



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

LVD TEST REPORT

TEST REPORT NUMBER : CGZ3171120-03669-L



CTS (Ningbo) Testing Service Technology Co., Ltd.
Fl.1 & 8 West, Bldg. B, No. 66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification (only telecommunication products).

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

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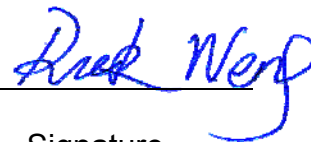
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1.2 Tester**Tested by:**11 December 2017Kate Zhang

Date

Name

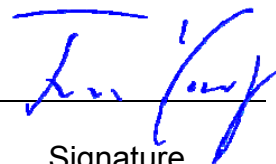
Signature

Reviewed by:11 December 2017Rock Weng

Date

Name

Signature

Approved by:11 December 2017Jun Yang

Date

Name

Signature



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1.3 Testing laboratory

1.3.1 Location

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Telephone: + 86-574-87912121

Telefax : + 86-574-87907993

1.3.2 Test location, where different from CTS:

Name: ./.

Street: ./.

Town: ./.

Country: ./.

Telephone: ./.

Fax: ./.

Teletex: ./.

1.4 Client details

1.4.1 Details of applicant

Name : ANSELL ELECTRICAL PRODUCTS LTD
Street : Unit 6B Stonecross Industrial Park, Yew Tree Way
Town : Warrington WA3 3JD
Country : ./.
Telephone : +44-(0)1942 433508
Fax : +44-(0)1942 433508
Teletex : ./.

Contact : Craig Taylor
Telephone : ./.

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1.4.2 Details of manufacturer

Name : ANSELL ELECTRICAL PRODUCTS LTD
Street : Unit 6B Stonecross Industrial Park, Yew Tree Way
Town : Warrington WA3 3JD
Country : ./.
Telephone : +44-(0)1942 433508
Fax : +44-(0)1942 433508
Teletex : ./.

Contact : Craig Taylor
Telephone : ./.

1.4.3 Details of factory

Name : ANSELL ELECTRICAL PRODUCTS LTD
Street : Unit 6B Stonecross Industrial Park, Yew Tree Way
Town : Warrington WA3 3JD
Country : ./.

1.4.4 Dates of application

Date of receipt of application : 10 November 2017
Date of receipt of test item : 10 November 2017
Date of test : 10 November – 11 December 2017

1.5 Test item Description**1.5.1 Description of test item**

Type of product : EMERGENCY LIGHT
Model/Type reference : ATSLED/3NM
Serial number : ---

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1.5.2 Test item particulars

Test item	EMERGENCY LIGHT
Trade Mark	Ansell
Protection Class	<input checked="" type="checkbox"/> Class I; <input type="checkbox"/> Class II; <input type="checkbox"/> Class III.
Rated Voltage(Range)	220-240V~
Rated Frequency	<input type="checkbox"/> 50Hz; <input type="checkbox"/> 60Hz; <input checked="" type="checkbox"/> 50/60Hz; <input type="checkbox"/> DC; <input type="checkbox"/> Other:
Rated Wattage	6,2W
IP Number	<input checked="" type="checkbox"/> IP20; <input type="checkbox"/> IP24; <input type="checkbox"/> IP65; <input type="checkbox"/> Other:
Supply Connection	<input type="checkbox"/> Type X; <input checked="" type="checkbox"/> Type Y; <input type="checkbox"/> Type Z; <input type="checkbox"/> Pins; <input type="checkbox"/> Appliance inlet; <input checked="" type="checkbox"/> Terminals; <input type="checkbox"/> connecting leads (tails); <input type="checkbox"/> Adaptors; <input type="checkbox"/> connectors; <input type="checkbox"/> Other:
Lamp(s) type	<input type="checkbox"/> Tungsten filament lamps; <input type="checkbox"/> Tungsten halogen lamps; <input type="checkbox"/> Discharge lamps; <input type="checkbox"/> Metal halide lamps; <input type="checkbox"/> High-pressure sodium vapour lamps; <input type="checkbox"/> Single-capped fluorescent lamps ; <input type="checkbox"/> Double-capped fluorescent lamps; <input type="checkbox"/> Self-ballasted lamps; <input checked="" type="checkbox"/> Other: LED Lamp
Luminaire Mobility	<input checked="" type="checkbox"/> Fixed Luminaires; <input type="checkbox"/> Portable Luminaries; <input type="checkbox"/> Recessed Luminaire; <input type="checkbox"/> Track-mounted Luminaires <input type="checkbox"/> Semi-luminaires; <input type="checkbox"/> Other:
Mass of Equipment	2.2 kg
Instructions language	<input checked="" type="checkbox"/> English; <input type="checkbox"/> French; <input type="checkbox"/> Other:
Mounting condition	<input checked="" type="checkbox"/> Luminaires suitable for direct mounting on normally flammable surfaces; 
Ambient Temperature	t _a 25 °C

(all informations was provided by the applicant or detected at the sample)
Please see also attachment

1.6 Test standards

EN 60598-1: 2015
Luminaires — Part 1: General requirements and tests
(BS EN 60598-1: 2015)

EN 60598-2-22: 2014
Luminaires-Part 2-22: Particular requirements
Luminaires for emergency lighting
(BS EN 60598-2-22: 2014)

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



2.2 Test environment

Temperature:	18 ... 25 °C
Relative humidity content:	20 ... 75 %
Air pressure:	86 ... 103 kPa
Details of power supply:	100 ... 280 V, AC
Other parameters:	---

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2.3 Conformity verification - Summary of inspection

Clause	Summary of inspection	Test result		
		N.A.	Pass	Fail
3	Marking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	External and internal wiring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	Provisions for earthing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	Protection against electric shock	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	Resistance to dust, solid objects and moisture	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	Insulation resistance and electric strength, touch current and protective conductor current	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	Creepage distances and clearances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	Endurance tests and thermal tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	Resistance to heat, fire and tracking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14	Screw terminals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Screwless terminals and electrical connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Annexes		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Test case verdicts

N.A.: Test case does not apply to the test object

Pass: Test item does meet the requirement

Fail: Test item does not meet the requirement

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3 Test results basic standard(s)

3.1 Particulars: test item vs. Test requirements

EN 60598-2-22 and/or BS EN 60598-2-22 Part 2-22: Particular requirements Luminaires for emergency lighting	
Possible test case verdicts:	
- test case does not apply to the test object	N(N/A)
- test object does meet the requirement.....	P(Pass)
- test object does not meet the requirement.....	F(Fail)
Test specification:	
Standard	<input checked="" type="checkbox"/> EN 60598-2-22: 2014 used in conjunction with EN 60598-1: 2015 <input checked="" type="checkbox"/> BS EN 60598-2-22: 2014 used in conjunction with BS EN 60598-1: 2015
Test procedure	LVD DOC approval.
Non-standard test method.....	N/A
Test Report Form No.....	
IEC60598_2_22E	
Test Report Form(s) Originator	Centre of Testing Service
Master TRF	Dated Nov 2015
Copyright blank test report	Centre of Testing Service
General remarks:	
“(see remark #)” refers to a remark appended to the report.	
“(see appended table)” refers to a table appended to the report.	
Throughout this report a comma is used as the decimal separator.	
The test results presented in this report relate only to the object tested.	
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Copy of marking plate:

EMERGENCY LIGHT
MODEL No.: ATSLED/3NM
INPUT VOLTAGE: 220-240V~ 50/60Hz
6.2W
BATTERY: 3.6V Ni-Cd 4Ah
BATTERY LIFE: 2017-11~2021-10
LUMINAIRE : 3.5V 6W
 t_a : 0-40°C

   
ANSELL ELECTRICAL PRODUCTS LTD

RISK GROUP 1

Caution: UV emitted from this product.
Minimise exposure to eyes or skin.
Invisible radiation emitted from this product.
IR emitted from the product.

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3.2 General requirements and results

EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.4 (0)	GENERAL TEST REQUIREMENTS		P
22.4 (0.1)	Information for luminaire design considered	Standard Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
22.4 (0.3)	More sections applicable	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
22.4 (-)	Part provide normal lighting, test according relevant part of IEC 60598-2		P
22.4 (-)	Adjacent part fulfils relevant part of this part 2		P
22.4 (-)	Self-contained portable emergency luminaires, requirements according Annex E	(see Annex E)	N

22.5 (2)	CLASSIFICATION		P
22.5 (2.2)	Type of protection	Class I	—
22.5 (2.3)	Degree of protection.....	IP20	—
22.5 (2.4)	Luminaires suitable for direct mounting on normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
22.5 (2.5)	Luminaire for normal use	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire for rough service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
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	Marking is placed on the body of appliance	P
	Format of symbols/text		P
22.6 (3.3)	Additional information		P
	Language of instructions	English	P
22.7 (3.3.1)	Combination luminaires		N
22.6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
22.6 (3.3.3)	Operating temperature		N
22.6 (3.3.4)	Symbol or warning notice		N
22.6 (3.3.5)	Wiring diagram		N
22.6 (3.3.6)	Special conditions		N
22.6 (3.3.7)	Metal halide lamp luminaire – warning		N
22.6 (3.3.8)	Limitation for semi-luminaires		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
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
22.6 (3.3.12)	Clip-mounted luminaire – warning		N
22.6 (3.3.13)	Specifications of protective shields		N
22.6 (3.3.14)	Symbol for nature of supply	~	P
22.6 (3.3.15)	Rated current of socket outlet		N
22.6 (3.3.16)	Rough service luminaire		N
22.6 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
22.6 (3.3.18)	Non-ordinary luminaires with PVC cable		N
22.6 (3.3.19)	Protective conductor current in instruction if applicable		N
22.6 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N
22.6 (3.3.21)	Non replaceable and non-user replaceable light sources information provided		P
	Cautionary symbol		P
22.6 (3.3.22)	Controllable luminaires, classification of insulation provided		N
22.6. (3.3.101)	For luminaires not supplied with terminal block: Adequate warning on the package (EN)		N
22.6 (3.4)	Test with water	Rubbing with water for 15s	P
	Test with hexane	Rubbing with petroleum for 15s	P
	Legible after test	Still legible	P
	Label attached	No curling	P
22.6.1(-)	Supply voltage	220-240V~	P
22.6.2(-)	Classification according to annex B	See marking plate	P
22.6.3(-)	Correct replacement lamp		P
22.6.4(-)	Range of ambient temperatures	ta:0°C ~40°C	P
22.6.5(-)	Fuse ratings and/or indicator lamps	Fuse:3,15A/1,0A	P
22.6.6(-)	Facilities to simulate normal supply failure		P
22.6.7(-)	Marked with correct battery replacement	Ni-Cd Battery 3,6V/4Ah	P
	Non-replaceable batteries		N
22.6.8(-)	Battery marked with date of manufacture	2017,11	P
	Space provided on battery label		P
22.6.9(-)	Correct lamp replacement for combined emergency luminaires		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	Green dot with min 5 mm diameter		N
	Instruction leaflet 22.6.10 – 22.6.12 and 22.6.14 – 22.6.16		N
22.6.10(-)	Replacement of battery or luminaire		P
22.6.11(-)	Details of test facilities		P
22.6.12(-)	Details of connection leads		N
22.6.14(-)	Details of device which changes the mode of operation		P
22.6.15(-)	Photometric data available according 22.17		P
22.6.16(-)	Any normal preparation procedure		P
22.6.17(-)	Marking in 22.6.1, 22.6.2, 22.6.7 and 22.6.20 visible on installed luminaire		P
	Marking in 22.6.5, 22.6.7 and 22.6.9 visible during maintenance		P
22.6.18 (-)	Provided with warning if intended for external plug and socket connections		N
22.6.19 (-)	Instruction leaflet specifies if lamp and/or battery is/are non-replaceable		P
22.6.20 (-)	Marking if luminaire mounted on lighting track systems		N
	Photometric data in instruction leaflet		N

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)	Lampholders		P
22.7 (4.4.1)	Integral lampholder		N
22.7 (4.4.2)	Wiring connection		N
22.7 (4.4.3)	Lampholder for end-to-end mounting		N
22.7 (4.4.4)	Positioning		N
	- pressure test (N)		N
	After test the lampholder comply with relevant standard sheets and show no damage		N
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N
	- bending test (Nm)		N
	After test the lampholder have not moved from its position and show no permanent deformation		N
22.7 (4.4.5)	Peak pulse voltage		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.7 (4.4.6)	Centre contact		N
22.7 (4.4.7)	Parts in rough service luminaires resistant to tracking		N
22.7 (4.4.8)	Lamp connectors	LED lamp	P
22.7 (4.4.9)	Caps and bases correctly used		N
22.7 (4.4.10)	Light source for lampholder or connection according IEC 60061 not connected another way		N
22.7 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
22.7 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
22.7 (4.7)	Terminals and supply connections		P
22.7 (4.7.1)	Contact to metal parts		P
22.7 (4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
22.7 (4.7.3)	Terminals for supply conductors		P
22.7 (4.7.3.1)	Welded connections:		N
	- stranded or solid conductor		N
	- spot welding		N
	- welding between wires		N
	- Type Z attachment		N
	- mechanical test according to 15.8.2		N
	- electrical test according to 15.9		N
	- heat test according to 15.9.2.3 and 15.9.2.4		N
22.7 (4.7.4)	Terminals other than supply connection		P
22.7 (4.7.5)	Heat-resistant wiring/sleeves		N
22.7 (4.7.6)	Multi-pole plug		N
	- test at 30 N		N
22.7 (4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
	- compliance with IEC 61058-1 for electronic switches		N
22.7 (4.9)	Insulating lining and sleeves		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.7 (4.9.1)	Retainment		N
	Method of fixing		N
22.7 (4.9.2)	Insulated linings and sleeves		N
	Resistant to a temperature > 20 °C to the wire temperature or		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C).....		N
22.7 (4.10)	Insulation of Class II luminaires		N
22.7 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N
	Safe installation fixed luminaires		N
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14		N
22.7 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
22.7 (4.10.3)	Retainment of insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lampholder		N
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:		N
	- self-tapping screws		N
	- thread-cutting screws		N
22.7 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
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
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
	Torque test: torque (Nm); part	Screws fixed the enclosure; 0,50Nm	P

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Clause	Requirement - Test	Result	Verdict
	Torque test: torque (Nm); part		N
	Torque test: torque (Nm); part		N
22.7 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
22.7 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm)		N
	- lampholder; torque (Nm)		N
	- push-button switches; torque 0,8 Nm		N
22.7 (4.12.5)	Screwed glands; Torque (Nm)		N
22.7 (4.13)	Mechanical strength		P
22.7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)		N
	- other parts; energy (Nm)	Body, 0,35Nm	P
	1) live parts		P
	2) linings		N
	3) protection		P
	4) covers		P
22.7 (4.13.3)	Straight test finger		P
22.7 (4.13.4)	Rough service luminaires		N
	- IP54 or higher		N
	a) fixed		N
	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
22.7 (4.13.6)	Tumbling barrel		N
22.7 (4.14)	Suspensions, fixings and means of adjusting		P
22.7 (4.14.1)	Mechanical load:		P
(-)	A) Four times the weight	4x2,2kg = 8,8kg	P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm)		N
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N
	metal rod. diameter (mm)		N
	Fixed luminaire or independent control gear without fixing devices		N
22.7 (4.14.2)	Load to flexible cables		N
	Mass (kg)		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	Stress in conductors (N/mm ²)		N
	Mass (kg) of semi-luminaire		N
	Bending moment (Nm) of semi-luminaire		N
22.7 (4.14.3a)	Adjusting devices:		P
	- flexing test; number of cycles	Moving arms; 150 times	P
	- strands broken		P
	- electric strength test afterwards		P
22.7 (4.14.3b)	Luminaires with a means of adjustment intended to be installed within arms reach, shall allow the operation of its intended function without impairing the stability of the luminaire or causing deformation of any part of the construction, nor cause injury due to temperatures above those specified in Table 12.1.		N
22.7 (4.14.3c)	For luminaires intended to be mounted within arms reach, the space surrounding any means of adjustment, except the light beam aperture, up to 5 cm away from the means of adjustment in any direction, shall comply with the temperature limits for the means of adjustment, as specified in Table 12.1.	Out of arms reach	N
22.7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N
22.7 (4.14.5)	Guide pulleys		N
22.7 (4.14.6)	Strain on socket-outlets		N
22.7 (4.15)	Flammable materials:		P
	- glow-wire test 650 °C		N
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		P
	- thermal protection		N
	- electronic circuits exempted		N
22.7 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
22.7 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(compliance with Section 12)	N
22.7 (4.16.1)	Lamp control gear spacing:		N

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Clause	Requirement - Test	Result	Verdict
	- spacing 35 mm		N
	- spacing 10 mm		N
22.7 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
22.7 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N
22.7 (4.17)	Drain holes		N
	Clearance at least 5 mm		N
22.7 (4.18)	Resistance to corrosion:		N
22.7 (4.18.1)	- rust-resistance		N
22.7 (4.18.2)	- season cracking in copper		N
22.7 (4.18.3)	- corrosion of aluminium		N
22.7 (4.19)	Ignitors compatible with ballast		N
22.7 (4.20)	Rough service vibration		N
22.7 (4.21)	Protective shield:		N
22.7 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N
	Shield of glass if tungsten halogen lamps		N
22.7 (4.21.2)	Particles from a shattering lamp not impair safety		N
22.7 (4.21.3)	No direct path		N
22.7 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
22.7 (4.22)	Attachments to lamps not cause overheating or damage		N
22.7 (4.23)	Semi-luminaires comply Class II		N
22.7 (4.24)	Photobiological hazards		P
22.7 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N
22.7 (4.24.2)	Retinal blue light hazard		P
	Luminaires with Ethr :		P
	a) Fixed luminaires		P
	- distance x m, borderline between RG1 and RG2.. :		P
	- marking and instruction according 3.2.23		P
	b) Portable and handheld luminaires		N
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	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
22.7 (4.25)	Mechanical hazard		P
	No sharp point or edges		P
22.7 (4.26)	Short-circuit protection:		N
22.7 (4.26.1)	Adequate means of uninsulated accessible SELV parts		N
22.7 (4.26.2)	Short-circuit test with test chain according 4.26.3		N
	Test chain not melt through		N
	Test sample not exceed values of Table 12.1 and 12.2		N
22.7 (4.27)	Terminal blocks with integrated screwless earthing contacts		N
	Test according Annex V		N
	Pull test of terminal fixing (20 N)		N
	After test, resistance < 0,05 Ω		N
	Pull test of mechanical connection (50 N)		N
	After test, resistance < 0,05 Ω		N
	Voltage drop test, resistance < 0,05 Ω		N
22.7 (4.28)	Fixing of thermal sensing control		N
	Not plug-in or easily replaceable type		N
	Reliably kept in position		N
	No adhesive fixing if UV radiations from a lamp can degrade the fixing		N
	Not outside the luminaire enclosure		N
	Test of adhesive fixing:		N
	Max. temperature on adhesive material ($^{\circ}\text{C}$)		N
	100 cycles between t min and t max		N
	Temperature sensing control still in position		N
22.7 (4.29)	Luminaires with non-replaceable light source		P
	Not possible to replace light source		P
	Live part not accessible after parts have been opened by hand or tools		P
22.7 (4.30)	Luminaires with non-user replaceable light source		N
	If protective cover provide protection against electric shock and marked with "caution, electric shock risk" symbol:		N
	Minimum two fixing means		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.7 (4.31)	Insulation between circuits		N
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N
	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
22.7 (4.31.1)	SELV circuits		N
	Used SELV source		N
	Voltage ≤ ELV		N
	Insulating of SELV circuits from LV supply		N
	Insulating of SELV circuits from other non SELV circuits		N
	Insulating of SELV circuits from FELV		N
	Insulating of SELV circuits from other SELV circuits		N
	SELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to enter socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Plugs and socket-outlets does not have protective conductor contact		N
22.7 (4.31.2)	FELV circuits		N
	Used FELV source		N
	Voltage ≤ ELV		N
	Insulating of FELV circuits from LV supply		N
	FELV circuits insulated from accessible parts according Table X.1		N
	Plugs not able to enter socket-outlets of other voltage systems		N
	Socket outlets does not admit plugs of other voltage systems		N
	Socket-outlets does not have protective conductor contact		N
22.7 (4.31.3)	Other circuits		N
	Other circuits insulated from accessible parts according Table X.1		N
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N
	- conductive parts are connected together		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	- test according 7.2.3 of above		N
	- conductive part not cause an electric shock in case of an insulation fault		N
	- equipotential bonding in master/slave applications		N
	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N
	- slave luminaire constructed as class I		N
22.7 (4.32)	Overvoltage protective devices		N
	Comply with IEC 61643-11		N
	External to control gear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N
22.7 (-)	Luminaire with automatic testing system complies with IEC 62034		N
	Specific items according IEC 61347-2-7 Annex K		N
22.7.1 (-)	No glow starters in circuit in start of or during the emergency mode	LED lamp	N
22.7.2 (-)	Lamp control gears comply with relevant part 2 of IEC 61347		P
22.7.3 (-)	Protective device disconnect luminaire in case of failure		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
22.7.7 (-)	Charging device		P
	Indicator lamp and colour		P
22.7.8 (-)	Battery meet requirements in Annex A	(see Annex A)	P
	Battery designed to provide duration for at least four years		P
	Battery only for emergency function		P
22.7.10 (-)	No switch in self-contained emergency luminaire between battery and emergency lighting lamps		P
	No switch in self-contained and central supplied emergency luminaire isolating emergency circuits from mains supply		N
	Installation according IEC 60364-5-56		P
22.7.11 (-)	Failure of lamp(s) not impair operation of the battery		P
22.7.12 (-)	Batteries in self-contained emergency luminaire comply with cl. 23 of IEC 61347-2-7 if applicable		P

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
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 clause 25 of IEC 61347-2-7		N
22.7.19 (-)	Lamp voltage in self-contained emergency luminaire with tungsten filament lamps not exceed 1,05 rated voltage		N
22.7.20 (-)	Battery in self-contained emergency luminaire according manufacturers specification and Annex A		P
22.7.21 (-)	Batteries and chargers within self-contained emergency luminaire or in remote box		N
22.7.22 (-)	Remote box in self-contained emergency luminaire comply with same requirements as for the luminaire		N
22.7.23 (-)	Locking system for emergency luminaire on track system used for display lighting requires aid of tool		N

22.8 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V).....:	240V~	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Rated pulse voltage (kV).....:	N/A	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....:	Cr:>2,5mm Cl:>1,5mm (limit:Cr/Cl:2,5mm/1,5mm)	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....:	Cr:>2,5mm Cl:>1,5mm (limit:Cr/Cl:2,5mm/1,5mm)	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm).....:		N
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....:		N
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....:	Cr:>2,5mm Cl:>1,5mm (limit:Cr/Cl:2,5mm/1,5mm)	P

22.9 (7)	PROVISION FOR EARTHING	P
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Clause	Requirement - Test	Result	Verdict
22.9 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω:	0,027 Ω	P
	Two self-tapping screws used		N
	Thread-forming screws		N
	Thread-forming screw used in a grove		N
	Earth makes contact first		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
	Protective earthing of the luminaire not via built-in control gear		P
22.9 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
22.9 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	For terminal blocks with integrated screwless earthing contacts, the additional tests of Annex V are to be applied		N
22.9 (7.2.5)	Earth terminal integral part of connector socket		N
22.9 (7.2.6)	Earth terminal adjacent to mains terminals		P
22.9 (7.2.7)	Electrolytic corrosion of the earth terminal		N
22.9 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
22.9 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
22.9 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P

22.10 (14)	SCREW TERMINALS		—
	Separately approved; component list	(see Annex 1)	N
	Part of the luminaire	(see Annex 3)	N

22.10 (15)	SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS		—
	Separately approved; component list	(see Annex 1)	P
	Part of the luminaire	(see Annex 4)	N

22.11 (5)	EXTERNAL AND INTERNAL WIRING		P
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Clause	Requirement - Test	Result	Verdict
22.11 (5.2)	Supply connection and external wiring		N
22.11 (5.2.1)	Means of connection	Terminal	P
	Outdoor luminaire has not PVC insulated external wiring if not class III or SELV ≤ 25 V a.c./60 V d.c. or protected from outdoor environment	H03VV-F; 2X0.5mm ²	P
	Connecting leads (EN)		N
	- without a means for connection to the supply		N
	- terminal block specified		N
	- relevant information provided		N
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N
22.11 (5.2.2)	Type of cable.....		N
	Nominal cross-sectional area (mm ²)		N
	Cables equal to IEC 60227 or IEC 60245		N
	Cables equal to EN 50525 (EN)		N
	Replace table 5.1 – Supply cord		N
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
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
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guards made of insulating material		N
22.11 (5.2.9)	Locking of screwed bushings		N
22.11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
22.11 (5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N

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Clause	Requirement - Test	Result	Verdict
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N
	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
22.11 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
22.11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	60N	P
	- torque test: torque (Nm).....	0.15Nm	P
	- displacement \leq 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
22.11 (5.2.11)	External wiring passing into luminaire		P
22.11 (5.2.12)	Looping-in terminals		N
22.11 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
22.11 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
	No unsafe compatibility		N
22.11 (5.2.16)	Appliance inlets (IEC 60320)		N
	Installation couplers (IEC 61535)		N
	Other appliance inlet or connector according relevant IEC standard		N
22.11 (5.2.17)	Non standardized interconnecting cables properly assembled		N
22.11 (5.2.18)	Used plug in accordance with:		N
	- IEC 60083		N
	- other standard		N

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Clause	Requirement - Test	Result	Verdict
22.11 (5.3)	Internal wiring		P
22.11 (5.3.1)	Internal wiring of suitable size and type		P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A)		N
	- temperatures (see Annex 2)		N
	Green-yellow for earth only		P
22.11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N
	Cross-sectional area (mm ²)		N
	Insulation thickness		N
	Extra insulation added where necessary		N
22.11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness	20AWG	P
22.11 (5.3.1.3)	Double or reinforced insulation for class II		N
22.11 (5.3.1.4)	Conductors without insulation		N
22.11 (5.3.1.5)	SELV current-carrying parts		N
22.11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
22.11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360°		P
22.11 (5.3.3)	Insulating bushings:		N
	- suitable fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- cables with protective sheath		N
22.11 (5.3.4)	Joints and junctions effectively insulated		P
22.11 (5.3.5)	Strain on internal wiring		N
22.11 (5.3.6)	Wire carriers		N
22.11 (5.3.7)	Wire ends not tinned		P

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	Wire ends tinned: no cold flow		N
22.11.1(-)	Emergency lighting Luminaires shall be permanently connected to the mains supply order to prevent any unintended disconnection		P

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
	Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires		N
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		P
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N
	Basic insulation only accessible under lamp or starter replacement		N
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		N
	Double-ended high pressure discharge lamp		N
	Relevant warning according to 3.2.18 fitted to the luminaire		N
22.12 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N
22.12 (8.2.3a)	Class II luminaire:		N
	- basic insulated metal parts not accessible during starter or lamp replacement		N
	- basic insulation not accessible other than during starter or lamp replacement		N
	- glass protective shields not used as supplementary insulation		N
22.12 (8.2.3b)	BC lampholder of metal in class I luminaires shall be earthed		N
22.12 (8.2.3c)	SELV circuits with exposed current carrying parts:		N
	Ordinary luminaire:		N
	- touch current		N
	- no-load voltage		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	Other than ordinary luminaire:		N
	- nominal voltage		N
22.12 (8.2.4)	Portable luminaire have protection independent of supporting surface		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
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)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N
	Portable plug connected luminaire with capacitor		N
	Other plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N

22.13 (12)	ENDURANCE TEST AND THERMAL TEST		P
22.13.1 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 22.14		N
22.13 (12.3)	Endurance test:		P
	- mounting-position.....	As normal use	—
	- test temperature (°C)	50	—
	- total duration (h)	390	—
	- supply voltage: Un factor; calculated voltage (V)	240V~	—
	- lamp used.....	Normal use	—
22.13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible		P
	- no cracks, deformation etc.		P
22.13 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
22.13 (12.4.2c)	Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring (EN)		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
22.13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		—

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	- case of abnormal conditions		—
	- electronic lamp control gear		N
	- measured winding temperature (°C): at 1,1 Un		—
	- measured mounting surface temperature (°C) at 1,1 Un		N
	- calculated mounting surface temperature (°C)		N
	- track-mounted luminaires		N
22.13 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions		—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C)		N
	- track-mounted luminaires		N
22.13 (12.7)	Luminaire without temperature sensing control		N
22.13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N
	Test method 12.7.1.1 or Annex W		—
	Test according to 12.7.1.1:		N
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V)		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex W:		N
	- 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
22.13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		—
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	- calculated temperature of fixing point/exposed part (°C).....:		—
	Ball-pressure test		N
22.13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N
	- case of abnormal conditions		—
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
22.13 (12.7.2)	Luminaire with temperature sensing control		N
	- thermal link.....: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	- case of abnormal conditions		N
	- highest measured temperature of fixing point/ exposed part (°C):		N
	Ball-pressure test:		N
22.13.1 (-)	Endurance test for self-contained luminaire		P
	Operate satisfactory during 50 supply switching		N
22.13.2 (-)	Thermal test 12.4 to 12.5 in IEC 60598-1	(see Annex 2)	P
22.13.3 (-)	Condition of tests		—
22.13.4 (-)	Battery discharge		—
22.13.5 (-)	Reduced temperature		—
22.13.6 (-)	Additional thermal test	(see Annex 2)	P
22.13.7 (-)	Provide Vmin according Clause 20 of IEC 61347-2-7 at the end of operation		P

22.14 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE	P
22.14 (-)	If IP > IP 20 the order of tests as specified in clause 22.12	N
22.14 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP	IP20
	- mounting position during test.....	As normal use
	- fixing screws tightened; torque (Nm)	---
	- tests according to clauses	Cl. 9,2,0 of EN60598-1
	- electric strength test afterwards	P
	a) no deposit in dust-proof luminaire	N
	b) no talcum in dust-tight luminaire	N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	c) no trace of water on current-carrying parts or where it could become a hazard		N
	d) i) For Luminaires without drain holes – no water entry		N
	d) ii) For Luminaires with drain holes – no hazardous water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP 3X and IP 4X)		N
	g) no trace of water on any part of a lamp		N
	h) no damage		N
22.14 (9.3)	Humidity test 48 h	25°C, 93%RH	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		—
	Insulation resistance (MΩ)		—
	SELV:		N
	- between current-carrying parts of different polarity		N
	- between current-carrying parts and mounting surface.....		N
	- between current-carrying parts and metal parts of the luminaire.....		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N
	- insulating bushings as described in Section 5.....		N
	Other than SELV:		P
	- between live parts of different polarity	>50 MΩ	P
	- between live parts and mounting surface	>50 MΩ	P
	- between live parts and metal parts	>50 MΩ	P
	- between live parts of different polarity through action of a switch.....		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N
	- insulating bushings as described in Section 5.....		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.15 (10.2.2)	Electric strength test		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		P
	SELV:		N
	- between current-carrying parts of different polarity		N
	- between current-carrying parts and mounting surface.....		N
	- between current-carrying parts and metal parts of the luminaire		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N
	- insulating bushings as described in Section 5		N
	Other than SELV:		P
	- between live parts of different polarity	1480V/MIN	P
	- between live parts and mounting surface	1480V/MIN	P
	- between live parts and metal parts	1480V/MIN	P
	- between live parts of different polarity through action of a switch.....		N
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N
	- insulating bushings as described in Section 5		N
22.15 (10.3.1)	Touch current or protective conductor current (mA)	Touch current: 0,136 mA	P

22.16 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		P
22.16 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C)	Enclosure; 75°C; 0,7mm	P
	- part tested; temperature (°C)	Terminal; 125°C; 1,1mm	P
22.16 (13.3.1)	Needle flame test (10 s):		P
	- part tested	Terminal	P
	- part tested		N
22.16 (13.3.2)	Glow-wire test (850°C):		P

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
	- part tested	Enclosure	P
	- part tested		N
22.16 (13.4)	Proof tracking test (IEC 60112).....		N
22.16 (-)	Glow-wire test (850°C) if applicable	Enclosure	P
	Glow-wire test (850°C) or fire resistant cable if applicable		N

22.17 (-)	PHOTOMETRIC DATA		P
22.17.1 (-)	Intensity distribution data available		P
	At least 50% of level declared photometric data 5 s after failure of supply		P
	100% of level declared photometric data if high-risk task-area lighting 0,5 s after failure of supply		N
	Photometric measurements according CIE 121 SP1		P
	All values at least minimum declared data		P
22.17.4 (-)	Colour-rendering index		P
22.17.5 (-)	Internally illuminated emergency safety sign meet requirements of ISO 30061		P
	Luminance of permanently illuminated safety sign meet requirements of ISO 3864-1 and ISO 3864-4		P
	Luminance measurements according Annex C		P

22.18 (-)	CHANGEOVER OPERATION		P
	Changeover device comply with Clause 21 of IEC 61347-2-7		P

22.19 (-)	HIGH TEMPERATURE OPERATION		P
	Operation at 70°C		P
	Relative light outputs		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		N
22.21.1 (-)	Self-contained luminaire provided with test facility		N
22.21.2 (-)	Remote testing device not influence proper function of safety illumination		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
22.21.3 (-)	Indicators colour according IEC 60073		N

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3.3 Annex as stated in the standards

EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
A	Annex A: Batteries for self-contained emergency luminaires		P
A.1	Type of batteries	Ni-Cd	P
A.2	Battery conform to relevant standard		P
	Luminaire operate within specific tolerances		P
A.3	Battery capacity	4Ah	P
A.4	Sealed nickel cadmium batteries		P
A.4.1	Battery conform to IEC 61951-1		P
A.4.2.a	Maximum surface temperature of the battery °C		P
A.4.2.b	Maximum overcharge rate 0,08 C ₅ A		P
A.4.2.c	Minimum ambient temperature of the cells 5 °C		P
A.4.2.d	Maximum discharge rates		P
A.5	Sealed nickel metal-hydride batteries		N
A.5.1	Battery conform to IEC 61951-2		N
A.5.2.a	Maximum case temperature of the battery °C		N
A.5.2.b	Maximum overcharge rate 0,08 C ₅ A		N
A.5.2.c	Minimum ambient temperature of the cells 5 °C		N
A.5.2.d	Maximum discharge rates		N
A.6	Valve regulated lead acid batteries		N
A.6.1	Battery conform to relevant part of IEC 60869-21 or IEC 61056-1		N
A.6.2.a	Maximum surface temperature of the battery °C		N
A.6.2.b	Maximum recharge current 0,4 C ₂₀		N
A.6.2.c	Maximum discharge rates		N
A.6.2.d	Maximum r.m.s. ripple current 0,1 C ₂₀		N
A.6.2.e	Minimum ambient temperature of the cells 5 °C		N
A.7	Ambient temperature of the cells measured after 48 h		P
A.8	Alternative operating parameters and evidence if operating outside limits in A.4 and A.5		N
A.9	Battery only replaced by a competent person		P

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

B	Annex B: Luminaire classification					P
	Classified and marked according Annex B.....:	X	0	****	180	P

C	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

E	Annex E: Requirements for self-contained portable emergency luminaires					N
E.5	Classification of luminaires					N
	Base unit and portable emergency luminaires with mains-voltage supplied integrated charger of Class I or Class II					N
	Self-contained portable emergency luminaire without integrated mains-voltage supplied charger of Class III					N
E.5.1	Classified according construction					—
E.5.1.a	Control unit contained in the self-contained portable emergency luminaire	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			—
E.5.1.b	Part of the control unit remains in the base unit	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			—
E.5.2	Classified according operation					—
E.5.2.a	Automatic initiation with manual control	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			—
E.5.2.b	Automatic initiation with automatic control	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			—
E.5.2.c	Manual control	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			—
E.5.3	Classified according photometric performance					—
	Distribution measured according IEC TR 61341					N
E.5.3.a	Narrow beam angels not greater than 15°					N
E.5.3.b	Medium beam angels between 15° and 25°					N
E.5.3.c	Wide beam angels greater than 25°					N
E.5.3.d	Variable beam angels – state the range of angels					N
E.6	Marking					N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
E.6.1	Marking visible after installation		N
	Marking on both parts if separate charging device		N
	Class II symbol only on the charger if separate charging device		N
E.6.2	Instruction for electrical, mechanical and use according classification		N
E.6.3	Warning notice on both parts to return the luminaire to base unit for recharging after use		N
E.6.4	Instruction with photometric data		N
E.7	Construction		N
E.7.1	Control unit completely contained in the luminaire or part of the control unit in the base unit		N
E.7.2	Mechanical strength tests according 4.13 of IEC 60598-1		N
	Mechanical strength tests according 4.13.4 of IEC 60598-1 of portable section		N
E.7.3	Base unit permanently connected to unswitched supply		N
E.7.4	Integral manual switch used to switch the unit between inhibit mode and emergency mode and vice versa		N
	Recharging before supply voltage reach 0,85 times nominal value		N
E.7.5	Integral over current protection device connected immediately after the terminals connecting to the supply		N
E.7.6	Power supply connection between the luminaire and its base unit made without a tool		N
	Connecting devices according relevant standard		N
E.7.7	No access to live parts during or after connection or disconnection		N
E.7.8	Supply cable disconnected from the portable part before use		N
E.7.9	Connection between the portable part and the charger mechanically interlocked to prevent incorrect polarised connection		N
E.7.10	At least two independent replaceable lamps if incandescent lamps		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict
E.7.11	Colour rendering index of any emergency lamps <i>Ra</i> 40 or better		N
E.7.12	Audible and/or visible warning on re-instatement of normal supply		N
E.7.13	Failure of the mains supply the luminaire operate in emergency mode or an indicator identify the location of the luminaire		N
	Load $\leq 0,01C5/h$ of the battery if indicator is used		N
E.7.14	Indicator give warning of low battery capacity remaining		N
E.7.15	Adequate stability		N
	Test at an angle of 15° to the horizontal		N
E.7.16	Adequate stability to illuminate the task area on non-horizontal surface		N
	Test at an angle of 15° to the horizontal		N
E.8	Changeover operation		N
	Requirements according 22.7.10 excluded if integral manual switch		N
	Design avoid switching of charger whilst holding the luminaire		N
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		—

W	ANNEX W, Alternative thermal test for thermoplastic luminaires	N
W.1	Thermal test in regard to fault conditions in lamp controlgear or electronic devices without temperature sensing controls in thermoplastic luminaires for fluorescent lamps $\leq 70W$	—
	Thermal test (failed lamp control gear in plastic luminaires):	N
	Through wiring or looping-in wiring loaded by a current of (A)	—
	- case of abnormal conditions.....	—
	- measured winding temperature (°C): at 1,1 Un....	—

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

	- measured temperature of fixing point/ exposed part (°C): at 1,1 Un		N
	- calculated temperature of fixing point/ exposed part (°C).....		N

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
(3.3)	DK: power supply cords of class I luminaires with label		N
(4.5.1)	DK: socket-outlets		N
(5.2.1)	CY, DK, FI, GB: type of plug		N
22.6.18 (-) 22.11.1 (-)	FR: Permanent fittings		N
22.6.15 (-) 22.17.1 (-)	FR: Photometric characteristics of products are only based on the "rated lumen output"		N

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N
	FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de sécurité pour la construction des immeubles de grande hauteur et leur protection contre les risques d'incendie et de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires:		N
	- 850°C for luminaires in stairways and horizontal travel paths		N
	- 650°C for indoor luminaires		N
	GB: Requirements according to United Kingdom Building Regulation		N

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3.4 Tables

EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

	ANNEX 1: components	P
--	----------------------------	----------

object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Enclosure	C	BAYER MATERIALSCIENCE AG	6485	V-0; 125°C	---	UL E41613 Tested with appliance
Battery	C	WINTONIC BATTERY & MAGNET CO LTD	---	3,6V 4000mAh	---	UL MH28037 Tested with appliance
Wire for battery	C	GUANG DONG XIN LONG ENTERPRISE CO LTD	1015	105°C 600V 20AWG	---	UL E207567 Tested with appliance
Wire for LED lamp	B	DA ZHENG WIRE & CABLE MFG. LTD.	H03VV-H	2 x 0,5 mm ²	---	VDE 40004765
Wire	C	ZHONGSHAN DONGFENG RUIHUA ELECTRONIC LINE MACHINING FACTORY	2468	300V 24AWG	---	UL E307703 Tested with appliance
Earth wire	C	GUANGZHOU ZHIHE ELECTRONIC CO.,LTD	1007	300V 20AWG	---	UL E251728 Tested with appliance
Emergency Driver	B	DPPUL ELECTRONIC CO., LTD.	---	220-240V 50/60Hz	---	CE
Fuse	B	LITTELFUSE, INC	392	1A/3,15A 250V	---	VDE 126983
Terminal	B	YUEQING XINPENG ELECTRONIC COMPONENTS FACTORY	XP126	300V 10A	---	CLZJ 1411264691
Terminal	B	YUEQING XINPENG ELECTRONIC COMPONENTS FACTORY	D238-10-3	450V 10A	---	VDE 40045520
PCB	C	ZHONGSHAN LIXIN CHAIN-BOARD CO LTD	CEM-1	V-0	---	UL E230073 Tested with appliance
Transformer Winding	C	SHANGHAI ZHONGMA MAGNETIC WIRE CO	UEW(QA)	180°C	---	UL E226756 Tested with appliance
Transformer Bobbin	C	CHANGSHU SOUTH-EAST PLASTIC CO LTD	PF2A4-151J(b)	150°C V-0	---	UL E136137 Tested with appliance

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Transformer Insulation tape	C	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY312	130°C	---	UL E188295 Tested with appliance
Transformer Triple insulation wire	C	SHANGHAI CHUANYE ELECTRONIC TECHNOLOGY CO LTD	GPX-B	130 °C	---	UL E243712 Tested with appliance

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

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
	Type reference.....	ATSLED/3NM	—
	Lamp used	LED 6,2W	—
	Lamp control gear used	Built-in control gear	—
	Mounting position of luminaire	As normal use	—
	Supply wattage (W)	7,0W	—
	Supply current (A)	0,029A	—
	Calculated power factor	0,928	—
	Table: measured temperatures corrected for $t_a = 40^\circ\text{C}$:		P
	- abnormal operating mode	Short-circuit batteries charger output	—
	- test 1: rated voltage	3,6V --- The emergency lighting mode	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage	254,4V~ The normal operating mode	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....	---	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage	264V~	—
	Through wiring or looping-in wiring loaded by a current of A during the test	---	—

temperature ($^\circ\text{C}$) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Wire for LED lamp	53,3	45,2	---	90	---	---
Internal wiring	48,7	49,6	---	105	---	---
Terminal(XP126)	47,5	45,8	---	For cl. 13	---	---
Terminal(D238-10-3)	46,0	43,6	---	For cl. 13	---	---
PCB	69,5	51,2	---	130	---	---
Transformer Winding	90,5	64,6	---	130	---	---
Surface of batteries	42,2	44,2	---	50	---	---
Surface of enclosure	41,7	40,9	---	For cl. 13	---	---
Mounting surface	40,2	40,5	---	90	41,7	130

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

	ANNEX 3: screw terminals (part of the luminaire)		N
--	---	--	----------

(14)	SCREW TERMINALS		N
(14.2)	Type of terminal		—
	Rated current (A)		—
(14.3.2.1)	One or more conductors		N
(14.3.2.2)	Special preparation		N
(14.3.2.3)	Terminal size		N
	Cross-sectional area (mm ²)		N
(14.3.3)	Conductor space (mm)		N
(14.4)	Mechanical tests		N
(14.4.1)	Minimum distance		N
(14.4.2)	Cannot slip out		N
(14.4.3)	Special preparation		N
(14.4.4)	Nominal diameter of thread (metric ISO thread) ... :		N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.4.6)	Nominal diameter of thread (mm)		N
	Torque (Nm)		N
(14.4.7)	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N)		N
(14.4.8)	Without undue damage		N

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EN 60598-2-22 and/or BS EN 60598-2-22			
Clause	Requirement - Test	Result	Verdict

	ANNEX 4: screwless terminals (part of the luminaire)		N
--	---	--	----------

(15)	SCREWLESS TERMINALS		N
(15.2)	Type of terminal		—
	Rated current (A)		—
(15.3.1)	Material		N
(15.3.2)	Clamping		N
(15.3.3)	Stop		N
(15.3.4)	Unprepared conductors		N
(15.3.5)	Pressure on insulating material		N
(15.3.6)	Clear connection method		N
(15.3.7)	Clamping independently		N
(15.3.8)	Fixed in position		N
(15.3.10)	Conductor size		N
	Type of conductor		N
(15.5.1)	Terminals internal wiring		N
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples).....		N
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples).....		N
	Insertion force not exceeding 50 N		N
(15.5.2)	Permanent connections: pull-off test (20 N)		N
(15.6)	Electrical tests		N
	Voltage drop (mV) after 1 h (4 samples)		N
	Voltage drop of two inseparable joints		N
	Number of cycles		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples)		N
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples)		N
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....		N
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....		N
(15.7)	Terminals external wiring		N
	Terminal size and rating		N
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N)		N

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Clause	Requirement - Test	Result	Verdict

	Pull test pin or tab terminals (4 samples); pull (N)		N
(15.9)	Contact resistance test		N
	Voltage drop (mV) after 1 h		N

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	--	----	---	---	---	---	---	---
---	Voltage drop of two inseparable joints								N	
---	Voltage drop after 10th alt. 25th cycle								N	
---	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								N	
---	Max. allowed voltage drop (mV).....:								---	
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	--	----	---	---	---	---	---	---
---	Continued ageing: voltage drop after 10th alt. 25th cycle								N	
---	Max. allowed voltage drop (mV).....:								---	
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	--	----	---	---	---	---	---	---
---	Continued ageing: voltage drop after 50th alt. 100th cycle								N	
---	Max. allowed voltage drop (mV).....:								---	
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)	---	---	--	----	---	---	---	---	---	---

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Attachments

- ☒ Photo document
- ☐ BOM
- ☐ CDF (critical data form)
- ☐ Copies of certificates of certified components
- ☐ Instruction manual
- ☐ Circuit diagram
- ☐ Explosion block
- ☐ Other if necessary

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Attachment

Page 1 of 4

Type Designation: EMERGENCY LIGHT, ATSLED/3NM
Report Number: CGZ3171120-03669-L

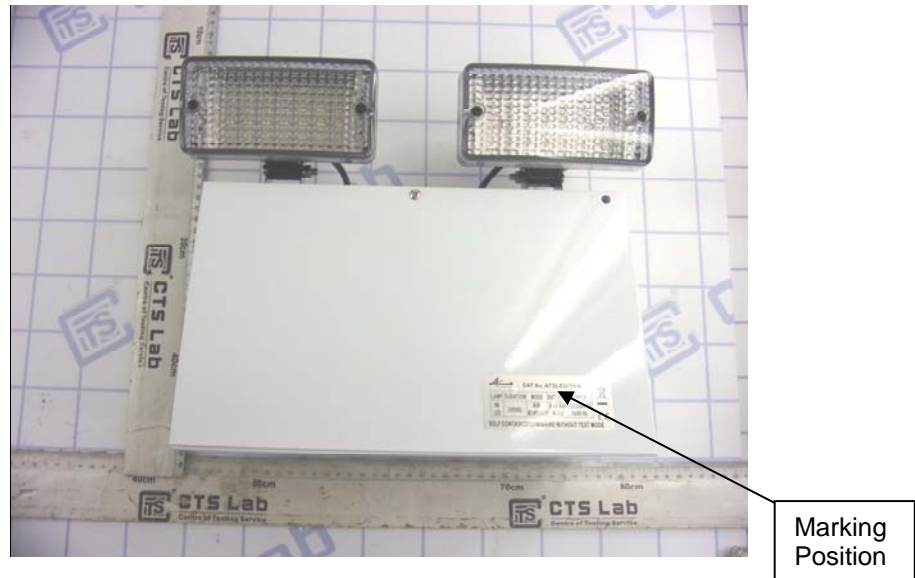


Figure 1 (External view – front)



Figure 2 (External view – rear)

Attachment

Page 2 of 4

Type Designation: EMERGENCY LIGHT, ATSLED/3NM
Report Number: CGZ3171120-03669-L



Figure 3 (External view – side)



Figure 4 (Internal construction)

Attachment

Page 3 of 4

Type Designation: EMERGENCY LIGHT, ATSLED/3NM
Report Number: CGZ3171120-03669-L



Figure 5 (Lamp control - top)

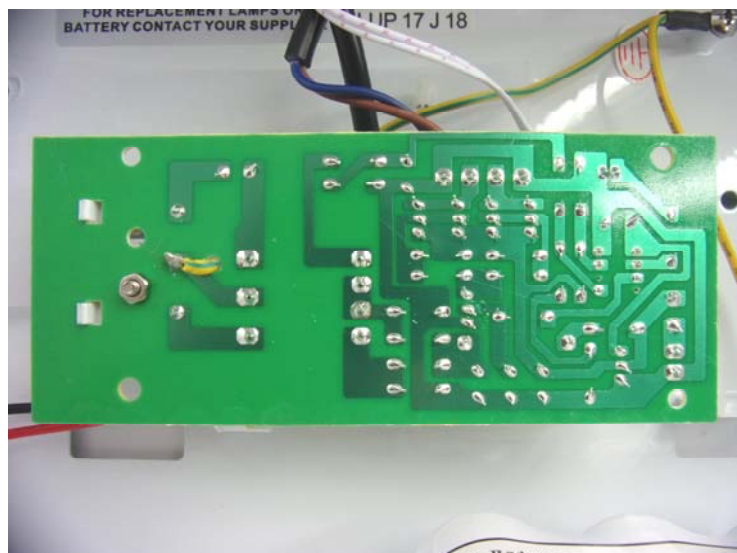


Figure 6 (Lamp control - rear)

Attachment

Page 4 of 4

Type Designation: EMERGENCY LIGHT, ATSLED/3NM
Report Number: CGZ3171120-03669-L



Figure 7 (LED lamp)

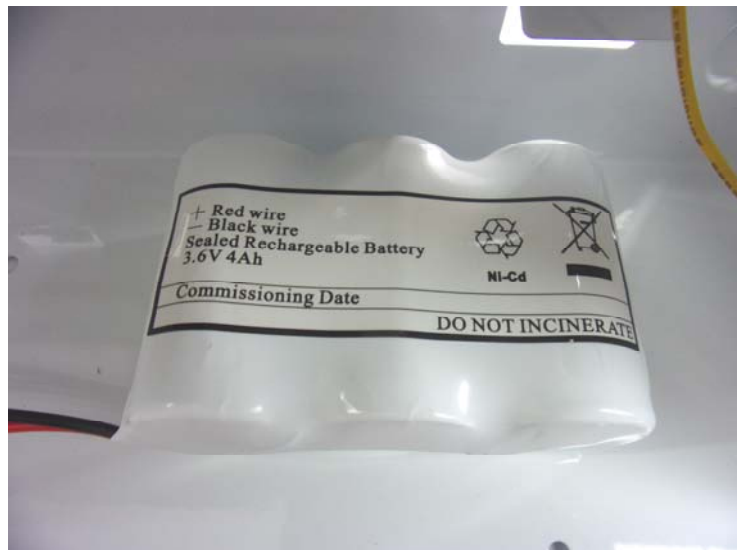


Figure 8 (Battery)