

APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

EN POWER ELECTRONICS LLC

Flexible led strip

Model No.: See in Annex page at the end of this report

Prepared for : EN POWER ELECTRONICS LLC

Address: Office#M01, Mezzanine Floor, Al Marri 7 building Besides Dewa Power Station, Manama Street 51 Ras Al Khor Industrial 1, P.o box: 126081, Dubai - UAE

Prepared By : Shenzhen Hong Testing technology Co., Ltd

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Date of Test: January 02, 2020- January 06, 2020

Date of Report: January 06, 2020

Report Number: HTS2001060015



Version Number: REV0




TEST REPORT

EN 60598-2-1

Part 2: Particular requirements

Section 1 – Fixed general purpose luminaires

Report Reference No	HTS2001060015	
Tested by (+ signature)	Tom Zhu <i>Tom Zhu</i>	
Approved by (+ signature)	Frank Hu <i>Frank Hu</i>	
Date of issue	January 06, 2020	
Testing Laboratory	Shenzhen Hong Testing technology Co., Ltd	
Address	3F, JinHai building 2, JinHai road XiXiang street Baoan district ShenZhen , P.R. China	
Testing procedure	TL <input checked="" type="checkbox"/> RMT <input type="checkbox"/> SMT <input type="checkbox"/> WMT <input type="checkbox"/> TMP <input type="checkbox"/>	
Testing location/ address	(Same as above)	
Applicant's name	EN POWER ELECTRONICS LLC	
Address	Office#M01, Mezzanine Floor, Al Marri 7 building Besides Dewa Power Station, Manama Street 51 Ras Al Khor Industrial 1, P.o box: 126081, Dubai - UAE	
Test specification:		
Standard	<input checked="" type="checkbox"/> EN 60598-2-1:1989 <input type="checkbox"/> IEC 60598-2-1:1979 <input checked="" type="checkbox"/> EN 60598-1:2015 <input type="checkbox"/> IEC 60598-1:2014	
Test procedure	LVD	
Non-standard test method	N/A	
Test item description	Flexible led strip	
Trade mark		
Manufacturer	EN POWER ELECTRONICS LLC	
Address	Office#M01, Mezzanine Floor, Al Marri 7 building Besides Dewa Power Station, Manama Street 51 Ras Al Khor Industrial 1, P.o box: 126081, Dubai - UAE	
Model/Type reference	BR-F3528xx60-xx-x-Fx-Vx	
Model difference	Only with the difference power with all models	
Ratings	12-24VDC	

<p>Test item particulars</p> <p>Classification of installation and use: Class III</p> <p>Supply Connection: AC Mains</p> <p>Possible test case verdicts:</p> <p>- test case does not apply to the test object: N (not applicable)</p> <p>- test object does meet the requirement: P (Pass)</p> <p>- test object does not meet the requirement: F (Fail)</p>
<p>Testing</p> <p>Date of receipt of test item: January 02, 2020</p> <p>Date (s) of performance of tests.....: January 06, 2020</p>
<p>General remarks:</p> <p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>List of test equipment must be kept on file and available for review. Throughout this report a comma (point) is used as the decimal separator.</p>
<p>Summary of the test report:</p> <p>The complete report including following parts:</p> <ol style="list-style-type: none"> 1. All clause of EN 60598-1:2015 and EN 60598-2-1:1989; 2. Circuit components, see annex 1; 3. Temperature measurements, thermal tests of Section 12, see annex 2; 4. Tests according to standard IEC/TR 62778: 2014, see annex 5; 5. Appendix 1 For Equipment List; 6. Appendix 2 For Photo Documentation.
<p>Marking plate:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> <p>Flexible led strip</p> <p>Model No.: BR-F3528xx60-xx-x-Fx-Vx</p> <p>Ratings: 24VDC</p> </div> <div style="text-align: right;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin: 10px 0;">   </div> <p>Manufacturer: EN POWER ELECTRONICS LLC</p> <p>Address: Office#M01, Mezzanine Floor, Al Marri 7 building Besides Dewa Power Station, Manama Street 51 Ras Al Khor Industrial 1, P.o box: 126081, Dubai - UAE</p> <p>Importer: XXX</p> <p>Address: XXX</p> </div> <p>Note:</p> <ol style="list-style-type: none"> 1. The height of the letters is not less than 2mm, the height of the logo is not less than 7mm, height of CE mark at least 5mm, height of other marks at least 5mm. <p>The manufacturer can design the label by itself if contains all of information above.</p>
<p>These tests fulfil the requirements of standard EN ISO/IEC 17025.</p>

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1.2 (0)	GENERAL TEST REQUIREMENTS		P
1.2 (0.1)	Information for luminaire design considered.....:	Standard Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
1.2 (0.3)	More sections applicable.....:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—

1.4 (2)	CLASSIFICATION		P
1.4 (2.2)	Type of protection	Class III luminaries	—
1.4 (2.3)	Degree of protection	IP20	—
1.4 (2.4)	Luminaire only suitable for non-combustible surfaces	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
	Luminaire suitable for normally flammable surfaces	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	—
	Luminaire suitable to be covered by insulating material	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	—
1.4 (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"/>	—

1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	On main body	P
	Format of symbols/text	Symbols: 5.0mm min; Letter: 2.0mm min.	P
1.5 (3.3)	Additional information		P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaires	No such luminaires	N
1.5 (3.3.2)	Nominal frequency in Hz	50Hz	P
1.5 (3.3.3)	Operating temperature		N
1.5 (3.3.4)	Symbol or warning notice		N
1.5 (3.3.5)	Wiring diagram		N
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halide lamp luminaire – warning	Not metal halide lamp luminaire	N
1.5 (3.3.8)	Limitation for semi-luminaires	No such luminaires	N
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors		P
1.5 (3.3.11)	Luminaires with remote control		N
1.5 (3.3.12)	Clip-mounted luminaire – warning		N

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1.5 (3.3.13)	Specifications of protective shields		N
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N
1.5 (3.3.16)	Rough service luminaire	Not rough service luminaire	N
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type Y	P
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable	Ordinary luminaires	N
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N
1.5 (3.3.20)	Provided with information if not intended to be mounted within arm's reach		N
1.5 (3.3.21)	Non-replaceable and non-user replaceable light sources information provided	Non replaceable light sources See manual instruction	P
	Cautionary symbol		N
1.5 (3.3.22)	Controllable luminaires, classification of insulation provided		N
1.5 (3.4)	Test with water	15s with water	P
	Test with hexane	15s with hexane	P
	Legible after test	Yes	P
	Label attached	Label was not be easily removable and show no curling	P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty	No replaceable part	N
1.6 (4.3)	Wireways smooth and free from sharp edges	Arranged correctly, no damage	P
1.6 (4.4)	Lampholders		N
1.6 (4.4.1)	Integral lampholder	Integral LED module, no lampholder	N
1.6 (4.4.2)	Wiring connection		N
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		N
	- pressure test (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 (N)		—

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	After test the lampholder have not moved from its position and show no permanent deformation		N
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking	Not rough service luminaires	N
1.6 (4.4.8)	Lamp connectors		N
1.6 (4.4.9)	Caps and bases correctly used		N
1.6 (4.4.10)	Light source for lampholder or connection according EN 60061 not connected another way		N
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II	No starter holder	N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
1.6 (4.7)	Terminals and supply connections		N
1.6 (4.7.1)	Contact to metal parts		N
1.6 (4.7.2)	Test 8 mm live conductor	Not touch any metal part	P
	Test 8 mm earth conductor		N
1.6 (4.7.3)	Terminals for supply conductors		P
1.6 (4.7.3.1)	Welded method and material		N
	- stranded or solid conductor	See clause 4.6	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
1.6 (4.7.4)	Terminals other than supply connection	No such terminal	N
1.6 (4.7.5)	Heat-resistant wiring/sleeves		P
1.6 (4.7.6)	Multi-pole plug	No multi-pole plug	N
	- test at 30 N		N
1.6 (4.8)	Switches		N
	- adequate rating	No switch	N
	- adequate fixing		N
	- polarized supply		N

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	- compliance with EN 61058-1 for electronic switches		N
1.6 (4.9)	Insulating lining and sleeves		N
1.6 (4.9.1)	Retainment		N
	Method of fixing	Reliably fixed	—
1.6 (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
1.6 (4.10)	Double or reinforced insulation		N
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation	Class III luminaire	N
	Safe installation fixed luminaires		N
	Capacitors and switches		N
	Interference suppression capacitors according to EN 60384-14		N
1.6 (4.10.2)	Assembly gaps:		P
	- not coincidental	No assembly gaps	P
	- no straight access with test probe		N
1.6 (4.10.3)	Retainment of insulation:		P
	- fixed		P
	- unable to be replaced; luminaire inoperative		P
	- sleeves retained in position		N
	- lining in lampholder		N
1.6 (4.11)	Electrical connections and current-carrying parts		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws	Thread-cutting screws not used	N
1.6 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts	>50% copper	P
1.6 (4.11.5)	No contact to wood or mounting surface	Current-carrying parts not contact wood	P
1.6 (4.11.6)	Electro-mechanical contact systems	No electro-mechanical contact systems	N
1.6 (4.12)	Screws and connections (mechanical) and glands		P

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1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part	Screw for fixing enclosure : Ø 3.38mm, 0.80Nm	P
	Torque test: torque (Nm); part		N
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
1.6 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm).....		N
	- lampholder; torque (Nm).....		N
	- push-button switches; torque 0,8 Nm.....	No such parts	N
1.6 (4.12.5)	Screwed glands; force (Nm)	No such component	N
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....		N
	- other parts; energy (Nm)	0.35Nm for other parts	P
	1) live parts	Not become accessible	P
	2) linings	Not impaired	P
	3) protection	Remain accordance against ingress of dust, sold objects and moisture classification	P
	4) covers		P
1.6 (4.13.3)	Straight test finger	30N	P
1.6 (4.13.4)	Rough service luminaires		N
	- IP54 or higher	Not rough service luminaire	N
	a) fixed		N
	b) hand-held		P
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
1.6 (4.13.6)	Tumbling barrel	Not socket-outlet-mounted luminaires	N
1.6 (4.14)	Suspensions, fixings and means of adjusting		N
1.6 (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

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	E) clip-mounted luminaires, glass-shelve. Thickness (mm)		N
	Metal rod. diameter (mm)		N
	Fixed luminaire or independent control gear without fixing devices		N
1.6 (4.14.2)	Load to flexible cables		N
	Mass (kg)	No flexible cables	N
	Stress in conductors (N/mm ²)		N
	Mass (kg) of semi-luminaire		N
	Bending moment (Nm) of semi-luminaire		N
1.6 (4.14.3)	Adjusting devices:		
	- flexing test; number of cycles	No adjustable devices	N
	- strands broken		N
	- electric strength test afterwards		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	Telescopic tubes not used	N
1.6 (4.14.5)	Guide pulleys	No guide pulleys	N
1.6 (4.14.6)	Strain on socket-outlets	Not direct plug-in type	N
1.6 (4.15)	Flammable materials		P
	- glow-wire test 650°C.....		P
	- spacing ≥30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		—
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		N
	No lamp control gear		N
1.6 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
1.6 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N

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	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see clause 12.6)	N
1.6 (4.17)	Drain holes		N
	Clearance at least 5 mm	No drain holes	N
1.6 (4.18)	Resistance to corrosion		P
1.6 (4.18.1)	- rust-resistance	Adequately protected against rusting.	P
1.6 (4.18.2)	- season cracking in copper		N
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Igniters compatible with ballast	No ignitor	N
1.6 (4.20)	Rough service vibration	Not rough service used	N
1.6 (4.21)	Protective shield		N
1.6 (4.21.1)	Shield fitted if tungsten halogen lamps or metal halide lamps		N
	Shield of glass if tungsten halogen lamps		N
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
1.6 (4.21.3)	No direct path		N
1.6 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment.....:	See Test Table 1.15 (13.3.2)	N
1.6 (4.22)	Attachments to lamps not cause overheating or damage	No attachments	N
1.6 (4.23)	Semi-luminaires comply Class II		N
1.6 (4.24)	Photobiological hazards		P
1.6 (4.24.1)	No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)		N
1.6 (4.24.2)	Retinal blue light hazard		P
	Luminaires with E_{thr} :		P
	a) Fixed luminaires	Exempt group	P
	- distance x m, borderline between RG1 and RG2....:		N
	- marking and instruction according 3.2.23		N
	b) Portable and handheld luminaires		N
	- marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778		N
	Portable luminaires for children EN 60598-2-10 and Mains socket outlet nightlights EN 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778		N

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1.6 (4.25)	Mechanical hazard		P
	No sharp point or edges	No sharp edges	P
1.6 (4.26)	Short-circuit protection		N
1.6 (4.26.1)	Adequate means of uninsulated accessible SELV parts	No SELV parts	N
1.6 (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
1.6 (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
1.6 (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 (°C).....:		—
	100 cycles between t min and t max		
	Temperature sensing control still in position		
1.6 (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
1.6 (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
1.6 (4.31)	Insulation between circuits		N
	Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3		N

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	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
1.6 (4.31.1)	SELV circuits		P
	Used SELV source		P
	Voltage \leq ELV		P
	Insulating of SELV circuits from LV supply		P
	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		P
	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
1.6 (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
1.6 (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
	- 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

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	- master luminaire provided with terminal for accessible conductive parts of slave luminaires		N
	- slave luminaire constructed as class I		N
1.6 (4.32)	Overvoltage protective devices		N
	Comply with EN 61643-11		N
	External to control gear and connected to earth:		N
	- only in fixed luminaires		N
	- only connected to protective earth		N

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V)	Rated voltage 24VDC	—
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input type="checkbox"/> Category III <input checked="" type="checkbox"/>	—
	Rated pulse voltage (kV)		—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm)	cr>2.5mm, cl>1.5mm, required: cr: 2.5 mm, cl: 1.5mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm)	cr>5.0mm, cl>3.0mm, required: cr:5.0 mm, cl:3.0mm	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>5.0mm, cl>3.0mm , required:cr:5.0 mm, cl:3.0mm	P

1.8 (7)	PROVISION FOR EARTHING		P
1.8 (7.2.1 + 7.2.3)	Accessible metal parts	Class III luminaire	P
	Metal parts in contact with supporting surface		N
	Resistance < 0,5 Ω		N
	Self-tapping screws used		N
	Thread-forming screws		N
	Thread-forming screw used in a groove		N

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	Earth makes contact first		N
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
	Protective earthing of the luminaire not via built-in control gear		N
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints, etc.		N
1.8 (7.2.4)	Locking of clamping means		N
	Compliance with 4.7.3		N
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
1.8 (7.2.5)	Earth terminal integral part of connector socket		N
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N
1.8 (7.2.8)	Material of earth terminal		N
	Contact surface bare metal		N
1.8 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
1.8 (7.2.11)	Earthing core coloured green-yellow		N
	Length of earth conductor		N

1.9 (14)	SCREW TERMINALS		N
	Separately approved; component list	Approved screw terminal (see Annex 1)	N
	Part of the luminaire.....		N

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

1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		P
1.10 (5.2.1)	Means of connection.....	Terminal	P
	Connecting leads(EN)		N
	- without a means for connection to the supply		N
	- terminal block specified		N
	- relevant information provided		N

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	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N
	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		N
1.10 (5.2.2)	Type of cable		N
	Nominal cross-sectional area (mm ²).....		N
	Cables equal to EN 50525		N
1.10 (5.2.3)	Type of attachment, X, Y or Z	Type Y	P
1.10 (5.2.5)	Type Z not connected to screws		N
1.10 (5.2.6)	Cable entries:		P
	- suitable for introduction		P
	- adequate degree of protection		P
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		P
1.10 (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
1.10 (5.2.9)	Locking of screwed bushings		N
1.10 (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
1.10 (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

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	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorages		N
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment	Type Y	P
1.10 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)		P
	- torque test: torque (Nm)		P
	- displacement ≤ 2 mm		P
	- no movement of conductors		P
	- no damage of cable or cord		P
	- function independent of electrical connection		P
1.10 (5.2.11)	External wiring passing into luminaire		P
1.10 (5.2.12)	Looping-in terminals		N
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		P
1.10 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N
	No unsafe compatibility		N
1.10 (5.2.16)	Appliance inlets (EN 60320)		N
	Installation couplers (EN 61535)		N
	Other appliance inlet or connector according relevant IEC standard		N
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N
1.10 (5.2.18)	Used plug in accordance with		—
	- EN 60083		N
	- other standard		P
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type	Suitable size and type	P

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	Through wiring		—
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A).....:		N
	- temperatures.....:	(see Annex 2)	N
	Green-yellow for earth only		N
1.10 (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
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N
1.10 (5.3.1.4)	Conductors without insulation		N
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
1.10 (5.3.2)	Sharp edges etc.	No sharp edges	P
	No moving parts of switches etc.	No switch	N
	Joints, raising/lowering devices	No such devices	N
	Telescopic tubes etc.	No telescopic tubes	N
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		P
	- suitable fixed		P
	- material in bushings	Insulating bushing was used	P
	- material not likely to deteriorate		N
	- cables with protective sheath		N
1.10 (5.3.4)	Joints and junctions effectively insulated		P
1.10 (5.3.5)	Strain on internal wiring		N
1.10 (5.3.6)	Wire carriers		N

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1.10 (5.3.7)	Wire ends not tinned	Wire ends are not tinned and wrapped with brass	P
	Wire ends tinned: no cold flow		N

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (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		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires		N
	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	No double-ended tungsten filament lamp used	N
	Insulation lacquer not reliable	No insulation lacquer used	N
	Double-ended high pressure discharge lamp	No double-ended high pressure discharge lamp	N
	Relevant warning according to 3.2.18 fitted to the luminaire		N
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position	Fixed luminaire, not applicable	N
1.11 (8.2.3.a)	Class II luminaire:		—
	- basic insulated metal parts not accessible during starter or lamp replacement		P
	- basic insulation not accessible other than during starter or lamp replacement	No replaceable parts	N
	- glass protective shields not used as supplementary insulation	No glass used as supplementary insulation	N
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N
1.11 (8.2.3.c)	SELV circuits with exposed current carrying parts:		—
	Ordinary luminaire:		N
	- touch current	No exposed current carrying parts	N

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	- no-load voltage		N
	Other than ordinary luminaire:		N
	- nominal voltage		N
1.11 (8.2.4)	Portable luminaire have protection independent of supporting surface		N
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured	Reliable fixed	P
1.11 (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

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (-)	If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 4.13		—
1.12 (12.3)	Endurance test:		P
	- mounting-position	Operating mode normal use, most unfavourable position	—
	- test temperature (°C)	+60°C ± 2°C	—
	- total duration (h).....	240h	—
	- supply voltage: Un factor; calculated voltage (V) ...:	1.1 times the voltage	—
	- lamp used	LED	—
1.12 (12.3.2)	After endurance test:		—
	- no part unserviceable	Compliance is checked by inspection	P
	- luminaire not unsafe	Compliance is checked by inspection	P
	- no damage to track system	No track system provided	N
	- marking legible	Compliance is checked by inspection	P
	- no cracks, deformation etc.	Compliance is checked by inspection	P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2) , no abnormal operation	N
1.12 (12.6)	Thermal test (failed lamp control gear condition):		—
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)	No lamp control gear	—

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	- 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
1.12 (12.6.2)	Temperature sensing control		—
	- 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
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N
1.12 (12.7.1)	Luminaire without temperature sensing control		—
1.12 (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.....:	See Table 1.15 (13.2.1)	N
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N
	- case of abnormal conditions.....:		—
	- measured winding temperature (°C): at 1,1 Un.....:		—

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	- measured temperature of fixing point/exposed part (°C): at 1,1 Un		—
	- calculated temperature of fixing point/exposed part (°C).....		—
	Ball-pressure test	See Table 1.15 (13.2.1)	N
1.12 (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
1.12 (12.7.2)	Luminaire with temperature sensing control		—
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out.....	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):.....		—
	Ball-pressure test:	See Table 1.15 (13.2.1)	P

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
1.13 (-)	If IP > IP 20 the order of tests as specified in clause 1.12		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP	IP20	—
	- mounting position during test.....	Normal use, most unfavourable position	—
	- fixing screws tightened; torque (Nm)	Two thirds of that specified in table 4	—
	- tests according to clauses	9.2.0	—
	- electric strength test afterwards	See 10.2.2	P
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying parts or on insulation 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

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	f) no contact with live parts (IP 2X)	IP20, no contact with live part	P
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		P
1.13 (9.3)	Humidity test 48 h	48h, 25°C, 93%	P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (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
	- Insulation bushings as described in Section 5		N
	Other than SELV		P
	- between live parts of different polarity	>100MΩ	P
	- between live parts and mounting surface	>100MΩ	P
	- between live parts and metal parts.....	>100MΩ	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
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp	No such lamp	N
	Luminaires with ignitors after 24 h test	No ignitors	N
	Luminaires with manual ignitors	No manual ignitors	N
	Test voltage (V).....	See below	N

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	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	2960V, 1min, no breakdown	P
	- between live parts and mounting surface	2920V, 1min, no breakdown	P
	- between live parts and metal parts	2920V, 1min, no breakdown	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
1.14 (10.3)	Touch current or protective conductor current (mA):	0.020mA	P

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		N
1.15 (13.2.1)	Ball-pressure test	See Test Table 1.15 (13.2.1)	N
1.15 (13.3.1)	Needle-flame test (10 s).....	See Test Table 1.15 (13.3.1)	N
1.15 (13.3.2)	Glow-wire test (650°C).....	See Test Table 1.15 (13.3.2)	N
1.15 (13.4)	Proof tracking test (EN 60112)	See Test Table 1.15 (13.4)	N

1.15 (13.2.1)	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm)		2mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
LED cover	/	125	0.78	
Plastic enclosure	/	125	0.65	
LED board	/	87	0.52	
Supplementary information:				

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1.15 (13.3.1)	TABLE: Needle-flame test				P
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED board	/	10	No	0	P
Supplementary information:					

1.15 (13.3.2)	TABLE: Glow-wire test				P
Glow wire temperature		650°C	—		
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
LED cover	/	30	No	0	P
Plastic enclosure	/	30	No	0	P
Any flame or glowing of the sample extinguished within 30 s of withdrawing the glow-wire, and any burning or molten drop did not ignite the underlying parts (Yes/No).....					/
Supplementary information:					

1.15 (13.4)	TABLE: Proof tracking test				N
Test voltage PTI		175 V	—		
Object/ Part No./ Material	Manufacturer/ trademark	Withstand 50 drops without failure on three places or on three specimens			Verdict
/	/	/	/	/	/
Supplementary information:					

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)			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)	CY, DK, FI, SE, GB: type of plug			N

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)			—
(13.3)	DK: Needle flame test during 30 s			N
(13.3)	GB: Requirements according to United Kingdom Building Regulation			N

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(13.3.2)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public or 960°C for luminaires in emergency exits		N
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ANNEX 1: components						P
object/part No.	Code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Plastic enclosure	B	Various	Various	V-0, 130 °C	UL 94	UL
PCB of LED	B	Various	Various	V-0,130 °C	UL796	UL
LED lamp	B	Various	Various	3.6V, 60mA,2700K	IEC 62031	Tested with appliance
<p>The codes above have the following meaning:</p> <p>A - The component is replaceable with another one, also certified, with equivalent characteristics</p> <p>B - The component is replaceable if authorized by the test house</p> <p>C - Integrated component tested together with the appliance</p> <p>D - Alternative component</p>						

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ANNEX 2: temperature measurements, thermal tests of Section 12			P			
Type reference	:		—			
Lamp used	:	LED	—			
Lamp control gear used	:	---	—			
Mounting position of luminaire	:	Normal use, most unfavourable position	—			
Supply wattage (W).....	:	23.9W	—			
Supply current (A).....	:	1A	—			
Calculated power factor	:	0.9532	—			
Table: measured temperatures corrected for $t_a = 25\text{ }^\circ\text{C}$:			-			
- abnormal operating mode.....	:	No abnormal	P			
- test 1: rated voltage	:		—			
- test 2: 1,06 times rated voltage or 1,05 times rated wattage	:	1,06 times voltage	P			
- 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	:	--	—			
Through wiring or lopping-in wiring loaded by a current of (A) during the tests	:	--	—			
temperature ($^\circ\text{C}$) of part	clause 12.4 – normal				clause 12.5 – abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Power cord	--	44.2	--	105	--	--
LED lamp	--	59.8	--	Ref.	--	--
PCB of LED module	--	63.6	--	130	--	--
Input wire	--	54.8	--	80	--	--
Cover	--	44.2	--	Ref.	--	--
Mounting surface	--	34.9	--	90	--	--
Ambient	--	40.1	--	--	--	--

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	ANNEX 3: screw terminals (part of the controlgear)	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

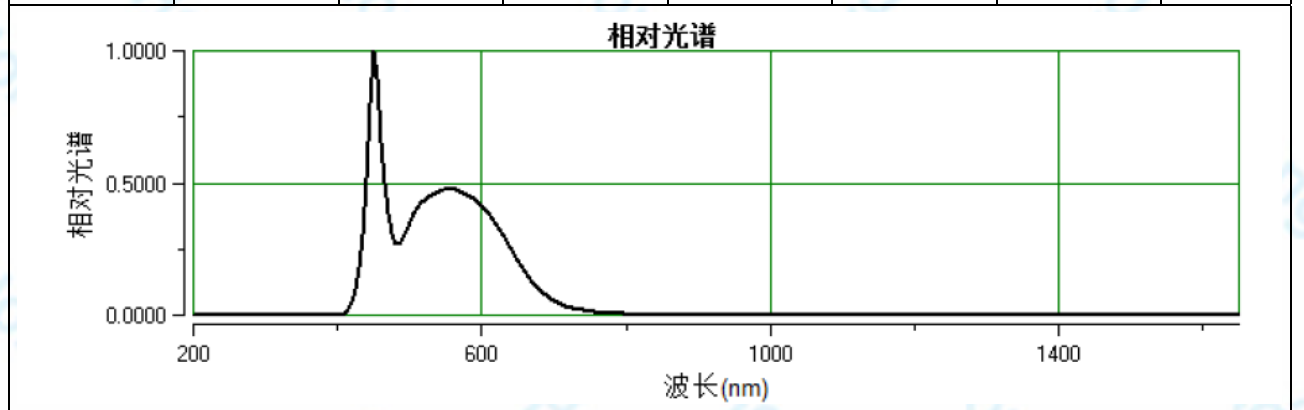
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	ANNEX 4: screwless terminals (part of the luminaire)										N
(15)	SCREWLESS TERMINALS										N
(15.2)	Type of terminal	No such terminals									—
	Rated current (A)										—
(15.3.1)	Material										N
(15.3.2)	Clamping										N
(15.3.3)	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
	Pull test pin or tab terminals or welded connections (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										N

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	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										
	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)											

SN	field of view (mrad)	distance d (mm)	Illuminance E(lx)	Diameter D(mm)	Luminance Lv(cd/m2)	Blue light Lb(W/m2/sr)	exp.limit Tmax(s)
[1]	11	200	2601	2.2	1.154e+005	102	9828



Appendix 1
Equipment List

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE001	Data Acquisition / Switch Unit	Agilent	34970A	MY44011615	2019.9.27	2020.9.26
SE002	Thermocouple wire	OMEGA	TT-K-30-1000	kxjf	2019.9.27	2020.9.26
SE003	Temp. & Humid. Chamber	Gongwen	GDS-250	080943	2019.9.27	2020.9.26
SE004	Oven Chamber	Rongfeng	101A-3	31446	2019.9.27	2020.9.26
SE005	DC Electronic Load	Arry	3711A	A06BI03017	2019.9.27	2020.9.26
SE006	DC Electronic Load	Arry	3711A	A06BI02095	2019.9.27	2020.9.26
SE007	DC Electronic Load	Arry	3711A	A06BI03015	2019.9.27	2020.9.26
SE008	DC Electronic Load	Arry	3711A	A06BH02122	2019.9.27	2020.9.26
SE009	Oscilloscope	Tektronix	TDS3012B	YT204842	2019.9.27	2020.9.26
SE010	Digital Power Meter	Qingzhi	8716C	870806042	2019.9.27	2020.9.26
SE011	Digital Power Meter	Qingzhi	8716C	870806037	2019.9.27	2020.9.26
SE012	Ohm Meter	Yang Zi	YD2511	11-2250	2019.9.27	2020.9.26
SE013	Multi Meter	Fluke	115C	96721596	2019.9.27	2020.9.26
SE014	Desktop Multi Meter	Fluke	45	7662018	2019.9.27	2020.9.26
SE015	Desktop Multi Meter	Fluke	45	8095018	2019.9.27	2020.9.26
SE016	Desktop Multi Meter	Fluke	45	6792039	2019.9.27	2020.9.26
SE017	Grounding Bond Meter	Yang Zhi	YD2654B	548-053	2019.9.27	2020.9.26
SE018	Leakage Current Meter	EXTECH	7611	1330848	2019.9.27	2020.9.26
SE019	Insulation Resistance Tester	Yang Zhi	YD9820A	20A-1734	2019.9.27	2020.9.26
SE020	Hi-Pot Tester	Yang Zhi	YD2650A	088	2019.9.27	2020.9.26
SE021	Electronic Scale	Balance	BCSS-F-6	081050	2019.9.27	2020.9.26
SE022	Push-Pull Scale	Algol	NK-300	67420	2019.9.27	2020.9.26
SE023	Digital Caliper	Yitu	YT211	P840156	2019.9.27	2020.9.26
SE024	Electronic Thermo-Hygrometer	S.H.Qixiang	CTH-608	GC-WS608	2019.9.27	2020.9.26
SE025	Goniometer	Wenzhou	JZC-B2	15032	2019.9.27	2020.9.26
SE026	Tumbling Barrel	Zhilitong	GT-1	G010308	2019.9.27	2020.9.26
SE027	Audio Generator	LWDQGS	TAG-101	308909	2019.9.27	2020.9.26
SE028	Noise Generator	DF	DF1681	071001107	2019.9.27	2020.9.26
SE029	Plug Torque Tester	Zhilitong	LJ-1	LJ010908	2019.9.27	2020.9.26
SE030	Test Probe 13	Zhilitong	TP13	D3L15	2019.9.27	2020.9.26
SE031	Test Probe 41	Zhilitong	TP41	D30L80	2019.9.27	2020.9.26
SE032	Finger Nail Probe	Zhilitong	FN-1	D12N30	2019.9.27	2020.9.26
SE033	Test Finger Probe B	Zhilitong	TF-B	D12J3	2019.9.27	2020.9.26
SE034	Rigid Finger Probe	Zhilitong	RFP	D12N50	2019.9.27	2020.9.26
SE035	Test Probe	Zhilitong	D4L100	60065-913	2019.9.27	2020.9.26
SE036	Test Probe C	Zhilitong	TP-C	60065-915	2019.9.27	2020.9.26
SE037	Test Probe D	Zhilitong	TP-D	60065-914	2019.9.27	2020.9.26
SE038	Test Probe	Zhilitong	FG2C	D12L80	2019.9.27	2020.9.26
SE039	Test hook	Zhilitong	TH-1	W8L180T1	2019.9.27	2020.9.26
SE040	Accessibility Probe	Zhilitong	ZA-1	A1310	2019.9.27	2020.9.26
SE041	UL Finger Probe	Zhilitong	ULP-01	D5L97	2019.9.27	2020.9.26
SE042	Steel Ball	Zhilitong	GQ-1	G121008	2019.9.27	2020.9.26
SE043	Ball Pressure Tester	Sinna	SN3407	08051808	2019.9.27	2020.9.26
SE044	Ball Pressure Tester	Sinna	SN3407	08082302	2019.9.27	2020.9.26
SE045	Hammer	Sinna	SN3406	08083102	2019.9.27	2020.9.26
SE046	Torque Driver	kanon	12LTDK	08G338	2019.9.27	2020.9.26
SE047	Glow Wire Test Set	Sinna	ZRS-2	08091118	2019.9.27	2020.9.26
SE048	Needle Flame Test Set	Sinna	ZY-2	08091125	2019.9.27	2020.9.26
SE049	Switching Mode DC Power Supply	Manson	SIM-9106	G360800228	2019.9.27	2020.9.26
SE050	Hardened steel pin	Zhilitong	SC30	R25N30	2019.9.27	2020.9.26
SE051	Platform scale	shanghai	TGT-100	526	2019.9.27	2020.9.26
SE052	Salt spary tester	Jiahui	JH-60	176358	2019.9.27	2020.9.26
SE053	Test rod	Zhilitong	TZ-14	D40N5	2019.9.27	2020.9.26
SE054	Vibration tester	shengshiwei	SW-TF	20100228	2019.9.27	2020.9.26
SE055	Surge tester	Ceprei	1065A	0503Y01	2019.9.27	2020.9.26
SE056	Digital Power Meter	Qingzhi	8713B1	870909080	2019.9.27	2020.9.26
SE057	Dust chamber	Gongwen	SC-500	100311	2019.9.27	2020.9.26
SE058	Draught-proof enclosure	Tengbo	TB180	Q100226	2019.9.27	2020.9.26
SE059	Hammer	Zhilitong	CJ-3	C031026	2019.9.27	2020.9.26
SE060	Hammer	Zhilitong	CJ-3	C031027	2019.9.27	2020.9.26
SE061	Hammer	Zhilitong	CJ-3	C031028	2019.9.27	2020.9.26

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No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE062	Data Acquisition / Switch Unit	Agilent	34970A	US37013205	2019.9.27	2020.9.26
SE063	Leakage Current Tester	Simpson	228	7173286	2019.9.27	2020.9.26
SE064	Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2019.9.27	2020.9.26
SE065	Salt spary tester	Henqiang	KH-160	/	2019.9.27	2020.9.26
SE066	Oscillating tube	damsion	DMS-E01	2011DNS-E010401	2019.9.27	2020.9.26
SE067	Spray nozzle	Lihui	LH56	63125	2019.9.27	2020.9.26
SE068	Immersion tester	kunshang	IPX7-1	SK2018M5	2019.9.27	2020.9.26
SE069	Test Probe 18	Aodesaichuang	AUTO-18	auto110721-18-01	2019.9.27	2020.9.26
SE070	Test Probe 19	Aodesaichuang	AUTO-19	auto110721-19-02	2019.9.27	2020.9.26
SE071	Data Acquisition / Switch Unit	Agilent	34970A	MY44052414	2019.9.27	2020.9.26
SE072	Data Acquisition / Switch Unit	Agilent	34970A	MY44052411	2019.9.27	2020.9.26
SE073	Digital Power Meter	Yokogawa	WT210	91K223105	2019.9.27	2020.9.26
SE074	Desktop Multi Meter	Agilent	34401A	MY44008459	2019.9.27	2020.9.26
SE075	Desktop Multi Meter	Agilent	34401A	MY44008472	2019.9.27	2020.9.26
SE076	Hi-Pot Tester	ME I RUIKE	RK2672D	RK72D111130-010	2019.9.27	2020.9.26
SE077	Switching Mode Power Supply	ZHAOXIN	KXN-6030D	KXN.PS.JPS	2019.9.27	2020.9.26
SE078	Torque Driver	Aigu	10DPSK	356019	2019.9.27	2020.9.26
SE079	Magnifying glass	German	10x	12234	2019.9.27	2020.9.26
SE080	Regulated Power Supply	APC	AFC-11010G	F310120052	2019.9.27	2020.9.26
SE081	Air Pressure Gauge	Tianya	N509	/	2019.9.27	2020.9.26
SE082	Step Temperature Room	Long An	LA-ORT28	LA-201206001	2019.9.27	2020.9.26
SE083	"GO" Gauge for E27 Caps	KINGPO	7006-27B-1	8688	2019.9.27	2020.9.26
SE084	"NOT GO" Gauge for E27 Caps	KINGPO	7006-28A-1	8689	2019.9.27	2020.9.26
SE085	"GO" Gauge for dimension "S1" of E27 Caps	KINGPO	7006-27C-1	8691	2019.9.27	2020.9.26
SE086	Gauge for E27 Caps for testing contact making	KINGPO	7006-50-1	8693	2019.9.27	2020.9.26
SE087	Gauge for E27 Caps for testing protection against accidental contact during insertion	KINGPO	7006-51A-2	8690	2019.9.27	2020.9.26
SE088	Oscilloscope	Tektronix	TDS3012B	C010353	2019.9.27	2020.9.26
SE089	Single wing drop tester	FEILING	FL8618	/	2019.9.27	2020.9.26
SE090	Data Acquisition / Switch Unit	Agilent	34970A	MY44006829	2019.9.27	2020.9.26
SE091	Thermocouple wire	OMEGA	TT-J-30-1000	/	2019.9.27	2020.9.26
SE092	Touch current tester	Ceprei	410B	1207AG10	2019.9.27	2020.9.26
SE093	Cord oscillating tester	Dongguan lixiong	LX-1211	/	2019.9.27	2020.9.26
SE094	Lampholder digital torsion meter	Inventfine Instrument Co., Ltd.	CH338	1301004	2019.9.27	2020.9.26
SE095	Straight steel pin	KINGPO	SE095	/	2019.9.27	2020.9.26
SE096	Digital Caliper	Guanglu	SF2000	C1211225254	2019.9.27	2020.9.26
SE097	Digital Caliper	Guanglu	SF2000	C1211225024	2019.9.27	2020.9.26
SE098	Timer	PURSUN	PS-528	/	2019.9.27	2020.9.26
SE099	Timer	PURSUN	PS-528	/	2019.9.27	2020.9.26
SE100	Switching Mode DC Power Supply	GW INSTEK	GPS-1850D	EN820728	2019.9.27	2020.9.26
SE101	Digital Power Meter	EVERFINE	PF9901	1005046	2019.9.27	2020.9.26
SE102	Digital Power Meter	EVERFINE	PF9901	G100731CJ6331237	2019.9.27	2020.9.26
SE103	Tape line	YANGGUANG	YG-206	/	2019.9.27	2020.9.26
SE104	Electronic Thermo-Hygrometer	UYIGAO	CTH-608	UA13706944	2019.9.27	2020.9.26
SE105	Pressure Gauge	ZHHY	SE105	/	2019.9.27	2020.9.26
SE106	"GO" Gauge for E14 Caps	GRT/china	7006-27F-1	2013053131	2019.9.27	2020.9.26
SE107	"NOT GO" Gauge for E14 Caps	GRT/china	7006-28B-1	2013053126	2019.9.27	2020.9.26
SE108	"GO" Gauge for dimension "S1" of E14 Caps	GRT/china	7006-27G-1	2013053132	2019.9.27	2020.9.26
SE109	Gauge for E14 Caps for testing contact making	GRT/china	7006-54-2	2013053128	2019.9.27	2020.9.26

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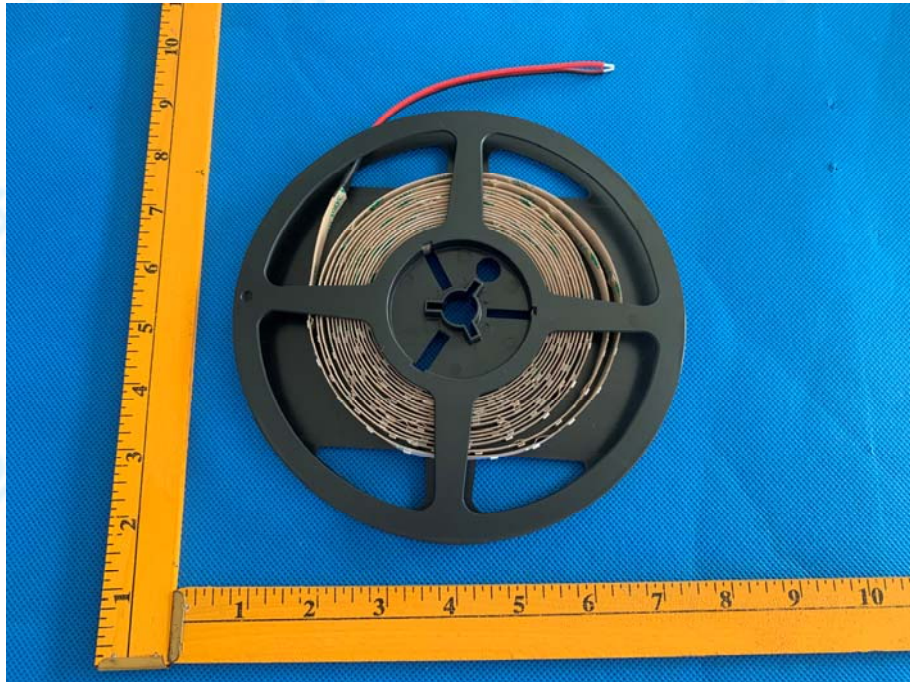
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE110	Gauge for E14 Caps for testing protection against accidental contact during insertion	GRT/china	7006-55-2	2013053129	2019.9.27	2020.9.26
SE111	"GO" and "NOT GO" Gauge for base GU10	KINGPO	7006-121-1	KingPo12485237	2019.9.27	2020.9.26
SE112	"GO" plug gauge for E12 lampholder	GRT/china	7006-25C-1	20130512135005	2019.9.27	2020.9.26
SE113	"NOT GO" plug gauge for E12 lampholder	GRT/china	7006-26B-1	20130512135006	2019.9.27	2020.9.26
SE114	"GO" Gauge for E26 Caps	GRT/china	7006-27D-3	2013053135	2019.9.27	2020.9.26
SE115	"NOT GO" Gauge for E26 Caps	GRT/china	7006-29L-4	2013053125	2019.9.27	2020.9.26
SE116	"GO" Gauge for E40 Caps	ANGUI TESTING	7006-27-7	20140405	2019.9.27	2020.9.26
SE117	"NOT GO" Gauge for E40 Caps	ANGUI TESTING	7006-28D-1	20140406	2019.9.27	2020.9.26
SE118	Gauge for E40 Caps for testing contact making	ANGUI TESTING	7006-52-1	20140407	2019.9.27	2020.9.26
SE119	Gauge for E40 Caps for testing protection against accidental contact during insertion	ANGUI TESTING	7006-53-1	20140408	2019.9.27	2020.9.26
SE120	"Go" gauge for bi-pin cap on finished lamps G13	KINGPO	7006-45-4	KingPo12485238	2019.9.27	2020.9.26
SE121	"Go" gauge for bi-pin cap on finished lamps G5	KINGPO	7006-46A-3	KingPo12485230	2019.9.27	2020.9.26
SE122	Gauge for three-pin flat-pin plugs (10A)	KINGPO	AS/NZS 3112 Fig A 10A	KingPo12485231	2019.9.27	2020.9.26
SE123	Gauge for three-pin flat-pin plugs (15A)	KINGPO	AS/NZS 3112 Fig A 15A	KingPo12485232	2019.9.27	2020.9.26
SE124	Gauge for three-pin flat-pin plugs (20A)	KINGPO	AS/NZS 3112 Fig A 20A	KingPo12485233	2019.9.27	2020.9.26
SE125	Gauge for two-pin flat-pin plugs with parallel pins	KINGPO	AS/NZS 3112 Fig B	KingPo12485236	2019.9.27	2020.9.26
SE126	Gauge for flat and round pin plugs (two flat live pins and a round earth pin)	KINGPO	AS/NZS 3112 Fig F-A	KingPo12485234	2019.9.27	2020.9.26
SE127	Gauge for flat and round pin plugs (two round live pins and a flat earth pin)	KINGPO	AS/NZS 3112 Fig F-B	KingPo12485235	2019.9.27	2020.9.26
SE128	Transport type simulation vibration tester	KING DESIGN	KD-9363-550-PC	LT0PCLA13003	2019.9.27	2020.9.26
SE129	Oven Chamber	Rongfeng	101A-3	33897	2019.9.27	2020.9.26
SE130	"Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-11-8	20140404	2019.9.27	2020.9.26
SE131	"Not Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-10-8	20140403	2019.9.27	2020.9.26
SE132	Gauges for testing the insertion of caps in lampholders B22d	ANGUI TESTING	7006-4A-2	20140401	2019.9.27	2020.9.26
SE133	Gauges for testing the retention of B22d caps in the holder	ANGUI TESTING	7006-4B-1	20140402	2019.9.27	2020.9.26
SE134	1000:1 Oscilloscope Probe	Pintek	HVP-18HF	13010082	2019.9.27	2020.9.26
SE135	100:1 Oscilloscope Probe	Pintek	CP-3308R	/	2019.9.27	2020.9.26
SE136	AC power source	All power	APW-150N	930607	2019.9.27	2020.9.26
SE137	Horizontal&vertical tester	AUTOSTRONG	AUTO-SPA	AUTO1033	2019.9.27	2020.9.26
SE138	Tracking index tester	AUTOSTRONG	AUTO-LDA	AUTO1040	2019.9.27	2020.9.26
SE139	Vicat softening tester	AUTOSTRONG	AUTO-WK	/	2019.9.27	2020.9.26
SE140	Electroplated coating thickness tester	Guangzhou Dongru electronic	DR280	9324	2019.9.27	2020.9.26
SE141	Battery Tester	DG	W602	DG2014W6021772	2019.9.27	2020.9.26
SE142	Test plug for antenna coaxial sockets	ANGUI TESTING	AG-IEC60065F9	/	2019.9.27	2020.9.26
SE143	SHORE D Durometer	Handpi	LX-D	8134006969	2019.9.27	2020.9.26
SE144	Steel Ball	ANGUI TESTING	GQ-2	/	2019.9.27	2020.9.26
SE145	"Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-11-8	140728017	2019.9.27	2020.9.26
SE146	"Not Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-10-8	140728010	2019.9.27	2020.9.26
SE147	Gauges for testing the insertion of caps in lampholders B15d	ANGUI TESTING	7006-4A-2	140728004	2019.9.27	2020.9.26
SE148	Gauges for testing the retention of B15d caps in the holder	ANGUI TESTING	7006-4B-1	140728009	2019.9.27	2020.9.26

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No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
SE149	"GO" Gauge for E39 Caps	ANGUI TESTING	7006-24B-1	144509	2019.9.27	2020.9.26
SE150	Gauge for E39 Caps for testing contact making	ANGUI TESTING	7006-24A-1	144511	2019.9.27	2020.9.26
SE151	"NOT GO" Gauge for E39 Caps	ANGUI TESTING	7006-24C-1	144510	2019.9.27	2020.9.26
SE152	Noise Generator/filter	ZCTEK	ZC6221	ZC14020178	2019.9.27	2020.9.26
SE153	Hi-Pot Tester	ME I RUIKE	RK2671C	RK71C-BEAI005	2019.9.27	2020.9.26
SE154	Data Acquisition / Switch Unit	Agilent	34970A	MY44064740	2019.9.27	2020.9.26
SE155	PVC compounds pressure tester at high temperature	ANGUI TESTING	AG8113F1	/	2019.9.27	2020.9.26
SE156	Low Pressure Tester	BELL	BE-ZK-125	201505250002	2019.9.27	2020.9.26
SE157	Thermal abuse chamber	BELL	BE-101-480B	201505250003	2019.9.27	2020.9.26
SE158	Temperature control short-circuit tester	BELL	BE-1000W	201505250004	2019.9.27	2020.9.26
SE159	Projectile Tester	BELL	BE-6046	201505250005	2019.9.27	2020.9.26
SE160	Test machine for forced internal short circuit of cells	BELL	BE-6045W	201505250006	2019.9.27	2020.9.26
SE161	Crush tester	BELL	BE-6045-2T	201505250007	2019.9.27	2020.9.26
SE162	Rapid temperature test chamber	BELL	BTKS-408C-5	201505250008	2019.9.27	2020.9.26
SE163	Mechanical shock(crash hazard)	BELL	BE-5066	201505250009	2019.9.27	2020.9.26
SE164	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080859	2019.9.27	2020.9.26
SE165	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080860	2019.9.27	2020.9.26
SE166	Battery Testing System	NEWARE	CT-3008-20V6A-A	T1505-080861	2019.9.27	2020.9.26
SE167	Shock tester	LABTONE	HSKT10	L150529	2019.9.27	2020.9.26
SE168	Electromagnetic vibration tester	LABTONE	CV-700	L150530	2019.9.27	2020.9.26
SE169	Electronic scales	JM	JM-A	/	2019.9.27	2020.9.26
SE170	Digital Power Meter	EVERFINE	PF9901	G100731CO1351143	2019.9.27	2020.9.26
SE171	"GO" and "NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 6	/	2019.9.27	2020.9.26
SE172	"NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 7	/	2019.9.27	2020.9.26
SE173	"GO" Gauge for starters	KINGPO	IEC 60155 Fig 8	/	2019.9.27	2020.9.26
SE174	Internal resistance tester	TestPad	BTS-100	IR09100699	2019.9.27	2020.9.26
SE175	DC Electronic Load	PRODIGIT	3302C	80602C 446	2019.9.27	2020.9.26
SE176	DC Electronic Load	PRODIGIT	3302C	25689721698	2019.9.27	2020.9.26
SE177	Data Acquisition / Switch Unit	Agilent	34970A	MY44041739	2019.9.27	2020.9.26
SE178	Data Acquisition / Switch Unit	Agilent	34970A	US37043094	2019.9.27	2020.9.26
SE179	100:1 Oscillograph Probe	Pintek	CP-3308R	/	2019.9.27	2020.9.26
SE180	Digital Power Meter	EVERFINE	PF9901	G100731CN1351244	2019.9.27	2020.9.26
SE181	Cord oscillating tester	Futexing	FT-CWT03	CWT1604001	2019.9.27	2020.9.26

Appendix 2
Photo documentation



Annex

	Product part numbers
	BR-F3528xx60-xx-x-Fx-Vx
	BR-F3528xx120-xx-x-Fx-Vx
	BR-F3528xx180-xx-x-Fx-Vx
	BR-F3528xx240-xx-x-Fx-Vx
	BR-F3528xx240D-xx-x-Fx-Vx
	BR-F2835xx30-xx-x-Fx-Vx
	BR-F2835xx60-xx-x-Fx-Vx
	BR-2835xx120-xx-x-Fx-Vx
	BR-F2835xx180-xx-x-Fx-Vx
1	BR-F2835xx240-xx-x-Fx-Vx
	BR-F2835xx112-xx-x-Fx-Vx
	BR-F2835xx96-xx-x-Fx-Vx
	BR-F5050xx30-xx-x-Fx-Vx
	BR-F5050xx60-xx-x-Fx-Vx
	BR-F5050xx120D-xx-x-Fx-Vx
	BR-F5630xx126-xx-x-Fx-Vx
	BR-F5050xx96-xx-x-Fx-Vx
	BR-F3014xx70-xx-x-Fx-Vx
	BR-F2216xx120-xx-x-Fx-Vx
2	"BR" in the part number represents the brand " Brio Series", a product serie from the brand"LED RAY".
3	"F" in the part number represents "Flexible LED STRIP".
4	Numbers like "3528", "2835", "5050", "5630", "3014", "2216" represents the size of the LEDs;
5	The first "xx" represents the CCT/Color, such a"WW=Warm White", "NW=Natural White", "CW=Cool White", "B=Blue Color", " G=Green Color", " R=Red Color".
6	Numbers like "60", "120", "180", "240", "112", "126", "96", "30", "70" represents the quantity of LEDs per meter;
7	"D" means "double row";
8	The second "xx" represents the Color Kelvin, such as "22=2200K", "24=2400K", "27=2700K", "30=3000K", "40=4000K", "65=6500K", "Blank = Solid Color like Red, Green, Blue...etc"
9	"x" represents the MacAdam Binning, such as " C= MacAdam 3 Step", "C1=MacAdam 4 Step".
10	"Fx" Represents the waterproof types, such as"F0=IP20", "F1=IP54", "F2=IP65", "F3=IP66", "F4=IP67", "F5=IP68" etc.
11	"Vx" Represents the Voltage, Such as " V1=DC12V", "V2=DC24V" etc.

-----THE END OF REPORT-----

