

TEST REPORT EN 60598-1 & EN 60598-2-13 Luminaires Part 1: General requirements and tests Part 2-13: Particular requirements - Ground LED Outdoor In-ground lights	
Report Number.	KEYS240805009001LD-01
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Address	Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China
Testing location	Guangdong KEYS Testing Technology Co., Ltd.
Applicant's Name	GZ lucky dance floor Co;Ltd
Address	No.10, No.1, Third Street, Chatang Xincun, Tanbu Town, HuaduDistrict, Guangzhou, China 510800
Manufacturer	GZ lucky dance floor Co;Ltd
Address	No.10, No.1, Third Street, Chatang Xincun, Tanbu Town, HuaduDistrict, Guangzhou, China 510800
Test specification	N/A
Standard.....	EN IEC 60598-1:2021+ A11:2022 EN 60598-2-13:2006+A1:2012+A2:2016+A11:2021
Procedure deviation	N/A
Non-standard test method	N/A
Test item description	Led dance floor
Trade mark	LK
Model and/or type reference	LK-MD01, LK-M064, LK-RO1, LK-101, LK-ID50C, LK-MD02C, LK-N01, LK-MDO1W, LK-MD01I, LK-MDO1U, LK-MDO2, LK-MDO2W, LK-GL01, LK-GL02, LK-GL03, LK-D36, LK-D36W, LK-D64, LK-D64W, LK-D225, LK-ID64, LK-ID144, LK-D144, LK-D144W, LK-D50, LK-D50W, LK-CH01, LK-CHO1W, LK-CHO2, LK-CHO2W, LK-YTO1I, LK-YTO1W, LK-MB50I, LK-MB50W, LK-TKO1A, LK-TKO1W, LK-F001, LK-F001w, LK-GQ82, LK-GQ13, LK-LD01D, LK-LD02, LK-LD03
Rating(s).....	AC 90-260V, 50/60Hz, 15W
Test case verdicts	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)



General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.

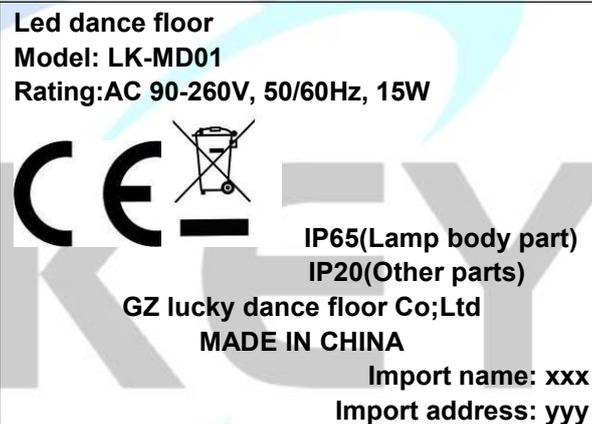
"(see Annex #)" refers to an annex appended to the report.

Clause numbers between brackets refer to clauses in IEC 60598-1 (EN 60598-1)

Throughout this report a comma is used as the decimal separator.

Attached with:

A. photo documentation

Copy of marking plate:**Note:**

1. xxx means importer company name; yyy means importer company address.
2. The marking for the other models are identical as above except the model no. only.
3. As declared by client that the name (or registered trade mark) and address of the certificate holder (manufacturer) or the importer or authorized representative based within the European Economic Area will be clearly affixed on the product or where that is not possible, on the packaging or in a document accompanying the product.
3. The height of letters and numerals was not less than 2mm.



4. The height of symbol "■" was not less than 7mm.
5. The height of the other graphical symbols was not less than 5mm.

Test item particulars	: See test report
Classification of installation and use	: Class I
Supply Connection	: connected to AC Mains
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 :	
Date of receipt of test item	: July 26, 2024
Date (s) of performance of tests	: July 26, 2024 to August 9, 2024
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Name and address of factory (ies)	: same as manufacturer
<p>General product information:</p> <p>1. The appliance/equipment is "Led dance floor " with models LK-MD01, LK-M064, LK-RO1, LK-101, LK-ID50C, LK-MD02C, LK-N01, LK-MDO1W, LK-MD01I, LK-MDO1U, LK-MDO2, LK-MDO2W, LK-GL01, LK-GL02, LK-GL03, LK-D36, LK-D36W, LK-D64, LK-D64W, LK-D225, LK-ID64, LK-ID144, LK-D144, LK-D144W, LK-D50, LK-D50W, LK-CH01, LK-CHO1W, LK-CHO2, LK-CHO2W, LK-YTO1I, LK-YTO1W, LK-MB50I, LK-MB50W, LK-TKO1A, LK-TKO1W, LK-F001, LK-F001w, LK-GQ82, LK-GQ13, LK-LD01D,LK-LD02, LK-LD03", as class I appliance for outdoor use only.</p> <p>2.All models are identical, except for model name size and rated Power. Model "LK-MD01", all test(s) were performed on it.</p> <p>3The ambient temperature is 25°C.</p>	

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
13.1(0)	SCOPE		P
13.1(0.1)	More sections applicable.....	Yes [√] No []	—
13.4(2)	CLASSIFICATION		P
13.4(2.2)	Type of protection.....	Class I	—
13.4(2.3)	Degree of protection.....	IP65(Lamp body part) IP20(Other parts)	—
13.4(2.4)	Portable or handheld luminaire	No	—
	FIXED LUMINAIRE suitable for normally flammable surfaces.....	Yes	—
	FIXED LUMINAIRE suitable for non-combustible materials only	No	—
13.4(2.5)	Luminaire for normal use	Yes	—
	Luminaire for rough service	No	—
13.5(3)	MARKING		P
13.5.1(-)	Rated load in N		P
13.5.2(-)	Rated maximum surface temperature T		P
13.5.3(-)	Concerning the external connecting box		N
13.5(3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
13.5(3.3)	Additional information		P
	Language of instructions	English	P
13.5(3.3.1)	Combination luminaires		N
13.5(3.3.2)	Nominal frequency in Hz	50-60Hz	P
13.5(3.3.3)	Operating temperature		N
13.5(3.3.4)	Symbol or warning notice		N
13.5(3.3.5)	Wiring diagram		P
13.5(3.3.6)	Special conditions		N
13.5(3.3.7)	Metal halid lamp luminaire – warning		N
13.5(3.3.8)	Limitation for semi-luminaires		N
13.5(3.3.9)	Power factor and supply current		P
13.5(3.3.10)	Suitability for use indoors		N
13.5(3.3.11)	Luminaires with remote control		N
13.5(3.3.12)	Clip-mounted luminaire – warning		N
13.5(3.3.13)	Specifications of protective shields		N
13.5(3.3.14)	Symbol for nature of supply	~	P

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Cl.	Requirement – Test	Result	Verdict
13.5(3.3.15)	Rated current of socket outlet		N
13.5(3.3.16)	Rough service luminaire		N
13.5(3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	type Y attachment	P
13.5(3.3.18)	Non-ordinary luminaires with PVC cable		N
13.5(3.3.19)	The protective conductor current shall be clearly stated in the manufacturers' instructions		N
13.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N
13.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided	non-user replaceable light source	P
	Cautionary symbol		N
13.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N
13.5(3.3.101)	Terminal block supplied with luminaire		N
13.5(3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
13.6(4)	CONSTRUCTION		P
13.6.1	Resistance to static load		P
13.6.2	Resistance to torque and shear loads		P
13.6.2.1	Torque test		P
13.6.2.2	Shear load test		P
13.6.3	Resistance to thermal shock		P
13.6.4	edges		P
13.6.5	Mechanical strength		P
13.6(4.2)	Components replaceable without difficulty		P
13.6(4.3)	Wireways smooth and free from sharp edges		P
13.6(4.4)	Lampholders		N
13.6(4.4.1)	Integral lampholder		N
13.6(4.4.2)	Wiring connection		N
13.6(4.4.3)	Lampholder for end-to-end mounting		N
13.6(4.4.4)	Positioning		N
13.6(4.4.5)	Peak pulse voltage		N
13.6(4.4.6)	Centre contact		N
13.6(4.4.7)	Rough service luminaires		N
13.6(4.4.8)	Lamp connectors		N
13.6(4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N

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Cl.	Requirement – Test	Result	Verdict
	Starter holder class II construction		N
13.6(4.6)	Terminal blocks		P
	Tails		N
	Unsecured blocks		N
13.6(4.7)	Terminals and supply connections		P
13.6(4.7.1)	Contact to metal parts		P
13.6(4.7.2)	Test 8 mm live conductor		P
	Test 8 mm earth conductor		P
13.6(4.7.3)	Terminals for supply conductors		N
13.6(4.7.4)	Terminals other than supply connection		N
13.6(4.7.5)	Heat-resistant wiring/sleeves		N
13.6(4.7.6)	Multi-pole plug		N
13.6(4.8)	Switches:		N
	- adequate rating		N
	- adequate fixing		N
	- polarized supply		N
13.6(4.9)	Insulating lining and sleeves		N
13.6(4.9.1)	Retainment		N
	Method of fixing.....:		N
13.6(4.9.2)	Insulated linings and sleeves		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C)		N
13.6(4.10)	Insulation of Class II luminaires		N
13.6(4.10.1)	No contact, mounting surface - accessible metal parts - wiring of basic insulation		N
	Safe installation fixed luminaires		N
	Capacitors		N
	Interference suppression capacitors according to IEC 6LD519014-14		N
13.6(4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
13.6(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
13.6(4.11)	Electrical connections		P

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
13.6(4.11.1)	Contact pressure	Not transmitted through insulating material	P
13.6(4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N
	- at least two self-tapping screws		N
13.6(4.11.3)	Screw locking:		P
	- spring washer		N
	- rivets		N
13.6(4.11.4)	Material of current-carrying parts		P
13.6(4.11.5)	No contact to wood	No wood material in the luminaires	P
13.6(4.11.6)	Electro-mechanical contact systems	No such systems	N
13.6(4.12)	Mechanical connections and glands		P
13.6(4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part.....	Fixed metal cover: 0.5Nm	P
	Torque test: torque (Nm); part.....		N
13.6(4.12.2)	Screws with diameter < 3 mm screwed into metal		P
13.6(4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm).....		N
	- lampholder; torque (Nm).....		N
	- push-button switches; torque 0,8 Nm.....		N
13.6(4.12.5)	Screwed glands; force (N).....		P
13.6(4.13)	Mechanical strength		P
13.6(4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....		N
	- other parts; energy (Nm).....	0.5Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
13.6(4.13.3)	Straight test finger		P
13.6(4.13.4)	Rough service luminaires		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

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Cl.	Requirement – Test	Result	Verdict
13.6(4.13.6)	Tumbling barrel		N
13.6(4.14)	Suspensions and adjusting devices		N
13.6(4.14.1)	Mechanical load:		N
	A) four times the weight		N
	B) torque 2,5 Nm		N
	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
13.6(4.14.2)	Load to flexible cables		N
	Mass (kg).....		N
	Stress in conductors (N/mm ²).....		N
	Semi-luminaires – mass (kg)		N
	Semi-luminaires – bending moment (Nm).....		N
13.6(4.14.3)	Adjusting devices:		N
	- flexing test; number of cycles.....		N
	- strands broken		N
	- electric strength test afterwards		N
13.6(4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No telescopic tubes	N
13.6(4.14.5)	Guide pulleys	No guide pulleys	N
13.6(4.14.6)	Strain on socket-outlets	No socket-outlet	N
13.6(4.15)	Flammable materials:		P
	- glow-wire test 650 °C		P
	- spacing \geq 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
13.6(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
13.6(4.16)	Luminaires marked with F-symbol		P
	No lamp control gear		N
13.6(4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N

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Cl.	Requirement – Test	Result	Verdict
	- spacing 10 mm		N
13.6(4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
13.6(4.17)	Drain holes		N
	Clearance at least 5 mm		N
13.6(4.18)	Resistance to corrosion:		P
13.6(4.18.1)	- rust-resistance		P
13.6(4.18.2)	- season cracking in copper		N
13.6(4.18.3)	- corrosion of aluminium		P
13.6(4.19)	Igniters compatible with ballast		N
13.6(4.20)	Rough service vibration.....		N
13.6(4.21)	Protective shield:		N
13.6(4.21.1)	Shield fitted		N
13.6(4.21.2)	Particles from a shattering lamp not impair safety		N
13.6(4.21.3)	No direct path		N
13.6(4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
13.6(4.22)	Attachments to lamps	No attachments	N
13.6(4.23)	Semi-luminaires comply class II		N
13.6 (4.24)	UV radiation, metal halide lamps		N
13.6 (4.24.1)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N
13.6 (4.24.2)	Retinal blue light hazard		P
	Luminaires with E_{thr} :		P
	a) Fixed luminaires		N
	- distance x m, borderline between RG1 and RG2.....		N
	- marking and instruction according 3.2.23		N
	b) Portable and handheld luminaires		N
	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
13.6(4.25)	No sharp point or edges	No sharp points or edges	P
13.6(4.26)	Short-circuit protection:		N
13.6(4.26.1)	Uninsulated accessible SELV parts		N
13.6(4.26.2)	Short-circuit test		N

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
13.6(4.26.3)	Test chain according to IEC 61032		N
13.6 (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
	Test according Annex V		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
13.6 (4.29)	Luminaires with non-replaceable light source		N
	Not possible to replace light source		N
	Live part not accessible after parts have been opened by hand or tools		N
13.6 (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:		N
	Minimum two fixing means		P
13.6 (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
	Used SELV source		P
	Voltage \leq ELV		N
	Insulating of SELV circuits from LV supply		N
	Insulating of SELV circuits from other non SELV circuits		P
	Insulating of SELV circuits from FELV		N

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Cl.	Requirement – Test	Result	Verdict
	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
13.6 (4.31.2)	FELV circuits		N
	Used FELV source		N
	Voltage \leq 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
13.6 (4.31.3)	Other circuits		P
	Other circuits insulated from accessible parts according Table X.1		P
	Class II construction with equipotential bonding for protection against indirect contacts with live parts:		N
	- conductive parts are connected together		N
	- 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
13.6 (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
13.10(5)	EXTERNAL AND INTERNAL WIRING		P

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
13.10(5.2)	Supply connection and external wiring		P
13.10(5.2.1)	Means of connection.....	Terminal block	N
13.10(5.2.2)	Type of cable.....		N
	Nominal cross-sectional area (mm ²).....		N
13.10(5.2.3)	Type of attachment, X, Y or Z		N
13.10(5.2.5)	Type Z not connected to screws		N
13.10(5.2.6)	Cable entries:		N
	- suitable for introduction		N
	- adequate degree of protection		N
13.10(5.2.7)	Cable entries through rigid material have rounded edges		N
13.10(5.2.8)	Insulating bushings:		N
	- suitably fixed		N
	- material in bushings		N
	- tubes or guards made of insulating material		N
13.10(5.2.9)	Locking of screwed bushings		N
13.10(5.2.10)	Cord anchorage:		N
	- covering protected from abrasion		N
	- clear how to be effective		N
	- no mechanical or thermal stress		N
	- no tying of cables into knots etc.		N
	- insulating material or lining		N
13.10(5.2.10.1)	Cord anchorage for type X attachment:		N
	a) at least one part fixed		N
	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
13.10(5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N
13.10(5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N).....		N

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Cl.	Requirement – Test	Result	Verdict
	- torque test: torque (Nm).....		N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
13.10(5.2.11)	External wiring passing into luminaire		N
13.10(5.2.12)	Looping-in terminals		N
13.10(5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
13.10(5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
13.10(5.2.15)	Colour code low voltage		N
13.10(5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		N
13.10(5.3)	Internal wiring		P
13.10(5.3.1)	Internal wiring of suitable size and type	suitable size	P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A).....		N
	- temperatures.....		N
	Green-yellow for earth only		N
13.10(5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm ²).....	0.75 mm ²	P
	Insulation thickness		P
	Extra insulation added where necessary		P
13.10(5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
13.10(5.3.1.3)	Double or reinforced insulation for class II		N
13.10(5.3.1.4)	Conductors without insulation		N
13.10(5.3.1.5)	SELV current-carrying parts		N
13.10(5.3.1.6)	Insulation thickness other than PVC or rubber		N
13.10(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
13.10(5.3.3)	Openings		N

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
	Bushings not removable		N
	Bushings in sharp openings		N
	Cables with protective sheath		N
13.10(5.3.4)	Joints and junctions effectively insulated		N
13.10(5.3.5)	Strain on internal wiring		N
13.10(5.3.6)	Wire carriers		N
13.10(5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N

13.11(8)	PROTECTION AGAINST ELECTRIC SHOCK		P
13.11(8.2.1)	Live parts not accessible		P
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N
13.11(8.2.2)	Portable luminaire adjusted in most unfavourable position		N
13.11(8.2.3)	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
	Class I luminaire with BC lampholder		N
13.11(8.2.4)	Portable luminaire:		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
13.11(8.2.6)	Covers reliably secured		P
13.11(8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		P
	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
13.13(9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
13.13(9.2)	Tests for ingress of dust, solid objects and moisture:		P

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
	- classification according to IP.....	IP65(Lamp body part) IP20(Other parts)	P
	- 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
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire		P
	e) no contact with live parts (IP 2X)		N
	e) no entry into enclosure (IP 3X and IP 4X)		N
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N
	f) no trace of water on part of lamp requiring protection from splashing water		P
	g) no damage of protective shield or glass envelope		P
13.13(9.3)	Humidity test 48 h	R.H.:93% T:25°C	P

13.14(10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
13.14(10.2.1)	Insulation resistance test		P
	Insulation resistance (MΩ):		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

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....		N
	- Insulation bushings as described in Section 5		N
	Other than SELV:		P
	- between live parts of different polarity.....	>100M Ω	P
	- between live parts and mounting surface.....	>100M Ω	P
	- between live parts and enclosure.....	>100M Ω	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
	- Insulation bushings as described in Section 5		N
13.14(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
	- Insulation bushings as described in Section 5		N
	Other than SELV:		P
	- between live parts of different polarity.....	1520V	P
	- between live parts and mounting surface.....	1520V	P
	- between live parts and enclosure.....	1520V	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

EN 60598-1 & EN 60598-2-13			
Cl.	Requirement – Test	Result	Verdict

	- Insulation bushings as described in Section 5		N
13.14(10.3.1)	Leakage current (mA).....	0,06mA	P

13.7(11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V).....	90-260V	P
	Voltage form	/	N
	PTI	< 600	N
	Rated pulse voltage (Kv)	--	N
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....	cr (mm)>5.0 cl (mm)>3.0	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....	cr (mm)>5.0 cl (mm)>3.0	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) Current-carrying parts of switches and metal parts, after removal of insulation: cr (mm); cl (mm).....		N
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....		P

13.12(12)	ENDURANCE TEST AND THERMAL TEST		P
13.12(12.3)	Endurance test:		P
	- mounting- position.....	As normal used	—
	- test temperature (°C).....	35°C	—
	- total duration (h).....	240h	—
	- supply voltage: Un factor; calculated voltage (V).....	286V	—
	- lamp used.....	LED	—
13.12(12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible	Marking still legible and shows no curling	P
	- no cracks, deformation etc.		P
13.12(12.4)	Thermal test (normal operation)	(see Annex 2)	P
13.12(12.5)	Thermal test (abnormal operation)	(see Annex 2)	N

13.12(12.6)	Thermal test (failed lamp control gear condition):	N
13.12(12.6.1)	- 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
13.12(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
13.12(12.7)	Thermal test (failed lamp control gear in plastic luminaries):	N
	- case of abnormal conditions.....	—
13.12(12.7.1)	- measured winding temperature (°C) at 1,1 Un.	—
	- measured temperature of fixing point/ exposed part (°C) at 1,1 Un.....	N
	- calculated temperature of fixing point/ exposed part (°C).....	N
13.12(12.7.2)	Temperature sensing control	N
	- thermal link	N
	- manual reset cut-out	N
	- auto reset cut-out	N
	- measured temperature of fixing point/ exposed part (°C)	N

13.15(13)	RESISTANCE TO HEAT, FIRE AND TRACKING	P
13.15(13.2.1)	Ball-pressure test:	P
	- part tested; temperature (°C)..... DC connector:125°C, 1.3mm	P
	- part tested; temperature (°C).....	N
13.15(13.3.1)	Needle flame test (10 s):	P
	- part tested..... DC connector	P
	- part tested.....	N
13.15(13.3.2)	Glow wire test (650°C):	N
	- part tested.....	N
	- part tested.....	N
13.15(13.4.1)	Tracking test: part tested.....	N
(14)	SCREW TERMINALS	N

	Separately approved; component list		N
	Part of the luminaire		N

(15)	SCREWLESS TERMINALS		N
	Separately approved; component list		N
	Part of the luminaire		N

	COMMON MODIFICATIONS		N
(3.3.101 + 5.2.1)	For luminaires connected by tails, information about terminal block		N
(5.2.2)	Cables equal to HD 21 S2 or HD 22 S2		N
(5.2.15)	Colour code low voltage		N

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS		N
(2.2)	Class 0 not accepted		N
(3.3)	DK: power supply cord with label		N
	IT: warning label on Class 0 luminaire		N
(4.5.1)	DK: socket-outlets		N
(4.5.1)	FR: socket-outlets		N
(5.2.1)	DK, FI, SE, GB: type of plug		N

ZC	ANNEX ZC, NATIONAL DEVIATIONS		N
(13.3)	DK: Needle flame test or glow-wire test 750°C for luminaires in access routes		N
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N
(13.3.2)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public and workers		N

	ANNEX 1: components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
LED Driver	Interchangeable	Interchangeable	Input: 90-260V 50-60Hz Output: DC12V	EN/IEC 61347-1 EN/IEC 61347-2-13	CE
LED Driver	Interchangeable	Interchangeable	Input: 90-260V 50-60Hz Output: DC24V	EN/IEC 61347-1 EN/IEC 61347-2-13	CE
Internal wire	Interchangeable	Interchangeable	2 x0,5 mm ²	EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE

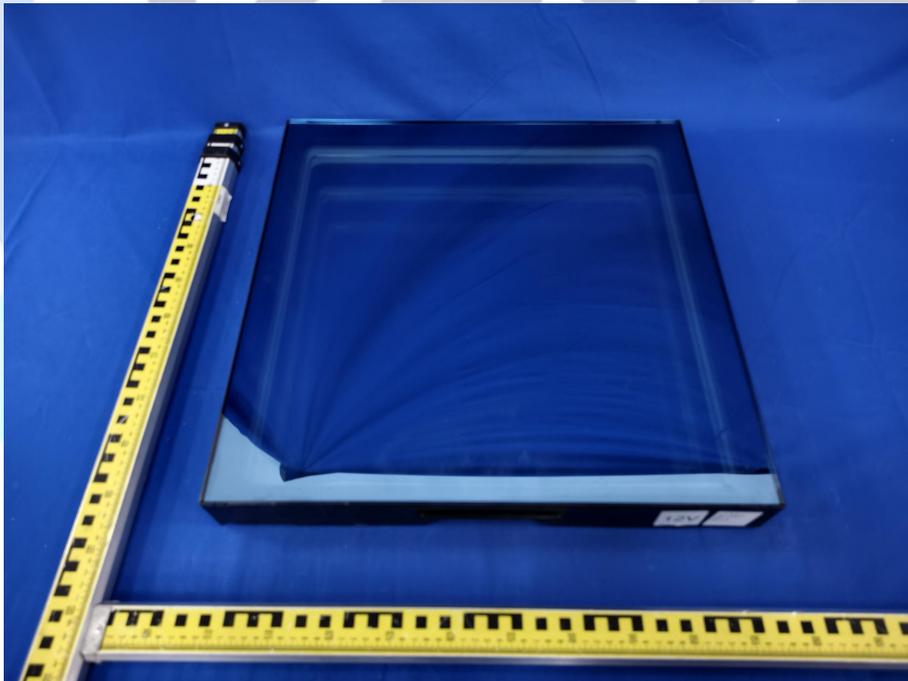
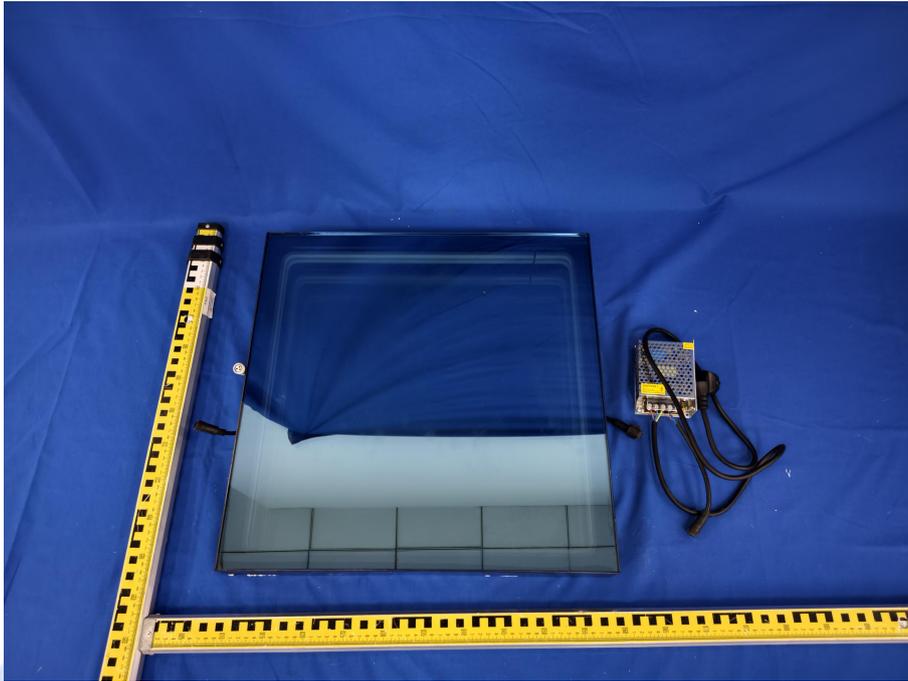
	ANNEX 2: temperature measurements, thermal tests of Section 12	P
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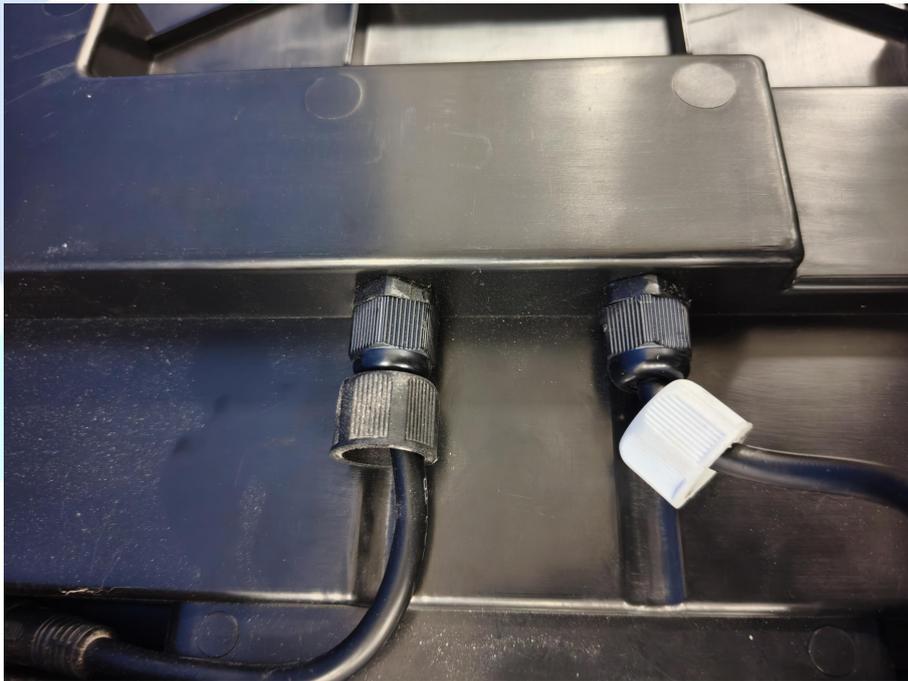
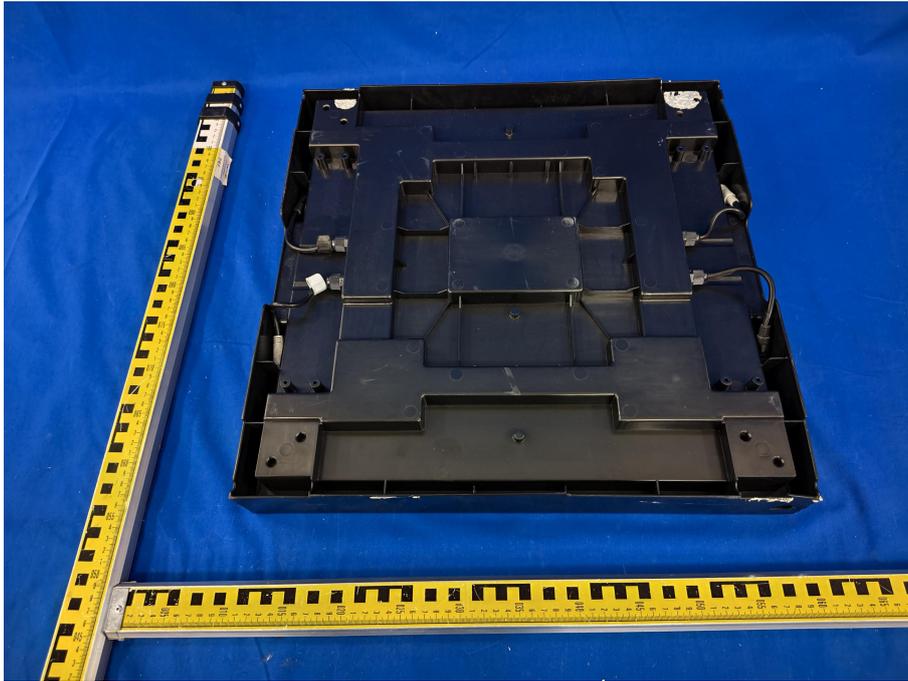
	Type reference.....	LK-MD01				---
	Lamp used.....	LED				---
	Lamp control gear used.....	LED Driver				---
	Mounting position of luminaire.....	normal position				---
	Supply voltage (V).....	286V				
	Supply wattage (W).....	17.8W				---
	Supply current (A).....	0.03A				---
	Calculated power factor.....	-				---
	Table: measured temperatures corrected for $t_a = 25\text{ }^\circ\text{C}$:					
	- abnormal operating mode.....	--				---
	- test 1: rated voltage.....	--				---
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1.06*260V				---
	- 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.....	--				---
temperature ($^\circ\text{C}$) of part	clause 12.4 – normal				clause 12.5 – abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Lighting surface	--	65.6	--	100	--	--
Leads wire	--	51.4	--	105	--	--
Terminal block	--	43.6	--	80	--	--
Internal wire	--	41.8	--	90	--	--
LED Driver	--	62.6	--	90	--	--
Shell	--	33.2	--	85	--	--
Metal surface	--	50.3	--	Ref.	--	--
Mounting surface	--	30.1	--	90	--	--
	ANNEX 3: screw terminals (part of the luminaire)					N
(14)	SCREW TERMINALS					--
(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					--
(14.4.1)	Minimum distance					N
(14.4.2)	Cannot slip out					N
(14.4.3)	Special preparation					N

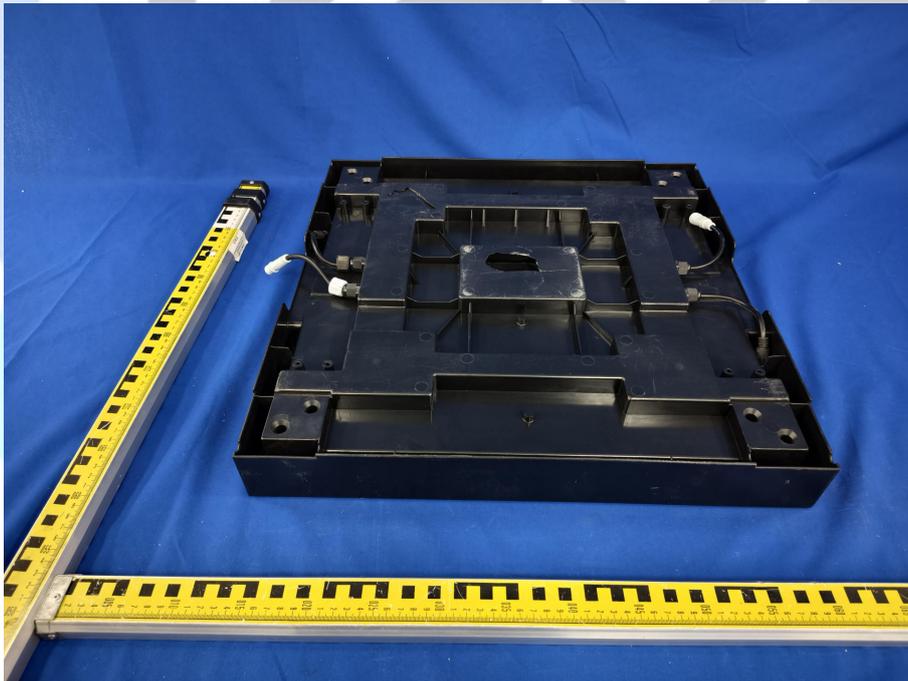
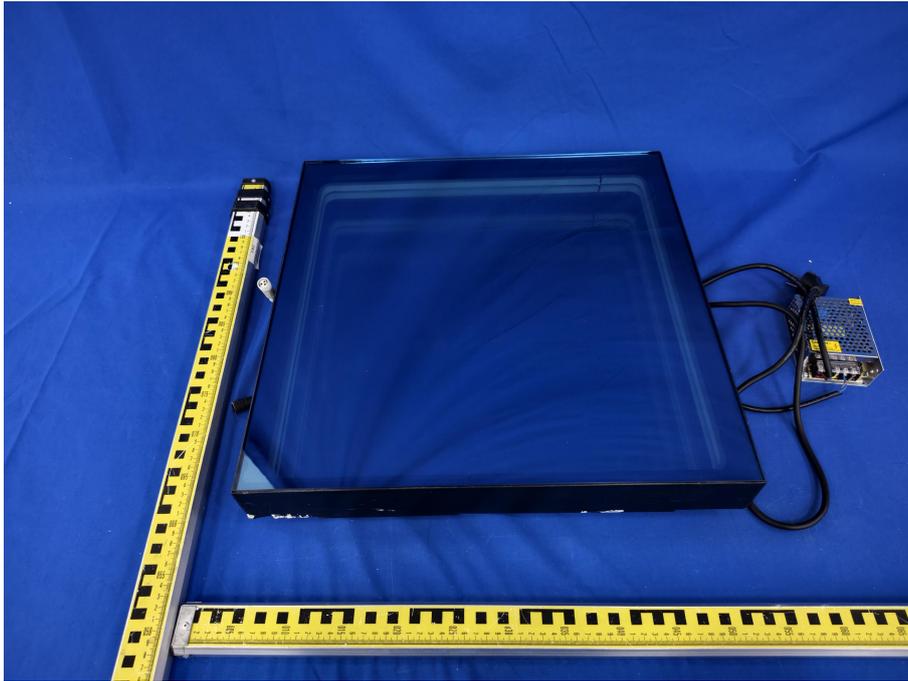
(14.4.4)	Nominal diameter of thread (metric ISO thread)..		N
	External wiring		N
	No soft metal		N
(14.4.5)	Corrosion		N
(14.4.6)	Nominal diameter of thread (mm).....		N
	Torque (Nm).....		N
(14.4.7)	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N).....		N
(14.4.8)	Without undue damage		N
	ANNEX 4: SCREWLESS TERMINALS (PART OF THE LUMINAIRE)		N
(15)	SCREWLESS TERMINALS		--
(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 (4 samples); pull (N)										N
	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										
	Voltage drop after 10th alt. 25th cycle										
	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)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										
	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										
	Max. allowed voltage drop (mV).....:										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											

Photos







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--The End of Report--