual

Batteries
Standard systems are supplied with Valve Regulated Lead Acid (VRLA) batteries, also known as 'Sealed Lead Acid'. These batteries are sealed for their design life of 10 years. Longer design life VRLA and Nickel Cadmium batteries are available upon request, however, these batteries require a much larger physical area, and emit potentially explosive gases, meaning the battery room must be adequately ventilated.

These reasons, along with the additional capital cost, generally outweigh the additional life obtained, as demonstrated below.

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01 EMEX power measurements

Battery	Initial cost	Design life	Maintenance
VRLA	££	YY	££
Ni-CAD	£££££	YYYYY	£££££
Planté	££££	YYY	££££

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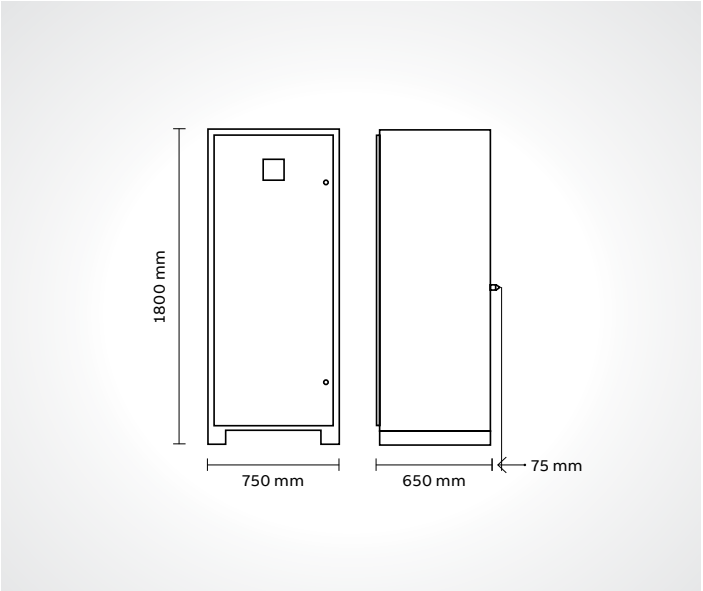

Technical reference AC/DC System
Specification & certification

Central power supply & Static specification

LED indications	
Mains healthy	Green
Maintained circuit on	Green
Battery high volts	Amber
Battery low volts	Amber
Supply from battery	Red
Charge fail	Red
System fault	Red
Common alarm	Red
Battery discharged	Red
System inhibited	Red

Charger modules	
Constant voltage current limited with temperature compensation. Voltage control to ±1% with full mains supply variations.	
Rating	5A (220V) & 10A (110V)
Cooling	Integral fan (on-demand operation)
Protection	AC 2 pole type D
	DC 2 pole type B
Module dimensions	360mm x 170mm x 575mm
Handling	Recessed handles front and rear
Weight	50kg

Metering	
DC metering	Combined digital battery voltage and charge/ discharge current
AC metering	Combined digital AC output Voltage and current

Controls	
Final exit interlock	Requires volt-free contact
Sub-circuit monitor	24V control loop
Maintained circuit control	24V control loop
Fire alarm control	12/24V DC from fire panel
Remote MCB monitoring	24V control loop
Changeover device	Four pole contactor to BS 5424 and EN 60947
Battery Earth leakage monitor	

Mechanical	
Input / output terminals	10mm/50mm dependant on rating
Control terminals 2.5mm	

Transient over voltage protection

The charger has a surge protection device of 190J and 10kA peak current (single pulse).

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01 Emergency lighting system reference

Battery
Battery should be comprised of one or more strings of no more than 120V nominal voltage per battery section/compartment.

The batteries shall be maintenance free sealed lead acid, gas recombination type with a minimum design life of 10 years. They shall have extremely low gas generation, low self-discharge and have sealed pressure release vents. Other battery technologies to be available upon special request.

The batteries shall be sized to power the complete system for the rated duration following mains failure at 100% light output of all emergency lamps.

Environmental conditions
Ambient temperature of the installation (switch room) should be in the range 15 – 25°C. Air conditioning is required where normal ambient will exceed 25°C. This is to achieve optimum battery life expectations.

Indoor equipment categorized	
Ambient temperature (Nominal)	5°C – 35°C
Extreme temperature	0 – 40°C
Humidity (non-condensing)	40 – 85%
Noise level at 1 metre	55 dBA
Altitude without extra ventilation	1000 metres

Cabinets	
Nominal output	220V – 240V 50/60Hz AC
Construction	Modular without welds; battery cubicles can be flat-packed for ease of access to site
Ingress protection	IP21 & IP31 standard, options up to IP41
Colour	RAL 7016 (Anthracite grey) Other RAL colour finishes available to special order
Lifting & handling	M12 lifting eyes and 110mm plinth
Levelling	Levelling feet available
Access	Single door with 8mm square block key. Front access only required - opening angle 180° Key lockable doors on request. Removable top gland plate.
Ventilation	Ventilation in rear and front only – cubicles can be mounted adjacent to each other (no side ventilation)
Dimensions	1800mm x 750mm x 725mm (Dimensions are inclusive of 75mm ventilation back-stop)

EMEX 220 AC/DC
Order codes

EMEX 220 system installed codes:

Part Code Key:
ELD A B C D . E F G H

A	System Type 7 For EMEX 220 Unity PF
B (C)	Duration: 1 for 1hr, 15 for 1.5 hr, 2 for 2 hr and 3 for 3hr
C (D)	Phase - 1 for single and 3 for 3 phase Input only
EFG	KW (multiplied by 0.1)
H	additional suffix below, e.g. TS

Example:
ELD7310.030 = EMEX 220, 3 hr, 1 Phase @ 3 kW
ELD7151.030 = EMEX 220, 1.5 hr, 1 Phase @ 3 kW

Note: X & B suffix code will be used to allow the phasing of battery deliveries and will not show on product documentation or product. The X &B codes will only be used for order processing and logistics and will show on and will show on the Shipping and invoice document.

Suffix Description:

X	Excluding batteries
B	Battery Kit
N	Nicad cells
TS	Touch screen EMEX Test control GUI

Note: adding this Suffix TS the EMEX power central batter system contains the full hardware to communicate and operate the EMEX Test Automatic testing system.

Example:
ELD7310.015NTS
ELD7310.01560TS
ELD7310.015X
ELD7310.015B

The new EMEX order codes have the Machine and Batteries split into two codes, to allow the control to customers during project execution. So to explain the process with this as an example the new codes will be quoted as: Full System Code ELD7110.030 as declared in the following tables this code is the installed machine including the batteries, this is a descriptive code for certification compliance and product identification, etc. ELD7110.030 = Total Price of installed system.

Actual order codes for processing with GID codes are as below:
- ELD7110.030X – Machine
- ELD7110.030B – Battery

EMEX 220 - Single phase 220 AC/DC 220-240 V 50/60 Hz

Watts Commercial rating	Power Rating Watts ICEL (EN50171, 120%)				
SPN input with and without TS		1 hour duration	1.5 hour duration	2 hour duration	3 hour duration
1000	833	–	ELD7151.010	–	ELD7310.010
2000	1667	–	ELD7151.020	–	ELD7310.020
3000	2500	–	ELD7151.030	–	ELD7310.030
4000	3333	–	ELD7151.040	–	ELD7310.040
5000	4167	–	ELD7151.050	–	ELD7310.050
6000	5000	–	ELD7151.060	–	ELD7310.060
7000	5833	–	ELD7151.070	–	ELD7310.070
8000	6667	–	ELD7151.080	–	ELD7310.080
9000	7500	–	ELD7151.090	–	ELD7310.090
10000	8333	–	ELD7151.100	–	ELD7310.100
11000	9167	–	ELD7151.110	–	ELD7310.110
12000	10000	–	ELD7151.120	–	ELD7310.120
13000	10833	–	ELD7151.130	–	ELD7310.130
14000	11667	–	ELD7151.140	–	ELD7310.140
15000	12500	–	ELD7151.150	–	ELD7310.150
16000	13333	–	ELD7151.160	–	ELD7310.160
17000	14167	–	ELD7151.170	–	ELD7310.170
18000	15000	–	ELD7151.180	–	ELD7310.180
19000	15833	–	ELD7151.190	–	ELD7310.190
20000	16667	–	ELD7151.200	–	ELD7310.200

All EMEX systems Are subject to price on application so to obtain a quotation and the correct part order codes
or to order an EMEX Power sytem or for special product requirements please contact your local ABB Emergilite sales office / representative.

EMEX 110

110 Volt AC/DC central power supply systems

EMEX 110 units provide 110V AC/DC to provide power to 110V CPS luminaires or converted CPS 230V luminaires.

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01 EMEX 110 volt AC/DC central power supply cabinet size

System design
Systems provide 110V AC continuously under mains healthy conditions, and battery back-up at 110V DC upon mains failure. EMEX 110 units benefit from the same modular construction as the EMEX Power static inverter range. Charger modules utilise solid state electronics of the highest reliability. Units feature MCB protection throughtout, to provide a rugged easy to maintain system with exceptional performance for emergency lighting use. Each charger has input and output protection, and measures and limits its own current, making it a self contained unit.

Alarms and status indicators are provided on the front panel display, which provides clear and concise information, rather than a long list of parameters, which may be confusing. EMEX Power is designed and manufactured in the UK.

Standard features: EMEX 110 system overview
EMEX Power offers a host of standard features and benefits, as listed below. Note that some items will be optional, extra cost items on other systems, or may not be available at all if the system is not designed specifically and solely for emergency lighting use.

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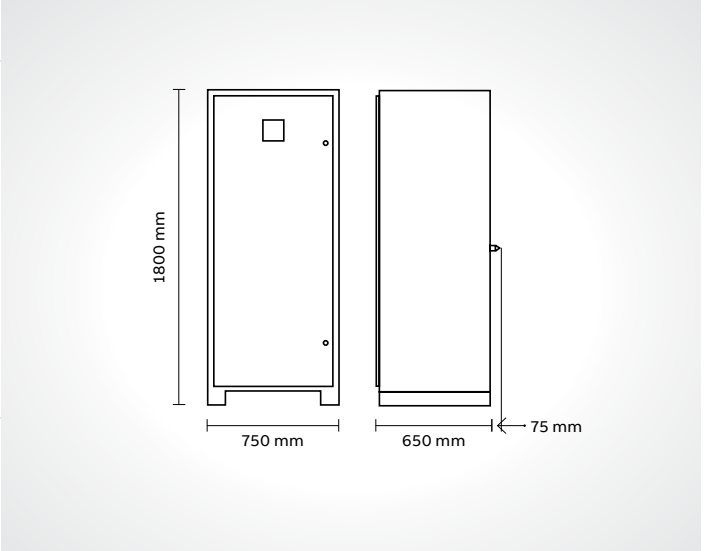

Performance
- 110V AC/DC output
- Excellent recharge capability – 80% after 12 hours following rated discharge
- MCB protection throughout; no fuses
- EMEX Power true modular construction with common spares (charger, control PCB, and system interface common across the full system range)
- Individual MCB protection for each module - AC and DC circuits
- Individual cooling fans for each charger with on-demand operation (not continuously running)
- Split parallel charger above 10 amps – enhanced integrity with the ability to operate with one or more charger modules isolated (subject to increased recharge time)
- Integral maintenance bypass facility (ability to support output load in bypass mode whilst maintenance is performed)
- Temperature compensated charger
- Standard maintained transformer and switchable for non-maintained

Alarms and instrumentation
- Comprehensive display
- Charger alarm pack
- Momentary “push to test” button
- Fire alarm interface
- Final exit interlock
- Internal and external MCB monitoring
- Local/remote maintained circuit control
- Sub-circuit monitor connection
- Two sets of volt–free alarm relay contacts
- System-inhibit engineers’ switch
- Remote alarm unit option
- Remote test

Mechanical
- IP21 & IP31 rated cabinet as standard
- Easy front panel access
- Inter-cabinet trunking for battery cables
- Fork-lift plinth
- Lifting eyes for crane lift as standard
- Installation pack with all tools required
- Detailed instruction manual

EMEX 110

110 Volt AC/DC central power supply systems

— 01 Invertor module
— 02 Remote alarm unit

Batteries
Standard systems are supplied with Valve Regulated Lead Acid (VRLA) batteries, also known as 'Sealed Lead Acid'. These batteries are sealed for their design life of 10 years.

Lead Acid Planté and Nickel Cadmium batteries are available upon request, however, these batteries require a much larger physical area, and emit potentially explosive gases, meaning the battery room must be adequately ventilated in line with EN 50272 Special attention to EN 50272 should be observed.

These reasons, along with the additional capital cost, generally outweigh the additional life obtained, as demonstrated below.

Cabinet size
Standard cabinet size is 750 mm wide x 650 mm deep x 1800 mm tall. For larger installations, cabinets are mounted side by side to provide sufficient accommodation for the batteries.

Overall depth of 725 mm is required to allow a ventilation gap of 75 mm (rubber back-stop provided ensures this distance is maintained). Cabinets may be mounted side-by-side since no side ventilation is required.

Remote alarm
British Standard BS 5266 Part 8 (BS EN 50172) section 7.2.2 requires that a visual daily check of the central power supply alarms is made. It is also a requirement that the CPS should be located in a secure area, which is typically a locked switch room in the basement.

We offer an optional remote alarm unit (RAU), which assists the user to identify any alarm conditions.

Remote alarm unit providing both audible and visual fault indication with mute facility. The RAU requires a local 220 – 240V AC supply and should be linked to the static central power supply unit by a two core cable.

—
01

—
Remote alarm unit

Part no.	Order code
RAU/240V	ELD0075.003A

—
02

EMEX 110 AC/DC
Order codes

EMEX 110 system installed codes:

Part Code Key:
ELD A B C D . E F G H

A	System Type 6 For EMEX 110
B (C)	Duration: 1 for 1hr, 15 for 1.5 hr, 2 for 2 hr and 3 for 3hr
C (D)	Phase - 1 for single and 3 for 3 phase Input only
EFG	KW (multiplied by 0.1)
H	additional suffix below, e.g. X

Example:
ELD6110.020 = EMEX 110, 1 hr, 1 Phase @ 2 kW
ELD6310.020 = EMEX 110, 3 hr, 1 Phase @ 2 kW

Note: X & B suffix code will be used to allow the phasing of battery deliveries and will not show on product documentation or product. The X &B codes will only be used for order processing and logistics and will show on and will show on the Shipping and invoice document.

Suffix Description:

X	Excluding batteries
B	Battery Kit
N	Nicad cells

Note: Suffix TS is not applicable to the EMEX 110 central battery system and is not compatible with EMEX Test Automatic testing system.

Example:
ELD6110.020N
ELD6110.020X
ELD6110.020B

The new EMEX order codes have the Machine and Batteries split into two codes, to allow the control to customers during project execution. So to explain the process with this as an example the new codes will be quoted as: Full System Code ELD6110.030 as declared in the following tables this code is the installed machine including the batteries, this is a descriptive code for certification compliance and product identification, etc. ELD6110.020 = Total Price of installed system.

Actual order codes for processing with GID codes are as below:
- ELD6110.020X – Machine
- ELD6110.020B – Battery

EMEX 110 - Single phase 110 AC/DC 220-240 V 50/60 Hz

Commercial rating	Power rating (EN50171)				
Watts	**Watts**	**1 hour duration**	**1.5 hour duration**	**2 hour duration**	**3 hour duration**
2000	1600	ELD6110.020	–	–	ELD6310.020
3000	2400	ELD6110.030	–	–	ELD6310.030
4000	3200	ELD6110.040	–	–	ELD6310.040
5500	4400	ELD6110.055	–	–	ELD6310.055
7500	6000	ELD6110.070	–	–	ELD6310.070
8000	6400	ELD6110.080	–	–	ELD6310.080
11000	8800	ELD6110.110	–	–	ELD6310.110
15000	12000	ELD6110.150	–	–	ELD6310.150

All EMEX systems Are subject to price on application so to obtain a quotation and the correct part order codes or to order an EMEX Power sytem or for special product requirements please contact your local ABB Emergilite sales office / representative.

03

03 Lifting eyes for crane lift

Central power supply solutions
EMEX Test

- Automated, scheduled testing of your emergency lighting sytems power supply
- Full control to access test reports locally or remotely at any time
- Efficient emergency lighting testing procedure

EMEX Test system
Introduction

The complete emergency lighting central system testing solution. Emergency lighting regulations state that periodic, mandatory tests must be carried out to verify the correct operation of any emergency lighting system.

—
01 EMEX test touch screen control panel

Increasingly, changes in safety legislation, risk assessment, and the requirements of public liability insurance are placing responsibility for the testing of emergency lighting systems firmly with the owner or occupier of the building. Additionally, legislation states that records of this testing must be kept.

Automated testing solution
Manual testing (and record keeping) of emergency lighting systems can prove to be expensive, time consuming and disruptive (even dangerous) exacerbated by access problems caused by physical and commercial reasons. The EMEX Test Central Testing System ensures peace of mind by automating the normal, periodic testing of emergency lighting lamps and control gear.

EMEX Test is simple to operate, being controlled by a dedicated touch screen control panel or a standards desktop PC and is featured packed.

- Multiple Central Power Supply Systems (CPS) can be networked to a single control PC
- Remote access via a Local Area Network (LAN) or internet connection is straight forward
- Utilising EMEX TS, Remote access via a Local Area Network (LAN) or internet connection is possible. This must be in collaboration with the building information technology management system and security policies.

Scheduled testing
System tests are scheduled for periods of minimum disruption using EMEX Test.
Live luminaire data is compared against pre-programmed threshold data to identify any discrepancies. These are then duly highlighted in the test report which is generated and stored automatically.

The user has full control to access test reports at any time. Service personnel can then arrange a convenient time to access any faulty luminaires – ready prepared with any necessary spares in order to further reduce the amount of time required to effect a repair.

In addition, EMEX Test can conduct discharge tests and monitor and record the status of the CPS and end battery voltage. Since discharge tests cannot be performed until visual condition checks have been undertaken by an engineer on site, these annual tests are initiated manually.

Fire alarm activation input
Fire alarm input on the CPS panel allows all lights to illuminate as a global activation on the initiation of a fire alarm evacuation, this is achieved by connecting a signal input (24V) to the connections in the FAR terminals in the CPS panel.

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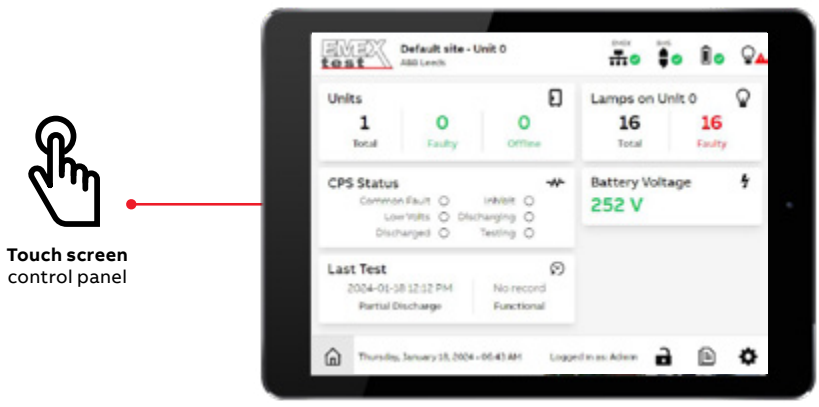


Technical reference
EMEX Test system technology

The system should use EMEX Test system Technology to provide full addressable monitoring ofthe complete emergency lighting system including the EMEX Central Power Supply System(s).

The system must be capable of monitoring fluorescent, cold cathode fluorescent, filament, LED, or halogen luminaires.

Software
System should use EMEX test software to schedule the automatic regular testing of emergency lighting system components. The system should automatically generate and collate test reports. These reports should be automatically date-stamped and should be available in a notepad format such that engineer's notes can be added.

CPS capacity
The system can support multiple Central Power Supply Systems (CPS). Each CPS must be able to communicate with up to 4,000 luminaires.

Communication
The system must use data cable to link the control computer to the CPS unit(s), and from each CPS to the associated luminaire interfaces only. Data cables will NOT be fitted direct to any luminaires. Up to 100 substations may be fed from the internal transmitter within the CPS.

MXD4 substation (EMEX Power AC/AC only)
The system must offer remote MXD4 substations having 4 separate outputs, each capable of monitoring up to 4 no. fluorescent, filament, LED, or halogen luminaires completely without modification to the luminaire. The systems should be capable of monitoring a lamp wattage of up to 230 watts. The substation should provide minimum 8 no. monitoring inputs, free programmable switched or unswitched with mixed mode of operation (maintained, non-maintained, switched maintained).

MXC substations and distribution panels
The system must offer remote MXC substations each having 2 outputs, which are capable of monitoring up to 40 No. luminaires / 10 amps in total or multi-way MXC substation distribution panels with 4 x 2A outputs which are capable of monitoring 80 No. luminaires. The substation should provide minimum 8 No. monitoring inputs, free programmable switched or unswitched control. Luminaires must share the same supply cable with mixed mode of operation (maintained, non-maintained, switched maintained, dim maintained).

LTC luminaire module
Luminaires for use with MXC each require a local LTC module. Each LTC must provide 1 no. switched and 1 no. unswitched local monitoring input to act directly on the luminaire in addition to any communication received from the substation.
A full range of exit signs, bulkhead luminaires, decorative luminaires, and twinspot units must be available ready fitted with LTC modules.
LTC modules must also be available loose and in remote enclosures for the adaptation of standard CPS 230V luminaires to the MXC system.

Flexibility
The AC/AC CPS system must permit both MXD4 and MXC solutions on the same system, controlled from a single PC.

The AC/DC CPS system must permit MXC multi-way distribution panel solutions on the same system, controlled from a single PC touch screen.

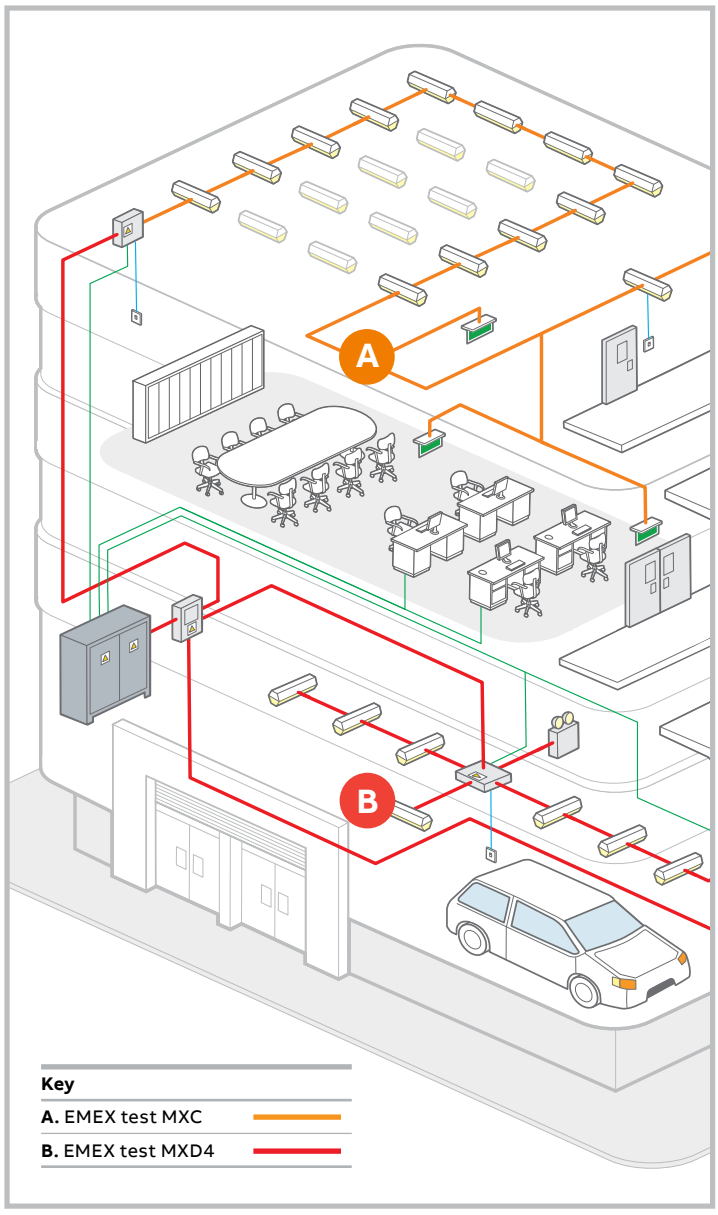
Cable specification
Cable must be 2 core with additional earth or drain wire and must be a composite screened cable. The conductor cross section must be a minimum of 1.5 mm sq cable and must be rated for 230V AC. General data cables do not meet this requirement.

These requirements can be met by using FP200 or similar fireproof cable or LSFOH type cable.

EMEX Test

Complete emergency lighting central system testing solution

EMEX Test is the most flexible emergency lighting testing system available today. With the ability to support virtually any type of CPS 230V luminaire, including LED, EMEX Test affords freedom of choice for consultants, designers and end-users alike.



Two approaches, one solution
EMEX Test can utilise two different solutions to interface your emergency luminaires, whatever the scenario. Both systems utilise the same software and are fully compatible with each other on the same system:

Substation and MXC multi way distribution panel
The MXC multi way distribution panel is ideal for use where a large number of emergency lighting circuits are situated in a relatively small area and where room for cable runs is restricted and the aesthetics are a primary concern.
The MXC substation panel solution employs compact LTC integral luminaire interfaces to supports up to 20 luminaires per circuit. It allows mixed operation modes of the emergency luminaires on the same circuit without data cable. Multiple local switched and un-switched circuit monitoring is marshalled by the substation, or direct into the luminaires. Substations are connected together and back to the control PC by data cable connection. Ideal for high-rise buildings.

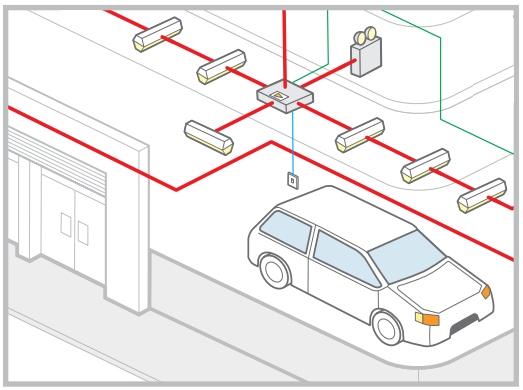
Features and benefits
- Maintained, non-maintained and switched luminaires on a single circuit
- Cable saving as a result of combined power and data lines
- High capacity substations
- Flexible local circuit monitoring options
- Fully compatible with MXD4

MXD4 AC/AC only
MXD4 substation modules control luminaires in groups of four with no modification to the mains luminaires whatsoever. Data cable provides communication to the CPS. A data cable connection exists between the CPS and the PC. MXD4 is ideal for use where a smaller number of luminaires are to be situated in an environment where aesthetic cabling is not an issue, for example warehousing or car parks.

Features and benefits
- Supports virtually any type of luminaire – no modification required
- High switching power capability
- Simple to install
- Compatible with digital and analogue dimming systems

EMEX Test

Case Study - A high rise building



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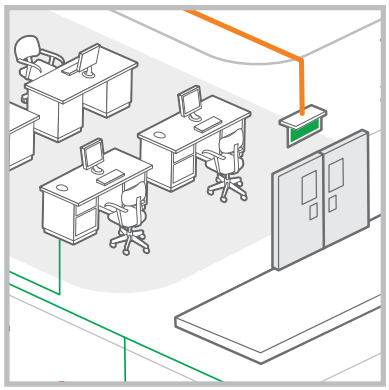

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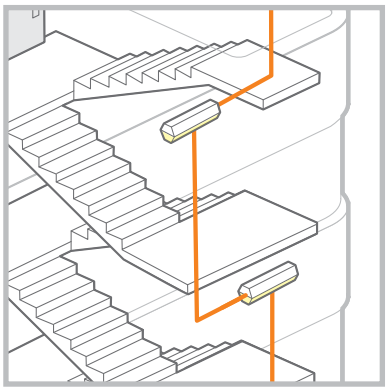


05

03 Underground car parks
04 Upper floors
05 Stairwells

How to apply EMEX Test MXC and MXD4 emergency lighting testing systems
A typical high-rise installation will employ a variety of luminaire types in different areas. It will have varying switching arrangements and cabling restrictions according to the usage of each area and the fabric of the building.

When considering their mains lighting, the consultant and end user can retain complete freedom of design, assured in the knowledge that specifying EMEX Test will offer the most flexible and economic solution to provide addressable emergency lighting.

Underground car parks
In underground car parks and service areas the designer may prefer basic batten/linear fittings. In this instance, where surface cabling is acceptable, MXD4 substations are ideal. There is no modification to the CPS 230V 50/60Hz luminaires whatsoever. This makes the installation very straightforward no matter the wattage or operation of the luminaires (substations can even be “first fixed” before the luminaires arrive!), and has the great benefit that in the event of any damage or vandalism the CPS 230V 50/60Hz luminaires can be replaced without interfering with the addressable emergency system.

Open plan areas
Typically in open plan areas, special environments, or where the client would need to refurbish at a later date. MXD4 substations offer the benefits of utilising or changing any luminaires types at will, with only reprogramming of the EMEX Test software required.

Upper floors
Upper floors with a larger number of rooms per area (for example offices or hotel rooms), will also use MXC in order to take advantage of the large number of switched feeds that can be monitored by each substation. Coupled with the option to wire monitoring feeds directly into the luminaires, this will offer great savings in cable and simplify the installation, whilst retaining flexibility of programming should the mode of operation of the luminaire change.

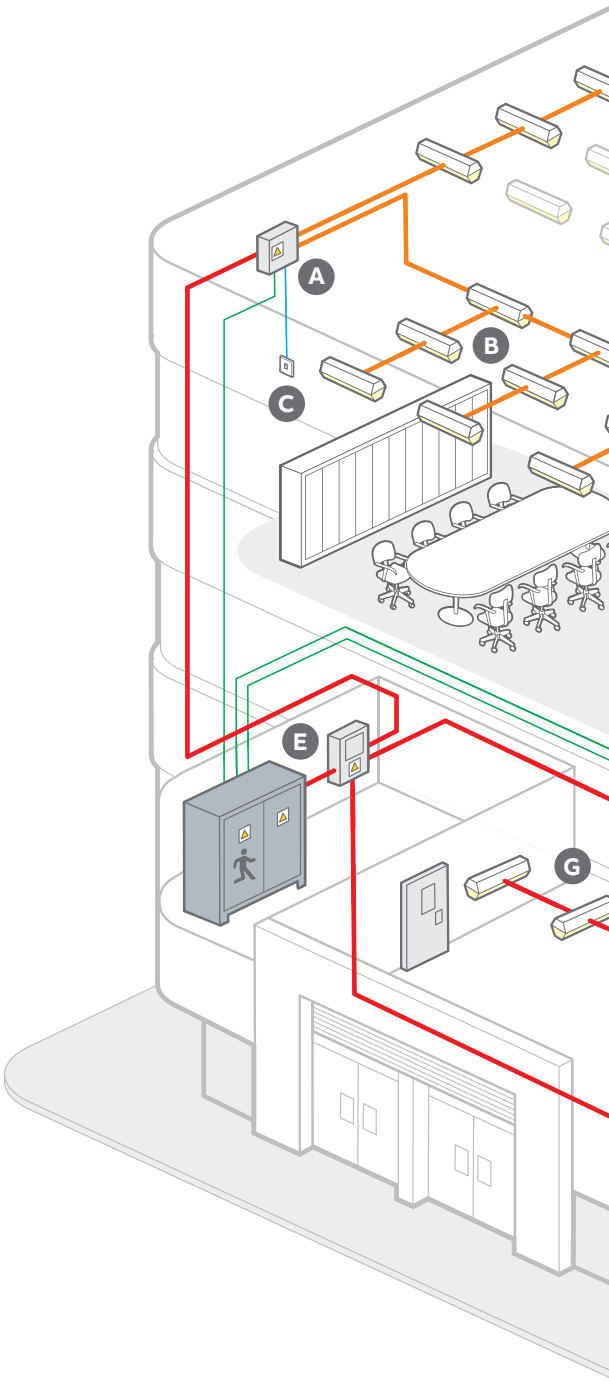
EMEX Test can accommodate many scenarios whether the system is one large Central Power Supply System (CPS) feeding the whole building, one smaller CPS per floor, or any combination thereof.

Stairwells
In stairwells, the MXC substation solution with LTC equipped luminaires offers great benefits in cable saving and installation costs. The MXC substation(s) can be mounted in risers at the foot of each stairwell, removing the need for data cable or remote boxes in the stairwell itself. The maintained exit signs, switched luminaires, and even any non-maintained external units can all share a single supply cable.

Monitoring feeds can all come to a single point at the substation, simplifying the cabling within the stairwell. Conversely, if it is inconvenient or impossible to wire a switched or monitoring feed back to the substation, it can be wired directly into the relevant luminaire.

Stairwells (Two circuit wiring)
Dual circuit wiring concept, to provide a higher integrity installation.

Applying EMEX test
AC/AC



— 01 A MXC substation
— 02 B MXC compatible luminaires
— 03 C Switching
— 04 D EMEX Test control station
— 05 E EMEX Power
— 06 F MXD4 substation
— 07 G MXD4 luminaires

MXC substation
Each MXC substation can control up to 40 luminaires. Power and datalines feed the substation which in turn monitors & controls the luminaires via a single combined power/data line. Each substation can monitor up to 8 local switched and/or unswitched circuits. Luminaires operate in maintained, switched maintained, or non-maintained modes on the same circuit, according to the system programming.

MXC compatible luminaires
The MXC testing system requires luminaires to be LTC compatible. In addition, virtually any standard mains luminaires can be converted for use with the MXC system using an integral or remote LTC interface module. Luminaires must contain a high frequency electronics (please check with Emergi-Lite). MXCs are not compatible with switch start control gear, please use MXD4 for these applications.

Switching
One switched and/or one unswitched local feed can be wired directly into the MXC System LTC module, in addition to the monitoring/switching provided via the MXC substation.

EMEX Test control station or touch screen panel
EMEX Test software is installed and run on the latest version of windows operating system the software monitors and initiates system function and duration tests, then collates test report data. EMEX Test can optionally export system status in BACnet format to a Building Management System.

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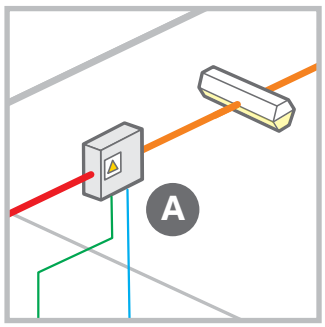

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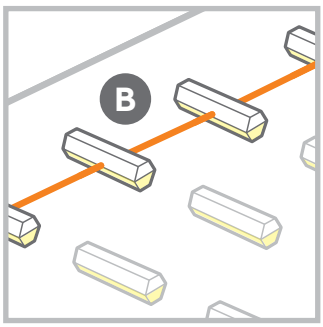

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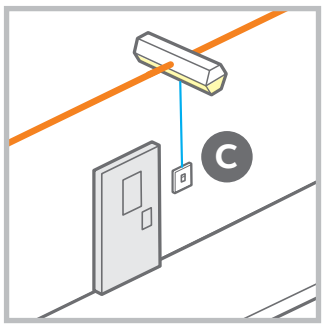

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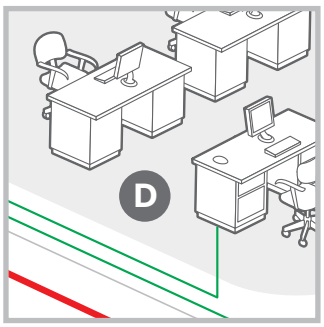
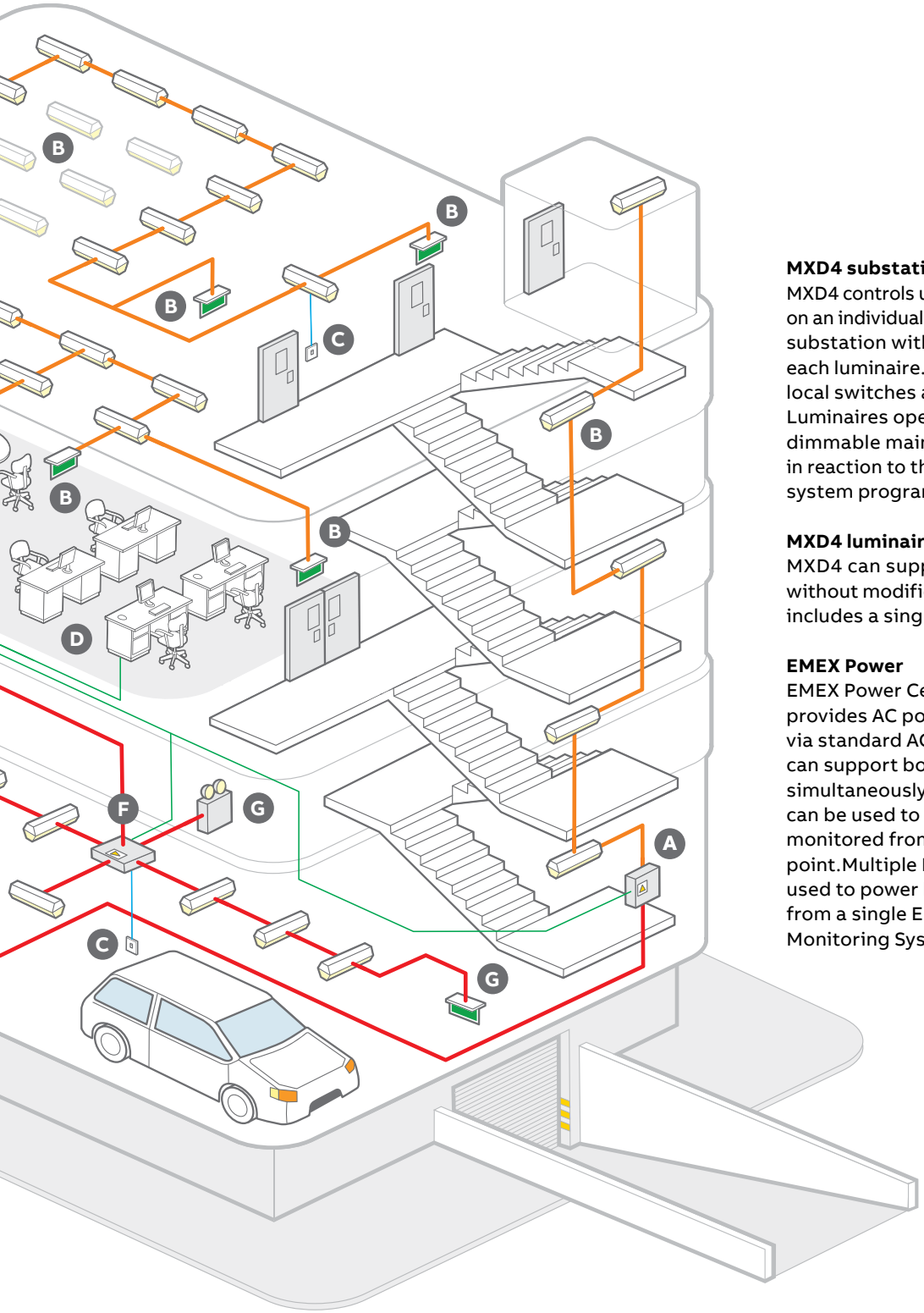




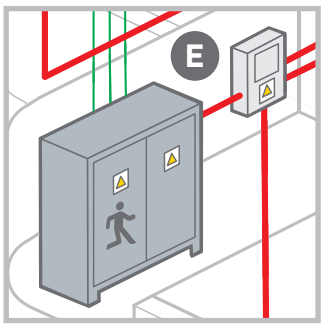
MXD4 substation
MXD4 controls up to 4 unmodified mains luminaires on an individual basis. Power and datalines feed the substation with individual power outputs to each luminaire. Each MXD4 can monitor up to 8 local switches and/or unswitched circuits. Luminaires operate in maintained, switched/dimmable maintained, or non-maintained modes in reaction to these inputs, according to the system programming.

MXD4 luminaires
MXD4 can support virtually any LED luminaire, without modification. Each MXD4 substation includes a single dimming control relay.

EMEX Power
EMEX Power Central Power Supply System provides AC power to emergency luminaires via standard AC distribution boards. EMEX Test can support both MXC and MXD4 systems simultaneously. Multiple EMEX Power CPS units can be used to power larger applications, monitored from a single EMEX Test control point.Multiple EMEX Power CPS units can be used to power larger applications, monitored from a single EMEX Test control point Central Monitoring System.

Key	
AC Power	
AC Power and data	
Data cable	
Local inputs	

05



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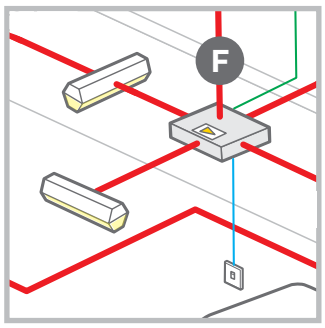

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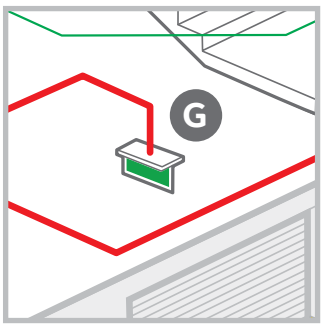


Applying EMEX test
AC/DC

01 A MXC distribution panel

02 B MXC compatible luminaires

03 C Switching

04 D EMEX Test control station

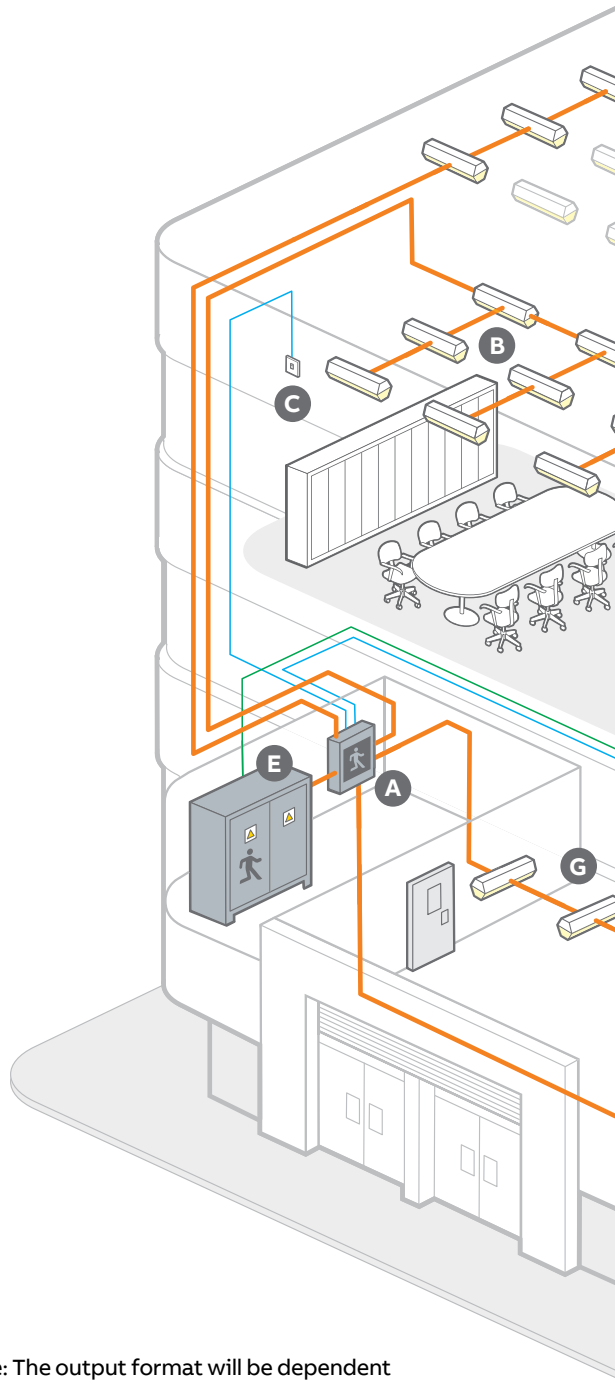
05 E EMEX Power

MXC distribution panel
Each MXC substation can control up to 80 (4x20) luminaires. Power and datalines feed the substation panel which in turn monitors & controls the luminaires via a single combined power/data line. Each substation can monitor up to 8 local switched and/or unswitched circuits. Luminaires operate in maintained, switched maintained, or non-maintained modes on the same circuit, according to the system programming.

MXC compatible luminaires
The MXC testing system requires luminaires to be LTC compatible. Virtually any standard mains luminaires can be converted for use with the MXC system using an integral or remote LTC interface module. Luminaires must contain AC/DC compatible high frequency electronics (please check with Emergi-Lite). MXCs are not compatible with switch start control gear.

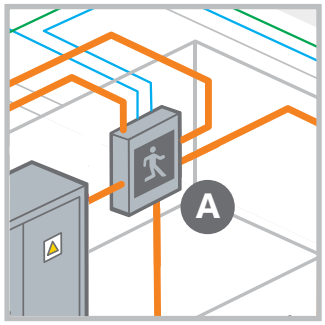
Switching
One switched and/or one unswitched local feed can be wired directly into the MXC System LTC module, in addition to the monitoring/switching provided via the MXC substation.

EMEX Test control station or touch screen panel
EMEX Test software is installed and run on the latest version of windows operating system the software monitors and initiates system function and duration tests, then collates test report data. System status can be accessed remotely over a EMEX Test can optionally export system status in BACnet format to a Building Management System.



(Note: The output format will be dependent on the Building Management integrators system functionality and capabilities, see EMEX BMS profile document for further information).

01



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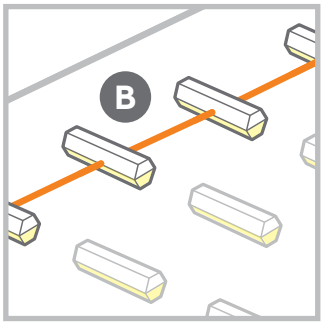

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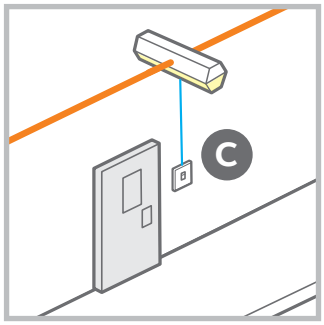

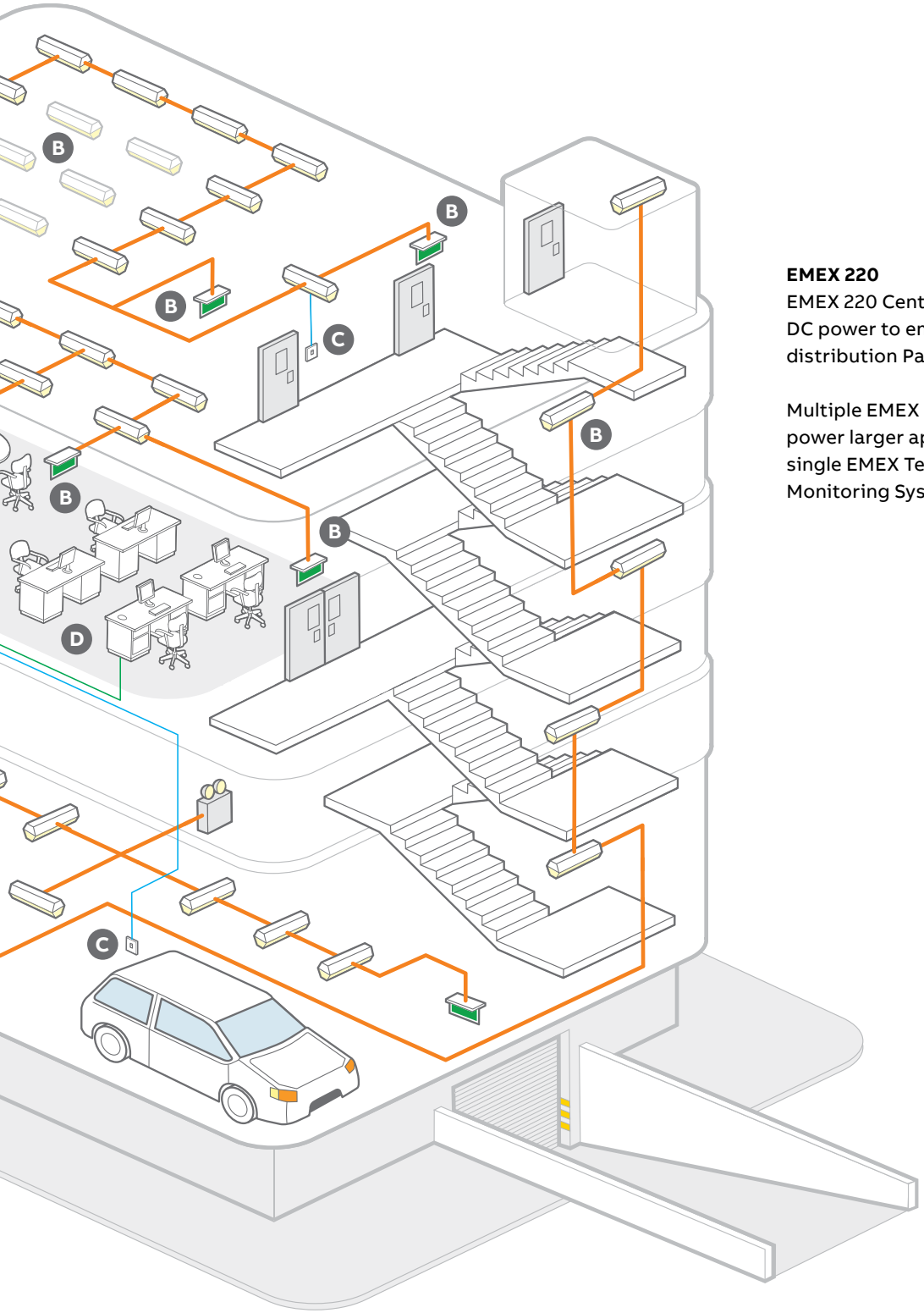

EMEX 220
EMEX 220 Central Power Supply System provides DC power to emergency luminaires via MXC distribution Panel boards.

Multiple EMEX Power CPS units can be used to power larger applications, monitored from a single EMEX Test control point Central Monitoring System.

Key

AC/DC Power and data	
Data cable	
Local inputs	

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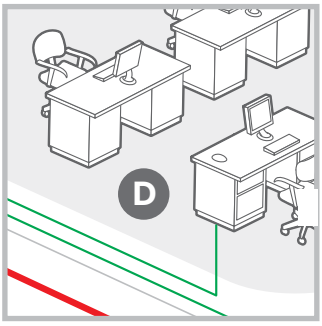
04



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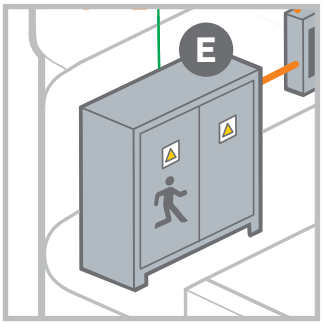


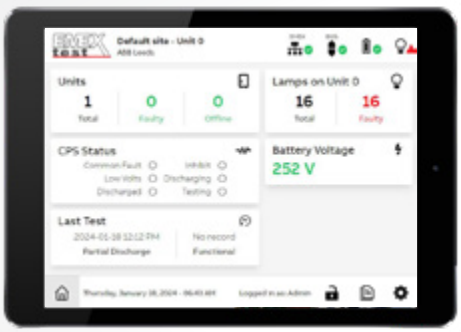
EMEX Test
System components

—
01 EMEX Test software
—
02 MXKP station adapter kit
—
03 MXC substation

EMEX Test software
The focal point of an EMEX Test monitoring network is a Windows OS running the EMEX Test software package.
EMEX Test software is Windows™ based Operating system (OS). It provides detailed address information of all connected Central Power Supply Systems and luminaires. Scheduled testing is configured quickly and easily – once set up it can be left to operate, without further input, in the background. Reports are created and collated automatically. These are date stamped and can be printed or distributed electronically.

EMEX Test control panel
Description
- EMEX Test Control Panel utilising a touch screen for operation of the EMEX Test programme 8” High Brightness TFT LCD (400 cd/m), long life-time display, support 800 mm x 600 mm
- Fanless, with AMD LX-800 500MHz processor
- One 200-pin SO-DIMM DDR 266/333MHz
- Up to 1GB Sealed resistive touch screen
- Support Panel / VESA 75 mount
- DC 11~28V wide-range power input

MXKP station adapter kit, included with /TS Systems
The MXKP station adapter kit is required to integrate the EMEX Power central power supplies with the EMEX testing system. Ordered separately, the MXKP station adapter kit is factory fitted in the cabinet.
- 4,000 luminaire address capability
- Output capacity of 100 x MXD4 and/or MXC units per MXKP
- 2-core data bus to MXD4 and MXC units and to/from MXKP units
- 2-core screened 240V, (1.0 mm² minimum) data cable
- (Max. distance 2,500 metres – additional repeaters available)



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04 EMEX test reference - factory

MXC substation
The MXC substation controls LTC equipped HF luminaires. It can also monitor 8 switched or unswitched inputs.

- 20 LTC units per radial Circuit
- Maximum 270V AC
- 2000VA maximum output power
- 200 metres maximum distance (per output radial Circuit) to final luminaire
- 2-core screened 240V, (1.0 mm² minimum) cable (fireproof recommended)
- 210 mm x 253 mm x 60 mm
- Operating temperature 0 – 50°C
- Galvanised steel enclosure (colour options available as specials)
- Substation rated to IP20 as standard

EMEX Test
System components

—
01 MXD4 4-way addressable substation
—
02 MXT data repeaters
—
03 70W LTC addressable interface
—
04 230W DIM LTC addressable interface
—
05 LIOB-Connect I/O Module
—
06 EMEX 220 AC/DC MXC Distribution Panel

MXD4 4-way addressable substation
The MXD4 addressable substation controls up to 4 unmodified mains luminaires. It can also monitor 8 switched and/or 8 unswitched inputs.

- 4 luminaires on individual circuits
- Maximum 270V AC, 230W (1 ampere per circuit)
- Switching threshold of 230V -60% to -85%
- Address range of 4 to 3999 (blocks of 4)
- Analogue and digital compatible dimming capability using on-board dimming relay to break dimmer control line
- 2-core screened 240V, (1.0mm² minimum) cable (fireproof recommended)
- 2,500 metres maximum distance from MXKP to MXD4 transmitter
- 254 mm x 210 mm x 60 mm
- Operating temperature 0 – 50°C
- Galvanised steel enclosure (colour options available as specials)
- Option for high IP rating are available

MXT data repeaters
MXT100 and MXT200
The MXT data repeater is used to increase the number of interfaces on an individual data line.

- Maximum 270V AC
- 2-core data inputs
- 2-core screened 240V, (1.0 mm² minimum) cable (fireproof recommended)
- 300 mm x 400 mm x 120 mm

Up to 100 substations may be fed from the internal transmitter within the CPS. Additional MXT data repeaters are available for situations where more than 100 substations are required. For example the MXT200 data repeater is capable for handling up to 200 substations.

Lamp test controller addressable interfaces
The LTC is designed specifically to control luminaires with fluorescent or incandescent lamps when working from a central power supply system.

The LTC is part of the EMEX MXC automatic emergency lighting testing system, and can control the lamp and dimmer signal when testing. It measures the lamp power consumption and communicates this and the lamp status back to the EMEX central PC using power line communication via the MXC substation. It is fully addressable and programmable for any lamp type or configuration. This is done in situ from the central PC.

70W LTC addressable interface
The LTC addressable interface unit is required when connecting standard mains luminaires to the MXC substation system.

- Maximum 270V AC
- 70 watt maximum switching output power
- 2 control inputs configurable as local switched and unswitched monitoring
- Factory pre-addressed
- 116.5 mm x 24.5 mm x 22 mm
- Complies with Radiated & Conducted Emissions Standard EN 55015

230W DIM LTC addressable interface AC/AC only
- Maximum 270V AC
- 230 watt maximum switching output power
- 2 control inputs configurable as local switched and unswitched monitoring
- Dim relay to disconnect dimming signal
- Factory pre-addressed
- 155 x 42 x 30, 148 mm fixing centres
- Complies with Radiated & Conducted Emissions Standard EN 55015

BACnet interface
BACnet is a Data Communication Protocol for monitoring and communicating building management data to and from the BMS workstation. The module is fed with data points from the EMEX touch screen graphical user interface (GUI) software.

This data is connected to the BMS by Ethernet using TCP/IP internet protocol. Data point details can be obtained from the Emergi-Lite Technical support department with the interfacing documents.

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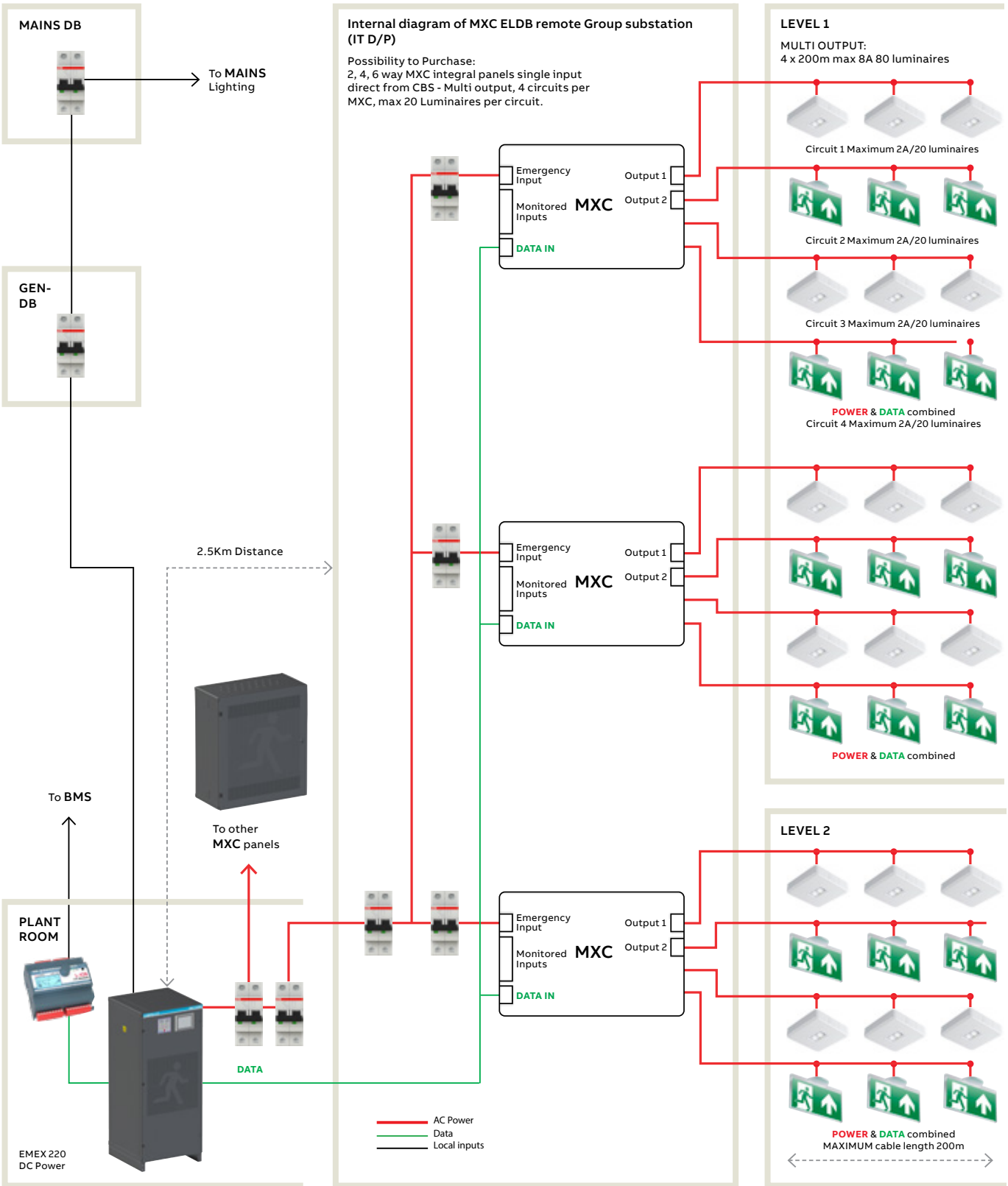
Order Codes

Part no.	Item name	Description
EMEX Test CBS and control Components		
ELD9500.910	MXKP	EMEX Test addressable interface
ELD9500.039	MXIN Remote test node serial input (modem)	–
ELD9500.931	EMEX Pro Touch Screen Kit	Integral EMEX Test Pro panel (touch screen)
ELD0077.009	RS232 to USB	RS232 to USB translator interface
ELD9500.120	MXT100 MXT100 data transmitter repeater	–
ELD9500.934	BACnet Static interface integral	BACnet interface I/O L-iob
ELD9500.935	SPN Energy Meter - BACnet	Single phase energy meter, AC volts/amperes
ELD9500.936	TPN Energy Meter - BACnet	Three phase energy meter, AC volts/amperes
EMEX230/400 AC/AC MXD range		
ELD9500.016	MXD4 Substation 50/60Hz	MXD4, 4 x 1A nominal O/P, 8 SU-CCT I/P data line interface
ELD9500.046	MXE2 Substation 50/60Hz	MXE2, 2 x 2A nominal O/P, 8 SU-CCT I/P data line interface
ELD9500.047	MXF1 Substation 50/60Hz	MXF1, 1x 4A nominal O/P, 8 SU-CCT I/P data line interface
EMEX230/400 AC/AC LTC range		
C-LTC230HF	LTC 230W AC Dim	LTC addressable interface 230W integral conversion with dimmer relay
C-LTC230HFRW	LTC 230W AC Dim REM	LTC addressable interface 230W remote conversion
ELD9500.048F	LTC 230W Dim parts Kit	LTC addressable interface 230W AC Dim new parts kit
ELD9500.048FRW	LTC 230W AC Dim ENC	LTC addressable interface 230W AC Dim new kit in enclosure
EMEX230/400 AC/AC MXC range		
ELD9500.032	MXC2.0 substation 50 Hz	MXC substation, 2 x 5A nominal O/P, 8 SU-CCTS I/P
ELD9500.032/60	MXC2.0 substation 60 Hz	MXC substation, 2 x 5A nominal O/P, 8 SU-CCTS I/P 60Hz
EMEX AC/DC & AC/AC LTC range Universal		
ELD9500.070	LTC 1-70W	LTC addressable interface 70W Single item/spare part
C-LTC70	LTC 1-70W	LTC addressable interface 70W integral conversion
C-LTC70RW	LTC 1-70W REM	LTC addressable interface 70W remote conversion
ELD9500.070K	LTC 1-70W parts Kit	LTC addressable interface 70W parts kit
ELD9500.070KRW	LTC 1-70W parts Kit ENC	LTC addressable interface 70W kit in enclosure
EMEX 220 AC/DC MXC Distribution Panel range		
ELD9500.033	2 way MXC2.0 Panel 8 O/P circuit	MXC substation, 8 x2.5A nominal O/P, 8 SU-CCTS I/P
ELD9500.034	4 way MXC2.0 Panel 16 O/P circuit	MXC substation, 16 x2.5A nominal O/P, 8 SU-CCTS I/P
ELD9500.035	6 way MXC2.0 Panel 24 O/P circuit	MXC substation, 24 x2.5A nominal O/P, 8 SU-CCTS I/P
ELD9500.033/60	2 way MXC2.0 Panel 4 O/P circuit 60Hz	MXC substation, 8 x2.5A nominal O/P, 8 SU-CCTS I/P 60Hz
ELD9500.034/60	4 way MXC2.0 Panel 8 O/P circuit 60Hz	MXC substation, 16 x2.5A nominal O/P, 8 SU-CCTS I/P 60Hz
ELD9500.035/60	6 way MXC2.0 Panel 24 O/P circuit 60Hz	MXC substation, 24 x2.5A nominal O/P, 8 SU-CCTS I/P 60Hz
CMS Central Monitoring System		
ELD9500.930	CMS SUPERVISOR EMEX BACNET	Central monitoring Supervisor EMEX BACnet
ELD9500.940	BACNET CPS MONITORING INTERF KIT	BACnet Central Power Supply Monitoring Interface Kit

EMEX 220 DC Power

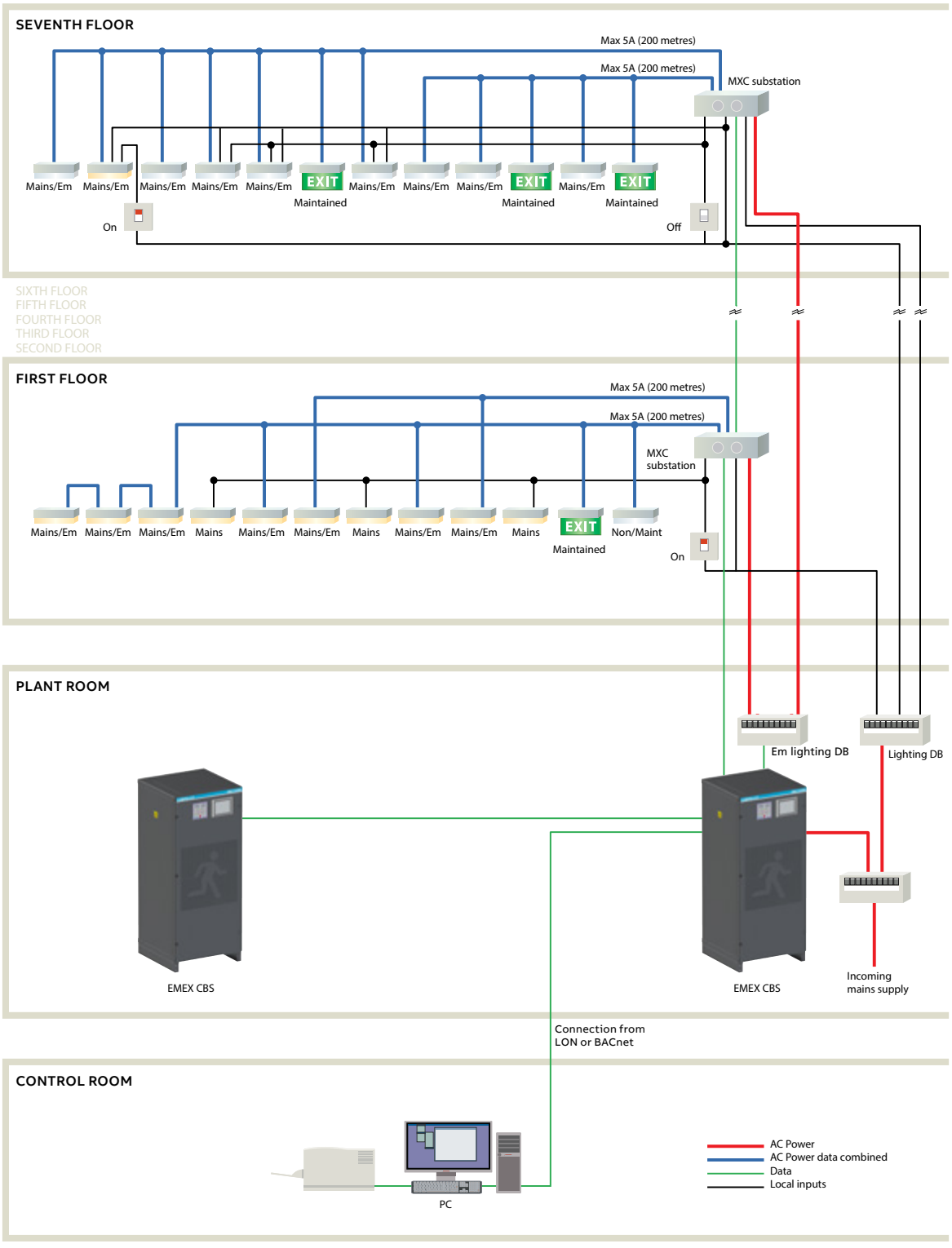
Layout schematic - Emergency lighting distribution board



Note: Indicative diagram only.

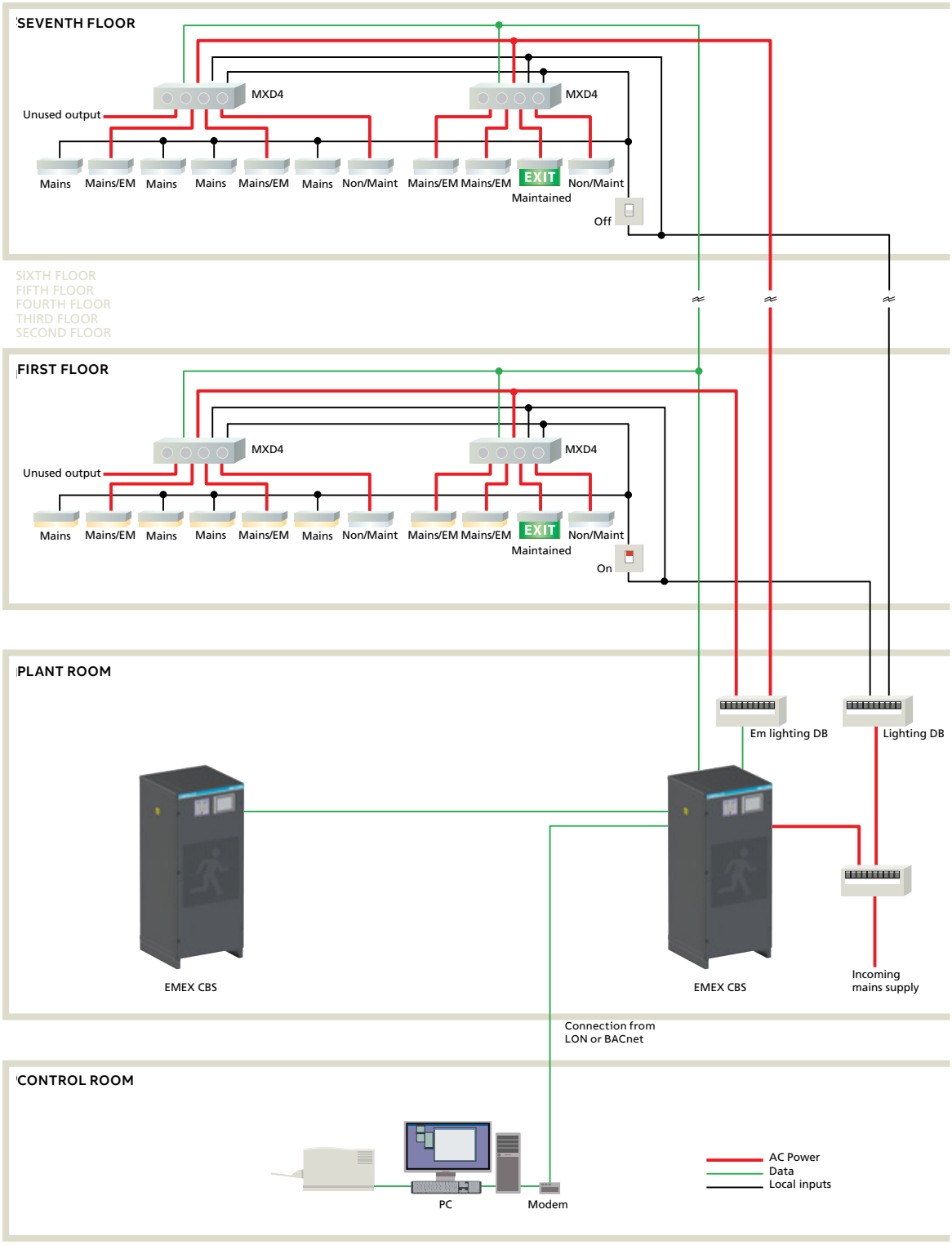
EMEX Test

Layout schematic - Distributed single MXC substations



EMEX Test

Layout schematic - Distributed MXD4 substations



Sub-circuit monitoring
AC/AC Hold-off / changeover relays

It is a mandatory requirement that emergency lighting is energised in the event of a local sub-distribution failure, not just on total building supply failure.

01 Local mains supply
02 Static inverter output
03 Hold-off relay
04 Local light switch
05 Changeover relay

Hold-off & sub-circuit monitoring relays are used to energise luminaires in the case of local supply failure. They may be used to feed more than one luminaire on the same switched circuit and are available in 1 amp, 8 amp & 12 amp versions.

Hold-off relays
Hold-off relays are required to monitor the relevant lighting supply circuits such that a failure brings on the emergency luminaires automatically in the event of local supply failure. Non maintained luminaires are connected to a localised sub-circuit hold-off relay fed from a maintained battery system. These luminaires are only energised when the supply to the hold off relay fails. 5, 10, 15 and 20 way sub-circuit monitors (with 12 amp hold-off relay) are available.

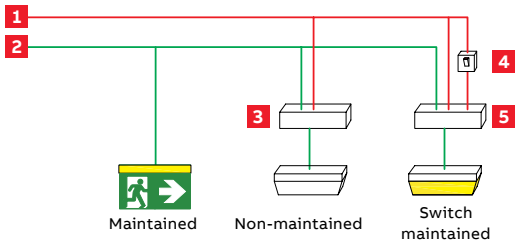
Part no.	Description
ELD9600.001	5 way 12 amp hold-off relay
ELD9600.002	10 way 12 amp hold-off relay
ELD9600.003	15 way 12 amp hold-off relay
ELD9600.004	20 way 12 amp hold-off relay

Changeover relays
The basic use of a switched maintained system is to energise the emergency lighting when required by operation of the local switched supply but automatically illuminate in the event of local sub-circuit supply failure (irrespective of the position of the local switch).

SI230 changeover relays are compact and easy to install. When using these changeover relays switched maintained emergency luminaires are energised whenever a local switched supply is present and automatically, when a local sub-circuit failure occurs.

Part no.	Dimensions HWD (mm)	Description
SI230DIM	155 x 43 x 30	230 volt 1.0 amp mains changeover relay
SI230DIM	428 x 110x 45	230 volt 1.0 amp mains changeover relay
ELD9600.010	200 x 130 x 40	230 volt 8 amp mains changeover relay with 2 x 2.5mm² terminal capacity

Maintained
Do not require sub-circuit monitoring or hold-off relays
Non-maintained
Require a hold-off relay (1 per circuit)
Switched maintained
Require a changeover relay (1 per switched circuit)



Emergi-Lite
Technical reference

- Legislation & requirements
- Checklist for emergency lighting design
- Spacing data & legends guide

Technical reference
Legislation & requirements

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01 Emergency lighting technical reference

The requirement for emergency lighting originates from the Fire Precautions Act 1971 and was further enforced by the Fire Precautions (Workplace) Regulations 1997 (Amended 1999).

The Regulatory Reform (Fire Safety) Order, FSO came into force in October 2006 and now replaces all previous fire safety legislation.

The key considerations from the Fire Safety Order are:

- The FSO creates one simple fire safety legislative control for all workplaces/non-domestic premises
- Control is fire risk assessment based, with the responsibility for fire safety resting with the 'responsible person' for the premises
- All persons inside the building/in the vicinity who might be affected by a fire must be protected
- Employees will be required to act upon the fire risk assessment, make remedial arrangements accordingly and maintain the fire precautions
- Failure to comply with the rules would be a breach of law, with the consequence of enforcement or prohibition notices being served

The fire safety risk assessment is a legal requirement, and where a site has 5 or more employees the risk assessment must be documented.

Fire certificates under the Fire Precautions Act 1971 are now no longer valid. Guidance documents on the new Fire Safety legislation have been published and the appropriate ones must be consulted as part of the overall fire risk assessment.

Other important legislation and regulations, such as The Buildings Regulations and The Health and Safety "Safety Signs and Signals" Regulations 1996, also have a requirement for emergency lighting and must be considered as part of the design and specification.

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02 Figure A.
Exit sign boards have a maximum viewing distance defined as 100 x the height of the sign (h), in metres.
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03 Figure B.
For illuminated exit signs, the maximum viewing distance is defined as 200 x the height of the sign (h), in metres.

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Other important legislation and regulations, such as The Buildings Regulations and The Health and Safety "Safety Signs and Signals" Regulations 1996, also have a requirement for emergency lighting and must be considered as part of the design and specification. A number of standards have been devised to provide guidance on application of emergency lighting in line with legislative requirements, and to determine the quality of product to be specified.

The major standards to be considered when designing a high-level emergency lighting system are:

- **BS 5266-1, BS EN 1838:2013, BS 5266-8**
  These sections of the standards set the guidelines for installation of emergency lighting, where to locate emergency luminaires and exit signs and the minimum lighting levels required. Note that BS 5266-7 has been superseded by BS EN 1838:2013.
- **BS EN 60598.2.22**
  This is the product standard which establishes the performance requirements of emergency lighting luminaires and internally illuminated exit signs
- **IEC 62034**
  This standard defines the requirement for automated testing systems for emergency lighting
- **Lighting Industry Association & ICEL**
  Guides and registration schemes provided by the Industry Committee for Emergency Lighting which define enhanced performance requirements for the differing types of emergency lighting, backed by independent testing

Exit signs
Designated legend formats
European pictogram format SI341 signs are acceptable, as are ISO 7010 format signs, although there should not be a mixture of both within an installation.

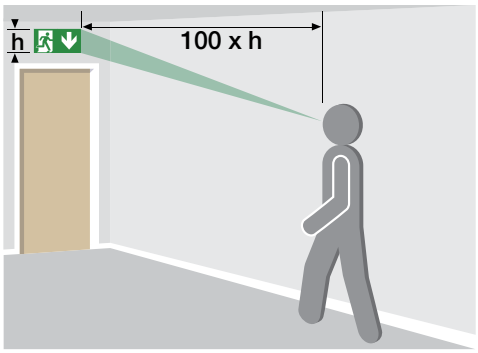

ISO 7010


EU-format, SI-341

Text only signs are no longer acceptable and should have been withdrawn.

SI-341: UK legislation, Statutory Instrument 341

Maximum viewing distances



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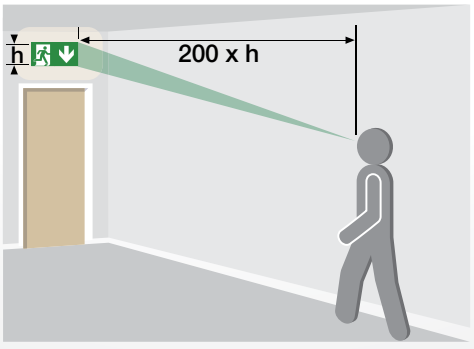

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Technical reference
Legislation & requirements

—
01 Near an exit door
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02 New stairs and changes of level
—
03 Near each piece of fire-fighting equipment or manual call point
—
04 Near changes in direction
—
05 Near each piece of fire-fighting equipment or manual call point
—
06 Near each First Aid point

General requirements for emergency lighting (BS 5266-1, BS EN 1838:2013, BS 5266-8)
If emergency lighting is required it should:

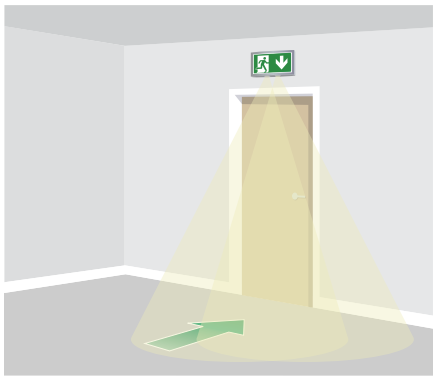
- Indicate the escape routes clearly with exit signs so there is no doubt which is the way out
- Ensure fire safety equipment such as fire alarm call-points, fire extinguishers etc can be located
- Illuminate escape routes, and open areas used in escape routes so that obstacles can be avoided
- Provide illumination for high risk task areas to allow the processes to be shut down safely

Any point on an escape route or leading to it must have an exit sign so that direction of travel is never in doubt. Internally illuminated exit signs offer the most effective method of achieving the requirement, and have a viewing distance twice that of exit signboards - see below.

Note: where exit sign boards are installed, these must now have 5 lux illuminance on the sign to meet the requirements on BS 5266 / EN 1838 - for practical purposes unachievable through use of converted mains luminaires.

Points of emphasis
An escape route luminaire shall be positioned to give emphasis on potential danger points, as well as for safety and fire equipment.

- Near all emergency exit doors
- At changes of direction along the escape route, to illuminate in both directions
- At intersection of corridors, to illuminate in both directions
- At changes in level to avoid tripping
- Near stairs, so stair flights are directly lit
- Near each piece of firefighting equipment or manual call point, to a level of 5 lux in the vertical.
- Near first aid points, to a level of 5 lux in the vertical
- At externally illuminated exit signs and other safety signs, which identify a hazard
- Near escape route equipment in place for disabled people
- Near refuges and two-way telephone positions for the disabled
- Near ‘disabled toilet’ alarm call positions
- Near to each final exit on the inside
- Near to the final exit externally, to a place of safety
- Near is defined as ‘within 2 m’ in the horizontal.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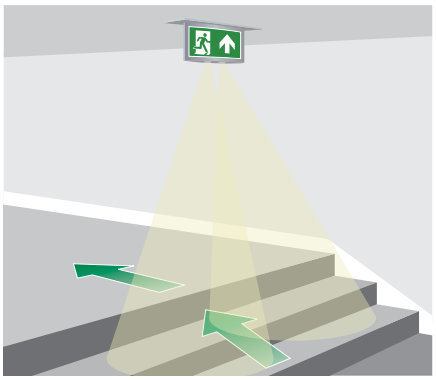
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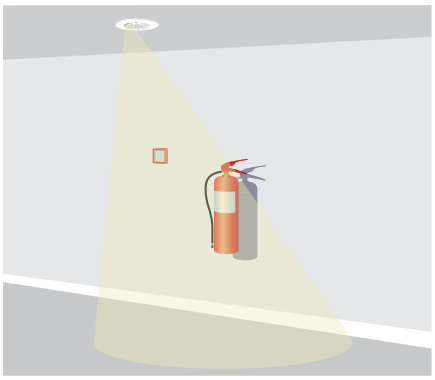
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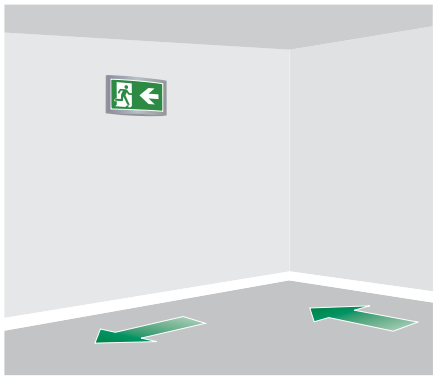
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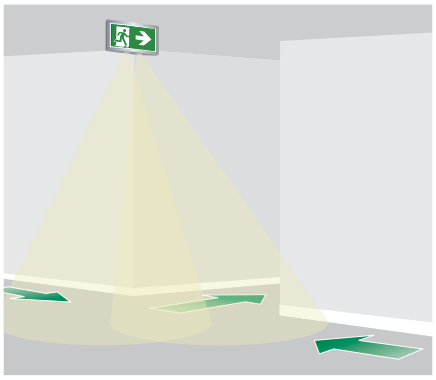
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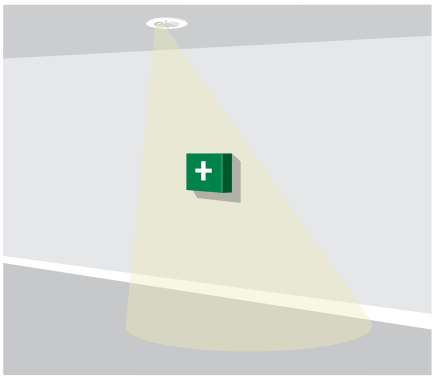
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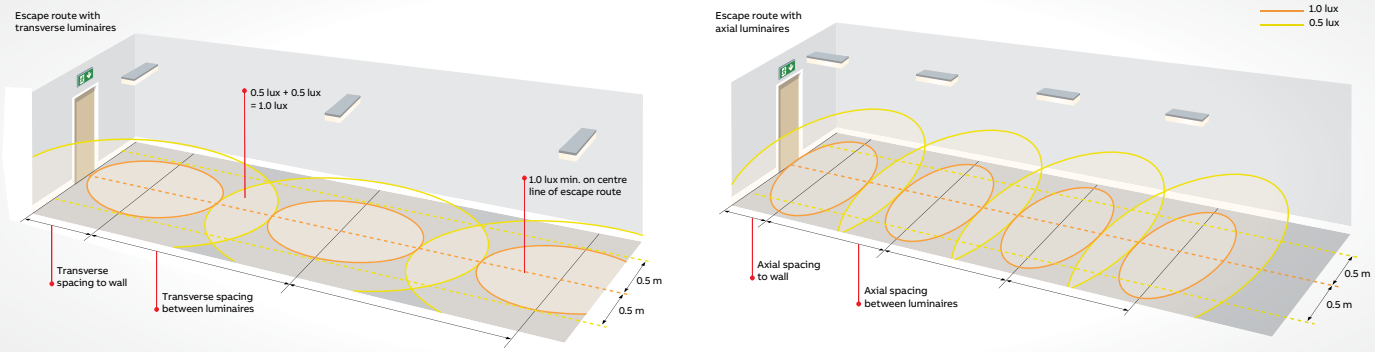

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07 Escape routes with transverse and axial luminaires
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08 Core areas

In addition to these points of emphasis, the following need to be considered when planning emergency lighting.

Escape routes
A defined escape route of 2 m width must be illuminated to a minimum of 1 lux along the centre line (see below).

Open areas (anti panic)
Open areas must be illuminated to 0.5 lux minimum in the core area (see below right). This also applies to areas with undefined escape routes, in halls or areas greater than 60 m^2.

High risk task areas
This refers to areas normally associated with moving machinery, dangerous materials or processes, and other areas of high risk where hazards may continue after mains lighting failure.

Illuminance levels should be maintained at 10% (or over) of the normal lighting level or 15 lux, provided within 0.5 seconds, to allow for safe egress and/or termination of processes. For high risk task areas, the lux requirement is calculated at the plane of the task rather than floor level.

Additional areas
Additional areas not part of the escape route still require illumination as people may be located there and/or measures may be required to ensure the safety of persons or processes. These areas include kitchens, first aid/operating rooms, lifts, refuge areas, escalators and moving walkways, toilets larger than 8 m^2 (or smaller without borrowed light), disabled toilets, small lobbies and pedestrian routes within covered car parks.

System integrity
All compartments should include two or more emergency luminaires to counter the risk of emergency luminaire failure.

Luminaire mounting height
Emergency luminaires should be mounted at least 2 m above the floor. There is no upper limit but luminaires should be fitted below smoke level if there is a significant risk of floor illumination being affected.

Stand-by lighting
If stand-by lighting is used as emergency lighting it should conform to all the requirements of emergency lighting.

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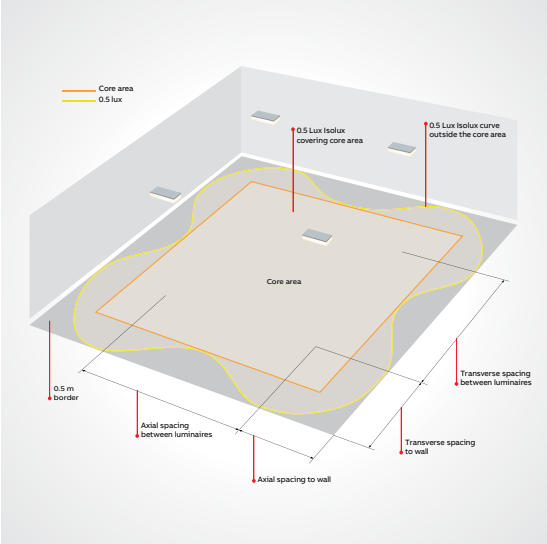


Technical reference
Legislation & requirements

Specific location requirements
BS 5266 stipulates light levels, response and duration times for specific locations within premises, and for specific activities, including:
- Kitchens
- First aid rooms
- Examination and treatment rooms
- Refuge areas for the mobility impaired
- Plant rooms, switch rooms and emergency winding facilities for lifts
- Reception areas
- Crash bars or security devices at exit doors
- Inspection of the condition of fire control and indicating equipment

A table showing the illuminance recommendation for these specific locations and requirements can be found in BS 5266-1.

Emergency lighting systems
There is a varied range of emergency lighting available to suit different budgets, decors, building requirements, colours and specifications. The types and categories available for specification are:

Types of emergency lighting
- **Self-contained**
  Each luminaire contains a battery and electronic circuitry to charge batteries and operate the lamp
- **CPS**
  Luminaires are powered from a central system
- **Conversions**
  Almost any mains fluorescent luminaire can be converted for emergency use. Emergi-Lite is registered to ICEL to undertake emergency lighting conversions at our head office facility in Leeds, UK

Categories of emergency lighting
- **Non-maintained (NM)**
  Luminaires operate when the mains fail
- **Maintained (M)**
  Luminaires operate when the mains fail, but can also be operated if required using a switch when the mains supply is healthy
- **Combined Non-maintained (CNM)**
  The luminaire contains more than one lamp, one of which is mains operated, the other is for emergency use only. When the mains is healthy one or more lamps operate, but should the mains fail the emergency lamp operates
- **Combined Maintained**
  Similar to combined non-maintained, but when the mains supply is healthy both lamps operate, whereas on mains failure only one lamp operates

CE marking alone on an emergency lamp does not necessarily imply that the product will work in an emergency situation. All emergency lighting must be designed and manufactured to meet the requirements of BS EN 60598.2.22, the established product standard.

Emergency lighting products may be independently certified and approved as a means of proving quality in the product, thereby giving an enhanced level of assurance to the installer, and greater confidence and less risk in the work he performs. Emergency lighting independently tested and carrying the approval of a recognised national standards body, such as the BSI Kitemark or European ENEC mark, serves this purpose.

Testing and maintenance of emergency lighting
Fire legislation requires the safety systems within a building to be tested and maintained to ensure correct working order.

The major standards for emergency lighting establish the testing requirement, and that testing and maintenance should be done by a “competent person” (trained, with appropriate skills and experience).

Automated testing solutions are available to assist with the testing requirement, such as the Self-Test, Dali and Naveo®Pro addressable testing solutions available from Emergi- Lite (see pages 70-74 of this catalogue for more details on these solutions).

For automated testing solutions, IEC 62034 provides specific guidance for luminaire testing, including:

- Testing should be undertaken during periods of low risk
- Tests should be performed at the appropriate times for the correct duration
- Testing should prove the emergency circuit operates correctly, and that the battery powers the luminaire for the duration of the test
- Results of the test should be reliably indicated

Within the IEC 62034 Standard, test systems for both self-contained and centrally powered emergency lighting systems are covered.

Technical reference

Checklist for emergency lighting system design

Checklist for emergency lighting system design

Point	Establish	Action
1	Establish position of fire equipment, position of hazards such as steps, each of changes of direction, stairs, first aid points etc.	Provide an emergency luminaire near (within 2 m horizontally) of these points of emphasis.
2	Establish designated exit doors, points on escape routes or where a sign is required to make the exit obvious.	Provide exit signs with arrows if necessary, observing the maximum viewing distances of the exit sign type.
3	Establish the need for external escape lighting.	Provide emergency luminaires so that people can proceed outside to a place of safety.
4	Establish the escape routes and establish mounting heights of luminaires and exit signs.	Position luminaires along parts of the escape route not already illuminated near the above points to provide 1 lux minimum along the centre line and 0.5 lux minimum in the 1 m central band. Use published data in the form of spacing tables for the luminaires to determine the positions taking into account the mounting height.
5	Establish the open areas used as escape routes and other open areas larger than 60 m^2 and establish mounting heights of luminaires above the floor.	Provide 0.5 lux minimum in the core area. Use published data (as above) to determine the positions.
6	Establish the position of lifts, escalators, toilets, control/plant rooms, pedestrian walkways in covered car parks.	Provide emergency luminaires in all of these areas.
7	Establish the location of any first aid point or fire equipment not on an escape route or open area.	Provide 5 lux emergency illuminance on the floor in the vicinity of the point. This also applies for a first aid room.
8	Establish the toilet areas.	Provide emergency lighting for toilets larger than 8 m^2, as if they were open areas. For toilets smaller than 8 m^2, unless illuminated by borrowed emergency light from another area, provide at least one emergency luminaire. Provide emergency lighting to all disabled toilets.
9	Establish any small lobbies with no borrowed light.	Provide emergency lighting.
10	Establish any central power supply (if used) is in an area of low risk away from other switchgear or plant.	Position the central power supply in its own room in fire-proof construction.
If the building use is known:		
11	Establish any need for stand-by lighting.	Provide generators as required. If the response time is longer than 5 seconds, then transitional, alternative or additional emergency lighting must be provided.
12	Establish any special needs for the occupants such as impaired mobility or impaired sight.	Provide additional emergency lighting to reduce the risk to those people to help them evacuate the premises. This applies to designated refuge areas (which may require the provision of emergency voice communication).
13	Establish the location of any high risk task areas and the normal lighting illuminance (lux) in these areas.	Provide 10% of the normal illuminance (lux) or 15 lux minimum.
14	Establish if there are any dust or dirt problems.	Allow a service factor as appropriate. 0.8 is allowed for normal areas, but for dusty environments 0.5 may be required, or alternatively instigate a regular cleaning procedure.
15	Establish any local regulations.	Provide emergency lighting to comply with the regulations.
16	Establish if there is any dimmable lighting and shopping malls.	Provide maintained emergency lighting.
17	Establish whether people would be “unfamiliar” with the escape routes.	Provide maintained exit signs.
18	Establish the use of the premises: • entertainment (including temporary such as licensed evening dance at a school) • sleeping risk • residential special care • non-residential care • public access non-residential • industrial • multi-storey dwelling over 10 storeys Note: because the duration times are varied, it is customary in the UK to use	Recommended Minimum Duration: 3 hr 3 hr 3 hr 1 hr 1 hr 1 hr 3 hr 3 hr

Note: for points 5 and 6 the luminaires positioned near points of emphasis can be moved slightly within the 2 m horizontal tolerance to fit in with the spacing or array of emergency luminaires in the escape route or open area. This checklist is for guidance purposes only and does not form an exhaustive list of all requirements to standards and legislation, which should be reviewed when undertaking emergency lighting system design. ‘60Hz’ option available on request, please contact Emergi-Lite . Please refer to ICEL (Industry Committee for Emergency Lighting) for updates and/or additional information [www.ICEL.co.uk]

Technical reference
Spacing data

In the UK, Building Regulation 2000 : B1 covers the provision of safe and effective means of escape from a building.

Approved Document B (2000) (ADB) is a published guide to the Building Regulations, which specifies that standards for the installation of escape lighting should be according to BS 5266 Part 1.

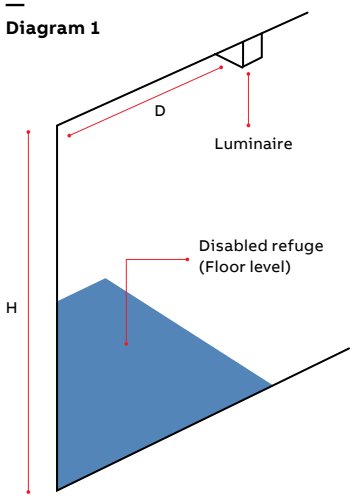
BS 5266 Part 1 is the umbrella standard which refers to EN 1838 (BS 5266 Part 7), defining emergency lighting levels of minimum 1.0 lux on the centre line of an escape route, and 0.5 lux minimum for open areas larger than 60m^2.

British Standards are recognised worldwide, or are commonly used as the basis of local standards. NFPA 101 Life Safety Code standards require an average of 10.8 lux with not less that 1.1 lux at any point for escape routes.

We recommend that a copy of relevant local standards are obtained prior to any design work. We are pleased to supply data for any of our luminaires in LUMDAT format, for use with Relux or similar lighting packages.

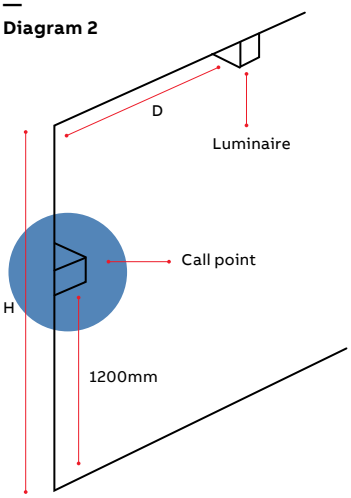
We offer the following data for guidance to assist with design work to BS 5266 requirements. Data is shown for a selection of luminaires, for a typical 2.5 metre ceiling height.

Diagram 1



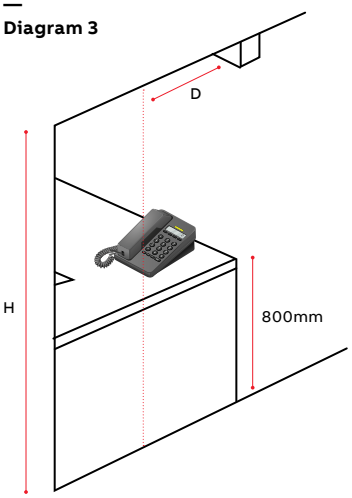
D - Distance to wall (m)
H - Ceiling height (m)

Diagram 2



D - Distance to wall (m)
H - Ceiling height (m)

Diagram 3



D - Distance to (imaginary) vertical intercept (m)
H - Ceiling height (m)

Technical reference
Spacing data

Serenga SR2, emergency spot light

Point of emphasis - Disabled refuge see diagram 1		
h (m)	↔	Minimum lux
Self-contained		
2.5	1.6	7.2
2.8	1.8	7.2
3.2	1.9	6.3
3.7	2.1	5.5
4.0	2.3	5.05
CPS 230V		
2.5	1.5	8.2
2.8	1.7	7.1
3.2	2	6.6
3.7	2.3	5.9
4.0	2.4	5.7

Serenga SR2, emergency spot light

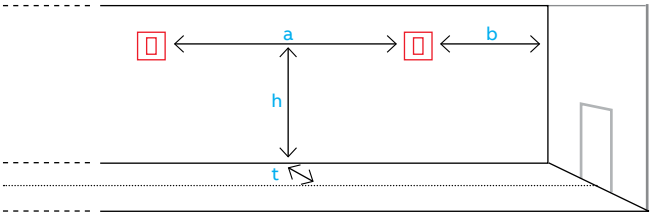
Point of emphasis - Call point see diagram 2		
h (m)	↔	Minimum lux
Self-contained		
2.5	1.5	15.5
2.8	1.7	12.7
3.2	1.9	8.15
3.7	2.1	5.56
4.0	–	–
CPS 230V		
2.5	1.5	17.8
2.8	1.75	13.3
3.2	2	9.5
3.7	2.4	6.64
4.0	2.4	5.7

Serenga SR2, emergency spot light

Point of emphasis - Telephone see diagram 3		
h (m)	↔	Minimum lux
Self-contained		
2.5	1	24.6
2.8	1.1	20.4
3.2	1.2	14.1
3.7	1.5	9.7
4.0	1.9	7.58
CPS 230V		
2.5	1	28.3
2.8	1.15	21.4
3.2	1.4	15.2
3.7	1.5	11.2
4.0	1.75	9.06

Serenga SR2, wall mount Lens G

Self contained and CPS (1.0 lux) CPS (1.0 lux)				
h (m)	↔	↔	↔	↔
Distance to escape route centre (t)				
	1m		1.5m	
0.5	1.5	3.7	1.7	5.0
1.0	1.6	4.0	1.6	5.7
1.5	1.5	3.6	2.5	5.8
2.0	1.2	3.5	2.5	5.6
2.5	0.0	1.8	2.3	5.3
3.0	0.0	0.0	2.0	5.0
3.5	0.0	0.0	1.1	3.3



Technical reference
Spacing data

Serenga 2, escape route lighting - lens A

h (m)				
Self Contained (1.0 lux)				
2.0	1.8	4.9	6.4	18.8
2.5	1.3	5.3	6.4	19.4
3.0	1.0	5.0	3.9	18.3
3.5	0.9	3.9	3.6	16.6
4.0	0.9	3.1	2.5	15.6
CPS (1.0 lux)				
2.0	2.0	5.2	7.0	19.7
2.5	1.6	5.6	6.9	20.8
3.0	1.2	5.5	4.8	20.0
3.5	1.1	4.8	4.0	19.7
4.0	1.0	3.7	3.2	16.8

Serenga 2, escape route lighting - lens B

h (m)				
Self Contained (1.0 lux)				
4.5	1.6	4.2	6.9	17.4
5.0	1.6	4.4	7.1	18.3
5.5	1.6	4.5	7.3	19.1
6.0	1.6	4.6	7.1	19.8
6.5	1.5	4.7	7.2	20.3
7.0	1.4	4.7	7.0	20.5
7.5	1.3	4.7	7.0	20.7
8.0	1.1	4.6	6.7	20.7
CPS (1.0 lux)				
4.5	1.7	4.4	7.4	17.8
5.0	1.7	4.6	7.7	19.0
5.5	1.8	4.7	7.8	19.9
6.0	1.7	4.9	7.6	20.7
6.5	1.6	5.0	7.7	21.3
7.0	1.6	5.0	7.7	21.8
7.5	1.5	5.0	7.5	22.0
8.0	1.4	5.0	7.4	22.1

Serenga 2, escape route lighting - lens C

h (m)				
Self Contained (1.0 lux)				
8.5	2.0	5.8	7.1	17.0
9.0	1.9	5.8	7.3	17.7
9.5	1.7	5.9	7.4	18.3
10.0	1.2	5.9	7.5	18.9
10.5	0.0	6.0	0.0	14.1
11.0	0.0	5.2	0.0	12.6
11.5	0.0	4.5	0.0	12.2
12.0	0.0	4.0	0.0	12.0
CPS (1.0 lux)				
8.5	2.1	6.1	7.6	17.4
9.0	2.1	6.2	7.8	18.1
9.5	2.0	6.2	7.9	18.8
10.0	1.9	6.2	8.1	19.4
10.5	1.5	6.3	7.9	20.0
11.0	0.4	6.4	8.0	20.6
11.5	0.0	6.4	0.0	14.0
12.0	0.0	5.2	0.0	13.3

Serenga 2, open area- lens D

h (m)				
Self Contained (0.5 lux)				
2.0	3.9	8.1	3.9	8.1
2.5	4.6	10.0	4.6	10.0
3.0	5.4	11.6	5.4	11.6
3.5	6.0	13.2	6.0	13.2
4.0	6.6	14.8	6.6	14.8
CPS (0.5 lux)				
2.0	3.9	8.2	3.9	8.2
2.5	4.6	10.0	4.6	10.0
3.0	5.4	11.8	5.4	11.8
3.5	6.3	13.4	6.3	13.4
4.0	6.9	15.0	6.9	15.0

Serenga 2, open area - lens E

h (m)				
Self Contained (0.5 lux)				
4.5	5.0	11.0	5.0	11.0
5.0	5.3	12.0	5.3	12.0
5.5	5.5	12.9	5.5	12.9
6.0	5.8	13.7	5.8	13.7
6.5	5.6	14.4	5.6	14.4
7.0	4.2	14.3	4.2	14.3
7.5	3.6	14.1	3.6	14.1
8.0	3.2	14.1	3.2	14.1
CPS (0.5 lux)				
4.5	5.0	11.2	5.0	11.2
5.0	5.3	12.2	5.3	12.2
5.5	5.7	13.1	5.7	13.1
6.0	6.0	14.0	6.0	14.0
6.5	6.0	14.7	6.0	14.7
7.0	8.8	15.5	8.8	15.5
7.5	4.5	15.3	4.5	15.3
8.0	4.1	15.2	4.1	15.2

Serenga 2, open area - lens F

h (m)				
Self Contained (0.5 lux)				
8.5	4.7	11.4	4.7	11.4
9.0	4.8	11.7	4.8	11.7
9.5	4.8	12.0	4.8	12.0
10.0	5.1	12.4	5.1	12.4
10.5	5.1	12.7	5.1	12.7
11.0	5.1	12.9	5.1	12.9
11.5	5.1	13.2	5.1	13.2
12.0	5.3	13.5	5.3	13.5
CPS (0.5 lux)				
8.5	4.9	11.8	4.9	11.8
9.0	5.0	12.1	5.0	12.1
9.5	5.0	12.5	5.0	12.5
10.0	5.3	12.8	5.3	12.8
10.5	5.3	13.1	5.3	13.1
11.0	5.4	13.5	5.4	13.5
11.5	5.6	13.7	5.6	13.7
12.0	5.6	14.0	5.6	14.0

Technical reference
Spacing data

Daylite Prismatic LED 251 Lm

h (m)				
Escape				
2.0	3.5	7.3	1.6	5.5
2.5	4.2	8.8	1.5	4.6
3.0	5.0	10.3	1.1	4.6
4.0	–	13.4	–	3.6
Open				
2.0	3.7	7.6	2.7	6.9
2.5	4.4	9.3	2.3	7.5
3.0	5.2	10.9	2.3	7.8
4.0	6.7	13.8	1.8	6.6

Daylite Opal LED 214 Lm

h (m)				
Escape				
2.0	3.1	7.8	2.8	7.0
2.5	3.3	8.4	2.9	7.6
3.0	3.3	8.9	3.0	8.0
4.0	3.2	9.4	2.8	8.3
Open				
2.0	3.9	9.6	3.5	8.7
2.5	4.2	10.5	3.8	9.5
3.0	4.4	11.3	4.0	10.2
4.0	4.7	12.4	4.2	11.1

Daylite Silverscape Prismatic LED 241 Lm

h (m)				
Escape				
2.0	3.6	7.6	2.6	6.5
2.5	3.9	9.2	2.9	7.1
3.0	4.4	10.7	1.5	7.7
4.0	–	12.0	–	4.6
Open				
2.0	3.8	8.0	3.3	7.5
2.5	4.6	9.6	3.6	8.5
3.0	5.3	11.3	3.8	9.5
4.0	6.0	14.4	2.3	10.6

Cordona Prismatic LED 207 Lm S/C EM

h (m)				
Escape				
2.0	2.9	7.3	2.9	7.3
2.5	3.1	7.9	3.1	7.9
3.0	3.1	8.3	3.1	8.3
4.0	3.1	8.8	3.1	8.8
Open				
2.0	3.7	9.1	3.7	9.1
2.5	3.9	9.9	3.9	9.9
3.0	4.2	10.6	4.2	10.6
4.0	4.4	11.6	4.4	11.6

Cordona & Camarque Opal LED 1830 Lm CPS

h (m)				
Escape				
2.0	5.7	13.8	5.7	13.8
2.5	6.3	15.3	6.3	15.3
3.0	6.8	16.5	6.8	16.4
4.0	7.6	18.8	7.6	18.7
Open				
2.0	6.9	16.7	6.9	16.6
2.5	7.6	18.3	7.6	18.3
3.0	8.2	20.1	8.2	20.0
4.0	9.4	22.8	9.4	22.8

Cordona Prismatic LED 2355 Lm CPS

h (m)				
Escape				
2.0	5.8	14.3	5.8	14.1
2.5	6.5	15.7	6.6	15.5
3.0	7.1	16.8	7.1	16.9
4.0	8.0	19.7	7.9	19.7
Open				
2.0	7.2	17.0	7.1	16.9
2.5	7.8	18.9	7.7	18.7
3.0	8.4	20.8	8.5	20.4
4.0	9.9	23.4	9.9	23.3

Cordona & Camarque Opal LED 207 Lm S/C EM

h (m)				
Escape				
2.0	2.9	7.3	2.9	7.3
2.5	3.1	7.9	3.1	7.9
3.0	3.1	8.3	3.1	8.3
4.0	3.1	8.8	3.1	8.8
Open				
2.0	3.7	9.1	3.7	9.1
2.5	3.9	9.9	3.9	9.9
3.0	4.2	10.6	4.2	10.6
4.0	4.4	11.6	4.4	11.6

Weather force opal LED 207 Lm

h (m)				
Escape				
2.0	2.9	7.5	2.7	6.9
2.5	3.0	8.0	2.9	7.5
3.0	3.0	8.3	2.9	7.8
4.0	2.8	8.6	2.7	8.2
Open				
2.0	3.7	9.4	3.5	8.7
2.5	4.0	10.2	3.8	9.4
3.0	4.2	10.8	3.9	10.0
4.0	4.3	11.6	4.1	10.9

Technical reference
Spacing data

PrimEvo XT100E & XT100ST

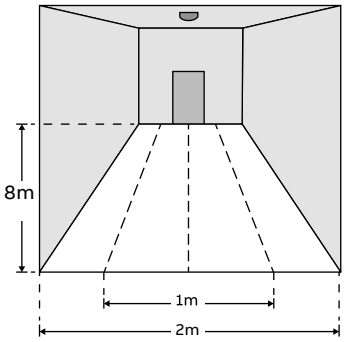
h (m)					
2.00	2.49	6.57	6.92	7.19	2.57
2.50	2.50	6.93	7.17	7.34	2.56
3.00	2.39	7.11	7.28	7.40	2.43
3.50	2.14	7.12	7.22	7.32	2.17
4.00	1.68	6.96	6.99	7.07	1.72

PrimEvo RS100E/RS100ST and SM100E/SM100ST

h (m)					
2.00	1.34	3.41	6.14	9.41	4.10
2.50	1.40	3.69	6.87	10.66	4.44
3.00	1.50	3.81	7.44	11.53	4.69
3.50	1.55	3.91	7.85	12.28	4.90
4.00	1.53	4.10	8.15	12.86	5.17

PrimEvo TW220E

h (m)					
2.50	5.39	11.75	6.85	2.03	0.86
3.00	6.47	14.11	8.22	2.44	1.04
3.50	7.15	16.04	9.26	2.66	1.18
4.00	7.57	17.69	9.89	2.87	1.28
4.50	7.94	19.15	10.44	3.14	1.36
5.00	7.93	20.15	10.87	3.39	1.42



Indulux Double Sided LED
IND3LS5DS & CTIND3LS5DS

h (m)				
Self contained 1hr (MF 0.8 - 1.0 lux)				
2.5	3.89	10.70	2.39	6.31
3.0	3.81	10.91	2.36	6.60
3.5	3.62	10.94	2.23	6.74
4.0	3.25	10.82	1.96	6.74
4.5	2.50	10.54	1.49	6.59
5.0	0.19	10.09	0.32	6.28
5.5	–	8.54	–	5.78
6.0	–	6.80	–	4.22
6.5	–	3.74	–	2.98
7.0	–	0.94	–	1.20

Indulux Single Sided LED
IND3LS5 & CTIND3LS5

h (m)				
Self contained 1hr (MF 0.8 - 1.0 lux)				
2.5	3.50	9.24	3.01	7.70
3.0	3.56	9.65	3.11	8.19
3.5	3.54	9.92	3.13	8.54
4.0	3.43	10.06	3.07	8.76
4.5	3.25	10.09	2.94	8.89
5.0	2.96	10.02	2.71	8.90
5.5	2.56	9.82	2.37	8.80
6.0	1.94	9.50	1.84	8.60
6.5	0.77	9.08	0.84	8.27
7.0	–	8.51	–	7.81

Indulux Double sided LED
IND1LS5DS & IND1LS5DSLTC

h (m)				
CPS 1hr (MF 0.8 - 1.0 lux)				
2.5	5.37	14.17	3.16	7.89
3.0	5.49	14.73	3.30	8.46
3.5	5.51	15.11	3.38	8.90
4.0	5.45	15.36	3.37	9.22
4.5	5.31	15.48	3.29	9.44
5.0	5.10	15.47	3.14	9.55
5.5	4.74	15.35	2.88	9.55
6.0	4.21	15.14	2.50	9.46
6.5	2.14	14.80	1.93	9.25

Indulux Single sided LED
IND1LS5 & IND1LSLTC

h (m)				
CPS 1hr (MF 0.8 - 1.0 lux)				
2.5	4.62	11.80	3.83	9.46
3.0	4.82	12.50	4.07	10.22
3.5	4.95	13.04	4.25	10.85
4.0	5.03	13.48	4.36	11.37
4.5	5.04	13.82	4.42	11.79
5.0	5.00	14.05	4.43	12.10
5.5	4.90	14.20	4.38	12.33
6.0	4.74	14.28	4.28	12.50

Technical reference
Spacing data

Hyled, escape route lighting

h (m)				
Self Contained (1.0 lux) 3hr				
2.0	1.8	5.3	3.7	8.2
2.5	1.7	5.2	4.5	8.9
3.0	1.7	5.0	5.2	11.3
3.5	1.8	4.9	5.9	12.9
4.0	2.0	4.9	6.5	14.4
5.0	2.3	5.3	8.2	17.3
6.0	2.5	5.9	9.4	20.2
7.0	2.6	6.5	10.6	23.0
8.0	2.7	7.0	11.7	25.8
9.0	2.7	7.5	12.7	28.3
10.0	2.5	7.8	13.6	30.7
11.0	1.7	8.0	14.0	33.0
CPS (1.0 lux)				
2.0	1.9	5.4	3.9	8.2
2.5	2.4	6.8	4.9	10.4
3.0	2.8	8.3	5.7	12.5
3.5	2.8	8.3	6.4	14.2
4.0	2.7	8.2	7.0	15.8
5.0	2.7	7.8	8.5	18.8
6.0	3.0	7.8	9.8	22.0
7.0	3.4	7.9	11.5	24.9
8.0	3.5	8.5	12.6	27.7
9.0	3.8	9.1	14.2	30.6
10.0	4.0	9.7	15.2	33.6
11.0	4.2	10.3	16.8	36.4
12.0	4.3	10.8	17.6	39.2
13.0	4.4	11.3	19.1	41.8
14.0	4.2	11.8	19.9	44.4
15.0	4.0	12.1	20.5	46.8
16.0	3.7	12.4	21.1	49.2
17.0	3.0	12.6	21.6	51.5
18.0	1.6	12.5	21.3	53.7

Hyled, open area

h (m)				
Self Contained (0.5 lux) 3hr				
2.0	3.4	7.6	3.4	9.6
2.5	4.2	9.1	4.2	9.1
3.0	4.8	10.7	4.8	10.7
3.5	5.2	12.0	5.2	12.0
4.0	5.6	13.3	5.6	13.3
5.0	6.3	15.3	6.3	15.3
6.0	6.8	16.8	6.8	16.8
7.0	7.1	18.1	7.1	18.1
8.0	7.4	19.2	7.4	19.2
9.0	7.5	20.1	7.5	20.1
10.0	7.2	20.9	7.2	20.9
11.0	6.3	21.5	6.3	21.5
CPS (0.5 lux)				
2.0	3.6	7.7	3.6	7.7
2.5	4.5	9.7	4.5	9.7
3.0	5.2	11.7	5.2	11.7
3.5	6.1	13.3	6.1	13.3
4.0	6.8	14.5	6.8	14.8
5.0	7.8	17.7	7.8	17.7
6.0	8.7	20.4	8.7	20.4
7.0	9.5	22.5	9.5	22.5
8.0	10.1	24.4	10.1	24.4
9.0	10.6	25.9	10.6	25.9
10.0	11.0	27.3	11.0	27.3
11.0	11.3	28.5	11.3	28.5
12.0	11.9	29.7	11.9	29.7
13.0	12.0	30.7	12.0	30.7
14.0	12.1	31.7	12.1	31.7
15.0	11.6	32.6	11.6	32.6
16.0	11.1	33.2	11.1	33.2
17.0	10.6	33.8	10.6	33.8
18.0	7.6	34.2	7.6	34.2

*Hyled 1hr escape route and open area spacing data available upon request.

Optima 950L, escape route lighting

h (m)					
CPS Luminaire (1 lux)					
2.00	4.18	10.00	10.01	10.07	4.22
2.50	5.23	12.50	12.51	12.59	5.27
3.00	5.91	14.19	14.22	14.30	5.96
3.50	6.32	15.29	15.32	15.40	6.37
4.00	6.67	16.27	16.31	16.39	6.73
4.50	6.98	17.16	17.19	17.27	7.03
5.00	7.24	17.94	17.98	18.06	7.30
5.50	7.47	18.66	18.70	18.78	7.52
6.00	7.66	19.31	19.35	19.43	7.71
7.00	7.93	20.42	20.45	20.53	7.98
8.00	8.08	21.30	21.34	21.41	8.12
9.00	8.11	21.98	22.01	22.08	8.15
10.00	8.02	22.47	22.50	22.57	8.06
11.00	7.82	22.79	22.82	22.88	7.85
12.00	7.47	22.93	22.96	23.02	7.49
13.00	6.97	22.91	22.94	23.00	6.99
14.00	6.27	22.73	22.75	22.81	6.29
15.00	5.30	22.38	22.39	22.44	5.33
16.00	3.88	21.84	21.85	21.89	3.92
17.00	0.00	21.10	21.10	21.14	0.60

Optima 950L, NFPA 101

h (m)		
CPS Luminaire (10.8 lux average / 1 lux min.)		
2.50	13.50	6.75
3.00	16.00	8.00
3.50	16.00	8.00
4.00	15.00	7.50

Technical reference
Spacing data

Optima 950L, escape route lighting

h (m)					
CPS Luminaire (0.5 lux)					
2.00	4.18	10.00	10.01	10.07	4.22
2.50	5.23	12.50	12.51	12.59	5.27
3.00	6.27	15.00	15.02	15.11	6.33
3.50	7.32	17.50	17.52	17.62	7.38
4.00	8.13	19.49	19.53	19.65	8.22
4.50	8.58	20.66	20.70	20.81	8.66
5.00	8.97	21.73	21.77	21.89	9.05
5.50	9.33	22.72	22.76	22.88	9.41
6.00	9.65	23.64	23.68	23.80	9.73
7.00	10.21	26.69	25.32	25.44	10.29
8.00	10.65	26.69	21.34	26.86	10.72
9.00	10.99	27.92	27.97	28.09	11.06
10.00	11.24	28.97	29.02	29.13	11.30
11.00	11.40	29.87	29.93	30.03	11.46
12.00	11.47	30.63	30.68	30.78	11.53
13.00	11.46	31.24	31.29	31.39	11.52
14.00	11.37	31.72	31.77	31.86	11.42
15.00	11.19	32.08	32.13	32.22	11.24
16.00	10.92	32.32	32.36	32.45	10.96
17.00	10.55	32.44	32.48	32.56	10.59
18.00	10.07	32.44	32.48	32.56	10.11
19.00	9.46	32.09	32.13	32.20	9.50
20.00	8.70	32.09	32.13	32.20	8.73
21.00	7.74	31.75	31.77	31.84	7.78
22.00	6.49	31.26	31.28	31.34	6.54
23.00	4.75	30.63	30.65	30.70	4.81
24.00	0.87	29.87	29.89	29.94	1.29

Lutia ceiling mount Open area

h (m)				
Self Contained 3 hrs (0.5 lux)	**Ya**	**Yb**	**Xa**	**Xb**
2.0	1.50	3.40	3.00	6.40
2.5	1.40	3.60	4.00	8.00
3.0	1.60	4.00	4.10	10.00
3.5	1.60	4.40	5.00	11.00
4.0	1.50	4.40	5.50	12.00
5.0	1.50	4.40	6.00	15.00
6.0	1.50	4.40	6.50	16.00
CPS (0.5 lux)				
2.0	1.70	4.00	3.00	7.00
2.5	2.00	4.60	3.50	8.00
3.0	2.00	5.00	5.00	10.00
3.5	2.20	5.20	5.00	10.00
4.0	2.30	5.40	6.00	13.00
5.0	2.30	6.20	7.50	15.00
6.0	2.20	6.20	8.00	18.00
7.0	2.20	6.60	8.00	18.00

Lutia ceiling mount escape route

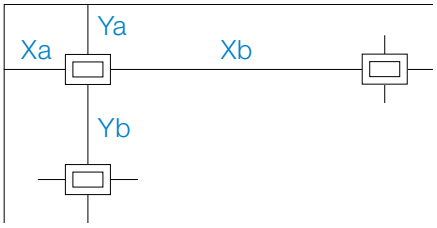
h (m)				
Self Contained 3 hrs (1.0 lux)	**Ya**	**Yb**	**Xa**	**Xb**
2.0	1.1	3.2	3.8	8.5
2.5	1.0	3.0	4.5	9.9
3.0	1.0	3.0	5.0	11.3
3.5	1.1	2.9	5.5	12.6
4.0	1.1	2.9	5.8	13.8
5.0	1.0	3.0	5.7	15.6
6.0	0.7	3.0	5.2	16.3
CPS (1.0 lux)				
2.0	1.7	4.5	4.3	9.7
2.5	1.6	4.7	5.0	11.2
3.0	1.6	4.3	5.7	12.6
3.5	1.5	4.4	6.3	14.1
4.0	1.5	4.4	7.0	15.4
5.0	1.5	4.2	7.9	18.1
6.0	1.5	4.3	8.4	20.4
7.0	1.4	4.4	8.3	22.3

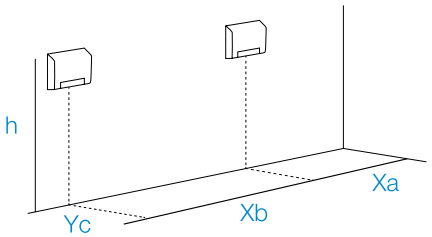
Lutia wall mount Open area

h (m)			
Self Contained 3 hrs (0.5 lux)	**Yb**	**Xa**	**Xb**
2.0	1.70	2.50	6.00
2.5	1.70	3.50	8.00
3.0	2.00	4.00	9.00
3.5	2.10	5.30	10.00
4.0	2.10	6.00	14.00
5.0	2.40	6.70	15.00
CPS (0.5 lux)			
2.0	1.90	3.00	7.00
2.5	2.20	4.00	10.00
3.0	2.40	5.00	10.00
3.5	2.60	5.00	10.00
4.0	2.70	6.50	14.00
5.0	2.90	8.00	16.00
6.0	3.10	9.00	18.00
7.0	3.30	9.00	18.00

Lutia wall mount escape route

h (m)			
Self Contained 3 hrs (1.0 lux) Yc = 1m	**Xa**	**Xb**
2.0	3.50	7.80
2.5	4.10	9.40
3.0	4.60	10.00
3.5	5.00	12.00
4.0	5.20	12.80
5.0	5.30	14.20
6.0	4.60	14.40
CPS (1.0 lux)		
2.0	4.0	8.8
2.5	4.7	10.4
3.0	5.4	12.0
3.5	5.9	13.4
4.0	6.5	14.6
5.0	7.2	17.0
6.0	7.4	19.0
7.0	7.4	20.4





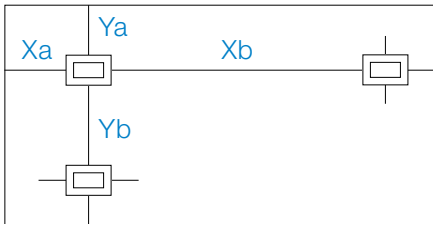
Technical reference
Spacing data

MirEvo Twinspot, escape route lighting

h (m)				
Self Contained 3 hrs (1.0 lux)	**Ya**	**Yb**	**Xa**	**Xb**
2.0	2.98	6.71	3.23	7.29
2.5	3.56	8.08	3.78	8.58
3.0	4.06	9.02	4.01	9.29
3.5	4.51	9.90	4.19	9.87
4.0	4.90	10.90	4.35	10.38
CPS (1.0 lux)				
2.0	3.02	6.75	3.26	7.34
2.5	3.69	8.28	3.94	8.91
3.0	4.16	9.25	4.19	9.62
3.5	4.63	10.08	4.40	10.22
4.0	5.05	11.03	4.57	10.75

Ovano, XT200M3H & XT201M3H

h (m)				
XT200M3H	**Ya**	**Yb**	**Xa**	**Xb**
2.0	3.11	7.53	3.29	7.50
2.5	3.35	8.34	3.49	8.37
3.0	3.48	8.98	3.62	8.93
3.5	3.51	9.47	3.68	9.37
4.0	3.47	9.79	3.65	9.70
XT201M3H				
2.0	3.24	7.98	2.05	5.04
2.5	3.56	8.71	2.34	5.38
3.0	3.77	9.35	2.60	5.87
3.5	3.90	9.98	2.80	6.48
4.0	3.99	10.43	2.94	7.02



Movion, escape route lighting

h (m)					
Self Contained (MF 0.8 - 1.0 lux)					
2.00	1.36	3.28	7.61	11.89	5.59
2.50	1.45	3.64	9.00	14.33	6.56
3.00	1.38	3.95	10.13	16.57	6.84
3.50	1.17	4.10	10.12	17.60	6.11
4.00	1.12	4.01	9.28	17.92	5.30
4.50	1.03	3.65	8.93	18.49	4.83
5.00	0.90	3.31	8.59	17.03	4.20
5.50	0.65	3.20	7.98	15.33	3.10
CPS (MF 0.8 - 1.0 lux)					
2.00	1.44	3.52	7.83	12.07	5.71
2.50	1.58	3.83	9.26	14.60	6.80
3.00	1.60	4.20	10.57	16.95	7.57
3.50	1.46	4.47	11.46	18.97	7.50
4.00	1.29	4.57	11.09	19.76	6.53
4.50	1.24	4.45	10.28	20.01	5.86
5.00	1.15	4.07	9.95	20.58	5.39
5.50	1.02	3.71	9.62	19.26	4.80
6.00	0.82	3.58	9.12	17.36	3.78

Movion, escape route lighting

h (m)					
Self Contained (MF 0.8 - 0.5 lux)					
2.00	1.64	4.22	8.30	12.42	5.94
2.50	1.82	4.46	9.83	15.12	7.16
3.00	1.97	4.76	11.26	17.69	8.28
3.50	2.05	5.13	12.63	20.10	9.22
4.00	2.01	5.45	13.89	22.38	9.71
4.50	1.82	5.70	14.56	24.24	9.46
5.00	1.65	5.81	14.23	24.97	8.52
5.50	1.60	5.71	13.33	25.16	7.66
6.00	1.53	5.46	12.82	25.78	7.17
6.50	1.43	4.99	12.54	26.19	6.69
7.00	1.30	4.70	12.20	24.39	6.07
7.50	1.10	4.57	11.76	22.38	5.05
8.00	0.72	4.48	10.89	21.22	3.60
CPS (MF 0.8 - 0.5 lux)					
2.00	1.76	4.59	8.50	12.58	6.03
2.50	1.96	4.82	10.13	15.31	7.30
3.00	2.10	5.07	11.54	17.96	8.47
3.50	2.23	5.40	12.99	20.48	9.55
4.00	2.29	5.78	14.33	22.86	10.45
4.50	2.23	6.10	15.58	25.12	10.81
5.00	2.04	6.34	16.22	26.97	10.55
5.50	1.85	6.46	15.96	27.69	9.64
6.00	1.79	6.41	15.09	27.90	8.68
6.50	1.73	6.22	14.38	28.46	8.16
7.00	1.65	5.84	14.12	29.05	7.69
7.50	1.53	5.33	13.79	28.10	7.17
8.00	1.37	5.16	13.44	26.14	6.36
8.50	1.15	5.06	12.87	24.50	5.31
9.00	0.60	4.96	11.97	23.45	0.52

Technical reference
Spacing data

Movion, escape route lighting

h (m)					
Self Contained (MF 0.8 - 5 lux)					
1.00	0.63	1.53	2.90	4.72	1.41
1.50	0.53	1.82	4.61	7.77	2.75
2.00	0.46	1.64	4.00	8.26	2.17
2.50	0.25	1.42	3.49	6.77	1.24
CPS (MF 0.8 - 5 lux)					
1.00	0.68	1.64	3.28	5.15	1.62
1.50	0.68	1.97	5.05	8.28	3.41
2.00	0.55	1.99	4.61	8.93	2.63
2.50	0.44	1.64	4.27	8.42	2.07

Movion, escape route lighting

h (m)					
Self Contained (MF 0.8 - 10 lux)					
1.00	0.41	1.27	2.01	2.82	0.90
1.50	0.30	1.07	2.77	5.50	1.08
CPS (MF 0.8 - 10 lux)					
1.00	0.50	1.36	2.24	3.24	1.04
1.50	0.38	1.35	3.19	6.42	1.65
2.00	0.16	1.11	2.69	5.27	0.16

Movion, open area

h (m)					
Self Contained (MF 0.8 - 0.5 lux)					
2.00	4.58	10.32	10.32	10.32	4.58
2.50	4.86	12.07	12.07	12.07	4.86
3.00	4.59	13.19	13.19	13.19	4.59
3.50	2.93	13.24	13.24	13.24	2.93
4.00	1.83	12.63	12.63	12.63	1.83
4.50	1.26	11.24	11.24	11.24	1.26
5.00	0.30	7.97	7.97	7.97	0.30
CPS (MF 0.8 - 0.5 lux)					
2.00	4.80	10.54	10.54	10.54	4.80
2.50	5.38	12.51	12.51	12.51	5.38
3.00	5.33	14.06	14.06	14.06	5.33
3.50	4.83	14.95	14.95	14.95	4.83
4.00	2.92	14.49	14.49	14.49	2.92
4.50	1.98	13.98	13.98	13.98	1.98
5.00	1.42	12.55	12.55	12.55	1.42
5.50	0.58	9.28	9.28	9.28	0.58

Movion, open area

h (m)					
Self Contained (MF 0.8 - 10 lux)					
1.00	0.29	2.53	2.53	2.53	0.29
CPS (MF 0.8 - 10 lux)					
1.00	0.45	3.14	3.14	3.14	0.45

Movion, open area

h (m)					
Self Contained (MF 0.8 - 5 lux)					
1.00	1.35	4.25	4.25	4.25	1.35
1.50	0.29	2.99	2.99	2.99	0.29
CPS (MF 0.8 - 5 lux)					
1.00	1.67	4.53	4.53	4.53	1.67
1.50	0.53	4.24	4.24	4.24	0.53

Movion, open area

h (m)					
Self Contained (MF 0.8 - 1.0 lux)					
2.00	3.36	9.09	9.09	9.09	3.36
2.50	1.99	9.27	9.27	9.27	1.99
3.00	1.09	8.56	8.56	8.56	1.09
3.50	0.34	5.83	5.83	5.83	0.34
CPS (MF 0.8 - 1.0 lux)					
2.00	3.81	9.60	9.60	9.60	3.81
2.50	3.35	10.61	10.61	10.61	3.35
3.00	1.66	10.12	10.12	10.12	1.66
3.50	1.04	8.98	8.98	8.98	1.04

Technical reference
Spacing data

Movion, hybrid

h (m)					
Self Contained (MF 0.8 - 1.0 lux)					
2.00	0.85	2.07	5.52	9.20	3.69
2.50	0.98	2.21	6.00	10.20	4.19
3.00	1.05	2.52	6.45	11.07	4.50
3.50	1.05	2.77	6.78	11.81	4.76
4.00	0.97	2.93	7.12	12.47	4.96
4.50	0.85	3.00	7.52	13.02	5.12
5.00	0.76	2.96	7.82	13.51	5.25
5.50	0.72	2.81	8.03	13.92	5.36
6.00	0.69	2.61	8.22	14.26	5.38
6.50	0.66	2.34	8.27	14.58	5.25
7.00	0.64	2.19	8.26	14.82	4.74
7.50	0.60	2.06	7.75	15.04	3.85
8.00	0.54	2.03	6.91	15.20	2.82
8.50	0.38	1.96	5.84	14.83	1.46
CPS (MF 0.8 - 1.0 lux)					
2.00	0.88	2.32	5.87	9.73	4.04
2.50	1.03	2.35	6.43	10.82	4.46
3.00	1.13	2.61	6.91	11.76	4.82
3.50	1.18	2.90	7.30	12.58	5.10
4.00	1.16	3.12	7.63	13.31	5.35
4.50	1.07	3.27	7.97	13.94	5.54
5.00	0.95	3.34	8.37	14.50	5.70
5.50	0.86	3.31	8.68	14.99	5.83
6.00	0.81	3.18	8.87	15.41	5.94
6.50	0.78	3.00	9.11	15.77	5.99
7.00	0.74	2.75	9.21	16.10	5.94
7.50	0.72	2.52	9.23	16.38	5.67
8.00	0.70	2.37	9.11	16.60	4.91
8.50	0.65	2.29	8.35	16.82	4.01
9.00	0.57	2.25	7.57	16.95	2.94
9.50	0.41	2.18	6.44	16.48	1.53

Movion, hybrid

h (m)					
Self Contained (MF 0.8 - 0.5 lux)					
2.00	1.03	2.79	6.68	10.90	4.60
2.50	1.10	2.95	7.40	12.26	5.10
3.00	1.26	2.91	8.00	13.37	5.53
3.50	1.38	3.11	8.45	14.36	5.90
4.00	1.47	3.43	8.94	15.26	6.23
4.50	1.50	3.71	9.31	16.05	6.51
5.00	1.48	3.94	9.63	16.78	6.75
5.50	1.40	4.11	9.97	17.45	6.96
6.00	1.30	4.21	10.36	18.03	7.13
6.50	1.17	4.24	10.73	18.56	7.29
7.00	1.09	4.20	11.03	19.05	7.41
7.50	1.03	4.07	11.22	19.48	7.52
8.00	1.01	3.90	11.47	19.85	7.60
8.50	0.98	3.69	11.63	20.18	7.60
9.00	0.93	3.42	11.69	20.50	7.52
9.50	0.92	3.21	11.71	20.78	7.22
10.00	0.90	3.07	11.67	21.01	6.53
10.50	0.86	2.92	11.10	21.23	5.64
11.00	0.81	2.89	10.33	21.44	4.68
11.50	0.71	2.85	9.42	21.52	3.55
12.00	0.54	2.78	8.35	21.00	2.14

Movion, hybrid

h (m)					
Self Contained (MF 0.8 - 5 lux)					
1.00	0.15	1.01	0.50	3.53	1.76
1.50	0.47	1.21	1.78	2.45	0.77
2.00	0.38	1.34	2.29	3.73	1.04
2.50	0.32	1.24	2.50	5.39	0.97
3.00	0.29	1.01	2.31	6.04	0.31
CPS (MF 0.8 - 5 lux)					
1.00	0.19	1.07	0.53	3.76	1.88
1.50	0.52	1.26	2.00	2.76	0.91
2.00	0.48	1.46	2.60	4.75	1.29
2.50	0.38	1.47	3.07	6.45	1.43
3.00	0.34	1.29	3.18	7.11	1.27
3.50	0.31	1.08	3.11	7.39	0.83
4.00	0.26	1.01	2.71	7.57	0.19

Movion, hybrid

h (m)					
CPS (MF 0.8 - 0.5 lux)					
2.00	1.04	2.81	6.72	10.97	4.63
2.50	1.17	3.22	7.86	12.92	5.41
3.00	1.30	3.27	8.51	14.16	5.88
3.50	1.45	3.32	9.07	15.23	6.29
4.00	1.56	3.53	9.52	16.19	6.65
4.50	1.64	3.85	10.00	17.07	6.97
5.00	1.67	4.12	10.36	17.87	7.25
5.50	1.65	4.36	10.68	18.60	7.49
6.00	1.59	4.54	11.03	19.28	7.70
6.50	1.50	4.66	11.39	19.88	7.88
7.00	1.37	4.72	11.79	20.43	8.05
7.50	1.26	4.72	12.12	20.94	8.19
8.00	1.18	4.64	12.38	21.40	8.30
8.50	1.14	4.49	12.56	21.81	8.41
9.00	1.12	4.31	12.82	22.18	8.47
9.50	1.09	4.10	12.97	22.51	8.47
10.00	1.04	3.83	13.03	22.83	8.39
10.50	1.03	3.59	13.05	23.11	8.14
11.00	1.01	3.46	13.03	23.34	7.51
11.50	0.97	3.29	12.60	23.56	6.62
12.00	0.93	3.24	11.84	23.78	5.71
12.50	0.88	3.20	11.04	23.95	4.68
13.00	0.73	3.15	10.14	23.92	3.47
13.50	0.55	3.08	8.98	23.23	1.92

Legends guide
Euro pictogram format

Single sided & safety equipment signs

Model		Horizon OH		Aqualux OW / STF	Navigator Compact VE / DVE
Format	Screen printed	Perspex screen printed	Screen printed (back-lit)	Self-adhesive (edge-lit)	Screen printed
	–	–	–	–	–
	XE02H	XE20HS	XE02W	RSE2W	XE02V31
	XE03H	XE30HS	XE03W	RSE3W	XE03V31
	XE06H	XE60HS	XE06W	RSE6W	XE06V31
	XE05H	XE50HS	XE05W	RSE5W	XE05V31
	XLF802H	XLF802HS	–	–	–
	XLF803H	XLF803HS	–	–	–

Model	Silver-Scape RB	Weatherforce DV	Weatherforce B / WA	Day-Lite Ex-cel XXW	Guideway 22	Guideway 32m
Format	Screen printed	Double sided fitted	Self-adhesive sticker	Self-adhesive sticker	Screen printed	Screen printed
	–	–	RSE120	RSE23560X	–	–
	XE02A31	–	RSE2120	RSE2X	XE02EG22	XE02EG32
	XE03A31	–	RSE3120	RSE3X	XE03EG22	XE03EG32
	XE06A31	–	RSE6120	RSE6X	XE06EG22	XE06EG32
	XE05A31	–	RSE5120	RSE5X	XE05EG22	XE05EG32

The standard 'Signs Directive' format is shown above. Other legend formats with different arrow directions, HTM65 format (below), BS 5499 mixed 'image/word' and foreign language variants are available by special request.

Double sided signs

Model	Horizon OH	Silver-Scape RB	Weatherforce DV
Format	Panel screen printed	Screen printed	Double sided fitted
	XE22HD	XE02/2A32	XE02/2DV32
	XE36HD	XE03/6A32	XE03/6DV32
	XE55HD	XE05/5A32	XE05/5DV32

Legends guide
ISO 7010 format

Single sided

Model		Horizon OH		Aqualux OW / STF
Format	Screen printed	Panel screen printed	Screen printed (back-lit)	Self-adhesive (edge-lit)
	–	–	–	–
	XEN2H	XEN20HS	XEN2W	RSEN2W
	XEN3H	XEN30HS	XEN3W	RSEN3W
	XEN6H	XEN60HS	XEN6W	RSEN6W
	XEN5H	XEN50HS	XEN5W	RSEN5W
Arabic legend format				
	XB01H	XB01HS	On request	XB01HS

Model	Navigator Compact VE / DVE	Silver-Scape RB
Format	Screen printed	Screen printed
	–	–
	XEN2V31	XEN2A31
	XEN3V31	XEN3A31
	XEN6V31	XEN6A31
	XEN5V31	XEN5A31
Arabic legend format		
	XB01V31	XB01A31

Model	Weatherforce DV	Weatherforce B /WA	Day-Lite Ex-cel XXW	Guideway 22m	Guideway 32
Format	Double sided fitted	Self-adhesive sticker	Self-adhesive sticker	Screen printed	Screen printed
	–	–	RSEN23560X	–	–
	–	RSEN2120	RSEN2X	XEN2EG22	XEN2EG32
	–	RSEN3120	RSEN3X	XEN3EG22	XEN3EG32
	–	RSEN6120	RSEN6X	XEN6EG22	XEN6EG32
	–	RSEN5120	RSEN5X	XEN5EG22	XEN5EG32
Arabic legend format					
	XB10DV32	RSB1X	RSB1X	XBN1EG22	XBN1EG32

Legends guide
ISO 7010 format

Single sided (Flag mounted)

Model	Guideway 22m
Format	Screen printed
	XEN602EG22
	XEN603EG22
	XEN606EG22
	XEN605EG22

Double sided signs

Model	Horizon OH	Silver-Scape RB	Weatherforce DV
Format	Panel screen printed	Screen printed	Double sided fitted
	XEN22HD	XEN2/2A32	XEN2/2DV32
	XEN36HD	XEN3/6A32	XEN3/6DV32
	XEN55HD	XEN5/5A32	XEN5/5DV32

EMEX Introduction
Choosing the right AC/AC system for emergency lighting

There are a variety of ways in which back-up power can be provided, however, even though certain methods are suitable for critical applications, they may not necessarily be suitable for emergency lighting.

General information on Uninterruptible Power Supply Systems (UPS), for guidance:

Why is it different?
This is because an Emergency lighting system has unique load characteristics. Since emergency lighting is a critical lifesafety installation, it is vital that a central power supply system selected to power emergency lighting is designed with these load characteristics in mind.

EMEX Power central inverter systems are specifically designed to provide emergency power for lighting systems in a mains fail or evacuation situation. In choosing the right AC system to support emergency lighting it is important to consider the following questions:

Cold load startup performance
BS EN 50171 requires that an inverter must be able to start the full load without the mains supply present. How does the system perform in a total power failure (i.e. is the system able to start the load without the bypass supply being available)?

Repeat duty
BS EN 50171 requires a Central power supply system to fully recharge within 24 hours. Is the charger able to recharge the batteries sufficiently quickly (80% in 12 hours or 100% after 24 hours)?

Energy consumption and heat dissipation
- Is the inverter and charger permanently running, reducing the battery life, generating heat and wasting energy?
- Are cooling fans running continuously, generating noise and reducing component life?

Maintenance
Is the system easy to service and maintain? Is the system designed in a modular format, or would the failure of even a minor component require the whole system to be shut down and stripped for repair?

Recharge period
UPS systems which are designed primarily for computer backup generally offer short back-up times, and consequentially employ small chargers. To provide the longer durations specified for emergency lighting, a much larger capacity battery is fitted. However, if the charger is not uprated then the system will not be capable of recharging sufficiently quickly. Hence the battery rating is sometimes increased even further so that it is not fully discharged at the end of the rated duration period (and is thus capable of “repeat duty” with limited further recharge). This results in a much larger system that is actually required for the load, increasing both the physical space required and future battery replacement costs.

Overload and short circuit performance
An emergency lighting load imposes large ‘in-rush’ currents when starting lamps from cold. However, UPS systems are often designed to shut down at only 125% overload and revert to the incoming supply. During a total power failure situation, this could result in total failure of the emergency lighting system. Furthermore, a UPS may fail to clear a protective device on a lighting circuit, meaning that a single short circuit fault could result in loss of the entire emergency lighting provision. It is a requirement of BS EN 50171: Clause 6.6.8 - The central inverter system shall be capable of tripping any associated protective device!

Energy consumption and battery life
Many UPS systems operate in the ‘on-line’ mode, whereby the inverter runs constantly to supply the load, and power is taken from the battery with the charger running constantly. This places an excessive ripple on the battery (in contravention of the advice given by most battery manufacturers). Also, the system is constantly generating heat which has a further detrimental effect on battery life. There are energy cost implications to run an on-line system, and deal with the heat generated.

EMEX Power
System benefits

Benefits for the installer

- EMEX Power installation is easy and trouble free.
- All interconnecting cables are provided
- Inter-cabinet trunking connects adjacent cabinets allowing battery cables to safely pass between battery and control cabinets without the need for an external cable tray. All cabinets are pre-drilled and rubber grommets are fitted for battery cables
- 60V DC per battery section and is maximum of 120V DC on AC/AC out put systems and 220V DC on AC/DC output systems.Larger systems utilise banks of batteries in parallel, each with its own circuit breaker in the control cabinet. There is no high DC voltage (some inverter UPS systems utilise battery voltages up to 600V DC)
- A large top entry gland plate provides enough room for all connection needs
- A comprehensive instruction manual is included showing all battery connections, full electrical schematic and commissioning instructions
- All cabinets are supplied with lifting eyes and have been certified for crane lifting, even when full. Alternatively, a 110mm plinth is fitted to all cabinets to allow fork-lift access
- No side ventilation is required. Cabinets can be positioned directly adjacent to walls and other cabinets. This reduces floor space requirements in the plant room
- Equipment is supplied 'Ready to install'. Simply connect the mains supply, battery and output circuits

Benefits for the end-user

- Emergi-Lite is the manufacturer of the system, providing a single source of technical support, spares, service and repair
- All equipment is designed and manufactured at our Leeds facility in the UK
- EMEX Power operates in a low power mode; the load is supplied via the incoming mains supply, with the system on standby for immediate start. This can provide substantial cost savings for the customer, as the inverter is not running continuously, generating waste heat that has an effect on battery life. Cooling fans only operate when on load and are high reliability types
- Minimal servicing is required on the EMEX power system, reducing maintenance costs. Greater savings on maintenance can be made if the system is integrated with an automatic testing system
- EMEX Power is built around five major components; master inverter module, CPS inverter module when installed, charger module, changeover contactor and display unit. Regardless of the number of systems on a site, spares holding will be similar for all systems. This greatly reduces spares cost
- Owing to the modular nature of the entire system, any component can be replaced in approximately 15 minutes, reducing down time should a fault occur
- 'Distributed System' modular concept – It could be possible that all the emergency lighting is lost owing to a single Central Power Supply System failure.
- The EMEX Power modular format, however, allows the user to design different sizes of system into the scheme, thus overcoming the potential risk. This 'distributed' concept, where several smaller units (5kVA /kW for example) replace a larger single 20kVA /kW unit, is a worthy and practicable consideration where circumstances suit the need for higher integrity is required.
- No fuses are used in the CPS system. All fault devices are miniature circuit breakers. This gives easy correction of overload tripping without the need to search for replacement fuses. An alarm is raised if ANY circuit breaker trips. This scheme can be extended to remote distribution boards if required
- Equipment is designed solely for emergency lighting, and is not modified as a secondary consideration. This gives the customer peace of mind that the equipment is suitable for this important task
- On request special systems can be supplied part populated for expansion later, reducing initial capital cost
- For EMEX Power AC/ACremote output MCB distribution panels are recommended. MCB Distribution panels are designed and manufactured to different product standards, enhancing a safer higher quality system solution. For EMEX power AC/DC Integral out going distribution is selected in conjunction with the MXC distribution panels.

EMEX Power
System selection

Design of centrally-powered emergency lighting systems is a complex process. For each system, it is imperative that sufficient battery power is made available to operate all emergency luminaires in the event of a mains failure.

Choosing the right system
Selecting a sufficiently powerful system at the outset is key to avoiding increased costs or revised installation requirements at a later point in the project.

Emergi-Lite 's Central Power Supply Department has substantial experience of designing Central Power Supply Systems and of providing technical advice on all aspects of centrally-powered emergency lighting schemes. Our team of engineers provides comprehensive support to parties involved in scheme design and is available to assess your specific requirements and prepare a relevant quotation as required.

To discuss your requirements in detail please contact our Central Power Supply Department at leeds.tech@gb.abb.com. To assist our engineers, consideration should be given to the following to help specify the level of CPS required.

Luminaire specification
To determine the size of CPS required, our engineers will need the following information about the luminaires intended for the emergency lighting scheme:

- Luminaire type & manufacturer (including luminaire part numbers if available)
- Quantity of luminaires in the scheme (per type)
- Specifically luminaire circuit wattage, VA consumption and inrush characteristics
- Luminaire power consumption for each luminaire type.

Note: particular attention should be given to low wattage luminaires not operating to unity power factor

Central power unit specification
Emergi-Lite EMEX Central Power Supply Systems are dual rated to allow selection of an appropriate system to either commercial or ICEL ratings. The ICEL rating would be the recommended usable rating to allow all aging, continuous overload and derating factors in line with EN 50171.

ICEL rated systems are de-rated by 20% from their commercial equivalent system.

Second consideration is to determine the size of central power unit required. From the luminaire data supplied, Emergi-Lite 's CPS department can advise the most appropriate size of CPS unit from our standard range of static inverters displayed on pages 96-98. Note, higher rated systems require multiple cabinets to be installed and therefore consideration should be given to the space these cabinets will require. Calculation of space requirements is straightforward as Emergi-Lite only supply one standard size of cabinet – as shown below.

Finally, consider the additional components required. Emergi-Lite offers two types of standard unit, EMEX Power or EMEX TS, plus a range of EMEX Test components for enhanced management and monitoring of the CPS.

EMEX Power range of static inverter systems
EMEX Power has been the standard-bearer for centrally powered emergency lighting systems for many years and continues to offer significant benefits to those considering a Central Power Supply System

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01

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01 EMEX Power designed for emergency lighting power supply

Quality assurance
Designed and manufactured in the UK, EMEX Power combines cutting edge design to quality components and assured build quality. This results in products providing both high performance and reliability. Constant product development by dedicated in-house engineers ensures Emergi-Lite Central Power Supply Systems will always meet even the most stringent demands.

The cabinet
The cabinet has been engineered to allow the housing of the inverter and charger modules, battery or a combination of both. All connections are in the top control section of the cabinet. A top entry gland plate is provided for ease of installation, as is inter-cabinet steel trunking to allow safe connection of battery cables between control and battery cabinets.

All cabinets have an integral lifting frame and are supplied with lifting eye bolts fitted to allow crane lifting. Cabinets also have an integrated plinth for fork-lift or pallet truck.

Entry to equipment is via the front door only, allowing the cabinet to be located directly against wall at sides and rear ie can be located in corner of room. Cubicle spacers are provided to prevent equipment located direct to wall with no ventilation space (75mm required at rear).

System modules
EMEX Power utilises standard modules to give reliable operation, reduces the need to carry extensive and costly spares and gives a ‘low mean’ time to repair.

Both the inverter and the charger utilise this modular approach, allowing a much higher power density than similar non-modular systems. The number of modules fitted, together with the appropriate sized battery, determines the rating of the system.

All modules connect to a common control bus via IDC connectors. Main connections to modules are via five front panel terminals giving quick and easy access to terminations, allowing a module to be changed in a matter of minutes.

Each module has two recessed handles to aid lifting. No side or rear access is required.

EMEX Technical reference
Best practice

Testing
BS 5266 Part 8 (EN 50172) and BS EN 62034 specify the statutory requirements for testing the entire emergency lighting installation, and a copy of this standard should be obtained.

It should be noted that, immediately after a test, the battery might not have sufficient capacity to provide emergency lighting cover. For this reason all tests should be performed, where possible, at a time of minimum risk.

Record keeping
It is a requirement of BS 5266 Part 8 (EN 50172) that accurate records of testing are kept.

General maintenance
Check the system has adequate ventilation. Louvres in the door, and grilles in the rear panel must not be obstructed. Door access must not be obstructed. The operating environment should be free from dust, which can accumulate inside modules.

Charger maintenance
The charger output voltage should be tested on a monthly basis by a competent engineer to ensure it is set correctly. Charger voltage may be affected by the ambient temperature in the battery compartment. Any variation in charger voltage should be noted, and, if in doubt, contact Emergi-Lite Service Department for advice and assistance. Equipment should be maintained dust free and clean to prevent premature failure.

Battery and cells maintenance and storage
Battery storage, maintenance and handling shall be fully carried out in line with the battery manufacturers instructions. The battery should be visually inspected each month by a competent engineer to check that there is no evidence of damaged or leaking cells. Damaged or leaking cells require replacement. Please contact Emergi-Lite service department for advice and replacements. Individual cell voltages should be recorded on the record sheets provided in the manual. A digital DC voltmeter is required for this purpose. Only record cell voltages when the battery is fully charged, which takes a maximum of 24 hrs after a test.

Cell voltages should remain constant over the life of the battery. Cells showing a voltage differing from previous readings require investigation (please note charger is temperature compensated and cell voltages will vary with ambient room temperature changes). Do not at any time attempt to remove or replace cells or re-commission the system. Please contact Emergi-Lite service department for advice and assistance.Temperature extremes severely affect battery life. Always check and record the ambient temperature in the battery room. The optimum temperature is 20°C. Always consult the battery manufacturers literature for further guidance.

Handling
Most cells are heavy and difficult to handle. Care should be taken and the correct technique employed when using manual or other lifting methods.

Explosion hazard
Recombination (sealed) cells, when operated correctly, have negligible rates of gas evolution.

Repair/disposal
No attempt should be made to repair any cells, they should be treated as disposable when they have outlived their use. Batteries must be disposed of in accordance with current waste disposal and pollution legislation. It is recommended that the following authorities are contacted before any attempt is made to dispose of cells; Environment Agency Local Office, Local Authority Environmental Health or Waste Handling Department.

Our service department is available to provide advice regarding disposal of batteries, replacement of batteries and re-commissioning of Central Power Supply Systems. Please contact us for assistance.

Warranty
Failure to observe above guidance may invalidate the ABB Emergi-Lite warranty. Terms and conditions of warranty apply which are available on request.

Appendix

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LTCCPW1LA11	7TCA091140R0538	42
LTCLU1LB1E	7TCA091140R0556	31
LTCRRB1LS1X	7TCA091140R0539	46,47
LTCVVE1LS1X	7TCA091140R0540	48
LTCWWA1LS1	7TCA091140R0541	50
LTCWWA1LS11	7TCA091140R0542	50
LTCWWA1LS1X	7TCA091140R0543	49
LTCXXW1LS1	7TCA091140R0544	45
LTCXXW1LS11	7TCA091140R0545	45
LU1LB1E	7TCA091130R0582	31
OH1L261HF	7TCA091130R0243	28
OH1L261LTC	7TCA091090R0036	28
OH3L261	7TCA091160R0198	28
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Notes

Additional information
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