



5eş A

creating value **for a bright future**

EMERGENCY LIGHTING
PRODUCT CATALOGUE

Whenever
you need light,

5eş A

is with you

5eş A

www.bes-a.com

Beş A, one of the leading enterprises engaged in the design and manufacturing in the lighting electronics in Turkey, was founded in 1995. Beş A started production with electronic ballasts and expanded its product range with emergency lighting kits, emergency exit luminaires and emergency lighting fixtures in 1999, considering the needs of our country. Having completed many innovative projects with its 25 years of knowledge and experience, Beş A responds to the needs of the emergency lighting products of the sector with its wide product range of up to 500 products in nearly 50 product groups. With its expert staff of 50 people, it operates in a 2500 m2 closed area in Beykoz.

Beş A always aims to produce new technologies, carries out its mechanical and electronic designs in its own TÜV Rheinland certified R & D laboratory.

Our company attaches importance to public, industry and university collaborations in product design and development. Moreover, develops new products related to emergency lighting kit and emergency exit luminaires with embedded software and original circuit design with the support of TUBITAK.

Our company, which takes a significant part of its power from the principle of “sustainable development” and its employees working in line of this principle, aims **to generate value for a bright future**; and serves with the vision of **being the leader in the regions where we operate with our products and services**, and with the mission of **making R & D and production in emergency lighting electronics**.

Its **strategic objectives** are to build high-performing teams; to develop sustainable business partnerships with the most effective and competent institutions, to produce high quality / price performance products in accordance with standards by using cutting-edge technology, to provide customer-oriented solutions, to differentiate in competition in domestic and international markets, to make zero defect and traceable production, to continuously improve design and production methods; its values are, being ethical, respectful and friendly with a team spirit, giving importance to ethical values, being sensitive to the environment, giving importance to employee and human health and giving importance to education and continuous development culture.

Our product’s quality is registered by international certification bodies such as TSE, TÜV Rheinland and BSI. Our company has also ensured quality management systems with ISO 9001 standards.

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EMERGENCY LIGHTING SOLUTIONS

OVERVIEW

EMERGENCY LIGHTING UNITS

An emergency lighting unit is an electronic circuit that provides adequate lighting to the surroundings in the case of a power failure, by the help of the battery it has, provided that it is connected to light sources such as LED, fluorescent and halogen used for general lighting. An emergency lighting unit must be fed from a non-switched phase. It tracks power outage from its own feed ends. In the case of a power failure, it prevents panic and provides the necessary lighting for the fastest evacuation possible from the surroundings.

Beş A provides up to standard solutions for all types of light sources in the domain of battery operated emergency lighting units.

Emergency Lighting Unit - LED

An Emergency Lighting Unit - LED is an electronic circuit that prompts LED lamps to illuminate the surroundings in the case of an emergency. The usage of LED based lighting systems increase rapidly day by day. In this segment Beş A provides tailored solutions for its customers with its products LED fluorescent, LED downlight, LED spot, LED panels and LED sticks.

**Emergency Lighting Unit - Fluorescent Lamp**

An Emergency Lighting Unit - Fluorescent Lamp is an electronic circuit that prompts fluorescent lamps to illuminate the surroundings in the case of an emergency. Beş A offers emergency lighting unit solutions complying with all power levels for 4-pin T8, T5, PLL and PLC fluorescent lamps.

**Emergency Lighting Unit - Halogen Lamp**

Emergency Lighting Unit - Halogen Lamp is an electronic circuit that prompts 12 V halogen lamps to illuminate the surroundings in the case of an emergency.



THE EMERGENCY LUMEN FACTOR (BLF, EBLF)

The emergency lumen factor or the emergency ballast lumen factor is the ratio of the light level transferred to the light sources such as LED, fluorescent and halogen by the emergency lighting unit in the case of an emergency to the light level of the light source under normal operation. It is stated as a percentage (%) in catalogues.

When emergency lighting units produced for LED, fluorescent or certain low voltage halogen lamps become active, they switch on the lamp not with its normal illumination capacity but with the emergency illumination level, which is lower. Since the purpose is to provide lighting at the illumination level set by the standards that allows the evacuation of the building, the lamp must not be switched on at full power. When designing with emergency lighting units in the emergency lighting system, if the emergency lumen factor is high, then this has an effect to reduce the number of compulsory devices to be used.

STANDALONE EMERGENCY LIGHTING LUMINAIRE

A standalone emergency lighting luminaire is a lighting luminaire with own battery, charge circuit, power voltage controller and lamp driver circuit. It can be obtained by installing an emergency lighting unit in a regular lighting luminaire. This method is obligatory in first and second-degree earthquake zones.

The light source can be a fluorescent, LED, compact fluorescent or low voltage tungsten halogen lamp. In the systems where standalone lighting luminaires are used, the installation is quick, the cable installation cost is low and increasing the capacity is easy. They are compatible with architectural variations.

LOCATIONS WHERE THE USE OF AN EMERGENCY LIGHTING SYSTEM IS COMPULSORY

- Gathering points
- All escape and exit routes
- Elevators and escalators
- Hospitals and nursing homes
- Schools and other buildings for education
- Hotels and dormitories
- Indoors car parks
- Gas stations
- All buildings with a occupant load of 200 or more
- Buildings with 50 or more occupants under the ground level
- Buildings without windows
- Tall buildings
- Areas where fire alarm buttons and fire cabinets are located
- Areas where first aid and safety kits are located
- Workshops and laboratories where machinery in motion and chemicals that pose high risk are located
- Electricity distribution and generator rooms
- Central battery unit rooms

EMLUS-SLED



Compatible With

- LED Downlight
- COB LED
- LED Strip
- LED Stick
- Power LED
- LED Spot Lamp
- Panel LED



EMLUS-SLED is suitable for the luminaire with external LED driver that has 3 ... 200 VDC output voltage. It feeds the LEDs with 10 ... 63 mA output current in the case of emergency.

EMLUS-LED



Compatible With

- LED Downlight
- COB LED
- LED Strip
- LED Stick
- Power LED
- LED Spot Lamp
- Panel LED



EMLUS-LED is suitable for the luminaire with external LED driver that has 3 ... 150 VDC output voltage. It feeds the LEDs with 10 ... 63 mA output current in the case of emergency.

EMLUS-12V/24V



Compatible With

- LED Strip
- LED Stick
- LED Spot Lamp



EMLUS-12/24V is suitable for LED strip applications up to 12V-50W / 24V-100W. It provides the same light as in operation on main power in the case of emergency.

EMLUS-220



Compatible With

- LED Spot Lamp
- LED Tube
- LED Lamba



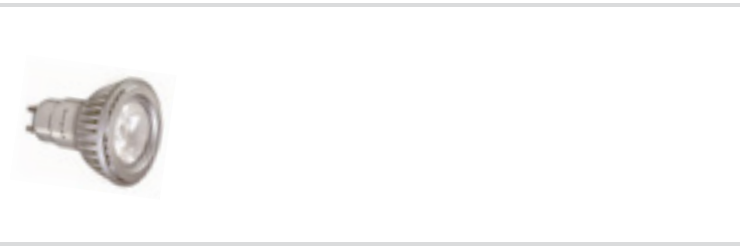
EMLUS-220 is suitable for LED spot, LED tube, panel luminaires, that operates on 220 V main power. It is manufactured for the lamps and luminaires with up to 30 W output power. It provides the same light as in operation on main power in the case of emergency.

EMLUS-220 (SPOT)



Compatible With

- LED Spot Lamp



EMLUS-220 (SPOT) is suitable for 3 W and 5 W LED spot lamps that operate on 220 V. It provides the same light as in operation on main power in the case of emergency.

EMLUS-FLS



Compatible With

- T5 Circular Fluorescent Lamp
- T5 Fluorescent Lamp
- T8 Fluorescent Lamp
- PLL Compact Fluorescent Lamp
- PLC Compact Fluorescent Lamp



EMLUS-FLS is suitable for 4-pin T5-T8-PLL-PLC fluorescent lamps. It is compatible with electronic and mechanic ballasts.

EMLUS-FLT



Compatible With

- T5 Circular Fluorescent Lamp
- T5 Fluorescent Lamp
- T8 Fluorescent Lamp
- PLL Compact Fluorescent Lamp
- PLC Compact Fluorescent Lamp



EMLUS-FLT is suitable for 4-pin T5-T8-PLL-PLC fluorescent lamps. It is compatible with electronic and mechanic ballasts.

EMLUS-1250



Compatible With

- Spot Halogen Lamp
- G9 Halogen Lamp
- AR 111 Halogen Lamp



EMLUS-1250 is suitable for 50 W power values that operate on 12 V. It provides the same light as in operation on main power in the case of emergency.

EMERGENCY EXIT LUMINAIRES

For the people to reach the exits easily during emergencies, emergency exits luminaires should be installed in buildings. It is compulsory to install emergency exit signs in order to show people in the building the locations of the exits to be used for evacuation and the planned exit routes from every point in the building in the case of an emergency.

These luminaires, which can be one-sided or double-sided, have graphic signs on them that provide orientation. The luminaires can be installed on the wall, on the ceiling or on the suspended ceiling. They can also be hung down by using components such as hangers, chains and slings.



OPERATION TYPES OF EMERGENCY EXIT LUMINAIRES

Non-Maintained Model

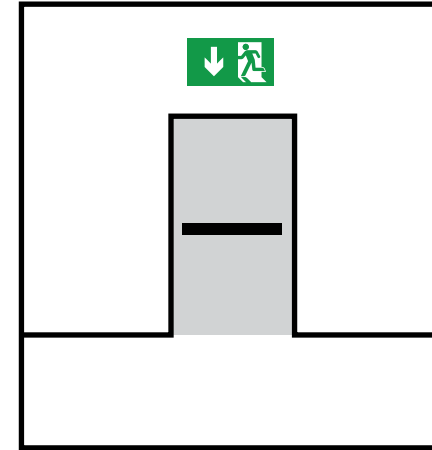
The lamp does not provide light when the main power is at its normal value. In the case of a main power failure or a main power interruption, the lamp starts to provide light by means of the battery and the electronic circuit located inside the luminaire.

Maintained Model

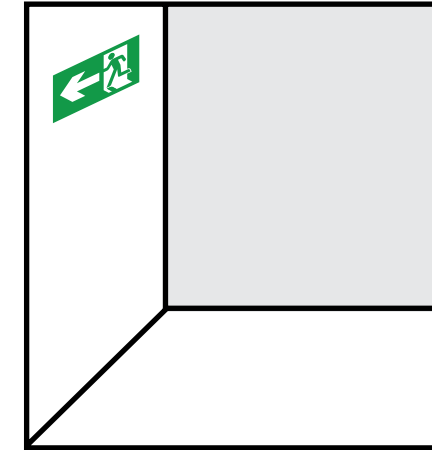
The lamp provides light when the mains voltage is at its normal value. In the case of a power failure or a power interruption, the lamp continues to provide light by means of the battery and the electronic circuit located inside the luminaire.

THE INSTALLATION OF THE EMERGENCY EXIT LUMINAIRES

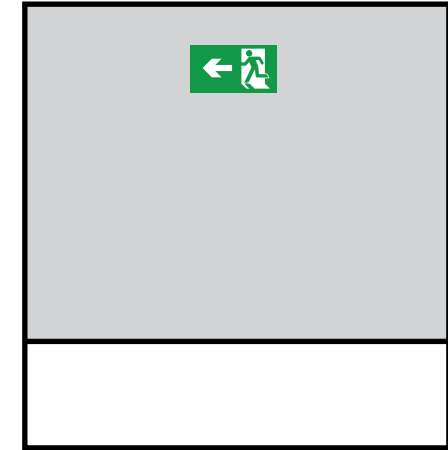
The details on the installation of the emergency exit luminaires are explained in EN 50172 and EN 1838 standards.



At all exits to be used in the case of an emergency



All points that dictate a change in direction

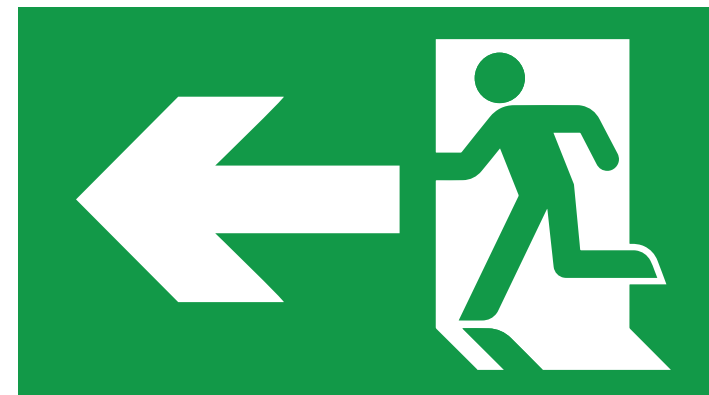


Throughout the corridor

THE SIGN (PICTOGRAM) FORMATS OF THE EMERGENCY EXIT LUMINAIRES

It is very important that the escape route is marked clearly in order to provide a quick and safe evacuation in areas and buildings. The effect of an exit sign depends on the size, the color, the position and the high visibility of the sign. The European standards approve and support the use of pictograms that use white drawings on a green background.

The lighting level ratios of green and white colors with respect to each other are defined in EN 1838 standards. The color rendering index of the lamp must be at least 40 for the safety sign colors to be perceived. On the escape route, apart from the exit signs, there must not be any illuminated signs or objects that may cause hesitation or confusion regarding the escape direction.



- Minimum lighting intensity = 2cd/m^2
- The lighting intensity ratio between the most and the least illuminated parts of the areas with the same color must not be greater than 10:1.
- The lighting intensity ratio between the white and green area must not be less than 5:1 and more than 15:1.
- The green background should constitute at least 50% of the area of the sign.

THE MAXIMUM VIEWING DISTANCE OF THE EMERGENCY EXIT LUMINAIRES

It is very important to assure that the signs that show the escape routes are visible from everywhere. For this purpose, EN 1838 standard states that the maximum viewing distance should be determined in accordance with the height of the pictogram. The standard provides the formula below:

$$d = s \times h$$

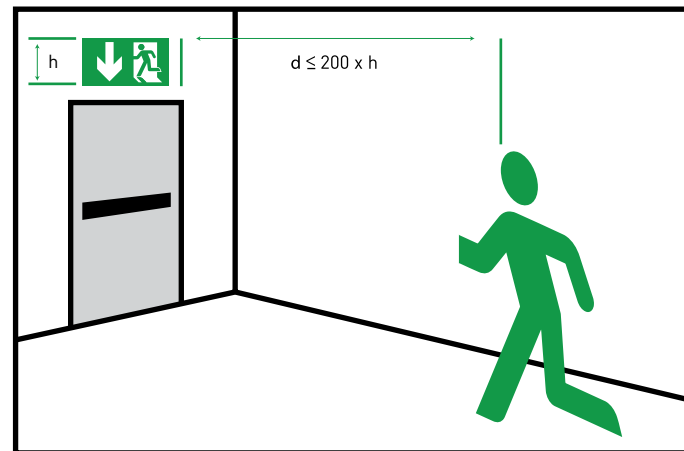
d: Maximum viewing distance

h: Pictogram's height

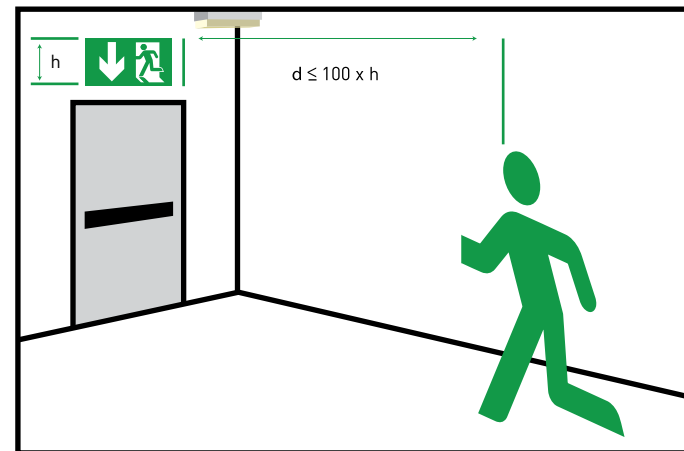
s= 100, for signs illuminated from outside

s= 200, for signs illuminated from within

For example, for an emergency exit luminaire located at the end of a 20 meter corridor the height of the sign (pictogram) must be at least 10 cm if it is illuminated from within and at least 20 cm if it is illuminated from outside.



For the signs illuminated from within it has to be 200 times of the height of the sign



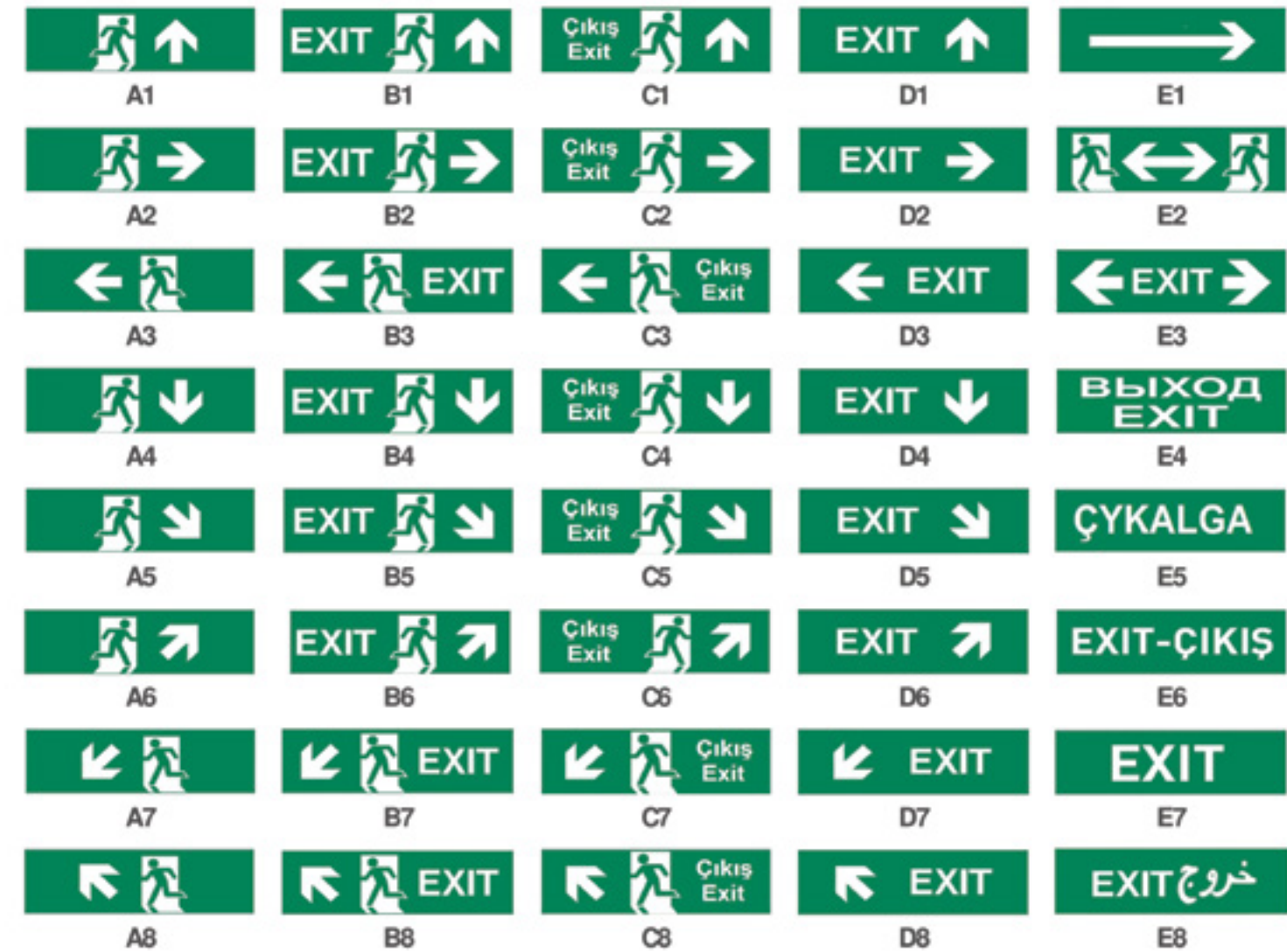
For the signs illuminated from outside it has to be 100 times of the height of the sign

LIGHTING DURATION OF THE EMERGENCY EXIT LUMINAIRES

Emergency lighting must be provided for at least 60 minutes in the case of an interruption in the normal lighting. In the buildings with a occupants load of 200 or more, emergency lighting must be provided for at least 120 minutes.

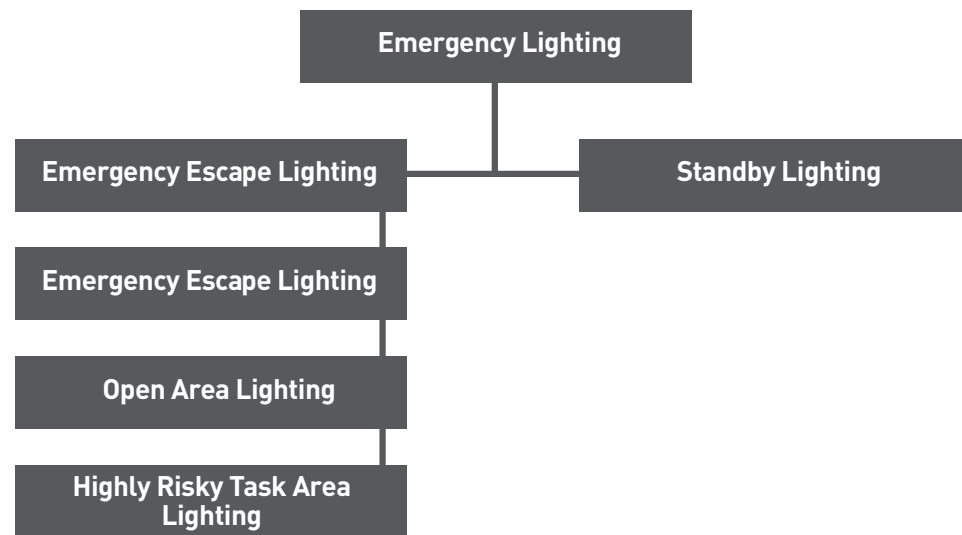
PICTOGRAM ALTERNATIVES FOR EMERGENCY EXIT LUMINAIRES

The details regarding the icons that are used in the emergency exit luminaires are listed in the standards EN ISO 7010, ISO 3864-1 and ISO 16069.



EMERGENCY LIGHTING SYSTEM

Emergency lighting systems are the systems that become automatically active and provide adequate lighting when the main power or a similar external electric supply is interrupted due to a breakdown, when the power in a building is cut for safety reasons in the case of a fire or an earthquake and when normal lighting is interrupted after a circuit breaker or a fuse is switched on.



Standby Lighting

Standby lighting is the emergency lighting type envisaged for the continuity of the current conditions and the operations before the interruption of normal lighting. This lighting type is not included in emergency escape scenarios.

Emergency Escape Lighting

Emergency escape lighting is the emergency lighting that provides the necessary lighting for the safety of the people who are evacuating a building or an area in the case of an emergency, or who are trying to finalize a potentially hazardous action before evacuation. There are 3 types of emergency escape lighting.

A- Escape Route Lighting

Escape route lighting is the emergency lighting type that assists in the safe evacuation of the people from the building by illuminating the escape routes in the case of an emergency.

B- Open Area Lighting

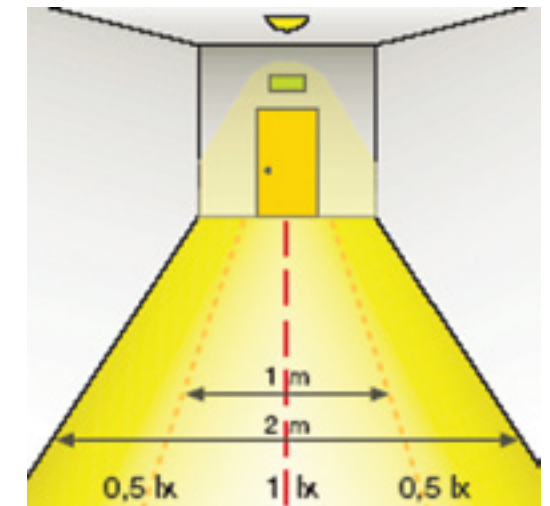
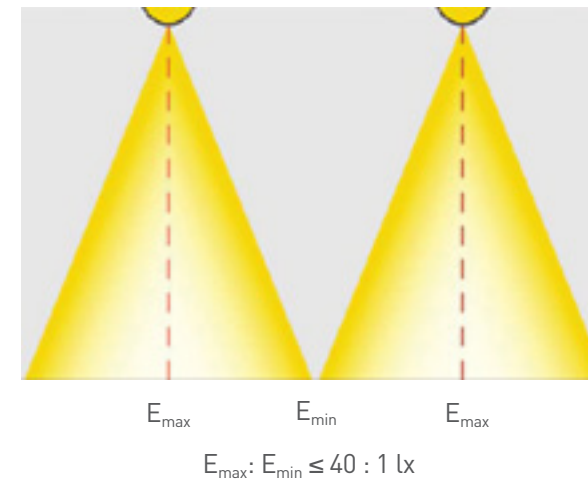
Open area lighting is the lighting type envisaged for areas larger than 60m² or for gathering points and it provides access to the predetermined escape routes in the case of an emergency. It is also known as anti-panic lighting.

C- Highly Risky Task Area Lighting

Highly risky task area lighting is the lighting that is manufactured for the safety of the people who are located in areas where possibly hazardous processes or conditions may occur in the case of emergency. In certain systems, it provides the users with opportunities for appropriate deactivation

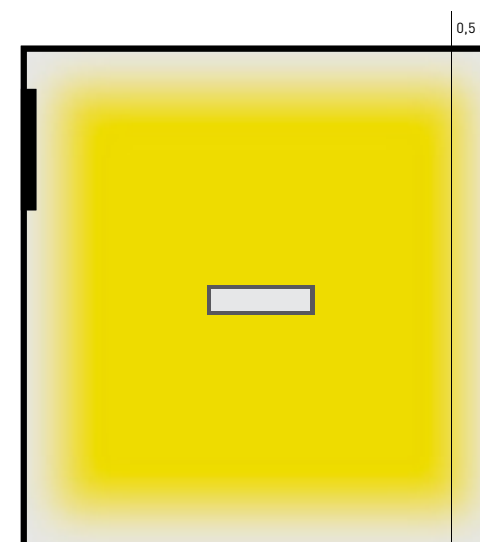
ESCAPE ROUTE LIGHTING

The emergency lighting level has to be set at 1 lux at least at any point of the central line of the escape route. At the end of the emergency operating period, the lighting level should not fall below the level of 0.5 lux at any point. The lighting level ratio between the points with the highest and lowest lighting levels must not be more than 1/40. 50% of the required level of the emergency lighting must be provided within 5 seconds and full capacity must be reached within 60 seconds. Emergency lighting for the purpose of evacuation must be on at least for one hour.



OPEN AREA (ANTI - PANIC) LIGHTING

According to EN 1838 and EN 60598-2-22 standards, areas and gathering points larger than 60m² are classified as open areas. The magnitude of illumination above the floor level at open areas must be at least 0.5 lux. The edges and the area surrounding the edges within 0.5 meter are not included in this scope. The ratio of the magnitude of illumination between the most and the least illuminated points in open areas must not be more than 40:1.



Minimum lighting level

$E_{min} = 0,5 \text{ lx}$

Minimum-maximum lighting level ratio

$E_{max} : E_{min} \leq 40 : 1 \text{ lx}$

Color rendering index

$CRI \geq 40$

Period specified for emergency escape

1 saat

HIGHLY RISKY TASK AREA LIGHTING

Energy distribution, production and industrial process control rooms, engine-generator control rooms, locations that have machines in motion, elevators and conveyors that do not immediately stop when the power is cut are classified as highly risky and hazardous areas. Emergency lighting level in areas with a high risk of a dangerous situation must not be less than 10% of the normal lighting level.

Minimum lighting level

$$E_{\min} = 15 \text{ lx}$$

Minimum-maximum lighting level ratio

$$E_{\max} : E_{\min} \leq 10 : 1 \text{ lx}$$

Color rendering index

$$\text{CRI} \geq 40$$

Period specified for emergency escape

As long as the risk exists

EMERGENCY LIGHTING LUMINAIRES

Escape Route Lighting Luminaires

According to the standards, they must be installed at a height between 2 and 4.5 meters. They can be directly installed on the walls, ceilings or mounted ceilings or they can be hung down by using components such as hangers, chains and slings.



Open Area Lighting Luminaires

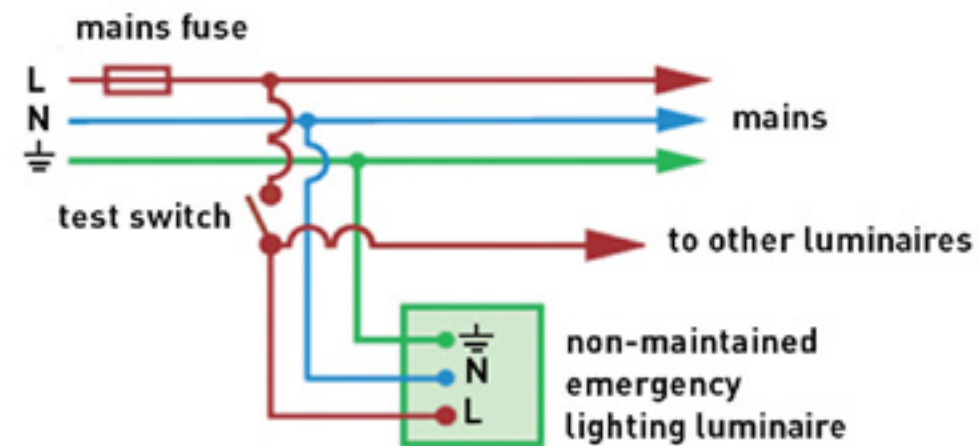
Open area emergency lighting luminaires have lamps with moving head. These lamps can be projected towards the desired direction. They can be used in large areas such as factories and garages and in surroundings that require a high level of lighting.



OPERATING MODES OF EMERGENCY LIGHTING LUMINAIRES

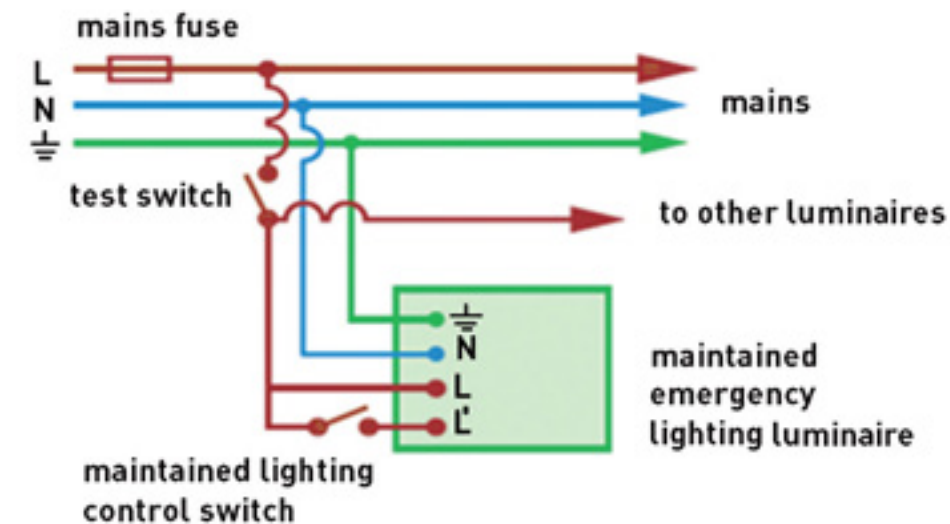
Non-Maintained Mode

The lamp does not provide light when the main power is at its normal value. It starts providing light in the case of a main power failure. The lamp is switched on by means of the battery inside the luminaire in the case of a failure.



Maintained mode

In this type of luminaires, the lamp provides light when the mains voltage is at its normal value. In the case of a main power failure, it continues to provide light by means of the battery in the luminaire. In some versions, the lamp can be switched off when desired by installing an external switch.



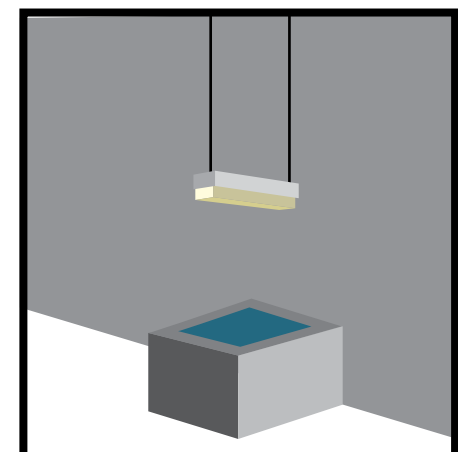
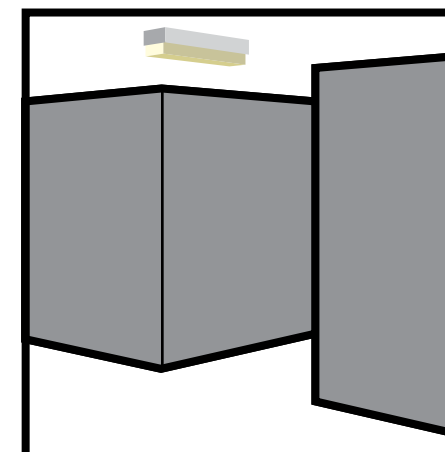
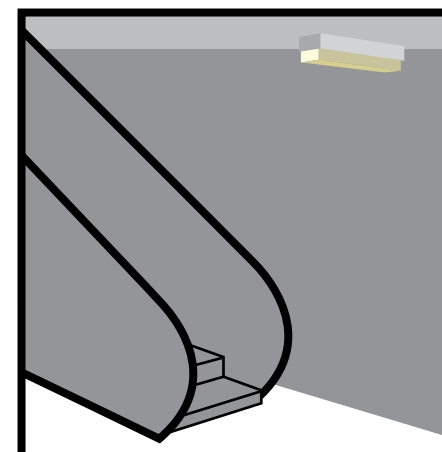
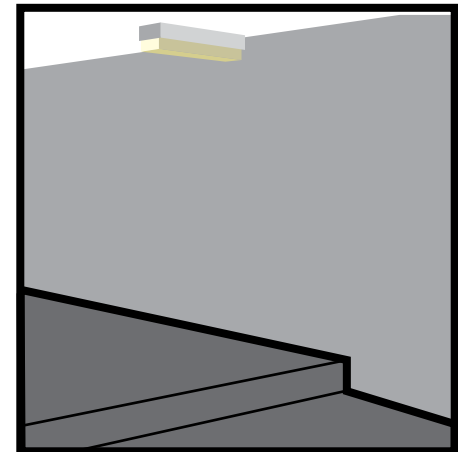
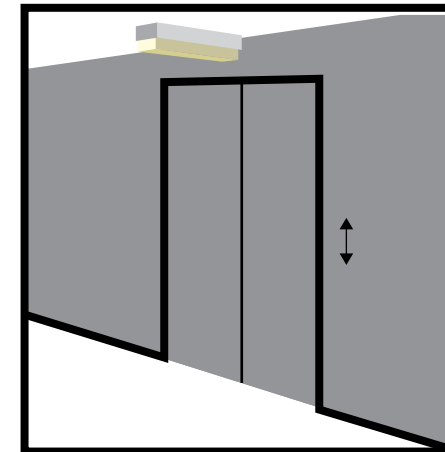
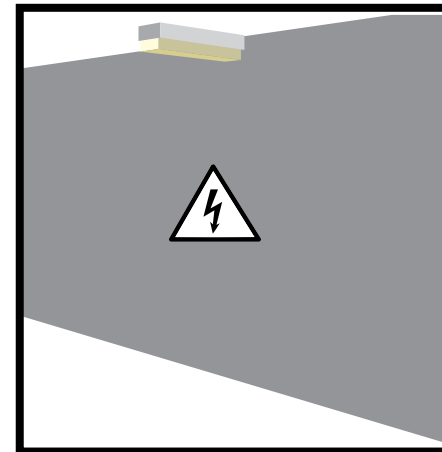
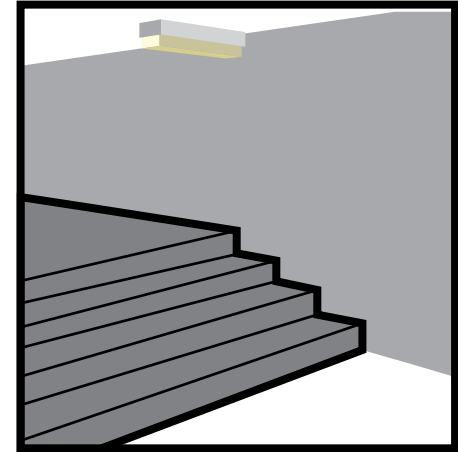
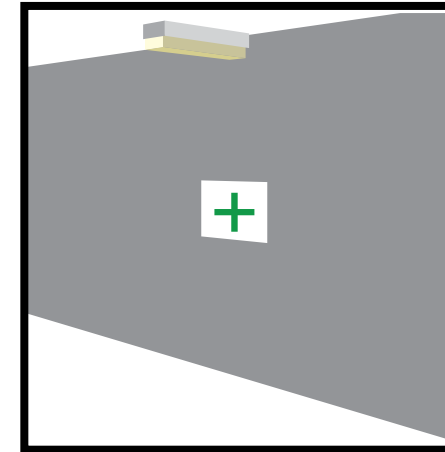
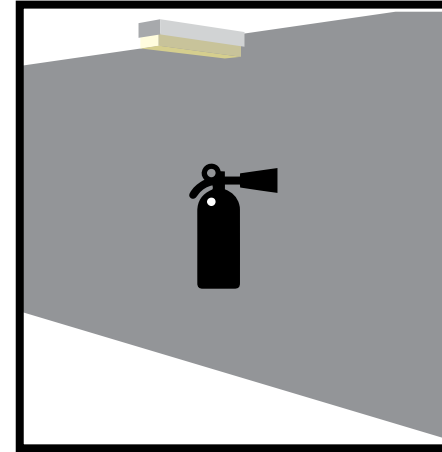
LOCATIONS WHERE THE USE OF AN EMERGENCY LIGHTING SYSTEM IS COMPULSORY

The use of emergency lighting is compulsory in the following locations

- All escape routes,
- Locations which are used for gathering,
- Elevators and escalators,
- Locations where ground level changes and the intersections of corridors,
- Workshops and laboratories where machinery in motion and chemicals that pose high risk are located,
- Electricity distribution and generator rooms,
- Central battery unit rooms,
- Gas stations,
- Indoors car parks,
- Areas where first aid and safety kits are located,
- Areas where fire alarm buttons and fire cabinets are located.

The use of emergency lighting is compulsory in the following buildings

- Hospitals, nursing homes and buildings for education,
- All buildings with a occupants load of 200 or more,
- Buildings with 50 or more occupants under the ground level,
- Buildings without windows,
- Hotels, motels and dormitories,
- Highly hazardous locations,
- Tall buildings.





BATTERY USER'S MANUAL

- Emergency lighting units must be operated on a non-switched phase with the voltage stated on them. Power must not be interrupted except for maintenance and testing purposes. Continuously turning off and on the line which the device is connected wears the fluorescent lamps and battery.
- Emergency lighting units must not be operated in environments where the temperature is not within the operating environment temperature threshold stated on the unit for long periods. If they are, this may cause damage in the device and the battery.
- Emergency lighting units must be operated in environments that comply with the IP Protection Class conditions that are stated on the units. Operating the device in environments other than those stated may cause damage in the device and the battery.
- The initial charging time of the battery is 48 hours for 1-hour capacity products and 96 hours for 3-hour capacity products. For the next charges, 24 hours for 1-hour capacity products and 48 hours for 3-hour capacity products are enough for the battery to be fully charged.
- When installing emergency lighting units, the battery must be connected to the emergency unit circuit when the luminaire is to be used. In cases where it takes time for the luminaire to be operative after the installation, the battery must be removed from its socket after the necessary controls.
- The emergency lighting units and emergency exit luminaires should not be stored inactive for too long since their batteries are already mounted. Batteries that remain inactive in the socket for long periods before the actual energy supply may irreversibly be damaged.
- A previously charged battery loses 15% of its capacity per month when it is not used. Thus, previously charged batteries must not remain inactive for more than 3 months. Uncharged batteries can remain inactive for 2 years in favorable storage conditions. It is not suggested to store the batteries under temperatures higher than 40°C.
- Batteries that remained inactive for a long time may require around two to ten charging cycles to reach full capacity.
- In emergency lighting unit installations, the unswitched line must be disconnected once in every six months and the battery capacities must be tested. Before this test is conducted, it must be checked that there were no interruptions in the line for 24 hours for 1-hour capacity products and 48 hours for 3-hour capacity products and that the battery is sufficiently charged. Once this is checked, the power to the device must be cut and the "Emergency Lighting Duration" of the lamps must be controlled. It must be confirmed by the operator conducting the test that the lamps provide light for duration time that declared by producer.
The operator must inform the authorities that the batteries of the luminaires that cannot deliver the required performance have completed their life cycles.
- When the battery is to be changed, first the power to the device must be cut and then the old battery must be replaced with an equivalent battery. When replacing the battery, the use of lower than required capacity batteries may cause the device not to operate whereas the use of higher than required capacity batteries may cause the device to break down.
- Out of use batteries must not be thrown away with regular waste. They must be sent to waste collection centers or to the manufacturer in order to be sent to these centers.

TECHNOLOGY OF THE BATTERY	BATTERY DESIGNATION	CAPACITY	VOLTAGE	MAXIMUM CHARGE CURRENT	MINIMUM CHARGE CURRENT	CHARGE VOLTAGE LIMIT	MAXIMUM DISCHARGE CURRENT	MINIMUM DISCHARGE CURRENT	DISCHARGE VOLTAGE LIMIT	TEMPERATURE RATING	USAGE INFORMATION
Ni-Cd	D, KRMU 33/60	4000mAh	1,2V per cell	200mA permanent charge	160mA permanent charge	1.55V per cell	2800mA - for 1 h discharge	1000mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 1000mA for 10 to 20 minutes.
Ni-Cd	C, KRMU 26/50	3000mAh	1,2V per cell	150mA permanent charge	120mA permanent charge	1.55V per cell	2100mA - for 1 h discharge	750mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 750mA for 10 to 20 minutes.
Ni-Cd	C, KRMU 26/50	2500mAh	1,2V per cell	125mA permanent charge	100mA permanent charge	1.55V per cell	1750mA for 1 h discharge	625mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 600mA for 10 to 20 minutes.
Ni-Cd	SC, KRMU 23/43	1800mAh	1,2V per cell	90mA permanent charge	70mA permanent charge	1.55V per cell	1250mA - for 1 h discharge	450mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 450mA for 10 to 20 minutes.
Ni-Cd	SC, KRMU 23/43	1600mAh	1,2V per cell	80mA permanent charge	65mA permanent charge	1.55V per cell	1150mA - for 1 h discharge	400mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 400mA for 10 to 20 minutes.
Ni-Cd	SC, KRMU 23/43	1200mAh	1,2V per cell	60mA permanent charge	48mA permanent charge	1.55V per cell	840mA - for 1 h discharge	300mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 250mA for 10 to 20 minutes.
Ni-Cd	AA, KRMU 15/51	900mAh	1,2V per cell	45mA permanent charge	35mA permanent charge	1.55V per cell	650mA - for 1 h discharge	220mA - for 3 h discharge	1V per cell	Recommended 0 - 55 °C	Discharge every 6 months. Discharge 220mA for 10 to 20 minutes.



WIRELESS EMERGENCY LIGHTING MONITORING SYSTEM

Regular system controls must be done in order to ensure that any emergency lighting system is in a completely working condition. Building managements must provide routine tests of emergency lighting , keep their records and show them to the relevant authorities when necessary.

Emergency lighting monitoring systems monitor connected emergency lighting products and systems continuously, make automated periodic tests and report. Thus, information about working condition of the products in emergency cases such as earthquake, fire, etc. is sent to building management.



WELCO SOFTWARE GRAPHIC INTERFACE WORKING ON CLOUD

- Easy to control via single software
- Remote testing with a single click
- Ability to display and monitor areas on map
- Ability to distinguish areas as buildings and floors
- Monitoring Emergency Lighting on floor plans
- Monitoring all areas and components in the same interface as a tree branch structure
- Displaying battery, test, lamp etc. conditions of emergency lighting with user friendly icons
- Defining timing of function and period tests and carrying out tests automatically on time
- Generating test reports with date and time stamps
- Taking detailed test reports as excel files



WIRELESS MONITORING SYSTEM-WELCO

Welco is our wireless system solution that allows you to monitor the status of our emergency lighting products via the internet

Each emergency lighting includes a wireless communication module with Wi-Fi technology that proved itself in wireless communication. It is enough just to connect emergency lighting to 230V city mains.

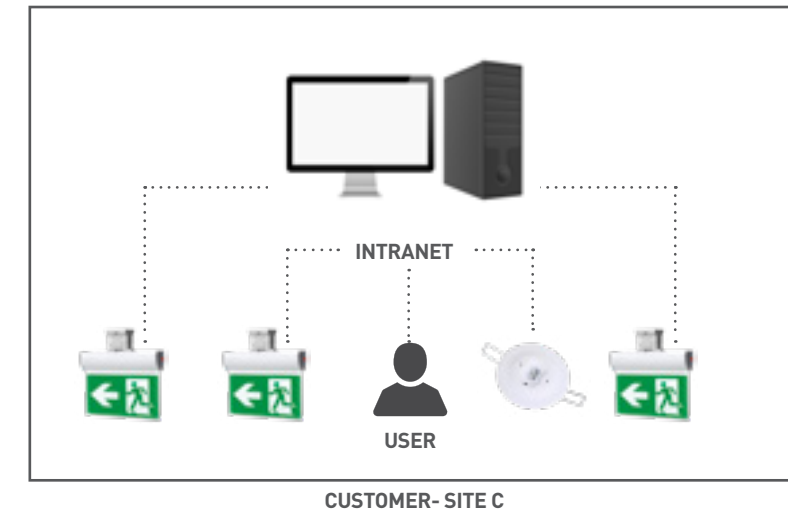
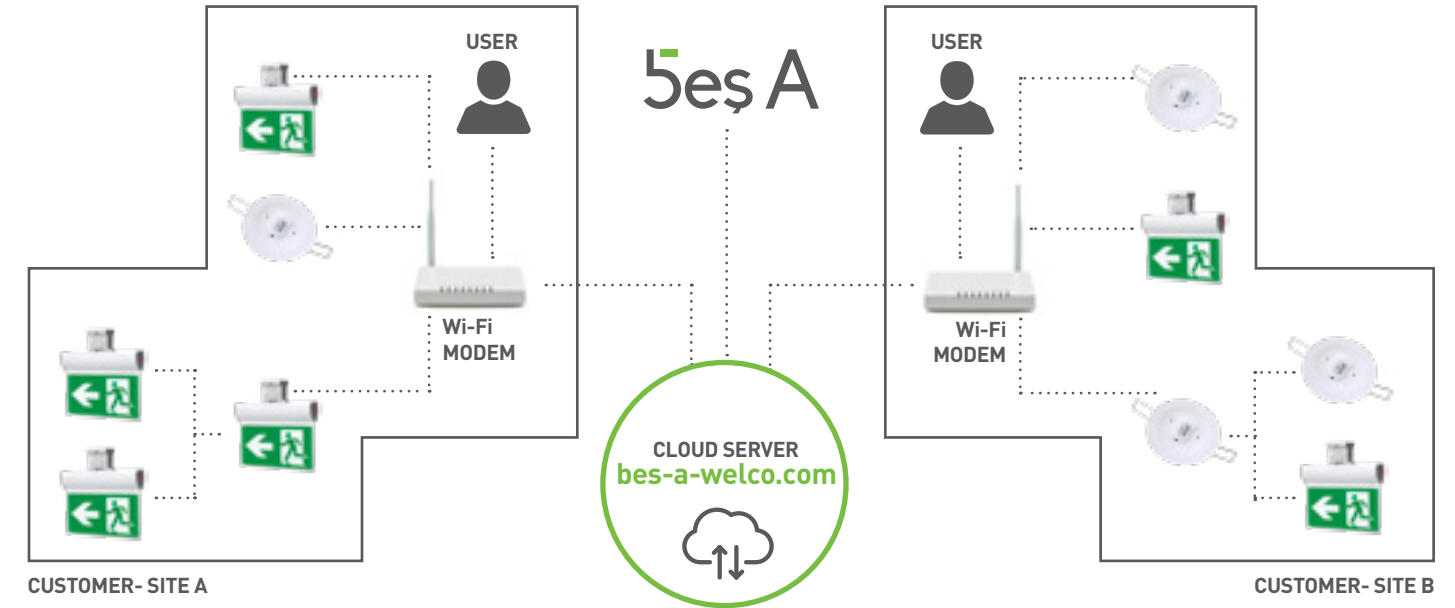
- Wireless , Wi-Fi (802.11 b/g/n) and cloud based.
- It does not need extra cost and workmanship for cabling.
- It can be tested and reported from everywhere of the world on demanded time.
- Efficient use of resources is provided by evaluating the existing wi-fi substructure.
- Periodic function and duration tests of products are carried out on a routine basis.
- It is possible to provide test and reporting as services when needed.



WHY CLOUD TECHNOLOGY?

With WELCO cloud monitoring system developed by Beş A, you can access many information such as failure status, test history of your emergency lights, from anywhere you have internet connection by entering your user name and password via a web browser with your computer, tablet or smartphone.

- Test status and history of emergency lighting devices can be accessed over internet without physically visiting any panel.
- Products can be monitored and managed from a single point, even if they are at different geographical locations.
- Alerts, such as test fails, are automatically sent to the e-mail address you have defined.
- The real-time status of the products is monitored in groups or individually.
- Test reports can be downloaded in excel format, where products are easily filtered according to the failure types or location based, and shared with the technical service.



EMERGENCY LIGHTING UNITS - LED EMLUS-SLED / WELCO



- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Electromagnetic Interference (EMI) filter
- Emergency lighting function in case of low-voltage
- Constant output power
- Operation range of 9 ... 70 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Status display with two color LEDs
- Optional - Test switch
- Optional - 110 VAC compatibility
- Polycarbonate case
- Simple connectable terminal block
- Optional - LiFePO4 or Ni-MH battery application



In accordance with EN 61347-1, EN 61347-2-7, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	25 ... 300 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	9 ... 70 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	70 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%4 ... %26		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-SLED/WELCO-2W/3H	25 ... 190 mA	9 ... 70 VDC	±%5	3 ... 23 LED	1,75 W
EMLUS-SLED/WELCO-3W/1H	40 ... 300 mA	9 ... 70 VDC	±%5	3 ... 23 LED	2,75 W
EMLUS-SLED/WELCO-3W/3H	40 ... 300 mA	9 ... 70 VDC	±%5	3 ... 23 LED	2,75 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-SLED/WELCO-2W/3H	3,6 V / 1800 mAh	2,40	0,021	0,48	42 x 234,5 x 23,5	0,130	50
EMLUS-SLED/WELCO-3W/1H	3,6 V / 1600 mAh	2,31	0,021	0,47	42 x 234,5 x 23,5	0,130	50
EMLUS-SLED/WELCO-3W/3H	3,6 V / 3000 mAh	2,96	0,024	0,52	42 x 234,5 x 23,5	0,130	50

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (2W)

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
9 ... 30 VDC	%16,50	%11,50	%8,00	%5,50	%4,00
31 ... 50 VDC	%10,00	%7,00	%5,00	%3,00	-
51 ... 70 VDC	%7,00	%5,00	%3,50	-	-

Measured with 3,6 V battery under maximum operating voltage.

EMERGENCY LUMEN FACTOR (3W)

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
9 ... 30 VDC	%26,00	%18,00	%13,00	%8,50	%6,50
31 ... 50 VDC	%15,50	%11,00	%7,50	%5,00	-
51 ... 70 VDC	%11,00	%7,50	%5,50	-	-

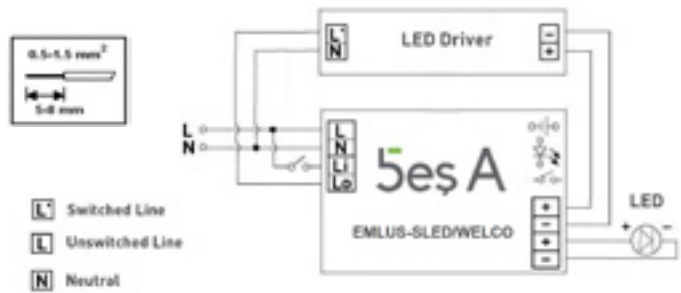
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

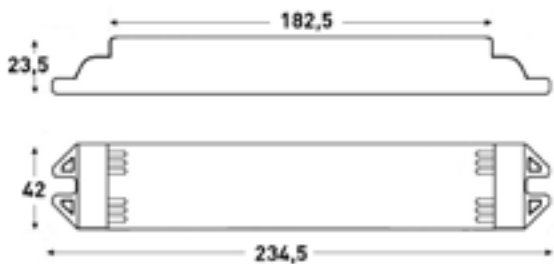
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	1600mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	3000mAh	C	26	3	26 x 150±3 x 26	0,240

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING

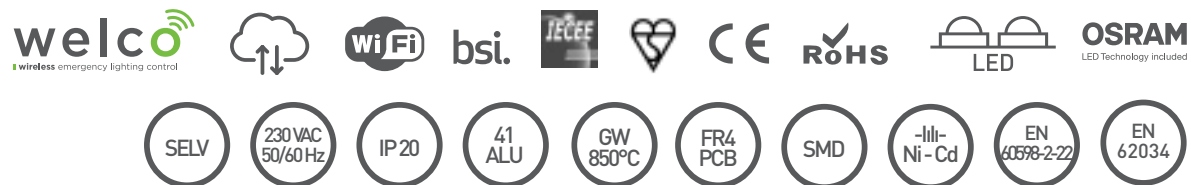




- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Status display with green and red LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent Plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - LiFePO4 or Ni-MH battery application



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	180 x 299 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	36 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-L08/WELCO-CY/SU	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-L08/WELCO-CY/SUMA	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Steel Wire
BYAL-L08/WELCO-CY/MT	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-L08/WELCO-CY/SA	3 h	Maintained	12 x SMD LED	Double-sided	Recessed Mounted

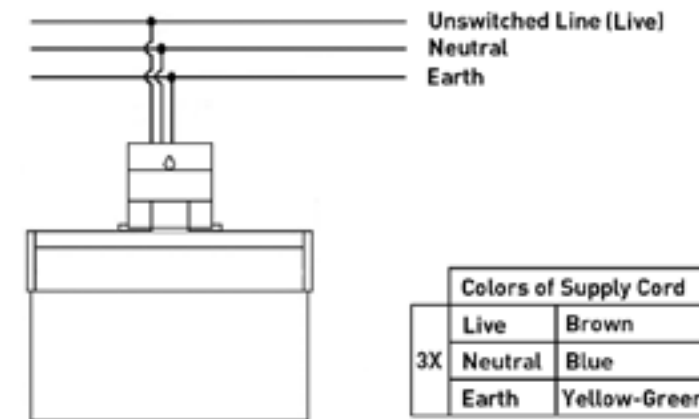
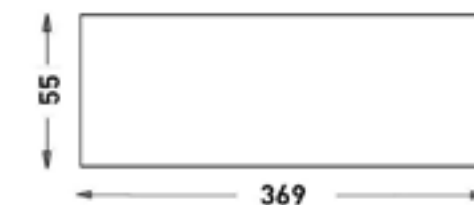
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-L08/WELCO-CY/SU	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/WELCO-CY/SUMA	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/WELCO-CY/MT	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/WELCO-CY/SA	4,82	0,032	0,63	102 x 372 x 235	1,255	1

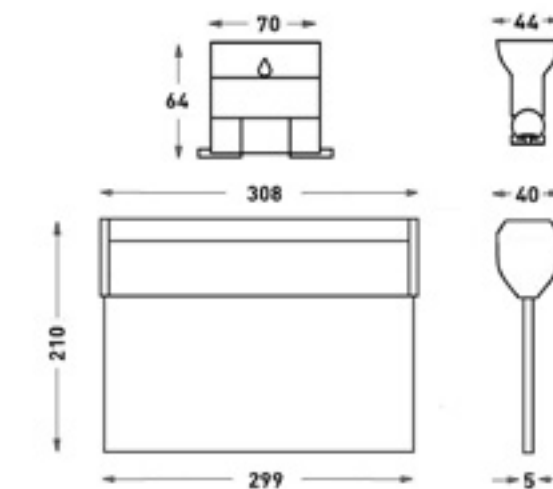
* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE

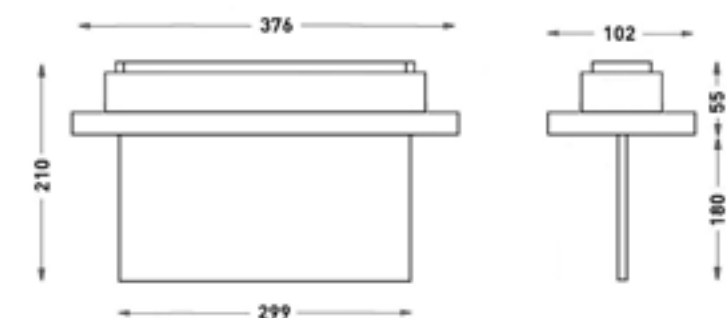


Colors of Supply Cord	
Live	Brown
Neutral	Blue
Earth	Yellow-Green

TECHNICAL DRAWING / SURFACE MOUNTED



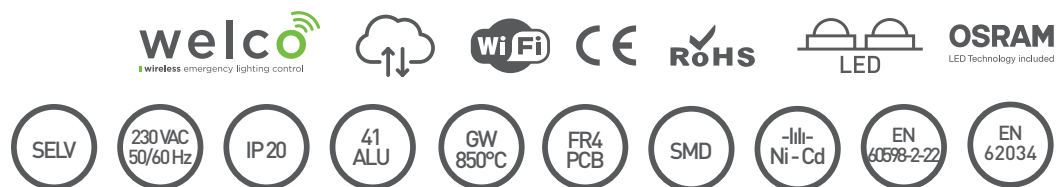
TECHNICAL DRAWING / RECESSED MOUNTED





Wireless communication, Wi-Fi (802.11 b/g/n)
Possible to access from anywhere in the world with cloud technology
Remote monitoring and testing with WELCO software
Single- or double-sided
Anodized aluminum case
Polycarbonate side cover and hanger
SMD LED application
Status display with green and red LEDs
Test switch
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
White acrylic plate
Back lighting
Ceiling mounted, ceiling recessed or wall mounted
Optional - 110 VAC compatibility
Optional - Metal hanger, hook or steel wire
Optional - LiFePO₄ or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	170 x 335 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	34 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL06-S/LED/WELCO	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-S/LED/WELCO/SA	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Recessed Mounted
BYAL07-S/LED/WELCO	3 h	Maintained	12 x SMD LED	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-S/LED/WELCO/SA	3 h	Maintained	12 x SMD LED	Single-sided (Lipsos)	Recessed Mounted

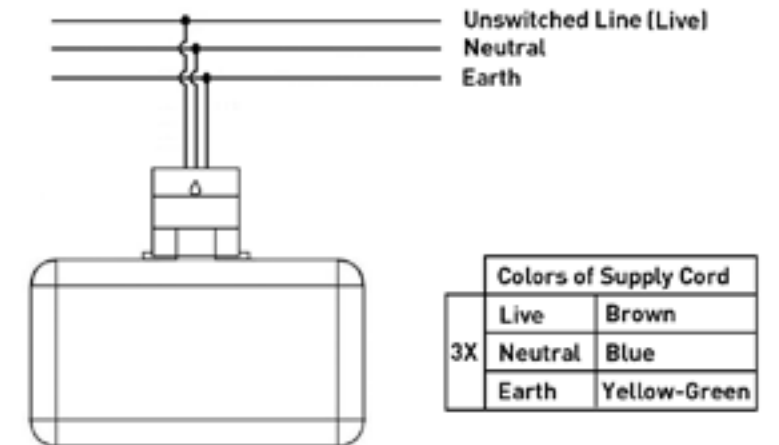
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

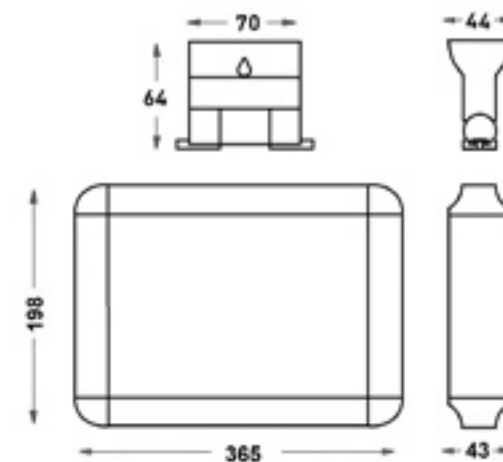
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL06-S/LED/WELCO	5,2	0,036	0,63	365 x 43 x 198	0,825	1
BYAL06-S/LED/WELCO/SA	5,2	0,036	0,63	425 x 43 x 216	0,955	1
BYAL07-S/LED/WELCO	5,2	0,036	0,63	365 x 43 x 198	0,970	1
BYAL07-S/LED/WELCO/SA	5,2	0,036	0,63	425 x 43 x 216	1,100	1

* Measured under 230 V mains.

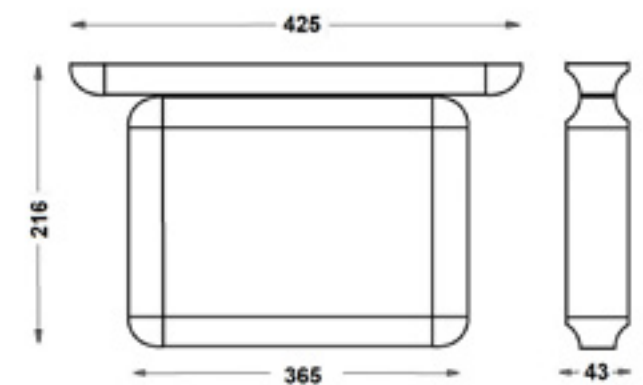
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED



EMERGENCY EXIT LUMINAIRES - LED

LAPIN XL LED / WELCO

LİPSOS XL LED / WELCO

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-XL06-LED/WELCO-S	3 h	Maintained	24 X SMD LED	Double-sided (Lapin)	Surface Mounted - Hook Hanger
BYAL-XL07-LED/WELCO-S	3 h	Maintained	24 X SMD LED	Single-sided (Lipsos)	Wall Mounted

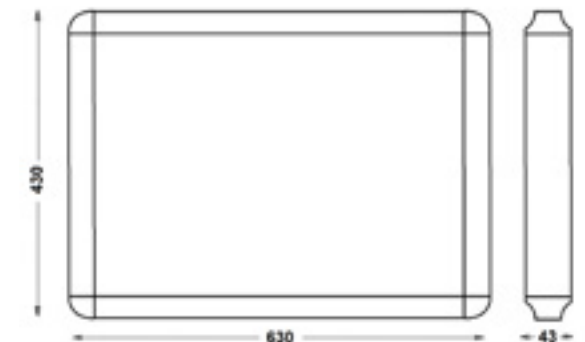
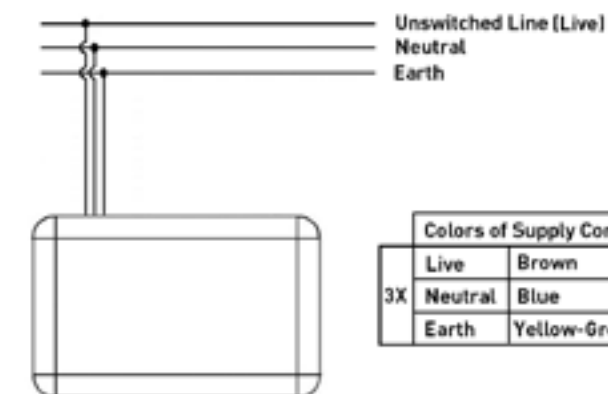
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-XL06-LED/WELCO-S	6,4	0,044	0,63	630 x 43 x 430	2,400	1
BYAL-XL07-LED/WELCO-S	6,4	0,044	0,63	630 x 43 x 430	2,400	1

* Measured under 230 V mains.

WIRING DIAGRAM

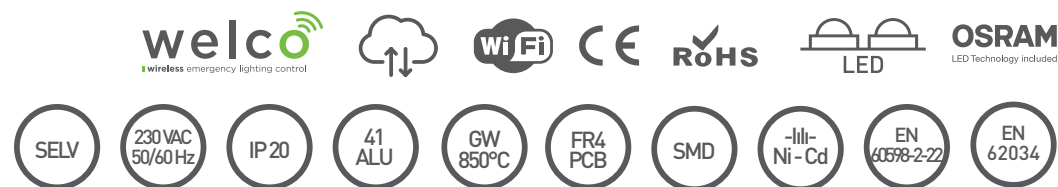


TECHNICAL DRAWING



- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Status display with green and red LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	400 x 600 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	80 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

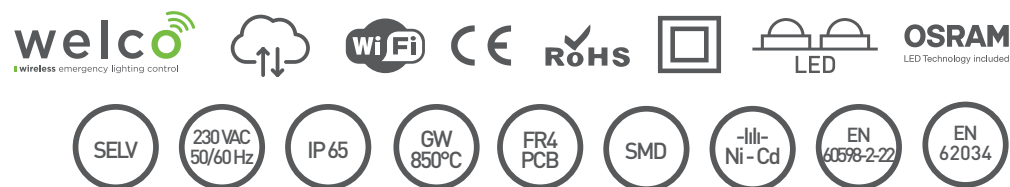
Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

EMERGENCY EXIT LUMINAIRES - LED
ORFOZ / WELCO

- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Ceiling mounted
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	140 x 300 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL02-S-XLED2/WELCO	3 h	Main-tained	20 x SMD LED	Double-sided	Surface Mounted

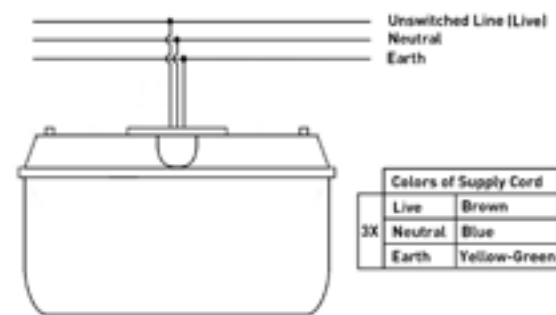
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

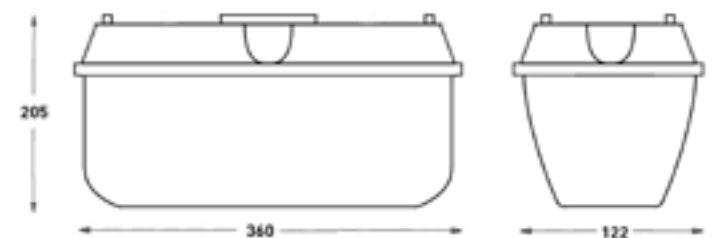
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL02-S-XLED2/WELCO	5,0	0,036	0,60	122 x 360 x 205	1,025	1

* Measured under 230 V mains.

WIRING DIAGRAM



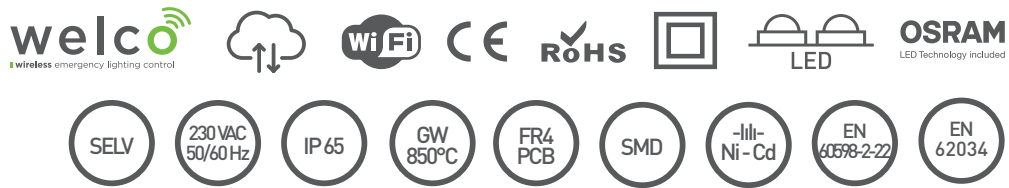
TECHNICAL DRAWING



EMERGENCY EXIT LUMINAIRES - LED
SOMON XLED2 / WELCO

- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall mounted
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	108 x 341 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	21 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL06-S-XLED2/WELCO	3 h	Maintained	20 x SMD LED	Single-sided	Surface Mounted

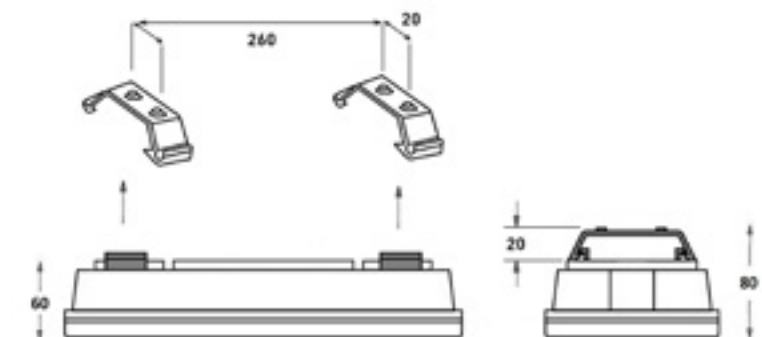
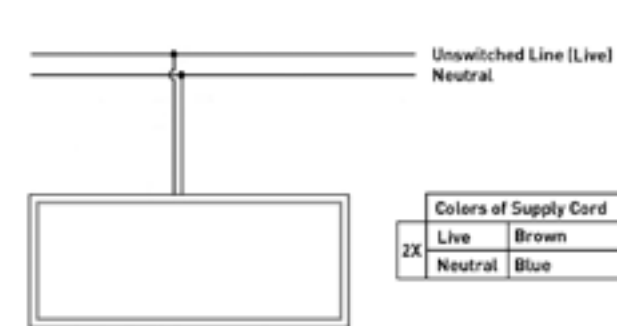
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2/WELCO	5,05	0,036	0,60	108 x 341 x 60	0,630	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING

EMERGENCY LIGHTING
LUMINAIRES – LED
RINA / WELCO



- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- SMD power LED application
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polycarbonate case
- Recessed mounted
- Asymmetric lens
- Optional - Symmetric lens application
- Optional - Surface mounted application
- Optional - LiFePO4 or Ni-MH battery application

PRODUCT LIST

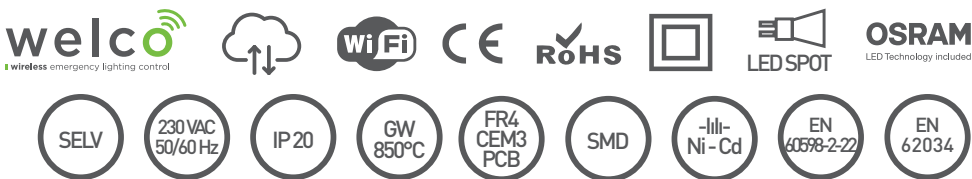
PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA104-RINA/WELCO/1W	3 h	Non-Maintained	Power LED	- / 105 lm	Recessed / Surface Mounted	24 h
AA104-RINA/WELCO/2W	3 h	Non-Maintained	Power LED	- / 205 lm	Recessed / Surface Mounted	24 h
AA104-RINA/WELCO/3W	3 h	Non-Maintained	Power LED	- / 305 lm	Recessed / Surface Mounted	24 h
AA104-RINA/WELCO/4W	3 h	Non-Maintained	Power LED	- / 405 lm	Recessed / Surface Mounted	24 h

* Non-maintained : Lights in case of the mains failure.

MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA104-RINA/WELCO/1W	3,6V / 900mAh	1,45	0,018	0,35	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,100	1
AA104-RINA/WELCO/2W	3,6V / 1800mAh	1,65	0,019	0,37	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,165	1
AA104-RINA/WELCO/3W	3,6V / 3000mAh	2,60	0,024	0,45	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,255	1
AA104-RINA/WELCO/4W	3,6V / 4000mAh	3,15	0,027	0,48	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,390	1

* Measured under 230 V mains.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	Power LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	DIFFUSER :	Symmetric / Asymmetric LENS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

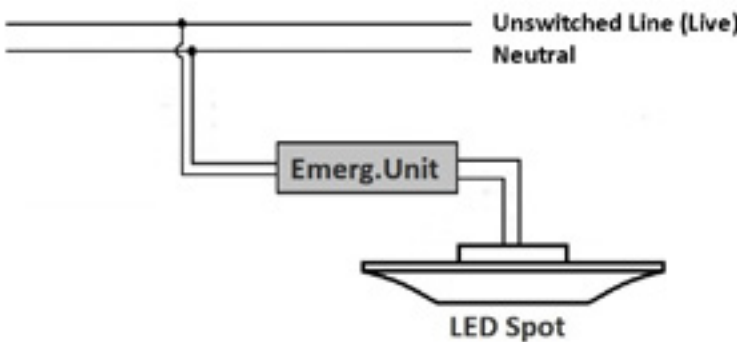
Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

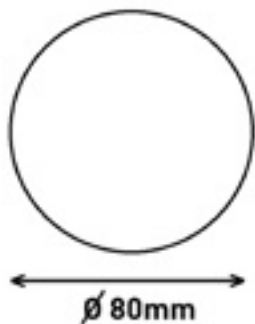
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	3000mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	4000mAh	D	33	3	33 x 180±3 x 33	0,375

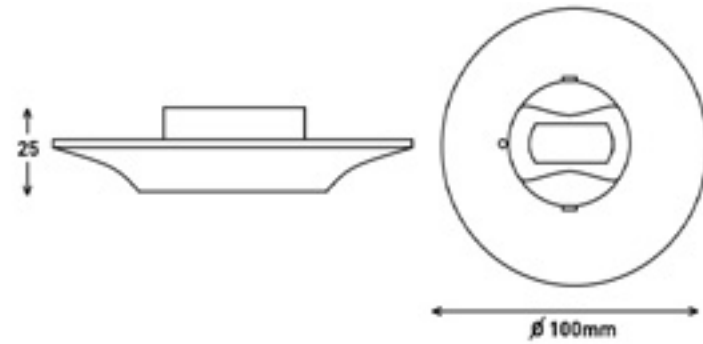
WIRING DIAGRAM



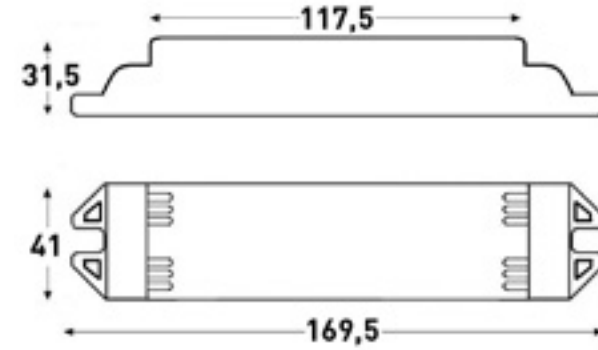
RECESSED MOUNTING HOLE SIZE



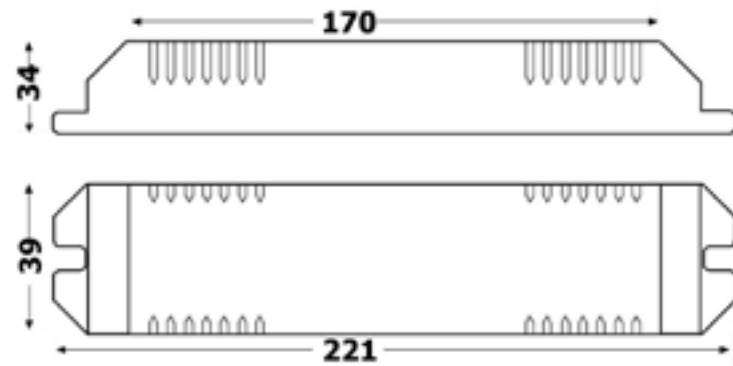
TECHNICAL DRAWING (LED SPOT)




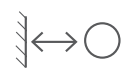


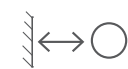

TECHNICAL DRAWING (EMERGENCY UNIT)









TECHNICAL DRAWING (BATTERY BOX)

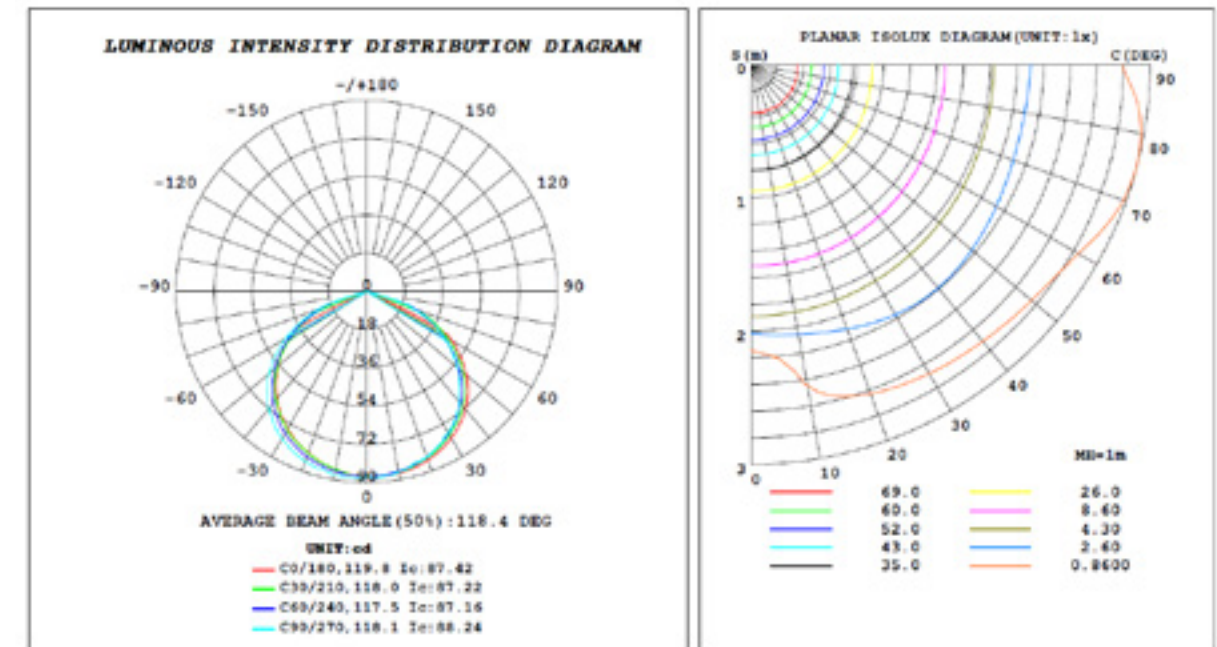


PHOTOMETRY DATA (1W)

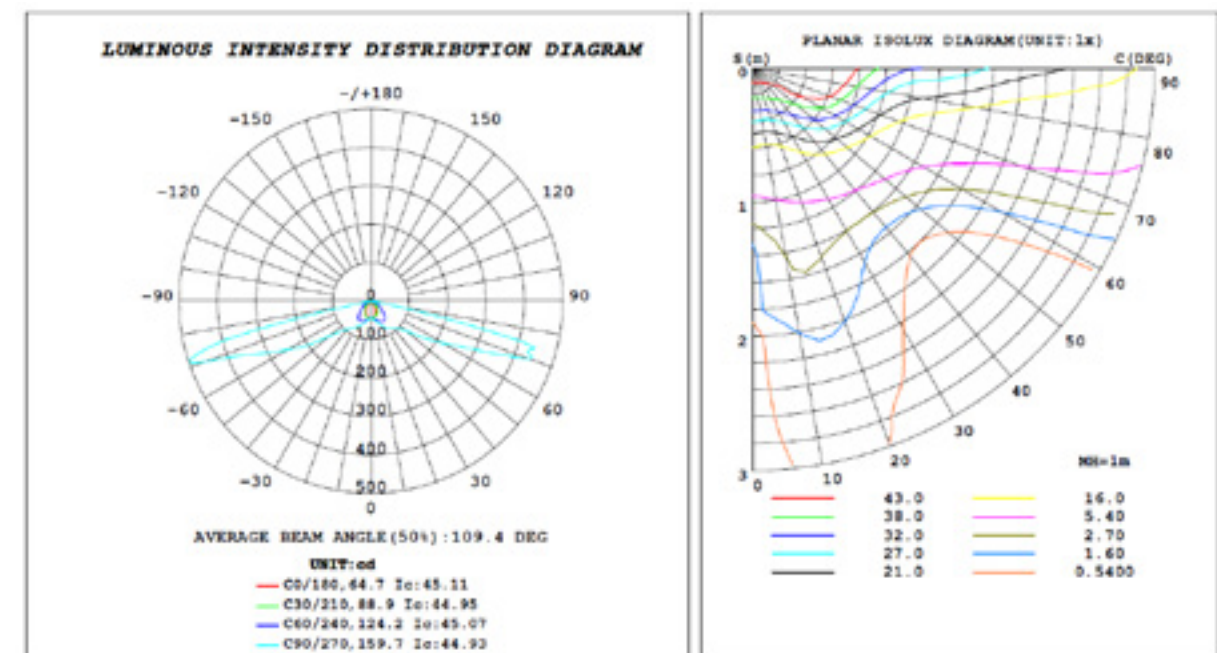
Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	4,00	2,00	5,50	10,50
2,50	2,50	5,00	2,50	7,00	13,50
3,00	2,50	5,00	3,00	6,50	16,00
3,50	3,00	6,00	3,50	6,00	16,50
4,00	3,00	6,50	4,00	3,50	11,50

Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50	2,00	6,50	11,50
2,50	4,00	7,50	2,50	8,00	15,50
3,00	4,50	8,50	3,00	9,50	18,50
3,50	4,50	10,00	3,50	10,50	21,50
4,00	5,00	11,00	4,00	11,00	24,00

LIGHT DISTRIBUTION CURVE (SYMMETRIC LENS)



LIGHT DISTRIBUTION CURVE (ASYMMETRIC LENS)



EMERGENCY LIGHTING LUMINAIRES – LED SOMON XLED2 / WELCO

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYPL06-S-XLED2/WELCO/1W	3 h	Maintained	20 x SMD LED	115 lm / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/WELCO/1W	3 h	Non-Maintained	20 x SMD LED	- / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/WELCO/2W	3 h	Non-Maintained	20 x SMD LED	- / 230 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/WELCO/3W	3 h	Non-Maintained	20 x SMD LED	- / 350 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/WELCO/4W	3 h	Non-Maintained	20 x SMD LED	- / 450 lm	Recessed / Surface Mounted	24 h

* Non-maintained : Lights in case of the mains failure.

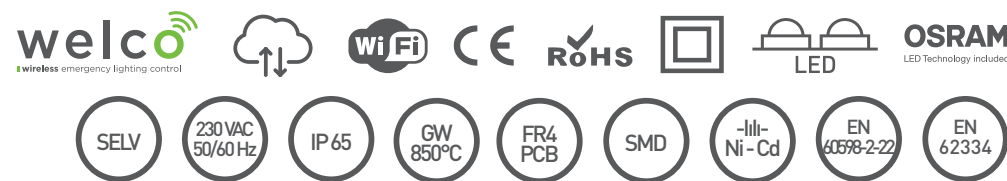
MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2/WELCO/1W	5,05	0,036	0,60	108x341x60	0,630	1
BYPL06-A-XLED2/WELCO/1W	1,45	0,018	0,35	108x341x60	0,630	1
BYPL06-A-XLED2/WELCO/2W	1,65	0,019	0,37	108x341x60	0,690	1
BYPL06-A-XLED2/WELCO/3W	2,60	0,024	0,45	108x341x60	0,780	1
BYPL06-A-XLED2/WELCO/4W	3,15	0,027	0,48	108x341x60	0,850	1

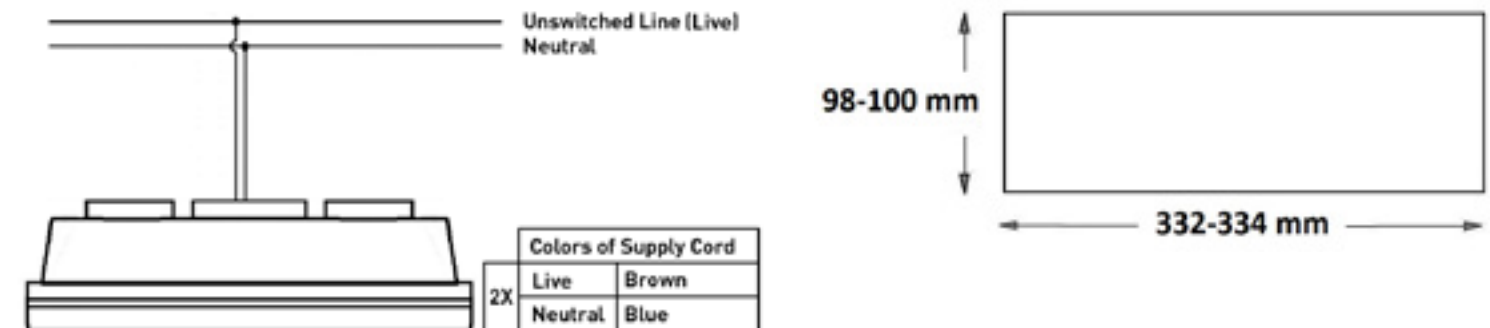
* Measured under 230 V mains.

WIRING DIAGRAM

RECESSED MOUNTING HOLE SIZE



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	SMD LED
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	DIFFUSER :	Polycarbonate Glass
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

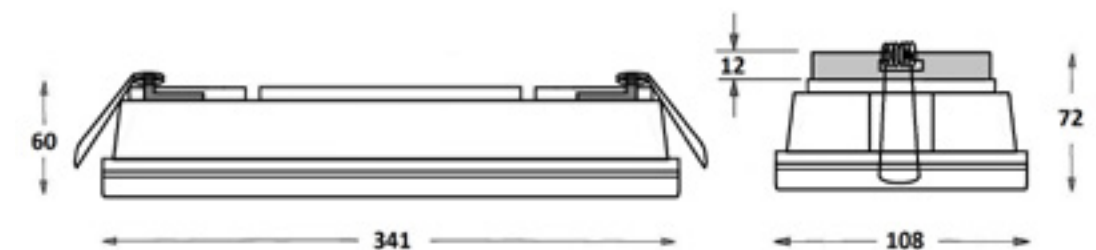
Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

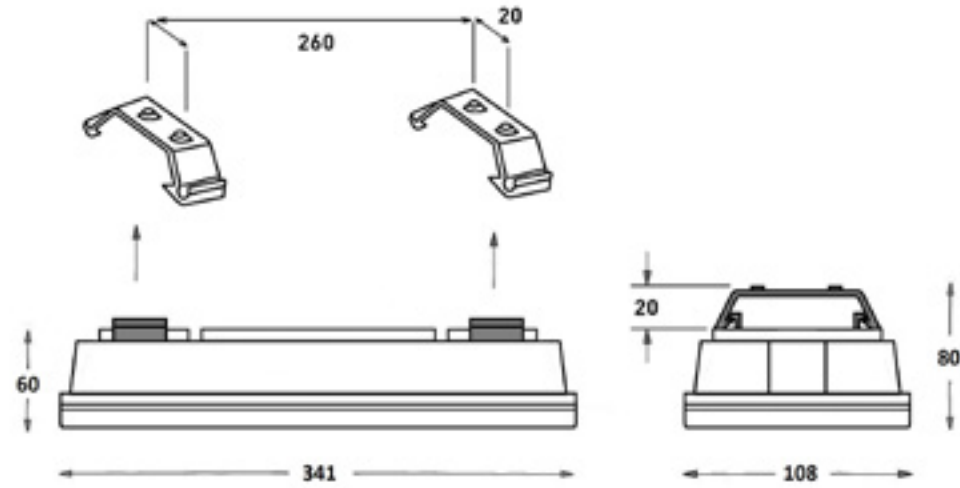
Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.







TECHNICAL DRAWING / RECESSED MOUNTED









TECHNICAL DRAWING / SURFACE MOUNTED



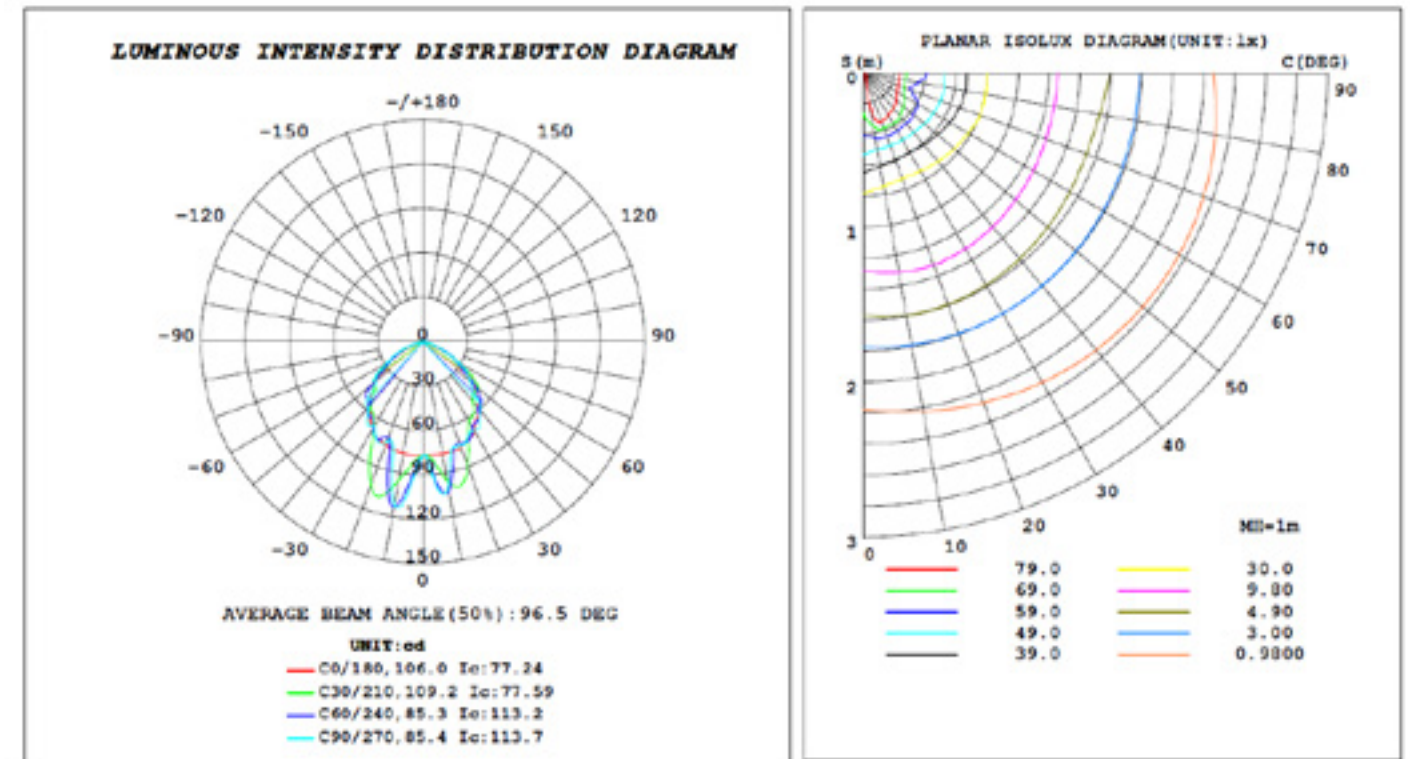
PHOTOMETRY DATA (1W)

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	3,00	2,00	2,00	3,50
2,50	2,25	4,00	2,50	2,25	4,25
3,00	2,75	4,75	3,00	2,50	4,50
3,50	2,75	5,50	3,50	2,50	5,00
4,00	2,75	6,00	4,00	2,25	5,25

PHOTOMETRY DATA (3W)

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50	2,00	3,00	5,75
2,50	3,50	6,75	2,50	3,50	7,00
3,00	4,00	7,75	3,00	4,00	7,75
3,50	4,25	8,50	3,50	4,25	8,50
4,00	4,50	9,25	4,00	4,25	9,25

LIGHT DISTRIBUTION CURVE



EMERGENCY LIGHTING LUMINAIRES – LED TETRA PW3 / WELCO



- Wireless communication, Wi-Fi (802.11 b/g/n)
- Possible to access from anywhere in the world with cloud technology
- Remote monitoring and testing with WELCO software
- 180° adjustable LED headlamp
- SMD power LED application
- Long life-time (30.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- Maintenance-free sealed lead acid battery
- Overcharge and deep discharge protection
- Charging circuit with constant voltage and current protect
- Wall mounted
- ABS case
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	9W LED
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	ABS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	12V Lead-Acid	INSULATION CLASS :	II

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA209-PW3/WELCO	3 h	Non-Maintained	2x9W LED	- / 1500 lm	Surface Mounted	48 h

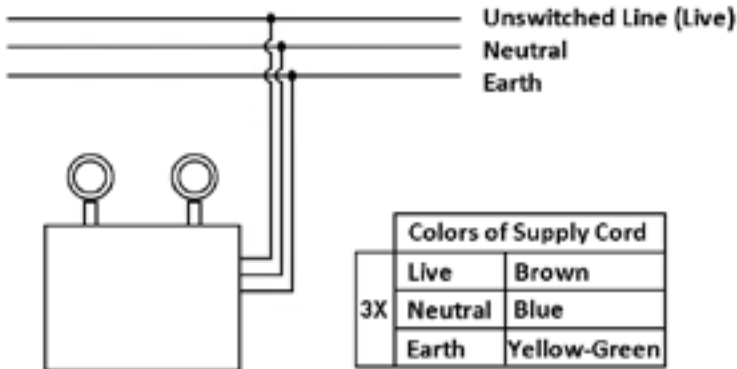
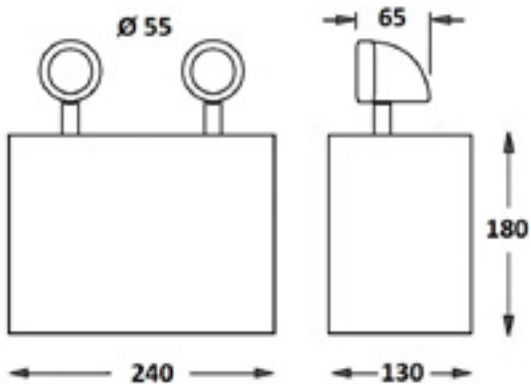
* Non-maintained : Lights in case of the mains failure.

MAINS DATA

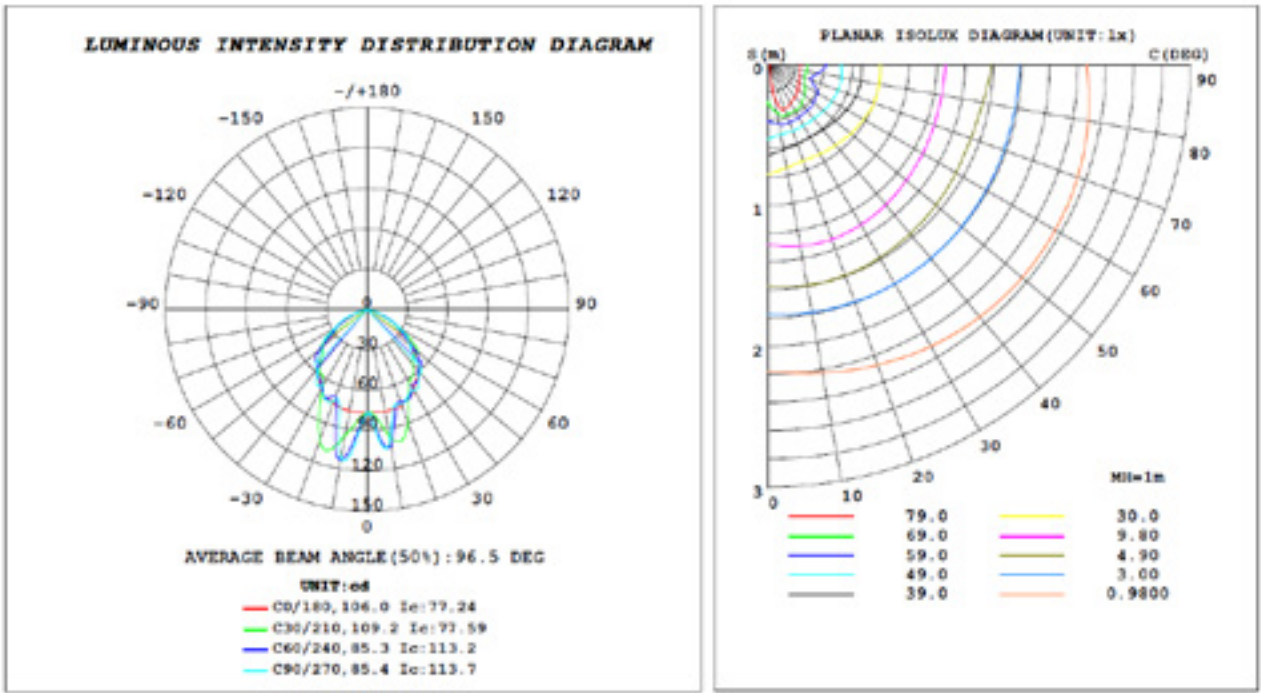
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA209-PW3/WELCO	1,25 - 8,90	0,010 - 0,058	0,50 - 0,67	98 x 255 x 205	4,50	1

* Measured under 230 V mains.
Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.

TECHNICAL DRAWING



LIGHT DISTRIBUTION CURVE



* Above curve is measured data just for one headlamp

EMERGENCY LIGHTING LUMINAIRES

SENSORLIGHT - LED

MANTA LED / WELCO

PRODUCT LIST

PRODUCT CODE*	RATED DURATION	OPERATING MODE**	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE OF MOUNTING	BATTERY CHARGING TIME
AA105-MANTA-L6D/350/W3	3 h	Maintained	16 W / 3 W LED	1750 lm / 250 lm	Surface Mounted	24 h
AA105-MANTA-L6SD/350/W3	3 h	Sensor+Maintained	16 W / 3 W LED	1750 lm / 250 lm	Surface Mounted	24 h
AA105-MANTA-L6SD/500/W3	3 h	Sensor+Maintained	23 W / 3 W LED	2500 lm / 250 lm	Surface Mounted	24 h

* WELCO compatibility only in emergency mode

** Maintained: Lights on mains and stays alight in case of the mains failure. (With battery kit)

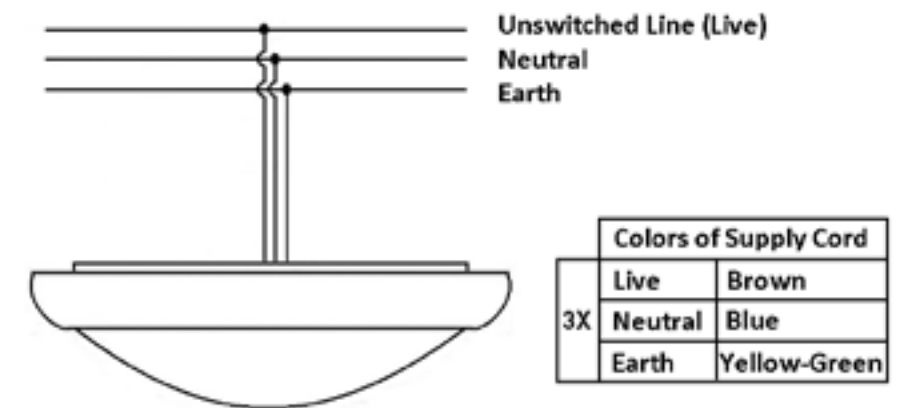
Sensor: Lights on mains through sensor

MAINS DATA

PRODUCT CODE	STAND-BY RATED POWER (W)*	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA105-MANTA-L6D/350/W3	3,0	23,7	0,140	0,73	320 x 320 x 115	1,70	1
AA105-MANTA-L6SD/350/W3	3,7	25,2	0,169	0,64	320 x 320 x 115	1,75	1
AA105-MANTA-L6SD/500/W3	3,7	32,6	0,198	0,71	320 x 320 x 115	1,75	1

* Measured under 230 V mains.

WIRING DIAGRAM



Wireless communication, Wi-Fi (802.11 b/g/n)
Possible to access from anywhere in the world with cloud technology
Remote monitoring and testing with WELCO software
Indoor and outdoor use
Polycarbonate case
Soft lighting with sanded glass
Microwave radar sensor
Adjustable lighting duration
Adjustable night / day working mode
High energy saving with LED lighting
Long life-time (50.000 hours)
4000 K / 6500 K Color temperature
Emergency lighting function by interruption of the unswitched phase
3 hours duration in case of emergency
Status display with green and red LEDs
High-temperature Ni-Cd battery cells
Overcharge and deep discharge protection
Wall and ceiling mounted
Optional - 110 VAC compatibility
Optional - LiFePO4 or Ni-MH battery application
As battery kit, EMLUS-SLED/WELCO is used.



In accordance with EN 60598-1, EN 60598-2-22, EN 62034 standards.

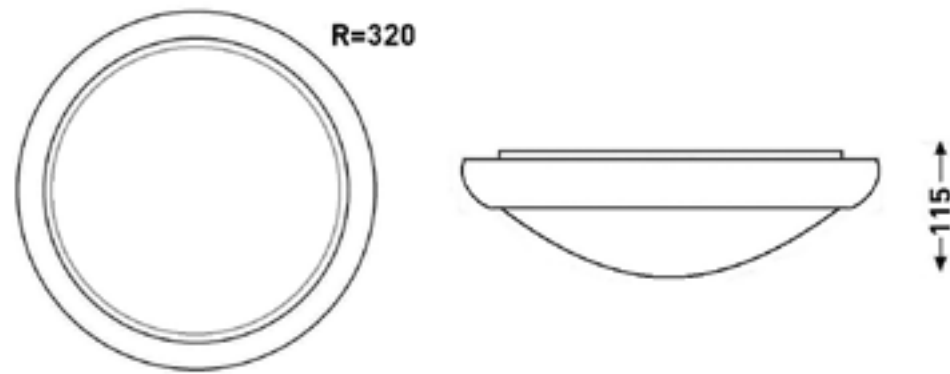
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SENSOR TYPE :	Microwave Radar Sensor
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	Polycarbonate
RATED DURATION :	3 h	LIGHT SOURCE :	SMD LED
BATTERY CHARGING TIME :	24 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	3,6 V Ni-Cd	INSULATION CLASS :	II





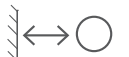

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

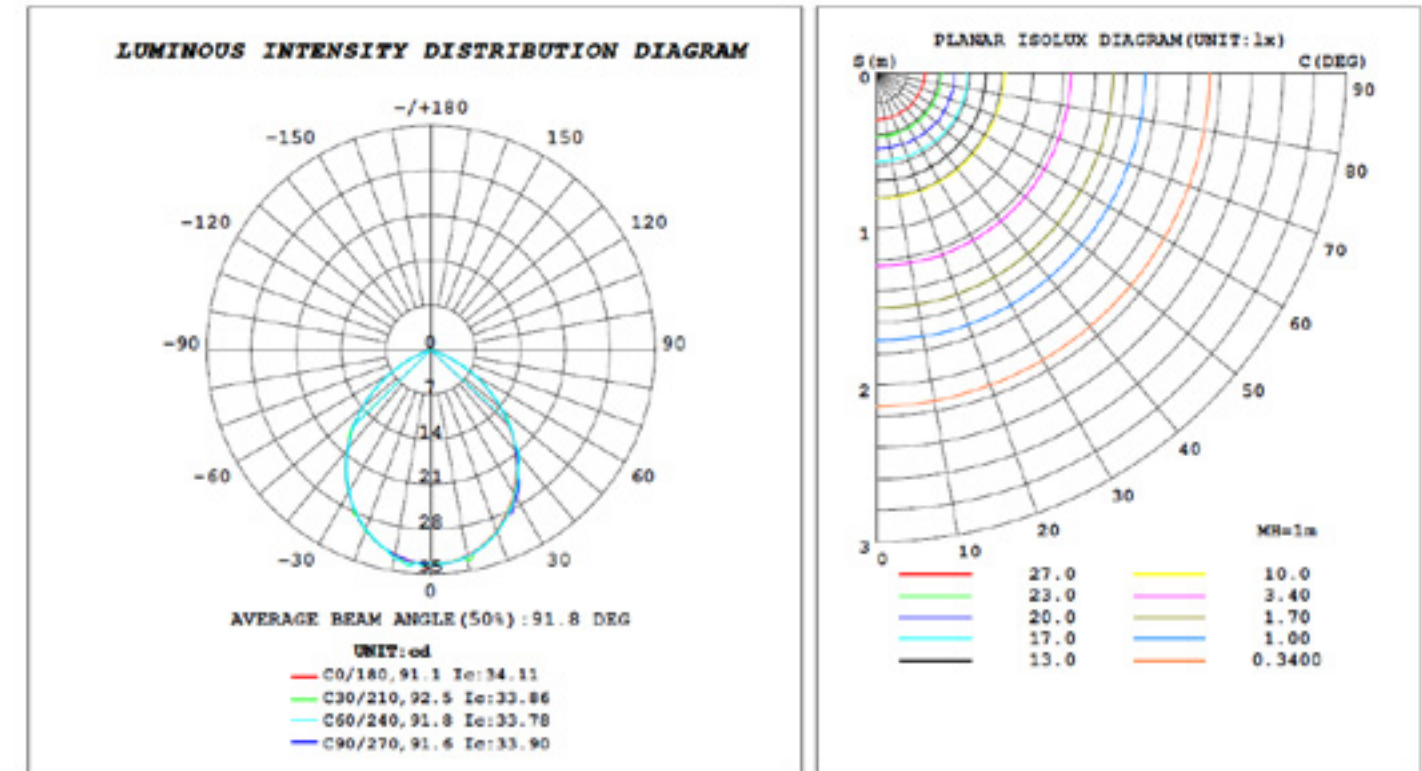
TECHNICAL DRAWING



PHOTOMETRY DATA

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,25	4,00	2,00	2,25	4,25
2,50	2,50	5,00	2,50	2,50	5,00
3,00	2,75	5,50	3,00	2,75	5,50
3,50	3,00	6,25	3,50	2,75	5,75
4,00	3,25	6,50	4,00	2,75	6,25

LIGHT DISTRIBUTION CURVE





WIRED EMERGENCY LIGHTING MONITORING SYSTEM

BEŞ A AND DALI

Digital Addressable Lighting Interface (DALI) is an open communication protocol developed by the leading producers in the lighting industry and is defined in international IEC 62386 technical standard.

DALI protocol, which was developed for controllable lighting ballasts at the beginning, includes many smart lighting technologies at the moment and requirements for Emergency Lighting is included in scope of the standard. It provides maximum flexibility and easiness for system designers, project/installation/montage firms and final users and a very secure and stable communication platform for emergency lighting for monitoring emergency lights in compliance with the Regulation on Fire Protection of Buildings and EN / IEC 50172 Standard.

As an active member of DALI organization, Beş A designs and manufactures DALI compliant emergency lighting products and systems.

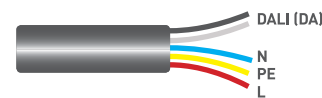
In our R&D laboratory, original circuit designs and embedded software are developed for DALI compliant emergency lightings units and emergency exit luminaires. With using new technologies; our product family which we manufacture in our facilities is further expanded. Beş A, as a member of the DiiA organization regulates DALI standards, warrants the DALI compliance of its products with the ProbitLab - DALI Tester in its R & D Laboratory. Beş A, as a member of DiiA, it applies the DALI logo to its products that pass all tests successfully.

WIRED MONITORING SYSTEM- ELCO

ELCO is our wired monitoring system solution that allows you to monitor status of DALI compatible emergency lighting products via router and touch screen panel developed by Beş A.

- Central monitoring via touch screen control panel
- Addressable emergency lighting system according to EN and IEC standards
- Instant or periodic functional and duration tests
- Control software for testing, reporting and recording test reports
- Password protected user interface
- Omnidirectional and 2-wired standard DALI data bus cabling

elco
emergency lighting control



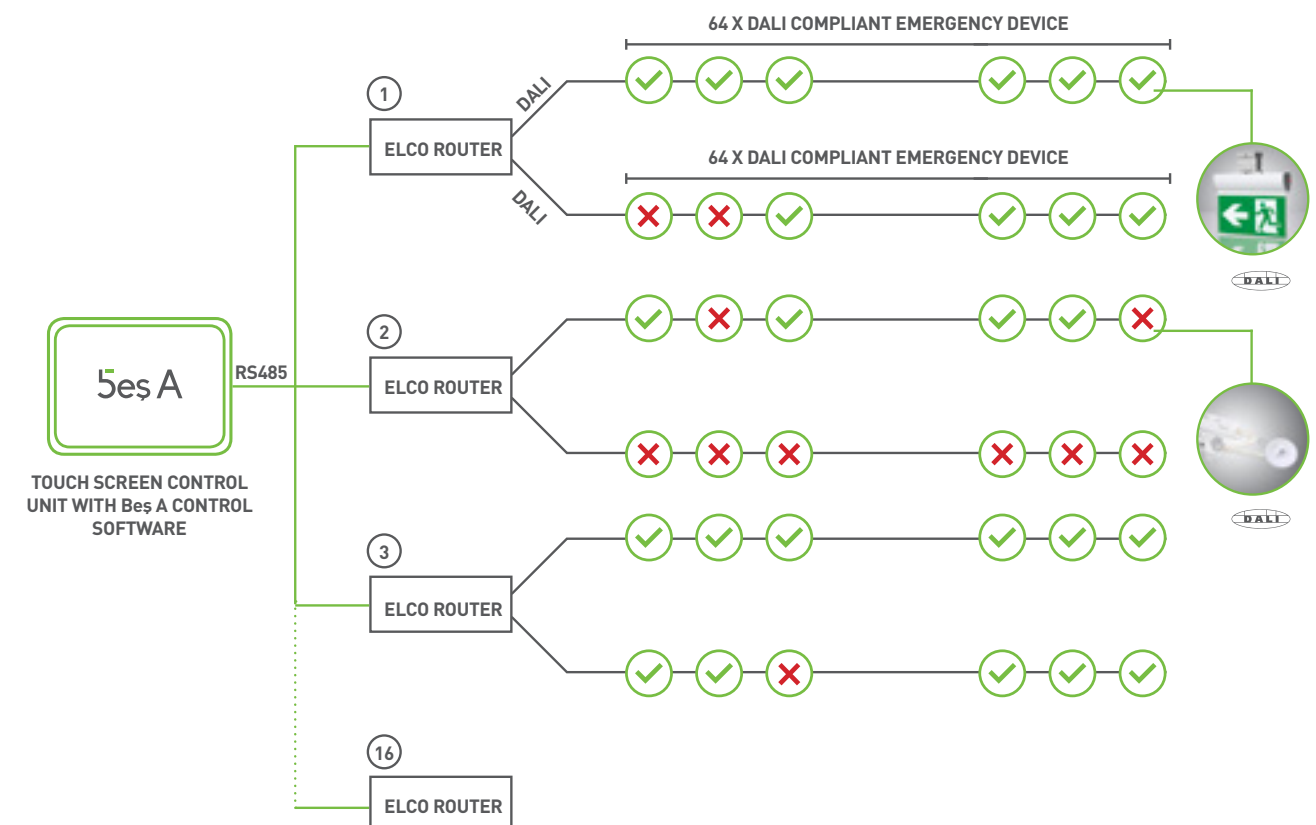
CONTROL PANEL

- RTC (Real Time Clock)
- 7 inch touch screen
- 1x RJ45 Ethernet : TCP/IP Internet
- 1x RS485 input: for 16 x DALI Router connection (max. 2048 DALI compliant emergency lighting device)
- 230VAC 50/60 Hz
- Functional and duration tests of DALI compliant emergency lighting devices
- Status Monitoring of battery and LED lamp
- Reporting and recording test results



ROUTER

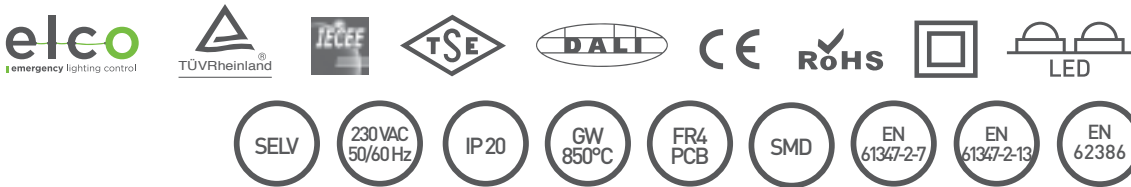
- 2x Outputs: Max. 128 x DALI compliant emergency lighting device connection
- 1x RS485 input: For connection of touch screen control panel
- 230VAC 50/60Hz



EMERGENCY LIGHTING UNITS - LED
EMLUS-SLED / DALI



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Electromagnetic Interference (EMI) filter
- Emergency lighting function in case of low-voltage
- Constant output power
- Operation range of 9 ... 70 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Status display with two color LEDs
- Simple connectable terminal block
- Polycarbonate case
- Optional - Test switch
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application



In accordance with EN 61347-1, EN 61347-2-7, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	25 ... 300 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	9 ... 70 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	70 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%4 ... %26	OUTPUT CURRENT :	40 ... 300 mA

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-SLED/DALI-2W/3H	25 ... 190 mA	9 ... 70 VDC	±%5	3 ... 23 LED	1,75 W
EMLUS-SLED/DALI-3W/1H	40 ... 300 mA	9 ... 70 VDC	±%5	3 ... 23 LED	2,75 W
EMLUS-SLED/DALI-3W/3H	40 ... 300 mA	9 ... 70 VDC	±%5	3 ... 23 LED	2,75 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-SLED/DALI-2W/3H	3,6 V / 1800 mAh	2,40	0,021	0,48	42 x 234,5 x 23,5	0,130	50
EMLUS-SLED/DALI-3W/1H	3,6 V / 1600 mAh	2,31	0,021	0,47	42 x 234,5 x 23,5	0,130	50
EMLUS-SLED/DALI-3W/3H	3,6 V / 3000 mAh	2,96	0,024	0,52	42 x 234,5 x 23,5	0,130	50

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR (2W)

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
9 ... 30 VDC	%16,50	%11,50	%8,00	%5,50	%4,00
31 ... 50 VDC	%10,00	%7,00	%5,00	%3,00	-
51 ... 70 VDC	%7,00	%5,00	%3,50	-	-

Measured with 3,6 V battery under maximum operating voltage.

EMERGENCY LUMEN FACTOR (3W)

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
9 ... 30 VDC	%26,00	%18,00	%13,00	%8,50	%6,50
31 ... 50 VDC	%15,50	%11,00	%7,50	%5,00	-
51 ... 70 VDC	%11,00	%7,50	%5,50	-	-

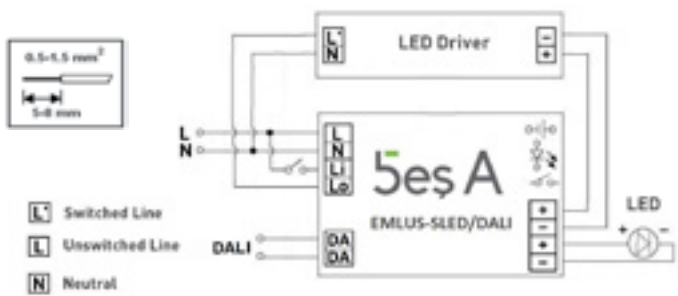
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

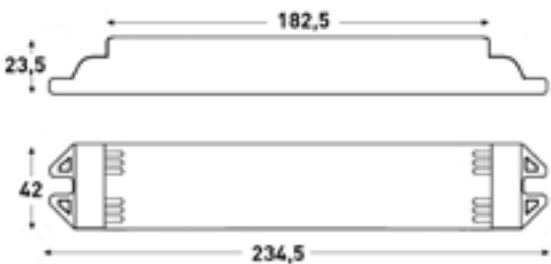
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	1600mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	3000mAh	C	26	3	26 x 150±3 x 26	0,240

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm.
Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING

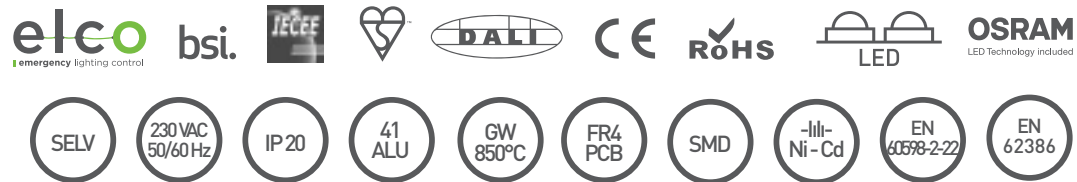




- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent Plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - LiFePO4 or Ni-MH battery application



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	180 x 299 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	36 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-L08/DALI-CY/SU	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-L08/DALI-CY/SUMA	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Steel Wire
BYAL-L08/DALI-CY/MT	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-L08/DALI-CY/SA	3 h	Maintained	12 x SMD LED	Double-sided	Recessed Mounted

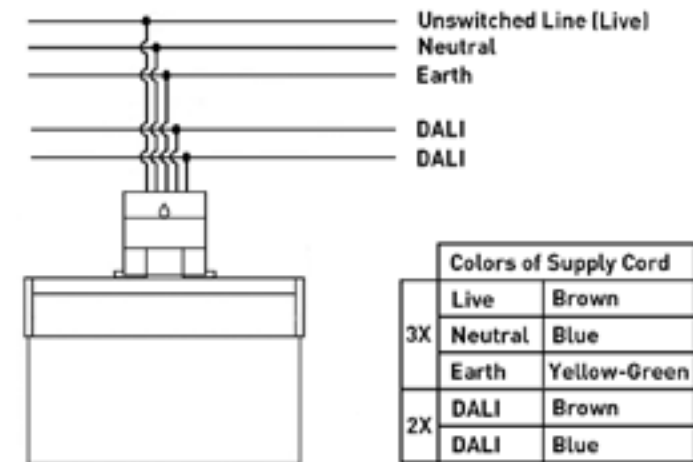
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

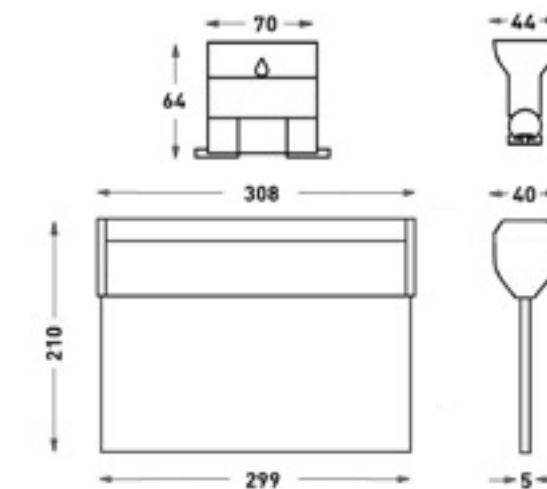
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-L08/DALI-CY/SU	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/DALI-CY/SUMA	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/DALI-CY/MT	4,82	0,032	0,63	40 x 304 x 235	0,700	1
BYAL-L08/DALI-CY/SA	4,82	0,032	0,63	102 x 372 x 235	1,255	1

* Measured under 230 V mains.

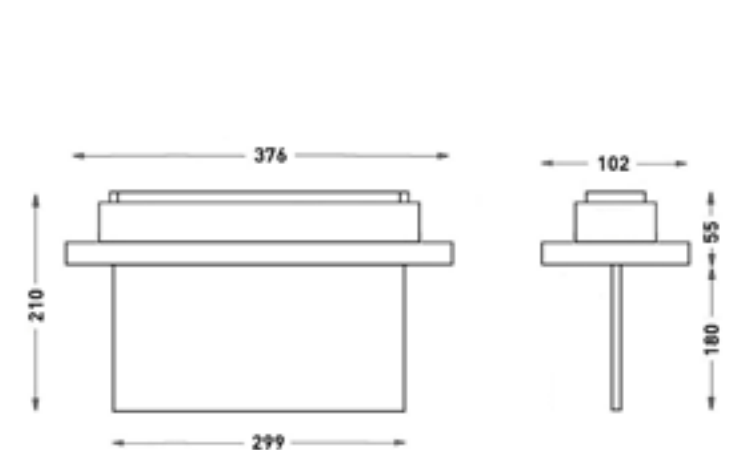
RECESSED MOUNTING HOLE SIZE



TECHNICAL DRAWING / SURFACE MOUNTED

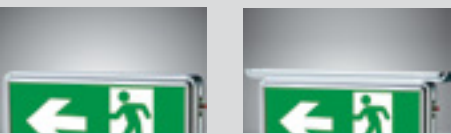


TECHNICAL DRAWING / RECESSED MOUNTED





- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - LiFePO4 or Ni-MH battery application



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	170 x 335 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	34 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL06-S/LED/DALI	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-S/LED/DALI /SA	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Recessed Mounted
BYAL07-S/LED/DALI	3 h	Maintained	12 x SMD LED	Single-sided (Lippos)	Surface Mounted - Plastic Hanger
BYAL07-S/LED/DALI /SA	3 h	Maintained	12 x SMD LED	Single-sided (Lippos)	Recessed Mounted

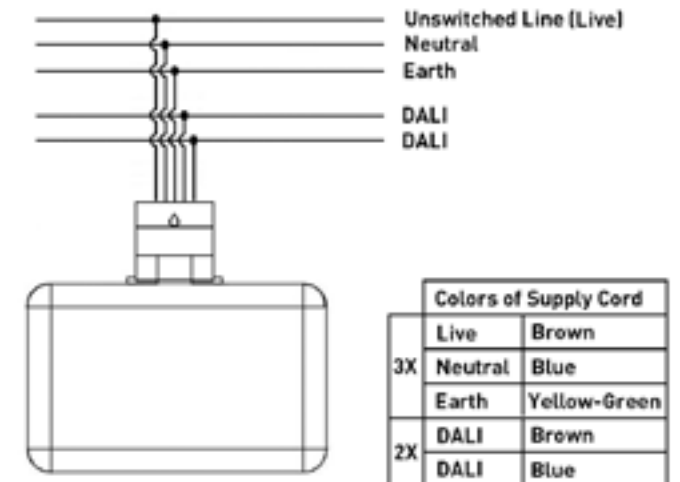
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

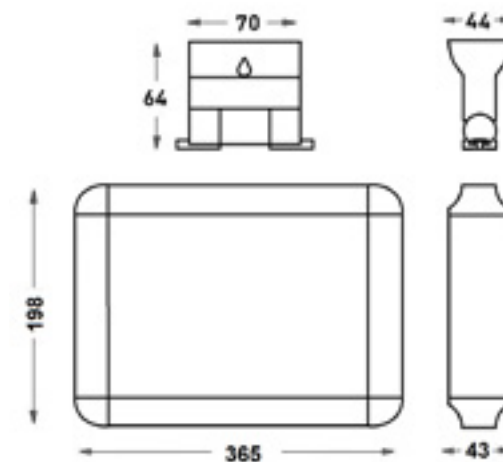
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL06-S/LED/DALI	5,2	0,036	0,63	365 x 43 x 198	0,825	1
BYAL06-S/LED/DALI /SA	5,2	0,036	0,63	425 x 43 x 216	0,955	1
BYAL07-S/LED/DALI	5,2	0,036	0,63	365 x 43 x 198	0,970	1
BYAL07-S/LED/DALI /SA	5,2	0,036	0,63	425 x 43 x 216	1,100	1

* Measured under 230 V mains.

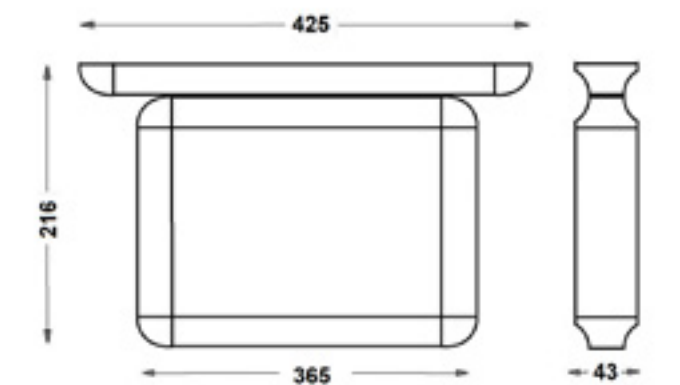
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



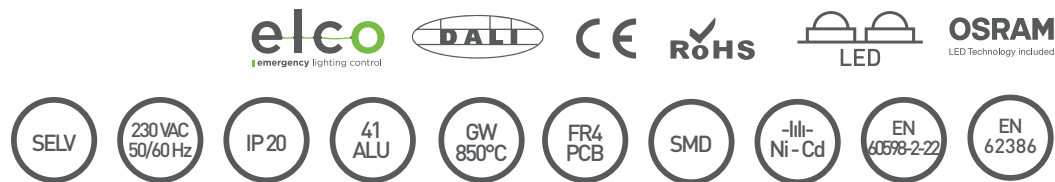
TECHNICAL DRAWING / RECESSED MOUNTED





- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	400 x 600 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	80 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-XL06-LED/DALI-S	3 h	Maintained	24 X SMD LED	Double-sided (Lapın)	Surface Mounted - Hook Hanger
BYAL-XL07-LED/DALI-S	3 h	Maintained	24 X SMD LED	Single-sided (Lipsos)	Wall Mounted

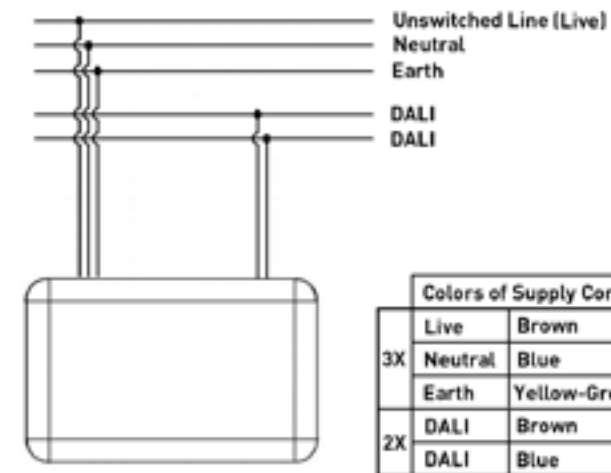
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-XL06-LED/DALI-S	6,4	0,044	0,63	630 x 43 x 430	2,400	1
BYAL-XL07-LED/DALI-S	6,4	0,044	0,63	630 x 43 x 430	2,400	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



EMERGENCY EXIT LUMINAIRES - LED ORFOZ / DALI



- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Ceiling mounted
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	140 x 300 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL02-S-XLED2/DALI	3 h	Maintained	20 x SMD LED	Double-sided	Surface Mounted

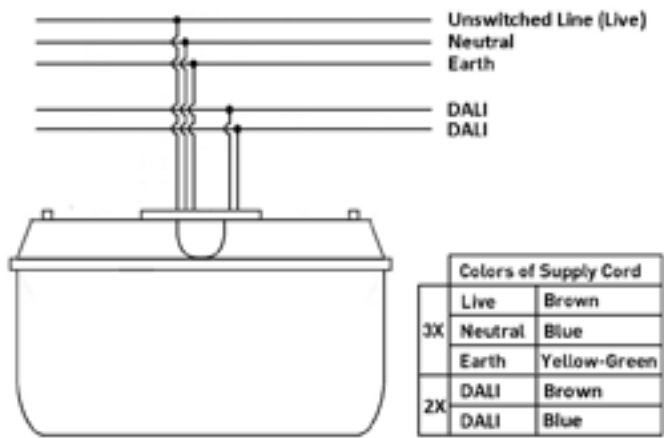
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

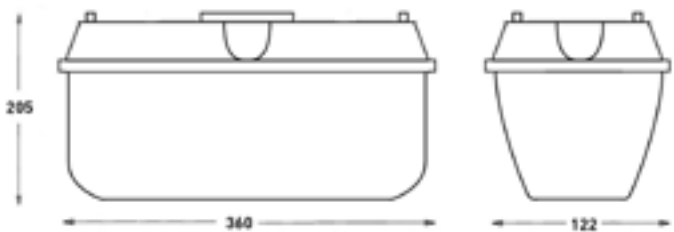
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL02-S-XLED2/DALI	5,0	0,036	0,60	122 x 360 x 205	1,025	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING



EMERGENCY EXIT LUMINAIRES - LED SOMON-XLED2 / DALI



- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall mounted
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	108 x 341 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	21 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL06-S-XLED2/DALI	3 h	Maintained	20 x SMD LED	Single-sided	Surface Mounted

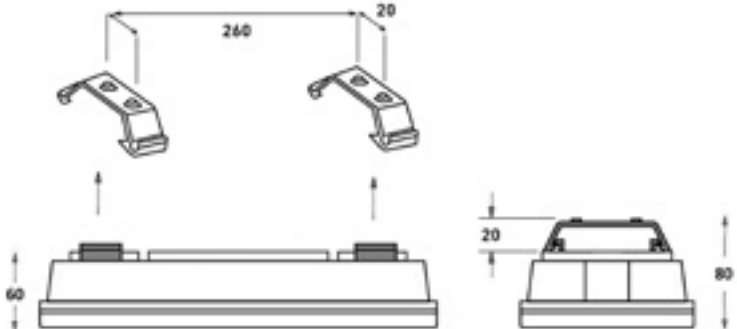
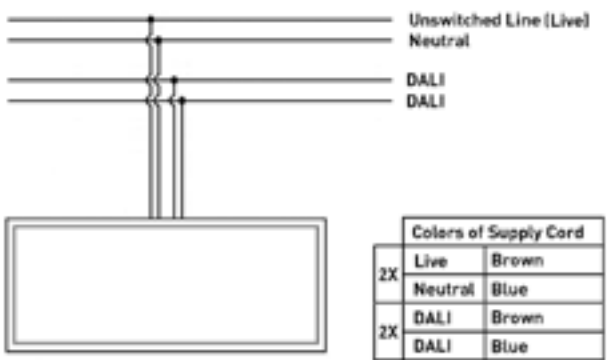
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2/DALI	5,05	0,036	0,60	108 x 341 x 60	0,630	1

* Measured under 230 V mains.

WIRING DIAGRAM



EMERGENCY LIGHTING
LUMINAIRES – LED
RINA / DALI

PRODUCT LIST



- SMD power LED application
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polycarbonate case
- Recessed mounted
- Asymmetric lens
- Optional - Symmetric lens application
- Optional - Surface mounted application
- Optional - LiFePO4 or Ni-MH battery application

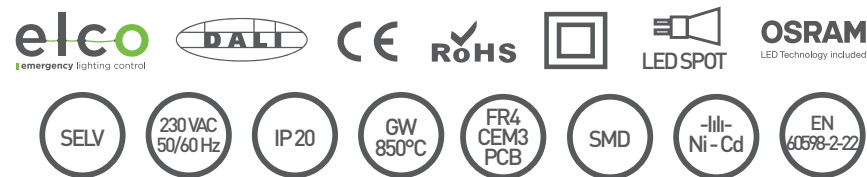
PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA104-RINA/DALI/1W	3 h	Non-Maintained	Power LED	- / 105 lm	Recessed / Surface Mounted	24 h
AA104-RINA/DALI/2W	3 h	Non-Maintained	Power LED	- / 205 lm	Recessed / Surface Mounted	24 h
AA104-RINA/DALI/3W	3 h	Non-Maintained	Power LED	- / 305 lm	Recessed / Surface Mounted	24 h
AA104-RINA/DALI/4W	3 h	Non-Maintained	Power LED	- / 405 lm	Recessed / Surface Mounted	24 h

* Non-maintained : Lights in case of the mains failure.

MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA104-RINA/DALI/1W	3,6V / 900mAh	1,45	0,018	0,35	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,100	1
AA104-RINA/DALI/2W	3,6V / 1800mAh	1,65	0,019	0,37	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,165	1
AA104-RINA/DALI/3W	3,6V / 3000mAh	2,60	0,024	0,45	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,255	1
AA104-RINA/DALI/4W	3,6V / 4000mAh	3,15	0,027	0,48	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,390	1

* Measured under 230 V mains.



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	Power LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	DIFFUSER :	Symmetric / Asymmetric LENS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6V Ni-Cd		

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

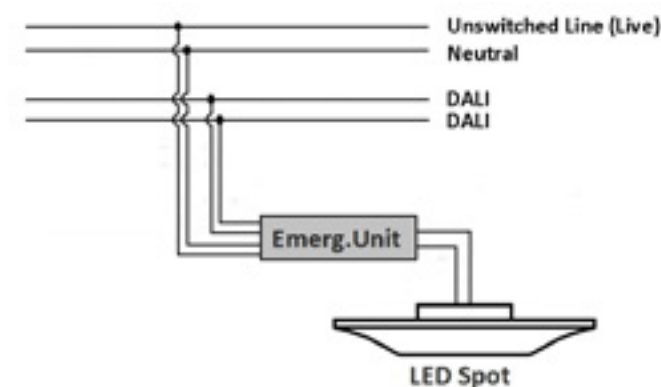
Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

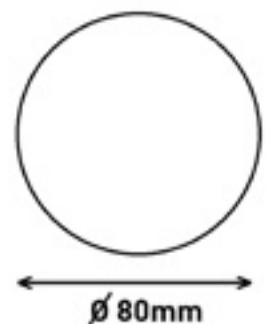
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	3000mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	4000mAh	D	33	3	33 x 180±3 x 33	0,375

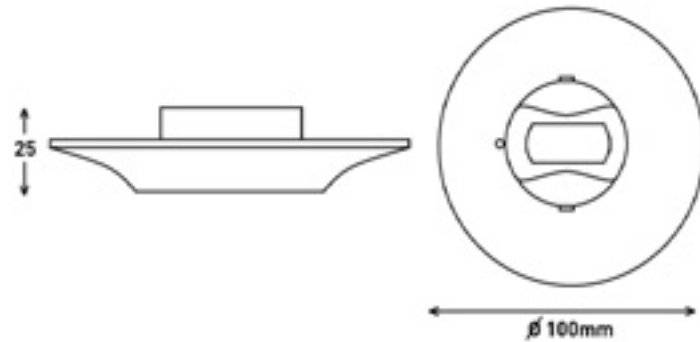
WIRING DIAGRAM



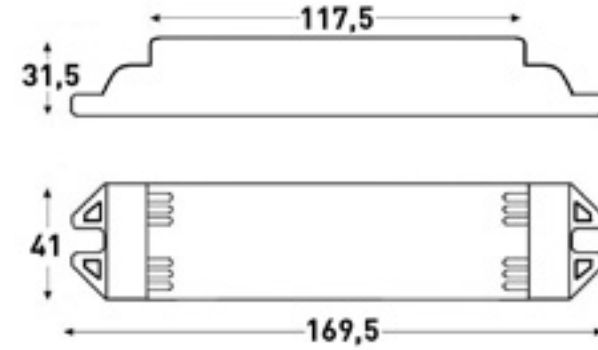
RECESSED MOUNTING HOLE SIZE



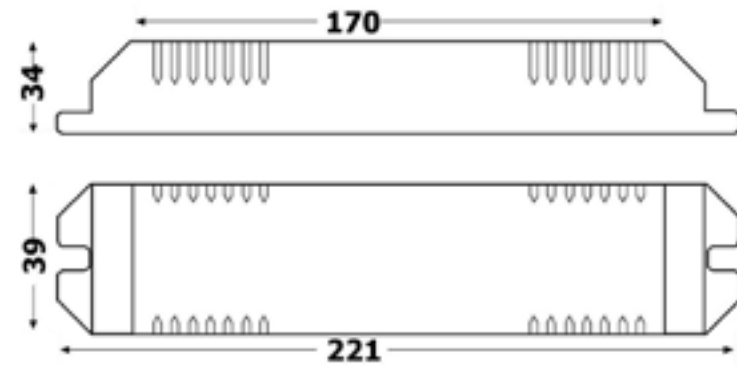
TECHNICAL DRAWING (LED SPOT)







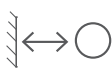

TECHNICAL DRAWING (EMERGENCY UNIT)









TECHNICAL DRAWING (BATTERY BOX)



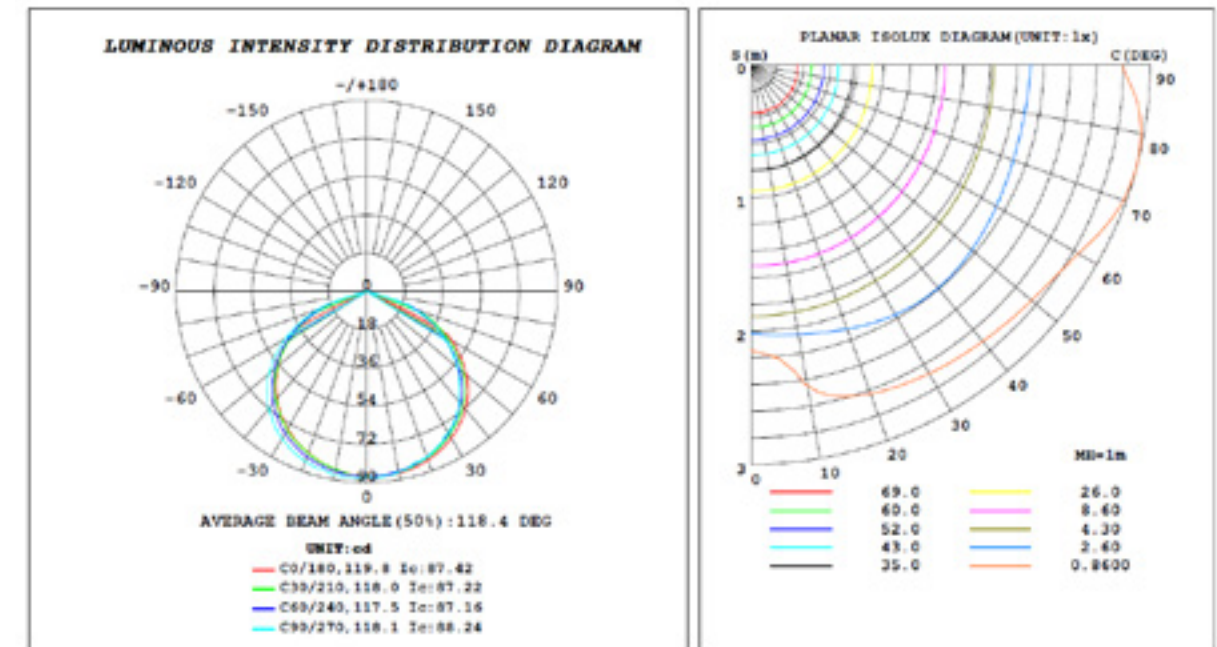
PHOTOMETRY DATA (1W)

Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	4,00	2,00	5,50	10,50
2,50	2,50	5,00	2,50	7,00	13,50
3,00	2,50	5,00	3,00	6,50	16,00
3,50	3,00	6,00	3,50	6,00	16,50
4,00	3,00	6,50	4,00	3,50	11,50

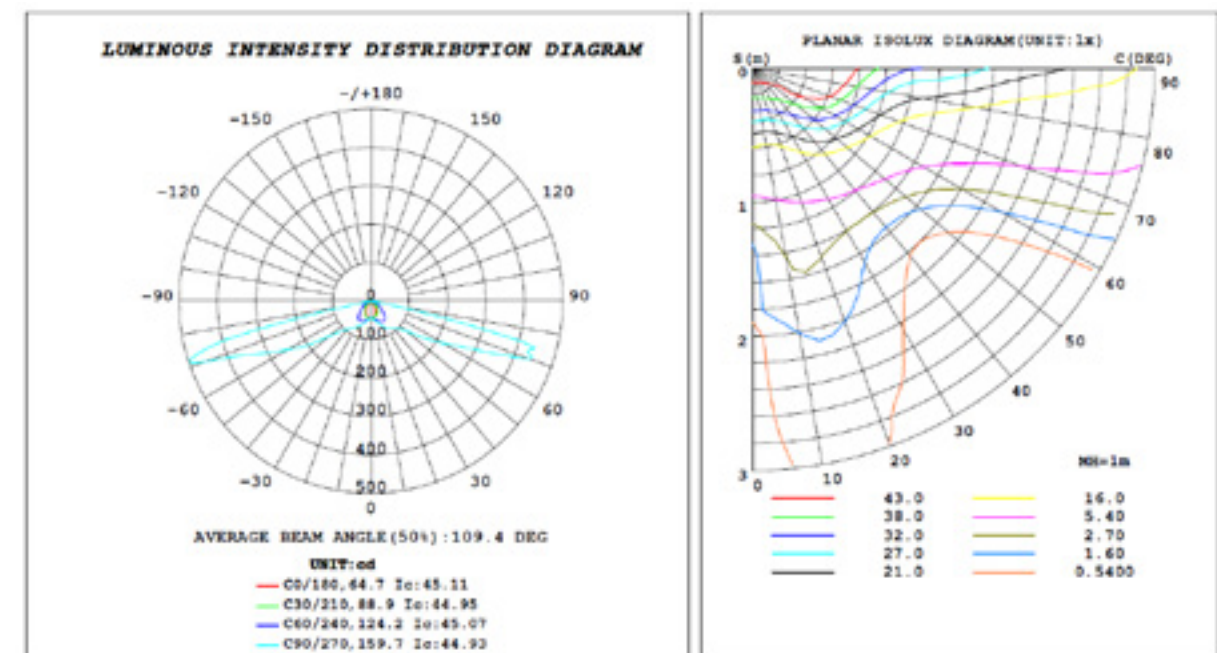
PHOTOMETRY DATA (3W)

Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50	2,00	6,50	11,50
2,50	4,00	7,50	2,50	8,00	15,50
3,00	4,50	8,50	3,00	9,50	18,50
3,50	4,50	10,00	3,50	10,50	21,50
4,00	5,00	11,00	4,00	11,00	24,00

LIGHT DISTRIBUTION CURVE (SYMMETRIC LENS)



LIGHT DISTRIBUTION CURVE (ASYMMETRIC LENS)



EMERGENCY LIGHTING LUMINAIRES – LED SOMON XLED2 / DALI

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
BYPL06-S-XLED2/DALI/1W	3 h	Maintained	20 x SMD LED	115 lm / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/DALI/1W	3 h	Non-Maintained	20 x SMD LED	- / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/DALI/2W	3 h	Non-Maintained	20 x SMD LED	- / 230 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/DALI/3W	3 h	Non-Maintained	20 x SMD LED	- / 350 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/DALI/4W	3 h	Non-Maintained	20 x SMD LED	- / 450 lm	Recessed / Surface Mounted	24 h

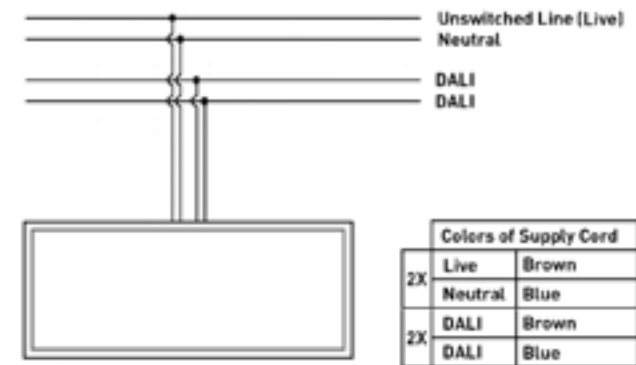
* Non-maintained : Lights in case of the mains failure.

MAINS DATA

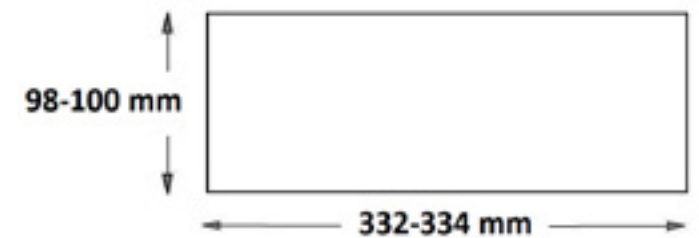
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2/DALI/1W	5,05	0,036	0,60	108 x 341 x 60	0,630	1
BYPL06-A-XLED2/DALI/1W	1,45	0,018	0,35	108 x 341 x 60	0,630	1
BYPL06-A-XLED2/DALI/2W	1,65	0,019	0,37	108 x 341 x 60	0,690	1
BYPL06-A-XLED2/DALI/3W	2,60	0,024	0,45	108 x 341 x 60	0,780	1
BYPL06-A-XLED2/DALI/4W	3,15	0,027	0,48	108 x 341 x 60	0,850	1

* Measured under 230 V mains.

WIRING DIAGRAM



RECESSED MOUNTING HOLE SIZE



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	SMD LED
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	DIFFUSER :	Polycarbonate Glass
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6 V Ni-Cd		

LED INDICATION FUNCTIONS

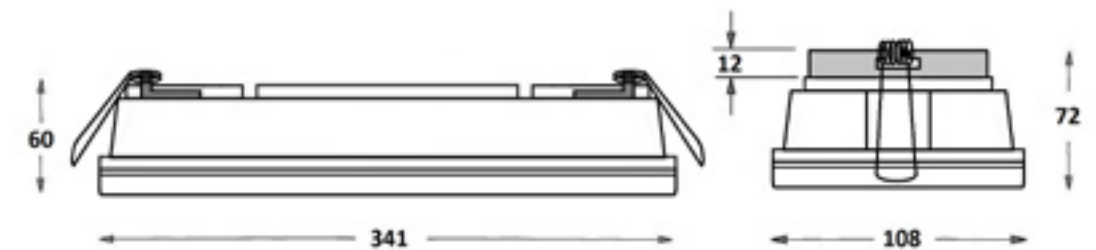
Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

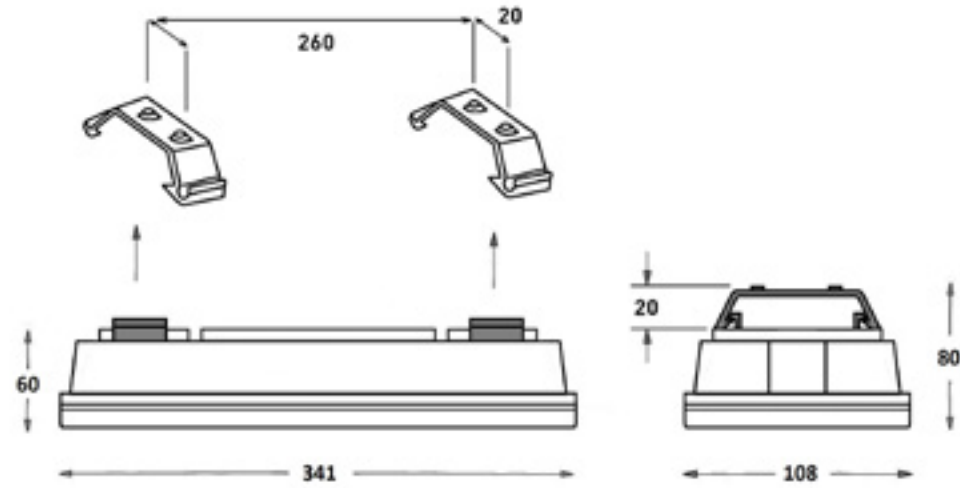
Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

TECHNICAL DRAWING / RECESSED






TECHNICAL DRAWING / SURFACE MOUNTED






PHOTOMETRY DATA (1W)




Open Area (Anti-Panic) Lighting
(for min. 0,5 lux)

 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	3,00
2,50	2,25	4,00
3,00	2,75	4,75
3,50	2,75	5,50
4,00	2,75	6,00




Escape Route Lighting
(for min. 1 lux)

 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	3,50
2,50	2,25	4,25
3,00	2,50	4,50
3,50	2,50	5,00
4,00	2,25	5,25

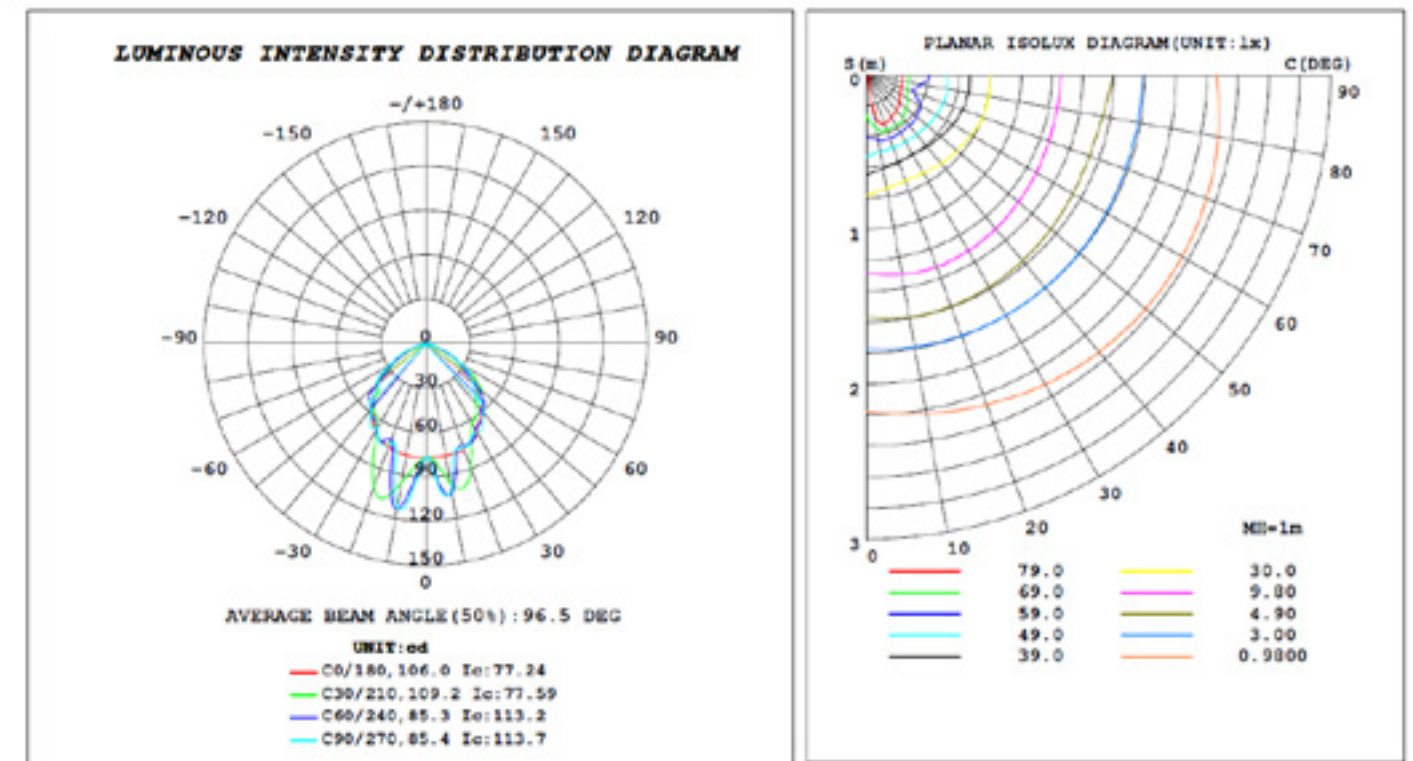
Open Area (Anti-Panic) Lighting
(for min. 0,5 lux)

 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50
2,50	3,50	6,75
3,00	4,00	7,75
3,50	4,25	8,50
4,00	4,50	9,25

Escape Route Lighting
(for min. 1 lux)

 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,75
2,50	3,50	7,00
3,00	4,00	7,75
3,50	4,25	8,50
4,00	4,25	9,25

LIGHT DISTRIBUTION CURVE



EMERGENCY LIGHTING
LUMINAIRES – LED
TETRA PW2 / DALI

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA209-PW2/DALI	3 h	Non-Maintained	2x9W LED	- / 1500 lm	Surface Mounted	48 h

* Non-maintained : Lights in case of the mains failure.

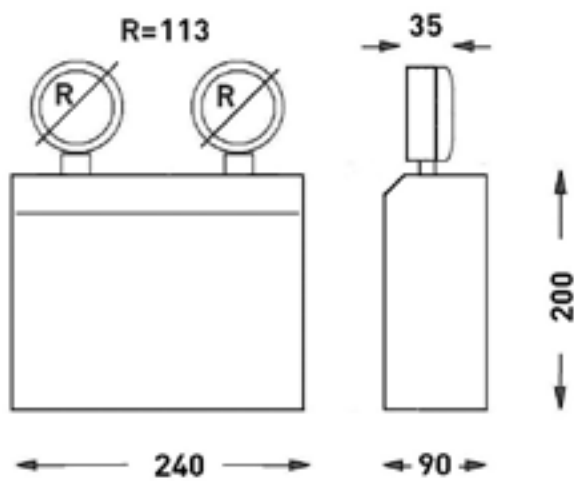
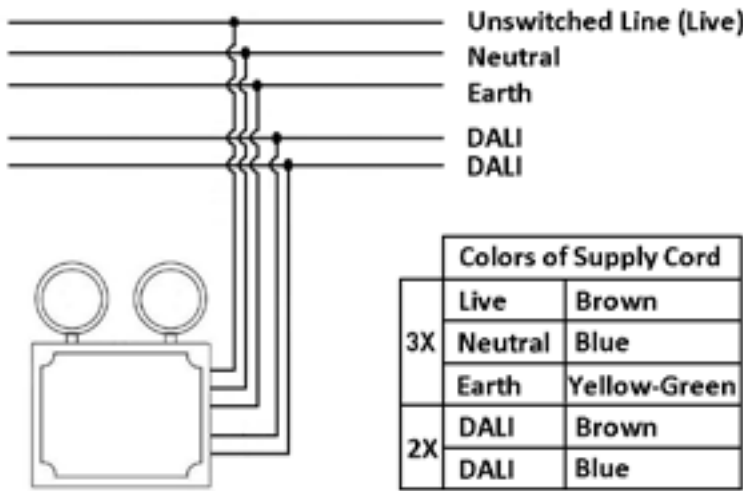
MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA209-PW2/DALI	1,25 - 8,90	0,010 - 0,058	0,50 - 0,67	90 x 240 x 200	4,00	1

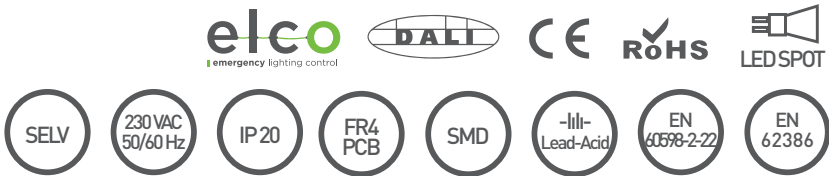
* Measured under 230 V mains.
Maximum values are measured with discharged batteries and values are minimummeasured with full-charged batteries.

WIRING DIAGRAM

TECHNICAL DRAWING



- 180° adjustable headlamp
- SMD Power LED application
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 h duration in case of emergency
- Status display with green and red LEDs
- Test switch
- Remote control and test with DALI interface
- Maintenance-free sealed lead acid battery
- Overcharge and deep discharge protection
- Charging circuit with constant voltage and current protection
- Wall mounted
- Powder coated, white iron sheet case
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	9W LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	CASE MATERIAL :	Iron Sheet
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY TYPE :	12V Lead-Acid	INSULATION CLASS :	I

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.

EMERGENCY LIGHTING LUMINAIRES – LED TETRA PW3 / DALI

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA209-PW3/DALI	3 h	Non-Maintained	2x9W LED	- / 1500 lm	Surface Mounted	48 h

* Non-maintained : Lights in case of the mains failure.

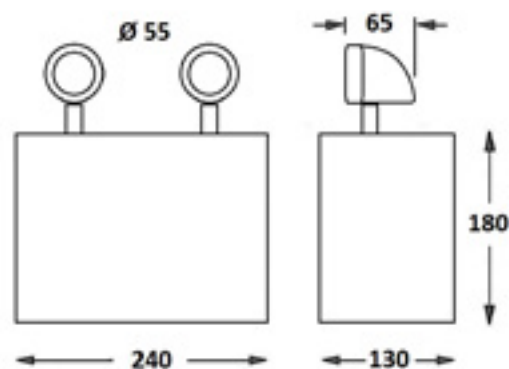
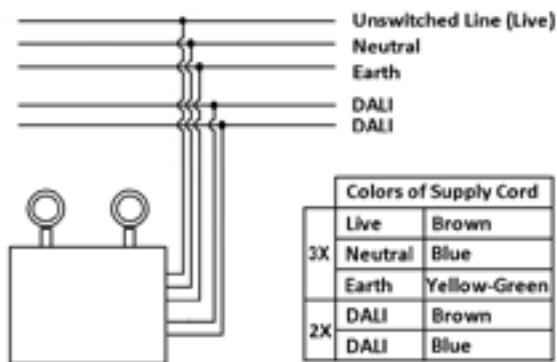
MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA209-PW3/DALI	1,25 - 8,90	0,010 - 0,058	0,50 - 0,67	98 x 255 x 205	4,50	1

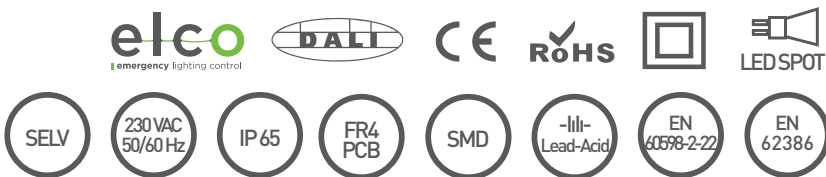
* Measured under 230 V mains.

Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.

WIRING DIAGRAM



TECHNICAL DRAWING



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	9W LED
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	ABS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	12V Lead-Acid	INSULATION CLASS :	II

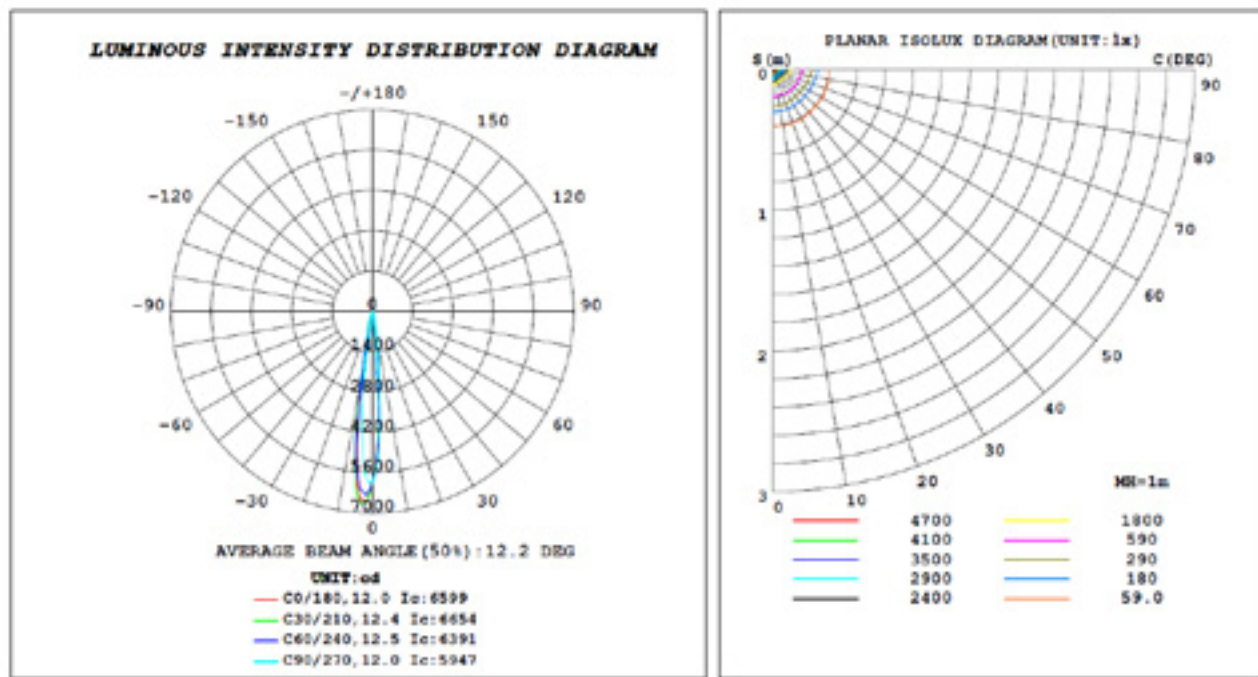
LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

TEST SWITCH FUNCTIONS

Short press (<1s)	Starts the function test or terminate the all tests.
Long press (>5s)*	Starts the duration test.

* The battery must be 100% full before the duration test can be started.



* Above curve is measured data just for one headlamp

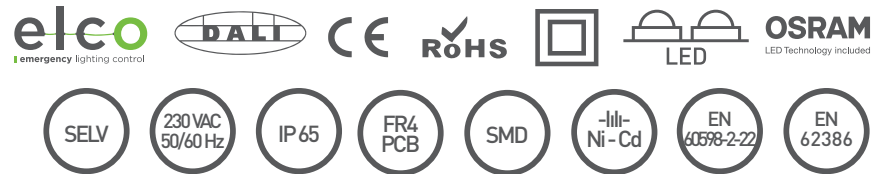
EMERGENCY LIGHTING LUMINAIRES

SENSORLIGHT – LED

MANTA LED / DALI



- Indoor and outdoor use
- Polycarbonate case
- Soft lighting with sanded glass
- Microwave radar sensor
- Adjustable lighting duration
- Adjustable night / day working mode
- High energy saving with LED lighting
- Long life-time (50.000 hours)
- 4000 K / 6500 K Color temperature
- Emergency lighting function by interruption of the unswitched phase
- 3 hours duration in case of emergency
- Status display with green and red LEDs
- Remote control and test with DALI interface
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall and ceiling mounted
- Optional - 110 VAC compatibility
- Optional - LiFePO4 or Ni-MH battery application
- As battery kit, EMLUS-SLED/DALI is used



In accordance with EN 60598-1, EN 60598-2-22, EN 62386 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SENSOR TYPE :	Microwave Radar Sensor
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	Polycarbonate
RATED DURATION :	3 h	LIGHT SOURCE :	SMD LED
BATTERY CHARGING TIME :	24 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	3,6 V Ni-Cd	INSULATION CLASS :	II

LED INDICATION FUNCTIONS

Permanent GREEN	Charge mode
Fast flashing GREEN (0,1s on - 0,1s off)	Function test
Slow flashing GREEN (1s on - 1s off)	Duration test
Permanent RED	Load failure
Slow flashing RED (1s on - 1s off)	Battery failure
Fast flashing RED (0,1s on - 0,1s off)	Charging failure
Double pulsing GREEN	Inhibit mode
Binary transmission of address via GREEN/RED	Addressing or identification
GREEN and RED off	Emergency mode

PRODUCT LIST

PRODUCT CODE*	RATED DURATION	OPERATING MODE**	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE OF MOUNTING	BATTERY CHARGING TIME
AA105-MANTA-L6D/350/E3	3 h	Maintained	16 W / 3 W LED	1750 lm / 250 lm	Surface Mounted	24 h
AA105-MANTA-L6SD/350/E3	3 h	Sensor+Maintained	16 W / 3 W LED	1750 lm / 250 lm	Surface Mounted	24 h
AA105-MANTA-L6SD/500/E3	3 h	Sensor+Maintained	23 W / 3 W LED	2500 lm / 250 lm	Surface Mounted	24 h

* DALI compatibility only in emergency mode

** Maintained: Lights on mains and stays alight in case of the mains failure. (With battery kit)

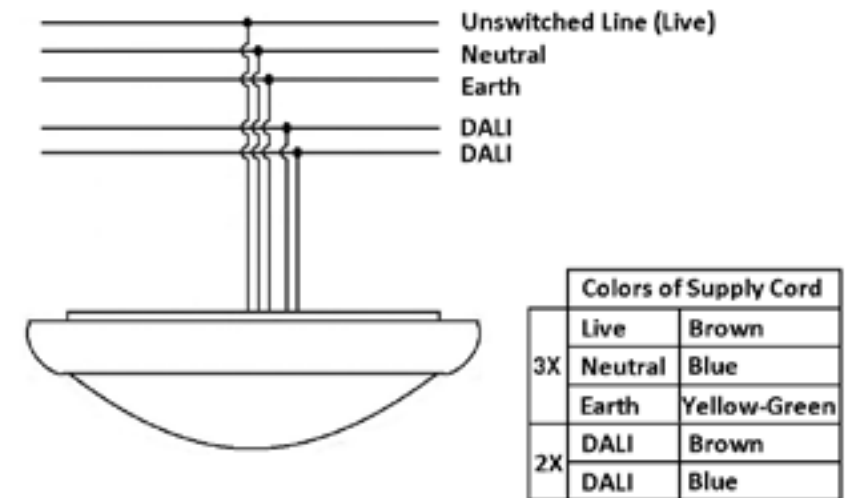
Sensor: Lights on mains through sensor.

MAINS DATA

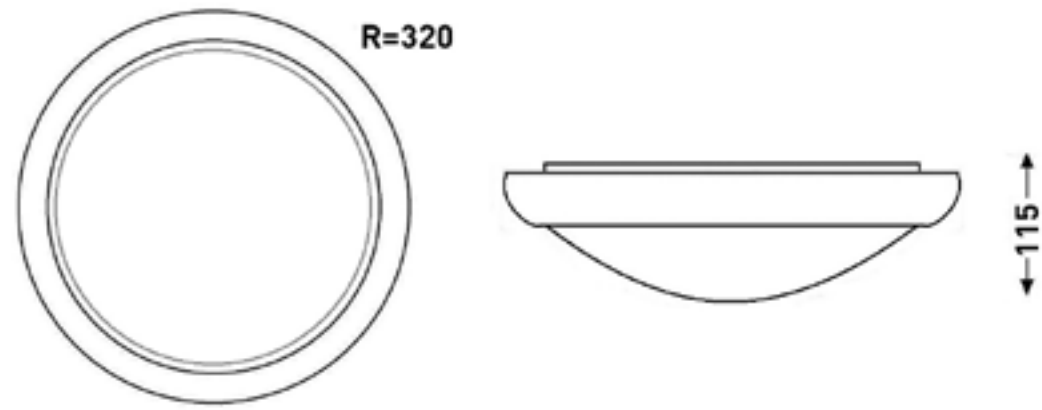
PRODUCT CODE	STAND-BY GÜCÜ (W)*	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA105-MANTA-L6D/350/E3	3,0	23,7	0,140	0,73	320 x 320 x 115	1,70	1
AA105-MANTA-L6SD/350/E3	3,7	25,2	0,169	0,64	320 x 320 x 115	1,75	1
AA105-MANTA-L6SD/500/E3	3,7	32,6	0,198	0,71	320 x 320 x 115	1,75	1

* Measured under 230 V mains.

WIRING DIAGRAM



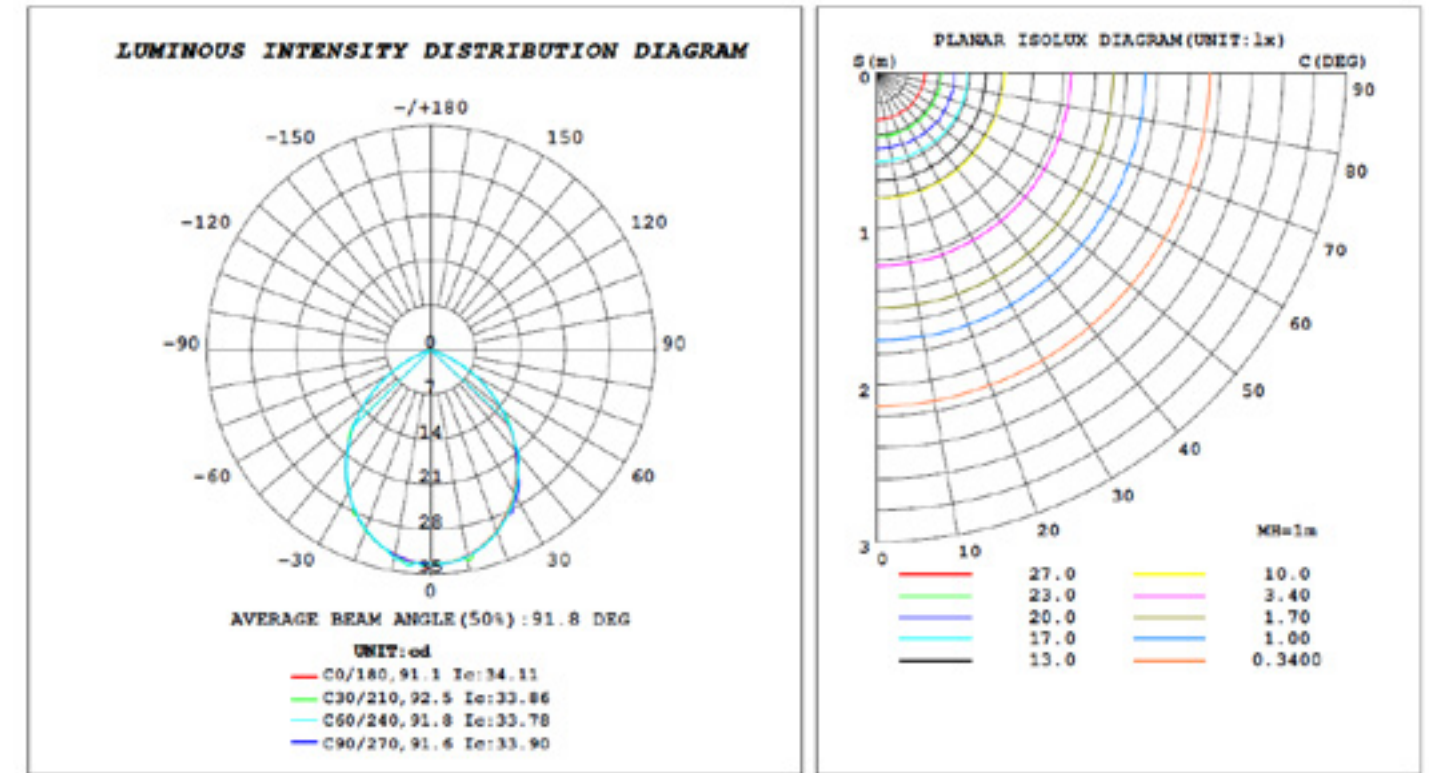
TECHNICAL DRAWING



PHOTOMETRY DATA

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
Mounting Height (m)	Distance Between Luminaire and Wall (m)	Distance Between Luminaires (m)	Mounting Height (m)	Distance Between Luminaire and Wall (m)	Distance Between Luminaires (m)
2,00	2,25	4,00	2,00	2,25	4,25
2,50	2,50	5,00	2,50	2,50	5,00
3,00	2,75	5,50	3,00	2,75	5,50
3,50	3,00	6,25	3,50	2,75	5,75
4,00	3,25	6,50	4,00	2,75	6,25

LIGHT DISTRIBUTION CURVE

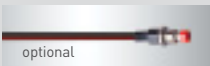
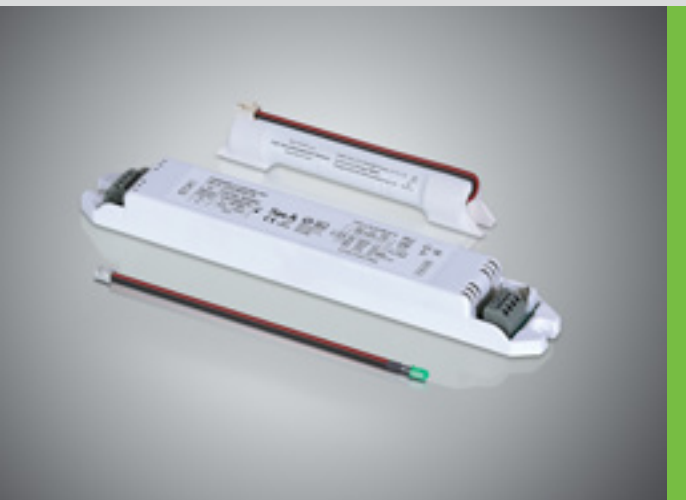




SELF-CONTAINED PRODUCTS

EMERGENCY LIGHTING UNITS

EMERGENCY LIGHTING UNITS - LED EMLUS-SLED / L



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Electromagnetic Interference (EMI) filter
- Emergency lighting function in case of low-voltage
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Simple connectable terminal block
- Polycarbonate case
- Optional - Test switch
- Optional - 110 VAC compatibility
- Optional - Ni-MH battery application



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	10 ... 20 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%1,5 ... %6		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-SLED/L040	20 mA	3 ... 40 VDC	±%5	1 ... 13 LED	0,80 W
EMLUS-SLED/L075	17 mA	3 ... 75 VDC	±%5	1 ... 25 LED	1,28 W
EMLUS-SLED/L150	10 mA	3 ... 150 VDC	±%5	1 ... 50 LED	1,50 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-SLED/L150/1H	3,6 V / 900 mAh	1,95	0,020	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/L040/3H	3,6 V / 1200 mAh	2,00	0,021	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/L075/3H	3,6 V / 1600 mAh	2,15	0,021	0,44	32 x 221 x 22	0,100	50
EMLUS-SLED/L150/3H	3,6 V / 1800 mAh	2,18	0,021	0,44	32 x 221 x 22	0,100	50

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%6,00	%4,00	%3,00	%2,00	%1,50
41 ... 75 VDC	%5,00	%3,50	%2,50	-	-
76 ... 150 VDC	%3,00	-	-	-	-

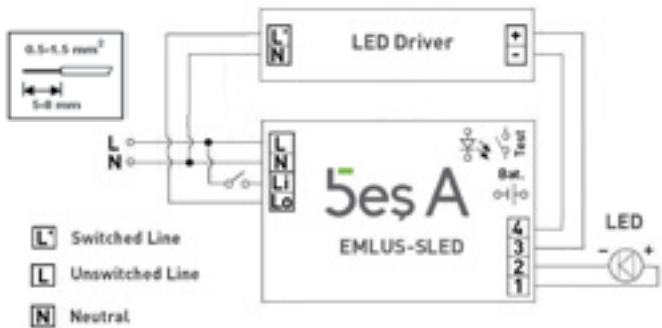
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

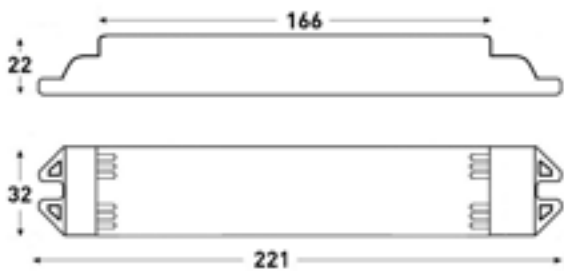
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1600mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



EMERGENCY LIGHTING UNITS - LED EMLUS-SLED / M



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Electromagnetic Interference (EMI) filter
- Emergency lighting function in case of low-voltage
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - Test switch
- Optional - 110 VAC compatibility
- Optional - Ni-MH battery application



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	19 ... 33 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%3 ... %10		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-SLED/M050	33 mA	3 ... 50 VDC	±%5	1 ... 17 LED	1,7 W
EMLUS-SLED/M075	29 mA	3 ... 75 VDC	±%5	1 ... 25 LED	2,0 W
EMLUS-SLED/M150	19 mA	3 ... 150 VDC	±%5	1 ... 50 LED	2,5 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-SLED/M075/1H	3,6 V / 900 mAh	1,95	0,020	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/M150/1H	3,6V / 1200 mAh	2,00	0,021	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/M050/3H	3,6V / 1800 mAh	2,18	0,021	0,44	32 x 221 x 22	0,100	50
EMLUS-SLED/M150/3H	3,6V / 2500 mAh	2,55	0,023	0,48	32 x 221 x 22	0,100	50

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%14,00	%10,00	%7,00	%5,00	%3,5
41 ... 50 VDC	%10,00	%7,00	%5,00	%3,00	-
51 ... 75 VDC	%7,50	%5,00	%4,00	-	-
76 ... 150 VDC	%5,00	-	-	-	-

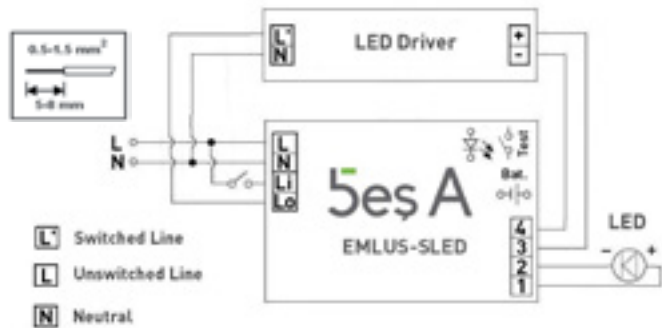
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

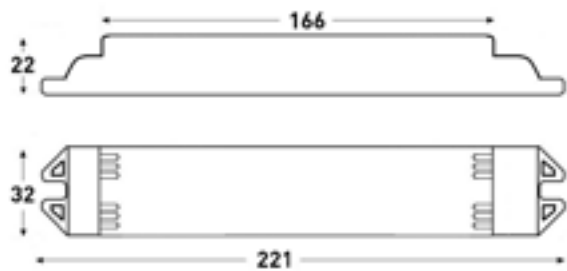
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



EMERGENCY LIGHTING UNITS - LED EMLUS-SLED / H



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Electromagnetic Interference (EMI) filter
- Emergency lighting function in case of low-voltage
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - Test switch
- Optional - 110 VAC compatibility
- Optional - Ni-MH battery application



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	30 ... 63 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%5,5 ... %17		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-SLED/H040	63 mA	3 ... 40 VDC	±%5	1 ... 13 LED	2,4 W
EMLUS-SLED/H060	55 mA	3 ... 60 VDC	±%5	1 ... 20 LED	3,3 W
EMLUS-SLED/H090	45 mA	3 ... 90 VDC	±%5	1 ... 30 LED	4,0 W
EMLUS-SLED/H150	30 mA	3 ... 150 VDC	±%5	1 ... 50 LED	4,6 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-SLED/H040/1H	3,6 V / 900 mAh	1,95	0,020	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/H060/1H	3,6 V / 1200 mAh	2,00	0,021	0,42	32 x 221 x 22	0,100	50
EMLUS-SLED/H090/1H	3,6 V / 1600 mAh	2,15	0,021	0,44	32 x 221 x 22	0,100	50
EMLUS-SLED/H150/1H	3,6 V / 1800 mAh	2,18	0,021	0,44	32 x 221 x 22	0,100	50
EMLUS-SLED/H040/3H	3,6 V / 2500 mAh	2,55	0,023	0,48	32 x 221 x 22	0,100	50
EMLUS-SLED/H060/3H	3,6 V / 3000 mAh	2,75	0,023	0,51	32 x 221 x 22	0,100	50
EMLUS-SLED/H150/3H	3,6 V / 4000 mAh	3,00	0,025	0,52	32 x 221 x 22	0,100	50

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%17,00	%12,00	%8,50	%6,00	%4,00
41 ... 60 VDC	%16,00	%11,00	%8,00	%5,50	-
61 ... 90 VDC	%12,50	%9,00	%6,50	-	-
91 ... 150 VDC	%9,00	-	-	-	-

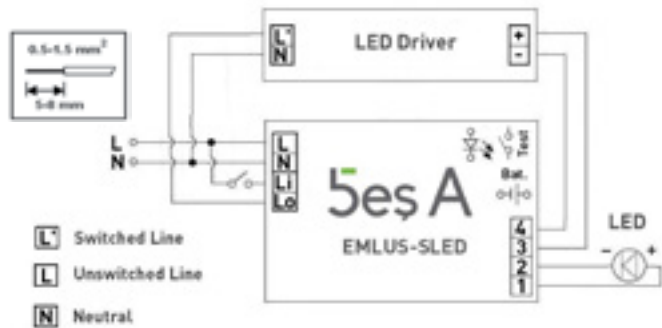
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

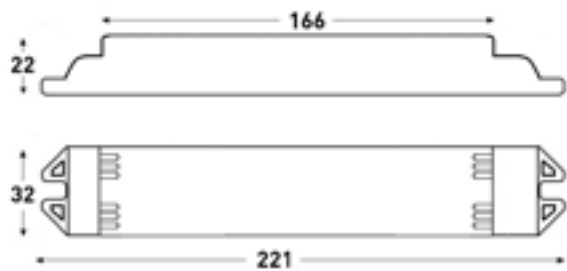
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1600 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	3000 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	4000 mAh	D	33	3	33 x 180±3 x 33	0,375

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

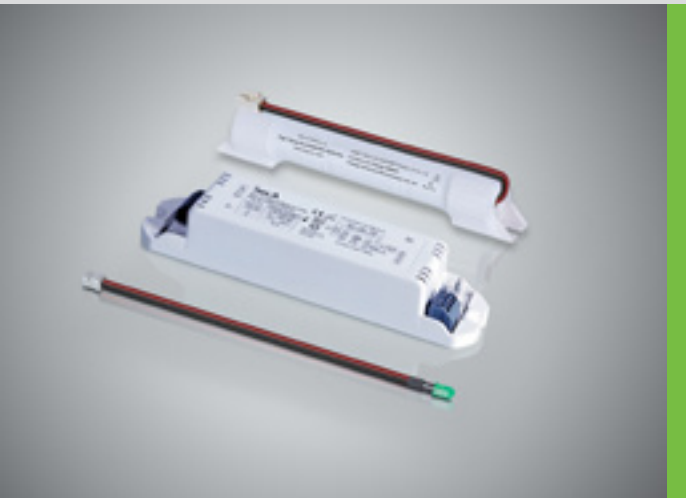


TECHNICAL DRAWING

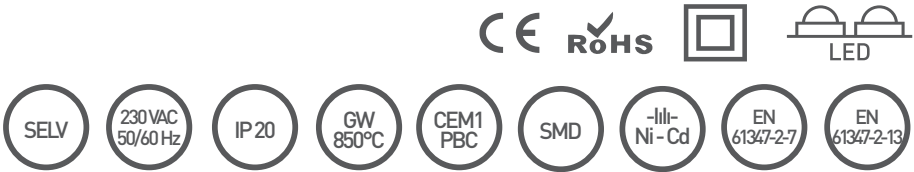


EMERGENCY LIGHTING UNITS - LED

EMLUS-LED / LX2



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	10 ... 20 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%1,5 ... %6		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-LED/LX2-040	20 mA	3 ... 40 VDC	±5%	1 ... 13 LED	0,80 W
EMLUS-LED/LX2-075	17 mA	3 ... 75 VDC	±5%	1 ... 25 LED	1,28 W
EMLUS-LED/LX2-150	10 mA	3 ... 150 VDC	±5%	1 ... 50 LED	1,50 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-LED/LX2-150/1H	3,6 V / 900 mAh	3,03	0,014	0,94	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/LX2-040/3H	3,6 V / 1200 mAh	3,06	0,014	0,95	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/LX2-075/3H	3,6 V / 1600 mAh	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/LX2-150/3H	3,6 V / 1800 mAh	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%6,00	%4,00	%3,00	%2,00	%1,50
41 ... 75 VDC	%5,00	%3,50	%2,50	-	-
76 ... 150 VDC	%3,00	-	-	-	-

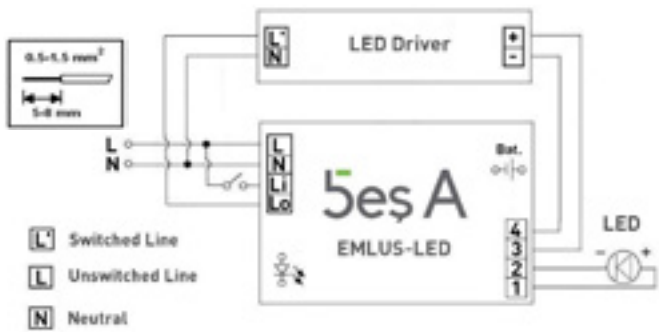
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

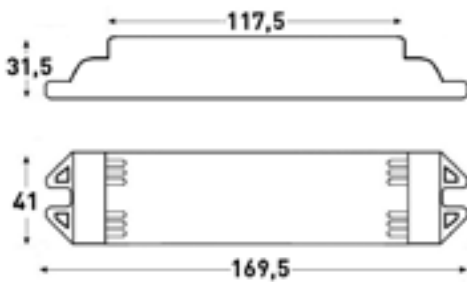
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3.6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3.6V	1200mAh	SC	23	3	23 x 129±3 x 23	0,150
3.6V	1600mAh	SC	23	3	23 x 129±3 x 23	0,150
3.6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

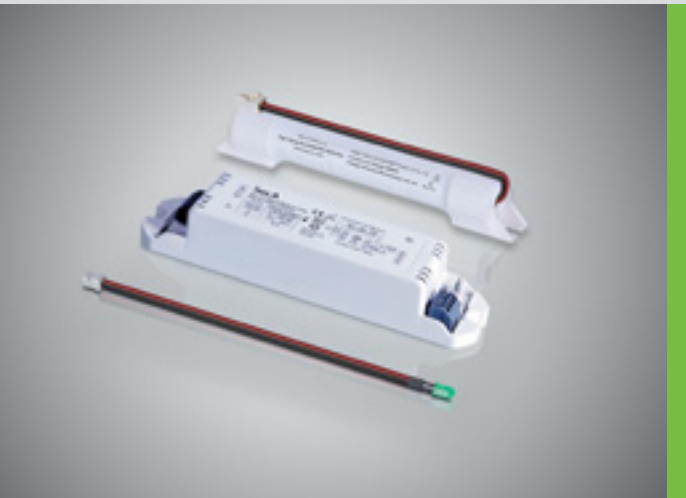


TECHNICAL DRAWING

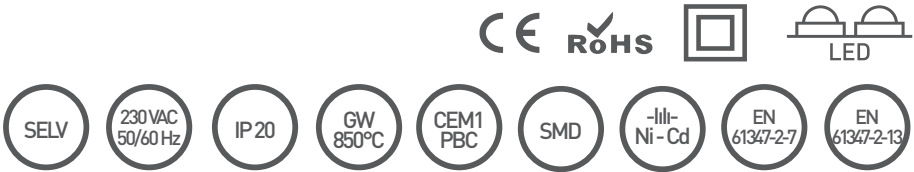


EMERGENCY LIGHTING UNITS - LED

EMLUS-LED / MX2



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	19 ... 33 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%3 ... %10		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-LED/MX2-050	33 mA	3 ... 50 VDC	±5%	1 ... 17 LED	1,7 W
EMLUS-LED/MX2-075	29 mA	3 ... 75 VDC	±5%	1 ... 25 LED	2,0 W
EMLUS-LED/MX2-150	19 mA	3 ... 150 VDC	±5%	1 ... 50 LED	2,5 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-LED/MX2-075/1H	3,6 V / 900 mAh	3,03	0,014	0,94	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/MX2-150/1H	3,6 V / 1200 mAh	3,06	0,014	0,95	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/MX2-050/3H	3,6 V / 1800 mAh	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/MX2-150/3H	3,6 V / 2500 mAh	3,65	0,016	0,97	41 x 169,5 x 31,5	0,180	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%14,00	%10,00	%7,00	%5,00	%3,50
41 ... 50 VDC	%10,00	%7,00	%5,00	%3,00	-
51 ... 75 VDC	%7,50	%5,00	%4,00	-	-
76 ... 150 VDC	%5,00	-	-	-	-

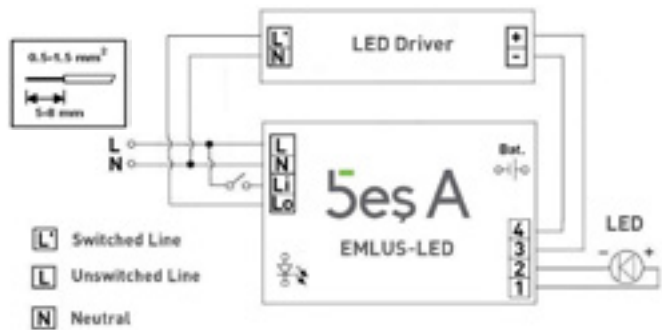
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

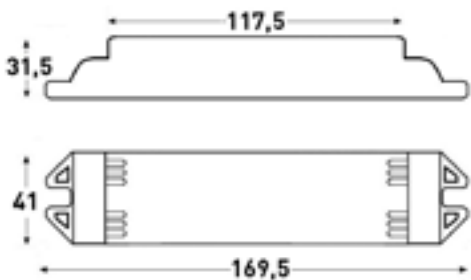
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING

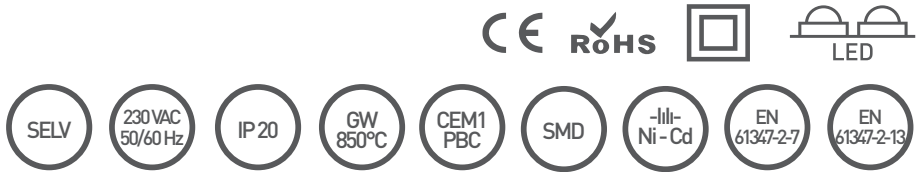


EMERGENCY LIGHTING UNITS - LED

EMLUS-LED / HX2



- Compatible with panel LED, COB LED and power LED
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Constant current output
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	OUTPUT CURRENT :	30 ... 63 mA
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	3 ... 150 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	0 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%5,5 ... %17		

PRODUCT LIST

PRODUCT CODE	OUTPUT CURRENT*	LED MODULE OUTPUT VOLTAGE RANGE	LED CURRENT TOLERANCE	SERIES LED QUANTITY	OUTPUT POWER*
EMLUS-LED/HX2-040	63 mA	3 ... 40 VDC	±5%	1 ... 13 LED	2,4 W
EMLUS-LED/HX2-060	55 mA	3 ... 60 VDC	±5%	1 ... 20 LED	3,3 W
EMLUS-LED/HX2-090	45 mA	3 ... 90 VDC	±5%	1 ... 30 LED	4,0 W
EMLUS-LED/HX2-150	30 mA	3 ... 150 VDC	±5%	1 ... 50 LED	4,6 W

* Measured using maximum LED quantities with 3,6 V battery.

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-LED/HX2-040/1H	3,6 V / 900 mAh	3,03	0,014	0,94	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-060/1H	3,6 V / 1200 mAh	3,06	0,014	0,95	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-090/1H	3,6 V / 1600 mAh	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-150/1H	3,6 V / 1800 mAh	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-040/3H	3,6 V / 2500 mAh	3,65	0,016	0,97	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-060/3H	3,6 V / 3000 mAh	3,65	0,016	0,97	41 x 169,5 x 31,5	0,180	30
EMLUS-LED/HX2-150/3H	3,6 V / 4000 mAh	3,65	0,016	0,97	41 x 169,5 x 31,5	0,180	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

LED OPERATING VOLTAGE	LED OPERATING CURRENT 350mA	LED OPERATING CURRENT 500mA	LED OPERATING CURRENT 700mA	LED OPERATING CURRENT 1050mA	LED OPERATING CURRENT 1400mA
3 ... 40 VDC	%17,00	%12,00	%8,50	%6,00	%4,00
41 ... 60 VDC	%16,00	%11,00	%8,00	%5,50	-
61 ... 90 VDC	%12,50	%9,00	%6,50	-	-
91 ... 150 VDC	%9,00	-	-	-	-

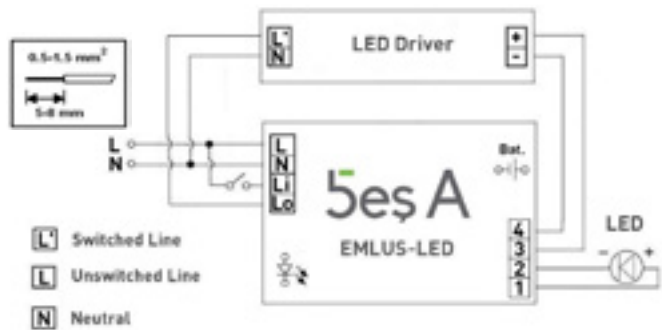
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

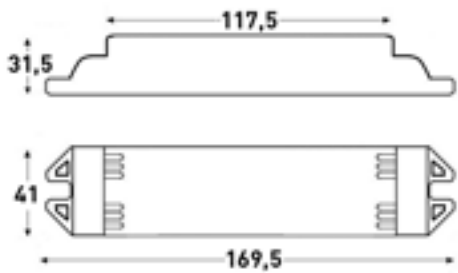
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1600 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	3000 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	4000 mAh	D	33	3	33 x 180±3 x 33	0,375

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



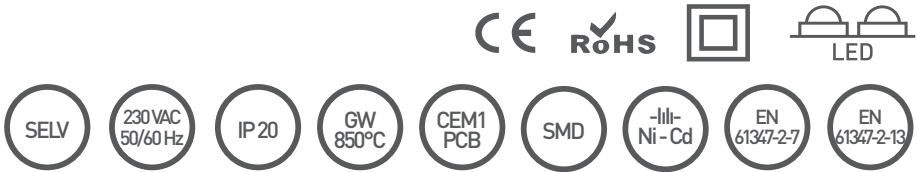
TECHNICAL DRAWING



EMERGENCY LIGHTING UNITS - LED
EMLUS-12V/24V



- Compatible with 12 V and 24 V LED Strip
- Compatible with all dimmable and non-dimmable, constant current LED control gears
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 h duration
- Constant voltage output
- Sustained constant 100% lighting
- Operation range of 3 ... 150 VDC, optional 200 VDC
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility

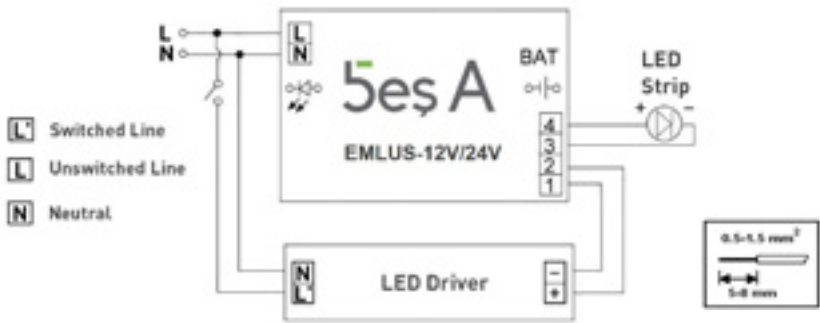


In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

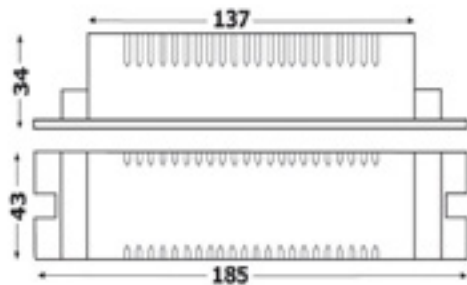
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	MAX. OUTPUT POWER :	12 V – 50 W / 24 V – 100 W
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	OUTPUT VOLTAGE :	10 ... 14 VDC / 20 ... 28 VDC
MAX. CASING TEMPERATURE (tc) :	70 °C	OPEN CIRCUIT VOLTAGE :	10 ... 14 VDC / 20 ... 28 VDC
RATED DURATION :	1 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 72 h	INSULATION CLASS :	II
EMERGENCY LUMEN FACTOR (BLF) :	%100		

WIRING DIAGRAM



TECHNICAL DRAWING



BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-12V-008W	12 V / 900 mAh (1 h)	3,55	0,022	0,68	43 x 185 x 34	0,200	30
EMLUS-12V-015W	12 V / 1600 mAh (1 h)	4,30	0,024	0,76	43 x 185 x 34	0,200	30
EMLUS-12V-030W	12 V / 4000 mAh (1 h)	5,45	0,028	0,83	43 x 185 x 34	0,200	30
EMLUS-12V-050W	12 V / 5000 mAh (1 h)	6,25	0,031	0,86	43 x 185 x 34	0,200	30
EMLUS-24V-015W	24 V / 900 mAh (1 h)	7,10	0,035	0,89	43 x 185 x 34	0,200	30
EMLUS-24V-030W	24 V / 1600 mAh (1 h)	8,75	0,042	0,91	43 x 185 x 34	0,200	30
EMLUS-24V-060W	24 V / 4000 mAh (1 h)	8,75	0,042	0,91	43 x 185 x 34	0,200	30
EMLUS-24V-100W	24 V / 5000 mAh (1 h)	8,75	0,042	0,91	43 x 185 x 34	0,200	30

* Measured under 230 V mains.

BATTERY DATA

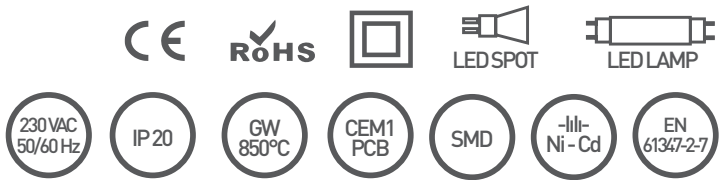
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
12 V / 900 mAh	900mAh	AA	15	10	30 x 255±3 x 15	0,285
12 V / 1600 mAh	1600mAh	SC	23	10	46 x 215±3 x 23	0,500
12 V / 4000 mAh	4000mAh	D	33	10	66 x 300±3 x 33	1,250
12 V / 5000 mAh	2500mAh	C	26	20	52 x 250±3 x 52	1,600
24 V / 900 mAh	900mAh	AA	15	20	30 x 255±3 x 15	0,570
24 V / 1600 mAh	1600mAh	SC	23	20	46 x 215±3 x 23	1,000
24 V / 4000 mAh	4000mAh	D	33	20	66 x 300±3 x 33	2,500
24 V / 5000 mAh	2500mAh	C	26	40	52 x 250±3 x 52	3,200

Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

EMERGENCY LIGHTING UNITS - LED
EMLUS-220



- Compatible with 220 V LED tube and spot lighting
- Sustained constant 100% lighting
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- DC voltage supply for LED Driver
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	%100
AMBIENT TEMPERATURE (ta) :	-10°C ... +50 °C	MAX. OUTPUT POWER :	30 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	200 ... 340 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 96 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-220/10W	7,2 V / 3000 mAh (1 h)	4,70	0.023	0.86	42 x 264 x 34	0,285	25
	7,2 V / 6000 mAh (3 h)	6,30	0.030	0.90			
EMLUS-220/20W	12 V / 3000 mAh (1 h)	6,75	0.034	0.87	42 x 264 x 34	0,285	25
	12 V / 6000 mAh (3 h)	6,75	0.034	0.87			
EMLUS-220/25W	12 V / 4000 mAh (1 h)	6,75	0.034	0.87	42 x 264 x 34	0,285	25
	12 V / 8000 mAh (3 h)	6,75	0.034	0.87			
EMLUS-220/30W	12 V / 5000 mAh (1 h)	6,75	0.034	0.87	42 x 264 x 34	0,285	25
		6,75	0.034	0.87			

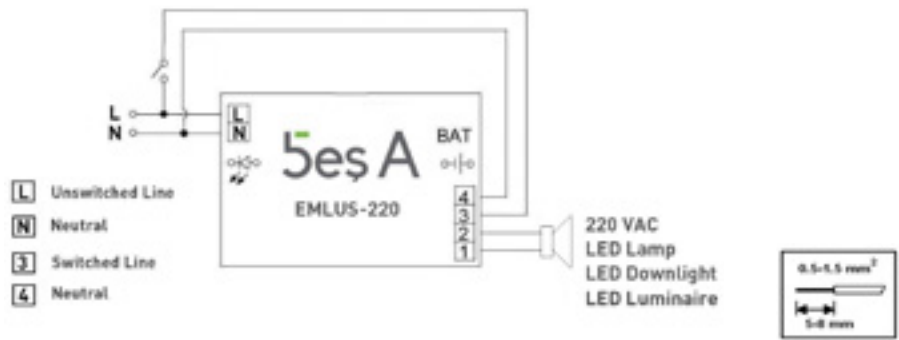
* Measured under 230 V mains.

BATTERY DATA

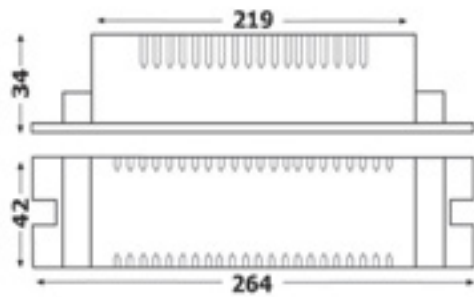
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
7,2V/3000mAh	3000 mAh	C	26	6	26 x 300±3 x 26	0,480
7,2V/6000mAh	3000 mAh	C	26	12	52 x 300±3 x 26	0,960
12V/3000mAh	3000 mAh	C	26	10	52 x 250±3 x 26	0,800
12V/4000mAh	4000 mAh	D	33	10	66 x 300±3 x 33	1,250
12V/5000mAh	2500 mAh	C	26	20	52 x 250±3 x 52	1,600
12V/6000mAh	3000 mAh	C	26	20	52 x 250±3 x 52	1,600
12V/8000mAh	4000 mAh	D	33	20	66 x 300±3 x 66	2,600

Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM

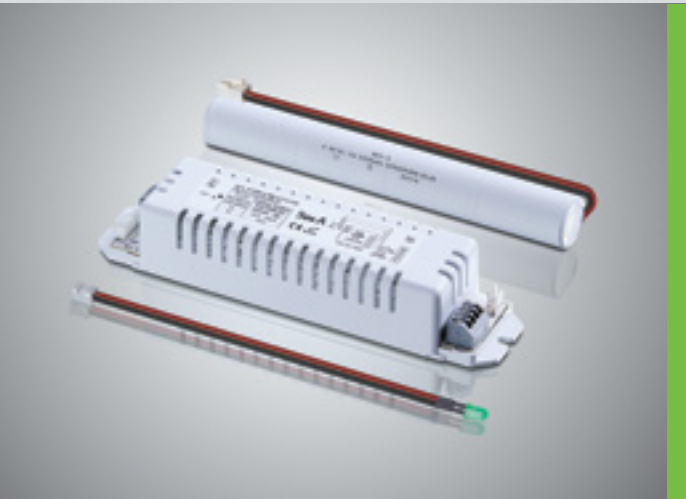


TECHNICAL DRAWING



EMERGENCY LIGHTING UNITS - LED

EMLUS-220 SPOT



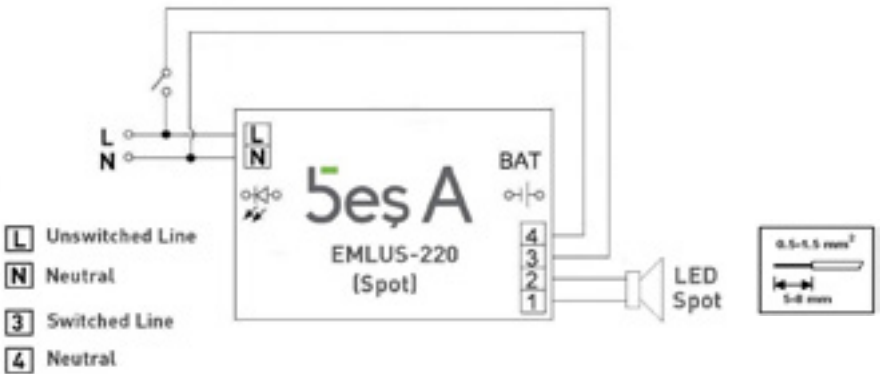
- Compatible with 220 V / up to 5 W LED spot
- Sustained constant 100% lighting
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- DC voltage supply for LED Driver
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility

BATTERY DATA

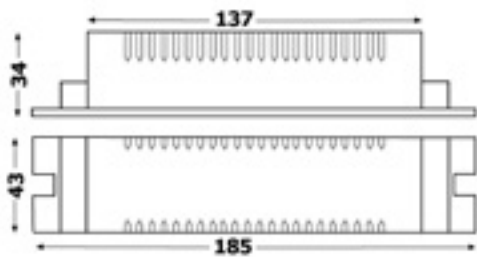
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
4,8 V	1800 mAh	SC	23	4	23 x 180±4 x 23	0,200
4,8 V	4000 mAh	D	33	4	33 x 248±4 x 33	0,520

Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



In accordance with EN 61347-1, EN 61347-2-7 and EN 61347-2-13 standards.

TECHNICAL DATA

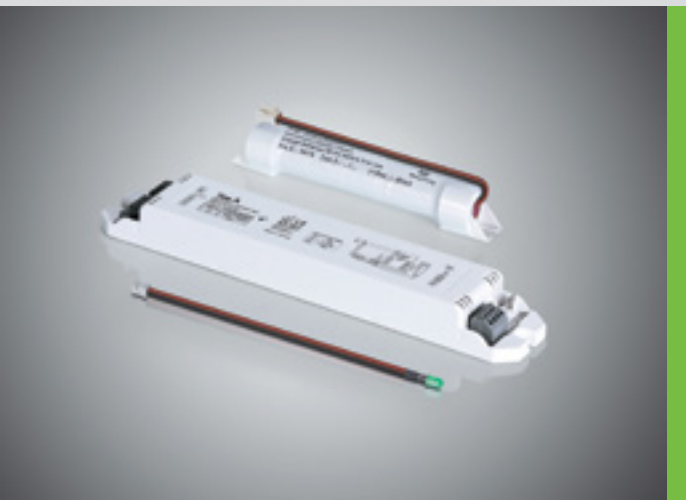
SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	EMERGENCY LUMEN FACTOR (BLF) :	%100
AMBIENT TEMPERATURE (ta) :	-10°C ... +50 °C	MAX. OUTPUT POWER :	5 W
MAX. CASING TEMPERATURE (tc) :	70 °C	OUTPUT VOLTAGE :	160 ... 310 VDC
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 / 48 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-220/5W	4,8 V / 1800 mAh (1 h)	3,55	0,019	0,80	43 x 185 x 34	0,225	30
	4,8 V / 4000 mAh (3 h)	4,60	0,023	0,86	43 x 185 x 34	0,225	30

* Measured under 230 V mains.

EMERGENCY LIGHTING UNITS FLUORESCENT LAMP EMLUS-FLS



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Emergency lighting function in case of low-voltage
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - Ni-MH battery application
- Optional - 110 VAC compatibility



In accordance with EN 61347-1 and EN 61347-2-7 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	BATTERY CHARGING TIME :	24 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	%7 ... %20
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	FLUORESCENT LAMP TYPE & LAMP POWER			
		4-pin T8	4-pin T5	4-pin PLL	4-pin PLC
EMLUS-FLS/A	1 / 3 h	18 W	13-14 W	11-18 W	13 W
EMLUS-FLS/B	1 / 3 h	36 W	24 W	24-36 W	18-26 W
EMLUS-FLS/C	1 / 3 h	58 W	21-39 W	55 W	-
EMLUS-FLS/D	1 / 3 h	-	28-35-49-54-80 W	-	32-42 W

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-FLS/A/1H	3,6 V / 900 mAh (1 h)	2,25	0,021	0,48	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/A/3H	3,6 V / 2500 mAh (3 h)	2,95	0,024	0,52	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/B/1H	3,6 V / 1200 mAh (1 h)	2,50	0,022	0,50	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/B/3H	3,6 V / 3000 mAh (3 h)	2,95	0,024	0,52	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/C/1H	3,6 V / 1600 mAh (1 h)	2,75	0,023	0,50	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/C/3H	3,6 V / 4000 mAh (3 h)	3,60	0,029	0,55	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/D/1H	4,8 V / 1800 mAh (1 h)	3,80	0,030	0,56	42 x 234,5 x 23,5	0,140	30
EMLUS-FLS/D/3H	4,8 V / 4000 mAh (3 h)	5,50	0,041	0,60	42 x 234,5 x 23,5	0,140	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

PRODUCT	FLUORESCENT LAMP TYPE & LAMP POWER			
	4-pin T8	4-pin T5	4-pin PLL	4-pin PLC
EMLUS-FLS/A	18W(%11)	13W(%18) 14W(%17)	11W(%20) 18W(%13)	13W(%20)
EMLUS-FLS/B	36W(%8)	24W(%11)	24W(%10) 36W(%13)	18W(%20) 26W(%14)
EMLUS-FLS/C	58W(%7)	21W(%15) 39W(%14)	55W(%10)	-
EMLUS-FLS/D	-	28W(%13) 35W(%10) 49W(%10) 54W(%12) 80W(%8)	-	32W(%13) 42W(%13)

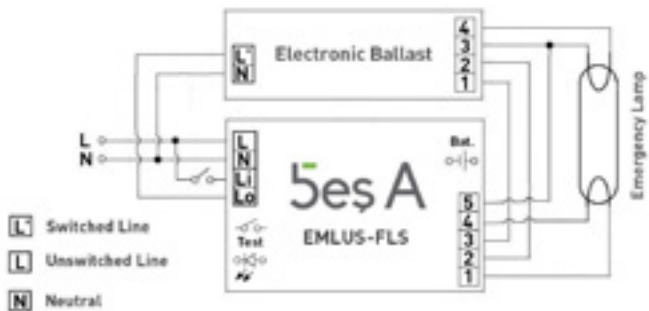
Measured with 3,6 V battery under maximum operating voltage.

BATTERY DATA

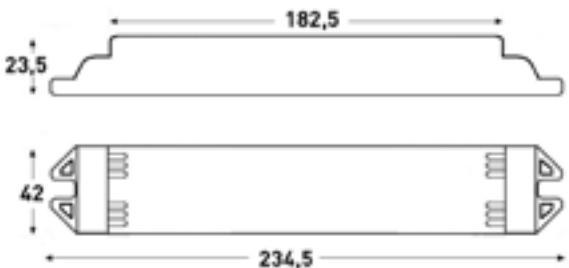
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6 V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6 V	1600 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6 V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6 V	3000 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6 V	4000 mAh	D	33	3	33 x 180±3 x 33	0,375
4,8 V	1800 mAh	SC	23	4	33 x 172±4 x 33	0,225
4,8 V	4000 mAh	D	33	4	33 x 240±4 x 33	0,520

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



EMERGENCY LIGHTING UNITS FLUORESCENT LAMP EMLUS-FLT



- Compatible with electronic and magnetic ballast
- Non-maintained operation
- Emergency lighting function by interruption of the unswitched phase
- 1 - 3 h duration
- Compatible with 4-pin fluorescent lamps
- Prolonging the lamp life with warm-start
- Short-circuit, open-circuit and overload protection
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polarity reversal protection for battery
- Charge status display with green LED
- Polycarbonate case
- Simple connectable terminal block
- Optional - 110 VAC compatibility

BATTERY AND MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-FLT/AX2/1H	3,6 V / 900 mAh (1 h)	3,00	0,014	0,95	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/AX2/3H	3,6 V / 2500 mAh (3 h)	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/BX2/1H	3,6 V / 1200 mAh (1 h)	3,10	0,014	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/BX2/3H	3,6 V / 2500 mAh (3 h)	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/CX2/1H	3,6 V / 1600 mAh (1 h)	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/CX2/3H	3,6 V / 4000 mAh (3 h)	3,40	0,015	0,96	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/DX2/1H	4,8 V / 1800 mAh (1 h)	3,85	0,017	0,97	41 x 169,5 x 31,5	0,180	30
EMLUS-FLT/DX2/3H	4,8 V / 4000 mAh (3 h)	3,85	0,017	0,97	41 x 169,5 x 31,5	0,180	30

* Measured under 230 V mains.

EMERGENCY LUMEN FACTOR

PRODUCT	FLUORESCENT LAMP TYPE & LAMP POWER			
	4-pin T8	4-pin T5	4-pin PLL	4-pin PLC
EMLUS-FLT/AX2	18W(%11)	13W(%18) 14W(%17)	11W(%20) 18W(%13)	13W(%20)
EMLUS-FLT/BX2	36W(%8)	24W(%11)	24W(%10) 36W(%13)	18W(%20) 26W(%14)
EMLUS-FLT/CX2	58W(%7)	21W(%15) 39W(%14)	55W(%10)	-
EMLUS-FLT/DX2		28W(%13) 35W(%10) 49W(%10) 54W(%12) 80W(%8)	-	32W(%13) 42W(%13)

Measured with 3,6 V battery under maximum operating voltage.



In accordance with EN 61347-1 and EN 61347-2-7 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	BATTERY CHARGING TIME :	24 / 48 h
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	%7 ... %20
MAX. CASING TEMPERATURE (tc) :	70 °C	PROTECTION CLASS :	IP 20
RATED DURATION :	1 / 3 h	INSULATION CLASS :	II

PRODUCT LIST

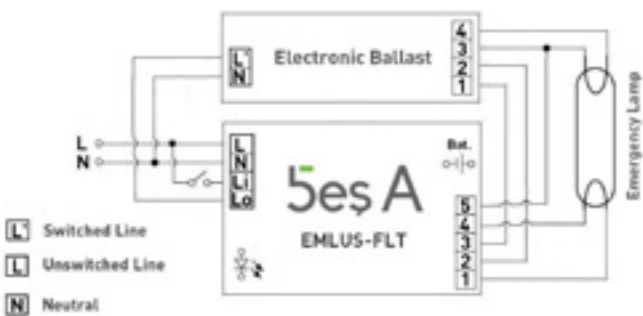
PRODUCT CODE	RATED DURATION	FLUORESCENT LAMP TYPE & LAMP POWER			
		4-pin T8	4-pin T5	4-pin PLL	4-pin PLC
EMLUS-FLT/AX2	1 / 3 h	18 W	13-14 W	11-18 W	13 W
EMLUS-FLT/BX2	1 / 3 h	36 W	24 W	24-36 W	18-26 W
EMLUS-FLT/CX2	1 / 3 h	58 W	21-39 W	55 W	-
EMLUS-FLT/DX2	1 / 3 h	-	28-35-49-54-80 W	-	32-42 W

BATTERY DATA

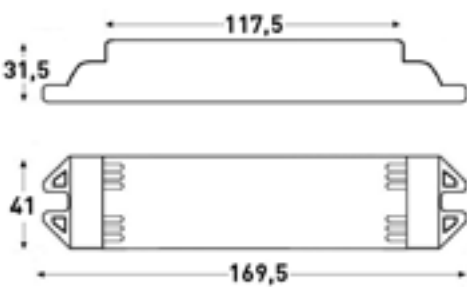
VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm) *	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6 V	900 mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6 V	1200 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6 V	1600 mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6 V	2500 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6 V	3000 mAh	C	26	3	26 x 150±3 x 26	0,240
3,6 V	4000 mAh	D	33	3	33 x 180±3 x 33	0,375
4,8 V	1800 mAh	SC	23	4	33 x 172±4 x 33	0,225
4,8 V	4000 mAh	D	33	4	33 x 240±4 x 33	0,520

Battery dimensions are given without holder. When the holders are added, the length will increase by +40mm and the diameter +5mm. Please refer to “Battery Details Table” in “Emergency Lighting Solutions Overview” section of the catalogue for further battery information.

WIRING DIAGRAM



TECHNICAL DRAWING



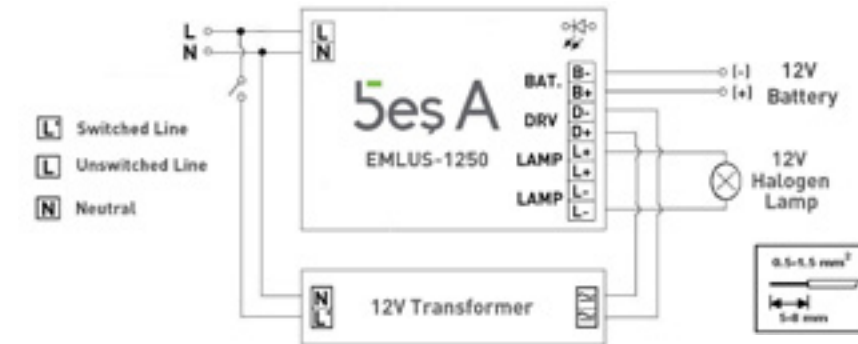
EMERGENCY LIGHTING UNITS HALOGEN LAMP EMLUS-1250

BATTERY DATA

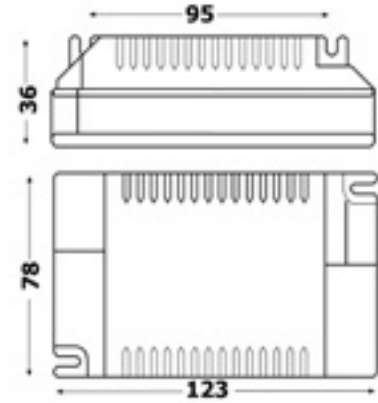
VOLTAGE	CAPACITY	DIMENSIONS (mm)	WEIGHT (kg)
12 V	7000 mAh	65 x 150 x 95	2,150

* Seal lead-acid battery is used.

WIRING DIAGRAM



TECHNICAL DRAWING



In accordance with EN 61347-1 and EN 61347-2-7 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	BATTERY TYPE :	12 V Lead-Acid
AMBIENT TEMPERATURE (ta) :	-10 °C ... +50 °C	EMERGENCY LUMEN FACTOR (BLF) :	%100
MAX. CASING TEMPERATURE (tc) :	70 °C	MAX. OUTPUT POWER :	12 V - 50 W
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	48 / 96 h	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
EMLUS-1250/1H	12 V / 7000 mAh (1 h)	0,95 - 12,60	0,006 - 0,070	0,47	78 x 123 x 36	0,150	25
EMLUS-1250/3H	2*12 V / 7000 mAh (3 h)	0,95 - 12,60	0,006 - 0,070	0,47	78 x 123 x 36	0,150	25

* Measured under 230 V mains.

** Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.



SELF-CONTAINED PRODUCTS

EMERGENCY EXIT LUMINAIRES



- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire
- Optional - Central battery system application



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140 x 265 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- **STATE:** Charge Status LED . Indicates charging process of the battery.
- **TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-M08-CY/SU	3 h	Maintained	8 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-M08-CY/SUMA	3 h	Maintained	8 x SMD LED	Double-sided	Surface Mounted -Steel Wire
BYAL-M08-CY/MT	3 h	Maintained	8 x SMD LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-M08-CY/SA	3 h	Maintained	8 x SMD LED	Double-sided	Recessed Mounted

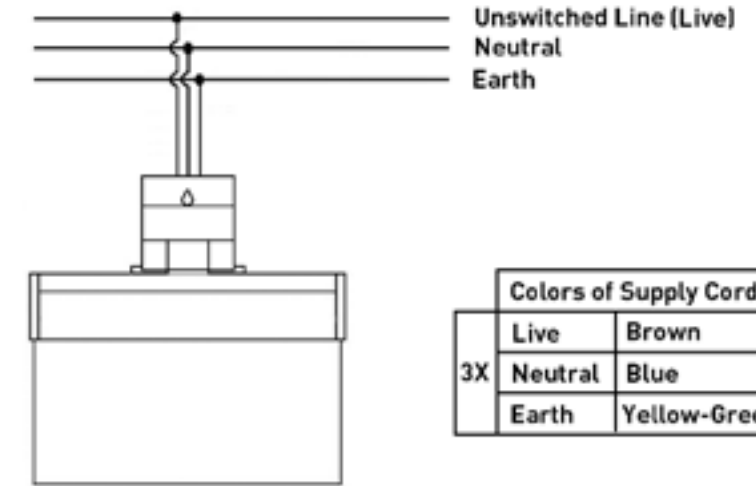
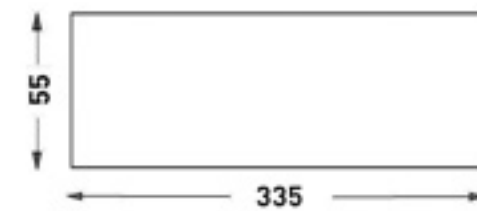
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-M08-CY/SU	4,87	0,035	0,61	40 x 274 x 195	0,665	1
BYAL-M08-CY/SUMA	4,87	0,035	0,61	40 x 274 x 195	0,885	1
BYAL-M08-CY/MT	4,87	0,035	0,61	40 x 274 x 195	0,745	1
BYAL-M08-CY/SA	4,87	0,035	0,61	102 x 342 x 195	1,220	1

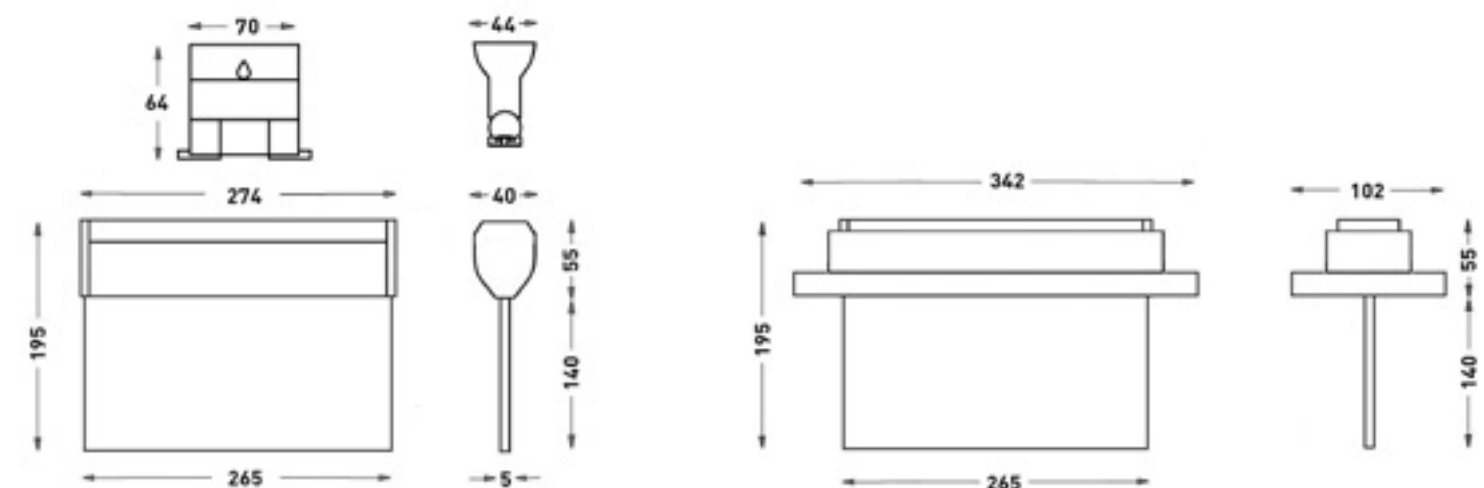
* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE



TECHNICAL DRAWING / SURFACE MOUNTED

TECHNICAL DRAWING / RECESSED MOUNTED

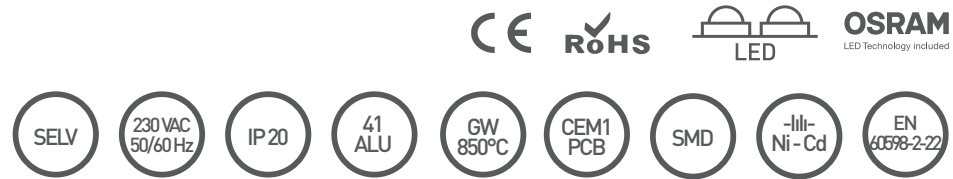




- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	180 x 299 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	36 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- **STATE:** Charge Status LED . Indicates charging process of the battery.
- **TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-L08-CY/SU	3 h	Maintained	10 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL-L08-CY/SUMA	3 h	Maintained	10 x SMD LED	Double-sided	Surface Mounted - Steel Wire
BYAL-L08-CY/MT	3 h	Maintained	10 x SMD LED	Double-sided	Surface Mounted - Metal Hanger
BYAL-L08-CY/SA	3 h	Maintained	10 x SMD LED	Double-sided	Recessed Mounted

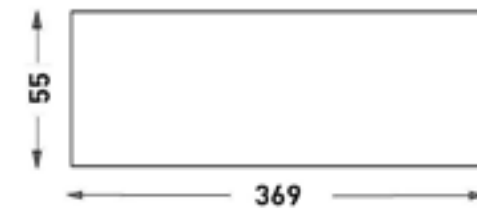
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

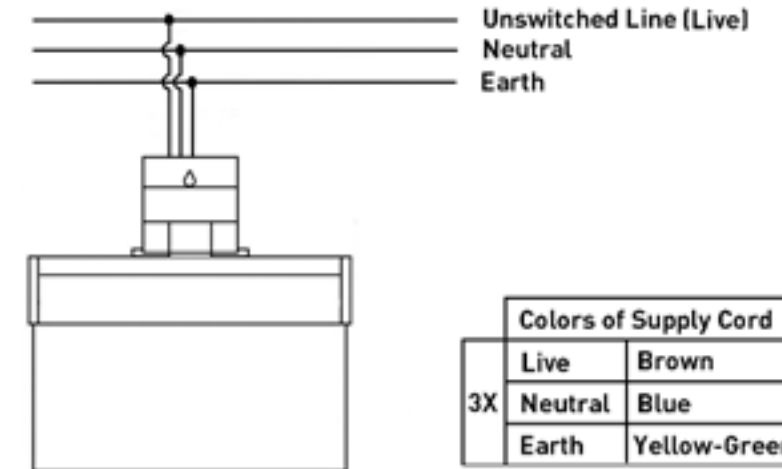
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-L08-CY/SU	4,87	0,035	0,61	40 x 304 x 235	0,700	1
BYAL-L08-CY/SUMA	4,87	0,035	0,61	40 x 304 x 235	0,700	1
BYAL-L08-CY/MT	4,87	0,035	0,61	40 x 304 x 235	0,700	1
BYAL-L08-CY/SA	4,87	0,035	0,61	102 x 372 x 235	1,255	1

* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE

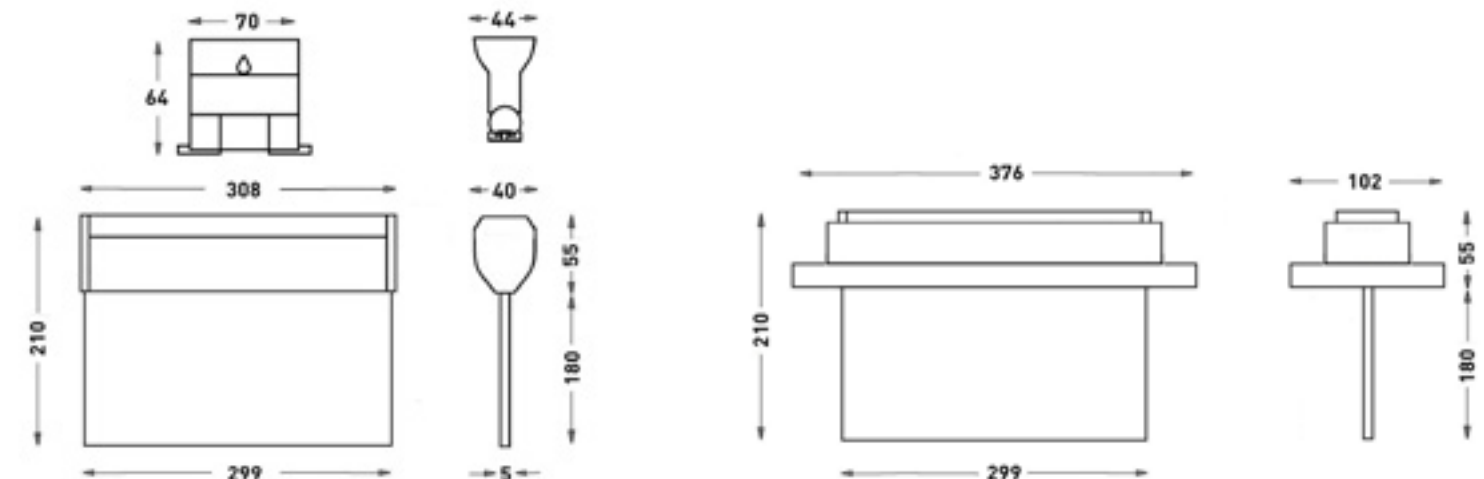


WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED

TECHNICAL DRAWING / RECESSED MOUNTED





- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Charge and battery capacity status display with green LEDs
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire



Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	130 x 235 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- **STATE:** Charge Status LED . Indicates charging process of the battery.
- **TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL05-TY/SU	3 h	Maintained	4 x SMD LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL05-TY/SUMA	3 h	Maintained	4 x SMD LED	Single-sided	Surface Mounted - Steel Wire
BYAL05-TY/MT	3 h	Maintained	4 x SMD LED	Single-sided	Surface Mounted - Metal Hanger
BYAL05-TY/SA	3 h	Maintained	4 x SMD LED	Single-sided	Recessed Mounted

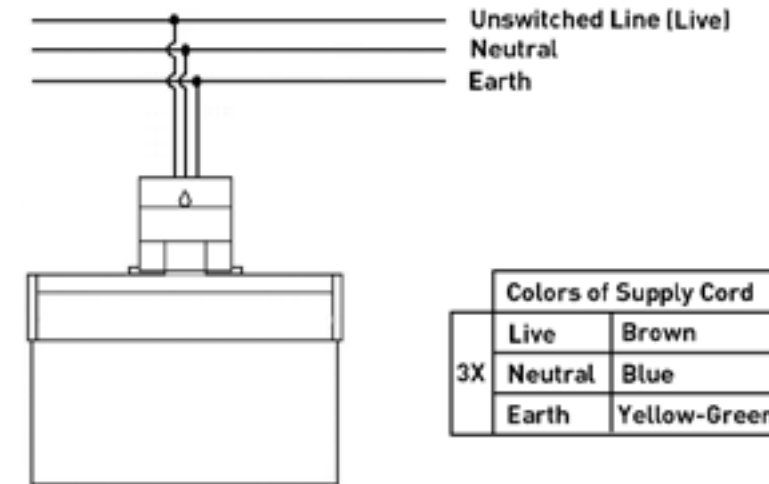
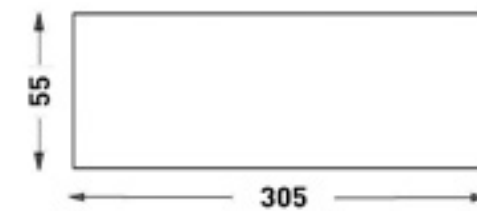
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL05-TY/SU	3,25	0,015	0,94	38 x 245 x 187	0,525	1
BYAL05-TY/SUMA	3,25	0,015	0,94	38 x 245 x 187	0,745	1
BYAL05-TY/MT	3,25	0,015	0,94	38 x 245 x 187	0,605	1
BYAL05-TY/SA	3,25	0,015	0,94	102 x 312 x 187	0,910	1

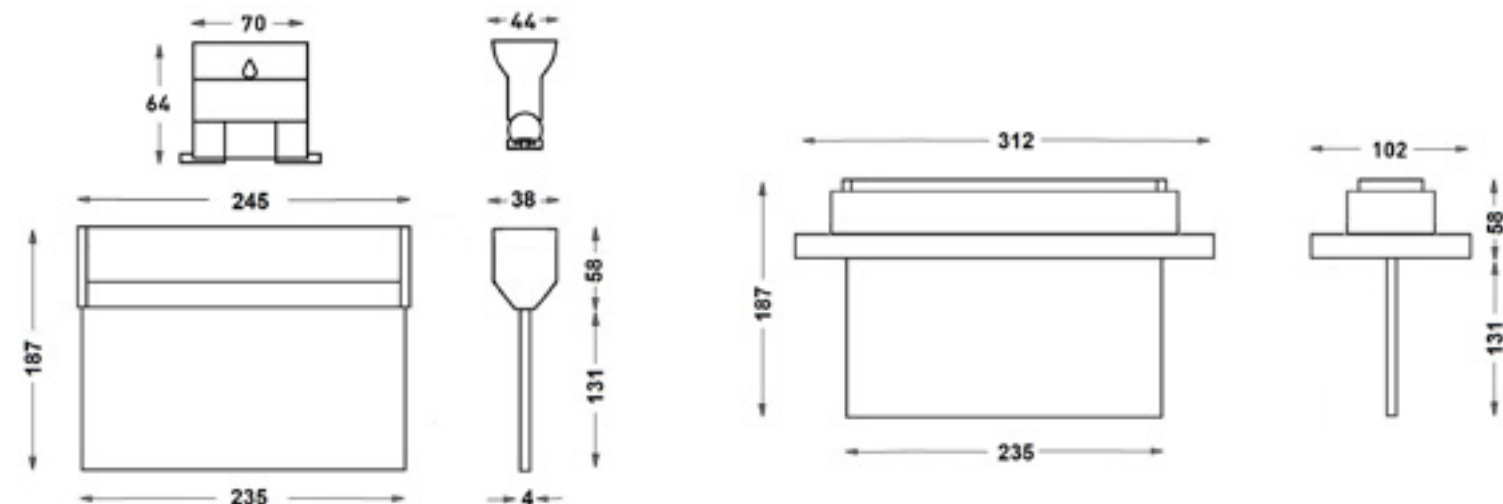
* Measured under 230 V mains.

RECESSED MOUNTING HOLE SIZE



TECHNICAL DRAWING / SURFACE MOUNTED

TECHNICAL DRAWING / RECESSED MOUNTED



EMERGENCY EXIT LUMINAIRES - LED
MERCAN LED

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL04-S/LED/CY	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYAL04-S/LED/CY/MT	3 h	Maintained	12 x SMD LED	Double-sided	Surface Mounted - Metal Hanger
BYAL04-S/LED/TY	3 h	Maintained	12 x SMD LED	Single-sided	Surface Mounted - Plastic Hanger
BYAL04-S/LED/TY/MT	3 h	Maintained	12 x SMD LED	Single-sided	Surface Mounted - Metal Tij

* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL04-S/LED/CY/3H	5,0	0,034	0,64	335 x 63 x 220	1,250	1
BYAL04-S/LED/CY/MT/3H	5,0	0,034	0,64	335 x 63 x 220	1,330	1
BYAL04-S/LED/TY/3H	5,0	0,034	0,64	335 x 63 x 220	1,385	1
BYAL04-S/LED/TY/MT/3H	5,0	0,034	0,64	335 x 63 x 220	1,365	1

* Measured under 230 V mains.

WIRING DIAGRAM

TECHNICAL DRAWING

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



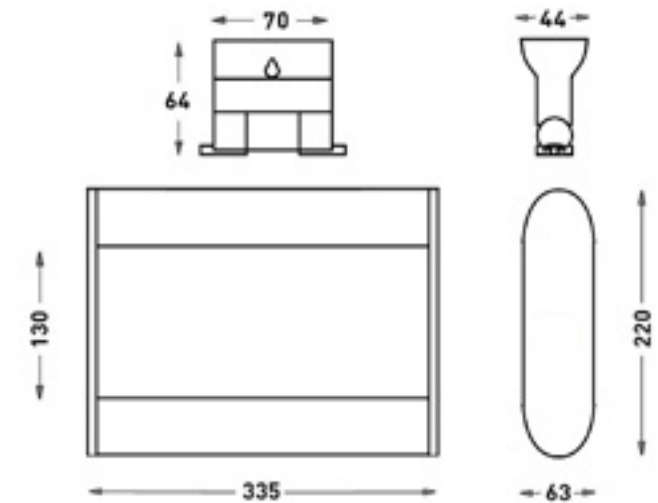
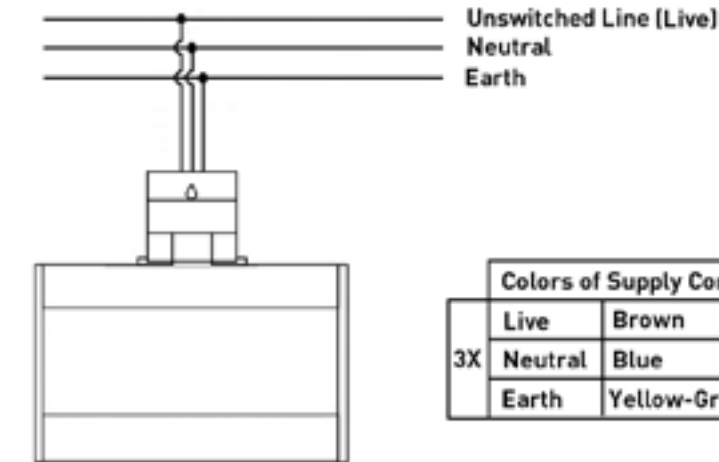
TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	130 x 335 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	26 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

■ **STATE:** Charge Status LED . Indicates charging process of the battery.

■ **TEST:** Test Button. Enables testing the product without mains cuts.

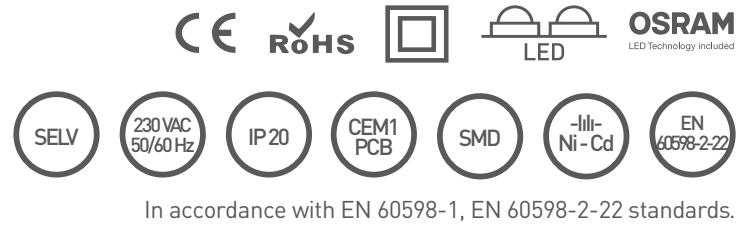


EMERGENCY EXIT LUMINAIRES - LED TRAKONYA



- Single- or double-sided
- Polycarbonate case and hanger
- SMD LED application
- Charge and battery capacity status display with green LED
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Transparent plexiglas with screen printed
- Side lighting
- Ceiling mounted, ceiling recessed or wall mounted

Please refer to “Pictogram Table” in Emergency Exit Luminaries Overview section of the catalogue for alternatives.



TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	150 x 264 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	30 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATARYA TİPİ:	1,2 V Ni-Cd		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL05-CY/SU	3 h	Maintained	9 x SMD LED	Double-sided	Surface Mounted - Plastic Hanger
BYPL05-CY/SA	3 h	Maintained	9 x SMD LED	Double-sided	Recessed Mounted

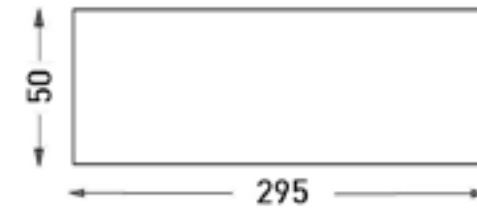
* Maintained: Lights on mains and stays alight in case of the mains failure.

MAINS DATA

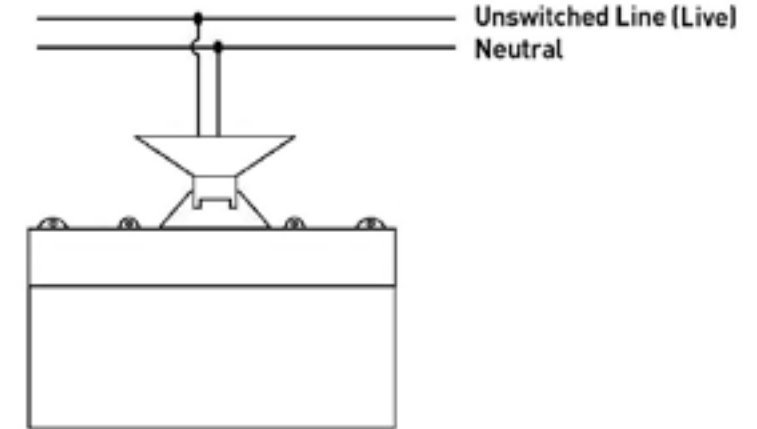
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL05-CY/SU	1,2	0,155	40x264x255	0,330	1
BYPL05-CY/SA	1,2	0,155	92x325x210	0,700	1

* Measured under 230 V mains.

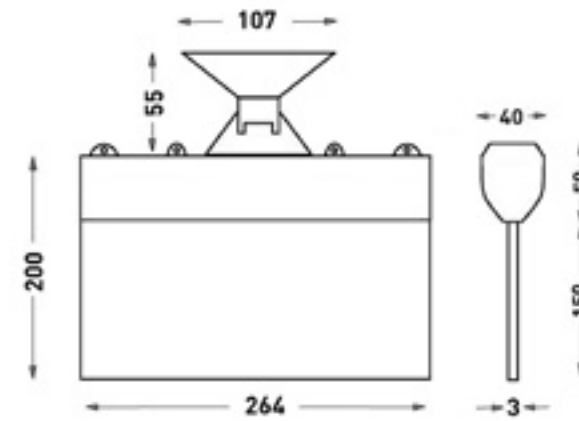
RECESSED MOUNTING HOLE SIZE



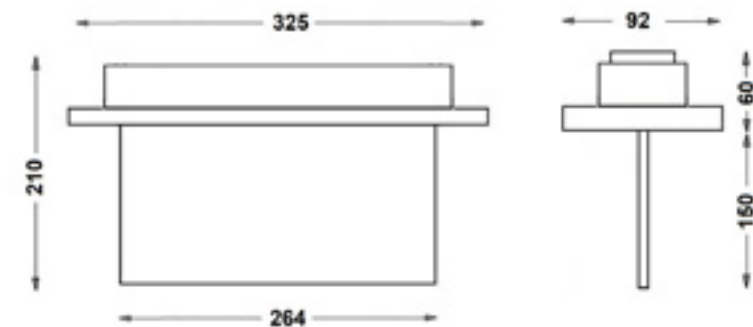
WIRING DIAGRAM

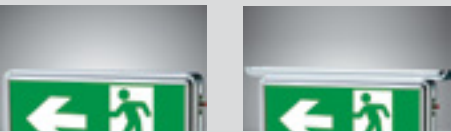


TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED





- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	140 x 335 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- **STATE:** Charge Status LED . Indicates charging process of the battery.
- **TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL06-S/LED	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Surface Mounted - Plastic Hanger
BYAL06-S/LED/MT	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Surface Mounted - Metal Hanger
BYAL06-S/LED/SA	3 h	Maintained	12 x SMD LED	Double-sided (Lapin)	Recessed Mounted
BYAL07-S/LED	3 h	Maintained	12 x SMD LED	Single-sided (Lipsos)	Surface Mounted - Plastic Hanger
BYAL07-S/LED/MT	3 h	Maintained	12 x SMD LED	Single-sided (Lipsos)	Surface Mounted - Metal Hanger
BYAL07-S/LED/SA	3 h	Maintained	12 x SMD LED	Single-sided (Lipsos)	Recessed Mounted

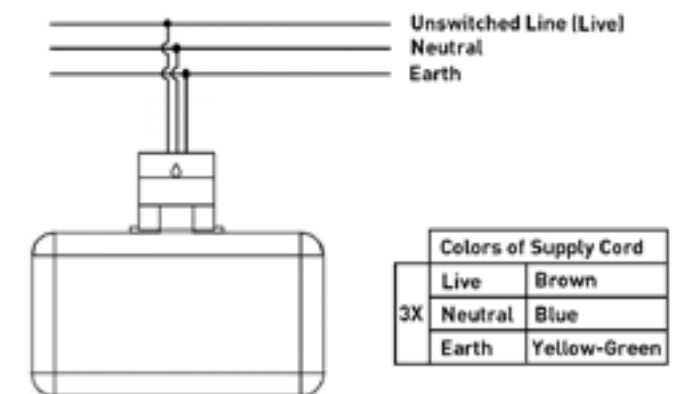
* Maintained : Lights on mains and stays alight in case of the mains failure.

MAINS DATA

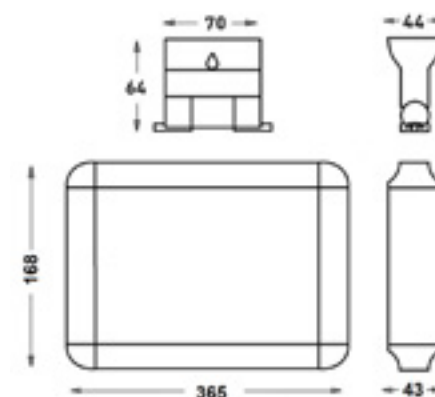
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL06-S/LED	5,0	0,034	0,64	365 x 43 x 168	0,770	1
BYAL06-S/LED/MT	5,0	0,034	0,64	365 x 43 x 168	0,850	1
BYAL06-S/LED/SA	5,0	0,034	0,64	425 x 43 x 186	0,900	1
BYAL07-S/LED	5,0	0,034	0,64	365 x 43 x 168	0,915	1
BYAL07-S/LED/MT	5,0	0,034	0,64	365 x 43 x 168	0,995	1
BYAL07-S/LED/SA	5,0	0,034	0,64	425 x 43 x 186	1,045	1

* Measured under 230 V mains.

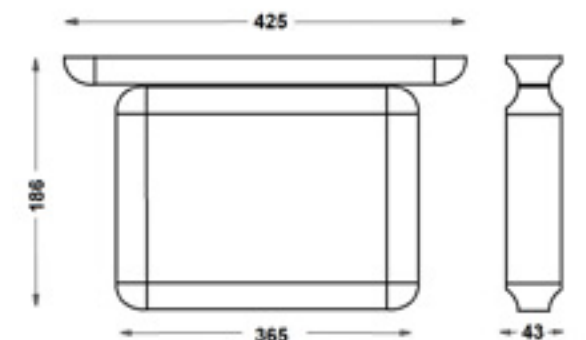
WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED



TECHNICAL DRAWING / RECESSED MOUNTED

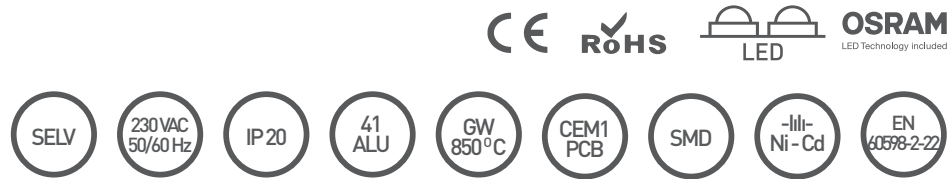


EMERGENCY EXIT LUMINAIRES - LED

LAPİN XL LED
LİPSOS XL LED

- Single- or double-sided
- Anodized aluminum case
- Polycarbonate side cover and hanger
- SMD LED application
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- White acrylic plate
- Back lighting
- Ceiling mounted, ceiling recessed or wall mounted
- Optional - 110 VAC compatibility
- Optional - Metal hanger, hook or steel wire

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50 / 60 Hz	SIGN DIMENSIONS :	400 x 600 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	80 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	I
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- **STATE:** Charge Status LED . Indicates charging process of the battery.
- **TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYAL-XL06-LED-S	3 h	Maintained	24 x SMD LED	Double-sided (Lapın)	Surface Mounted - Hook Hanger
BYAL-XL07-LED-S	3 h	Maintained	24 x SMD LED	Single-sided (Lipsos)	Wall Mounted

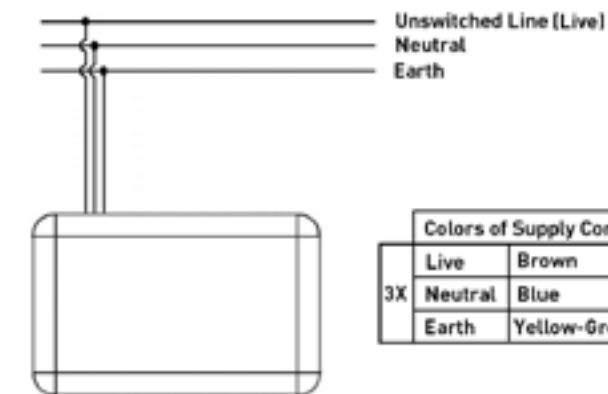
* Maintained : Lights on mains and stays alight in case of the mains failure.

MAINS DATA

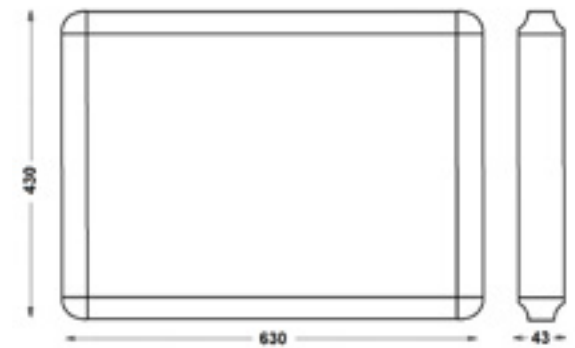
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYAL-XL06-LED-S/3H	5,85	0,040	0,64	630 x 43 x 430	2,400	1
BYAL-XL07-LED-S/3H	5,85	0,040	0,64	630 x 43 x 430	2,400	1

* Measured under 230 V mains.

WIRING DIAGRAM



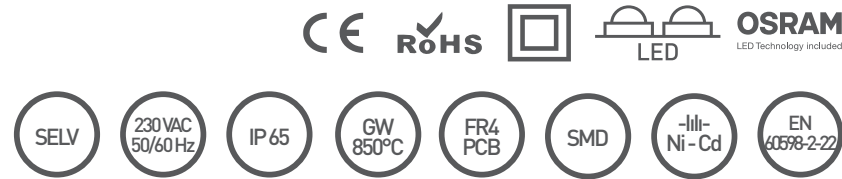
TECHNICAL DRAWING



EMERGENCY EXIT LUMINAIRES - LED
ORFOZ

- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Ceiling mounted
- Optional - 110 VAC compatibility

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	140 x 300 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	28 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- STATE:** Charge Status LED . Indicates charging process of the battery.
- TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL02-S-XLED2	3 h	Main-tained	20 x SMD LED	Double-sided	Surface Mounted

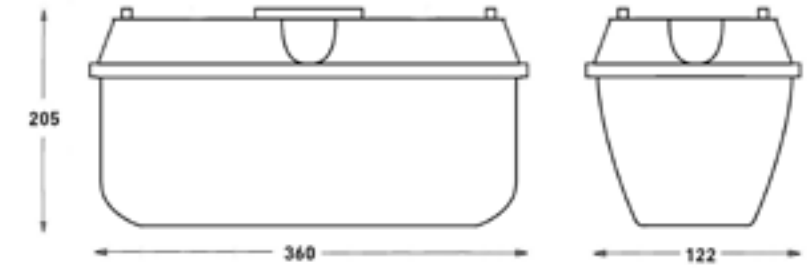
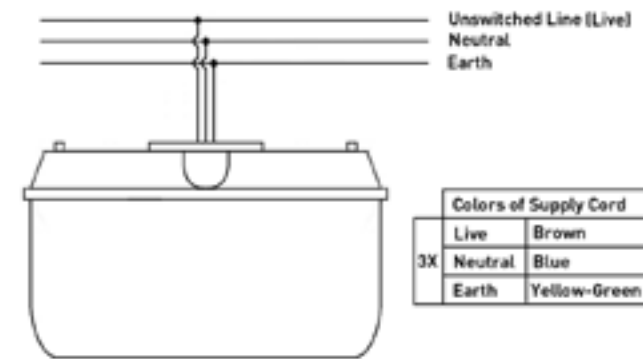
* Maintained : Lights on mains and stays alight in case of the mains failure.

MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL02-S-XLED2	4,5	0,034	0,58	122 x 360 x 205	1,025	1

* Measured under 230 V mains.

WIRING DIAGRAM

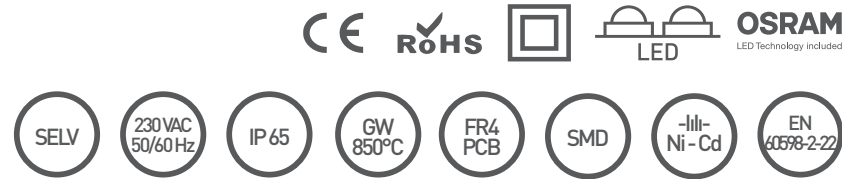


TECHNICAL DRAWING

EMERGENCY EXIT LUMINAIRES - LED
SOMON-XLED2

- Indoor and outdoor use
- Polycarbonate case and glass
- Moisture-proof
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall mounted
- Optional - 110 VAC compatibility

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	108 x 341 mm
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	VIEWING DISTANCE :	21 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATARYA TİPİ:	3,6 V Ni-Cd		

CONTROL PANEL

- STATE:** Charge Status LED . Indicates charging process of the battery.
- TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL06-S-XLED2	3 h	Maintained	20 x SMD LED	Single-sided	Surface Mounted

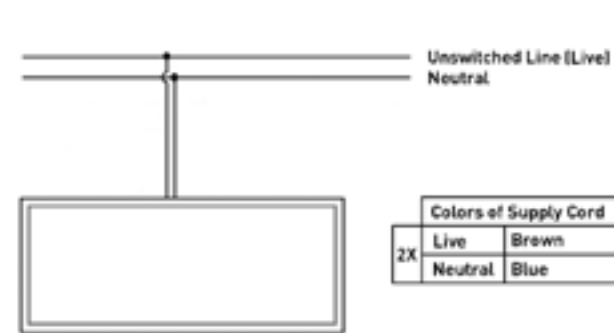
* Maintained : Lights on mains and stays alight in case of the mains failure.

MAINS DATA

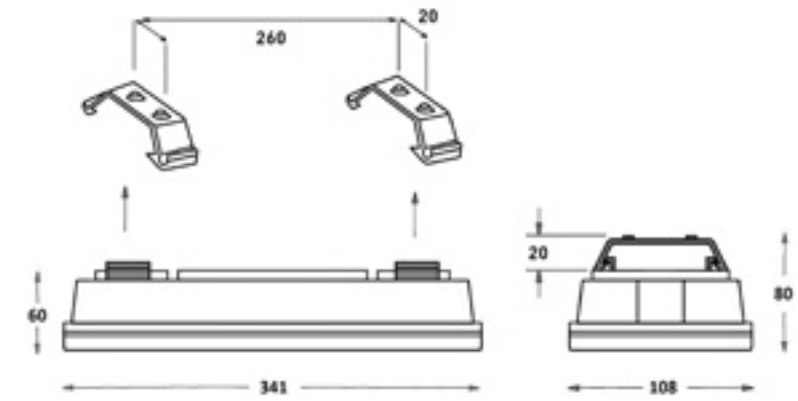
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2	4.51	0,034	0,58	108 x 341 x 60	0,630	1

* Measured under 230 V mains.

WIRING DIAGRAM



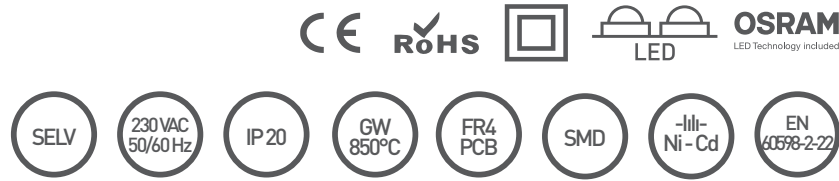
TECHNICAL DRAWING



EMERGENCY EXIT LUMINAIRES - LED
SARGOZ LED

- Indoor use
- Polycarbonate case and glass
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- 3 hours duration in case of emergency
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Ceiling or wall mounted

Please refer to “Pictogram Table” in Emergency Exit Luminaires Overview section of the catalogue for alternatives.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SIGN DIMENSIONS :	100 x 300 mm
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	VIEWING DISTANCE :	20 m
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATARYA TİPİ:	2,4 V Ni-Cd		

CONTROL PANEL

- STATE:** Charge Status LED . Indicates charging process of the battery.
- TEST:** Test Button. Enables testing the product without mains cuts.

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	ROUTING MODE	TYPE OF MOUNTING
BYPL04-S-LED	3 h	Maintained	20 x SMD LED	Single-sided	Surface Mounted

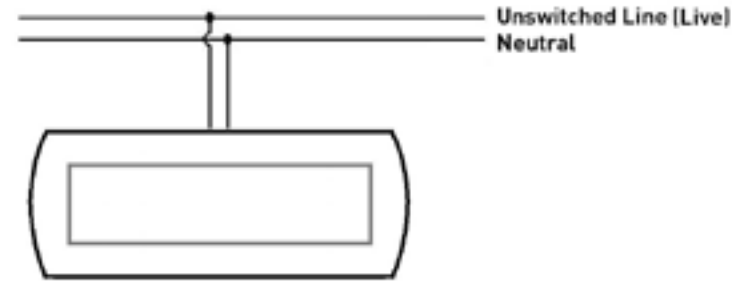
* Maintained : Lights on mains and stays alight in case of the mains failure.

MAINS DATA

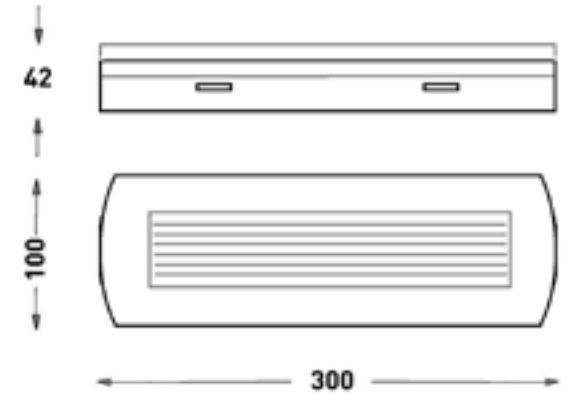
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL04-S-LED	1,15	0,210	100 x 300 x 42	0,400	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING





SELF-CONTAINED PRODUCTS

EMERGENCY LIGHTING LUMINAIRES

EMERGENCY LIGHTING
LUMINAIRES – LED
RİNA



- SMD power LED application
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polycarbonate case
- Recessed mounted
- Asymmetric lens
- Optional - Symmetric lens application
- Optional - Surface mounted application

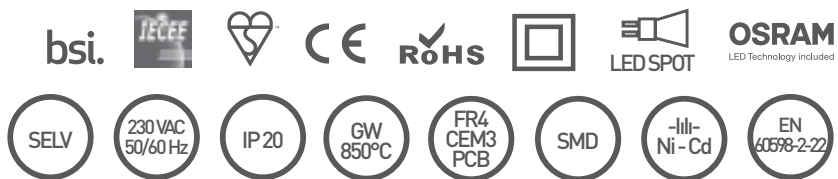
MAINS DATA

PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA104-RINA/1W	3,6V / 900mAh	1,20	0,017	0,31	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,100	1
AA104-RINA/2W	3,6V / 1800mAh	1,75	0,020	0,39	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,165	1
AA104-RINA/3W	3,6V / 3000mAh	2,40	0,025	0,43	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,255	1
AA104-RINA/4W	3,6V / 4000mAh	3,60	0,030	0,51	Spot: 100 x 100 x 25 Unit: 41 x 169,5 x 31,5 Battery: 39 x 221 x 34	0,065 0,080 0,390	1

* Measured under 230 V mains.

BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	3000mAh	C	26	3	26 x 150±3 x 26	0,240
3,6V	4000mAh	D	33	3	33 x 180±3 x 33	0,375



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

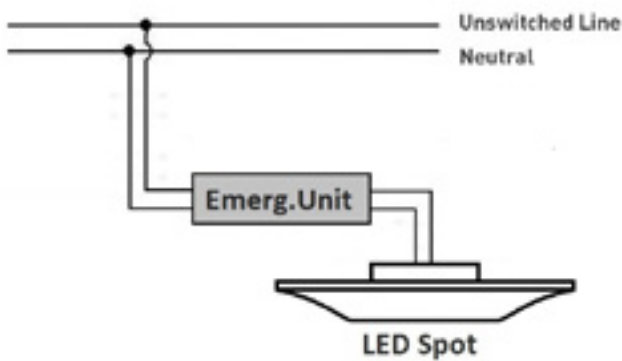
SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	Power LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	DIFFUSER :	Symmetric / Asymmetric LENS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6V Ni-Cd		

PRODUCT LIST

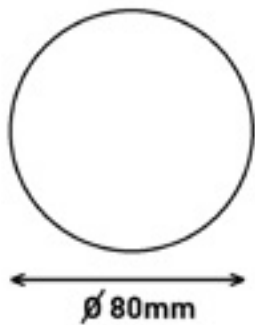
PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA104-RINA/1W	3 h	Non-Maintained	Power LED	- / 105 lm	Recessed / Surface Mounted	24 h
AA104-RINA/2W	3 h	Non-Maintained	Power LED	- / 205 lm	Recessed / Surface Mounted	24 h
AA104-RINA/3W	3 h	Non-Maintained	Power LED	- / 305 lm	Recessed / Surface Mounted	24 h
AA104-RINA/4W	3 h	Non-Maintained	Power LED	- / 405 lm	Recessed / Surface Mounted	24 h

* Non-maintained : Lights in case of the mains failure.

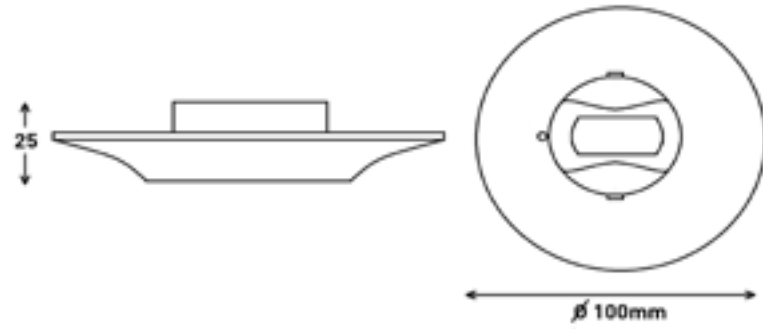
WIRING DIAGRAM



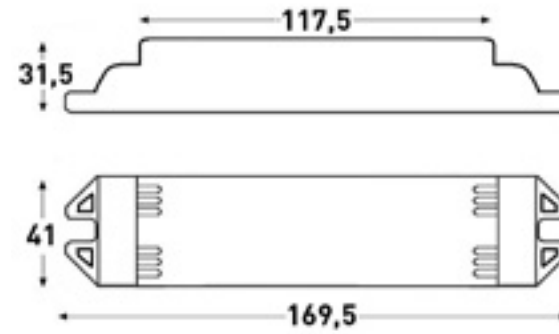
RECESSED MOUNTING HOLE SIZE



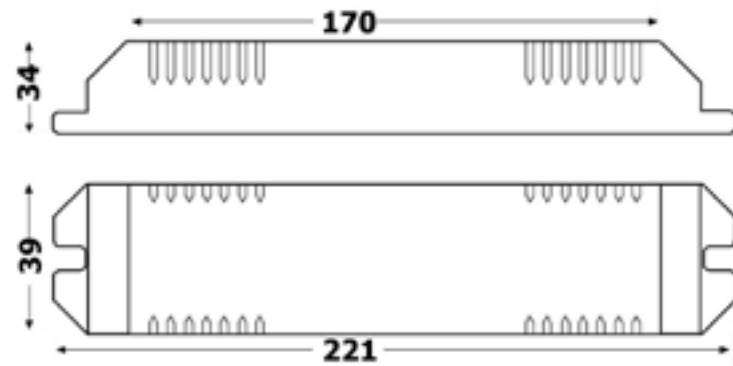
TECHNICAL DRAWING (LED SPOT)




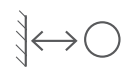


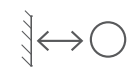

TECHNICAL DRAWING (EMERGENCY UNIT)









TECHNICAL DRAWING (BATTERY BOX)

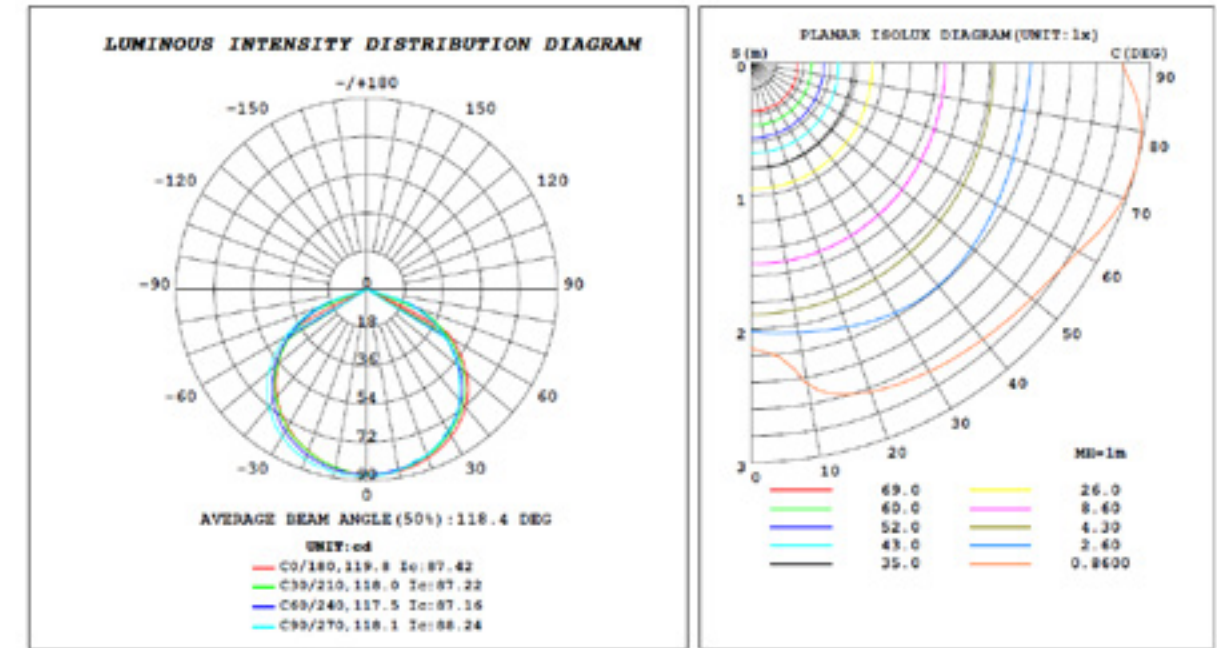


PHOTOMETRY DATA (1W)

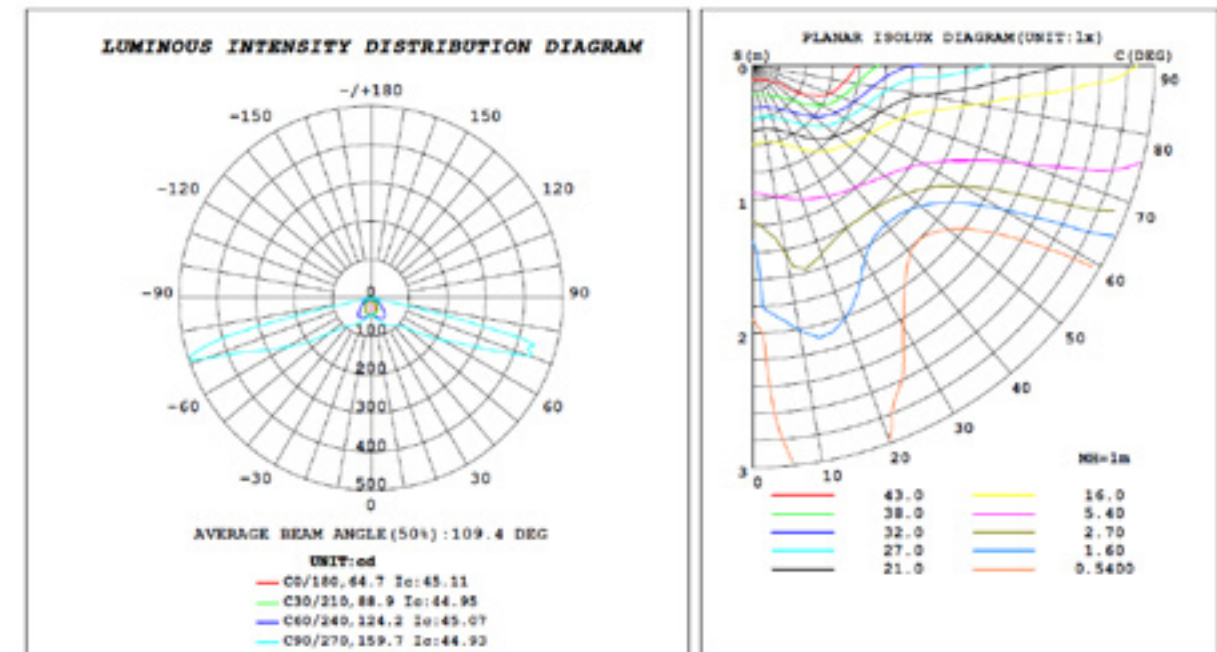
Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	4,00	2,00	5,50	10,50
2,50	2,50	5,00	2,50	7,00	13,50
3,00	2,50	5,00	3,00	6,50	16,00
3,50	3,00	6,00	3,50	6,00	16,50
4,00	3,00	6,50	4,00	3,50	11,50

Open Area (Anti-Panic) Lighting (for min. 0,5 lux) (Symmetric Lens)			Escape Route Lighting (for min. 1 lux) (Asymmetric Lens)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50	2,00	6,50	11,50
2,50	4,00	7,50	2,50	8,00	15,50
3,00	4,50	8,50	3,00	9,50	18,50
3,50	4,50	10,00	3,50	10,50	21,50
4,00	5,00	11,00	4,00	11,00	24,00

LIGHT DISTRIBUTION CURVE (SYMMETRIC LENS)

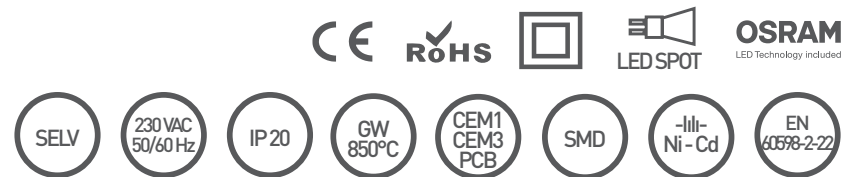


LIGHT DISTRIBUTION CURVE (ASYMMETRIC LENS)



EMERGENCY LIGHTING
LUMINAIRES – LED
RİNA-E

- SMD power LED application
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Polycarbonate case
- Recessed mounted
- Asymmetric lens
- Optional - Symmetric lens application
- Optional - Surface mounted application



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	Power LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	DIFFUSER :	Symmetric / Asymmetric LENS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY CHARGING TIME :	24/48 h	INSULATION CLASS :	II
BATTERY TYPE :	3,6V Ni-Cd		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA104-RINA-E/1W	3 h	Non-Maintained	Power LED	- / 90 lm	Recessed / Surface Mounted	24 h
AA104-RINA-E/2W	3 h	Non-Maintained	Power LED	- / 170 lm	Recessed / Surface Mounted	48 h
AA104-RINA-E/3W	3 h	Non-Maintained	Power LED	- / 260 lm	Recessed / Surface Mounted	48 h
AA104-RINA-E/4W	3 h	Non-Maintained	Power LED	- / 350 lm	Recessed / Surface Mounted	48 h

* Non-maintained : Lights in case of the mains failure.

MAINS DATA

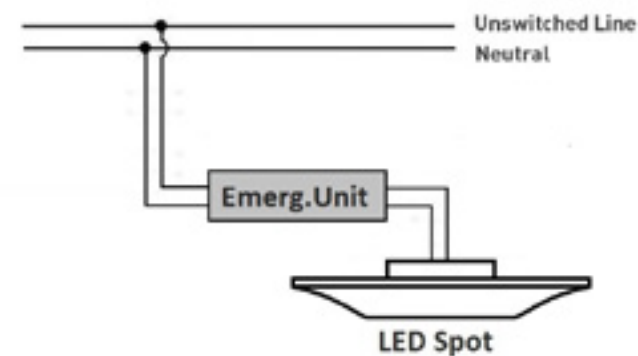
PRODUCT CODE	BATTERY CAPACITY	RATED POWER (W) *	MAINS CURRENT (A) *	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA104-RINA-E/1W	3,6V / 900mAh	1,75	0,009	0,84	Spot: 100 x 100 x 25 Unit: 44 x 110 x 36	0,065 0,235	1
AA104-RINA-E/2W	3,6V / 1200mAh	1,80	0,009	0,84	Spot: 100 x 100 x 25 Unit: 44 x 110 x 36	0,065 0,235	1
AA104-RINA-E/3W	3,6V / 1800mAh	1,80	0,009	0,84	Spot: 100 x 100 x 25 Unit: 44 x 110 x 36	0,065 0,235	1
AA104-RINA-E/4W	3,6V / 2500mAh	1,80	0,009	0,84	Spot: 100 x 100 x 25 Unit: 44 x 110 x 36	0,065 0,235	1

* Measured under 230 V mains.

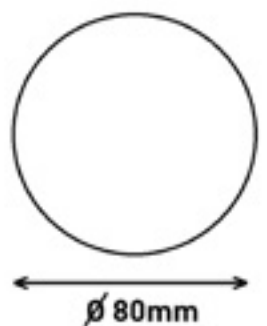
BATTERY DATA

VOLTAGE	CAPACITY	CELL TYPE	CELL SIZE (mm)	QTY OF CELLS	DIMENSIONS (mm)	WEIGHT (kg)
3,6V	900mAh	AA	15	3	15 x 153±3 x 15	0,085
3,6V	1200mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	1800mAh	SC	23	3	23 x 129±3 x 23	0,150
3,6V	2500mAh	C	26	3	26 x 150±3 x 26	0,240

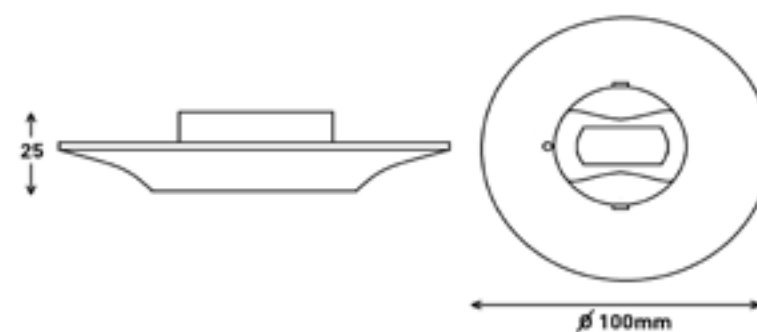
WIRING DIAGRAM



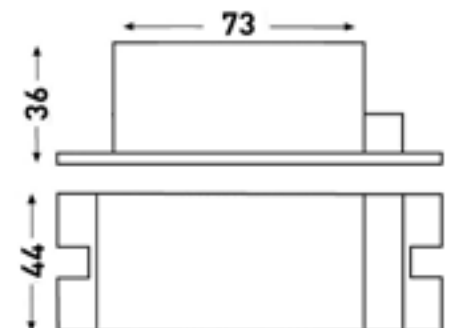
EMERGENCY UNIT MOUNTING HOLE SIZE



TECHNICAL DRAWING (LED SPOT)



TECHNICAL DRAWING (EMERGENCY UNIT)



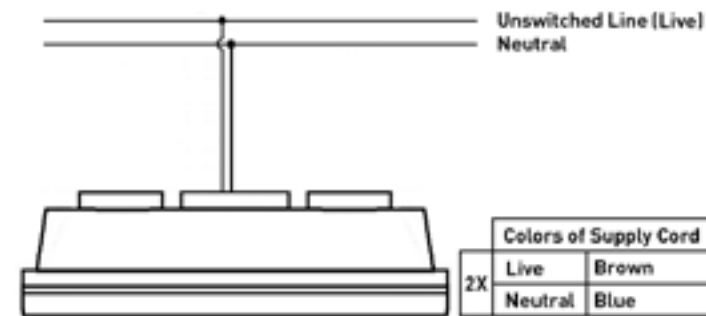
EMERGENCY LIGHTING
LUMINAIRES – LED
SOMON XLED2

MAINS DATA

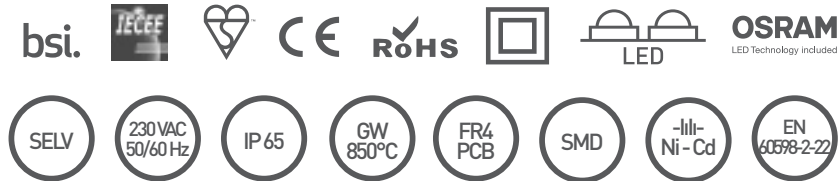
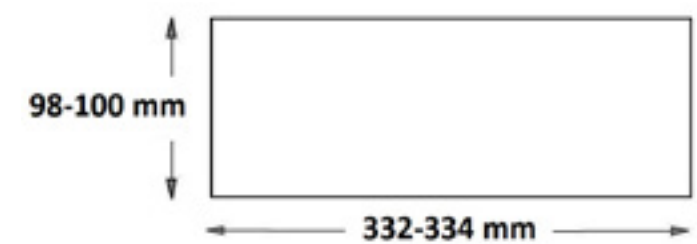
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPL06-S-XLED2/1W	4.51	0,033	0,58	108 x 341 x 60	0,630	1
BYPL06-A-XLED2/1W	1.21	0,017	0,31	108 x 341 x 60	0,630	1
BYPL06-A-XLED2/2W	1.73	0,019	0,39	108 x 341 x 60	0,690	1
BYPL06-A-XLED2/3W	2.38	0,024	0,43	108 x 341 x 60	0,780	1
BYPL06-A-XLED2/4W	3.24	0,028	0,49	108 x 341 x 60	0,850	1

* Measured under 230 V mains.

WIRING DIAGRAM



RECESSED MOUNTING HOLE SIZE



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

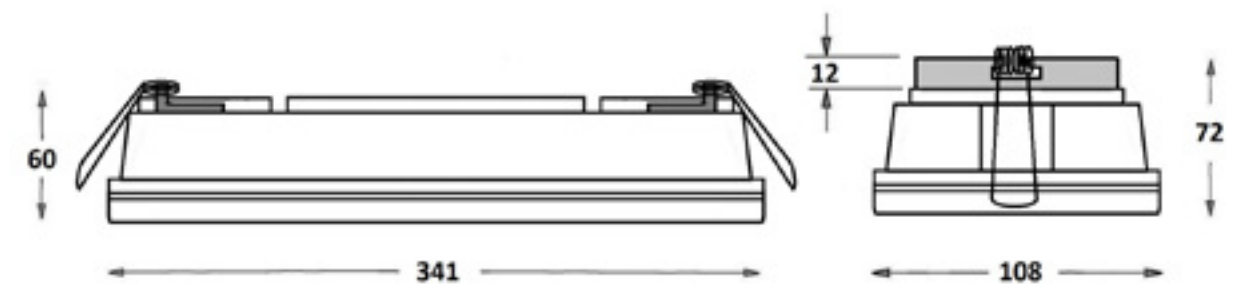
SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	SMD LED
AMBIENT TEMPERATURE (ta) :	-5°C ... +40°C	DIFFUSER :	Polycarbonate
RATED DURATION :	1 / 3 h	PROTECTION CLASS :	Glass
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	IP 65
BATTERY TYPE :	3,6 V Ni-Cd		II

PRODUCT LIST

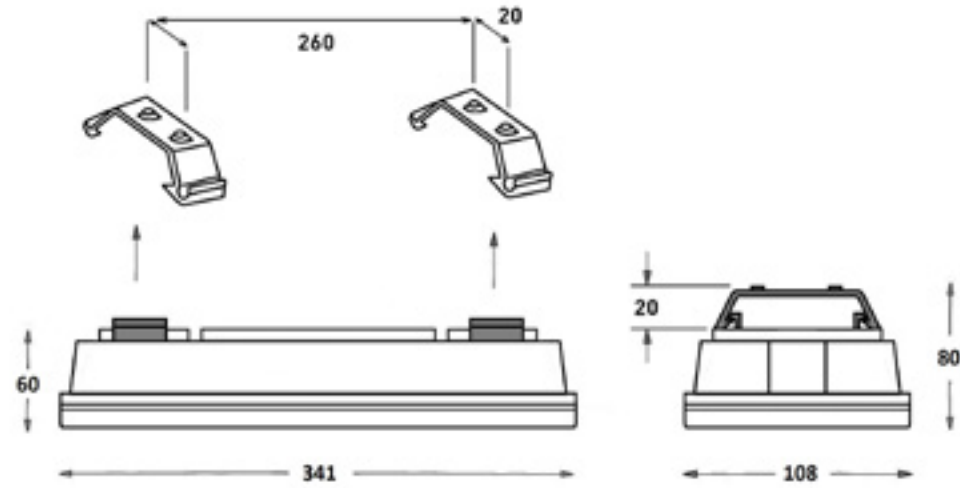
PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	ROUTING MODE	BATTERY CHARGING TIME
BYPL06-S-XLED2/1W	3 h	Maintained	20 x SMD LED	115 lm / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/1W	3 h	Non-Maintained	20 x SMD LED	- / 115 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/2W	3 h	Non-Maintained	20 x SMD LED	- / 230 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/3W	3 h	Non-Maintained	20 x SMD LED	- / 350 lm	Recessed / Surface Mounted	24 h
BYPL06-A-XLED2/4W	3 h	Non-Maintained	20 x SMD LED	- / 450 lm	Recessed / Surface Mounted	24 h







* Maintained: Lights on mains and stays alight in case of the mains failure.

TECHNICAL DRAWING / RECESSED

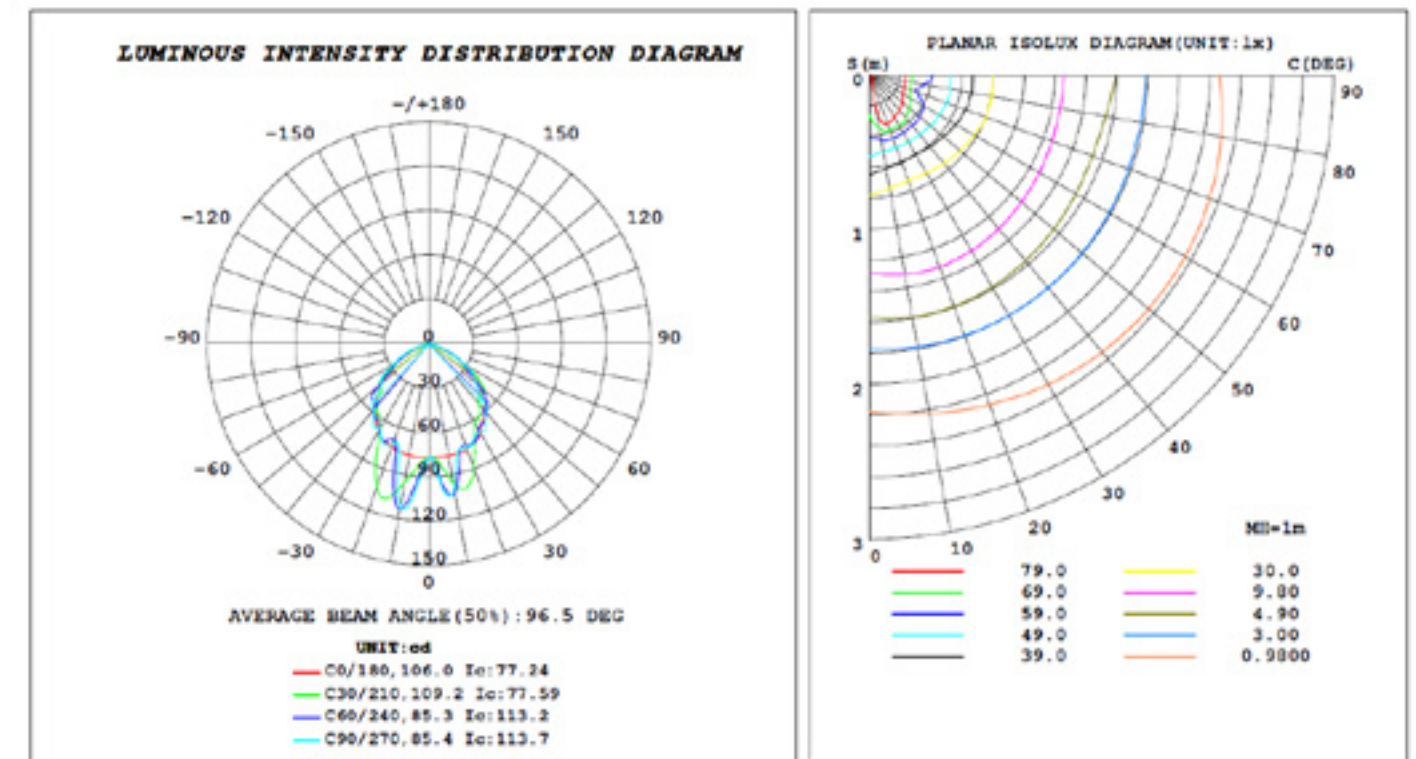


TECHNICAL DRAWING / SURFACE MOUNTED









Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	3,00	5,50	2,00	3,00	5,75
2,50	3,50	6,75	2,50	3,50	7,00
3,00	4,00	7,75	3,00	4,00	7,75
3,50	4,25	8,50	3,50	4,25	8,50
4,00	4,50	9,25	4,00	4,25	9,25

LIGHT DISTRIBUTION CURVE



PHOTOMETRY DATA (1W)

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)	 Mounting Height (m)	 Distance Between Luminaire and Wall (m)	 Distance Between Luminaires (m)
2,00	2,00	3,00	2,00	2,00	3,50
2,50	2,25	4,00	2,50	2,25	4,25
3,00	2,75	4,75	3,00	2,50	4,50
3,50	2,75	5,50	3,50	2,50	5,00
4,00	2,75	6,00	4,00	2,25	5,25

EMERGENCY LIGHTING LUMINAIRES – LED SARGOZ LED



- Indoor use
- Polycarbonate case and glass
- SMD LED application
- High energy saving
- Long life-time (50.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- 3 hours duration in case of emergency
- Charge status display with green LED
- Test switch
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Ceiling or wall mounted



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	LIGHT SOURCE :	SMD LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	DIFFUSER :	Polycarbonate
RATED DURATION :	3 h	PROTECTION CLASS :	Glass
BATTERY CHARGING TIME :	24 h	INSULATION CLASS :	IP 20
BATTERY TYPE :	2,4 V Ni-Cd		II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	ROUTING MODE	BATTERY CHARGING TIME
BYPLO4-S-LED/3H	3 h	Maintained	SMD LED	100 lm / 100 lm	Surface Mounted	24 h
BYPLO4-A-LED/3H	3 h	Non-Maintained	SMD LED	- / 100 lm	Surface Mounted	24 h

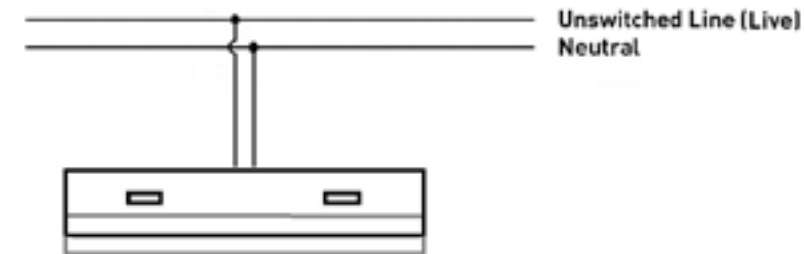
* Maintained: Lights on mains and stays alight in case of the mains failure.
Non-Maintained : Lights in case of the mains failure.

MAINS DATA

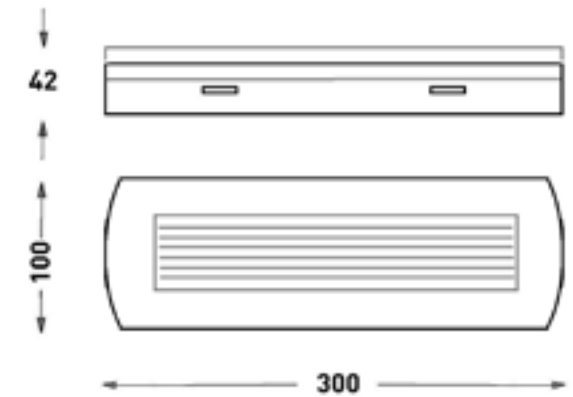
PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
BYPLO4-S-LED/3H	1,5	0,230	100 x 300 x 42	0,400	1
BYPLO4-A-LED/3H	0,6	0,080	100 x 300 x 42	0,350	1

* Measured under 230 V mains.

WIRING DIAGRAM



TECHNICAL DRAWING / SURFACE MOUNTED

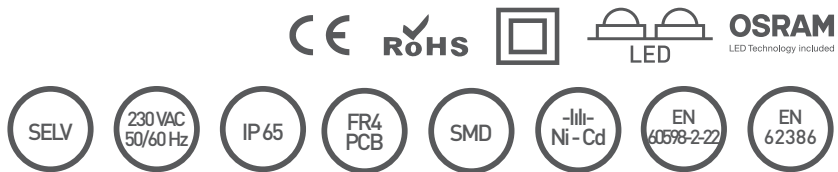


EMERGENCY LIGHTING LUMINAIRES
SENSORLIGHT – LED
MANTA LED



- Indoor and outdoor use
- Polycarbonate case
- Soft lighting with sanded glass
- Microwave radar sensor
- Adjustable lighting duration
- Adjustable night / day working mode
- High energy saving with LED lighting
- Long life-time (50.000 hours)
- 4000 K / 6500 K Color temperature
- Emergency lighting function by interruption of the unswitched phase
- 3 hours duration in case of emergency
- Charge status display with green LED
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall and ceiling mounted
- (*)Optional - Fire phase application
- Optional - 110 VAC compatibility

* The sensor is out-of-service when the luminaire is supplied on the fire line in case of emergency.
This feature is applied to only 9W models.



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SENSOR TYPE :	Microwave Radar Sensor
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	Polycarbonate
RATED DURATION :	3 h	LIGHT SOURCE :	SMD LED
BATTERY CHARGING TIME :	24 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	3,6 V Ni-Cd	INSULATION CLASS :	II

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE OF MOUNTING	BATTERY CHARGING TIME
AA105-MANTA-L6D/350	-	Luminaire	16W / - LED	1750lm / -	Surface Mounted	-
AA105-MANTA-L6D/350/K3	3 h	Maintained	16W / 3W LED	1750lm / 250 lm	Surface Mounted	48 h
AA105-MANTA-L6SD/500	-	Luminaire + Sensor	23 W / - LED	2500 lm / -	Surface Mounted	-
AA105-MANTA-L6SD/500/K3	3 h	Maintained + Sensor	23 W / 3 W LED	2500 lm / 250 lm	Surface Mounted	48 h

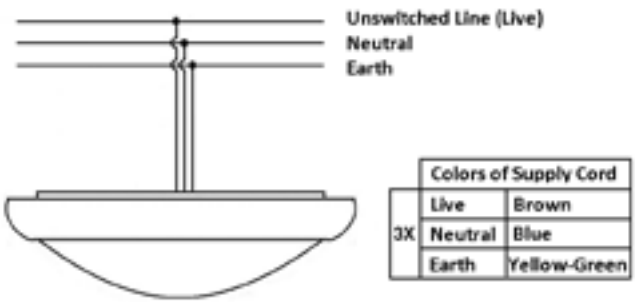
* Luminaire: Lights just on mains.
Maintained: Lights on mains and stays alight in case of the mains failure. (With battery kit)
Sensor: Lights on mains through sensor.

MAINS DATA

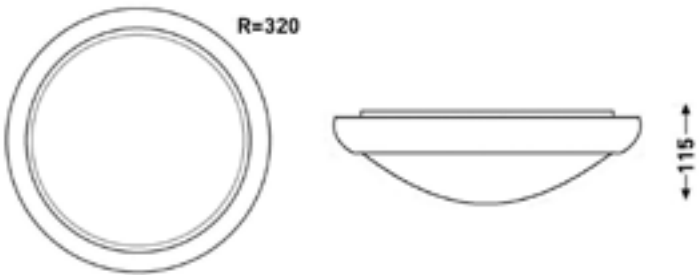
PRODUCT CODE	STAND-BY RATED POWER (W)*	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA105-MANTA-L6D/350	-	20,5	0,125	0,72	320 x 320 x 115	1,25	1
AA105-MANTA-L6D/350/K3	3,0	24,5	0,135	0,77	320 x 320 x 115	1,70	1
AA105-MANTA-L6SD/500	0,7	30,0	0,170	0,70	320 x 320 x 115	1,30	1
AA105-MANTA-L6SD/500/K3	3,7	33,0	0,185	0,74	320 x 320 x 115	1,75	1

* Measured under 230 V mains.

WIRING DIAGRAM



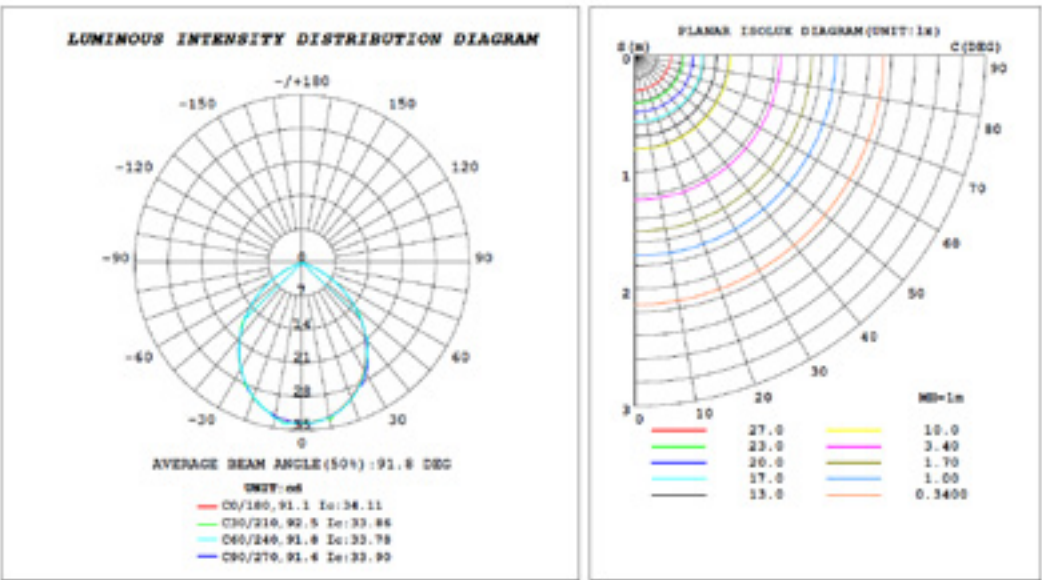
TECHNICAL DRAWING



PHOTOMETRY DATA

Open Area (Anti-Panic) Lighting (for min. 0,5 lux)			Escape Route Lighting (for min. 1 lux)		
Mounting Height (m)	Distance Between Luminaire and Wall (m)	Distance Between Luminaires (m)	Mounting Height (m)	Distance Between Luminaire and Wall (m)	Distance Between Luminaires (m)
2,00	2,25	4,00	2,00	2,25	4,25
2,50	2,50	5,00	2,50	2,50	5,00
3,00	2,75	5,50	3,00	2,75	5,50
3,50	3,00	6,25	3,50	2,75	5,75
4,00	3,25	6,50	4,00	2,75	6,25

LIGHT DISTRIBUTION CURVE



EMERGENCY LIGHTING LUMINAIRES
SENSORLIGHT - LED
VATOZ LED




- Indoor use
- Powder coated, white iron sheet case
- Soft lighting with sanded glass
- 360° Motion sensor
- Adjustable lighting duration
- Adjustable night / day working mode
- Energy saving
- Long life-time (50.000 hours)
- 4000 K / 6500 K Color temperature
- High light intensity (1000 lm)
- Emergency lighting function by interruption of the unswitched phase
- 3 h duration in case of emergency
- Charge status display with green LED
- High-temperature Ni-Cd battery cells
- Overcharge and deep discharge protection
- Wall and ceiling mounted
- (*)Optional - Fire line application
- Optional - 110 VAC compatibility

* The sensor is out-of-service when the luminaire is supplied on the fire line in case of emergency.

CE

RoHS


LED

OSRAM
LED Technology included

SELV

230 VAC
50/60 Hz

IP 20

CEM1
PCB

SMD

-III-
Ni - Cd

EN
60598-2-22

In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	SENSOR TYPE :	360° PIR Sensor
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	CASE MATERIAL :	Iron Sheet
RATED DURATION :	3 h	LIGHT SOURCE :	60 pcs SMD LED
BATTERY CHARGING TIME :	24 h	PROTECTION CLASS :	IP 20
BATTERY TYPE :	3,6 V Ni-Cd	INSULATION CLASS :	I

PRODUCT LIST

PRODUCT CODE**	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA106-VATOZ-L6SD/9W	-	Luminaire + Sensor	9 W / - LED	1000 lm / -	Surface Mounted	-
AA106-VATOZ-L6SD/9W/K	3 h	Maintained + Sensor	9 W / 3 W LED	1000 lm / 250 lm	Surface Mounted	24 h

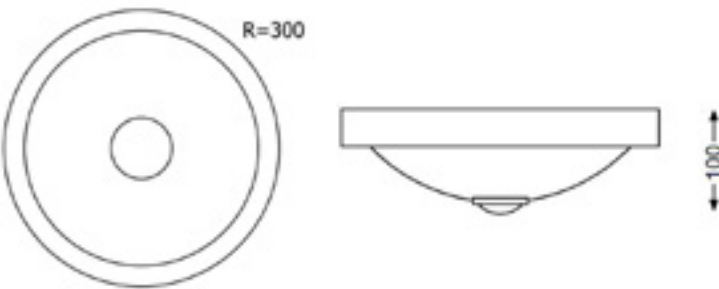
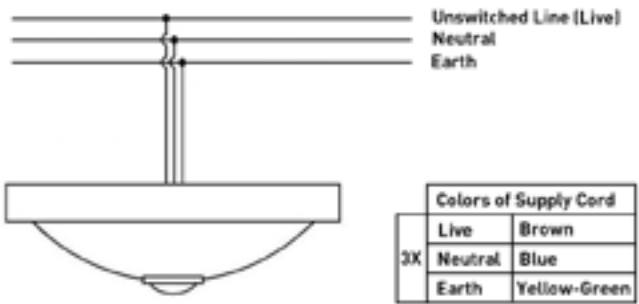
* Luminaire:Lights just on mains
Maintained: Lights on mains and stays alight in case of the mains failure. (With battery kit)
Sensor: Lights on mains through sensor.

MAINS DATA

PRODUCT CODE	STAND-BY RATED POWER (W)*	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA106-VATOZ-L6SD/9W	0,7	12,90	0,080	0,66	300 x 300 x 100	0,90	1
AA106-VATOZ-L6SD/9W/K	2,0	13,50	0,090	0,65	300 x 300 x 100	1,10	1

* Measured under 230 V mains.

WIRING DIAGRAM



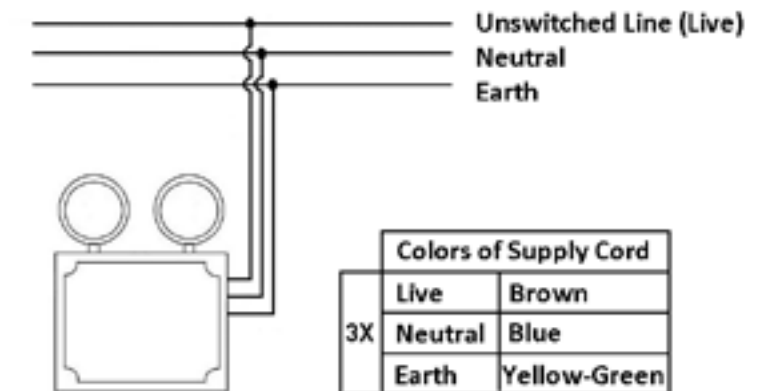
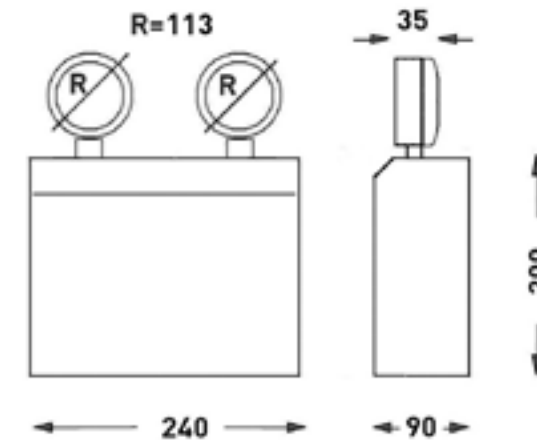
TECHNICAL DRAWING

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA209-PW2	1,25 - 8,90	0,010 - 0,063	0,50 - 0,61	90 x 240 x 200	4,00	1

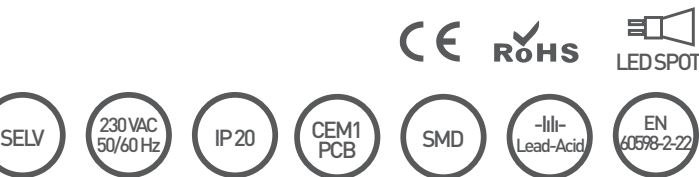
* Measured under 230 V mains.

Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.

TECHNICAL DRAWING



WIRING DIAGRAM



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

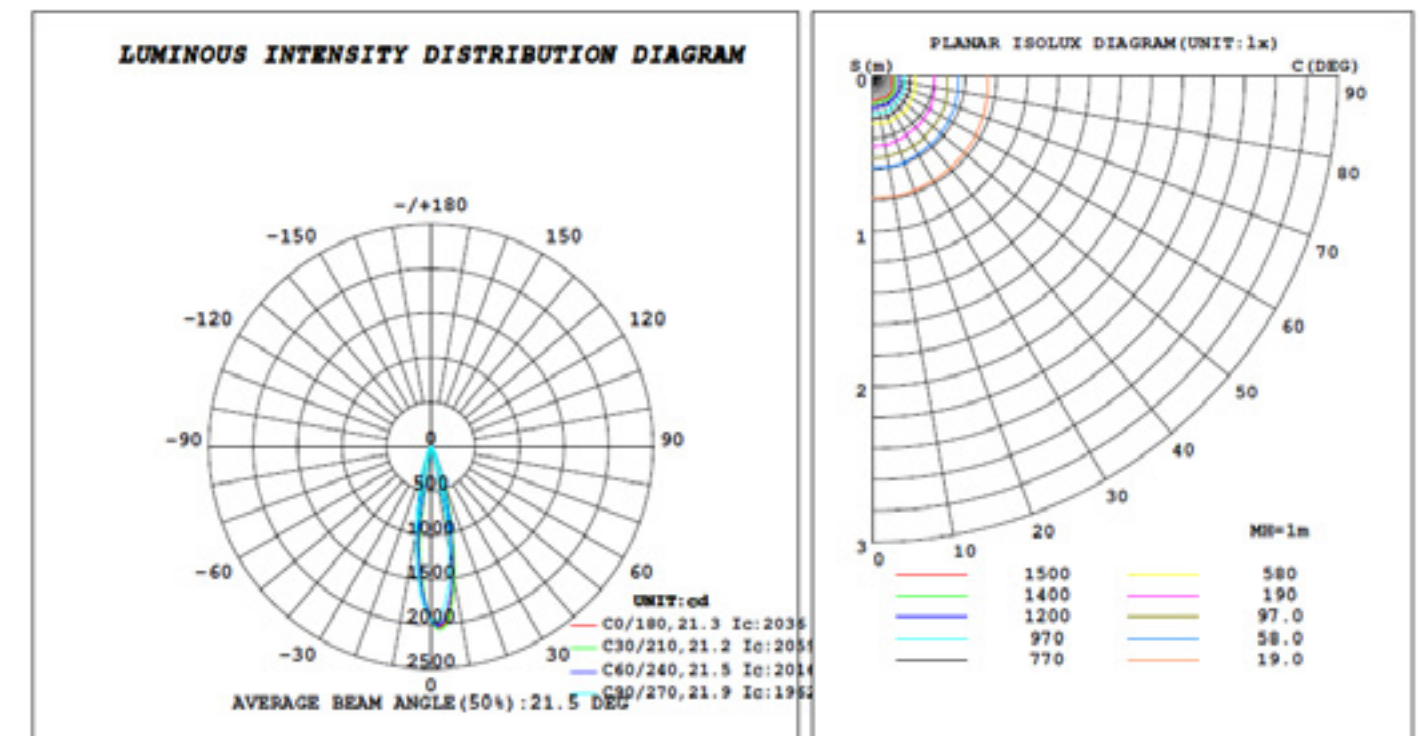
SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	9W LED
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	CASE MATERIAL :	Iron Sheet
RATED DURATION :	3 h	PROTECTION CLASS :	IP 20
BATTERY TYPE :	12V Lead-Acid	INSULATION CLASS :	I

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE OF MOUNTING	BATTERY CHARGING TIME
AA209-PW2	3 h	Non-Maintained	2x9 W LED	- / 1500 lm	Surface Mounted	48 h

* Non-Maintained : Lights in case of the mains failure.

LIGHT DISTRIBUTION CURVE



* Above curve is measured data just for one headlamp

EMERGENCY LIGHTING LUMINAIRES – LED TETRA-PW3

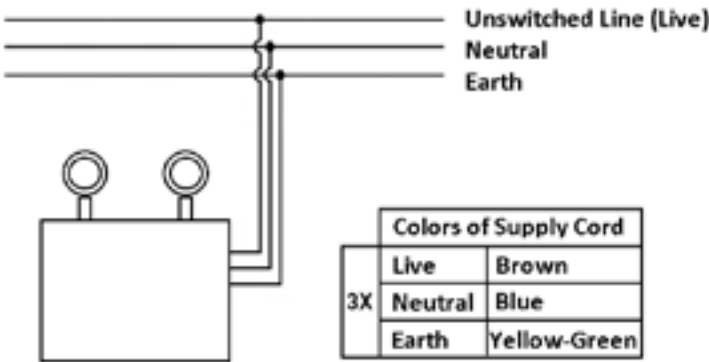
MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)*	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA209-PW3	1,25 - 8,90	0,010 - 0,063	0,50 - 0,61	98 x 255 x 205	4,50	1

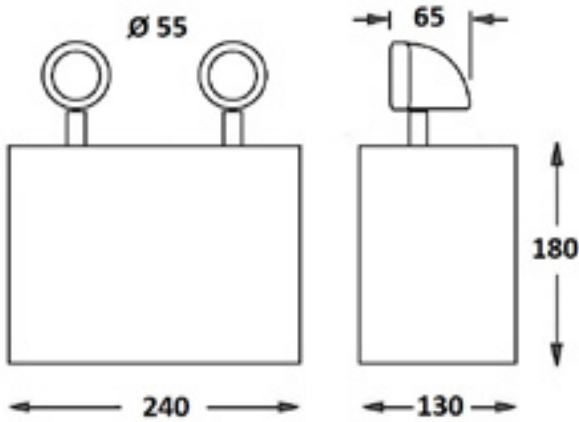
* Measured under 230 V mains.

Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.

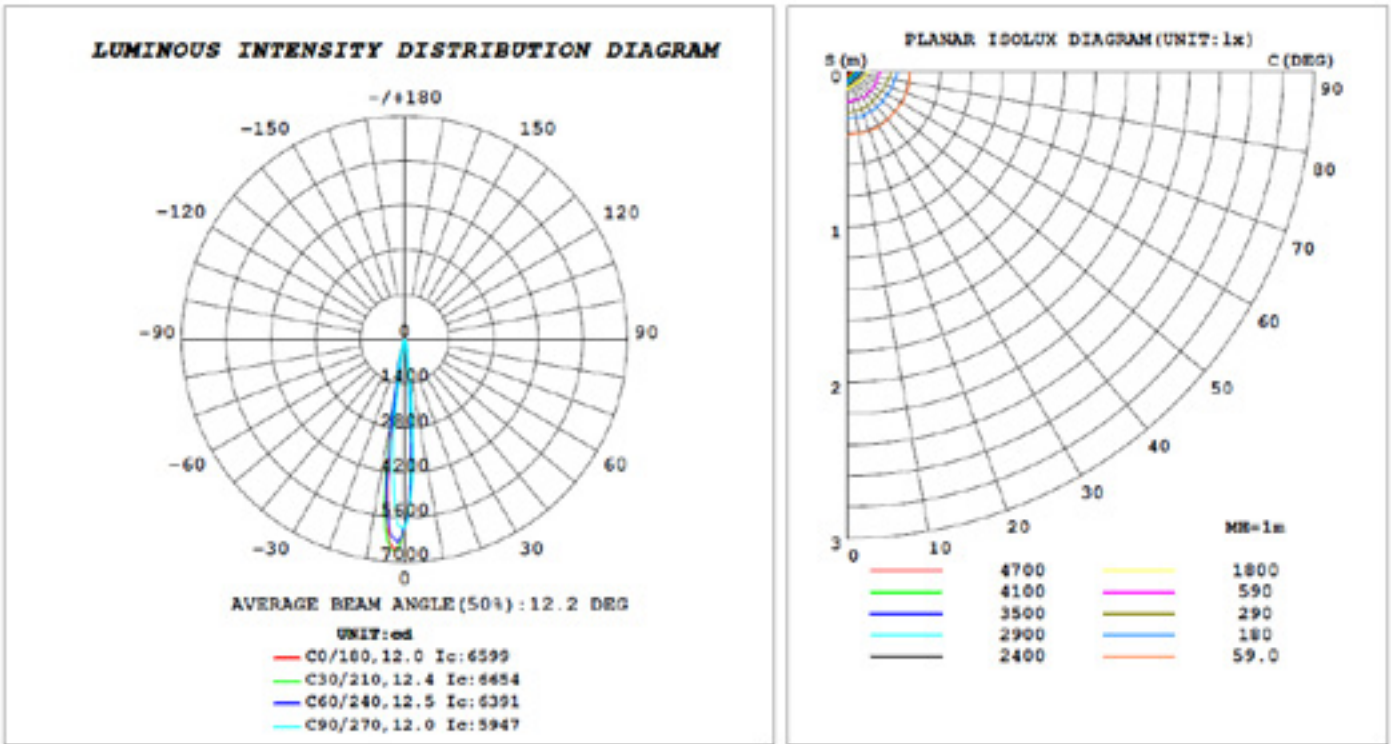
WIRING DIAGRAM



TECHNICAL DRAWING



LIGHT DISTRIBUTION CURVE



- 180° adjustable LED headlamp
- SMD power LED application
- Long life-time (30.000 hours)
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 3 hours duration in case of emergency
- Battery capacity status display with green LED
- Test switch
- Maintenance-free sealed lead acid battery
- Overcharge and deep discharge protection
- Charging circuit with constant voltage and current protect
- Wall mounted
- ABS case
- Optional - 110 VAC compatibility



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	9W LED
AMBIENT TEMPERATURE (ta) :	-5 °C ... +40 °C	CASE MATERIAL :	ABS
RATED DURATION :	3 h	PROTECTION CLASS :	IP 65
BATTERY TYPE :	12V Lead-Acid	INSULATION CLASS :	II

PRODUCT LIST

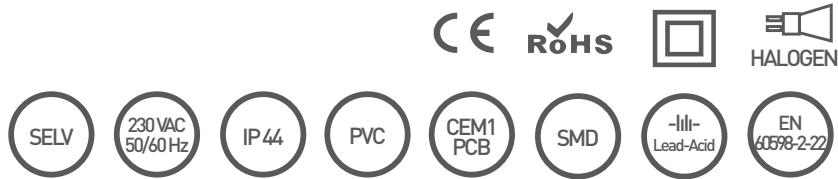
PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE of MOUNTING	BATTERY CHARGING TIME
AA209-PW3	3 h	Non-Maintained	2x9W LED	- / 1500 lm	Surface Mounted	48 h

* Non-maintained : Lights in case of the mains failure.

* Above curve is measured data just for one headlamp



- Indoor and outdoor use
- Portable
- 180° adjustable halogen headlamp
- Moisture - proof
- Emergency lighting function by interruption of the unswitched phase
- Emergency lighting function in case of low-voltage
- 1 ... 6 h duration in case of emergency
- Battery capacity status display with green LED
- Lamp error status display with green LED
- Test switch
- Maintenance-free sealed lead acid battery
- Overcharge and deep discharge protection
- Charging circuit with constant voltage and current protect
- Wall mounted
- Optional - on/off button
- Optional - 110 VAC compatibility



In accordance with EN 60598-1, EN 60598-2-22 standards.

TECHNICAL DATA

SUPPLY VOLTAGE :	230 VAC 50/60 Hz	HEADLAMP TYPE :	20 / 55 W Halogen
AMBIENT TEMPERATURE (ta) :	0 °C ... +40 °C	CASE MATERIAL :	PVC
RATED DURATION :	1 - 6 h	PROTECTION CLASS :	IP 44
BATTERY CHARGING TIME :	24 - 96 h	INSULATION CLASS :	II
BATTERY TYPE :	12 V Lead-Acid		

PRODUCT LIST

PRODUCT CODE	RATED DURATION	OPERATING MODE*	LIGHT SOURCE	LIGHT INTENSITY on ENERGY/EMERGENCY	TYPE OF MOUNTING	BATTERY CHARGING TIME
AA1207-AA1Y	3 h	Non-Maintained	1x20 W - Halogen	- / 350 lm	Surface Mounted	24 h
AA1214-AA1Y	6 h	Non-Maintained	1x20 W - Halogen	- / 350 lm	Surface Mounted	48 h
AA1507-AA1Y	1 h	Non-Maintained	1x55 W - Halogen	- / 850 lm	Surface Mounted	24 h
AA1514-AA1Y	2,5 h	Non-Maintained	1x55 W - Halogen	- / 850 lm	Surface Mounted	48 h
AA2207-AA2Y	1 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	24 h
AA2214-AA2Y	3 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	48 h
AA2228-AA2Y	6 h	Non-Maintained	2x20 W - Halogen	- / 700 lm	Surface Mounted	96 h
AA2514-AA2Y	1 h	Non-Maintained	2x55 W - Halogen	- / 1700 lm	Surface Mounted	48 h
AA2528-AA2Y	2,5 h	Non-Maintained	2x55 W - Halogen	- / 1700 lm	Surface Mounted	96 h

* Non-Maintained : Lights in case of the mains failure.

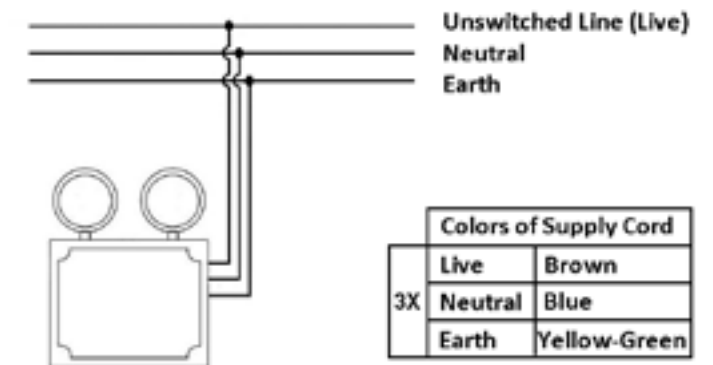
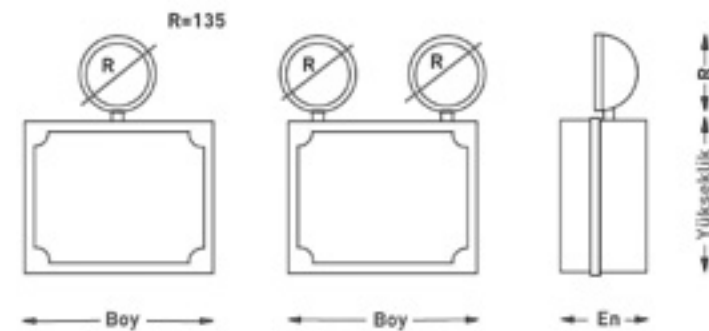
MAINS DATA

PRODUCT CODE	RATED POWER (W)*	MAINS CURRENT (A)**	POWER FACTOR (PF)*	DIMENSIONS (mm)	WEIGHT (kg)	QTY in CARTON BOX
AA1207-AA1Y	3,3 - 27,9	0,023 - 0,141	0,83	106 x 279 x 273	4,820	1
AA1214-AA1Y	3,8 - 28,6	0,028 - 0,148	0,83	135 x 320 x 375	7,630	1
AA1507-AA1Y	3,3 - 27,9	0,023 - 0,141	0,83	106 x 279 x 273	4,820	1
AA1514-AA1Y	4,0 - 30,6	0,030 - 0,145	0,83	135 x 320 x 375	8,570	1
AA2207-AA2Y	3,3 - 27,9	0,023 - 0,141	0,83	135 x 320 x 375	5,850	1
AA2214-AA2Y	3,8 - 28,6	0,028 - 0,148	0,83	135 x 320 x 375	7,950	1
AA2228-AA2Y	5,4 - 28,6	0,033 - 0,149	0,83	135 x 320 x 375	12,150	1
AA2514-AA2Y	3,8 - 28,6	0,028 - 0,148	0,83	135 x 320 x 375	8,420	1
AA2528-AA2Y	5,6 - 30,6	0,035 - 0,155	0,83	128 x 394 x 450	13,740	1

* Measured under 230 V mains.





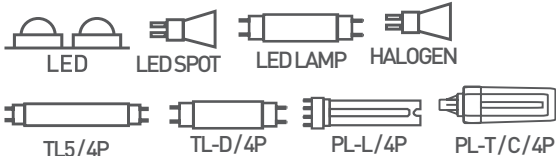










** Maximum values are measured with discharged batteries and values are minimum measured with full-charged batteries.

TECHNICAL DRAWING





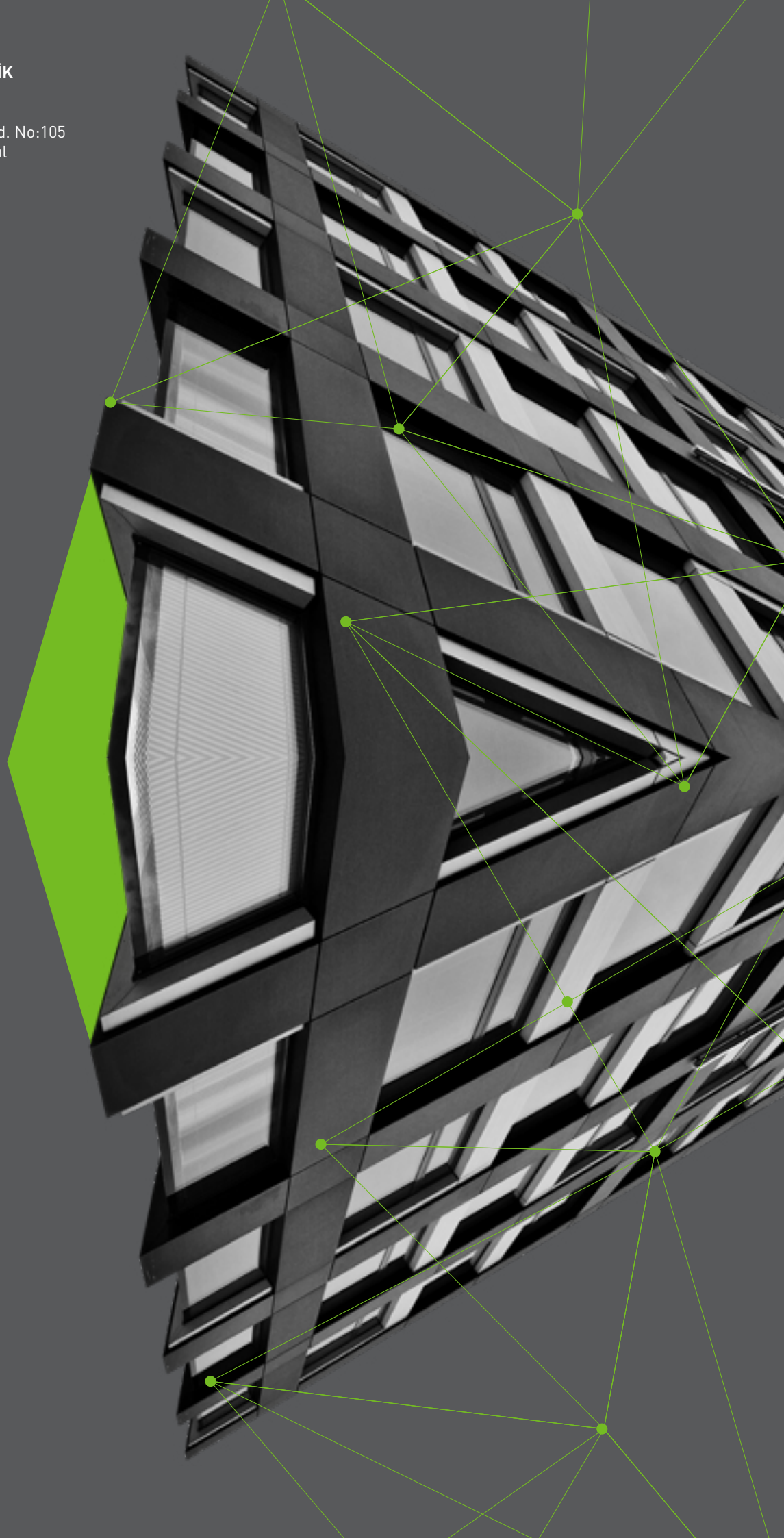
**STANDARDS &
ICONS**

EN 60598-1	General requirements and test for luminaires Part 1: General requirements and tests		Beş A products comply with the requirements of 2014/35/EU and 2014/30/EU are entitled to bear the CE mark.
EN 60598-2-22	Particular requirements in respect of luminaires for emergency lighting		
EN 62031	Safety specifications for LED modules		RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment).
EN 62384	DC or AC supplied electronic control gear for LED modules Performance requirements		
EN 62471	Photobiological safety of lamps and lamp systems		International and national approval marks.
EN 61347-1	General and safety requirements for lamp control gear		
EN 61347-2-7	Lamp controlgear - Part 2-7: Particular requirements for battery supplied electronic control gear for emergency lighting (self-contained)		Protection class II device in which protection against electric shock is not based solely on the basic insulation but in which there are additional safety features such as double or enhanced insulation.
EN 61347-2-13	Lamp controlgear - Part 2-7: Particular requirements for battery supplied electronic control gear for emergency lighting (self-contained)		Safety Extra-Low-voltage (<60V or <120V)
EN 62386-102	Digital Addressable Lighting Interface - Part 102: General rules - Control gear		LED or lamp usage
EN 62386-202	Digital Addressable Lighting Interface - Part 202: Special rules for control gear - Self emergency lighting (device type1)		
EN 62386-207	Numerically Addressable Lighting Interface - Part 207: Specific features for the control layout - LED modules (type 6 device)		Mains voltage for the product
EN 62034	Automatic test systems for battery powered emergency escape lighting		
EN 60929	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps Performance requirements		Insulation class
EN 61547	EMC immunity requirements		
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical ligthing and similar equipment		Body material of the product
EN 1838	Lighting applications - Emergency lighting		
EN 50172	Emergency escape lighting systems		PCB material
ISO 16069	Graphical symbols - Safety signs - Safety way guidance systems (SWGS)		
ISO 3864-1	Graphical symbols - Safety colours and safety signs		SMD technology application
EN ISO 7010	Graphical symbols - Safety colours and safety signs - Registered safety signs		
			Battery type
			International standard code
			OSRAM LED Technology included
			Compatible with DALI (Digital Addressable Lighting Interface) ELCO: Wired Emergency Lighting Monitoring System
			WELCO: Wireless Emergency Lighting Monitoring System Product consist of Wi-Fi module. Monitoring System via Cloud with WELCO software

**BEŞ A ELEKTRİK VE ELEKTRONİK
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