Test Report

Report No	3873731 Rev 2
Client	Olympia Electronics N. Lakasas - P. Arvanitidis S.A. 72nd klm Old Highway Thessaloniki Katerini, Eginio, Pieria P.C 60300 Greece
Authority & date	Quote Number: Q715582 SMO: 3873731 Date: 21/02/2023
Items tested	Emergency Safety Sign MLD-44D/w
Specification	IEC 60598-2-22:2021 used in conjunction with IEC 60598-1:2020 SASO IEC 60598-2-22:2021 used in conjunction with SASO IEC 60598-1:2020 BS EN IEC 60598-2-22:2022 used in conjunction with BS EN IEC 60598-1:2021
Results	A type sample of the above appliance has been tested and examined to the relevant requirements of the above specification and has been found to comply with these requirements, subject to the implementation of any corrective actions detailed in this test report.
Prepared by	Luke Masters — Testing Team Leader
Authorised by	Piers Taverner — Testing Team Manager
Issue Date	21st March 2023
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue of 'BSI Terms of Service'. The results contained herein apply only to the particular sample(s) tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of BSI, who reserve the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought. This report relies upon information supplied by the client which may affect the validity of results. **Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. Where a statement of conformity is reported the decision rule is simple acceptance unless stated otherwise. This version Rev 2 supersedes all previous versions. The purpose of this report is to add a specific model name into page 3 of this report.**

UKAS TESTING 0135

BSI, Holywell Park, Loughborough, Leicestershire, LE11 3AQ Tel: 01509 331133, e-mail: appliances@bsigroup.com

Test Report issued under the responsibility of:

BSI

TEST REPORT
IEC 60598-2-22
Luminaires
Part 2: Particular requirements
Section 22: Luminaires for emergency lighting

Report Number. ..... :	**3873731 Rev 2**
Date of issue ..... :	**21/03/2023**
Total number of pages ..... :	**56**
Name of Testing Laboratory preparing the Report ..... :	**BSI Assurance (Loughborough).**
Applicant's name ..... :	Olympia Electronics
Address ..... :	N. Lakasas - P. Arvanitidis S.A., 72nd klm Old Highway, Thessaloniki Katerini, Eginio, Pieria P.C 60300, Greece
Test specification:	
Standard ..... :	IEC 60598-2-22:2021 used in conjunction with IEC 60598-1:2020
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2022, Ed.1.5
Test Report Form No. ..... :	IEC60598_2_22I
Test Report Form(s) Originator .... :	Intertek Semko AB
Master TRF ..... :	Dated 2022-12-09

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description .....:	Internally illuminated emergency exit sign MLD-44D/w
Trade Mark(s) .....:	
Manufacturer .....:	Olympia Electronics
Model/Type reference.....:	Emergency Safety Sign MLD-44D/w
Ratings.....:	220-240 V~, 50-60 Hz, 3W/8VA, Class II, IP 40

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**CB Testing Laboratory:**	BSI Assurance (Loughborough)	
Testing location/ address		Holywell Park, Ashby Road, Loughborough, Leicestershire, United Kingdom, LE11 3AQ	
Tested by (name, function, signature)		Luke Masters Electrical Testing Team Leader	
Approved by (name, function, signature)		Piers Taverner – Testing Team Manager	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address			
Tested by (name, function, signature)			
Approved by (name, function, signature)			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address			
Tested by (name + signature).....			
Witnessed by (name, function, signature)			
Approved by (name, function, signature)			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address			
Tested by (name, function, signature)			
Witnessed by (name, function, signature)			
Approved by (name, function, signature)			
Supervised by (name, function, signature)			

List of Attachments (including a total number of pages in each attachment):

Attachment 1: European group differences and national differences (1 page)
Attachment 2: Photographs (5 pages)

Summary of testing:

Tests performed (name of test, test clause and date test performed):	**Testing location: (CBTL, SPTL, CTF, Subcontractor)**
The purpose of this report is to update to the latest version of BS EN IEC 60598-2-22:2022 used in conjunction with BS EN IEC 60598-1:2021. Also fulfills the requirements of SASO IEC 60598-2-22:2021 used in conjunction with SASO IEC 60598-1:2020 All other testing was performed previously, and results can be found in BSI Test Report 3676067. SASO National Differences are under consideration.	**CBTL:** BSI Assurance (Loughborough) Holywell Park Ashby Road Loughborough Leicestershire United Kingdom LE11 3AQ

Summary of compliance with National Differences (List of countries addressed):

European group differences and national differences.

☒ **The product fulfils the requirements of IEC 60598-2-22:2021 used in conjunction with IEC 60598-1:2020, SASO IEC 60598-2-22:2021 used in conjunction with SASO IEC 60598-1:2020 and BS EN IEC 60598-2-22:2022 used in conjunction with BS EN IEC 60598-1:2021.**

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other: … (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Test item particulars.....:	Internally illuminated emergency exit sign
Classification of installation and use.....:	Class II, Suitable for Mounting on Normally Flammable Surface, For Normal Use,
Supply Connection.....:	Fixed wiring into terminal block
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	BSI Assurance (Loughborough)
Date of receipt of test item .....:	22/02/2023
Date (s) of performance of tests.....:	23/03/2023 – 23/02/2023

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	Olympia Electronics N. Lakasas - P. Arvanitidis S.A., 72nd klm Old Highway, Thessaloniki Katerini, Eginio, Pieria P.C 60300, Greece

General product information and other remarks:

The Olympia Electronics emergency exit safety sign uses a LED light source. The MLD range are for ceiling and wall mounts, and for suspension with the mounts provided. The MLD range are rated at 220-240V 3W and 50-60Hz. The range are self-contained with a 3.6V Ni-Cd battery.

Protection Against Electric Shock Class……	Class II
Degree of Protection Against Ingress of dust, solid objects, and moisture……..	IP 40
Suitability of Material of Supporting Surfaces ……..…….	For Normally Flammable Surfaces
Classification of Use……...	For Normal Use
Classification according to Annex B……	X|1|AG|180
Construction……	LED, Self-Contained, Maintained, Emergency Luminaire, 3 h Rated Duration, Thermoplastic Enclosure, Fixed on wall/ ceiling with the aid of provided mounting brackets
Supply Connection……	Connecting Leads (Tails), 220-240V~, 50-60 Hz
Lamp Details	3W/8VA, LED Module
Battery Replacement Details…….	Ni-Cd, 3.6V DC, 1000 mAh, Type A-939/HT
Ratings……..	IP 40, 220-240 V~, 50-60 Hz, 3W/8VA, Ta: +40°C

Model Family:

Model Number	No. of LED	Width(mm)	Duration	Mounting
MLD-28D/w	12	280	3 h	Surface Mounted
MLD-34D/w	15	342	3 h	Surface Mounted
MLD-44D/w	15	440	3 h	Surface Mounted

Report History:

Test Report	Issue Date	Reason for Report	Clauses
8413436	05/01/2016	Original Type Test	All requirements (IEC 60598-2-22:2014 & IEC 60598-1:2014, BS EN 60598-2-22:2014 & BS EN60598-1:2015)
3676067	20/12/2022	Report issued to cover the changes added by the updated IEC 60598-1:2020 standard	Limited tests performed on model Emergency Safety Sign MLD-44D/w, to the requirements of: IEC60598-2-22:2014+A1:2017 used in conjunction with IEC60598-1:2020

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
22.4 (0)	**GENERAL TEST REQUIREMENTS**		P
22.4 (0.3)	More sections applicable ..... :	Yes ☐ No ☒ Section/s:	—
22.4 (0.5)	Components	(See Annex 1)	—
22.4 (0.7)	**Information for luminaire design in light sources standards**		—
22.4 (0.7.2)	Light source safety standard ..... :		—
	Luminaire design in the light source safety standard		P
22.4 (-)	Part providing normal lighting, test according to relevant part of IEC 60598-2 ..... :		N/A
22.4 (-)	Adjacent part fulfils relevant part of this part 2		N/A
22.4 (-)	Self-contained portable emergency luminaires, requirements according Annex E	(See Annex E)	N/A
22.5 (2)	**CLASSIFICATION OF LUMINAIRES**		P
22.5 (2.2)	Type of protection ..... :	Class II	
22.5 (2.3)	Degree of protection ..... :	IP 40	—
22.5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ..... :	Yes ☒ No ☐	—
22.5 (2.5)	Luminaire for normal use ..... :	Yes ☒ No ☐	—
	Luminaire for rough service ..... :	Yes ☐ No ☒	—
22.5 (-)	Classified as luminaire suitable for direct mounting on normally flammable surfaces		P
22.5 (-)	Classification code according Annex B	(See Annex B)	P
22.6 (3)	**MARKING**		P
22.6 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
22.6 (3.3)	Additional information		P
	Language of instructions	English	P
22.6 (3.3.1)	Combination luminaires		N/A
22.6 (3.3.2)	Nominal frequency in Hz		N/A
22.6 (3.3.3)	Operating temperature		P
22.6 (3.3.5)	Wiring diagram		N/A
22.6 (3.3.6)	Special conditions		N/A
22.6 (3.3.7)	Metal halide lamp luminaire – warning		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
22.6 (3.3.8)	Limitation for semi-luminaires		N/A
22.6 (3.3.9)	Power factor and supply current		P
22.6 (3.3.10)	Suitability for use indoors		P
22.6 (3.3.11)	Luminaires with remote control		N/A
22.6 (3.3.12)	Clip-mounted luminaire – warning		N/A
22.6 (3.3.13)	Specifications of protective shields		N/A
22.6 (3.3.14)	Symbol for nature of supply		P
22.6 (3.3.15)	Rated current of socket outlet		N/A
22.6 (3.3.16)	Rough service luminaire		N/A
22.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
22.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
22.6 (3.3.19)	Protective conductor current in instruction if applicable		N/A
22.6 (3.3.20)	Provided with information if not intended to be mounted within arm’s reach		N/A
22.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
22.6 (3.3.22)	Controllable luminaires, classification of insulation provided		P
22.6 (3.3.23)	Luminaires without control gear provided with necessary information for selection of appropriate component		N/A
22.6 (3.3.24)	If not supplied with terminal block, information on the packaging		N/A
22.6 (3.3.25)	Luminaires employing light sources emitting UV on mains wiring, information provided		N/A
22.6 (3.3.26)	Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided		N/A
22.6 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
22.6.1 (-)	Supply voltage		P
22.6.2 (-)	Classification according to annex B		P
22.6.3 (-)	Correct replacement lamp	Non-Replaceable	N/A
22.6.4 (-)	Range of ambient temperatures		P
22.6.5 (-)	Fuse ratings and/or indicator lamps	No replaceable fuses	N/A
22.6.6 (-)	Facilities to simulate normal supply failure		P
22.6.7 (-)	Marking with details about nature of ESSS		P
22.6.7.1 (-)	Marked with correct battery replacement		N/A
	Non-replaceable batteries		P
22.6.7.2 (-)	Battery marked with date of manufacture		P
	Space provided on battery label		N/A
22.6.7.3 (-)	Marked with correct EDLC replacement		N/A
	Non-replaceable EDLC		N/A
22.6.9 (-)	Correct lamp replacement for combined emergency luminaires		P
	Green dot with min 5 mm diameter		P
	Instruction leaflet 22.6.10 – 22.6.12 and 22.6.14 – 22.6.16		P
22.6.10 (-)	Replacement of ESSS or luminaire		P
	Details for correct ESSS replacement		N/A
	ESSS is not user serviceable, information provided		P
22.6.11 (-)	Details of test facilities		P
22.6.12 (-)	Details of connection leads		P
22.6.14 (-)	Details of device which changes the mode of operation		N/A
22.6.15 (-)	Photometric data available according 22.17		P
22.6.16 (-)	Any normal preparation procedure		N/A
22.6.17 (-)	Marking in 22.6.1, 22.6.2, 22.6.7.1 (2nd paragraph), 22.6.7.3 (2nd paragraph) and 22.6.20 visible on installed luminaire		P
	Marking in 22.6.5, 22.6.7.1 (1st paragraph), 22.6.7.3 (1st paragraph) and 22.6.9 visible during maintenance		P
22.6.18 (-)	Provided with warning if intended for external plug and socket connections		N/A
22.6.19 (-)	Instruction leaflet specifies if lamp and/or ESSS is/are non-replaceable		P
22.6.20 (-)	Marking if luminaire mounted on lighting track systems		P
	Photometric data in instruction leaflet		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
22.6.21 (-)	Rated charge time lower than 24 h, information in instruction leaflet provided		N/A
22.6.22 (-)	Allowed time for rest/remote inhibiting mode, information in instruction leaflet provided		N/A
22.7 (4)	**CONSTRUCTION**		P
22.7 (4.2)	Components replaceable without difficulty		P
22.7 (4.3)	Wireways smooth and free from sharp edges		P
22.7 (4.4)	**Lamp holders**		N/A
22.7 (4.4.1)	Integral lamp holder		N/A
22.7 (4.4.2)	Wiring connection		N/A
22.7 (4.4.3)	Lamp holder for end-to-end mounting		N/A
22.7 (4.4.4)	Positioning		N/A
	- pressure test (N) ..... :		—
	After test the lamp holder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lamp holder the lamp holder has not moved from its position and show no permanent deformation		N/A
	- bending test (N) ..... :		—
	After test the lamp holder has not moved from its position and show no permanent deformation		N/A
22.7 (4.4.5)	Peak pulse voltage		N/A
22.7 (4.4.6)	Centre contact		N/A
22.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
22.7 (4.4.8)	Lamp connectors		N/A
22.7 (4.4.9)	Caps and bases correctly used		N/A
22.7 (4.4.10)	Light source for lamp holder or connection according to IEC 60061 not connected another way		N/A
22.7 (4.5)	**Starter holders**		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
22.7 (4.6)	**Terminal blocks**		**P**
	Tails		P
	Unsecured blocks		P
22.7 (4.7)	**Terminals and supply connections**		**P**
22.7 (4.7.1)	Contact to metal parts		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
22.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		N/A
22.7 (4.7.3)	Terminals for supply conductors		P
22.7 (4.7.3.1)	Welded method and material		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.6.2		N/A
	- electrical test according to 15.6.3		N/A
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N/A
22.7 (4.7.4)	Terminals other than supply connection		N/A
22.7 (4.7.5)	Heat-resistant wiring/sleeves		N/A
22.7 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
22.7 (4.8)	**Switches**		**P**
	- adequate rating		P
	- adequate fixing		P
	- polarized supply		N/A
	- compliance with IEC 61058-1 for electronic switches		N/A
22.7 (4.9)	**Insulating lining and sleeves**		N/A
22.7 (4.9.1)	Retainment		N/A
	Method of fixing ..... :		N/A
22.7 (4.9.2)	Insulated linings and sleeves:		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C) ..... :		N/A
22.7 (4.10)	**Double or reinforced insulation**		**P**
22.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
22.7 (4.10.2)	Assembly gaps:		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
	- not coincidental		N/A
	- no straight access with test probe		N/A
22.7 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N/A
	- lining in lamp holder		N/A
22.7 (4.10.4)	Protective impedance device		N/A
	Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor		N/A
	Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s)		N/A
	Capacitors comply with IEC 60384-14		N/A
	Resistors comply with test (a) in 14.2 of IEC 60065		N/A
22.7 (4.11)	**Electrical connections and current-carrying parts**		**P**
22.7 (4.11.1)	Contact pressure		P
22.7 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		P
22.7 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
22.7 (4.11.4)	Material of current-carrying parts		P
22.7 (4.11.5)	No contact to wood or mounting surface		P
22.7 (4.11.6)	Electro-mechanical contact systems		N/A
22.7 (4.12)	**Screws and connections (mechanical) and glands**		**P**
22.7 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :		P

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part..... :		P
	Torque test: torque (Nm); part..... :		N/A
22.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
22.7 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm) ..... :		N/A
	- lamp holder; torque (Nm) ..... :		N/A
	- push-button switches; torque 0,8 Nm ..... :		N/A
22.7 (4.12.5)	Screwed glands; force (Nm)..... :		N/A
22.7 (4.13)	**Mechanical strength**		**P**
22.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :		P
	- other parts; energy (Nm)..... :		P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
22.7 (4.13.2)	Metal parts have adequate mechanical strength		N/A
22.7 (4.13.3)	Straight test finger		N/A
22.7 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
22.7 (4.13.6)	Tumbling barrel		N/A
22.7 (4.14)	**Suspensions, fixings and means of adjusting**		**P**
22.7 (4.14.1)	Mechanical load:		P
	A) four times the weight		P

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm) ..... :		N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :		N/A
	Metal rod. diameter (mm) ..... :		N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
22.7 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :		—
	Stress in conductors (N/mm²) ..... :		N/A
	Mass (kg) of semi-luminaire ..... :		N/A
	Bending moment (Nm) of semi-luminaire ..... :		N/A
22.7 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles..... :		N/A
	- strands broken ..... :		N/A
	- electric strength test afterwards		N/A
22.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
22.7 (4.14.5)	Guide pulleys		N/A
22.7 (4.14.6)	Strain on socket-outlets		N/A
22.7 (4.15)	**Flammable materials**		**P**
	- glow-wire test 650°C ..... :	See Test Table 22.15 (13.3.2)	P
	- spacing ≥30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		N/A
	- thermal protection		N/A
	- electronic circuits exempted		P
22.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		P
	a) construction		P
	b) temperature sensing control		N/A
	c) surface temperature		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict

22.7 (4.16)	**Luminaires for mounting on normally flammable surfaces**		**P**
	No lamp control gear ..... :	(Compliance with Section 12)	N/A
	Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces		N/A
22.7 (4.16.1)	Lamp control gear spacing:		P
	- spacing 35 mm		N/A
	- spacing 10 mm		P
22.7 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
22.7 (4.16.3)	Design to satisfy the test of 12.6	(See clause 12.6)	N/A
22.7 (4.17)	**Drain holes**		N/A
	Clearance at least 5 mm		N/A
22.7 (4.18)	**Resistance to corrosion**		**P**
22.7 (4.18.1)	- rust-resistance		N/A
22.7 (4.18.2)	- season cracking in copper		P
22.7 (4.18.3)	- corrosion of aluminum		N/A
22.7 (4.19)	Ignitors compatible with ballast		N/A
22.7 (4.20)	Rough service vibration		N/A
22.7 (4.21)	**Protective shield**		N/A
22.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N/A
	Shield of glass if tungsten halogen lamps		N/A
22.7 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
22.7 (4.21.3)	No direct path		N/A
22.7 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment ..... :	See Test Table 1.15 (13.3.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.7 (4.22)	Attachments to lamps not cause overheating or damage		N/A
22.7 (4.23)	Semi-luminaires comply Class II		N/A
22.7 (4.24)	**Photobiological hazards**		N/A
22.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N/A
22.7 (4.24.2)	Retinal blue light hazard		N/A
	Class of risk group assessed according to IEC/TR 62778 .....:		—
	Luminaires with E_{thr} :		N/A
	a) Fixed luminaires		N/A
	- distance x m, borderline between RG1 and RG2 .. :		N/A
	- marking and instruction according 3.2.23		N/A
	b) Portable and handheld luminaires		N/A
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N/A
	Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N/A
22.7 (4.25)	**Mechanical hazard**		P
	No sharp point or edges		N/A
22.7 (4.26)	**Short-circuit protection**		N/A
22.7 (4.26.1)	Adequate means of uninsulated accessible SELV / PELV parts		N/A
22.7 (4.26.2)	Short-circuit test with test chain according 4.26.3:		N/A
	Supply source ES1 PSE		N/A
	Test chain not melt through		N/A
	Test sample not exceed values of Table 12.1 and 12.2		N/A
22.7 (4.27)	**Terminal blocks with integrated screwless protective earthing contacts**		N/A
	Test according Annex V		N/A
	Pull test of terminal fixing (20 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Pull test of mechanical connection (50 N)		N/A
	After test, resistance < 0,05 Ω		N/A
	Voltage drop test, resistance < 0,05 Ω		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.7 (4.28)	**Fixing of thermal sensing control**		N/A
	Not plug-in or easily replaceable type		N/A
	Reliably kept in position		N/A
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N/A
	Not outside the luminaire enclosure		N/A
	Test of adhesive fixing:		N/A
	Max. temperature on adhesive material (°C) ..... :		—
	100 cycles between t min and t max		N/A
	Temperature sensing control still in position		N/A
22.7 (4.29)	**Luminaires with non-replaceable light source**		N/A
	Not possible to replace light source		N/A
	Live part not accessible after parts have been opened by hand or tools		N/A
22.7 (4.30)	**Luminaires with non-user replaceable light source**		**P**
	If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol:		P
	At least one fixing means requiring use of tool		P
22.7 (4.31)	**Insulation between circuits**		**P**
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		P
	Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3		N/A
22.7 (4.31.1)	SELV or PELV circuits		N/A
	Used SELV/PELV source		N/A
	Voltage ≤ ELV		N/A
	Insulating of SELV/PELV circuits from LV supply		N/A
	Insulating of SELV/PELV circuits from other non SELV/PELV circuits		N/A
	Insulating of SELV/PELV circuits from FELV		N/A
	Insulating of SELV/PELV circuits from other SELV/PELV circuits		N/A
	SELV/PELV circuits insulated from accessible parts according Table X.1		N/A
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlets does not admit plugs of other voltage systems		N/A
	Plugs and socket-outlets does not have protective conductor contact		N/A
22.7 (4.31.2)	FELV circuits		P
	Used FELV source		P
	Voltage ≤ ELV		P
	Insulating of FELV circuits from LV supply		P
	FELV circuits insulated from accessible parts according Table X.1		P
	Plugs not able to make any electrical contact with socket-outlets of other voltage systems		P
	Socket outlets does not admit plugs of other voltage systems		P
	Socket-outlets does not have protective conductor contact		P
22.7 (4.31.3)	Other circuits		N/A
	Other circuits insulated from accessible parts according Table X.1		N/A
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N/A
	- conductive parts are connected together		N/A
	- test according 7.2.3		N/A
	- conductive part not cause an electric shock in case of an insulation fault		N/A
	- equipotential bonding in master/slave applications		N/A
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N/A
	- slave luminaire constructed as class I		N/A
22.7 (4.32)	**Overvoltage protective devices**		N/A
	Comply with IEC 61643-11		N/A
	External to controlgear and connected to earth:		N/A
	- only in fixed luminaires		N/A
	- only connected to protective earth		N/A
22.7 (4.33)	**Luminaire powered via information technology communication cabling**		N/A
	Requirements for Class III luminaire		N/A
	Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Luminaire does not create any hazard from overvoltage	(See Annex 2)	N/A
22.7 (4.34)	**Electromagnetic fields (EMF)**		P
	No harmful electromagnetic fields		P
22.7 (4.35)	**Protection against moving fan blades**		N/A
	Test with a standard test finger		N/A
	Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire		N/A
	Blades rounded with radius ≥ 0.5 mm and:		N/A
	-hardness less than D60 Shore		N/A
	-peripheral speed less than 15 m/s		N/A
	-input power of fan ≤ 2 W at rated voltage		N/A
22.7 (4.36)	**Track-mounted luminaires**		N/A
	Test in accordance with Annex A of IEC60570:2003/AMD2:2019		N/A
24.7 (-)	Luminaire with automatic testing system complies with IEC 62034 as identified in Annex K of IEC 61347-2-7		N/A
22.7.1 (-)	No glow starters in circuit in start of or during the emergency mode		N/A
22.7.2 (-)	Lamp control gears comply with relevant part 2 of IEC 61347 and additional safety requirements for electronic controlgear for emergency lighting in appropriate annex of standards		N/A
22.7.3 (-)	Protective device disconnects luminaire in case of failure	1 A Fuse	P
22.7.4 (-)	Impact test min. 0,35 Nm		P
22.7.5 (-)	Circuit separation (self-contained lum.)		P
22.7.6 (-)	Circuit separation (centrally supplied lum.)		N/A
22.7.7 (-)	Charging device		P
	Indicator lamp and colour		P
22.7.8 (-)	ESSS meet requirements in Annex A	(See Annex A)	P
	ESSS designed to provide duration for at least four years		P
	ESSS only for emergency function		P
22.7.10 (-)	No switch in self-contained emergency luminaire between ESSS and emergency lighting lamps		N/A
	No manual/non-self-resetting switch in self-contained and central supplied emergency luminaire isolating emergency circuits from mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.7.11 (-)	Failure of lamp(s) not impair operation of ESSS		P
22.7.12 (-)	Batteries in self-contained emergency luminaire comply with cl. 23 of IEC 61347-2-7 if applicable		P
22.7.13 (-)	No influence in emergency mode in self-contained emergency luminaire by short-circuit, contact to earth or interruption in normal supply wiring		P
22.7.14 (-)	Self-contained emergency luminaire with remote inhibiting and/or rest mode meet requirements of cl. 25 of IEC 61347-2-7		N/A
22.7.19 (-)	Lamp voltage in self-contained emergency luminaire with tungsten filament lamps not exceed 1,05 rated voltage		N/A
22.7.20 (-)	Battery in self-contained emergency luminaire according control gear manufacturers specification and Annex A		P
22.7.21 (-)	ESSS and chargers within self-contained emergency luminaire or in remote box		P
22.7.22 (-)	Remote box in self-contained emergency luminaire complies with same requirements as for the luminaire		N/A
22.7.23 (-)	Locking system for emergency luminaire on track system used for display lighting requires aid of tool		N/A
22.7.24 (-)	Adequate space around EDLC	No EDLC’s	N/A
	Creepage/clearances are not reduced		N/A

22.8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		P
22.8 (11.2.1)	Impulse withstands category (Normal category II)	Category II ☒ Category III ☐	—
	Category III according to Annex U		N/A
	Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1		N/A
22.8 (11.2.2)	Creepage distances for frequency up to 30 kHz	See Test Table 22.8 (11.2) I	P
	Creepage distances for frequency over 30 kHz:		N/A
	- Controlgear marked with $\hat{U}_{OUT}$ and f_{UOUT} according to IEC 61347-1, clause 7.1, item w		N/A
	- Requirements according to IEC 60664-4 for control gear not covered by IEC 61347		N/A
22.8 (11.2.3)	Clearances for frequency up to 30 kHz	See Test Table 22.8 (11.2) I	P
	Clearances distances for frequency over 30 kHz:		N/A
	- Controlgear marked with U_P		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Requirements according to IEC 60664-4 for controlgear not covered by IEC 61347		N/A
22.9 (7)	**PROVISION FOR EARTHING**		N/A
22.9 (7.2.1 + 7.2.3)	Accessible metal parts		N/A
	Metal parts in contact with supporting surface		N/A
	Resistance < 0,5 Ω..... :		N/A
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Protective earth makes contact first		N/A
	Terminal blocks with integrated screwless protective earthing contacts tested according to Annex V		N/A
	Protective earthing of the luminaire not via built-in control gear		N/A
22.9 (7.2.2 + 7.2.3)	Protective earth continuity in joints, etc.		N/A
22.9 (7.2.4)	Locking of clamping means		N/A
	Compliance with 4.7.3		N/A
22.9 (7.2.5)	Protective earth terminal integral part of connector socket		N/A
22.9 (7.2.6)	Protective earth terminal adjacent to mains terminals		N/A
22.9 (7.2.7)	Electrolytic corrosion of the protective earth terminal		N/A
22.9 (7.2.8)	Material of protective earth terminal		N/A
	Contact surface bare metal		N/A
22.9 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
22.9 (7.2.11)	Protective earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A
22.9 (7.2.12)	PELV circuit connected to protective earth for functional purpose		N/A
22.10 (14)	**SCREW TERMINALS**		P
	Separately approved; component list	(See Annex 1)	P
	Part of the luminaire		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

22.10 (15)	**SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS**		N/A
	Separately approved; component list..... :		N/A
	Part of the luminaire ..... :		N/A

22.11 (5)	**EXTERNAL AND INTERNAL WIRING**		P
22.11 (5.2)	**Supply connection and external wiring**		**P**
22.11 (5.2.1)	Means of connection ..... :		P
	Outdoor luminaire has not PVC insulated external wiring if not Class III or SELV/PELV circuits ≤ 25 V AC/60 V DC/25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment		N/A
22.11 (5.2.2)	Type of cable ..... :		N/A
	Nominal cross-sectional area (mm²) ..... :		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
22.11 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
22.11 (5.2.5)	Type Z not connected to screws		N/A
22.11 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
22.11 (5.2.7)	Cable entries through rigid material have rounded edges		P
22.11 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
22.11 (5.2.9)	Locking of screwed bushings		N/A
22.11 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
22.11 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
22.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		P
22.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N) ..... :		P
	- torque test: torque (Nm) ..... :		P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
22.11 (5.2.10.4)	Luminaire with/designed for use with supply cord with maximum current of 2A:		N/A
	- Ordinary Class III luminaire supplied with SELV ≤ 25V RMS/60V DC		N/A
	- Ordinary Class III luminaire supplied with PELV ≤12V RMS/30V DC		N/A
	- Other than ordinary Class III luminaire supplied with voltage ≤12V RMS/30V DC		N/A
	Pull test of 30N		N/A
22.11 (5.2.11)	External wiring passing into luminaire		N/A
22.11 (5.2.12)	Looping-in terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.11 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
22.11 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
	No unsafe compatibility		N/A
22.11 (5.2.15)	Connectors for Class III luminaires (IEC 60603 or IEC 62680)		N/A
22.11 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Installation couplers (IEC 61535)		N/A
	Appliance inlet or connector systems (IEC 61984)		N/A
22.11 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
22.11 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
22.11 (5.3)	**Internal wiring**		**P**
22.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A) ..... :		N/A
	- temperatures ..... :	(See Annex 2)	N/A
	Green-yellow for protective earth only		N/A
22.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²)..... :		P
	Insulation thickness (mm) ..... :		N/A
	Extra insulation added where necessary		N/A
22.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Cross-sectional area (mm²)..... :		N/A
22.11 (5.3.1.3)	Double or reinforced insulation for class II		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.11 (5.3.1.4)	Conductors without insulation		N/A
22.11 (5.3.1.5)	SELV/PELV current-carrying parts		N/A
22.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		P
22.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		N/A
22.11 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
22.11 (5.3.4)	Joints and junctions effectively insulated		N/A
22.11 (5.3.5)	Strain on internal wiring		P
22.11 (5.3.6)	Wire carriers		N/A
22.11 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
22.11 (5.4)	**Test to determine suitability of conductors having a reduced cross-sectional area**		N/A
	Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2	(See Annex 2)	N/A
	No damage to luminaire wiring after test		N/A
22.11.1 (-)	Permanently connected		N/A

22.12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
22.12 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starter holders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		P
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high-pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
22.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
22.12 (8.2.3.a)	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
22.12 (8.2.3.b)	BC lamp holder of metal in class I luminaires shall be connected to protective earth		N/A
22.12 (8.2.3.c)	SELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V)..... :		N/A
	- voltage under load/ no-load DC (V)……...:		N/A
	- interrupted DC voltage (V) ……..:		N/A
	- touch current if applicable (mA) ..... :		N/A
	One conductive part insulated if required		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V)..... :		N/A
	- voltage under load/ no-load DC (V)……...:		N/A
	- interrupted DC voltage (V) ……..:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Class III luminaire only for connection to SELV		N/A
	Class III luminaire not provided with means for protective earthing		N/A
22.12 (8.2.3.d)	PELV circuits with exposed current carrying parts:		N/A
	Ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V)..... :		N/A
	- voltage under load/ no-load DC (V)……...:		N/A
	Other than ordinary luminaire:		N/A
	- voltage under load/ no-load AC (V)..... :		N/A
	- voltage under load/ no-load DC (V)……...:		N/A
	One pole insulated if required		N/A
22.12 (8.2.4)	Portable luminaire has protection independent of supporting surface		N/A
22.12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
22.12 (8.2.6)	Covers reliably secured		P
22.12 (8.2.7)	Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection		P
	Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection		N/A
	Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection		N/A
22.13 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
22.13 (-)	If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) as specified in 22.14		—
22.13 (12.2)	**Selection of lamps and ballasts**		**—**
	Lamp used according to Annex B	(Lamp used see Annex 2)	—
	Control gear if separate and not supplied	(Control gear used see Annex 2)	—
22.13 (12.3)	**Endurance test**		**P**
	a) mounting-position ..... :	Wall, Vertical	—
	b) test temperature (°C) ..... :	50	—
	c) total duration (h) ..... :	390	—
	d) supply voltage (V) ..... :	240	—

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Clause	Requirement + Test	Result - Remark	Verdict
	d) if not equipped with control gear, constant voltage/current (V) or (A) ..... :		—
22.13 (12.3.1d)	d) Class III luminaires powered via information technology communication cable:		N/A
	- voltage under normal operation (V)……...:		—
	- voltage under abnormal operation (V)……...:		—
	e) luminaire ceases to operate		—
	f) luminaire with constant light output function		P
22.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
22.13 (12.4)	**Thermal test (normal operation)**	(See Annex 2)	P
22.13 (12.5)	**Thermal test (abnormal operation)**	(See Annex 2)	P
22.13 (12.6)	**Thermal test (failed lamp control gear condition):**		**N/A**
22.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .... :		—
	- measured mounting surface temperature (°C) at 1,1 Un ..... :		N/A
	- calculated mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A
22.13 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions ..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) ..... :		N/A
	- track-mounted luminaires		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.13 (12.7)	**Thermal test (failed lamp control gear in plastic luminaires):**		**N/A**
22.13 (12.7.1)	Luminaire without temperature sensing control		N/A
22.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex W ..... :		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions ..... :		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex W:		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test .....:		N/A
22.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- measured winding temperature (°C): at 1,1 Un ..... :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test ..... :		N/A
22.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
22.13 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link ..... :	Yes ☐ No ☐	—
	- manual reset cut-out ..... :	Yes ☐ No ☐	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- auto reset cut-out ..... :	Yes ☐ No ☐	—
	- case of abnormal conditions ..... :		—
	- highest measured temperature of fixing point/ exposed part (°C): ..... :		—
	Ball-pressure test: ..... :		N/A
22.13.1 (-)	Endurance test for self-contained luminaire		N/A
	Operate satisfactory during 50 supply switching		NA
22.13.2 (-)	Thermal test 12.4 to 12.5 in IEC 60598-1	(See Annex 2)	N/A
22.13.3 (-)	Conditions of tests		—
22.13.4 (-)	Battery discharge		—
	EDLC discharge		—
22.13.5 (-)	Reduced temperature		—
22.13.6 (-)	Additional thermal test	(See Annex 2)	N/A
22.13.7 (-)	Provide Vmin according to Clause 20 of IEC 61347-2-7 at the end of operation		N/A

22.14 (9)	**RESISTANCE TO DUST AND MOISTURE**		P
22.14 (-)	If IP > IP 20 the order of tests as specified in clause 22.12		P
22.14 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP 40	—
	- mounting position during test ..... :		—
	- fixing screws tightened; torque (Nm) ..... :		—
	- tests according to clauses..... :		—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		N/A
	c.1) For luminaires without drain holes – no water entry		N/A
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold-water jet-proof luminaire		N/A
	e) no contact with live parts (IP 2X)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) no entry into enclosure (IP 3X and IP 4X)		P
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		N/A
22.14 (9.3)	Humidity test 48 h		P

22.15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
22.15 (10.2.1)	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø ..... :	Metal Foil	—
	Insulation resistance (MΩ):		P
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :		N/A
	- between current-carrying parts and metal parts of the luminaire..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV/PELV:		P
	- between live parts of different polarity ..... :	500 V d.c for 1 min 500 MΩ	P
	- between live parts and mounting surface ..... :	500 V d.c for 1 min 500 MΩ	P
	- between live parts and metal parts ..... :	500 V d.c for 1 min 500 MΩ	P
	- between live parts of different polarity through action of a switch..... :	No switch	NA
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	500 V d.c for 1 min 500 MΩ	P
	- Insulation bushings as described in Section 5 .....:		N/A
22.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		P
	SELV/PELV:		N/A
	- between current-carrying parts of different polarity :		N/A
	- between current-carrying parts and mounting surface..... :		N/A
	- between current-carrying parts and metal parts of the luminaire..... :		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :		N/A
	- Insulation bushings as described in Section 5 ..... :		N/A
	Other than SELV/PELV:		P
	- between live parts of different polarity ..... :	1480 V AC 50 Hz, Sine. 5 sec ramp-up, 60 sec hold No Breakdown	P
	- between live parts and mounting surface ..... :	2960 V AC 50 Hz, Sine. 5 sec ramp-up, 60 sec hold No Breakdown	P
	- between live parts and metal parts ..... :	2960 V AC 50 Hz, Sine. 5 sec ramp-up, 60 sec hold No Breakdown	P
	- between live parts of different polarity through action of a switch..... :	No switch	N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... :	2960 V AC 50 Hz, Sine. 5 sec ramp-up, 60 sec hold No Breakdown	P
	- Insulation bushings as described in Section 5 ..... :		N/A
22.15 (10.3)	Touch current (mA)……:	0.01 (AC) / 0.00 (DC)	P
	Protective conductor current (mA)..……:		N/A

22.16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
22.16 (13.2.1)	Ball-pressure test ..... :	See Test Table 22.16 (13.2.1)	P
22.16 (13.3.1)	Needle-flame test (10 s)..... :		N/A
22.16 (13.3.2)	Glow-wire test (650°C) ..... :	See Test Table 22.16 (13.3.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
22.16 (13.4)	Proof tracking test (IEC 60112).....:		N/A
22.17 (-)	**PHOTOMETRIC DATA**		P
22.17.1 (-)	Intensity distribution data provided		N/A
22.17.2 (-)	If declared values in cd/1 000 lm, reference flux in emergency mode provided		N/A
22.17.3 (-)	At least 50% of level declared photometric data 5 s after failure of supply		N/A
	100% of level declared photometric data		P
	- after 60 s		N/A
	- after 0,5 s after failure of supply if high-risk task-area lighting		N/A
	Photometric measurements according to CIE 121 SP1		N/A
	LED luminaires measurements according to CIE S025		N/A
	All values at least minimum declared data		N/A
22.17.4 (-)	Colour-rendering index	Ra = 71	P
22.17.5 (-)	Internally illuminated emergency safety sign meets requirements of ISO 30061		P
	Luminance of permanently illuminated safety sign meets requirements of ISO 30061		P
	Luminance measurements according Annex C only	(See Annex C)	P
22.18 (-)	**CHANGEOVER OPERATION**		P
	Changeover device complies with Clause 21 of IEC 61347-2-7	Approved control gear tested separately, See annex 1	P

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Clause	Requirement + Test	Result - Remark	Verdict

22.19 (-)	**HIGH TEMPERATURE OPERATION**		P
	Operation at 70°C		P
	Relative light outputs	Ta: 40°C = 409.5 nA Ta: 70°C = 397.4 nA 50% Ta: 40°C = 204.75 nA Ta: 70°C > 204.75	P

22.20 (-)	**BATTERY CHARGERS FOR SELF-CONTAINED EMERGENCY LUMINAIRES**		P
	Devices for recharging batteries comply with Clause 22 of IEC 61347-2-7		P

22.21 (-)	**TEST DEVICES FOR EMERGENCY OPERATION**		P
22.21.1 (-)	Self-contained luminaire provided with test facility		P
22.21.2 (-)	Remote testing device not influence proper function of safety illumination		N/A
22.21.3 (-)	Indicators colour according to IEC 60073		P

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Clause	Requirement + Test	Result - Remark	Verdict

22.8 (11.2)	**TABLE I: Creepage distances and clearances**						**P**
	Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages						**P**
	Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*						**P**
	Insulation type **	**Measured clearance**	**Required**		**Measured creepage**	**Required**	
			clearance	***Table**		**creepage**	***Table**
Distance 1:	B	2.82	1.5	11.1.B	2.82	2.5	11.1.A
Working voltage (V) ..... :					240		—
PTI ..... :					< 600 ☒ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :					-		—
Supplementary information:							
Distance 2:	-	-	-	-	-	-	-
Working voltage (V) ..... :					-		—
PTI ..... :					< 600 ☐ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :					-		—
Supplementary information:							
Distance 3:	-	-	-	-	-	-	-
Working voltage (V) ..... :					-		—
PTI ..... :					< 600 ☐ ≥ 600 ☐		—
Pulse voltage or U_P if applicable (kV) ..... :					-		—
Supplementary information:							

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

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Clause	Requirement + Test	Result - Remark	Verdict

22.8 (11.2)	**TABLE II: Creepage distances and clearances**							**N/A**
Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages								
Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2								
Distances	**Insulation type ****	**Measured clearance**	**Required**		**Measured creepage**	**Required**		
			clearance	***Table**		**creepage**	***Table**	
Distance 1:								
Working voltage (V) .....:								—
Frequency if applicable (kHz) .....:								—
PTI .....:					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								
Distance 2:								
Working voltage (V) .....:								—
Frequency if applicable (kHz) .....:								—
PTI .....:					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								
Distance 3:								
Working voltage (V) .....:								—
Frequency if applicable (kHz) .....:								—
PTI .....:					< 600 ☐ ≥ 600 ☐			—
Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....:								—
Supplementary information:								

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

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Clause	Requirement + Test	Result - Remark	Verdict

22.16 (13.2.1)	**TABLE: Ball Pressure Test of Thermoplastics**			**P**
Allowed impression diameter (mm) ..... :		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Main cover	Olympia	75	1.5	
Cap on side cover	Olympia	75	1.0	
Supply terminal block	Olympia	125	1.0	
Supplementary information:				

22.16 (13.3.1)	**TABLE: Needle-flame test**				**N/A**
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
Supplementary information:					

Object/ Part No./ Material	**Manufacturer/ trademark**	**GWT (°C):650**			**GWT (°C):850**			**Verdict**
		t_E (s)	**t_I (s)**	**t_R (s)**	**t_E (s)**	**t_I (s)**	**t_R (s)**	
Main cover	Olympia	-	-	-	0	0	0	P
Exit Sign	Olympia	0	0	0	-	-	-	P
Mounting Bracket	Olympia	-	-	-	0	0	0	P
Ignition of the specified layer placed underneath the test specimen (Yes/No)					No			
Supplementary information:								

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Clause	Requirement + Test	Result - Remark	Verdict

22.16 (13.4)	**TABLE: Proof tracking test**				**N/A**
Test voltage PTI ..... :		175 V			—
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
Supplementary information:					

	Annex A: ESSSs for self-contained emergency luminaires		PP
A.1	**General**		P
	Type of ESSSs	NiCd	P
	Other battery/EDLC types conform to relevant standard		P
A.2	**Safety and lifetime**		P
	ESSS conform to relevant standard		P
	Luminaire operates within specific tolerances	> 4 year life cycle	P
A.3	**Charge capacity**		P
A.4	**Sealed nickel cadmium batteries**		**P**
A.4.1	Battery conforms to IEC 61951-1	Manufacturer DoC to 22.6.8 of 60598-2-22	N/A
A.4.2.a	Maximum surface temperature of the battery °C .....:	26.4	P
A.4.2.b	Maximum overcharge rate 0,08 C_5A	0.07	P
A.4.2.c	Minimum ambient temperature of the cells 5 °C	0	P
A.4.2.d	Maximum discharge rates	0.6 (1 h) / 0.25 (3 h)	P
A.5	**Sealed nickel metal-hydride batteries**		**N/A**
A.5.1	Battery conforms to IEC 61951-2		N/A
A.5.2.a	Maximum case temperature of the battery °C .....:		N/A
A.5.2.b	Maximum overcharge rate 0,08 C_5A		N/A
A.5.2.c	Minimum ambient temperature of the cells 5 °C		N/A
A.5.2.d	Maximum discharge rates		N/A
A.6	**Valve regulated lead acid batteries**		N/A
A.6.1	Battery conforms to relevant part of IEC 60869-21 or IEC 61056-1		N/A
A.6.2.a	Maximum surface temperature of the battery °C .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.6.2.b	Maximum recharge current 0,4 C_{20}		N/A
A.6.2.c	Maximum discharge rates		N/A
A.6.2.d	Maximum r.m.s. ripple current 0,1 C_{20}		N/A
A.6.2.e	Minimum ambient temperature of the cells 5 °C		N/A
A.7	**Lithium iron phosphate ($LiFePO_4$), lithium nickel manganese cobalt oxide ($Li(NiCoMn)O_2$), lithium titanate oxide (LTO) batteries**		N/A
A.7.1	Cells conform to IEC 62620 and IEC 62133-2		N/A
A.7.2	Battery conforms to following subclauses IEC 62133-2:		N/A
	-7.2.2 – Case stress at high ambient temperature (battery)		N/A
	-7.3.2 – External short-circuit (battery)		N/A
	-7.3.6 – Over-charging of battery		N/A
	-9.2 – Battery marking		N/A
	-9.4 – Other information		N/A
A.7.3	Battery conforms to following subclauses IEC 62620:		N/A
	-5.3 – Battery designation		N/A
	-6.3.1 – Discharge performance at +25 °C		N/A
	--6.3.2 – Discharge performance at low temperature		N/A
	-6.3.3 – High rate permissible current		N/A
	-6.5 – Cell and battery internal resistance		N/A
	-6.6.2 – Endurance in storage at constant voltage (permanent charge life)		N/A
A.7.4	Conformity of similar lithium battery:		N/A
	-Battery constructed of identical cells		N/A
	-Same cell quantity and electrical configuration		N/A
	Battery connected by cable and plug:		N/A
	-plug provides equivalent connection		N/A
	-cable resistance no higher than in reference battery		N/A
	Battery pack with protection device:		N/A
	-DC resistance of battery system equal or less than in reference sample		N/A
	-evidence of equivalent design of protection circuit is provided		N/A
	Addition or removal of mounting bracket		N/A
A.7.5	Battery built-in protection device for luminaires designed for battery replacement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Protection device incorporated in battery/lamp control gear for luminaires designed for non-replaceable battery:		N/A
	- battery is not accessible during normal operation/installation		N/A
	-position of battery pack/cell		N/A
	- Marking “Do not remove”		N/A
	- Battery is secured		N/A
	- Protection device not contained within battery, assessed as part of control gear		N/A
A.7.6	Maximum surface temperature of battery not exceed temperature stated by manufacturer or Table 3 IEC 61347-2-7		N/A
A.8	**EDLC**		N/A
A.8.1	EDLC conforms to relevant requirements of IEC 62391-1 and IEC 62391-2		N/A
A.8.2	Operations limits of EDLC:		N/A
	- Maximum continuous surface temperature in accordance with manufacture`s declared temperature		N/A
	- Maximum charge voltage in accordance with manufacture`s declared voltage		N/A
A.8.3	Designed duration time with consideration to capacitance degradation		N/A
A.9	**Maximum surface temperature**		N/A
	Measured after 48 hrs from start of recharge		N/A
	Measured after twice rated charge time (minimum of 12 hrs) , if manufacturer declares lower charging time		N/A
A.10	**Alternative operating parameters**	Battery Manufacturer Declaration/s	P
A.11	**ESSS replacement**		P

	Annex B: Luminaire classification					P
	Classified and marked according to Annex B.....:	X	1	AG	180	P

	Annex C: Luminance measurements		P
C.1	Contrast measurements		P
C.2	On site photometric tests		P
	According to Annex C of ISO 3864-4		P
	Measured values not less than specified in this standard		P

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Clause	Requirement + Test	Result - Remark	Verdict

	Annex E: Requirements for self-contained portable emergency luminaires		N/A
E.5	**Classification of luminaires**		N/A
	Base unit and portable emergency luminaires with mains-voltage supplied integrated charger of Class I or Class II		N/A
	Self-contained portable emergency luminaire without integrated mains-voltage supplied charger of Class III		N/A
E.5.1	Classified according to construction		—
E.5.1.a	Control unit contained in the self-contained portable emergency luminaire	Yes ☐ No ☐	—
E.5.1.b	Part of the control unit remains in the base unit	Yes ☐ No ☐	—
E.5.2	Classified according to operation		—
E.5.2.a	Automatic initiation with manual control	Yes ☐ No ☐	—
E.5.2.b	Automatic initiation with automatic control	Yes ☐ No ☐	—
E.5.2.c	Manual control	Yes ☐ No ☐	—
E.5.3	Classified according to photometric performance		—
	Distribution measured according to IEC TR 61341		N/A
E.5.3.a	Narrow beam angels not greater than 15°		N/A
E.5.3.b	Medium beam angels between 15° and 25°		N/A
E.5.3.c	Wide beam angels greater than 25°		N/A
E.5.3.d	Variable beam angels – state the range of angels		N/A
E.6	**Marking**		N/A
E.6.1	Marking visible after installation		N/A
	Marking on both parts if separate charging device		N/A
	Class II symbol only on the charger if separate charging device		N/A
E.6.2	Instruction for electrical, mechanical and use according classification		N/A
E.6.3	Warning notice on both parts to return the luminaire to base unit for recharging after use		N/A
E.6.4	Instruction with photometric data		N/A
E.7	**Construction**		N/A
E.7.1	Control unit completely contained in the luminaire or part of the control unit in the base unit		N/A
E.7.2	Mechanical strength tests according 4.13 of IEC 60598-1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Mechanical strength tests according 4.13.4 of IEC 60598-1 of portable section		N/A
E.7.3	Base unit permanently connected to unswitched supply		N/A
E.7.4	Integral manual switch used to switch the unit between inhibit mode and emergency mode and vice versa		N/A
	Recharging before supply voltage reach 0,85 times nominal value		N/A
E.7.5	Integral over current protection device connected immediately after the terminals connecting to the supply		N/A
E.7.6	Power supply connection between the luminaire and its base unit made without a tool		N/A
	Connecting devices according to relevant standard		N/A
E.7.7	No access to live parts during or after connection or disconnection		N/A
E.7.8	Supply cable disconnected from the portable part before use		N/A
E.7.9	Connection between the portable part and the charger mechanically interlocked to prevent incorrect polarized connection		N/A
E.7.10	At least two independent replaceable lamps if incandescent lamps		N/A
E.7.11	Colour rendering index of any emergency lamps *Ra* 40 or better		N/A
E.7.12	Audible and/or visible warning on re-instatement of normal supply		N/A
E.7.13	Failure of the mains supply the luminaire operate in emergency mode or an indicator identify the location of the luminaire		N/A
	Load ≤ 0,01C_5/h of ESSS if indicator is used		N/A
E.7.14	Indicator gives warning of low ESSS capacity remaining		N/A
E.7.15	Adequate stability		N/A
	Test at an angle of 15° to the horizontal		N/A
E.7.16	Adequate stability to illuminate the task area on non-horizontal surface		N/A
	Test at an angle of 15° to the horizontal		N/A
E.8	**Changeover operation**		N/A
	Requirements according 22.7.10 excluded if integral manual switch		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Design avoids switching of charger whilst holding the luminaire		N/A
E.9	**High temperature operation**		—
	Ambient temperature of 40°C in Clause 22.19		—
E.10	**Thermal test**		—
	Test made with portable part either placed on dull black painted wooden floor or rest against a dull black painted wooden wall		—

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	**TABLE: Critical components information**					P
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Supply terminal	A	Legrand France	NS4 (342 75)	2.5mm² 24A 250V T55°C	EN60998-1:2004 EN60998-2-1:2004	VDE 40018574
NiCd Battery	C	KWASIA (ABT)	HT AA 1000	3.6V 1000mAh 0-55°C	IEC 61951-1:2013 IEC 60598-2-22:2014	BSI TR 8413436
Control gear	C	Olympia	0904129	220-240V	IEC61347-2-7:2012+A1:2019 IEC61347-2-13:2014 + A1:2017	BSI TR 8413437 3676068-1 3676068-2
LED module (MLD-44D/w)	C	Olympia	3005111	15 LEDs	IEC62031:2008 +A2:2015	BSI TR 8413438
LED module (MLD-34D/w)	C	Olympia	2905111	15 LEDs	IEC62031:2008 +A2:2015	BSI TR 8413438
LED module (MLD-28D/w)	C	Olympia	2805111	12 LEDs	IEC62031:2008 +A2:2015	BSI TR 8413438
Battery leads	C	Dongguan Zhongzheng Wire & Cable Tech Co., Ltd.	3385	18AWG 300V 105°C	UL758 Edition 3	UL E336285
Connecting lead (tails)	C	ETK Kablo	HSLH-OB	2 x 0.5mm²	IEC 60598-2-22:2021	Tested in application
Enclosure material	C	Olympia	--	White	IEC 60598-2-22:2021	Tested in application
Mounting brackets material	C	Olympia	--	White	IEC 60598-2-22:2021	Tested in application

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 2	**TABLE: Thermal tests of Section 12**		P
	Type reference ..... :	LED [3005111]	—
	Lamp used..... :	LED [3005111]	—
	Lamp control gear used ..... :	Olympia 0904129	—
	Mounting position of luminaire ..... :	Wall, Vertical	—
	Supply wattage (W) ..... :	3	—
	Supply current (A) ..... :	0.025	—
	Temperatures in test 1 - 4 below are corrected for ta (°C) ..... :	25	—
	- abnormal operating mode ..... :	Battery charger S/C	—
22.13 (12.4)	- test 1: rated voltage ..... :	240	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... :	254.4	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... :	N/A	—
	Through wiring or looping-in wiring loaded by a current of A during the test ..... :	N/A	—
22.13 (12.5)	- test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage ..... :	264	—

Temperature measurements (°C)

Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
Mounting surface	22.7	23.1	23.4	-	90	22.8	130
Supply Wiring	22.7	22.4	33.4	-	90	22.4	90
Luminaire exit sign	22.7	23.8	23.7	-	90	23.4	90
Transformer	22.7	49.1	49.5	-	130	39.4	130
Capacitor	22.7	46.4	46.5	-	105	33.9	105
Battery	22.7	24.7	24.6	-	40	22.4	40
Switch	22.7	24.2	24.2	-	55	24.1	55

Supplementary information:

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 3	**Screw terminals (part of the luminaire)**		N/A
(14)	**SCREW TERMINALS**		N/A
(14.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²).....:		—
(14.3.3)	Conductor space (mm).....:		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread).....:	M	N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....:		N/A
	Torque (Nm).....:		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N).....:		N/A
(14.4.8)	Without undue damage		N/A

IEC 60598-2-22			
Clause	Requirement + Test	Result - Remark	Verdict
ANNEX 4	**Screwless terminals (part of the luminaire)**		N/A
(15)	**SCREWLESS TERMINALS**		N/A
(15.2)	Type of terminal.....:		—
	Rated current (A).....:		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples) .....:		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples) .....:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.5.2)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....:		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles:		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....:		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....:		N/A
(15.6)	Terminals and connections for external wiring		N/A
(15.6.1)	Conductors		N/A
	Terminal size and rating		N/A
15.6.2	Mechanical tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
(15.6.2.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....:		N/A
(15.6.2.2)	Pull test pin or tab terminals (4 samples); pull (N) .....:		N/A
(15.6.3)	Electrical tests		N/A
	Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1		N/A

(15.6.3.1) (15.6.3.2)	**TABLE: Contact resistance test / Heating tests**									N/A
	Voltage drop (mV) after 1 h									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										N/A
	Voltage drop of two inseparable joints									N/A
	Voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										N/A
	Continued ageing: voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										N/A
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV) ..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										N/A
										N/A
Supplementary information:										

Attachment 1: National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT **IEC 60598-2-22** **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** LUMINAIRES PART 2: PARTICULAR REQUIREMENTS SECTION 22: LUMINAIRES FOR EMERGENCY LIGHTING	
Differences according to .....:	EN 60598-2-22:2014 + A1:2020 used in conjunction with EN IEC 60598-1:2021
TRF template used .....:	IECEE OD-2020-F2:2020, Ed. 1.1
Attachment Form No. .....:	EU_GD_IEC60598_2_22H
Attachment Originator .....:	OVE
Master Attachment.....:	Dated 2021-10-01

	CENELEC COMMON MODIFICATIONS (EN)		N/A
ZA	**ANNEX ZA,** **Normative references to international publications with their corresponding European publications**		-
	Reference ISO 30061, Emergency lighting replaced by: EN 1838, Lighting applications - Emergency lighting		-

ZB	**ANNEX ZB, A-deviations**		-
22.6.18	FR: In premises open to the public, electrical installations have only permanent fittings	To be considered when installed in France by commissioning engineer	-
22.11.1	FR: In premises open to the public, electrical installations have only permanent fittings	To be considered when installed in France by commissioning engineer	--
22.6.15	FR: The required photometric characteristics of products are only based on the “rated lumen output” as defined in 22.3.14. Photometric data distribution of the luminaire may not to be provided or checked	Not applicable to internally illuminated safety signs	N/A
22.17.1	FR: The required photometric characteristics of products are only based on the “rated lumen output” as defined in 22.3.14. Photometric data distribution of the luminaire may not to be provided or checked	Not applicable to internally illuminated safety signs	N/A

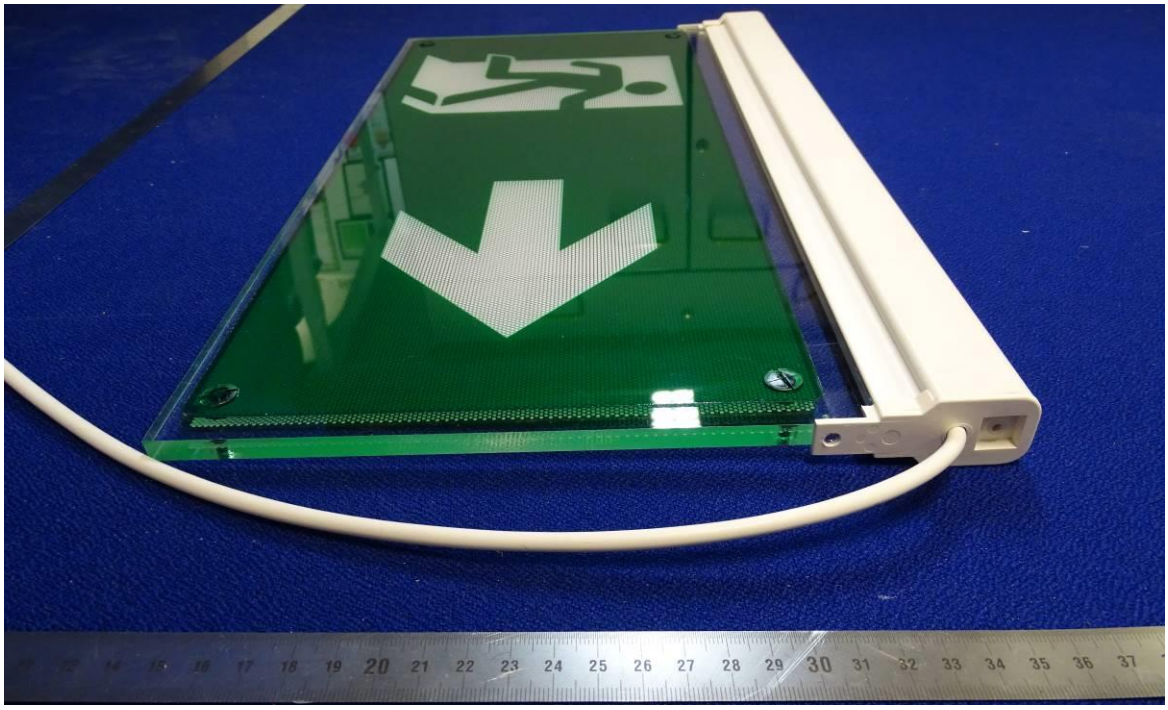
Attachment 2: Sample Pictures

Photograph 1: Luminaire Overview – Emergency Exit Safety Sign
Model No. MLD-44D/w (Front)

Photograph 2: Luminaire Overview – Emergency Exit Safety Sign
Model No. MLD-44D/w (Rear)

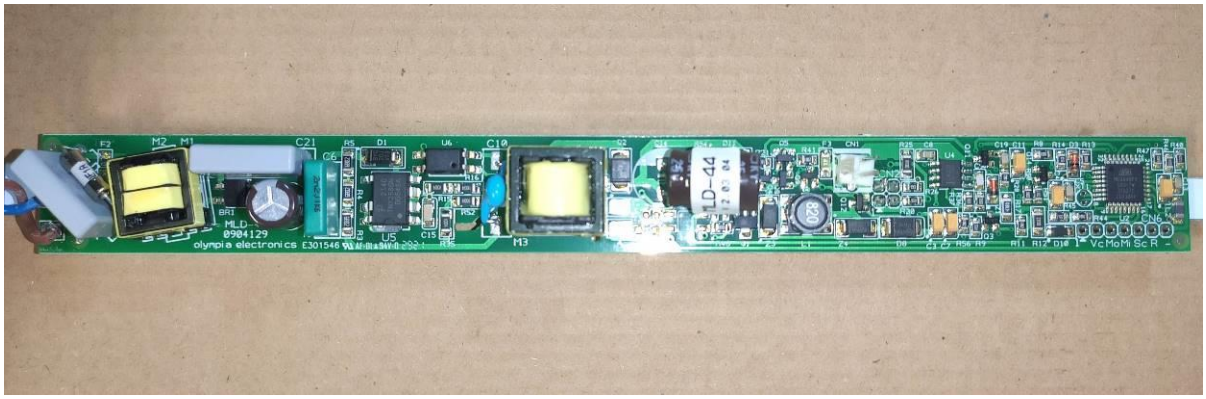
Attachment 2: Sample Pictures

Photograph 3: Luminaire Overview – Emergency Exit Safety Sign
Model No. MLD-44D/w (Side Profile)

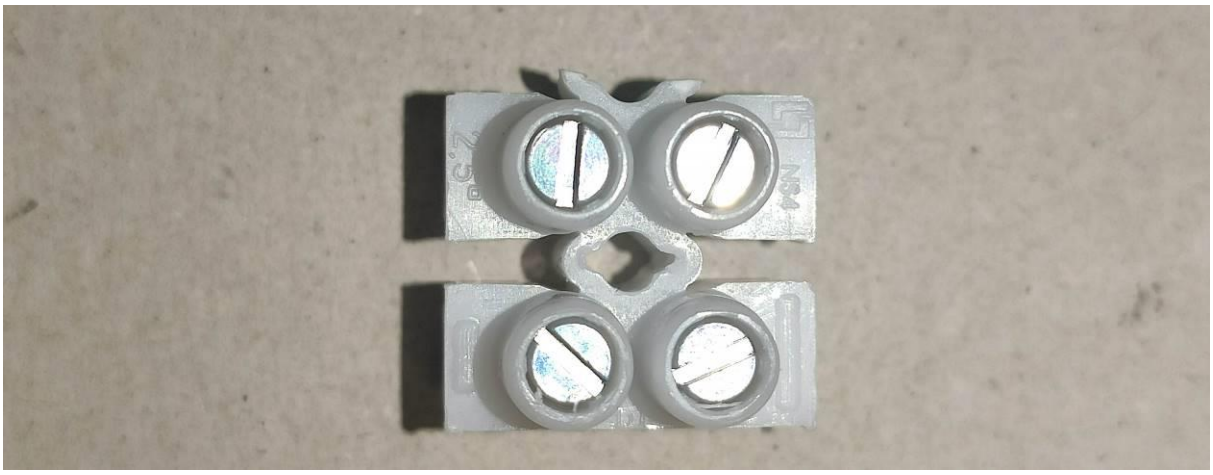


Photograph 4: Luminaire Overview – Emergency Exit Safety Sign
Model No. MLD-44D/w (Side Profile)

Attachment 2: Sample Pictures



Photograph 5: Built-in lamp controlgear



Photograph 6: Terminal block provided within the package

Attachment 2: Sample Pictures

Photograph 7: Built-in LED mdule

Photograph 8: Built-in rechargeable battery

Attachment 2: Sample Pictures

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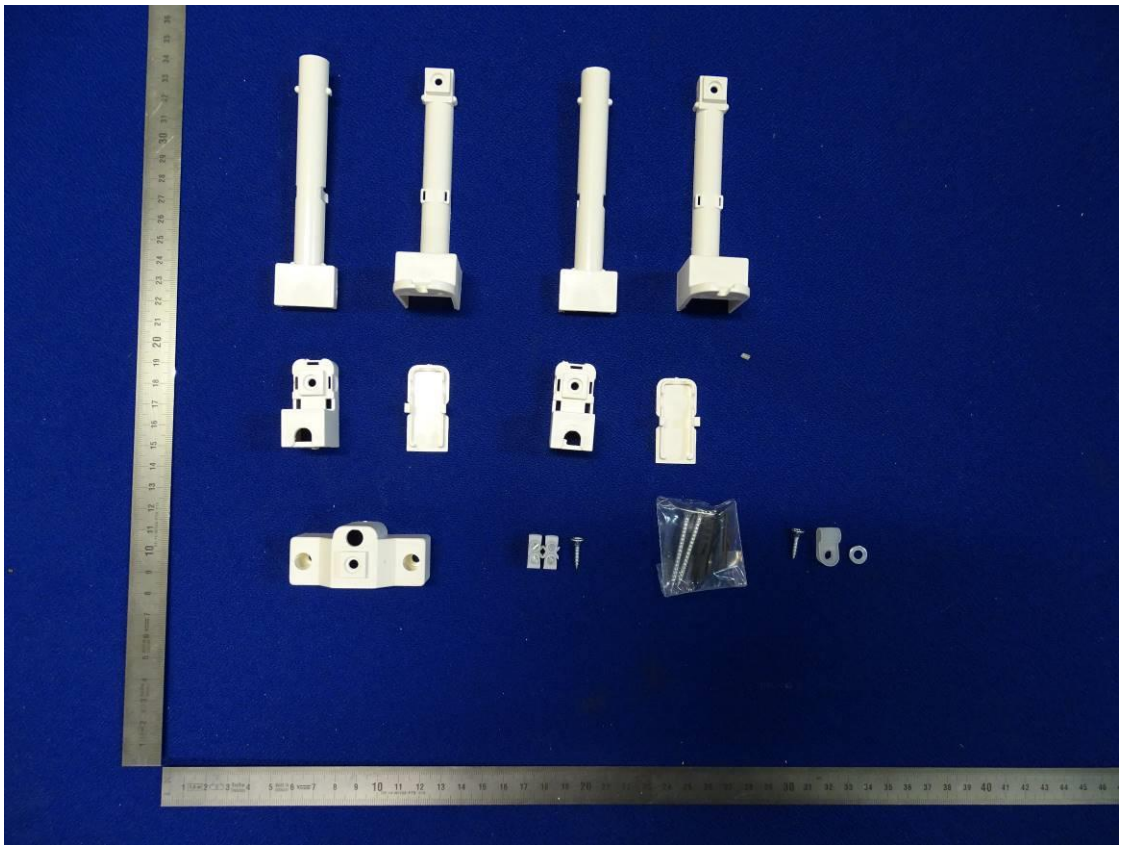
Photograph 9: Means of Connections (Connecting Leads (Tails))



Photograph 10: Mounting brackets and accessories provided within the package

*** END OF REPORT ***