



Emergency Lighting Luminaires and Systems



Catalogue
2014

Pictograms



P01



P02



P03



P04



P05



P06



P07



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Reference list

The Company is proud of emergency lighting systems installed in different facilities around Poland and other countries. Some of our realizations include:

1. Białystok - *University*
2. Białystok - *ZUS*
3. Białystok - *Nursing Home*
4. Bielsko-Biała - *Sfera Gallery*
5. Busko Zdrój - *Health resort*
6. Bytom - *Opera house*
7. Chorzów - *Carrefour*
8. Chorzów - *"Klimazowiec" wastewater treatment plant*
9. Chrzanów - *Valeo*
10. Dąbrowa Górnicza - *sport hall*
11. Elbląg - *Elbląg Technology Park*
12. Gdańsk - *Railway Station*
13. Gdańsk - *Rezydent Hotel*
14. Gdańsk - *ERGO ARENA Sport Hall*
15. Gdynia - *Kwiatkowski's Centre*
16. Gliwice - *PKP*
17. Gliwice - *Regional Oncological Hospital*
18. Karpacz - *Golebiewski Hotel*
19. Katowice - *Pediatric Clinic*
20. Katowice - *Rieter Automotive Poland*
21. Kielce - *Echo Gallery*
22. Kielce - *Regional Administrative Court of Law*
23. Kleszczów - *sports and teaching complex*
24. Kobierzyce - *Heesung Electronics*
25. Kraków - *Philharmonic*
26. Kraków, Łódź, Warszawa - *IBIS hotel*
27. Kraków - *Court of Appeal*
28. Kraków - *Sheraton Hotel*
29. Kraków - *VINCI office building*
30. Kraków - *Town Council*
31. Kraków - *Fabryka Schindlera Museum of Contemporary Art*
32. Kraków - *Philip Morris Poland*
33. Kraków - *Regional Court of Law*
34. Litwa - *Air Navigation*
35. Lublin - *Oncological Hospital*
36. Lublin - *Tesco*
37. Lublin - *Agricultural University*
38. Lublin - *UMCS Humanistyka*
39. Lublin - *Vita Polymers*
40. Lublin - *Olimp Gallery*
41. Łomża - *Custom House*
42. Łódź - *University library*
43. Łódź - *ARENA Sport Hall*
44. Łódź - *ZUS*
45. Mrągowo - *Orbis Hotel*
46. Pruszków - *cycling track*
47. Poznań - *Old Brewery*
48. Radom - *Music School*
49. Skarbimierz - *Cadbury-chocolate factory*
50. Skarbimierz - *Cadbury-chewing gum factory*
51. Szczecin - *Piast Shopping Centre*
52. Szczecin - *GALAXY Shopping Centre*
53. Szczecin - *Oxygen office building*
54. Toruń - *cinder track*
55. Wałbrzych - *Książ Castle*



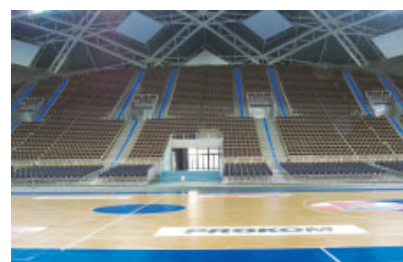
Horizon Plaza
Warszawa



Sheraton hotel
Kraków



Millennium Business Park
Warszawa



Atlas Arena - sport hall
Łódź



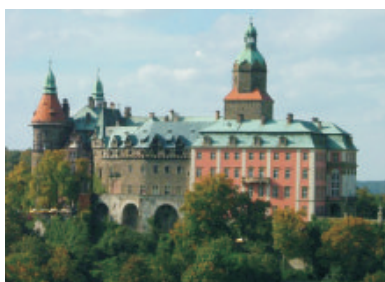
Legia stadium
Warszawa



Old Brewery
Poznań



Intercontinental hotel
Warszawa



Książ castle
Wałbrzych



Złote Tarasy
Warszawa



Golebiewski hotel
Karpacz



Radisson hotel
Wrocław

56. Wałbrzych - ZUS
57. Warszawa - Seym
58. Warszawa - Platinum Towers
59. Warszawa - Legia Stadium
60. Warszawa - Palace of Culture and Science
61. Warszawa - North Gate
62. Warszawa - Hale Kupieckie
63. Warszawa - Jasna Centre
64. Warszawa - French Embassy
65. Warszawa - The Chancellery of the President of RP
66. Warszawa - Bielanski Hospital
67. Warszawa - Polish Security Printing Works
68. Warszawa - Wilenski Railway Station
69. Warszawa - Matecznik Mazowsze
70. Warszawa - The Great Theatre
71. Warszawa - Poleczki Business Park
72. Warszawa - Warsaw Stock Exchange
73. Warszawa - Agora
74. Warszawa - Intercontinental Hotel
75. Warszawa - The Prime Minister Chancellery Customer Service
76. Warszawa - Złote Tarasy
77. Warszawa - Ministry of Infrastructure and Transport
78. Warszawa - SGGW
79. Warszawa - Polish Theatre
80. Warszawa - Wolski Hospital
81. Warszawa - National Bank of Poland
82. Warszawa - Marriott Hotel
83. Warszawa - WOLF Marszałkowska
84. Warszawa - Museum of Aviation
85. Warszawa - Mint of Poland
86. Warszawa - Horizon Plaza
87. Warszawa - Millennium Business Park
88. Wisła - Golebiewski Hotel
89. Wrocław - Radisson Hotel
90. Wrocław - Holiday Inn Hotel
91. Wrocław - Medical Academy
92. Wrocław - University Library
93. Zabrze - Philharmonic
94. Zwardoń - Border crossing
95. Żory - Jan Paweł's II Hospice
96. Żywiec - Żywiec Brewery
97. IKEA - Łódź, Gdańsk, Jarosły
98. LEROY MERLIN - Legnica, Łódź, Katowice, Mikołów, Sosnowiec
99. MEDIA MARKT - Gdańsk, Wałbrzych, Tarnów, Płock, Łódź, Przemysł
100. PANATTONI PARK - Czeladź, Mysłowice
101. SATURN - Piotrków Trybunalski, Kraków, Lubin, Tychy, Zielona Góra
102. Sklep C&A - Radom, Bielsko-Biała, Częstochowa, Bytom, Przemysł, Janki, Tarnów, Gdańsk, Łódź, Rzeszów, Kraków, Piotrków Trybunalski, Rumia, Zielona Góra, Legnica, Białystok, Toruń, Lubin, Opole, Poznań
103. TESCO - Sulechów, Wieliczka, Kraków, Warszawa, Maków Podhalański, Dobre Miasto, Sosnowiec, Łapy, Olsztyn, Kostrzyn, Pruszcz Gdański, Poznań, Radzymin, Tarnów, Oława, Przemysł, Choszczno, Lubin, Zabierzów, Łabiszyn, Hrubieszów, Łęczna,

Company profile





The Hybryd Company was originated in 1986 under the name of the Electronic Device Planning and Production Company Hybryd Ltd., and was, at first, located in Zabrze. At the time, multilayer hybrid modules for medical devices were produced, then the offer expanded to the application for railway signaling equipment and, subsequently, for motorization.

In 1996 the company premises relocated to Pyskowice, nearby Gliwice, and the mechanical park was developed. What is more, the technology production was extended to module assembly on PCB plates.

Since 1997, the range of production broadened to electroluminescent lamp power supply electronic modules, that is electronic ballasts and emergency lighting supply modules. While the production was under the process of improvement, the new emergency lighting supply modules equipped with digital interface were implemented. Most of the production is based on its own construction, elaborated in constructional department.

The Integrated Quality Management System Certificate acknowledges, in accordance with the ISO 9001:2000 standard, high quality of our products.

Due to technical outcomes, Hybryd Company has received a number of awards. Some of them are:

1st Prize for "The emergency lighting system with full visualization and remote monitoring" at the XIV International Fair of the Lighting Appliances in Warsaw,

Gold medal in the category of public protection at SAWO International Fair of Work Protection, Fire-fighting and Rescuing Service 2002 for the luminaires and emergency system with autotest,

Lech Walesa President's 1st award for the DYNAMIC SYSTEM H-300 DYN, during VII International Fair Elektrotechnika 2009.

In 2010, the company opened Research and Development Centre and new LED luminaires production rooms. Since 2010 we are involved in three projects subsidised by the Ministry of Regional Development and supported by the Innovative Economy EU fund.

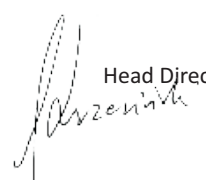
- "creation of the CBR Electronic Emergency Lighting Systems"
- "new operational designs introduced in the Hybryd company for competitiveness growth"
- "creation of the innovative emergency lighting system based on PLC technology"

In 2011, the company introduced OWA, KWADRA, HERKULES, PRIMOS and ORBIT - the new family of LED luminaires for illuminating emergency routes. The last three of them were reserved in patent office.



The company has full access to the constructional – production infrastructure with automatic electronic assembly (SMD line), and also to the electric and mechanical service stations. The devices produced are of the highest quality, and the company provides both, efficient guarantee, as well as post-guarantee service.

The company offers a wide variety of technical consulting, which, depending on the object, includes emergency lighting system type selection, luminaire type selection, illuminance distribution according to current regulations, professional trainings in emergency lighting system assembly on objects


Head Director,
Andrzej Krzeński, PhD. Eng.

Pursuant to Fire Safety in Buildings, Other Structures and Sites Order (**Dz. U. of 22 of June 2010, no. 109, item 719**) issued by the Ministry of Interior and Administration, emergency lighting installations are fire safety devices. According to the Order, all fire protection devices shall be subject to inspection and maintenance at last once a year.

Emergency lighting installations must be of certain technical parameters, because they directly affect people's safety; particularly the reliability factor must comply with a number of relevant standards. It applies both to their functional and lighting/electrical parameters.

Pursuant to the Order issued by the Ministry of Interior and Administration (**Dz. U. of 7 of April 2009, no. 56, item 461**) dated 12 of March 2009, changing technical conditions of the buildings and their location (**§181, pt. 7**) emergency lighting has to be produced according to relevant Polish standards. Additionally, the Order changes the minimal required lighting time to 1 hour.

The most important Polish standard referring to emergency lighting systems is **PN-EN 1838:2013 "Lighting Applications - Emergency Lighting"**. This is an equivalent of the **EN 1838 standard**, which has been implemented in all EU countries. The standard provides minimum requirements that have to be met by the emergency lighting systems. The EN 1838 standard is linked to other standards, such as EN 60598-2-22, referring to emergency lighting luminaires, and EN 50172 which defines emergency escape lighting systems. These standards have also been translated into Polish and approved by the Polish Committee for Standardization.

Pursuant to the Order issued by the Ministry of Interior and Administration (**Dz. U. no. 85, item 553**) dated 27 of April 2010 about "Rules of issuing product admission" every emergency luminaire requires "CNBOP Admission". This rule covers autonomous luminaires as well as luminaires working with central battery systems. The costs including product admission executed according to the PN-EN 60598-2-22 standard and the costs of acquiring CNBOP documents are very high and forces producers to select luminaires for certification. Therefore, emergency lighting producers focus mainly on direction luminaires and typically emergency lighting luminaires especially with LED as light source. Nowadays, objects are designed with the use of the emergency lighting luminaires treated as a separate lighting group whereas basic lighting luminaires working in two-function mode with emergency modules are rare. This way of designing emergency lighting in objects is very beneficial because:

- luminaires are more reliable, production recurrence is bigger than with basic lighting adaptations
- precise photometric data for typical emergency luminaires is available instead of basic lighting data with emergency modules
- there is an extended lifespan of the accumulators used in typical emergency lighting compared to shorter lifespan of the accumulators used in basic lighting adaptations generated by overheating of constantly working lamps
- transparency and reliability of power supply installation only for emergency lighting is clearly visible

The guidelines provided in the current regulations and standards can also be used to create a project specific evaluation and maintenance checklist:

GUIDELINES FOR EMERGENCY LIGHTING CONTROL

1. *Obligatory documents that shall be kept by the person responsible for emergency lighting in the object:*

a) Object designs signed by the fire safety expert - shall identify emergency lighting luminaires and all the components included in the system

b) Emergency lighting register - available in facility and including the register of emergency lighting tests. Altogether with system documentation and certificates shall be kept by the person responsible for emergency lighting.

The register shall include:

- 1) finished and prepared system acceptance date with appropriate documents describing changes
- 2) periodic inspection and test date
- 3) service, inspection and test date with shortened details
- 4) defect and described reaction date with shortened details
- 5) introduced to the system changes with date and shortened details
- 6) while using devices for automatic testing, basic parameters and working mode for this device shall be described

c) Last emergency lighting inspection report - cannot be older than 12 months

2. Site inspection

a) arrangement of emergency lighting luminaires used for illuminating. Luminaires shall be placed:

- at each exit door intended to be used in an emergency
- near stairs so that each flight of stairs receives direct light
- near any other change in level
- mandatory emergency exits and safety signs
- at each change of direction
- at each intersection of corridors
- outside and near to each final exit
- near each first air post
- near each piece of fire fighting equipment and call point

b) arrangement of emergency lighting used as direction luminaires - emergency signs shall be visible on emergency route from specific distance. All the emergency signs shall point unambiguously escape path. At least one direction luminaire shall be visible from any place within emergency route.

c) emergency routes illuminance - for escape route, the horizontal illuminances on the floor shall be not less than 1lx. Aid posts, fire fighting equipment and call points shall be illuminated to 5lx if not in open area nor on the escape routes.

3. Functionality of emergency lighting system

a) devices testing emergency work - emergency lighting luminaires with own accumulator shall be delivered with integrated testing device in order to simulate failure of basic lighting supply - it is important to do this without switching off power supply

b) initiation of emergency lighting - emergency lighting shall initiate itself not only when the whole basic lighting goes down but also during local failures.

The above listed requirements must be taken into consideration when designing emergency lighting systems for new or refurbished buildings or other structures. Also, investors and designers have to make a decision what type of emergency lighting system is suitable for particular project.

Considering legal requirements of at least one system inspection per year, it is hard to imagine the facility with more than 100 luminaires but no automatic monitoring and testing system.

Based on their supply source, the luminaires can be classified into two groups: the luminaires with their own power supply (e.g. accumulators) and the luminaires with external power source (e.g. central battery). Internally powered luminaires switch automatically into emergency mode when basic lighting system fails. This ensures that emergency lighting is provided in every area. Central battery systems do not provide this cover, as power supply failure is recorded by the remotely located central battery, not by each of the individual luminaires.

Nowadays the world is marked by the threat of terrorist attacks. Ensuring public safety is the most important factor required from the systems of emergency lighting.

This requirement is perfectly fulfilled by the system based on luminaires with their own power supply. Not only do these systems have all the advantages of the central battery systems, including functional automatic testing of luminaires and long-term warranty for all system elements, but they also eliminate possible disadvantages of central battery systems. Further disadvantages of central battery systems (apart from one device which controls other elements) are:

- the requirement to use additional, expensive fireproof wiring for emergency lighting luminaires
- high price of accumulators and central battery
- the need to replace all accumulators if they do not fulfil lighting time requirements

Systems based on luminaires with internal power source do not have these disadvantages. They do not require any additional wiring because the emergency lighting luminaires are connected to the same cable as the basic lighting luminaires. This system is cheaper due to both the price of the devices and the wiring. Also, it secures complete identification of damaged luminaires, because each of the luminaire has its own individual address. The latest solutions allow to monitor all luminaires and devices from different locations (e.g. from the manufacturer's or investor's premises) through internet connection.

SYSTEM VERSIONS

On the account of power supply, basic division of emergency lighting systems has been made:

- Systems with internal power supply, in which every luminaire has its own inner accumulator. They are called Dispersed Systems.
- Systems with external power supply, in which every emergency luminaire is powered by one, outer accumulator battery. They are called Central Battery Systems.

Moreover, Dispersed Systems can be divided according to differences resulting from the manner of emergency luminaire testing:

STANDARD (ST)

STANDARD execution, labeled in catalogue as ST, technically is the simplest product of emergency luminaires that can be tested by using "TEST" button to evoke short intervals in power supply.



Standard execution is being produced sporadically nowadays in respect of the current standards. The situation results from the fact that standard luminaires do not allow for testing the time of lighting, which, according to PN-EN 50172 is supposed to be performed at least once a year.

Moreover, performing functional test monthly may appear to be arduous and almost impossible in case of emergency luminaires located 3 meters above.

AUTOTEST (AT)

AUTOTEST execution, labeled in catalogue as AT, is the product readily applied by owners of building objects. The situation reflects the fact, that emergency luminaires with autotest are a bit more expensive, but allow for performing tests determined in PN-EN 50172 norm.



When it comes to luminaires with autotest, both functional (monthly) test and 'time lighting' test (at least once a year), thanks to the use of microprocessing circuit are performed automatically, and the outcome is displayed on LED diodes. Red light indicates negative result of the test.

A major drawback of this execution is the fact that the results of the test need to be read directly from emergency luminaires, which might be difficult, even impossible, especially in larger objects. Another negative aspect is lack of result history record, which has to be registered once a year in Emergency Lighting Register.

SYSTEM VERSIONS

TEST SYSTEM (TS)

TEST SYSTEM execution, labeled in catalogue as TS is the product dedicated especially to already existing objects, in which the history of particular emergency luminaire tests should be registered.

TEST SYSTEM possesses all the advantages - good price, actual fire regulations and conformity, as well as the possibility of electronic history record in small memory portable H-101 TS central unit.

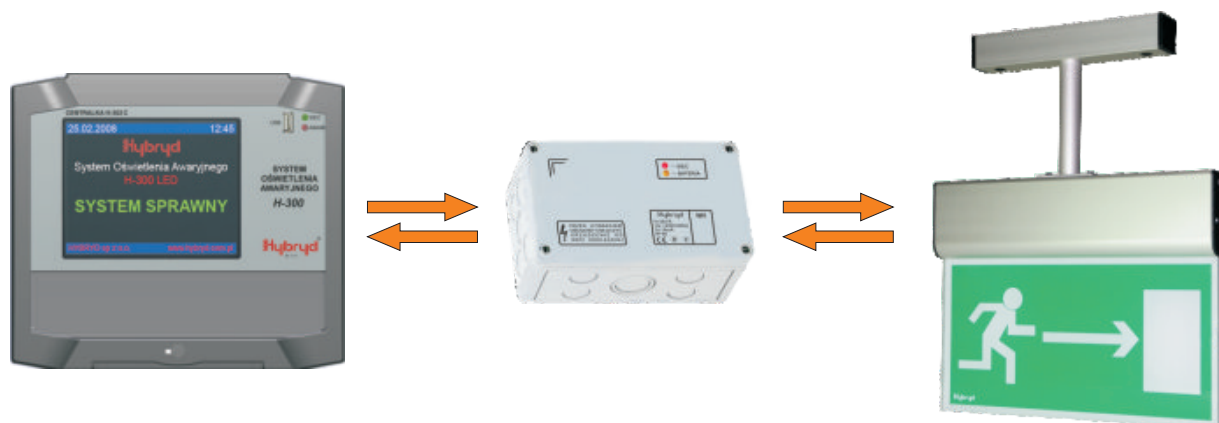
As far as this execution is concerned, frequency of functional tests "A" and time lighting tests "B" is being programmed in every emergency luminaire. Moreover, emergency luminaires of TS type have been equipped with a test result transmission module with the use of infrared signal. In this way, results can be registered in portable H-101 TS central unit, made in the form of handy pilot.



CENTRALTEST (CT)

CENTRALTEST execution, labeled in catalogue as CT, is more and more often chosen by its investors. Due to actual fire regulation conformity in Poland, as well as convenience in using and servicing. #

Emergency lighting systems of CENTRALTES type have a central unit responsible for systematic testing of technical condition of all elements of the system, but not for switching luminaires into emergency mode. After disappearance of voltage powering the luminaires, emergency mode is turned on automatically. In this way, safety of people in the building is being spread to all emergency luminaires without any risk that central unit of the system will be damaged and cut off emergency light in the whole object, as it happens with systems containing central battery.



H-300

The overall idea of the emergency lighting system H-300 assumes applying luminaires and other emergency lighting devices, which work fully automatically in emergency mode, and their technical condition is monitored and registered by central unit, for instance H-302 C or PC computer.

In H-300 system, the following luminaires and emergency lighting devices can be monitored:

- Fluorescent lamp luminaires
- Halogen luminaires
- LED luminaires
- 12V/24V DC feeders

H-300 systems can be divided according to central unit used, type of emergency luminaires monitored or their functions:

1. **H-300** system with central unit as a H-302C central
2. **H-300 PC** system with central unit as a PC computer
3. **H-300 LED** system containing LED luminaires only
4. **H-300 DYN** dynamic emergency lighting system, in which the central unit is connected with fire system, and depending on fire localization it indicates optimal fire escape by displaying proper markers on dynamic luminaires and activating proper fire luminaires at the same time.

Communication connection between central unit and luminaires, located in H-300 DYN system, has to be operative as well as made of fire proof wire, for instance HTKSH ekw PH90 1x2x1.0.

The software installed in central unit allows for:

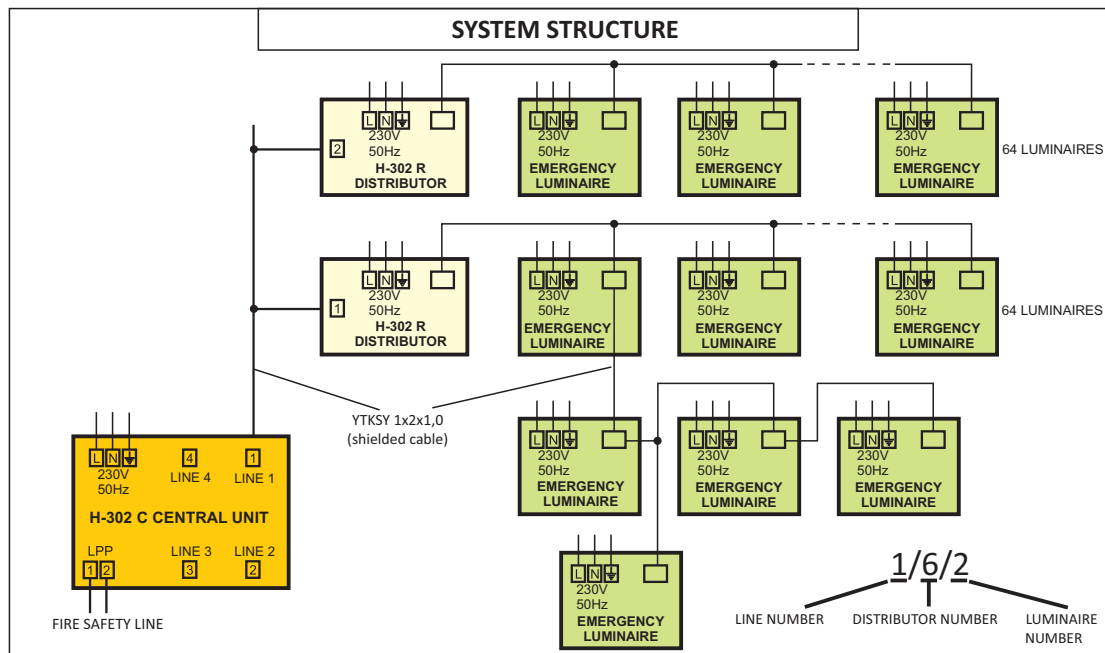
- Execution of automatic and manual functional tests (test A), as well as duration of operation in emergency mode (test B) of all luminaires
- Test result registration
- Test result printout
- Emergency mode blockade
- Address and other emergency luminaires of central unit level parameters programming
- Address and other emergency luminaires programming with the use of programmer and infrared signal

Complete system includes: central unit, distributors, luminaires and other emergency lighting devices.

Communication between the central unit, distributors and emergency lighting devices is being executed by two-wire bus. Distributors installed between central unit and luminaires and other emergency lighting luminaires can operate 64 monitored points maximum.

In central unit, there can be mounted 4 communication lines maximum, with 31 distributors on each. It results with the fact, that H-300 systems can monitor 7936 luminaires and emergency lighting devices.

Maximum distance between central unit and distributor, and distributor and luminaire equals 1000 meters, moreover, it can be extended by additional distributor installation. You can see an example scheme of H-300 system connection in the following picture:



The comparison of systems

Central monitoring system is used for integration of the process of controlling and monitoring the work of the greater amount of emergency lighting luminaires. Emergency lighting lamps in CENTRALTEST execution are connected to lamp communication network with different typologies. The central system element may be H-302 C or computer with dedicated software and communication interface H-302 IN. The H-302 distributors fulfill the role of mediators and the transmission medium is a two-wire signal cable.

	H-300	H-300 LED	H-300 DYN	H-300 PC
Available central units:				
H-302 C	YES	YES	YES	NO
PC 3 ² CENTRAL	YES (additional) ²	YES (additional) ²	NO	YES
Supported lamps:				
Compact and fluorescent lamps	YES	NO	YES	YES
Halogen lamps	YES	NO	YES	YES
LED	YES	YES	YES	YES
Dynamic	NO	NO	YES	NO
Overall parameters:				
Luminaires number	7936			
Distributors number (max per one line)	31			
Output lines	4			
Max. distance between central unit and distributor	1000m			
Max. distance between distributor and luminaire	1000m			
Other functions:				
Visualisation ³	NO	NO	NO	YES
Remote control	NO ⁴	NO ⁴	NO	YES
System status report saving	YES ⁵	YES ⁵	YES ⁵	YES
E-mail notification	NO ⁴	NO ⁴	NO	YES
Tests history	YES ⁵	YES ⁵	YES ⁵	YES
Tests planning	YES	YES	YES	YES
Automatic reports	NO	NO	NO	YES
Users authorizations	NO ⁴	NO ⁴	NO	YES

Ad 1 PC 3 CENTRAL includes PC+software+H-302 IN interface

Ad 2 in configuration H-302 C+PC3 CENTRAL, H-302 C is considered as H-302 IN / *ATTENTION - PC 3 CENTRAL and H-302 C do not work simultaneously!

Ad 3 facility project with emergency lighting luminaires and their addresses

Ad 4 not possible without PC 3 CENTRAL

Ad 5 saved on pen drive (USB)

H-300 PC

H-300 PC system can be treated as modern and comprehensive solution for emergency lighting systems. It allows for control of the whole emergency lighting locally and remotely with the use of the Internet.

System characteristics:

The complete system includes:

- Central unit – personal computer with the PC 3 CENTRAL software
- H-302 IN interface – connects the central unit with luminaires net and works with 4 output lines
- Distributors - one distributor enables to connect 64 luminaires, 31 distributors can be connected to one output line
- Luminaires with internal centraltest interface

H-300 PC system is innovative because of its software which includes:

- advanced possibilities – ensured by the computer
- simplicity – web page interface
- availability – web browser required
- safety – Microsoft.NET technology

System operation

Software access is available from the web page. System can be used directly from the central unit as well as from any computer with Internet access. Username and password are required.

After login, the main page appears.

The main page includes basic information about the facility:

- luminaires number
- group lists
- distributors number

„Report” button allows for generation of report about the whole system. This report can be saved or printed.

Basic functions:

- Test A – functionality test lasting about 1 minute (recommended interval: 1 month)
- Test B – emergency supply test, measurement of emergency lighting time, accumulator format included (recommended interval: ~ 1 year)
- Temporal luminaire blockade – emergency work blockade for 60min
- Luminaire ON/OFF
- Luminaire reset – luminaire ram memory reset

Task planning

H-300 PC system enables users to schedule tasks like Test A, Test B or others. Test A can be scheduled according to safety requirements. It is possible to schedule tests for all luminaires as well as for separate groups so that the whole testing process is executed in stages.

Tasks can be programmed with one minute precision and according to defined intervals or cycles. Report generation can be scheduled as well.

Reporting

Emergency lighting system based on PC gives many possibilities of reporting. One includes the possibility of luminaire status reporting. Such report can be generated for the whole system as well as for separate group and it presents luminaires list with information about tests time and results of those tests.

As it was mentioned above, reporting can be programmed and saved on hard disk monthly. Considering the central unit connected to the Internet, reports can be send to particular and responsible for the whole system person. Report appearance can be adjusted according to clients' will.

H-300 PC

Event history

Event history includes information about system logins, luminaires tests, groups editing, or automatic tasks/reports history. This diary keeps the whole history of the system and helps in analysing irregularities.

Visualisation

One of the most important functions of the H-300 PC and its software is visualisation. It includes all luminaires installed in the facility with their unique addresses. Colours of those addresses mark status (operative or not) and presence/absence of luminaires.

With the use of visualisation, luminaire position can be located. The system is able to search through facility plans and highlight required luminaire. By choosing any luminaire, there is a possibility to enter their specific profile where we can initiate test and other functions.

Summary:

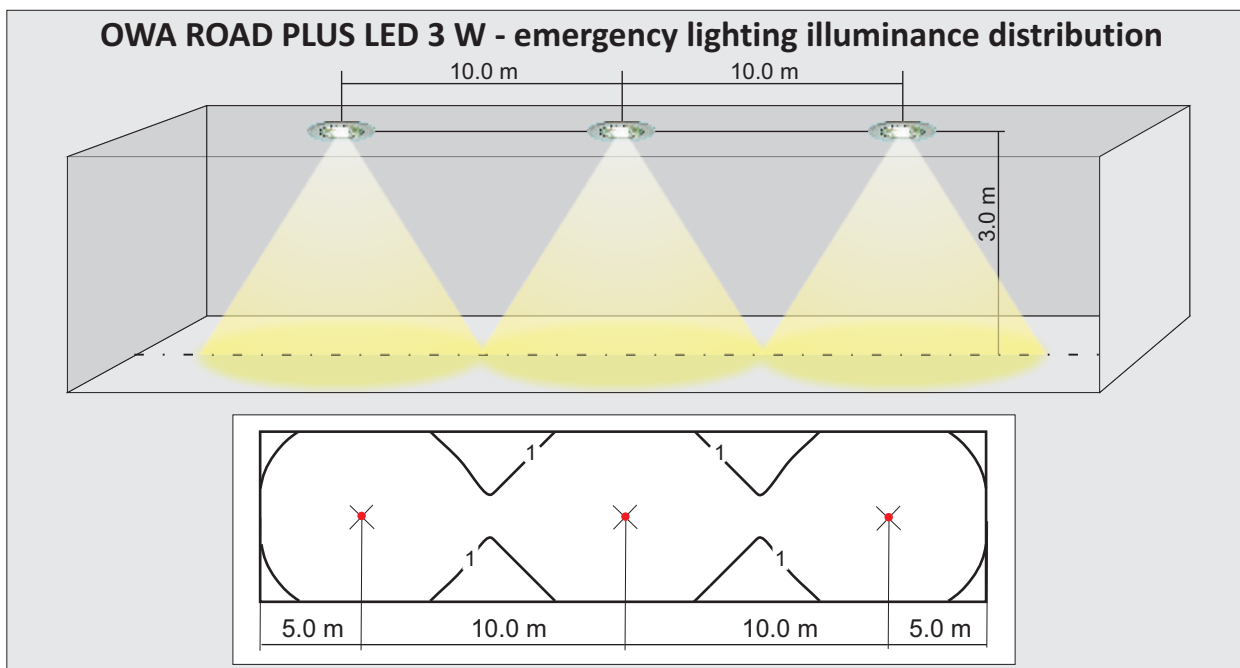
To sum up, test planning and report planning connected with Internet connection automate the whole system and eliminate the need of direct supervision. Event diary keeps the whole system history and helps in analysing irregularities. Finally, visualisation illustrates the whole system status in facility.

ADVANTAGES:

- simplicity – clear web page interface
- availability – web browser required
- automation – test and reports planning
- visualisation – easy search and control of luminaires
- safety – quick detection of errors
- reliability – Microsoft.NET technology



H-300 LED



H-300 LED system elements

H-302 C central unit	H-302 R distributor	LED feeder
PRIMOS CT LED	OWA POWER CT LED	PROFLIGHT CT LED
PROFIL CT LED	CRYSTAL CT LED	SPARK CT LED

AUTOTEST

Emergency lighting luminaires and modules of AUTOTEST type are elements connecting emergency lighting systems with monitoring and test result register (CENTRALTEST and TEST-SYSTEM) with STANDARD version, which does not contain much information about luminaires and modules technical condition.

AUTOTEST marks automatic autonomous testing of emergency luminaires and modules technical condition, and there is no need to apply any additional devices or services to conduct testing required by PN-EN 50172 norm.

In emergency lighting luminaires AUTOTEST provides an opportunity to keep them in good technical condition through constant functional control and measurement of the time of lighting while being in emergency mode. AUTOTEST version includes microprocessor device that functions in following multiple ways:

- Executes functional TEST A
- Controls the time of lighting while being in emergency more TEST B
- Supervises the current during accumulator charging
- Signals emergency luminaire damage by using red LED diode

Time limits of tests, according to microprocessor software, are triggered by internal clock. PN-EN 50172 requires TEST A to be conducted every 30 days, while TEST B every 360 days.



TEST A is a simulation of power breakdown and switching into the emergency mode for about 1 minute. At that time the particular luminaire subassemblies proper functioning is being tested. TEST B means switching the luminaire into emergency mode and time measurement from the moment of lighting to accumulator discharging. The time measured is compared (by microprocessor) to the expected time of lighting for particular luminaire, and when the red diode is on, it indicates, then, accumulator damage. To make them work properly, one needs to discharge the accumulator (voltage level specified by accumulator manufacturer) and next, charge them once again.

AUTOTEST luminaires are produced as direction luminaires of all types, both in fluorescent lamp version and with LED, as well as luminaires intended for emergency exits with fluorescent lamps and LED diodes, and halogen lamps as well.

Emergency lighting luminaires, intended for illuminating, are made of typical luminaires used for basic lighting, with emergency modules assembly. It provides the opportunity to create a coherent emergency lighting system, in which all luminaires are tested automatically.

By using AUTOTEST luminaires, the object has full control over the whole emergency lighting system. Luminaires meet with the PN-EN 60598-2-22 norm requirements: "Emergency lighting luminaires with their own source of power supply shall be equipped with internal testing circuit, or should be connected to remote testing circuit".

One drawback of using AUTOTEST luminaires is necessity of systematic visual control over LED diodes, which may signal potential defects. That is why they should not be applied in larger objects, where technical service, for various reasons, is not able to be in full control. The best solution would be using emergency lighting system with all luminaires monitoring and addressing.

TEST SYSTEM

The establishment of emergency lighting system TEST SYSTEM (H-100 TS) was the response for the need of indirect version between AUTOTEST and CENTRALTEST emergency lighting system. Execution of communication installation for CENTRALTEST system may be problematic especially in already existing areas, and, simultaneously, size or the character of the object predispose it for electronic test history record. In such cases TEST SYSTEM installation seems to be consensual solution that satisfies investors, as well as meets with current norms and requirements in Poland.

The general idea of H-100 TS SYSTEM is to apply such luminaires and other emergency lighting devices, that while being in emergency mode would function and administer its tests fully autonomously. It is possible thanks to microprocessing circuit installed in emergency luminaire, responsible for:

- Conduction functional TEST A
- Controlling the time of lighting in emergency mode TEST B
- Supervising the current during accumulator charging
- Signaling damaged luminaires using red LED diode
- Emergency luminaire electronic address
- Reporting test results to central unit H-101 TS using infrared signal

The central unit H-101 TS is presented in the form of handy remote controller with screen, that enables to:

- Read the emergency lighting address together with both TEST A and TEST B results
- Record tests, with the possibility to ascribe the address to luminaire in H-101 TS memory
- Change emergency lighting parameters, its addresses and A and B tests frequency
- Execute tests A/B at any time

TEST SYSTEM solution eliminates many investors and object users' problems, where AUTOTEST does not fulfill requirements, and CENTRALTEST is difficult to install, or simply too expensive.



STANDARD

Due to the problem with finding acceptance to use emergency luminaires and modules with Standard execution, this type of system begins to be the least popular and implemented in projects. The reason lies in inconsistency between Standard luminaires and Polish regulations. In general, the luminaires cannot be tested according to PN-EN 50172 norm.

Despite all disadvantages, wholesale of Standard emergency modules and luminaires is highly above the average. It is the consequence of the fact that Standard execution can be used in facilities where there is no need of meeting regulations and where the owner's own purpose is to improve the overall comfort and safety of all clients.

Private use is very popular as well, especially in houses or homes. Bearing in mind all the clients, Hybryd Company uses microprocessor devices with TEST A and accumulator charge current supervision functions available with Standard execution.

As far as market price is concerned, the cost of emergency luminaires equipped with microprocessors is similar to the cost of luminaires with the TEST button. Additionally, maintenance costs are unquestionably lower due to automatic testing and great accumulator durability.

Luminaires available with Standard execution:

- PRYMAT, PRYMAT D
- CRYSTAL
- ALU
- PROFIL
- PRIMOS
- PROFILIGHT
- SPARK



The majority of luminaires listed above can be equipped with both, fluorescent lamp and LED light source.

Basic lighting can be adopted to work in emergency mode due to Standard emergency lighting modules. This kind of adaptation is mostly applicable with fluorescent and compact lamp luminaires.

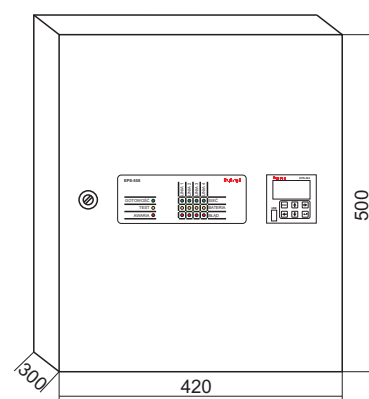
Recently, basic lighting luminaires became equipped with LED light source. The trend is also visible with emergency lighting, that is the reason of why Hybryd company elaborated emergency modules for those kinds of solutions.

BUFFER POWER SUPPLY SYSTEM BU

BU system is designed to supply emergency lighting luminaires in case of power failure, where it is required by relevant regulations. It is adapted to work with an input voltage of 230VAC/230VDC. The output voltage with 24VDC value is derived from the power supply with suitable power which is powered directly from the mains 230VAC or from battery constant voltage 220VDC. This power supply at the same time loads accumulators of batteries 24VDC. When a power failure 24V output voltage is obtained directly from the battery of accumulators 24V. This system has been designed in accordance with PN-EN 1838, PN EN 50171, PN EN 50172, PN EN 50272.

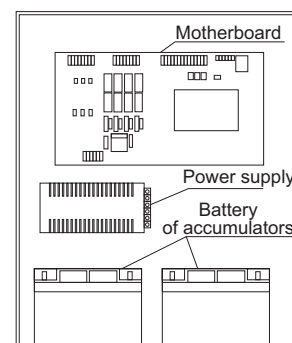
BU system is used for supplying 4 circuits with LED lamps and work time 1h or 2h. It consists of a single cabinet containing electronic systems with accumulators. BU system has its own computer and LED luminaires modules supplying-addressable, what allows to control technical efficiency of luminaires individually for each of luminaires, both illuminating escape routes and for lamps indicate emergency escape routes with pictograms. Depending on the required time for BU system operation in emergency mode are used accumulators of different capacities. For this reason BU systems exist in two different sizes of casings.

General view of BU system cabinet



System components and their placement in the system cabinet:

- motherboard containing the computer and control of circuits
- screen with touch panel
- power supply 230VAC-DC/24VDC.
- battery of accumulators



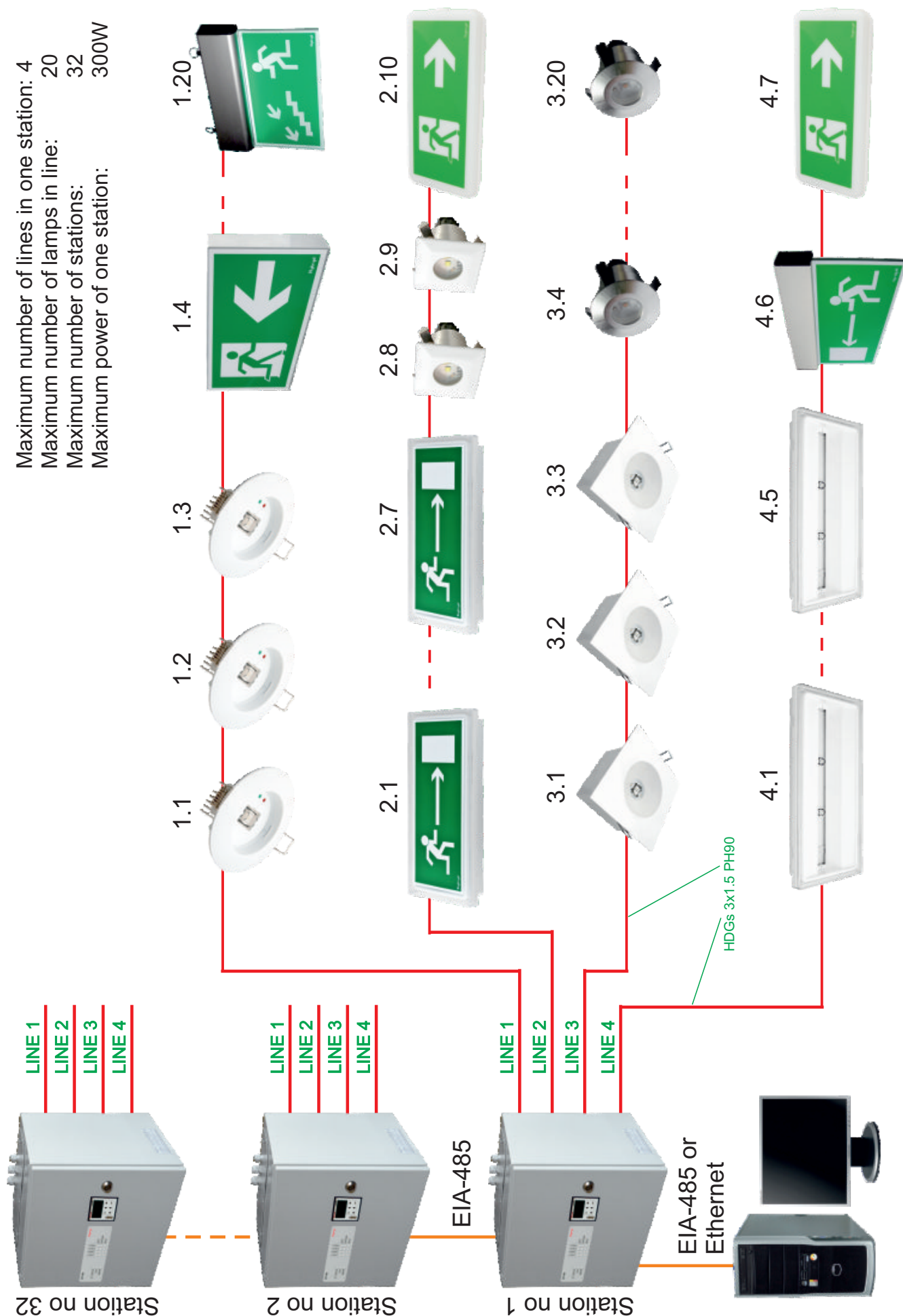
In BU systems are applied valve regulated lead acid batteries 12V with 10 year design life. These give a buffer supply voltage 27,2 V.

BU system can be supplied with alternating voltage 230VAC or direct current 220VDC.

Basic technical parameters of the BU system.

Power supply	230VAC or 230VDC
Connection power	500VA
Power take-off	300W
Number of lines	4pcs.
Output voltage	24VDC
Output lines:	luminaires control - max 20 luminaires on the line but no more than 75W
Buffered voltage level	27,2V
Emergency work time	1h, (2h)
Accumulator capacity	20Ah, (42Ah)
Dimensions	420x300x500, (420x300x700) (W x D x H)
Weight	15kg, (27kg)

Maximum number of lines in one station: 4
Maximum number of lamps in line: 20
Maximum number of stations: 32
Maximum power of one station: 300W



EMERGENCY LIGHTING SYSTEM
BU LED

CENTRAL BATTERY SYSTEM



Central Battery System, shortly Central Battery is characterized by this, that all emergency luminaires are supplied from one source. It is only adapted to one nominal voltage ie 230VAC/3x230VAC.

At presence of mains voltage all luminaires are supplied by mains or from battery 220VDC when mains fails. The system is prepared for final circuits with type IT during battery mode. System is designed in accordance to standards PN-EN 1838, PN-EN 50171, PN-EN 50172, PN-EN 50272.

Central Battery System CBS may consist of central station alone or central station together with substations. It is allowed to supply 12 slave luminaires in final circuits with total max load 700W. Central station and substations are connected together by means of RS485 bus. Testing of luminaires is attained by measure of current in final circuit or by individual address of luminaire in final circuit.

System is constructed in cabinet, where one can find following components:

- UKN module for battery charging and control
- H-505 computer for system supervision and data gathering
- rectifier for battery charging
- USO module - line controller, checks luminaire status (light sources and electronic ballasts)

Battery is placed in the same cabinet or in additional rack (depends on volume of battery). In CBS are applied valve regulated lead acid batteries with 10 year design life. These batteries have small self discharging and are maintenance free. There is always string of 18 pcs. 12V batteries connected in series thus giving 245V float voltage.

SZC may be supplied from one or three phase mains. Maximum allowable power in one cabinet system is 27kW at 3 phase supply. In such system may be maximum 42 final circuits.

TECHNICAL DATA

CATEGORY	PARAMETER
Battery mode	IT type electrical network
Output voltage	230VAC or 220VDC
Final circuits	
- Circuit control	700W max (1kW option)
- Luminaire control	20 luminaires with identity modules in circuit
Float battery voltage	245V

CENTRAL BATTERY SYSTEM

CBS essential components

1. Battery charger EPS-700

Charger is made in 6U 19" to fit to EuroCard system. Connection with 19" rack is made by means of H15b connector ensuring hot swap of charger. Applied number of chargers gives redundancy.

Green LED in front panel shows presence of output voltage. Fuses F1 (mains) and F2 (output) are placed inside. Charger is specially designed to meet requirements of batteries. Number of parallelly connected modules ensures proper current for charging with redundancy (N+1). Maximum output current for single modul is 3A.

There are following solutions applied in charger:

- Limitation of inrush current
- Soft start, constant voltage- constant current output characteristics
- Overvoltage protection 110%-120% output voltage
- Potential free contacts for fault detection
- Optical signalization of failure
- Limitation of inrush battery current enabling hot swap
- Turning on fan at 30% of load current
- Protection against fan failure by limiting output current to 40% of maximum current
- Temperature compensated charging voltage
- Equal current sharing between modules

*2. Changeover module plus addressing module*

Changeover relay MP-30P is applied to switch on or off luminaires connected to maintained final circuit by means of local switches. This module is supplied from both local and maintained final circuit from central battery. In case of local mains failure, luminaire is supplied from central battery. Maximum luminaire power is 150W. These modules can be installed in luminaires working with maintained lighting mode. Can be ordered as changeover+addressing module as well as only as changeover module.

*3. USO line and luminaire controller*

USO module is designed to measure and control final circuit luminaires status. Controlled line can be created with the use of 12 identical luminaires when supervising line status or 20 different luminaires with overall power <700W. Work mode can be set in H-505 computer. One USO module can supervise two final circuits.

There are 4 LEDs for every circuit in the front panel:

Green LED indicates "Mains".

Yellow LED indicates "Battery work".

Another green LED indicates activated line.

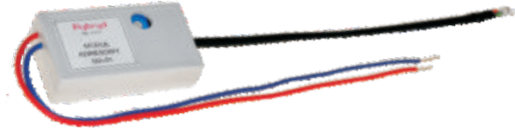
Red LED indicates circuit fuse failure.



CENTRAL BATTERY SYSTEM

4. Luminaire Identity Module MA-01 (for 12 luminaires) or MA-02 (for 20 luminaires)

Luminaire Identity module should be placed in every luminaire where identity is necessary. Photosensitive component placed in module should be oriented towards lamp.



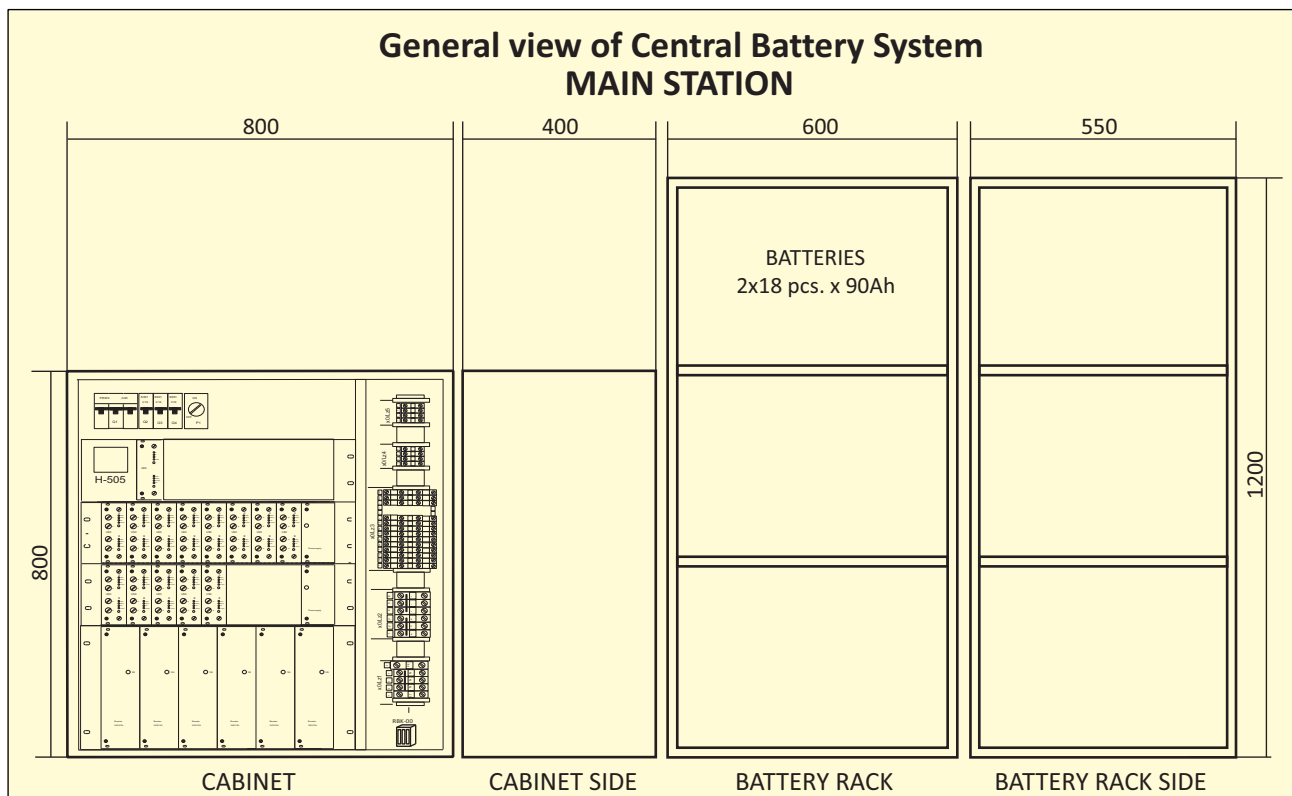
Identity switch should be set on luminaire number. In one final circuit may be maximum 20 lamps. One module can supervise one luminaire. Communication between central battery unit and luminaire is done with the use of power supply line.

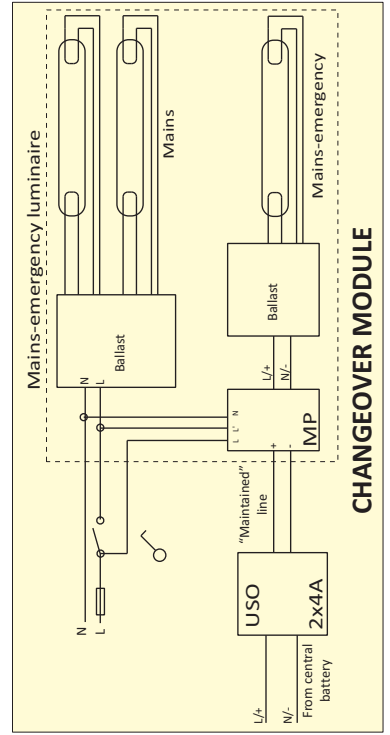
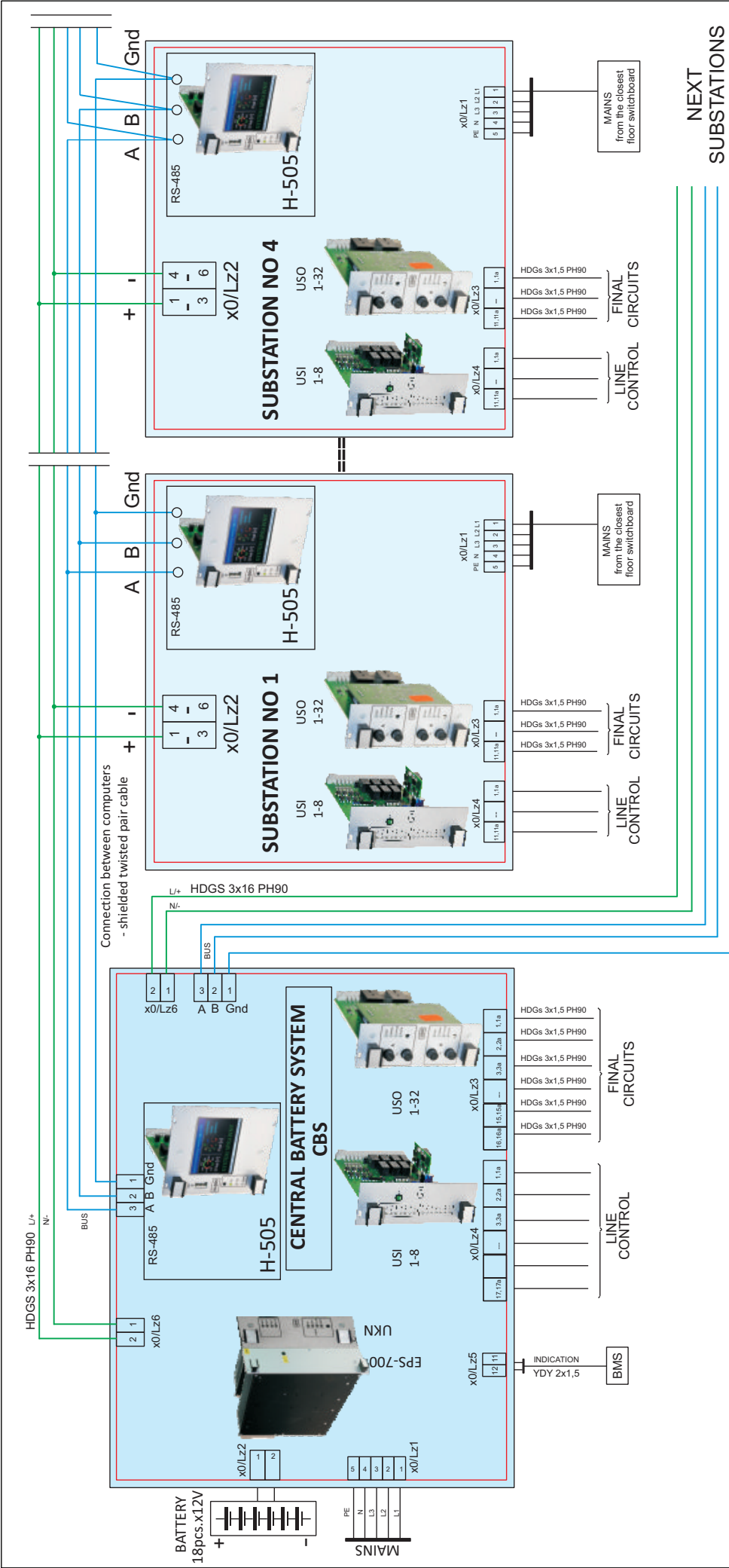
5. H-505 computer

H-505 computer can be used to gather and supervise the system and additionally to print reports. The device is equipped with touch panel showing system status and information. Emergency state is simultaneously indicated by the potential-free joint relay. BMS signalisation can be connected. RS485 port is used to communicate with substations. Information about system status is presented in written form.



H-505 computer automatically initiates functionality tests according to designed schedule. System parameters can be presented in the form of PC printed document with the use of USB. Saved file has txt format and can be printed from any computer. System remembers tests for two years and saves them on SD card.





CENTRAL BATTERY SYSTEM CBS

Versions - testing, monitoring

ST = Standard - emergency work test executed by turning off power supply

AT = Autotest - automatic and periodic test execution:

TEST A - lamp efficiency test, monthly;

TEST B - emergency work time measurement, annually;

CT = Centraltest - communication with the central unit or PC, full addressing of the luminaires, luminaires visualisation, system status reporting, many testing options, manual testing;

TS = Test System - communication with H-101TS central unit, many testing options, manual testing with the use of H-101TS central unit

CB = Central Battery - 220V DC power supply from central battery, built-in LED 220VDC ballast and LED module;

BU = Buffer Supply - luminaire adapted for 12-24V DC buffer feeders, built-in LED 12-24V DC ballast and LED module.

Functions

1. Automatic power supply switch: basic work/emergency work. (only ST, AT, CT and TS).
2. Luminaire and accumulator state indication (only ST, AT, CT and TS).
3. Supervision of 230V power supply voltage and accumulator condition (only ST, AT, CT and TS).
4. Deep accumulator discharge protection (only ST, AT, CT and TS).
5. Automatic test execution (only AT, CT and TS).
6. Light source work supervision.

Indication

The luminaire condition is indicated by LED. There is no LED indication during emergency mode:

Green - accumulator condition (only ST, AT, CT, TS)

Red - luminaire condition (only AT, CT, TS).

More details described in product manuals.

Lighting versions

Maintained (M) - basic lighting provided all the time (uses 230V); in case of power supply failure switches automatically into emergency mode (accumulator).

Non-maintained (NM) - standby mode as a standard (no lighting); in case of power supply failure switches automatically into emergency mode (accumulator).



General purpose

Prymat luminaire is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Additionally, the luminaire with fluorescent lamp can be used as illuminating fixture. Prymat can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORIES \ LIGHT SOURCE	8W lamp	LED
Power supply	230VAC/50Hz	
Power consumption	<12W	<4W
Protection class	II	
Radio noise	Level N	
Protection degree	IP 53	
Light source	TL8W - G5	White LED
Accumulator type	NiCd HT	
Recharging time	24h	
Emergency work time	1h, 2h, 3h	3h
Ambient temperature	0°C - 50°C	
Connector	3 x 0,5 ±2,5 mm ² (maintained) 2 x 0,5 ±2,5 mm ² (non-maintained)	
Lighting flux	450lm	-
Emergency efficiency	40%	100%



Casing

Available in white colour RAL 9003(different colours available)

- colour: white
- lamp cover: flat, oval
- lamp cover colour: frosted or transparent

Available versions

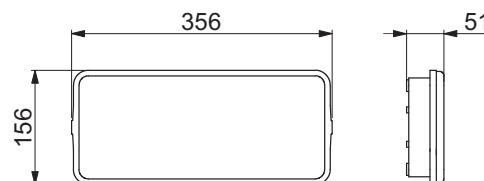
Check final pages of this catalogue.

Mounting types

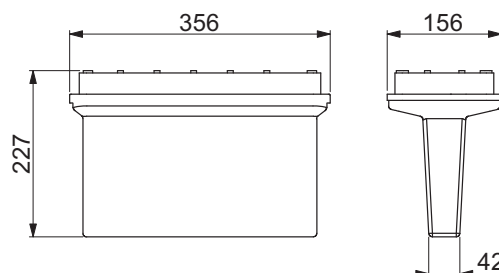
Check 3rd page of the catalogue cover.

Dimensions

PRYMAT - one-sided



PRYMAT - two-sided





CE IP40



General purpose

Profil luminaire is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Profil can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORIES \ LIGHT SOURCE	8W lamp	LED
Power supply	230VAC/50Hz	
Power consumption	<12W	<4W
Protection class	I	
Radio noise	Level N	
Protection degree	IP 40	
Light source	TL8W - G5	White LED
Accumulator type	NiMH HT	
Recharging type	24h	
Emergency work time	1h, 2h, 3h	3h
Ambient temperature	+10°C ÷ +40°C	
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)	

Casing

- body material - aluminium
- colour: silver (oxidized aluminium),
other RAL colour available
- lamp cover: flat transparent (plexiglass with pictogram)

Available versions

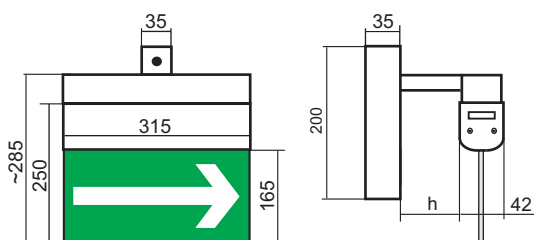
Check final pages of this catalogue.

Mounting types

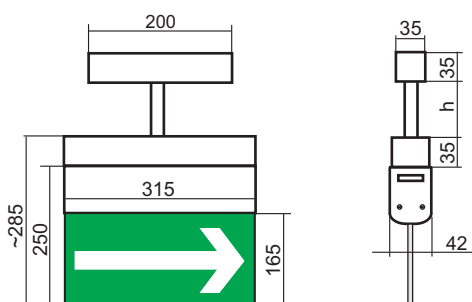
Check 3rd page of the catalogue cover.

Dimensions

PROFIL - wall



PROFIL - ceiling





General purpose

Crystal luminaire is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Crystal can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORIES \ LIGHT SOURCE	8W lamp	LED
Power supply	230VAC/50Hz	
Power consumption	<12W	<4W
Protection class	I	
Radio noise	Level N	
Protection degree	IP 20	
Light source	TL8W - G5	White LED
Accumulator type	NiCd HT	
Recharging time	24h	
Emergency work time	1h, 2h, 3h	3h
Ambient temperature	+10°C ÷ +40°C	
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)	



Casing

- body material: steel
- casing colour: white - RAL 9003 (different colours available)
- lamp cover: plexiglass with pictogram
- lamp cover colour: transparent

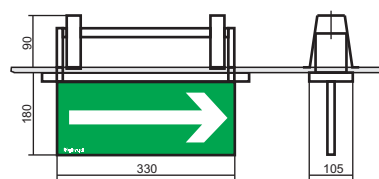
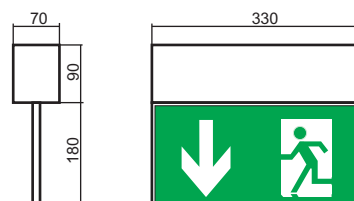
Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.

Dimensions



Luminaire is mounted in 80mm x 345mm gap



CE IP40



General purpose

Alu luminaire is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Alu can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

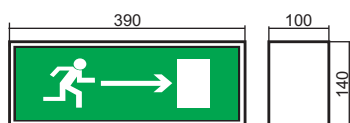
Additional information about emergency lighting luminaires - p. 24

Technical data

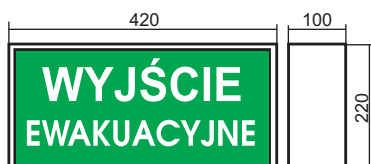
CATEGORIES \ LIGHT SOURCE	8W lamp	LED
Power supply	230VAC/50Hz	
Power consumption	<12W	<4W
Protection class	I	
Radio noise	Level N	
Protection degree	IP 40	
Light source	TL8W - G5	White LED
Accumulator type	NiCd HT	
Recharging time	24h	
Emergency work time	1h, 2h, 3h	3h
Ambient temperature	+10°C ÷ +40°C	
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)	

Dimensions

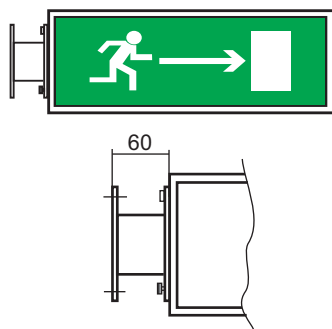
ALU



ALU D



ALU - side mounting



Casing

- body material: aluminium
- casing colour: white RAL 9003 (different colours available)
- lamp cover: plexiglass with pictogram
- lamp cover colour: frosted

Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.

General purpose

Spark luminaire, equipped with LED light source, is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Spark can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

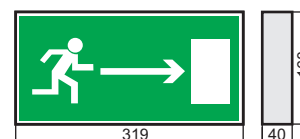
Technical data

CATEGORY \ LIGHT SOURCE	LED
Power supply	230VAC/50Hz
Power consumption	<4W
Protection class	I
Radio noise	Level N
Protection degree	IP 40
Light source	White LED
Accumulator type	Ni-MH HT
Recharging time	24h
Emergency work time	3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained) 4 x 0,5 ÷ 1,5 mm ² (main. W1) 3 x 0,5 ÷ 1,5 mm ² (non-main. W1)

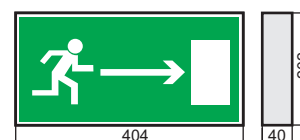


Dimensions

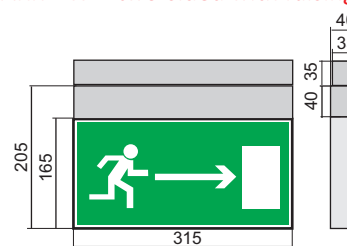
SPARK - one-sided



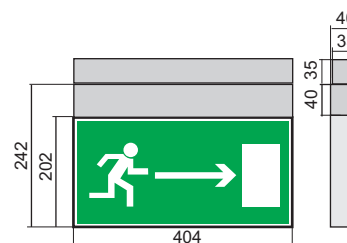
SPARK D - one-sided, big



SPARK DW - two-sided with raising



SPARK D DW - two-sided with raising, big



Casing

- body material: aluminium
- casing colour: black (different colours available)
- lamp cover: plexiglass with pictogram
- lamp cover colour: frosted

Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.



CE IP20

CNBOP-PIB
1231/2012



General purpose

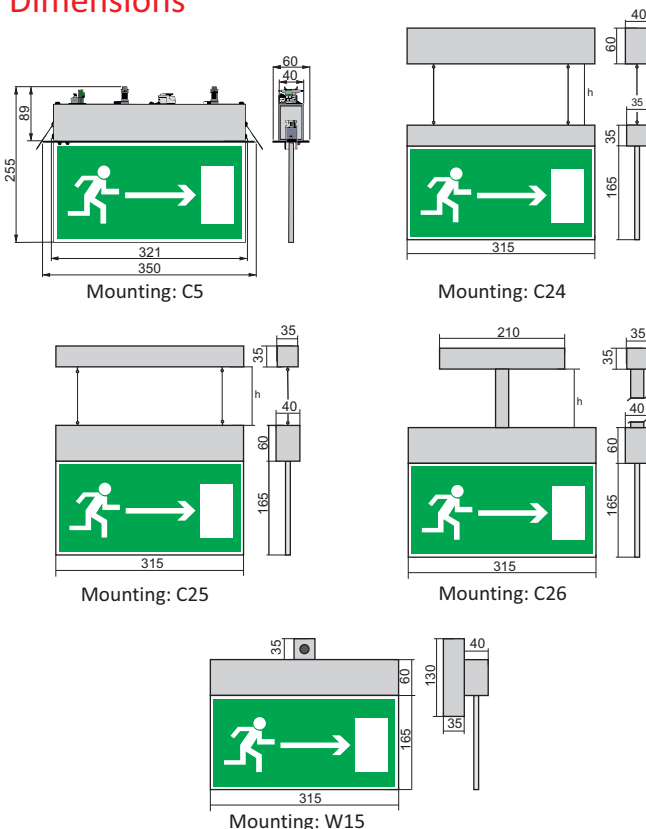
Profilight luminaire, equipped with LED light source, is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Profilight can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORIES \ LIGHT SOURCE	LED
Power supply	230VAC/50Hz
Power consumption	<4W
Protection class	I
Radio noise	Level N
Protection degree	IP 20
Light source	White LED
Accumulator type	Ni-MH HT, Ni-Cd HT / 4,8V
Recharging time	24h
Emergency work time	3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)

Dimensions



Casing

- body material: aluminium
- casing colour: black or silver (different colours available)
- lamp cover: plexiglass with pictogram

Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.



General purpose

Primos luminaire, equipped with LED light source, is supposed to indicate emergency escape routes and emergency exits with suitable pictograms. Primos can be adopted in public facilities or in workplaces and it is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY		VALUE	
		PRIMOS LED	PRIMOS LED T
Power supply		230V AC 50-60Hz	
Power consumption	maintained	< 4VA	< 4,2VA
	non-maintained	< 2VA	< 2,2VA
Power consumption of the heater (for 20°C)	after switching		< 20W
	when the temperature reached		< 6W
Protection class		II	
Protection degree		IP65	
Light source		LED Module ¹	
Light temperature		5000 - 6300K	
Light source power		1W	
Light source lifespan		> 50 000h	
Accumulator type		Ni-Cd HT	
Accumulator voltage		4,8V	
Accumulator capacity		1,0Ah	
Recharging time		24h	
Emergency work time		3h	
Ambient temperature		+10 - +35 °C	-20 - +35 °C
Connector		2x 0,5 - 2,5 mm ²	
Through connecting		YES	

¹⁾ - unchangeable light source

Casing

Body material: plastic
Casing colour: white - RAL 9003
Different colours available
Lamp cover material: plastic
Lamp cover: opal

Available versions

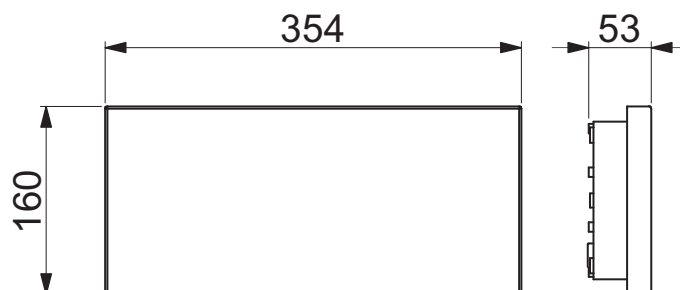
Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.



Dimensions

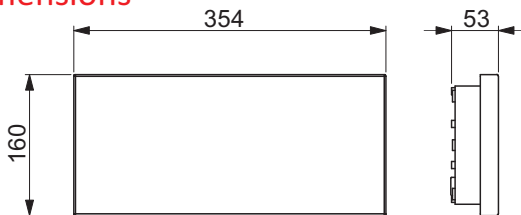




CE IP65



Dimensions



Casing

Body material: plastic
Casing colour: white - RAL 9003
Different colours available
Lamp cover material: plastic
Lamp cover: flat and transparent

Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.

General purpose

Primos LED, equipped with LED light source, is a highly efficient luminaire designed for emergency lighting. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is compatible with all emergency lighting systems offered by Hybryd.

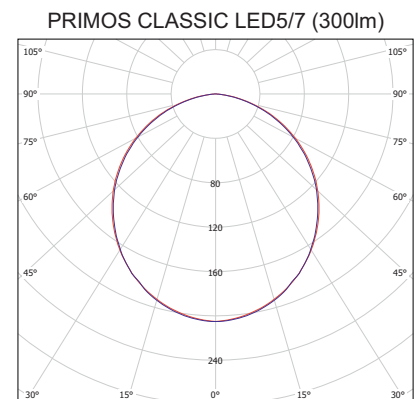
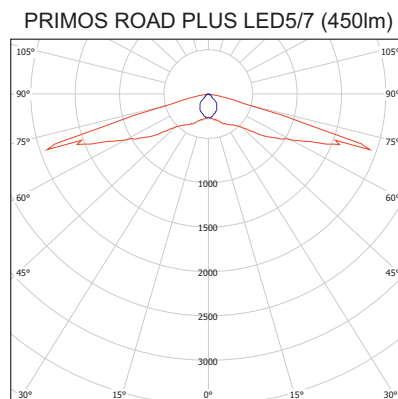
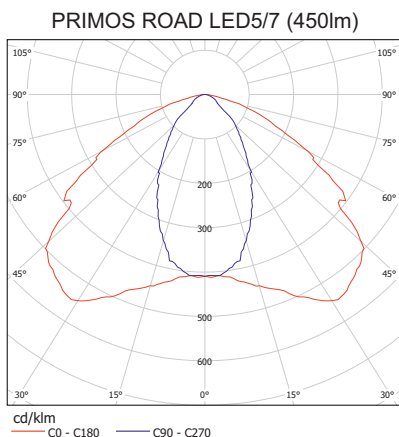
Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY		VALUE		
		PRIMOS LED5	PRIMOS LED5 T	PRIMOS LED7
Power supply		230V AC 50-60Hz		
Power consumption	maintained	< 11,5VA	< 11,7VA	< 11,5VA
	non-maintained	< 5VA	< 5,2VA	< 5VA
Power consumption of the heater (for 20°C)	after switching		< 20W	
	when the temperature reached		< 6W	
cos φ		0,5 - 0,7		
Protection class		I		
Protection degree		IP65		
Light source		LED Module ¹		
Light temperature		5700 - 6500K		
Luminous flux	PRIMOS ROAD	450lm		550lm
	PRIMOS ROAD PLUS			
	PRIMOS CLASSIC	300lm		360lm
Light source power		5W		7W
Light source lifespan		> 50 000h		
Accumulator type		Ni-Cd HT, Ni-MH HT		Ni-MH HT
Accumulator voltage		4,8V		8,4V
Accumulator capacity	t _{aw} = 1h	2,1 - 2,5 Ah		2,1 Ah
	t _{aw} = 2h, t _{aw} = 3h	4,0Ah		4,0Ah (2h)
Recharging time		24h		
Emergency work time		1h, 2h, 3h		1h, 2h
Ambient temperature		+10 - +35 °C	-20 - +35 °C	+10 - +35 °C
Connector	non-maintained	3x 0,5 - 2,5 mm ²		
	maintained	4x 0,5 - 2,5 mm ²		
Through connecting		YES		

¹⁾ - unchangeable light source

Light distribution diagrams





General purpose

DOWNLIGHT LED, equipped with LED source, is recessed highly efficient luminaire designed for emergency lighting. Its main task is to illuminate escape routes, emergency escape exits and rooms in public facilities, work places, etc. Designed for suspended ceilings. Emergency lighting module, battery of accumulators and LED power supply are placed in a separate metal casing. Profile of DOWNLIGHT LED luminaires include: DL CEILINE II LED, DL LED and DL SALVIA LED.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY		VALUE		
		DL CEILINE II LED	DL LED	DL SALVIA LED
Power supply		230V AC 50-60Hz		
Power consumption	maintained	15 - 48VA	< 40VA	18 - 44VA
	non-maintained	< 5VA		
cos φ	maintained	> 0,9		
	non-maintained	0,5 - 0,6		
Protection class		III, II dla 32W	I	I, III
Protection degree		IP20	IP20, IP44 ¹	IP20
Light source		LED Module ²		
Light temperature		warm, cold or neutral white		
Light source power		7W, 12W, 18W, 20W, 32W	12W, 25W	12W, 14W, 18W, 19W, 26W, 28W
Power in emergency operation		6W		
Versions		AT, CT, CB		
Light source lifespan		> 50 000h		
Accumulator type		Ni-Cd HT		
Accumulator voltage		4,8 - 8,4V		
Accumulator capacity		1,5Ah, 2,5Ah, 4,0Ah		
Recharging time		24h		
Emergency work time		1h, 2h, 3h		
Ambient temperature	standard	+10 - +35 °C		
	extended	-20 - +35 °C		
Connector	maintained	3x 0,5 - 2,5 mm ²		
	non-maintained	4x 0,5 - 2,5 mm ²		

¹⁾ - for special order

²⁾ - unchangeable light source

Casing

Body material: aluminium, steel

Casing colour: white, silver, gray, brushed silver

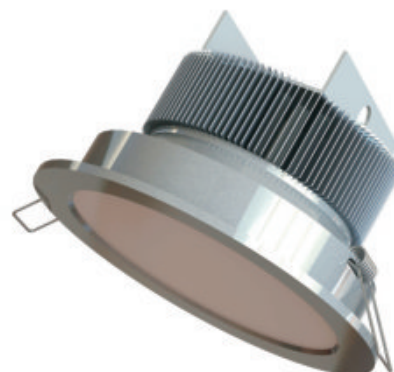
Different colours available

Lamp cover: frosted PMMA or no

Available versions

Check final pages of this catalogue.

DL CEILINE II LED 7W - 20W



DL CEILINE II LED 32W



DL SALVIA LED 12W - 28W



DL LED 25W

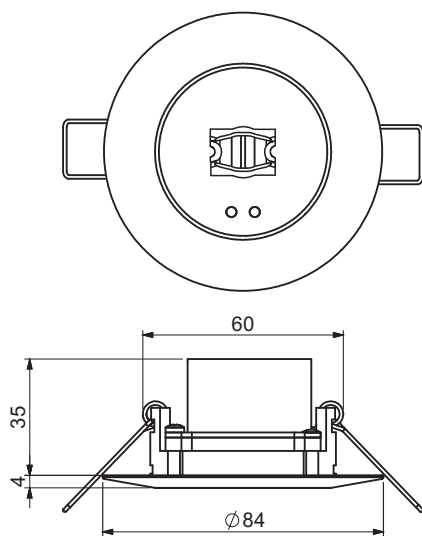




CE IP20, IP44*



Dimensions



OWA surface mounted



General purpose

Owa LED, equipped with LED light source, is a recessed highly efficient luminaire designed for emergency lighting. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is compatible with all emergency lighting systems offered by Hybryd. Different versions available.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	LED
Power supply	230V 50Hz
Power consumption	< 7VA
Protection class	I
Protection degree	IP20, IP44*
Light source	Power LED ¹
Light source power	3W
Minimal lighting flux	260 lm
Accumulator type	NiCd HT
Accumulator voltage	4,8V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Emergency work time	1h; 2h; 3h
Ambient temperature	+10°C ÷ +40°C
Accumulator lifespan	4 years
Light source lifespan	> 50.000h
Connector	4 x 0,5 ÷ 2,5 mm ² (main.) 3 x 0,5 ÷ 2,5 mm ² (non-main.)

¹⁾ - unchangeable light source

* - IP44 version also available while ordering

Casing

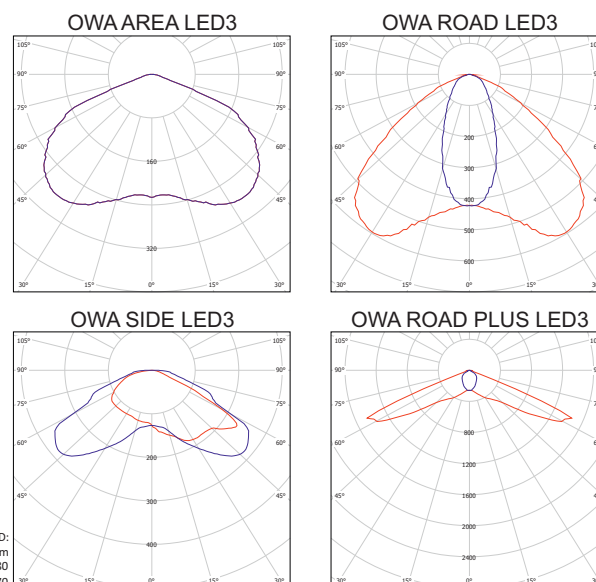
Body material: extruded aluminium

Casing colour: white, black, silver, different colours available

Available versions

Check final pages of this catalogue.

Light distribution diagrams





General purpose

Owa Atom LED, equipped with LED light source, is a recessed highly efficient luminaire designed for emergency lighting. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is compatible with all emergency lighting systems offered by Hybryd. Different versions available.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	LED
Power supply	230V 50Hz
Power consumption	< 7VA
Protection class	I
Protection degree	IP20
Light source	Power LED ¹
Light source power	2W
Light source protection degree	IP65
Minimal lighting flux	185lm
Accumulator type	NiCd HT
Accumulator voltage	4,8V
Accumulator capacity	1,5Ah; 2,5Ah
Emergency work time	1h; 2h; 3h
Ambient temperature	+10°C ÷ +40°C
Accumulator lifespan	4 years
Light source lifespan	> 50.000h
Connector	4 x 0,5 ÷ 2,5 mm ² (main.) 3 x 0,5 ÷ 2,5 mm ² (non-main.)

¹⁾ - unchangeable light source

Casing

Body material: extruded aluminium

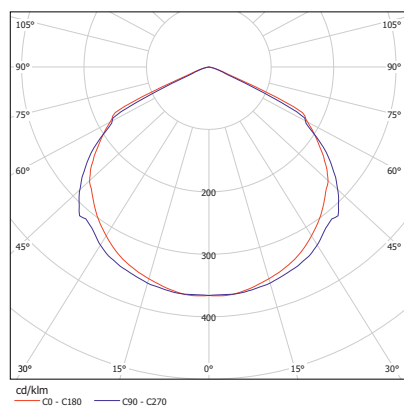
Casing colour: white, black, silver, different colours available

Lamp cover: flat, oval, transparent

Available versions

Check final pages of this catalogue.

Light distribution diagram



OWA ATOM K

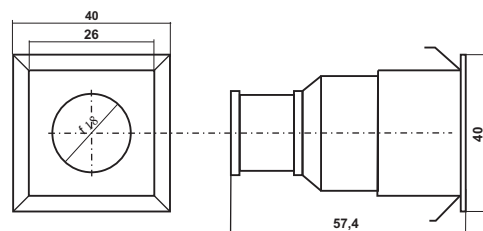


OWA ATOM O

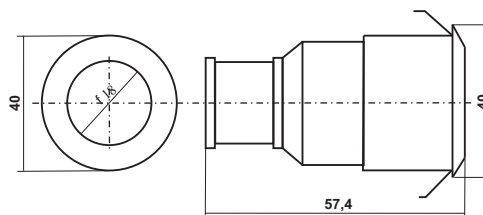


Dimensions

OWA ATOM K

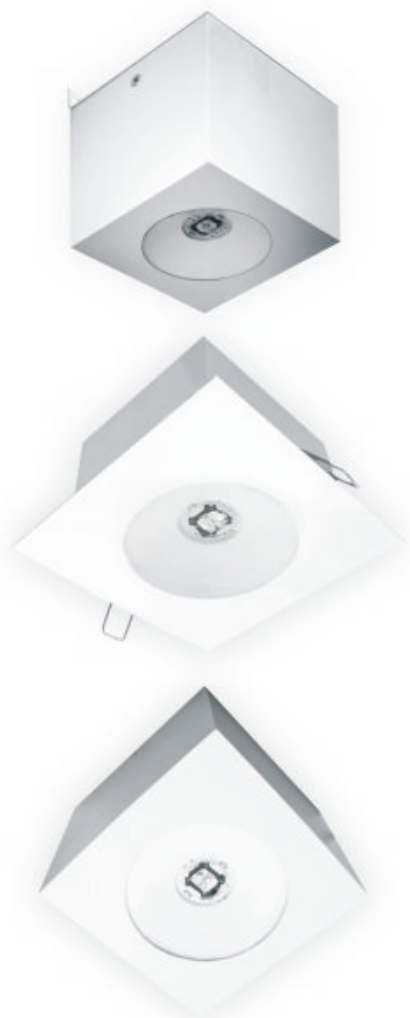


OWA ATOM O





CE IP20



General purpose

Kwadra LED, equipped with LED light source, is a highly efficient luminaire designed for emergency lighting. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is compatible with all emergency lighting systems offered by Hybryd. Different versions available including optics, LED type and mounting type: surface mounted or recessed.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY		VALUE
Power supply		230V 50-60Hz
Power consumption	maintained	<14VA
	non-maintained	<5VA
Protection class		I
Radio noise		Level N
Protection degree		IP20
Light source		LED Module ¹
Moc źródła światła		3W
Luminous flux	ROAD	260 lm
	ROAD PLUS	
	SIDE	
	AREA	225 lm
Light source lifespan		>50.000h
Emergency work time		1h; 2h; 3h
Accumulator type		Ni-MH HT
Accumulator capacity		1,6Ah; 2,1Ah; 4,0Ah
Accumulator voltage		4,8V
Recharging time		24h
Ambient temperature		+10°C - +35°C
Connector		0,5 - 2,5mm ²

¹ - unchangeable light source

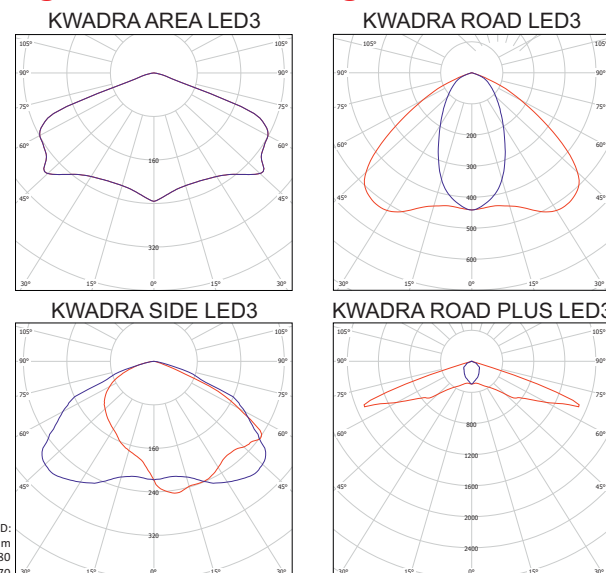
Casing

Body material - steel
Casing colour - white, black
Different colours available

Available versions

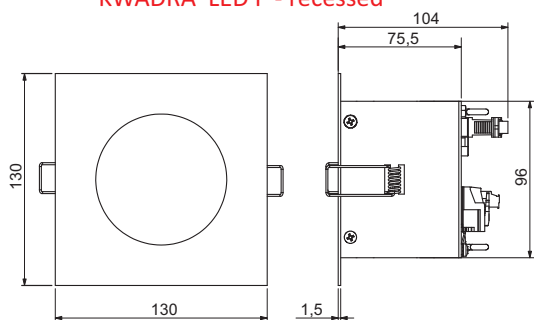
Check final pages of this catalogue.

Light distribution diagrams

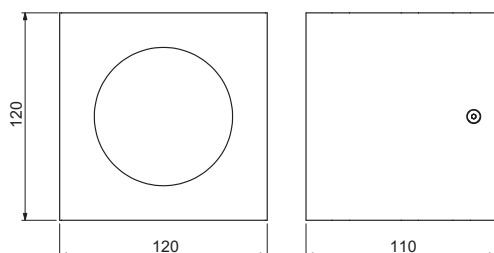


Dimensions

KWADRA LED P - recessed



KWADRA LED N - surface mounted





General purpose

KWADRA ORBIT LED, equipped with LED light source, is a highly efficient luminaire design for emergency lighting. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc.

Using lenses "road plus" luminaire suspended at a height of 3m illuminates 11m escape route with the required intensity 1lx. Available mountings: directly on the ceiling.

Easy mounting and accumulators exchange enable universal application. It is adapted to work with systems ST, AT and CB.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY		VALUE
Power supply		230V 50-60Hz
Power consumption		<1,5VA
Protection class		I
Radio noise		Level N
Protection degree		IP20
Light source		LED Module ¹
Light source power		2W
Luminous flux	ROAD	220 lm
	ROAD PLUS	
	SIDE	
	AREA	190 lm
Light source lifespan		>50.000h
Emergency work time		1h; 2h; 3h
Accumulator type		Ni-Cd HT
Accumulator capacity [Ah]		1,0Ah-2,5Ah
Accumulator voltage		4,8V
Recharging time		24h
Ambient temperature		+10°C - +35°C
Connector		0,5 - 2,5mm ²

¹⁾ - unchangeable light source

Casing

Body material: plastic

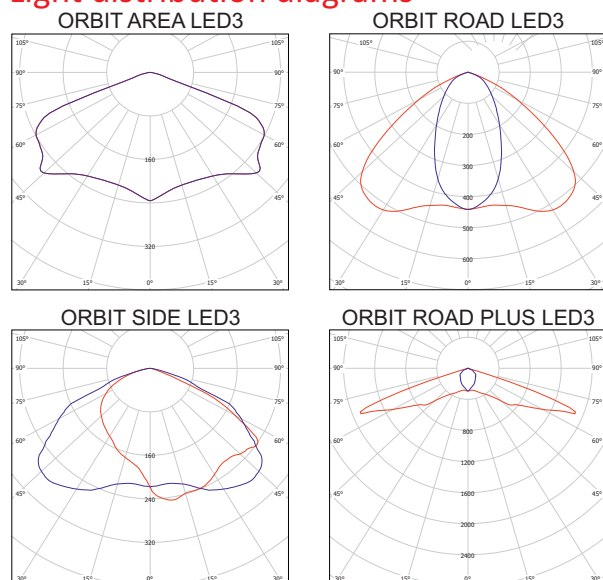
Casing colour: white

Different colours available

Available versions

Check final pages of this catalogue.

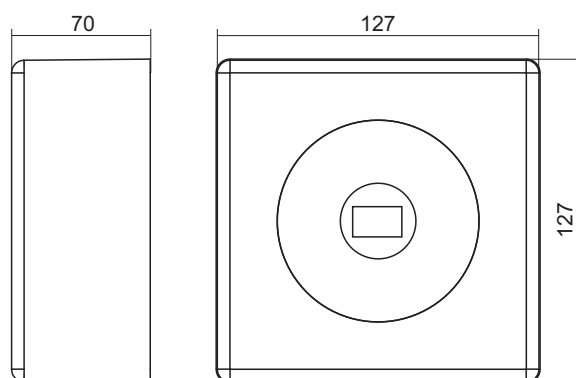
Light distribution diagrams



LEGEND:
cd/klm
— C0 - C180
— C90 - C270



Dimensions





CE IP65



General purpose

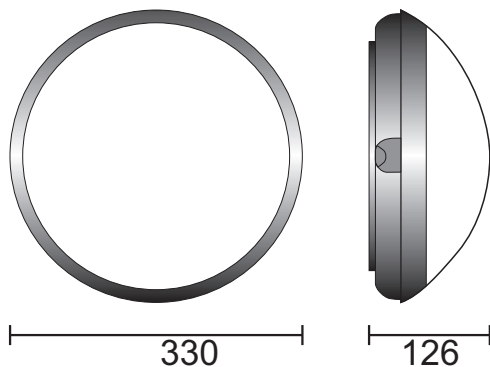
Telesto luminaire can be equipped with compact lamps. Maintained version is equipped with 28W lamp, non-maintained version and mixed versions are supported by 11W lamps. This luminaire can be characterized by simple mounting (to wall or ceiling) and by high tightness. Lamp cover can be removed without tools.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz
Power consumption	<12VA
Protection class	I
Protection degree	IP 65
Light source	TC-DD 28W, TC-SEL 11W
Minimal luminous flux	1800 lm (2x11W) 2050 lm (28W)
Accumulator type	Ni-MH HT, Ni-Cd HT
Accumulator voltage	3,6V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Recharging time	24h
Emergency work time	1h, 2h, 3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 1,5 mm ² (maintained) 3 x 0,5 ÷ 1,5 mm ² (non-maintained)

Dimensions



Casing

- Body material: PC (polycarbonate)
- Casing colour: white
- Lamp cover: oval
- Lamp cover colour: opal or transparent

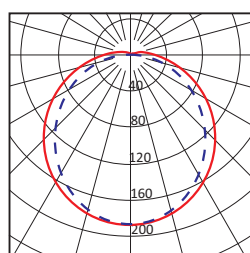
Available versions

Check final pages of this catalogue.

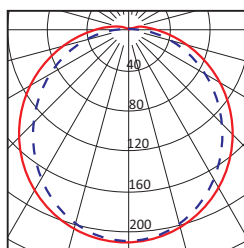
Mounting types

Check 3rd page of the catalogue cover.

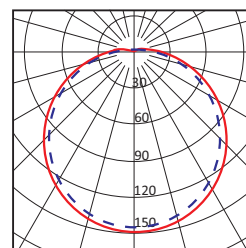
Light distribution diagrams



2 x 11W - lamp cover: opal



2 x 11W - lamp cover: trans.



1 x 28W - lamp cover: O, T



General purpose

Supernova luminaire can be equipped with T8 compact lamps. This luminaire can be characterized by its high tightness. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities altogether with open spaces where luminaires are exposed to different weather conditions. It is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz; 220V (CB)
Protection class	I
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)
Protection degree	IP65
Radio noise	Level N
Lamp types and power	T8/G13: 36W
T8/G13	18W; 36W; 58W; 70W
T5/G5	14W; 21W; 24W; 25W; 28W; 32W; 35W; 39W; 45W; 49W; 50W; 54W; 73W; 80W
Number of lamps	1, 2
Accumulator type	Ni-Cd HT
Accumulator voltage	3,6V; 4,8V; 6V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Recharging time	24h
Emergency work time	1h, 2h, 3h
Ambient temperature	+10C° ÷ +40C°

Casing

- Body material: PC (polycarbonate)
- Casing colour: grey
- Lamp cover: oval
- Lamp cover colour: transparent

Available versions

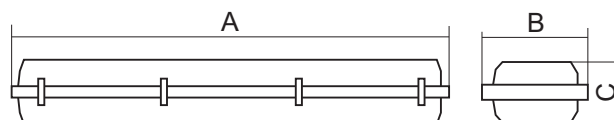
Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.



Dimensions



Luminaire	A [mm]	B [mm]	C [mm]
H-207 SUPERNOVA 1x18W	660	100	100
H-207 SUPERNOVA 1x36W	1269	100	100
H-207 SUPERNOVA 1x58W	1569	100	100
H-207 SUPERNOVA 2x18W	660	130	100
H-207 SUPERNOVA 2x36W	1269	130	100
H-207 SUPERNOVA 2x58W	1569	130	100



CE IP65



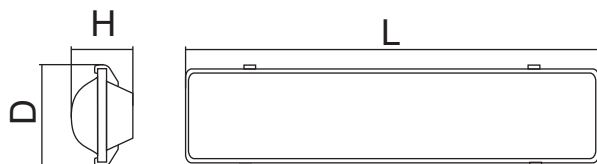
General purpose

Supernova luminaire can be equipped with T8 compact lamps. This luminaire can be characterized by its high tightness. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities altogether with open spaces where luminaires are exposed to different weather conditions. It is compatible with all emergency lighting systems offered by Hybryd. Supernova 100% luminaire version has 100% emergency efficiency.

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz
Protection class	I
Lighting type	non-maintained
Protection degree	IP65
Radio noise	Level N
Lamp types and power	T8/G13: 36W
Number of lamps	1
Accumulator type	PbAGM
Accumulator voltage	12V
Accumulator capacity	7,2Ah
Recharging time	24h
Emergency work time	2h
Ambient temperature	+10C° ÷ +35C°

Dimensions



Luminaire	L [mm]	D [mm]	H [mm]
H-207 SUPERNOVA 100% 1x36W	1270	86	90

Casing

- Body material: PC (polycarbonate)
- Casing colour: grey
- Lamp cover: oval
- Lamp cover colour: transparent

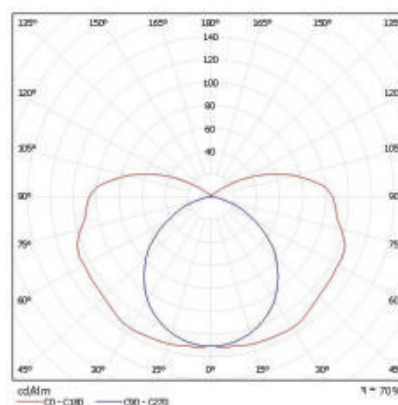
Available versions

Check final pages of this catalogue.

Mounting types

Check 3rd page of the catalogue cover.

Light distribution diagram



**Emergency efficiency for
SUPERNOVA 100% is 100%**



CE IP20, IP44*

General purpose

SFERA P - downlight luminaire for recessed ceilings. SFERA N is produced for normal ceilings. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities. SFERA light source types are PLC lamps. It is compatible with all emergency lighting systems offered by Hybrid.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	VALUE
Power supply	230VAC/50Hz
Protection class	I
Power consumption	<5VA
Radio noise	Level N
Protection degree	IP20, IP44*
Light source	
TC -DEL G24q-3	13W, 18W, 26W
TC-TEL GX24q3	18W, 26W, 32W, 42W
TC-R GR24q-1	14W, 17W
Accumulator type	NiCd HT
Recharging time	24h
Accumulator voltage	3,6V;
Emergency work time	1h, 2h, 3h
Accumulator capacity	1,5Ah;2,5Ah;4Ah
Ambient temperature	+10C° ÷ +40C°
Connector	4 x 0,5 ÷ 2,5 mm ² (main.) 3 x 0,5 ÷ 2,5 mm ² (non-main.)

* - IP44 version also available while ordering

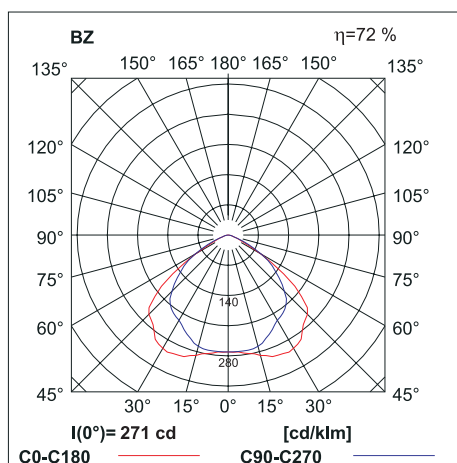
Casing

- Body material: galvanized steel
- Casing colour: silver, black
- Aluminium reflector, faceted

Available versions

Check final pages of this catalogue.

SFERA P 2x26W



SFERA P



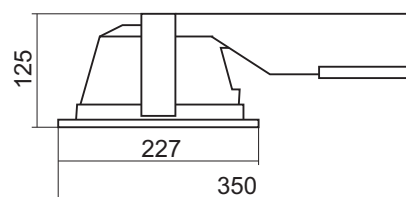
SFERA N



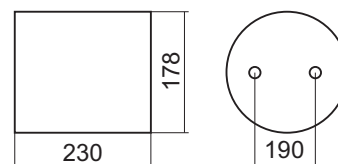
Dimensions

SFERA P

Średnica otworu montażowego:215[mm]



SFERA N





CE IP20

SQUARE P

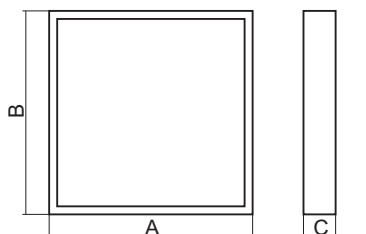


SQUARE N



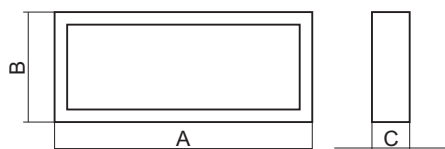
Dimensions

SQUARE P



Luminaire name	A [mm]	B [mm]	C [mm]
SQUARE P 4x18W	595	595	80

SQUARE N



Luminaire name	A [mm]	B [mm]	C [mm]
SQUARE N 2x18W	628	246	61
SQUARE N 2x36W	1236	246	61
SQUARE N 2x58W	1536	246	61
SQUARE N 4x18W	628	443	61

General purpose

SQUARE P is a recessed luminaire. SQUARE N is for normal ceiling. Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities. It is compatible with all emergency lighting systems offered by Hybryd.

Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	VALUE
Power supply	230VAC/50Hz
Protection class	I
Radio noise	Level N
Protection degree	IP 20
Light source	T8/ G13: 16W,18W; 36W; 58W; 70W T5/ G5: 14W; 21W; 24W; 25W; 28W; 32W 35W; 39W; 45W; 49W; 50W; 54W; 73W 54W; 73W; 80W
Number of lamps	1, 2, 3, 4
Accumulator type	NiCd HT
Recharging time	24h
Accumulator voltage	3,6V; 4,8V; 6V; 8,4V
Emergency work time	1h, 2h, 3h
Accumulator capacity	1,5Ah;2,5Ah;4Ah
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (main.) 3 x 0,5 ÷ 2,5 mm ² (non-main.)

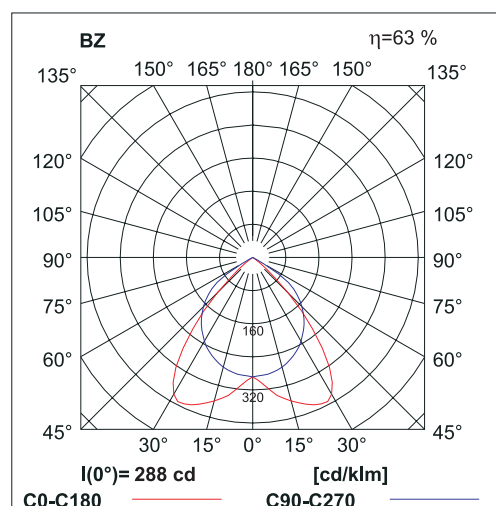
Casing

- body material: steel
- casing colour: white
- louver type PAR: parabolic aluminized reflector providing limited disability glare over 60° and 65° angles. Parabolic reflector provides high louver efficiency.

Available versions

Check final pages of this catalogue.

Photometric data SQUARE 4x18W





General purpose

Its main task is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities. It is compatible with all emergency lighting systems offered by Hybryd. It is part of trunking system.

Body material made of galvanized steel, powder painted, white. Can be rail mounted - mounting elements made of plastic for luminaire mounting and for different reflectors mounting. VLG AW luminaires are used with VLT rail for IP20 module builds. VLSG AW luminaires are used for IP54 module builds.

Luminaire bodies can be mounted in every part of the mounting rail. Electric adapter for easy current conduction. Colour and optic coding for easy mounting and mechanical coding for inappropriate mounting prevention. Sold with electronic ballast (EVG), 220-240V, 0/50-60Hz. Light source - TL-D and TL5 lamps.

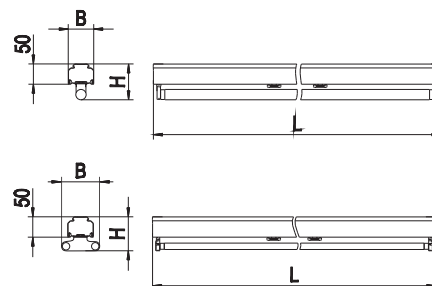
Additional information about emergency lighting luminaires - p. 24

Technical data

CATEGORY	VALUE
Power supply	230VAC/50Hz
Protection class	I
Radio noise	Level N
Protection degree VLG AW	IP 20
Protection degree VLSG AW	IP 54
Light source T8/G13 T5/G5	16W; 18W; 32W; 36W; 58W; 70W; 14W; 21W; 24W; 25W; 28W; 32W; 35W; 39W; 45W; 49W; 50W; 54W; 73W; 80W
Number of lamps	1,2
Accumulator type	NiCd HT
Recharging time	24h
Accumulator voltage	3,6V, 4,8V, 6V, 8,4V
Emergency work time	1h, 2h, 3h
Accumulator capacity	1,5Ah;2,5Ah;4Ah
Accumulator lifespan	4 years
Ambient temperature	+10°C ÷ +40°C
Connector	1,5 ÷ 2,5 mm ² (wire type) 1,0 ÷ 2,5 mm ² (line type)



Dimensions



Luminaire	L [mm]	B [mm]	H [mm]
VLG-T16 AW 1x28W/54W	1186	64	78
VLG-T16 AW 1x35/49/80W	1486	64	78
VLG-T16 AW 2x28/54W	1186	64	85
VLG-T16 AW 2x35/49/80W	1486	64	85
VLSG-T16 AW 1x28/54W	1186	64	107
VLSG-T16 AW 1x35/49/80W	1486	64	107
VLSG-T16 AW 2x28/54WW	1186	114	107
VLSG-T16 AW 2x35/49/80W	1486	114	107

Luminaire	L [mm]	B [mm]	H [mm]
VLG AW 1x36W	1237	64	90
VLG AW 1x58W	1537	64	90
VLG AW 2x36W	1237	101	88
VLG AW 2x58W	1537	101	88
VLSG AW 1x36W	1237	64	106
VLSG AW 2x36W	1237	122	106
VLSG AW 1x58W	1537	64	106
VLSG AW 2x58W	1537	122	106

Casing

- body material: steel, galvanized, powder painted
- casing colour: white
- lamp cover: acrylic lamp cover, transparent
- white reflector

CRACK line



Dimensions

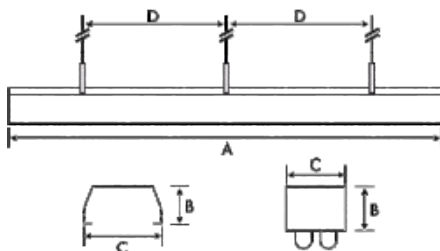


	Version	L [mm]
T5 FH/G5	1x14W	585
	1x21W	885
	1x28W	1185
	1x35W	1485
	2x14W	585
	2x21W	885
	2x28W	1185
	2x35W	1485
	2x1x28W	2360
	2x1x35W	2960
	2x2x28W	2360
	2x2x35W	2960
T5 FQ/G5	1x24W	585
	1x39W	885
	1x49W	1485
	1x54W	1185
	1x80W	1485
	2x1x49W	2960
	2x1x54W	2360
	2x1x80W	2960
	2x2x49W	2960

LINEA line



Dimensions



	Version	A/B/C [mm]
T5 FQ/G5	1x49W	1485/60/100
	2x1x49W	2970/60/100
	2x49W	1485/60/100
	2x2x49W	2970/60/100
	1x80W	1485/60/100
	2x1x80W	2970/60/100
	2x80W	1485/60/100
	2x2x80W	2970/60/100
T8/G13	1x58W	1540/60/100
	2x1x58W	3080/60/100
	2x58W	1540/60/100
	2x2x58W	3080/60/100

General purpose

The main task of this luminaire is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is an element of lighting line.

CRACK and LINEA luminaires can be used in shops, offices, corridors, shopping centres and production buildings where there is no need of high luminaire tightness.

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz; 220V (CB)
Protection class	I
Protection degree	IP20
Light source	
T8/G13	16W; 18W; 32W; 36W; 58W;
T5FH/G5	14W; 21W; 28W; 35W;
T5FQ/G5	24W; 39W; 49W; 54W; 80W
Number of lamps	1,2
Accumulator type	Ni-Cd HT
Accumulator voltage	3,6V; 4,8V; 6,0V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Recharging time	24h
Emergency work time	1h, 2h, 3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)

CRACK line casing

Casing - aluminium, anodized, powder-painted
Opalised distributor is available

Linea line casing

Casing - steel, powder-painted - white.
Steel distributor, powder-painted - white

Available colours:

- 05 black RAL 9005
- 06 grey RAL 9006
- 10 white RAL 9010
- 09 anode



General purpose

The main task of this luminaire is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is an element of lighting line.

DESIGN N (surface mounted) and DESIGN P (recessed) luminaires can be used in shops, offices, corridors, shopping centres and production buildings where there is no need of high luminaire tightness.

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz; 220V (CB)
Protection class	I
Protection degree	IP20, IP40
Light source	
T5FH/G5	14W; 21W; 28W; 35W;
T5FQ/G5	24W; 39W; 49W; 54W; 80W
Number of lamps	1, 2
Accumulator type	Ni-Cd HT
Accumulator voltage	3,6V; 4,8V; 6,0V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Recharging time	24h
Emergency work time	1h, 2h, 3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)

Casing

Casing - aluminium, anodized, powder-painted
Opalised distributor is available

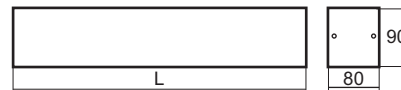
Available colours:

- ☒ black anode RAL 9005
☐ white RAL 9010

DESIGN N line



Dimensions



	Version	L [mm]
T5 FH/G5	1x14W	586
	1x21W	886
	1x28W	1186
	1x35W	1486
	2x14W	586
	2x21W	886
	2x28W	1186
	2x35W	1486
	2x1x28W	2261
	2x1x35W	2960
T5 FQ/G5	2x2x28W	2461
	2x2x35W	3061
	1x24W	585
	1x39W	885
	1x49W	1485
	1x54W	1185
	1x80W	1485
	2x1x49W	2861
	2x1x54W	2261
	2x1x80W	2961
	2x2x35W	3061
	2x2x39W	1861
	2x2x49W	3061

DESIGN P. line



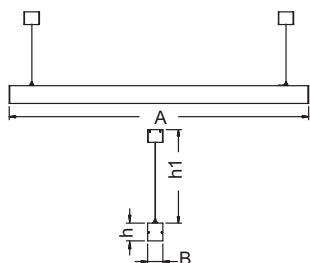
Dimensions



	Version	L [mm]
T5 FH/G5	1x14W	600
	1x21W	900
	1x28W	1200
	1x35W	1500
	2x14W	600
	2x21W	900
	2x28W	1200
	2x35W	1500
	2x1x28W	2275
	2x1x35W	2875
T5 FQ/G5	2x2x28W	2475
	2x2x35W	3075
	1x24W	600
	1x39W	900
	1x49W	1500
	1x54W	1200
	1x80W	1500
	2x1x49W	2875
	2x1x54W	2275
	2x1x80W	2875
	2x2x35W	3075
	2x2x39W	1875
	2x2x49W	3075

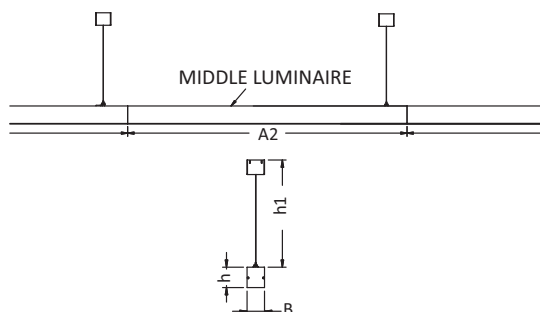


Dimensions (single luminaire)



P [W]	A (mm)	B (mm)	h (mm)	h1 (mm)
1x28W	1175	60	70	max.1500
1x54W	1175	60	70	max.1500
1x35W	1475	60	70	max.1500
1x49W	1475	60	70	max.1500
1x80W	1475	60	70	max.1500

Dimensions (middle luminaire)



P [W]	A2 (mm)	B (mm)	h (mm)	h1 (mm)
1x28W	1115	60	70	max. 1500
1x54W	1115	60	70	max. 1500
1x35W	1415	60	70	max. 1500
1x49W	1415	60	70	max. 1500
1x80W	1415	60	70	max. 1500

General purpose

The main task of this luminaire is to illuminate emergency escape routes, emergency escape exits and rooms in public facilities, work places, etc. It is an element of lighting line.

X-LINE luminaire can be used in shops, offices, corridors, shopping centres and production buildings where there is no need of high luminaire tightness.

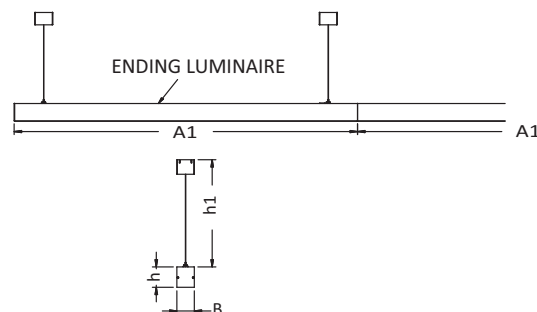
Technical data

CATEGORY	VALUE
Power supply	230V 50Hz; 220V (CB)
Protection class	I
Protection degree	IP20
Light source	
T8/G13	16W; 18W; 32W; 36W; 51W; 58W;
T5/G5	14W; 21W; 24W; 28W; 35W; 39W; 49W; 54W; 80W;
Number of lamps	1, 2, 3, 4
Accumulator type	Ni-Cd HT, Ni-Mh HT
Accumulator voltage	3,6V; 4,8V; 6,0V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Recharging time	24h
Emergency work time	1h, 2h, 3h
Ambient temperature	+10°C ÷ +40°C
Connector	4 x 0,5 ÷ 2,5 mm ² (maintained) 3 x 0,5 ÷ 2,5 mm ² (non-maintained)

Casing

Casing - aluminium; powder painted or anodized
Parabolic (glossy) distributor is available, opal cover.

Dimensions (ending luminaire)



P [W]	A1 (mm)	B (mm)	h (mm)	h1 (mm)
1x28W	1145	60	70	max. 1500
1x54W	1145	60	70	max. 1500
1x35W	1445	60	70	max. 1500
1x49W	1445	60	70	max. 1500
1x80W	1445	60	70	max. 1500

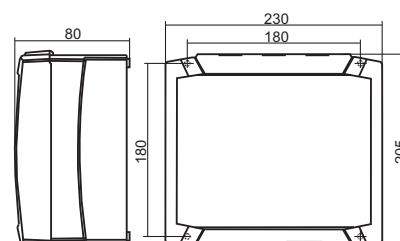
General purpose

H-302 C with touch screen is the main element of H-300 emergency lighting system. H-300 system integrates control and monitoring processes of many emergency luminaires in buildings.

The main purpose of H-302 C unit is supervision and control over efficiency of every system element connected. Test A, Test B and proper communication test (test C) are available for this reason.

Additionally, the central unit is equipped with input for cooperation with fire safety systems thanks to which mutual communication between luminaires and those systems is possible. All tests results can be copied into PenDrive connected to USB port or checked in "Tests results" menu.

Four modes of addressing allows for creation of many luminaires groups that makes control easier and more efficient. Communication between the H-302 C central unit and any other system component is possible when using YTKSY two-wire shielded cable.



Functions

Installed software allows for:

1. Initiation of automatic and manual tests for every element installed in system.
2. Registration of test results.
3. Generation of alarms in case of any failure.
4. Saving results on PenDrive.
5. Control of luminaires automatically within group addressing system.
6. Control of luminaires from fire safety group.
7. Control of night lighting.

Technical data

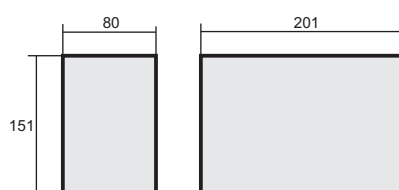
CATEGORY	VALUE
Power supply	230VAC/50Hz
Power consumption	5VA
Protection class	I
Protection degree	IP65
Radio noise	Level N
Galvanic insulation	1500V
Line load (1 z 4)	Up to 64 luminaires/31 distributors
Emergency work time	12h
Luminaires number	7936 - autonomous addresses
Group control	Up to 4 groups + 1 fire safety group
Area control	Up to 127 areas
Tests	Test A, B and C
Communication line length	Up to 1000m

Casing

- Casing material: high quality material - ABS and polycarbonate.
- Casing colour: grey - RAL7035 or graphite - RAL 7024.

Available version

No.	Ver.	Description	Code
1.	H-302 C	H-300 central unit	6597



General purpose

H-302 IN interface is compatible and prepared especially for H-300 PC emergency lighting system. It works as an element connecting personal computer with emergency lighting luminaires group. H-303 IN allows for supervision of emergency lighting luminaires with the use of local computer, as well as with the use of Internet (remotely).

Characteristics

H-303 IN module is an interface communicating between centraltest emergency lighting modules installed in luminaires and personal computer with installed software possible.

Connection between the interface and computer is possible with the use of basic RS-232 connector (EIA/TIA-232), RS-485 (EIA/TIA-485) or Ethernet (option).

Connectors

Interface is equipped with:

- mains power supply connector,
- four communication lines connectors,
- RS-232, RS-485 communication connectors, Ethernet (opcja)
- fire safety steering connectors: input and output
- interface status indication LED

Power supply

Interface is supplied with 230VAC/50Hz mains power supply, same as the computer, mains or through UPS. Additionally, it is equipped with NiMH 4,8V/2,1Ah accumulator for emergency work.

Versions and casing

As option, interface can be equipped with Ethernet communication which allows to use PC with Centrala PC-3 software from two different locations connected with Ethernet.

Interface module is installed in casing with dimensions 201 x 151 x 80 [mm]

Technical data

CATEGORY	VALUE
Power supply	230VAC/50Hz
Power consumption	10VA
Protection class	I
Protection degree	IP65
Radio noise	Level N
Communication with PC	RS-232/485, Ethernet (option)
Communication lines	4
Distributors per line	31
Dimensions	201 x 151 x 80 [mm]

Available option

No.	Version	Description	Code
1.	Ethernet for H-303 INT	Ethernet module for H-303 INT	4041

Available version

No.	Version	Description	Code
1.	H-303 INT	Interface for H-300 PC system	4034

General purpose

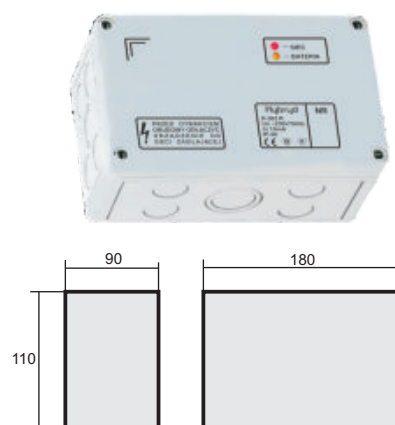
The main role of the distributor is to mediate between the central unit and luminaires. The distributor increases the maximal number of luminaires that can be connected to the H-302 C central unit. Additionally, it strengthens and divides signal from the central unit to lamps.

Communication

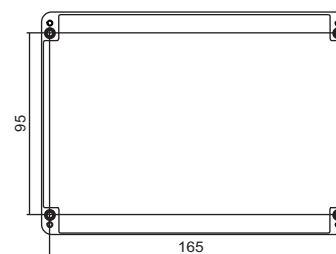
Communication between the H-302 C central unit and any other system component is possible when using YTKSY two-wire shielded cable.

Technical data

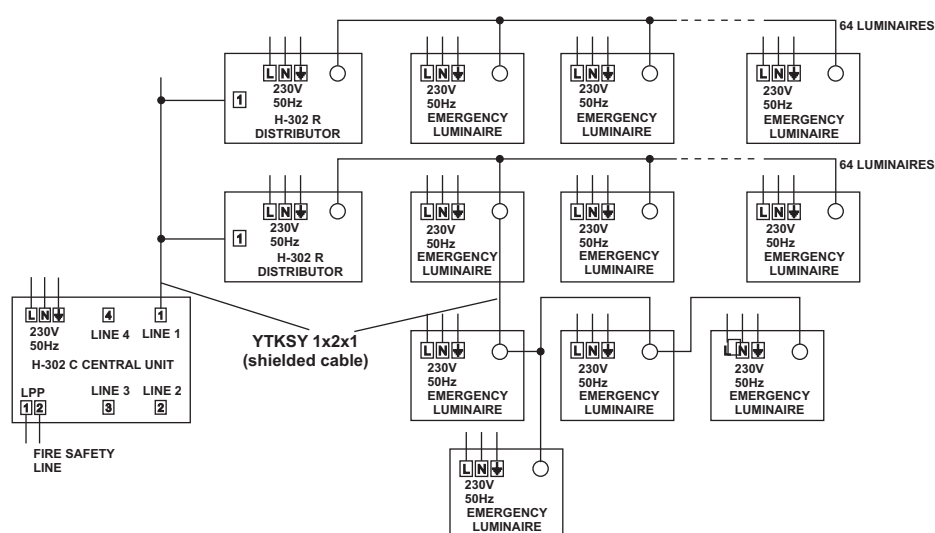
CATEGORY	VALUE
Power supply	230VAC/50Hz
Power consumption	3VA
Protection class	II
Protection degree	IP66
Radio noise	Level N
Luminaires per distributor	Up to 64
Communication line length	Up to 1000m
Emergency supply	1x7,2V/120mA
Emergency work time	5h
Dimensions	180 x 110 x 90 [mm]



Mounting



Distributor can be mounted directly to the surface.
Mounting holes gap is illustrated above.
Available version with DIN rail mounting.



System structure: different configurations of luminaires connection are available - in series, parallel, or star connection.

Available version

No.	Ver.	Description	Code
1.	H-302 R	H-300 signal divider	6603

Versions - testing, monitoring

ST = Standard - emergency work test executed by turning off power supply

AT = Autotest - automatic and periodic test execution:

TEST A - lamp efficiency test, monthly;

TEST B - emergency work time measurement, annually;

CT = Centraltest - communication with the central unit or PC, full addressing of the luminaires, luminaires visualisation, system status reporting, many testing options, manual testing;

TS = Test System - communication with H-101TS central unit, many testing options, manual testing with the use of H-101TS central unit

CB = Central Battery - 220V DC power supply from central battery, built-in LED 220VDC ballast and LED module;

BU = Buffer Supply - luminaire adapted for 12-24V DC buffer feeders, built-in LED 12-24V DC ballast and LED module.

Functions

1. Automatic power supply switch: basic work/emergency work.
2. Module and accumulator state indication (LED)
3. Deep accumulator discharge protection
4. Automatic and manual test execution (test A - every month, test B - every year), only AT and CT
5. Manual testing (test A) with TEST button (only ST)
6. Light source work supervision.
7. Works with broad range of lamps available in the market
8. Accumulator and module indication (LED)
9. Emergency work blockade function (only AT and ST)

Indication

The module condition is indicated by LED. There is no LED indication during emergency mode:

Green - accumulator condition (only ST, AT, CT, TS)

Red - luminaire condition (only AT, CT, TS).

More details described in product manuals.

Lighting versions

Maintained (M) - basic lighting provided all the time (uses 230V); in case of power supply failure switches automatically into emergency mode (accumulator).

Non-maintained (NM) - standby mode as a standard (no lighting); in case of power supply failure switches automatically into emergency mode (accumulator).

Accumulators set

NiCd HT and NiMH HT accumulators for high temperature work are used to supply emergency lighting modules.

Accumulator cells can be prepared in PAS/PAO configuration (in series) or in PAR configuration (parallel). Typical accumulator wiring is 200mm.

More about accumulators available on www.hybrid.com.pl

General purpose

H-209 AT/ST module is a modern emergency module in Autotest and Standard version. It is designed for emergency lighting constructions as well as for transforming basing lighting into its emergency version. It can operate with all fluorescent and compact lamps available on market.

Additional information about modules available on page 50.

Technical data

CATEGORY	VALUE
Power supply	230 V, 50Hz
Power consumption	<2VA
Protection class	II
Protection degree	IP20
Work frequency	25-30kHz
Light source	4 pin lamp
Accumulator type	Ni-Cd HT lub NI-MH HT
Accumulator voltage	3,6V; 4,8V; 6,0V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Emergency work time	1h, 2h, 3h
Recharging time	24h
Ambient temperature	+5°C ÷ +50°C
Dimensions (L x D x H)	167 x 37 x 29 mm
Weight (without accumulator)	193g

Characteristics

Available as AUTOTEST or STANDARD version.

Standard version is equipped with indication LED (accumulator status) and TEST button.

Autotest version is equipped with two indication LED (accumulator status and module status)

Blockade function allows to block emergency work when WB terminals are not connected.

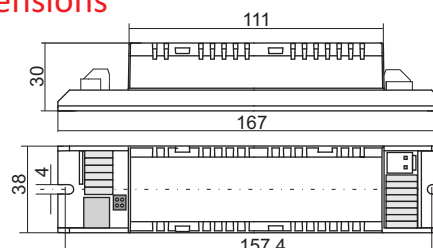
Connector (max): mains - 1,5mm²; lamp - 0,8mm²

Available versions

AUTOTEST		STANDARD		Lamp	Acc.	t _{aw}
Version	Code	Version	Code			
H-209 AT 9/36 3J	0252	H-209 ST 9/36 3J	0016	lamp adaptation	3,6V/4,0Ah	3
H-209 AT 9/36 2J	0269	H-209 ST 9/36 2J	0023	lamp adaptation	3,6V/2,5Ah	2
H-209 AT 9/36 1J	0276	H-209 ST 9/36 1J	0030	lamp adaptation	3,6V/1,5Ah	1
H-209 AT 18/58 3J	0283	H-209 ST 18/58 3J	0047	lamp adaptation	4,8V/4,0Ah	3
H-209 AT 18/58 2J	0290	H-209 ST 18/58 2J	0054	lamp adaptation	4,8V/2,5Ah	2
H-209 AT 18/58 1J	0306	H-209 ST 18/58 1J	0061	lamp adaptation	4,8V/1,5Ah	1
H-209 AT T5 14/24 3J	0313	H-209 ST T5 14/24 3J	0078	T5/14W, 24W	4,8V/4,0Ah	3
H-209 AT T5 14/24 2J	0320	H-209 ST T5 14/24 2J	0085	T5/14W, 24W	4,8V/2,5Ah	2
H-209 AT T5 14/24 1J	0337	H-209 ST T5 14/24 1J	0092	T5/14W, 24W	4,8V/1,5Ah	1
H-209 AT T5 21/39 3J	0344	H-209 ST T5 21/39 3J	0108	T5/21W, 39W	6,0V/4,0Ah	3
H-209 AT T5 21/39 2J	0351	H-209 ST T5 21/39 2J	0115	T5/21W, 39W	6,0V/2,5Ah	2
H-209 AT T5 21/39 1J	0368	H-209 ST T5 21/39 1J	0122	T5/21W, 39W	6,0V/1,5Ah	1
H-209 AT T5 28/80 3J	0375	H-209 ST T5 28/80 3J	0139	T5/28W-80W	6,0V/4,0Ah	3
H-209 AT T5 28/80 2J	0382	H-209 ST T5 28/80 2J	0146	T5/28W-80W	6,0V/2,5Ah	2
H-209 AT T5 28/80 1J	0399	H-209 ST T5 28/80 1J	0153	T5/28W-80W	6,0V/1,5Ah	1
H-209 AT L 40/55 3J	0405	H-209 ST L 40/55 3J	0160	TC-L 40W, 55W	6,0V/4,0Ah	3
H-209 AT L 40/55 2J	0412	H-209 ST L 40/55 2J	0177	TC-L 40W, 55W	6,0V/2,5Ah	2
H-209 AT L 40/55 1J	0429	H-209 ST L 40/55 1J	0184	TC-L 40W, 55W	6,0V/1,5Ah	1

t_{aw} - emergency work time

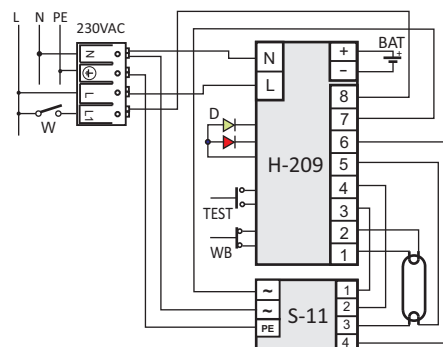
Dimensions



Casing made of plastic

Circuit diagram

Circuit diagrams are available in "Circuit diagrams configuration" section on www.hybrid.com.pl



TEST - luminaire condition control
W - on/off switch (with 230V power supply)
WB - blockade switch

S11 - electronic ballast
D - module condition indication

Lamp adaptation

Appropriate lamp adaptation provides successful ignition and stable work within the emergency work mode. Additionally, correct lamp adaptation provides long lamp lifespan during emergency work mode.

Type	H-209 AT 9/36	H-209 AT 18/58
TC-SEL	5, 7, 9, 11	+
TC-DEL	10, 13, 18, 26	+
TC-TEL	13, 18, 26	32
TC-L	-	18, 24, 36
TC-R	-	14, 17
TC-F	18	24, 36, 40
TC-DD	10	16, 21, 28, 38
T8	18, 30, 36	58

- not recommended; + improved flux

Ordering

While ordering, the following are needed:
- module name or code, 0016 or H-209 AT 9/36 3J
- number of modules
- battery configuration (type-voltage-capacity-connector)



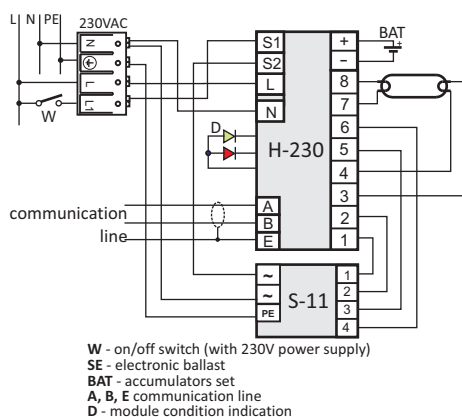
Dimensions



Casing made of plastic
Vertical mounting only for S (slim) version

Circuit diagram

Circuit diagrams are available in "Circuit diagrams configuration" section on www.hybrid.com.pl



Lamp adaptation

Appropriate lamp adaptation provides successful ignition and stable work within the emergency work mode. Additionally, correct lamp adaptation provides long lamp lifespan during emergency work mode.

Type	H-230(S) CT 9/36	H-230(S) CT 18/58
TC-SEL	5, 7, 9, 11	+
TC-DEL	10, 13, 18, 26	+
TC-TEL	-	13, 18, 26
TC-L	-	18, 24, 36
TC-R	-	14, 17
TC-F	-	18, 24, 36
TC-DD	10	16, 21, 28, 38
T8	18, 30	36, 58

- not recommended; + improved flux

Ordering

While ordering, the following are needed:

- module name or code,
1912 lub H-230S CT T5 21 2J
- number of modules
- battery configuration (type-voltage-capacity-connector)

General purpose

H-230 CT and H-230S CT are modern emergency modules designed to operate with Centraltest version. They are designed for emergency lighting constructions as well as for transforming basing lighting into its emergency version. They can operate with all fluorescent and compact lamps available on market.

Technical data

CATEGORY	VALUE
Power supply	230 V, 50Hz
Power consumption	<7VA
Protection class	II
Protection degree	IP20
Work frequency	25-30kHz
Communication line	2 wire shielded cable
Light source	4 pin lamp
Accumulator type	Ni-Cd HT or NI-MH HT
Accumulator voltage	3,6V; 4,8V; 6,0V; 8,4V
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Emergency work time	1h, 2h, 3h
Recharging time	24h
Ambient temperature	+5°C ÷ +50°C
Dimensions (L x D x H)	247 x 37 x 29 mm SLIM 247 x 37 x 21 mm
Weight (without accumulator)	160g

Characteristics

- lamp identification with the use of unique module address
- light source protection - filament heating for T5/45W-80W
- ballast power supply control - blockade protection
- complete ballast-lamp circuit termination during emergency work
- connectors (max): mains - 1,5mm²; lamp - 0,8mm²

Available versions

CETRALTEST		CETRALTEST SLIM		t _{sw} - emergency work time		
Version	Code	Version	Code	Lamp	Acc.	t _{sw}
H-230 CT 9/36 3J	1615	H-230S CT 9/36 3J	3336	Lamp adapt.	3,6V/4,0Ah	3
H-230 CT 9/36 2J	1622	H-230S CT 9/36 2J	3343	Lamp adapt.	3,6V/2,5Ah	2
H-230 CT 9/36 1J	1646	H-230S CT 9/36 1J	3640	Lamp adapt.	3,6V/1,5Ah	1
H-230 CT 18/58 3J	1653	H-230S CT 18/58 3J	3657	Lamp adapt.	4,8V/4,0Ah	3
H-230 CT 18/58 2J	1820	H-230S CT 18/58 2J	3671	Lamp adapt.	4,8V/2,5Ah	2
H-230 CT 18/58 1J	1837	H-230S CT 18/58 1J	3688	Lamp adapt.	4,8V/1,5Ah	1
H-230 CT L40/55 3J	1509	H-230S CT L40/55 3J	3251	TC-L 40W, 55W	6,0V/4,0Ah	3
H-230 CT L40/55 2J	1523	H-230S CT L40/55 2J	3305	TC-L 40W, 55W	6,0V/2,5Ah	2
H-230 CT L40/55 1J	1530	H-230S CT L40/55 1J	3312	TC-L 40W, 55W	6,0V/1,5Ah	1
H-230 CT T32/57 3J	1400	H-230S CT T32/57 3J	3213	TC-TEL 32-57W	8,4V/4,0Ah	3
H-230 CT T32/57 2J	1417	H-230S CT T32/57 2J	3220	TC-TEL 32-57W	8,4V/4,0Ah	2
H-230 CT T32/57 1J	1493	H-230S CT T32/57 1J	3244	TC-TEL 32-57W	8,4V/2,5Ah	1
H-230 CT T5 14/24/39 3J	1257	H-230S CT T5 14/24/39 3J	1851	T5 14/24/39W	6,0V/4,0Ah	3
H-230 CT T5 14/24/39 2J	1264	H-230S CT T5 14/24/39 2J	1868	T5 14/24/39W	6,0V/2,5Ah	2
H-230 CT T5 14/24/39 1J	1288	H-230S CT T5 14/24/39 1J	1882	T5 14/24/39W	6,0V/1,5Ah	1
H-230 CT T5 21 3J	1295	H-230S CT T5 21 3J	1899	T5/21W	8,4V/4,0Ah	3
H-230 CT T5 21 2J	1301	H-230S CT T5 21 2J	1912	T5/21W	8,4V/4,0Ah	2
H-230 CT T5 21 1J	1318	H-230S CT T5 21 1J	1929	T5/21W	8,4V/2,5Ah	1
H-230 CT T5 28 3J	1325	H-230S CT T5 28 3J	2032	T5/28W	8,4V/4,0Ah	3
H-230 CT T5 28 2J	1332	H-230S CT T5 28 2J	2049	T5/28W	8,4V/4,0Ah	2
H-230 CT T5 28 1J	1349	H-230S CT T5 28 1J	2063	T5/28W	8,4V/2,5Ah	1
H-230 CT T5 35 3J	1356	H-230S CT T5 35 3J	2070	T5/35W	8,4V/4,0Ah	3
H-230 CT T5 35 2J	1363	H-230S CT T5 35 2J	3060	T5/35W	8,4V/4,0Ah	2
H-230 CT T5 35 1J	1370	H-230S CT T5 35 1J	3077	T5/35W	8,4V/2,5Ah	1
H-230 CT T5 45/80 3J	1662	H-230S CT T5 45/80 3J	1679	T5/45-80W	8,4V/4,0Ah	3
H-230 CT T5 45/80 2J	1655	H-230S CT T5 45/80 2J	1686	T5/45-80W	8,4V/4,0Ah	2
H-230 CT T5 45/80 1J	1648	H-230S CT T5 45/80 1J	1693	T5/45-80W	8,4V/2,5Ah	1

General purpose

H-290 modules are designed for 12V luminaires equipped with up to 100W halogen lamps. They work in basic as well as in emergency mode.

H-290 CT module works with central monitoring system.

Additional information about modules available on page 48.

Technical data

CATEGORY	VALUE
Power supply	230VAC 50Hz
Power consumption	< 15VA
Protection class	I
Radio noise	Level N
Power load	Max. 100W
Luminaire efficiency	10% to 100%
Protection degree	IP10
Accumulator type	Pb AGM tight or NiCd HT
Accumulator voltage	12V
Accumulator capacity	7,2Ah, 8Ah (NiCd), 12Ah (Pb)
Recharging time	24h
Emergency work time	1h, 2h or 3h
Accumulator lifespan	4 years
Ambient temperature	+5°C - +35°C (Pb) +5°C - +55°C (NiCd)
t _c temperature	70°C
Dimensions (LxDxH)	210x62x50 [mm]
Weight (without accumulator)	910g

Available versions

Version	Accumulator	Lighting type	t _{aw}	Code
H-290 CT 50 3J Pb	12V/7Ah Pb	Maintained	3	3992
H-290 CT 50 2J Pb	12V/7Ah Pb	Maintained	2	4005
H-290 CT 50 1J Pb	12V/7Ah Pb	Maintained	1	4289
H-290 CT 50 3J Ni	12V/8Ah NiCd	Maintained	3	4326
H-290 CT 50 2J Ni	12V/8Ah NiCd	Maintained	2	4333
H-290 CT 50 1J Ni	12V/8Ah NiCd	Maintained	1	4340
H-290 AT 50 3J Pb	12V/7Ah Pb	Maintained	3	0243
H-290 AT 50 2J Pb	12V/7Ah Pb	Maintained	2	0250
H-290 AT 50 1J Pb	12V/7Ah Pb	Maintained	1	0267
H-290 AT 100 3J Pb	12V/12Ah Pb	Maintained	3	8454
H-290 AT 100 2J Pb	12V/12Ah Pb	Maintained	2	8461
H-290 AT 100 1J Pb	12V/12Ah Pb	Maintained	1	8478
H-290 AT 50 3J Ni	12V/8Ah NiCd	Maintained	3	0274
H-290 AT 50 2J Ni	12V/8Ah NiCd	Maintained	2	0281
H-290 AT 50 1J Ni	12V/8Ah NiCd	Maintained	1	0298

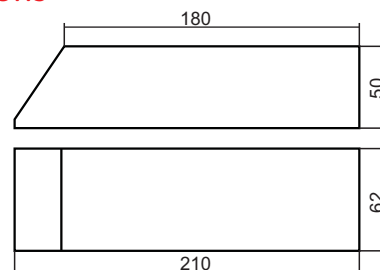
t_{aw} - emergency work time

Accumulators set

Pb AGM tight or NiCd HT accumulators for high temperature work are used to supply emergency lighting modules. More about accumulators available on www.hybrid.com.pl



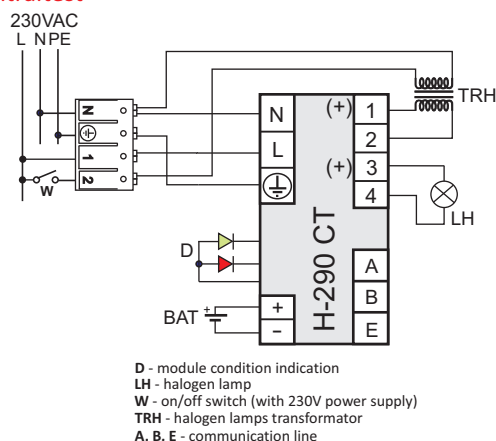
Dimensions



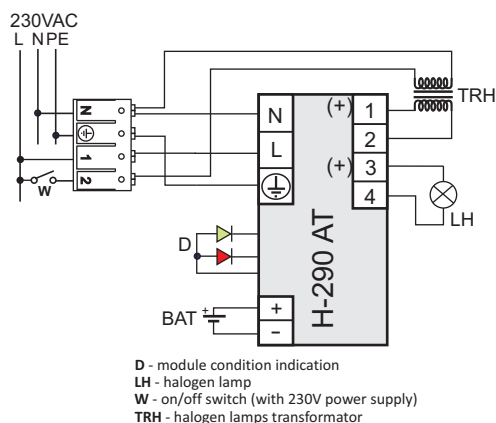
Casing made of galvanized steel

Circuit diagram

Centraltest



Autotest



Ordering

While ordering, the following are needed:

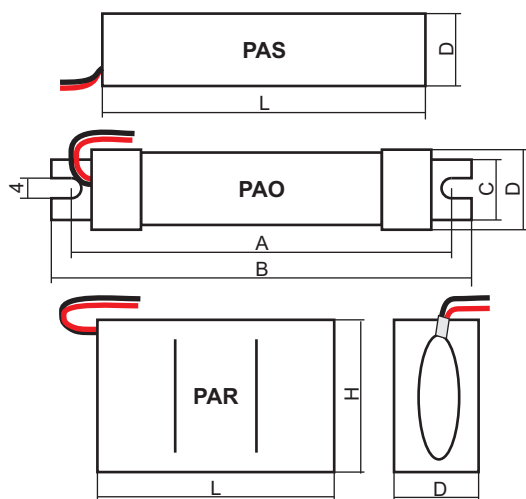
- module name or code, 3992 or H-290 CT 50 3J Pb
- number of modules
- battery code, for example - 12V/7Ah Pb



Technical data

CATEGORY	VALUE
Accumulator cell	NiCd HT
Cell voltage	1,2V
Accumulator voltage	n x 1,2V; n=2÷7 cells
Accumulator capacity	1,5Ah; 2,5Ah; 4,0Ah
Charging current	0,1C
Longlasting charging current	0,05C
Ambient temperature	+70°C
Without insulation length	200mm
Connector type	N
Accumulator lifespan	4 years

Accumulators configuration



Connector types



General purpose

Accumulators are designed to supply emergency lighting modules after basic lighting failure and switching into emergency mode. Accumulators are grouped in series from NiCd high temperatures cells

Accumulator construction

Standard accumulators configuration:

- in series: PAS, PAO (with mounting cover)
- parallel: PAR

Package is grouped with shoulder shrinking sleeve.

Without insulation length:

- standard: 200mm
- polarisation: + red; - black
- connector: standard - N type; H type as option

Mounting:

- PAS and PAR: mounting covers or ribbon cable
- PAO: M4 screws

Accumulator formatting

New accumulator shall be given a full charge (36 hours for the first time and 24 hours for the second and third time) before the first use and this process shall be cycled several times (2-3) to reach full capacity.

Ordering

Accumulator version and number shall be specified in the order.

Different accumulator configuration, length without insulation, connector type - to be consulted with sales department.

NiMH HT accumulators available.

More about accumulators available on www.hybrid.com.pl

Voltage/ capacity	PAO						PAR					PAS				
	Version	Dimensions				g	Version	Dimensions			g	Version	Dimen.		g	
		A	B	C	D			L	D	H			L	D		
3,6V/4,0Ah	PAO-36-40-N	207	222	25	37	370	PAR-36-40-N	100	33	63	350	PAS-36-40-N	180	33	350	
3,6V/2,5Ah	PAO-36-25-N	168	183	30	31	240	PAR-36-25-N	76	26	52	220	PAS-36-25-N	145	26	220	
3,6V/1,5Ah	PAO-36-15-N	152	167	27	28	170	PAR-36-15-N	70	23	44	150	PAS-36-15-N	125	23	150	
4,8V/4,0Ah	PAO-48-40-N	263	278	25	37	480	PAR-48-40-N	134	33	63	460	PAS-48-40-N	240	33	460	
4,8V/2,5Ah	PAO-48-25-N	220	235	30	31	310	PAR-48-25-N	104	26	52	290	PAS-48-25-N	195	26	290	
4,8V/1,5Ah	PAO-48-15-N	198	211	27	28	220	PAR-48-15-N	94	23	44	200	PAS-48-15-N	170	23	200	
6,0V/4,0Ah	PAO-60-40-N	326	341	25	37	590	PAR-60-40-N	167	33	63	570	PAS-60-40-N	300	33	570	
6,0V/2,5Ah	PAO-60-25-N	271	286	30	31	370	PAR-60-25-N	130	26	52	350	PAS-60-25-N	245	26	350	
6,0V/1,5Ah	PAO-60-15-N	238	253	27	28	220	PAR-60-15-N	117	23	44	200	PAS-60-15-N	215	23	200	
8,4V/4,0Ah	PAO-84-40-N	440	454	25	37	820	PAR-84-40-N	233	33	63	800	PAS-84-40-N	420	33	800	
8,4V/2,5Ah	PAO-84-25-N	373	388	30	31	500	PAR-84-25-N	182	26	52	480	PAS-84-25-N	345	26	480	
8,4V/1,5Ah	PAO-84-15-N	327	341	27	28	320	PAR-84-15-N	163	23	44	300	PAS-84-15-N	300	23	300	

Attention: Weight [g] - not more than specified in the table; Dimensions [mm] - approximate

General purpose

Accumulators set altogether with polymeric heater and H-323 thermostat module allows emergency module to be operative in temperature reaching -20°C .

Accumulator voltage and capacity is adapted according to emergency work time and lamp type/power.

Thermostat description

Supervision over NiCd HT and NiMH HT accumulators temperature is required by the manufacturers because accumulator charging in low temperatures can damage the cells.

Heater work is supervised by the thermostat module according to microcontroller integrated with temperature sensor.

Heater power supply is initiated while the temperature drops under $+5^{\circ}\text{C}$ and terminated while the temperature reaches $+10^{\circ}\text{C}$.

Thermostat module keeps accumulator temperature not lower than $+2^{\circ}\text{C}$ within low environment temperature.

Thermostat module, taking into consideration the need, can be adapted separately and near the accumulator or integrated with the accumulator set.

Heater description

The heater is supplied by the H-323 thermostat (230V/50Hz). It is made of self-regulated heating line in which heating material is made of polymer.

Polymer reacts to external environment - power of the heater is inversely proportional to the ambient temperature.

While reaching $+55^{\circ}\text{C}$ the heater work is terminated and that is why the overheating of the accumulator or heater is not possible.

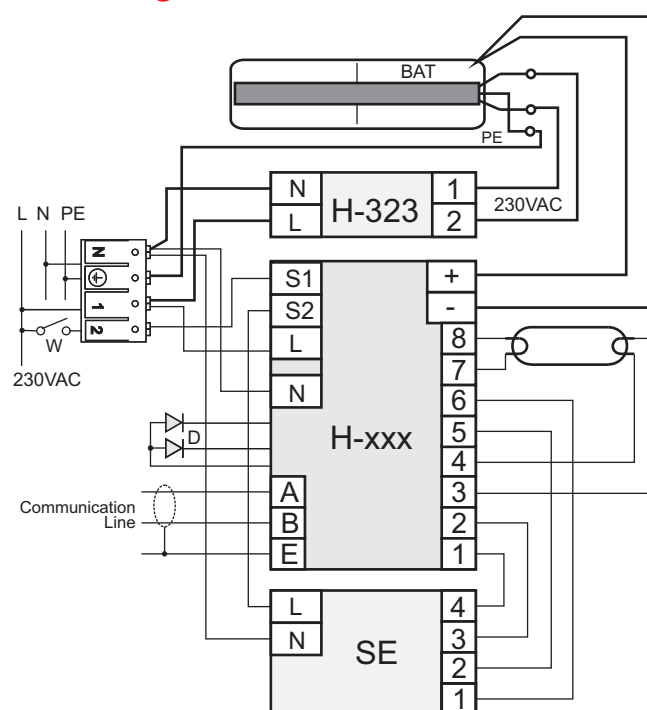
That kind of accumulator-polymer heater construction provides long and reliable work.

Heater insulation (PE) provides accurate fire safety protection of the accumulator.

Technical data

CATEGORY	VALUE
Power supply	230VAC/50Hz
Protection class	I
Heater power	5W-10W according to the length
Temperature measuring	Microprocessor
Heater work temperature	max 55°C
Minimal ambient temperature	-20°C
Minimal accumulator temp.	$+2^{\circ}\text{C}$
Heater initiation temperature	$<5^{\circ}\text{C}$
Heater termination temperature	$>10^{\circ}\text{C}$

Circuit diagram



Exemplary circuit diagram

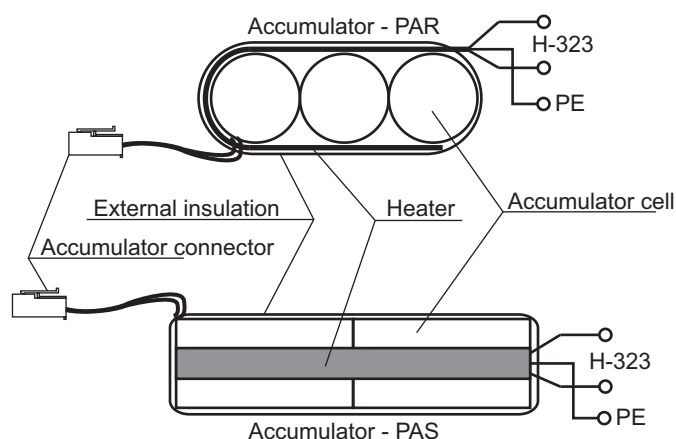
Ordering

H-323 module with accumulator and heater are treated as complete kit. Parameters like voltage, accumulator capacity and accumulator configuration (PAR or PAS) is required while ordering.

Available version

No.	Version	Description	Code
1.	H-323	Thermostat, accumulator, heater	7501

Accumulator construction



H-12DC

Module designed for supplying luminaires up to 100W (halogen lamps, stairs step markers) and 12V nominal voltage, only in emergency mode.

H-24DC

Module designed for supplying luminaires up to 120W (halogen lamps, stairs step markers) and 27V buffer voltage, works in basic and in emergency mode.

Technical data

CATEGORIES	VALUE
Power supply	230VAC/50Hz
Max. current peak	<60A/230V
Power consumption	<0,7A
Protection class	I
Radio noise	Level N
Protection degree	IP44
Power load	100W max.
Accumulator type	Pb AGM
Accumulator voltage	1x12V
Accumulator capacity	33Ah
Recharging time	16h
Emergency work time	2h
Ambient temperature	0°C - 35°C
Dimensions	300x210x400mm
Weight	7000g

Technical data

CATEGORIES	VALUE
Power supply	230VAC/50Hz
Max. current peak	<30A
Power consumption	<0,9A
Protection class	I
Radio noise	Level N
Protection degree	IP44
Power load	120W max.
Accumulator type	Pb AGM
Accumulator voltage	2x12V
Accumulator capacity	18Ah
Recharging time	16h
Charging voltage	27,3V
Temperature compensation	YES
Emergency work time	2h
Ambient temperature	0°C - 35°C
Dimensions	400x300x400mm
Weight	9000g

Indication

The luminaire condition is indicated by LED. There is no LED indication during emergency mode.

Green:

- informs about accumulator condition
- flashing 2Hz: accumulator charging

Red:

- informs about module condition
- on: module failure
- off: lack of failures
- flashing 2Hz: test A/B active

Functions

Constant mains and accumulator voltage control, accumulator deep discharge protection, automatic switch into emergency mode, tests A and B execution, luminaires current monitoring, accumulator and module condition optical indication, 4mm² mains connector, 6mm² OUT connector, metal housing with key lock, wall mounting.

Technical data

CATEGORY	VALUE
Power supply	230V 50Hz AC lub 12V DC
Power consumption	< 5W (when active)
Protection class	I
Radio noise	Level N
Light source	LED
Protection degree	IP40
Acoustic signal	Electromagnetic converter about 65 dB/1m, interrupted within 2s cycle
Information	Letters height - 35[mm]
Information colour in active state	Red, 2s pulsation
Ambient temperature	5°C - +50°C
Dimensions (LxDxH)	420x180x60 [mm]

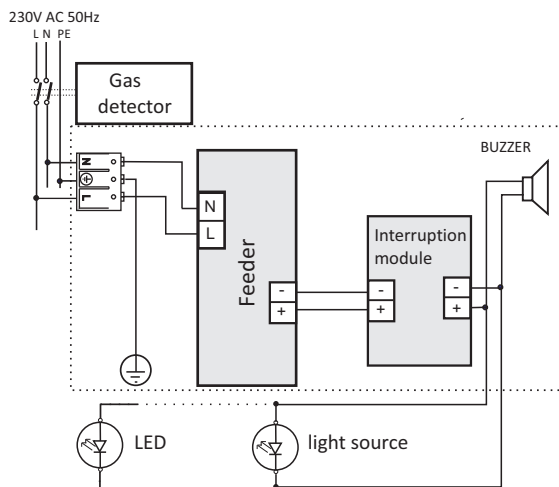
General purpose

Information sign is designed for optical and acoustical indication of the alarm state (for example dangerous gas detection). Luminaire has specific warning sign according to client's order. The sign is visible only when active and when the alarm state is initiated. Acoustic indication is accompanied by optical information.

Sign description

Modern design, visible red information (letter height - 35mm). Letters are not visible when not active. Pulsating backlight. Light source: LED. Acoustic indication of the alarm state. Low power consumption. Simple mounting (wall for one-sided and ceiling for two-sided) Mains connector: 1,5mm².

Circuit diagram



Available versions

No.	Name	Version	Power supply
1.	TABLICA	One-sided	230V 50Hz
2.	TABLICA DW	Two-sided	230V 50Hz
3.	TABLICA 12	One-sided	12V DC
4.	TABLICA 12 DW	Two-sided	12V DC
5.	TABLICA 24	One-sided	24V DC
6.	TABLICA 24 DW	Two-sided	24V DC

Casing

- Casing material: aluminium.
 - Casing colour: black (different colours available).
 - Lamp cover colour and material: opal - plexiglass
- Different pictogram and letter colour available

Dimensions



PRYMAT

Version with fluorescent lamp

Luminaire	Lampshade	Execution	T _{aw} [h]	Work mode	Pictogram	Temperature range
PRYMAT	DW ¹	ST	1	C	P01	T
		AT	2	J	...	
		CT	3	N	P29	
		TS				
		CB				
		CB-MA				

Example of creating a name: PRYMAT CT 2J P08

Version with LED

Luminaire	Lampshade	Execution	Work mode	Light source	Pictogram	Temperature range
PRYMAT	DW ¹	ST	C	LED	P01	T
		AT	J		...	
		CT	N		P29	
		TS				
		CB				
		CB-MA				

Example of creating a name: PRYMAT DW CT J LED P08

PROFIL

Version with fluorescent lamp

Luminaire	Execution	T _{aw} [h]	Work mode	Mounting ¹	Pictogram
PROFIL	ST	1	C	C12	P01
	AT	2	J
	CT	3		C18	P29
	CB			W7	
	CB-MA			...	
				W12	

Example of creating a name: PROFIL CT 1C W11 P12

Version with LED

Luminaire	Execution	Work mode	Light source	Mounting ¹	Pictogram
PROFIL	ST	C	LED	C12	P01
	AT	J	
	CT			C18	P29
	CB			W7	
	CB-MA			...	
				W12	

Example of creating a name: PROFIL AT C LED W10 P07

¹⁾ For mounting types C12 and C15 standard distance luminaire from the ceiling 150mm, for C13 and C14 – 300mm.

Other distances available - extended delivery time.

Legend - p. 63

Version with fluorescent lamp

Luminaire	Execution	T _{aw} [h]	Work mode	Mounting	Casing colour (RAL code)	Pictogram
CRYSTAL	ST	1	C	C5	□ 9003	P01
	AT	2	J	C6	■ 9005*	...
	CT	3		C7	■ 9006*	P29
	CB			W3		
	CB-MA			W4		

CRYSTAL

Example of creating a name: CRYSTAL CT 2C C5 9003 P05

Version with LED

Luminaire	Execution	Work mode	Light source	Mounting	Casing colour (RAL code)	Pictogram
CRYSTAL	ST	C	LED	C5	□ 9003	P01
	AT	J		C6	■ 9005*	...
	CT			C7	■ 9006*	P29
	CB			W3		
	CB-MA			W4		

Example of creating a name: CRYSTAL AT C LED W3 9003 P09

Version with fluorescent lamp

Luminaire	Luminaire size	Luminaire type	Execution	T _{aw} [h]	Work mode	Mounting	Casing colour (RAL code)	Pictogram
ALU			AT	1	C	W1 ¹	□ 9003	P01
	D	DW	CT	2	J	W2	■ 9005*	...
			TS	3		C1	■ 9006*	P29
			CB			C2		
			CB-MA					

ALU

Example of creating a name: ALU AT 2J W2 9003 P02

Version with LED

Luminaire	Luminaire size	Luminaire type	Execution	Work mode	Light source	Mounting	Casing colour (RAL code)	Pictogram
ALU			AT	C	LED	W1 ¹	□ 9003	P01
	D	DW	CT	J		W2	■ 9005*	...
			TS			C1	■ 9006*	P29
			CB			C2		
			CB-MA					

Example of creating a name: ALU D CT C LED C2 9003 P12

¹⁾ Mounting type W1 only for one-sided ALU luminaire.

Luminaire	Luminaire size	Luminaire type	Execution	Work mode	Light source	Mounting	Casing colour (RAL code)	Pictogram
SPARK			AT	C	LED	W1 ¹	■ 9006	P01
	D	DW	CT	J		C25	□ 9003*	...
			CB			C30	■ 9005*	P29
			CB-MA			W16		

SPARK

Example of creating a name: SPARK D AT J LED C25 9006 P05

¹⁾ Mounting type W1 only for one-sided SPARK luminaire.

Legend - p. 63

PROFILIGHT

Luminaire	Execution	Work mode	Light source	Mounting ¹	Casing colour ²	Pictogram
PROFILIGHT	ST	C	LED	W4		P01
	AT	J		W17		...
	CT			C5		P29
	CB			C24		
	CB-MA			C25		
				C26		
				C32		

Example of creating a name: PROFILIGHT CT C LED C24 P12

¹⁾For mounting type C26 standard distance luminaire from the ceiling 150mm, for C24 and C25 – 300mm.

Other distances available - extended delivery time.

²⁾Standard luminaire in anodised aluminum with black sides.

PRIMOS LED

Luminaire	Execution	Work mode	Light source	Pictogram	Temperature range
PRIMOS	ST	C	LED	P01	T
	AT	J		...	
	CT	N		P29	
	TS				
	CB				
	CB-MA				

Example of creating a name: PRIMOS AT J LED P05

PRIMOS LED5

Luminaire	Photometric body type	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Temperature range
PRIMOS	ROAD	AT	1	C	LED	5	T ⁴
	ROAD PLUS	CT	2	J		7 ²	
	CLASSIC	TS ¹	3	N			
		CB					
		CB-MA					

Example of creating a name: PRIMOS ROAD AT 1C LED5

¹⁾ Execution TS is not available for photometric body of CLASSIC type (frosted lamp cover)

²⁾ Luminaire with power 7W available for all execution and time (work mode) 1C i 2C.

³⁾ It is recommended to use photometric body of CLASSIC type

⁴⁾ Not available for the time (work mode 2J, 3J, 2N i 3N)

Luminaire	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Temperature range	Light colour	Casing colour
DL CEILINE II	AT	1	C	LED	7		L	E
DL	CT	2	J		12	T	R	F
DL SALVIA	CB	3			14		S	G
					18			H
					19			K
					20			
					25			
					26			
					28			
					32			

DOWNLIGHT LED

Example of creating a name: DL SALVIA AT 2J LED 14 R E

Light colour: L – cold white, R – warm white, S- neutral white

Casing colour: E – white, F – grey, G – black, H – silver, K - gold

Attention:

DL CEILINE II LED 32W - only white casing colour

DL SALVIA LED 14W, 19W, 28W - light colour warm white

DL SALVIA LED 12W, 18W, 26W - light colour neutral white

Luminaire	Photometric body type	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Casing colour (RAL code)
OWA	ROAD	AT	1	C	LED	3	□ 9003
	ROAD PLUS	CT	2	J		5 ¹	■ 9005*
	AREA	TS	3	N			▒ 9006*
	SIDE	CB					
		CB-MA					

OWA LED

Example of creating a name: OWA ROAD AT 2C LED3 9003

¹⁾ Luminaire 5W only available for performances CB i CB-MA.

Luminaire	Type of housing	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Casing colour (RAL code)
OWA ATOM	K	AT	1	C	LED	2	SAL ¹
	O	CT	2	J			□ 9003*
		CB	3	N			■ 9005*
		CB-MA					▒ 9006*

Example of creating a name: OWA ATOM K CT 1C LED2 SAL

¹⁾ SAL - brushed Aluminium.

KWADRA LED

Luminaire	Photometric body type	Type of housing	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Casing colour (RAL code)
KWADRA	ROAD	N	AT	1	C	LED	3	9010
	ROAD PLUS	P	CT	2	J			9005
	AREA		TS ¹	3	N			9006
	SIDE		CB					
			CB-MA					

Example of creating a name: KWADRA AREA N CT 2J LED3 9010

¹⁾ Execution TS is not available for the body type ROAD PLUS.

KWADRA ORBIT LED

Luminaire	Photometric body type	Execution	T _{aw} [h]	Work mode	Light source	Power [W]	Casing colour ¹
KWADRA ORBIT	ROAD	ST	1	C	LED	2	
	ROAD PLUS	AT	2				
	AREA	CB	3				
	SIDE						

Example of creating a name: KWADRA ORBIT AREA AT 2C LED2

¹⁾ Standard luminaire in white colour

H-207 TELESTO

Luminaire	Execution	Power [W]	T _{aw} [h]	Work mode
H-207 TELESTO	ST	1x11W	1	C
	AT	2x11W	2	J
	TS	1x28W	3	
	CT			
	CB			

Example of creating a name: H-207 TELESTO CT 2x11W 1C

H-207 SUPERNOVA

Luminaire	Execution	Power [W]	T _{aw} [h]	Work mode	Mounting
H-207 SUPERNOVA	ST	2x18W	1	C	C33
	AT	1x36W	2	J	
	TS	2x36W	3		
	CT	1x58W			
	CB	2x58W			

Example of creating a name: H-207 SUPERNOVA CT 1x58W 1C

Legend - p. 63

Luminaire	Type of housing	Execution	Power [W]	T _{aw} [h]	Work mode
SFERA	N	ST	1x18W	2	J
	P	AT	2x18W		
		CT	1x26W		
		CB	2x26W		
			1x32W		

SFERA

Example of creating a name: SFERA N CT 2x18W 2J

Luminaire	Type of housing	Execution	Power [W]	T _{aw} [h]	Work mode
SQUARE	N	ST	4x14W	2	J
	P	AT	4x18W		
		CT	2x36W		
		CB			

SQUARE

Example of creating a name: SQUARE P AT 4x18W 2J

Legend:

Photometric body type: see individual product data sheets.

Luminaire size:

Empty field – small

D – large.

Luminaire type or lamp cover:

N – surface mount

P – recessed

DW – luminaire two-sided or lamp cover two-sided.

Execution:

ST – standard

AT – autotest

CT – centraltest

TS – testsystem

CB – central battery,

CB-MA – central battery plus changeover module,

CB-MP – central battery plus addressing module,

CB-MAP – central battery plus changeover + addressing module .

T_{aw} [h] - emergency work time: CB is not defined.

Work mode:

C – non-maintained

J – maintained

N – night (only for CT).

Defined for ST, AT, CT, TS, CB-MA (luminaires LED) i CB-MAP (luminaires fluorescent).

Temperature range:

Empty field - standard temperature range

T – extended temperature range (see technical data) with thermostat H-323.

Casing colour: fields with “*” available - extended delivery time.

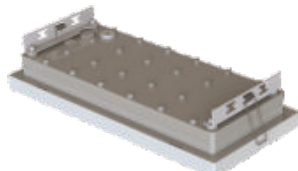
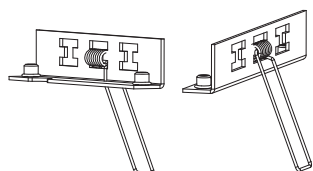


Mounting kit C101

Mounting kit designed to hang down luminaires PRYMAT, PRIMOS and HERKULES-P.

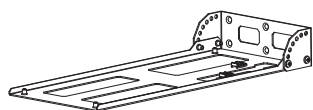
ATTENTION!

Strings or chains should be ordered separately.



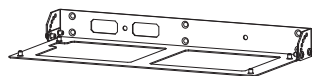
Mounting kit C105

Mounting kit designed for mounting luminaires PRIMOS, PRYMAT and HERKULES-P in suspended ceilings.



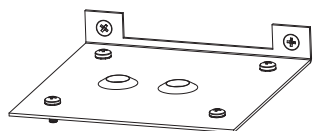
Mounting kit W121

Wall mounting kit designed for luminaires PRIMOS, PRYMAT and HERKULES-P. It allows mounting luminaire on the wall perpendicularly to it and for folding luminaire from the level 15, 30, 45, 60, 75 or 90 °. Using a mounting W121 luminaire is directed to the shorter side of wall.



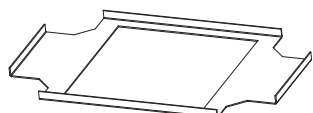
Mounting kit W122

Wall mounting kit designed for luminaires PRIMOS, PRYMAT and HERKULES-P. It allows mounting luminaire on the wall perpendicularly to it and for folding luminaire from the level 15, 30, 45, 60, 75 °. Using a mounting W121 luminaire is directed to the longer side of wall.



Mounting kit W131

Mounting kit designed for surface mounting of KWADRA luminaire on the wall in the way that the light is directed to the floor. It is recommended to use luminaire with SIDE type photometric body with mounting kit W131.



Reinforcement for soft ceilings

Addition designed for recessed execution of KWADRA luminaire. It allows mounting of luminaire in soft ceilings eg. in fiberglass ceilings.

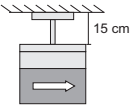
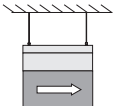
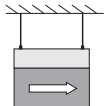
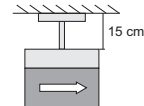
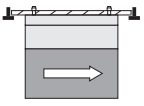
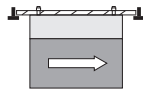
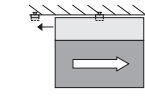
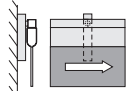
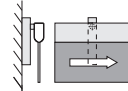
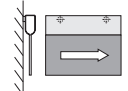
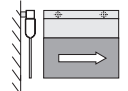
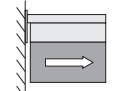
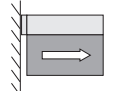
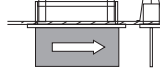

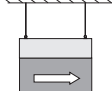
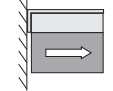

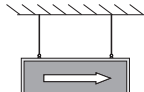
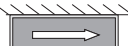
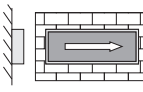
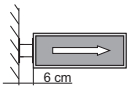
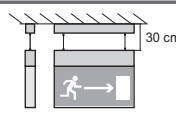
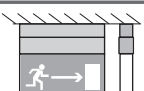
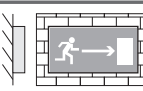
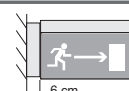
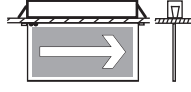


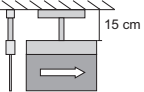
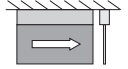
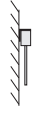
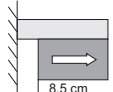
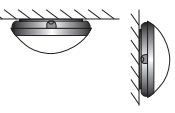
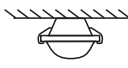
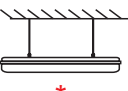

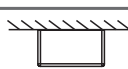

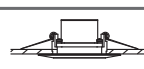
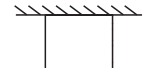
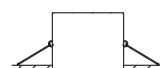
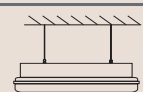

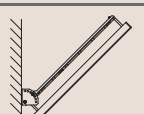
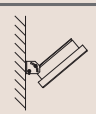
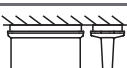


Strings , chains

Steel strings, galvanized chains DIN 5685-A – designed for mounting pendant luminaires.

Chains available in dimension DIN 5685-A 1,5x12.



Mounting types

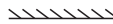

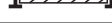
      							PROFIL
     							
    							CRYSTAL
   							ALU
   							SPARK
      							PROFILIGHT
   							
  							OWA LED
 							
      							PRIMOS PRYMAT

* Strings or chains available on request.

¹⁾ Requires access to ceiling void.

²⁾ Only for ST, CB.

LEGEND

-  - CONSTANT CEILING
-  - SUSPENDED CEILING
-  - MODULAR CEILING

ACCESSORIES
(ordered separately)



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