Prüfbericht-Nr.: *Test Report No.:*	**16061443 001**	**Auftrags-Nr.:** *Order No.:*	174022946	**Seite 1 von 42** *Page 1 of 42*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	27.08.2014	
Auftraggeber: *Client:*	Foshan Ronse Lighting Technology Co.,Ltd. Liansha Industrial Zone, Jinsha, Danzao, Nanhai, Foshan, Guangdong 528223, P. R. China			
Prüfgegenstand: *Test item:*	LED Spot Light			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	See model list on page 4			
Auftrags-Inhalt: *Order content:*	Type examination			
Prüfgrundlage: *Test specification:*	EN 60598-2-1:1989; EN 60598-1:2008+A11:2009 EN 62493:2010 EN 62471:2008			
Wareneingangsdatum: *Date of receipt:*	27.08.2014	Detaillierte Fotodokumentation siehe Anlage zu diesem Bericht *Detailed photo documentation see appendix to this report*		
Prüfmuster-Nr.: *Test sample No.:*	Engineering samples			
Prüfzeitraum: *Testing period:*	27.08.2014-20.09.2014			
Ort der Prüfung: *Place of testing:*	**Waltek Services (Foshan) Co., Ltd.**			
Prüflaboratorium: *Testing laboratory:*	**TÜV Rheinland (GuangDong) Ltd**			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von / *tested by:*			**kontrolliert von** / *reviewed by:*		
2014-10-13 Dashen Xiao Dashen Xiao / Project Engineer			Oct. 13, 2014 Ivy Lu / Reviewer		Ivy Lu
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*
- Attachment 1: 7 pages of test equipment list.
- Attachment 2: Test report of EN62493:2010, 16061445 001, total 11 pages.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V04

Summary of testing:

Tests performed (name of test and test clause):

1. Unless otherwise specified, the models RS-2238-2, RS-2252, RS-2266-2 and RS-2276B were chosen as representative models to perform all tests; the tests results complied with the requirements of the standards mentioned on page one. Construction had been checked on all models.
2. The integral LED module had been considered according to EN 62031:2008+A1:2013 for models RS-2238-2, RS-2252, RS-2266-2 and RS-2276B.
3. RS-2238-2, RS-2252, RS-2266-2 and RS-2276B were evaluated according to EN 62471:2008 and the emission limits for risk groups belong to exempt group.
4. Assessment of lighting equipment related to human exposure to electromagnetic fields was evaluated and fulfilled the requirements of EN 62493:2010.

Testing location:

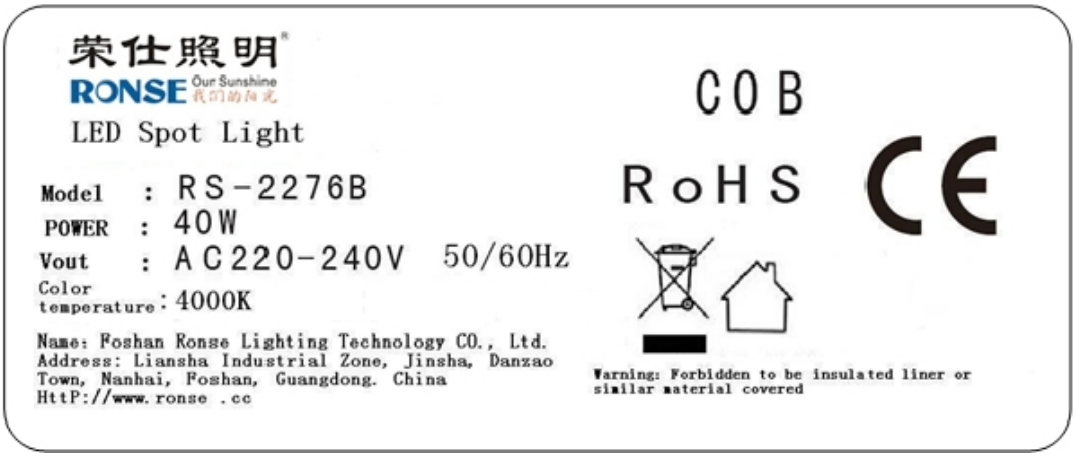
Waltek Services (Foshan) Co., Ltd.

No. 13-19, 2/F, 2nd Building, Sunlink International Machinery City, Chencun Town, Shunde District, Foshan, Guangdong, China

Summary of compliance with National Differences:

No national differences were considered.

Copy of marking plate:



The marking printed on the enclosure

Note: the marking labels for other models are identical as above, except the model No. and rated power.

Test item particulars	:	LED Spot Light
Classification of installation and use	:	Track-mounted luminaires
Supply Connection	:	Adaptor
IP degree	:	IP 20
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	:	2014-08-27
Date (s) of performance of tests	:	2014-08-27 to 2014-09-20

General remarks:

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.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a comma is used as the decimal separator.
Clause numbers between brackets refer to clauses in EN 60598-1.

Remark:

The manufacturer and factory are same as the applicant;

1. The complete report consists of 42 pages plus a photo documentation of 17 pages;
2. EN deviation of IEC 60598 was added on page 32-33.
3. The requirements of EN 62031 were added on page 34-37.
4. Photobiological Safety Of Lamps And Lamp Systems EN 62471 were added on page 38-42.

General product information:

1. They are track-mounted luminaires for indoor use only, differences are the bellow:

   All models have a same construction, except the appearance.

   There are four kinds of LED and LED drivers, All LED drivers and adaptor have approved, for more details see model list and annex 1.
2. 220-240VAC, 50/60Hz, Class I, see model list on page 4 for details.

Model list

Item	Model	Rated power (LED module)	IP degree	Size (mm) height x length	LED type and quantity	LED driver model name and quantity
1	RS-2238	15W	IP20	203x147	GW6BMR**HED x1	KED24W420R07E-1; 1pc
2	RS-2238-2	2x15W	IP20	203x246	GW6BMR**HED x2, (36,46 V, 0,380A)*	KED24W420R07E-1; 2pcs
3	RS-2252	20W	IP20	185x160	GW6DMA**NFC x1 (42,7 V, 0,530A)*	KED24W550R07E-1; 1pc
4	RS-2252A	20W	IP20	185x105	GW6DMA**NFCx1	KED24W550R07E-1; 1pc
5	RS-2257A	20W	IP20	222x147	GW6DMA**NFC x1	KED24W550R07E-1; 1pc
6	RS-2271A	15W	IP20	180x120	GW6BMR**HED x1	KED24W420R07E-1; 1pc
7	RS-2271B	20W	IP20	196x156	GW6DMA**NFC x1	KED24W550R07E-1; 1pc
8	RS-2252C	15W	IP20	205x119	GW6BMR**HED x1	KED24W420R07E-1; 1pc
9	RS-2252D	20W	IP20	254x137	GW6DMA**NFC x1	KED24W550R07E-1; 1pc
10	RS-2263A	20W	IP20	200x140	GW6DMA**NFC x1	KED24W550R07E-1; 1pc
11	RS-2256	20W	IP20	210x145	GW6DMA**NFC x1	KED24W550R07E-1; 1pc
12	RS-2256-2	2x20W	IP20	210x245	GW6DMA**NFC x2	KED24W550R07E-1; 2pcs
13	RS-2262A	40W	IP20	203x147	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
14	RS-2262	40W	IP20	203x220	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
15	RS-2266	30W	IP20	225x115	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
16	RS-2266-2	2x30W	IP20	225x292	GW6DMC**NFC x2 (36,70 V, 0,701A)*	KED36W700R08E-1; 2pcs
17	RS-2271C	30W	IP20	196x156	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
18	RS-2270A	40W	IP20	196x156	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
19	RS-2252E	30W	IP20	274x157	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
20	RS-2263A	30W	IP20	200x140	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
21	RS-2262B	40W	IP20	230x145	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
22	RS-2277A	40W	IP20	245x170	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
23	RS-2277B	40W	IP20	220x160	GW6DMD**NFC x1	KED36W850R08E-1; 1pc
24	RS-2277C	30W	IP20	210x140	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
25	RS-2276A	25W	IP20	235x220	GW6DMA**NFC x1	KED36W700R08E-1; 1pc
26	RS-2276B	40W	IP20	230x220	GW6DMD**NFC x1 (44,17 V, 0,847A)*	KED36W850R08E-1; 1pc
27	RS-2275D	30W	IP20	260x160	GW6DMC**NFC x1	KED36W700R08E-1; 1pc
28	RS-2240	15W	IP20	180x105	GW6BMR**HED x1	KED24W420R07E-1; 1pc
29	RS-2241	15W	IP20	200x142	GW6BMR**HED x1	KED24W420R07E-1; 1pc
30	RS-2250	15W	IP20	203x147	GW6BMR**HED x1	KED24W420R07E-1; 1pc
31	RS-2250-2	2x15W	IP20	203x246	GW6BMR**HED x2	KED24W420R07E-1; 2pcs

Remark: * means LED actual input value

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.2 (0)	**GENERAL TEST REQUIREMENTS**		**P**
1.2 (0.1)	Information for luminaire design considered	Standard Yes ☒ No ☐	—
1.2 (0.3)	More sections applicable.....:	Yes ☐ No ☒	—

1.4 (2)	**CLASSIFICATION**		**P**
1.4 (2.2)	Type of protection (Class 0 excluded).....:	Class I	—
1.4 (2.3)	Degree of protection (Requirement: Ordinary) .....:	IP 20	—
1.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces.....:	Yes ☒ No ☐	—
	Luminaire not suitable for direct mounting on normally flammable surfaces.....:	Yes ☐ No ☒	—
1.4 (2.5)	Luminaire for normal use .....:	Yes ☒ No ☐	—
	Luminaire for rough service .....:	Yes ☐ No ☒	—

1.5 (3)	**MARKING**		**P**
1.5 (3.2)	Mandatory markings		P
	Position of the marking		P
	Format of symbols/text		P
1.5 (3.3)	Additional information		P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaires		N/A
1.5 (3.3.2)	Nominal frequency in Hz	50/60 Hz	P
1.5 (3.3.3)	Operating temperature		N/A
1.5 (3.3.4)	Symbol or warning notice		N/A
1.5 (3.3.5)	Wiring diagram		N/A
1.5 (3.3.6)	Special conditions		N/A
1.5 (3.3.7)	Metal halide lamp luminaire – warning		N/A
1.5 (3.3.8)	Limitation for semi-luminaires		N/A
1.5 (3.3.9)	Power factor and supply current		N/A
1.5 (3.3.10)	Suitability for use indoors		N/A
1.5 (3.3.11)	Luminaires with remote control		N/A
1.5 (3.3.12)	Clip-mounted luminaire – warning		N/A
1.5 (3.3.13)	Specifications of protective shields		N/A
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet		N/A
1.5 (3.3.16)	Rough service luminaire		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments		N/A
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
1.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
1.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N/A
1.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P
1.6 (4)	**CONSTRUCTION**		**P**
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N/A
1.6 (4.4.1)	Integral lampholder		N/A
1.6 (4.4.2)	Wiring connection		N/A
1.6 (4.4.3)	Lampholder for end-to-end mounting		N/A
1.6 (4.4.4)	Positioning		N/A
	- pressure test (N) ..... :	---	N/A
	After test the lampholder comply with relevant standard sheets and show no damage		N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation		N/A
	- bending test (Nm) ..... :	---	N/A
	After test the lampholder have not moved from its position and show no permanent deformation		N/A
1.6 (4.4.5)	Peak pulse voltage		N/A
1.6 (4.4.6)	Centre contact		N/A
1.6 (4.4.7)	Parts in rough service luminaires resistant to tracking		N/A
1.6 (4.4.8)	Lamp connectors		N/A
1.6 (4.4.9)	Caps and bases correctly used		N/A
1.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
1.6 (4.6)	Terminal blocks		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Tails		N/A
	Unsecured blocks		N/A
1.6 (4.7)	Terminals and supply connections		N/A
1.6 (4.7.1)	Contact to metal parts		N/A
1.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
1.6 (4.7.3)	Terminals for supply conductors		N/A
1.6 (4.7.3.1)	Welded connections:		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
1.6 (4.7.4)	Terminals other than supply connection		N/A
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
1.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
1.6 (4.8)	Switches:		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with 61058-1 for electronic switches		N/A
1.6 (4.9)	Insulating lining and sleeves		P
1.6 (4.9.1)	Retainement		P
	Method of fixing..... :	Heart-shrinkable	P
1.6 (4.9.2)	Insulated linings and sleeves		P
	Resistant to a temperature > 20 °C to the wire temperature or		P
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C)..... :	---	N/A
1.6 (4.10)	Insulation of Class II luminaires		N/A
1.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
1.6 (4.10.2)	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
1.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
1.6 (4.11)	Electrical connections		P
1.6 (4.11.1)	Contact pressure		P
1.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
1.6 (4.11.3)	Screw locking:		P
	- spring washer		P
	- rivets		N/A
1.6 (4.11.4)	Material of current-carrying parts	> 50% Cu	P
1.6 (4.11.5)	No contact to wood or mounting surface		P
1.6 (4.11.6)	Electro-mechanical contact systems		N/A
1.6 (4.12)	Mechanical connections and glands		P
1.6 (4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part ..... :	Screw for fixing enclosure: 0,5Nm	P
	Torque test: torque (Nm); part ..... :	Screw for fixing earth terminal: 1,2Nm	P
	Torque test: torque (Nm); part ..... :	Screw for fixing LED module: 0,5 Nm	P
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		P
1.6 (4.12.4)	Locked connections:		P
	- fixed arms; torque (Nm)..... :	≤ M 10; 2,5 Nm	P
	- lampholder; torque (Nm)..... :	---	N/A
	- push-button switches; torque 0,8 Nm..... :	---	N/A
1.6 (4.12.5)	Screwed glands; force (Nm) ..... :	---	N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) ..... :	---	N/A
	- other parts; energy (Nm) ..... :	Enclosure: 0,35 Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
1.6 (4.13.3)	Straight test finger	Metal enclosure: 30 N	P
1.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
1.6 (4.13.6)	Tumbling barrel		N/A
1.6 (4.14)	Suspensions and adjusting devices		P
1.6 (4.14.1)	Mechanical load:		P
	A) four times the weight	For RS-2266-2, Max. 2,525x4=10,10kg	P
	B) torque 2,5 Nm		P
	C) bracket arm; bending moment (Nm) ..... :	---	N/A
	D) load track-mounted luminaires		P
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) ..... :	---	N/A
	Metal rod. diameter (mm) ..... :	---	N/A
	Fixed luminaire or independent control gear without fixing devices		N/A
1.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) ..... :	---	N/A
	Stress in conductors (N/mm²) ..... :	---	N/A
	Mass (kg) of semi-luminaire ..... :	---	N/A
	Bending moment (Nm) of semi-luminaire ..... :	---	N/A
1.6 (4.14.3)	Adjusting devices:		P
	- flexing test; number of cycles ..... :	150 cycles	P
	- strands broken		P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- electric strength test afterwards		P
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
1.6 (4.14.5)	Guide pulleys		N/A
1.6 (4.14.6)	Strain on socket-outlets		N/A
1.6 (4.15)	Flammable materials:		P
	- glow-wire test 650 °C		P
	- spacing ≥ 30 mm		N/A
	- screen withstanding test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N/A
	a) construction		N/A
	b) temperature sensing control		N/A
	c) surface temperature		N/A
1.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	(Electronic control gear)	N/A
1.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
1.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A
	- temperature marked lamp control gear		N/A
1.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N/A
1.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
1.6 (4.18)	Resistance to corrosion:		N/A
1.6 (4.18.1)	- rust-resistance		N/A
1.6 (4.18.2)	- season cracking in copper		N/A
1.6 (4.18.3)	- corrosion of aluminium		N/A
1.6 (4.19)	Ignitors compatible with ballast		N/A
1.6 (4.20)	Rough service vibration		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6 (4.21)	Protective shield:		N/A
1.6 (4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
1.6 (4.21.3)	No direct path		N/A
1.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A
1.6 (4.22)	Attachments to lamps		N/A
1.6 (4.23)	Semi-luminaires comply Class II		N/A
1.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N/A
1.6 (4.25)	No sharp point or edges		P
1.6 (4.26)	Short-circuit protection:		N/A
1.6 (4.26.1)	Uninsulated accessible SELV parts		N/A
1.6 (4.26.2)	Short-circuit test		N/A
1.6 (4.26.3)	Test chain according to Figure 29		N/A

1.7 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Working voltage (V) ..... :	220-240V~(input) Max. 52V DC (output of LED driver)	—
	Voltage form	Sinusoidal ☒ Non-sinusoidal ☒	—
	PTI	< 600 ☒ ≥ 600 ☐	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II ☒ Category III ☐	—
	Rated pulse voltage (kV) ..... :	---	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm) ..... :	Approved adaptor and LED driver	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm) ..... :	Cr=3,3mm(required: 2,5mm) Cl=3,3mm(required: 1,5mm)	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm) ..... :	---	N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm) ..... :	---	N/A
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm) ..... :	Cr=3,3mm(required: 2,5mm) Cl=3,3mm(required: 1,5mm)	P

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.8 (7)	**PROVISION FOR EARTHING**		**P**
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		P
	Metal parts in contact with supporting surface		P
	Resistance < 0,5 Ω	Max. 0.031 Ω	P
	Self-tapping screws used		N/A
	Thread-forming screws		N/A
	Thread-forming screw used in a grove		N/A
	Earth makes contact first		N/A
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		P
1.8 (7.2.4)	Locking of clamping means		P
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N/A
1.8 (7.2.5)	Earth terminal integral part of connector socket		N/A
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		P
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N/A
1.8 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
1.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
1.8 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		N/A

1.9 (14)	**SCREW TERMINALS**		N/A
	Separately approved; component list	(see Annex 1)	N/A
	Part of the luminaire	(see Annex 3)	N/A

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

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 ..... :	Adaptor	P
1.10 (5.2.2)	Type of cable..... :	---	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Nominal cross-sectional area (mm²) ..... :	---	N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
1.10 (5.2.3)	Type of attachment, X, Y or Z		N/A
1.10 (5.2.5)	Type Z not connected to screws		N/A
1.10 (5.2.6)	Cable entries:		N/A
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N/A
1.10 (5.2.8)	Insulating bushings:		N/A
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
1.10 (5.2.9)	Locking of screwed bushings		N/A
1.10 (5.2.10)	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
1.10 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- pull test: 25 times; pull (N) ..... :	---	N/A
	- torque test: torque (Nm) ..... :	---	N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
1.10 (5.2.11)	External wiring passing into luminaire		N/A
1.10 (5.2.12)	Looping-in terminals		N/A
1.10 (5.2.13)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
1.10 (5.2.14)	Mains plug same protection		N/A
	Class III luminaire plug		N/A
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
1.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
1.10 (5.2.18)	Used plug in accordance with		N/A
	- IEC 60083		N/A
	- other standard		N/A
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type	(see Annex 1)	P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A)..... :		N/A
	- temperatures..... :	(see Annex 2)	N/A
	Green-yellow for earth only		P
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²) ..... :	---	N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
1.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
1.10 (5.3.1.4)	Conductors without insulation		N/A
1.10 (5.3.1.5)	SELV current-carrying parts		P
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber	PVC	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		N/A
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
1.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
1.10 (5.3.4)	Joints and junctions effectively insulated		N/A
1.10 (5.3.5)	Strain on internal wiring		N/A
1.10 (5.3.6)	Wire carriers		N/A
1.10 (5.3.7)	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		P
1.11 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		**P**
1.11 (8.2.1)	Live parts not accessible with standard test finger		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 and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A
	Lampholder and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		N/A
1.11 (8.2.3.a)	Class II luminaire:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
1.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
1.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current ..... :	---	N/A
	- no-load voltage..... :	---	N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage ..... :	---	N/A
1.11 (8.2.4)	Portable luminaire:		N/A
	- protection independent of supporting surface		N/A
	- terminal block completely covered		N/A
1.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
1.11 (8.2.6)	Covers reliably secured		P
1.11 (8.2.7)	Discharging of capacitors ≥ 0,5 µF		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		P
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		P
1.11.1 (-)	Protective parts for lamp caps not removable by hand in hand-held inspection luminaires		N/A
1.11.2 (-)	Fixing of parts within 2 m from floor		N/A

1.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		**P**
1.12 (12.3)	Endurance test:		P
	- mounting-position..... :	As in normal use	—
	- test temperature (°C)..... :	35°C	—
	- total duration (h)..... :	240h	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- supply voltage: Un factor; calculated voltage (V):	RS-2238-2: 264V; 0,138A; 32,4W; 0,89PF; RS-2252: 264V; 0,109A; 27,5W; 0,95PF; RS-2266-2: 264V; 0,219A; 55,7W; 0,96PF; RS-2276B: 264V; 0,158A; 40,7W; 0,97PF	—
	- lamp used ..... :	Integral LED module	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		P
	- marking legible		P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
1.12 (12.5)	Thermal test (abnormal operation)		N/A
1.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
1.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... :		—
	- case of abnormal conditions ..... :		—
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un :		—
	- measured mounting surface temperature (°C) at 1,1 Un ..... :		N/A
	- calculated mounting surface temperature (°C) . :		N/A
	- track-mounted luminaires		N/A
1.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions ..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C) .. :		N/A
	- track-mounted luminaires		N/A
1.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
1.12 (12.7.1)	Luminaire without temperature sensing control		N/A
1.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex V ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex V:		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un . :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C) ..... :		N/A
	- part tested; temperature (°C) ..... :		N/A
1.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un . :		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C) ..... :		N/A
	- part tested; temperature (°C) ..... :		N/A
1.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
1.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link	Yes ☐ No ☐	—
	- manual reset cut-out	Yes ☐ No ☐	—
	- auto reset cut-out	Yes ☐ No ☐	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Ball-pressure test:		N/A
	- part tested; temperature (°C) ..... :		N/A
	- part tested; temperature (°C) ..... :		N/A
1.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP ..... :	IP 20	—
	- mounting position during test..... :	As in normal use	—
	- fixing screws tightened; torque (Nm)..... :	---	—
	- tests according to clauses ..... :	9.2.0	—
	- electric strength test afterwards		N/A
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust-tight luminaire		N/A
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A
1.13 (9.3)	Humidity test 48 h	25°C, 93%RH	P
1.13.1 (-)	Parts removed before humidity treatment	No such part	N/A
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:		P
	- between current-carrying parts of different polarity ..... :	---	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- between current-carrying parts and mounting surface ..... :	100 MΩ	P
	- between current-carrying parts and metal parts of the luminaire..... :	100 MΩ	P
	Other than SELV:		P
	- between live parts of different polarity..... :	200 MΩ	P
	- between live parts and mounting surface..... :	200 MΩ	P
	- between live parts and metal parts ..... :	200 MΩ	P
	- between live parts of different polarity through action of a switch..... :	---	N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts ..... :	---	N/A
	- Insulation bushings as described in Section 5 .. :	---	N/A
1.14 (10.2.2)	Electric strength test		P
	Dummy lamp		N/A
	Luminaires with ignitors after 24 h test		N/A
	Luminaires with manual ignitors		N/A
	Test voltage (V):		P
	SELV:		P
	- between current-carrying parts of different polarity ..... :	---	N/A
	- between current-carrying parts and mounting surface..... :	500 V	P
	- between current-carrying parts and metal parts of the luminaire..... :	500 V	P
	Other than SELV:		P
	- between live parts of different polarity..... :	1480 V	P
	- between live parts and mounting surface..... :	1480 V	P
	- between live parts and metal parts ..... :	1480 V	P
	- between live parts of different polarity through action of a switch..... :	---	N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts ..... :	---	N/A
	- Insulation bushings as described in Section 5 .. :	---	N/A
1.14 (10.3)	Touch current (mA) ..... :	---	N/A
	Protective conductor current (mA) ..... :	Max. 0,024 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict

1.15 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
1.15 (13.2.1)	Ball-pressure test:		P
	- part; test temperature (°C) .....:	Plastic enclosure; 80,5°C	P
1.15 (13.3.1)	Needle flame test (10 s):		N
	- part tested .....:	---	N
1.15 (13.3.2)	Glow-wire test (650°C):		P
	- part tested .....:	Plastic cover for LED	P
	- part tested .....:	Plastic enclosure	P
	- part tested .....:	Closed-end connector	P
1.15 (13.4.1)	Tracking test: part tested.....:	---	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Critical Components

Material: e.g. external enclosure, PCB, closed-end connector, sleeves, cord anchorage etc
Components with winding: e.g. motor, transformer, magnetic coil etc.
Other components: e.g. switch, thermostat, heater, plug, internal wire, capacitor, relay, varistor etc.

Object/part No.	Code	Manufacturer/ trademark	Type/ model	Technical data	Standard	Mark(s) of conformity
Adaptor	B	Protel Pacific Corp.	Pro-0440	AC220-250V; 50/60Hz; Max.10A; 100N	EN 60570	TUV R 50119006
Input wire only for RS-2252, RS-2252A, RS-2252C, RS-2252D, RS-2252E, RS-2275D, 's LED driver	B	Zhong Shan Yong Rui Electric Wire Co. Ltd.	H03VV-F	3 x 0,75 mm²	EN 50525-2-11	VDE 40021527
Input wire for other models' LED driver	B	Zhong Shan Yong Rui Electric Wire Co. Ltd.	H03VH7-H	0,75 mm²	DIN EN 50525-2-11	VDE 40027126
Output wire for LED driver	B	ZHONG SHAN YONG ROI ELECTRIC FACTORY CO LTD	1007	300VAC; 80°C; 22AWG	--	UL E204893
Earth wire	B	Zhong Shan Yong Rui Electric Wire Co. Ltd.	H03VH7-H	0,75 mm²	DIN EN 50525-2-11	VDE 40027126
LED driver 1 for RS-2238, RS-2238-2, RS-2271A, RS-2252C, RS-2240, RS-2241, RS-2250, RS-2250-2	B	KEGU POWER ELECTRONICS CO.,LTD.	KED24W42 0R07E-1	Input: 220-240VAC; 50/60Hz;0,14A; Output: DC24-49V; max.52V; 0,42A; ta:45°C; tc:85°C; SELV-equivalent; Independent; Class II; IP20	EN 61347-1 EN 61347-2-13	TUV SUD B 13 06 76089 026
LED driver 2 for RS-2252, RS-2252A, RS-2257A, RS-2271B, RS-2252D, RS-2263A, RS-2256, RS-2256-2	B	KEGU POWER ELECTRONICS CO.,LTD.	KED24W55 0R07E-1	Input: 220-240VAC; 50/60Hz;0,15A; Output: DC24-49V; max.52V; 0,55A; ta:45°C; tc:85°C; SELV-equivalent; Independent; Class II; IP20	EN 61347-1 EN 61347-2-13	TUV SUD B 13 06 76089 026

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

LED driver 3 for RS-2262A, RS-2262, RS-2270A, RS-2262B, RS-2277A, RS-2277B, RS-2276B	B	KEGU POWER ELECTRONICS CO.,LTD.	KED36W850R08E-1	Input: 220-240VAC; 50/60Hz;0,23A; Output: DC24-49V; max.52V; 0,85A; ta:45°C; tc:85°C; SELV-equivalent; Independent; Class II; IP20	EN 61347-1 EN 61347-2-13	TUV SUD B 13 06 76089 026
LED driver 4 for the rest models	B	KEGU POWER ELECTRONICS CO.,LTD.	KED36W700R08E-1	Input: 220-240VAC; 50/60Hz;0,2A; Output: DC24-49V; max.52V; 0,7A; ta:45°C; tc:85°C; SELV-equivalent; Independent; Class II; IP20	EN 61347-1 EN 61347-2-13	TUV SUD B 13 06 76089 026
Silicone coated fiberglass sleeving	B	XIAN NING CITY HAI JIN YANG INSULATION MATERIAL CO LTD	SRG-868-7AE	VW-1; 200°C	--	UL E303665
Closed-end connector	B	Heavy Power Co., Ltd	CE2; CE5	600V; 150°C	--	UL E113650
- COB LED 1 for RS-2238, RS-2238-2, RS-2271A, RS-2252C, RS-2240, RS-2241, RS-2250, RS-2250-2	B	SHARP CORPORATION	GW6BMR** HED	I_F=520mA; V_F=36V; 4000K; Neutral white	EN 62471	Tested with appliance
- COB LED 2 for RS-2252, RS-2252A, RS-2257A, RS-2271B, RS-2252D, RS-2263A 20W, RS-2256, RS-2256-2, RS-2276A	B	SHARP CORPORATION	GW6DMA** NFC	I_F=700mA; V_F=37V; 4000K; Neutral white	EN 62471	Tested with appliance
- COB LED 3 for RS-2262A, RS-2262, RS-2270A, RS-2262B, RS-2277A, RS-2277B, RS-2276B	B	SHARP CORPORATION	GW6DMD** NFC	I_F=1300mA; V_F=37V; 4000K; Neutral white	EN 62471	Tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

- COB LED 4 for the rest models	B	SHARP CORPORATION	GW6DMC** NFC	I_F=1050mA; V_F=37V; 4000K; Neutral white	EN 62471	Tested with appliance
- LED PCB	B	KINGBOARD LAMINATES HOLDINGS LTD	KB-6150C	130°C	--	UL E123995
Plastic enclosure for RS-2276B	B	CHI MEI CORPORATION	PA-757(+)	ABS; HB; 80°C	--	UL E56070
Plastic cover for LED	B	CHI MEI CORPORATION	PC-110(+)	PC; 105°C; V-2	--	UL E56070
Heat-shrinkage tube	B	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	600V; 125°C	--	UL E180908
Alternative	D	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600V; 125°C; VW-1	--	UL E203950

The codes above have the following meaning:
A - The component is replaceable with another one, also certified, with equivalent characteristics
B - The component is replaceable if authorised by the test house
C - Integrated component tested together with the appliance
D - Alternative component

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 2: temperature measurements, thermal tests of Section 12	P

	Type reference..... :	RS-2238-2	—
	Lamp used..... :	Integral LED	—
	Lamp control gear used ..... :	KED24W420R07E-1	—
	Mounting position of luminaire..... :	Mounted on the track	—
	Supply wattage (W)..... :	--	—
	Supply current (A)..... :	--	—
	Calculated power factor ..... :	--	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	Short-circuit LED 264V; 0,079A; 17,1W; 0,85PF	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06 x 240V = 254,4V 0,142A; 32,3W; 0,90PF	—
	- 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 (°C) of part	clause 12.4 – normal				clause 12.5 - abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Adaptor	--	28,7	--	Ref.	--	--
Input wire for LED driver	--	61,7	--	90	--	--
Output wire for LED driver	--	55,2	--	80	--	--
Lead wires of LED module	--	72,1	--	80	--	--
LED driver tc	--	63,6	--	85	--	--
Lamp cover (glass)	--	48,3	--	Ref.	--	--
Plastic cover for LED	--	66,6	--	Ref.	--	--
LED board	--	73,7	--	Ref	--	--
Adjustment part (metal)	--	53,4	--	60	--	--
Mounting surface (flammable surface)	--	27,5	--	90	--	--
Lighting object (10cm)	--	32,2	--	90	--	--
Accessible metal part	--	51,8	--	Ref.	--	--
Track	--	47,6	--	Ref.	--	--

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Type reference..... :	RS-2252	—
	Lamp used..... :	Integral LED	—
	Lamp control gear used ..... :	KED24W420R07E-1	—
	Mounting position of luminaire..... :	Mounted on the track	—
	Supply wattage (W)..... :	--	—
	Supply current (A)..... :	--	—
	Calculated power factor ..... :	--	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	Short-circuit LED 264V; 0,0A; 0W	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06 x 240V = 254,4V 0,112A; 27,5W; 0,96PF	—
	- 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 (°C) of part	clause 12.4 – normal				clause 12.5 - abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Adaptor	--	28,2	--	Ref.	--	--
Input wire for LED driver	--	48,6	--	90	--	--
Output wire for LED driver	--	46,4	--	80	--	--
Lead wires of LED module	--	70,3	--	80	--	--
LED driver tc	--	57,1	--	85	--	--
Lamp cover (glass)	--	50,5	--	Ref.	--	--
Plastic cover for LED	--	120,0	--	Ref.	--	--
LED board	--	125,2	--	Ref	--	--
Adjustment part (metal)	--	38,8	--	60	--	--
Mounting surface (flammable surface)	--	28,1	--	90	--	--
Lighting object (10cm)	--	29,8	--	90	--	--
Accessible Metal part	--	56,8	--	Ref.	--	--
Track	--	45,6	--	Ref.	--	--

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Type reference..... :	RS-2266-2	—
	Lamp used..... :	Integral LED	—
	Lamp control gear used ..... :	KED36W700R08E-1	—
	Mounting position of luminaire..... :	Mounted on the track	—
	Supply wattage (W)..... :	--	—
	Supply current (A)..... :	--	—
	Calculated power factor ..... :	--	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	Short-circuit LED 264V; 0,109A; 27,5W; 0,92PF	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06 x 240V = 254,4V 0,225A; 55,6W; 0,96PF	—
	- 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 (°C) of part	clause 12.4 – normal				clause 12.5 - abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Adaptor	--	34,0	--	Ref.	--	--
Input wire for LED driver	--	44,9	--	90	--	--
Output wire for LED driver	--	43,7	--	80	--	--
Lead wires of LED module	--	58,9	--	80	--	--
LED driver tc	--	64,7	--	85	--	--
Lamp cover (glass)	--	47,0	--	Ref.	--	--
Plastic cover for LED	--	62,3	--	Ref.	--	--
LED board	--	68,3	--	Ref	--	--
Adjustment part (metal)	--	53,2	--	60	--	--
Mounting surface (flammable surface)	--	33,4	--	90	--	--
Lighting object (10cm)	--	40,4	--	90	--	--
Accessible metal part	--	42,3	--	Ref.	--	--
Track	--	48,0	--	Ref.	--	--

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Type reference..... :	RS-2276B	—
	Lamp used..... :	Integral LED	—
	Lamp control gear used ..... :	KED36W850R08E-1	—
	Mounting position of luminaire..... :	Mounted on the track	—
	Supply wattage (W)..... :	--	—
	Supply current (A)..... :	--	—
	Calculated power factor ..... :	--	—
	Table: measured temperatures corrected for ta = 25 °C:		P
	- abnormal operating mode ..... :	Short-circuit LED 264V; 0,0A; 0W	—
	- test 1: rated voltage ..... :	---	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage..... :	1,06 x 240V = 254,4V 0,163A; 40,8W; 0,97PF	—
	- 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 (°C) of part	clause 12.4 – normal				clause 12.5 - abnormal	
	test 1	test 2	test 3	limits	test 4	limit
Adaptor	--	29,1	--	Ref.	--	--
Input wire for LED driver	--	40,8	--	90	--	--
Output wire for LED driver	--	49,8	--	80	--	--
Lead wires of LED module	--	63,5	--	80	--	--
LED driver tc	--	79,0	--	85	--	--
Lamp cover (glass)	--	42,7	--	Ref.	--	--
Plastic cover for LED	--	65,2	--	Ref.	--	--
LED board	--	70,4	--	Ref	--	--
Plastic enclosure	--	55,5	--	Ref	--	--
Adjustment part (metal)	--	46,1	--	60	--	--
Mounting surface (flammable surface)	--	29,5	--	90	--	--
Lighting object (10cm)	--	51,5	--	90	--	--
Accessible metal part	--	63,2	--	Ref.	--	--
Track	--	46,1	--	Ref.	--	--

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 3: screw terminals (part of the luminaire)	**N/A**

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

	ANNEX 4: screwless terminals (part of the luminaire)	**N/A**

(15)	**SCREWLESS TERMINALS**		**N/A**
(15.2)	Type of terminal ..... :		—
	Rated current (A) ..... :		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

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

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Voltage drop of two inseparable joints		N/A
	Voltage drop after 10th alt. 25th cycle		N/A
	Max. allowed voltage drop (mV)..... :		—

terminal	1	2	3	4	5	6	7	8	9	10

IEC 60598-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									N/A
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									N/A
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

EN deviation of IEC 60598			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 5:	**CENELEC COMMON MODIFICATIONS (EN)**		**P**
1.5 (3)	**MARKING**		N/A
1.5 (3.3.101)	Adequate warning on the package		N/A
1.10 (5)	**EXTERNAL AND INTERNAL WIRING**		N/A
1.10 (5.2.1)	Connecting leads		N/A
	- without a means for connection to the supply		N/A
	- terminal block specified		N/A
	- relevant information provided		N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1		N/A
1.10 (5.2.2)	Cables equal to HD21 S2 or HD22 S2		N/A

1.12 (12)	**ENDURANCE TEST AND THERMAL TEST**		**P**
1.12 (12.4.2c)	Thermal test (normal operation)		P

ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		**N/A**
(3.3)	DK: power supply cord with label		N/A
	IT: warning label on Class 0 luminaire		N/A
(4.5.1)	DK: socket-outlets		N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug		N/A

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		**N/A**
(4 & 5)	FR: Shuttered socket-outlets 10/16A		N/A
(13.3)	DK: Needle flame test during 30 s		N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N/A
(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/A

EN 60598-1: 2008/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict

Annex 6	**EN 60598-1: 2008/A11:2009**		
	Replace the exising definition 1.2.76 with the following		**P**
I.2.76	Impulse withstand category (former term" overvoltage categories").		P
	Numeral defining a transient overvoltage condition		P
Note 1	Impulse withstand categories I, II, III and IV are used		P
Note 2	Explanation is taken from IEC 60364-4-44:2007		P
	Table 1.1		P

EN 62031:2008+A1:2013			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 7	**LED modules for general lighting – Safety specifications EN 62031:2008+A1:2013**	P

13	FAULT CONDITIONS		P
13.1	In compliance with EN 61347-1 (clause numbers between parentheses refer to EN 61347-1)		P
	When operated under fault conditions the LED-module:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table)	P
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)		N/A
	Distances on printed boards provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.4)	Short-circuit across electrolytic capacitors		N/A
- (14.5)	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
	After the tests the insulation resistance with d.c. 500 V (MΩ) are ≥ 1 MΩ .....:	> 100 MΩ	P
	Temperature declared thermally protected LED-modules fulfil the requirements in Annex C of IEC 61437-1		N/A
13.2	Module withstands overpower condition >15 min.	(see appended table on next page of overpower condition)	P
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite		P

EN 62031:2008+A1:2013			
Clause	Requirement + Test	Result - Remark	Verdict

13	**TABLE: tests of fault conditions**		**P**
	for model RS-2238-2; 254,4V, 0,142A; 32,3W; 0,90PF		**P**
Part	Simulated fault	Result	Hazard
One LED	Short-circuit	0,079A; 16,3W; recoverable	No
One LED	Open-circuit	0,079A; 17,4W; recoverable	No
Supplementary information: N/A			

Clause 13.2 overpower condition	Position: Appliance positioned on the test corner. Duration: until stable Operation: increased to 150% the rated power, module withstands overpower condition > 15min.		
		ta: 25°C	
RS-2238-2	Thermocouple point	Measured temperature (°C)	Limit (°C)
	LED board	100,4	Ref.
	Lamp cover	66,4	Ref.
	Plastic cover for LED	93,3	Ref.
	Mounting surface (flammable surface)	30,9	130
	Observation: 50,56V; 20,2W; 0,411A; no fire, smoke or flammable gas is produced.		

13	**TABLE: tests of fault conditions**		**P**
	for model RS-2252; 254,4V, 0,112A; 27,5W; 0,96PF		**P**
Part	Simulated fault	Result	Hazard
One LED	Short-circuit	0 A; 0,2W; recoverable	No
One LED	Open-circuit	0, A; 0,1W; recoverable	No
Supplementary information: N/A			

EN 62031:2008+A1:2013			
Clause	Requirement + Test	Result - Remark	Verdict

Clause 13.2 overpower condition	Position: Appliance positioned on the test corner. Duration: until stable Operation: increased to 150% the rated power, module withstands overpower condition > 15min.		
		ta: 25°C	
RS-2252	Thermocouple point	Measured temperature (°C)	Limit (°C)
	LED board	153.9	Ref.
	Lamp cover	70.2	Ref.
	Plastic cover for LED	148.2	Ref.
	Mounting surface (flammable surface)	30.5	130
	Observation:60,47V; 0,544A; 32,9W; no fire, smoke or flammable gas is produced.		

13	**TABLE: tests of fault conditions**		**P**
	for model RS-2266-2; 254,4V, 0,225A; 55,6W; 0,96PF		**P**
Part	Simulated fault	Result	Hazard
One LED	Short-circuit	0,109A; 27,5W; recoverable	No
One LED	Open-circuit	0,109A; 28,4W; recoverable	No
Supplementary information: N/A			

Clause 13.2 overpower condition	Position: Appliance positioned on the test corner. Duration: until stable Operation: increased to 150% the rated power, module withstands overpower condition > 15min.		
		ta: 25°C	
RS-2266-2	Thermocouple point	Measured temperature (°C)	Limit (°C)
	LED board	100.1	Ref.
	Lamp cover	66.7	Ref.
	Plastic cover for LED	92.0	Ref.
	Mounting surface (flammable surface)	31.6	130
	Observation:50,11V; 0,780A; 39,0W; no fire, smoke or flammable gas is produced.		

EN 62031:2008+A1:2013			
Clause	Requirement + Test	Result - Remark	Verdict

13	**TABLE: tests of fault conditions**		**P**
	for model RS-2276B; 254,4V, 0,163A; 40,8W; 0,97PF		**P**
Part	Simulated fault	Result	Hazard
One LED	Short-circuit	0 A; 0,1W; recoverable	No
One LED	Open-circuit	0A; 0,2W; recoverable	No
Supplementary information: N/A			

Clause 13.2 overpower condition	Position: Appliance positioned on the test corner. Duration: until stable Operation: increased to 150% the rated power, module withstands overpower condition > 15min.		
		ta: 25°C	
RS-2276B	Thermocouple point	Measured temperature (°C)	Limit (°C)
	LED board	103.2	Ref.
	Lamp cover	70.8	Ref.
	Plastic cover for LED	94.8	Ref.
	Mounting surface (flammable surface)	35.2	130
	Observation:51,74V; 0,98A; 50,7W; no fire, smoke or flammable gas is produced.		

EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 9	Photobiological Safety Of Lamps And Lamp Systems EN 62471:2008	P

Conditions

1. Tests performed on RS-2238-2 (4000K), RS-2252 (4000K), RS-2266-2 (4000K) and RS-2276B (4000K) supplied by 240VAC.
2. Ambient temperature: 23±2°C, Humidity: 64±10%.
3. Measurement distance:

   RS-2238-2 at a distance of 3,767m

   RS-2252 at a distance of 0,200m

   RS-2266-2 at a distance of 0,200m

   RS-2276B at a distance of 0,200m

4. Angular subtense of whole lamp:

   RS-2238-2: 32,5mrad;

   RS-2252: 100,0mrad;

   RS-2266-2: 100,0mrad;

   RS-2276B: 100,0mrad;

Calculation of the Hazard exposure limits for the Exempt group Lamp

The philosophical basis for the exempt group classification is that the lamp does not pose any photobiological hazard for the end points in this standard. This requirement is met by any lamp that does not pose

1. An actinic ultraviolet hazard (Es) within 8-hours exposure (30000 s), nor
2. A near-UV hazard (EUVA) within 1000 s, (about 16 min), nor
3. A retinal blue-light hazard (LB) within 10000 s (about 2.8 h), nor
4. A retinal thermal hazard (LR) within 10 s, nor
5. An infrared radiation hazard for the eye (EIR) within 1000 s.

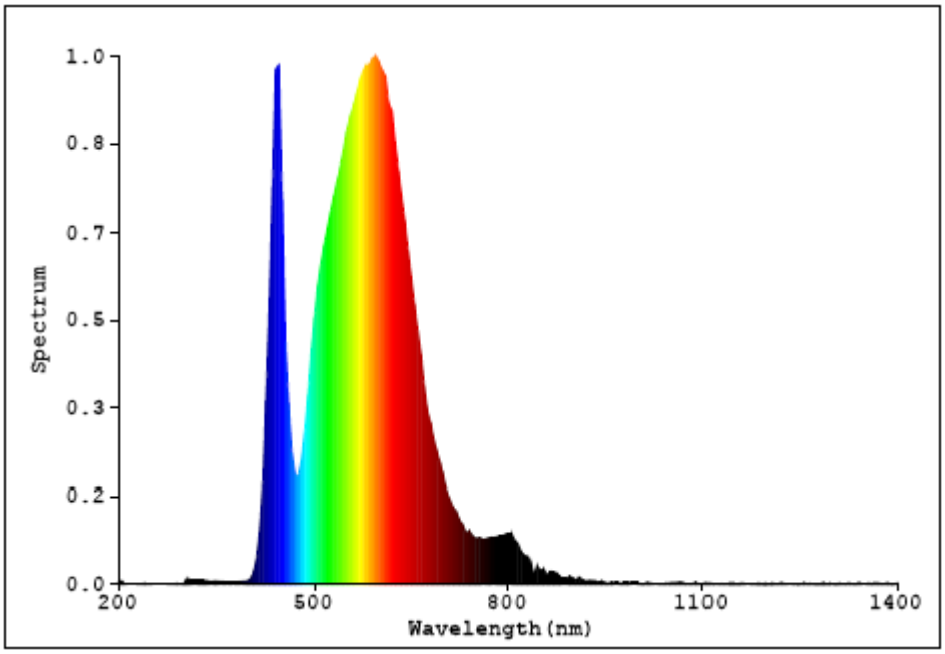
These lamps are in the Exempt Group.

Also, lamps that emit infrared radiation without a strong visual stimulus (i.e., less than 10 cd • m-2) and do not pose a near-infrared retinal hazard (LIR) within 1000 s are in the Exempt Group.

See the test data.

EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

Model: RS-2238-2 (4000K) is in Exempt group.

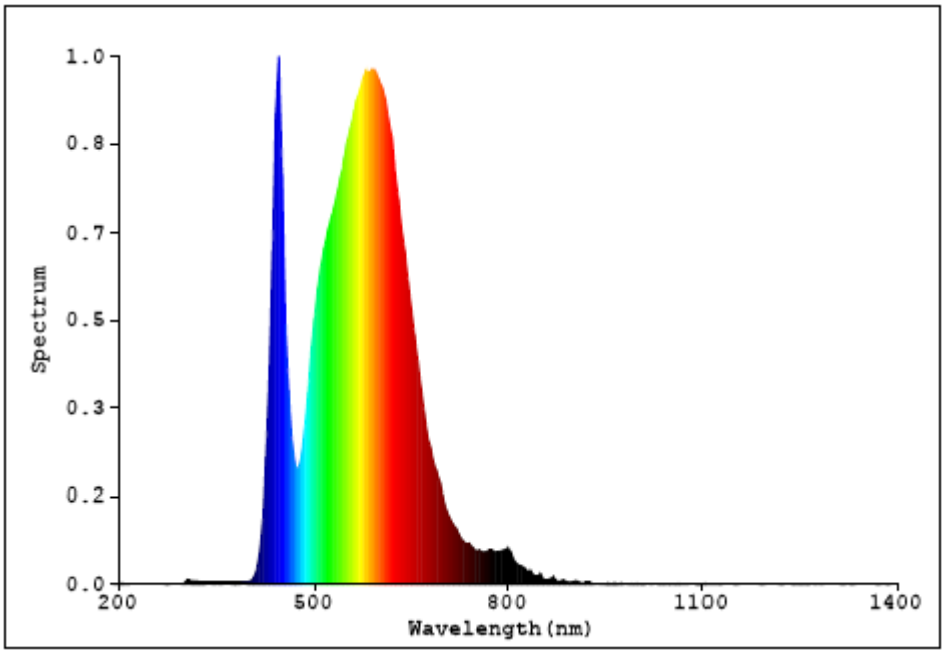


Test data:

Optical hazard	Test result	Used hazard exposure limit		Ref.
1. E_S	5,9e-05 W/m^2	0,001 W/m^2	200-400 nm	**P**
2. E_{UVA}	2,5e-03 W/m^2	0,33 W/m^2	315-400 nm	**P**
3. L_B	3,6e+00 W/m^2	100 W/m^2	300-700 nm	**P**
4. $E_{B(small\ source)}$	-	-	300-700 nm	**N/A**
5. L_R	2,1e+02 W/m^{2}sr	8,615 x10^5 W/m^{2}sr	380-1400 nm	**P**
6. L_{IR}	2,1e+00 W/m^{2}sr	1,846 x10^{5}W/m^{2}sr	780-1400 nm	**P**
7. E_{IR}	0,000 W/m^2	100 W/m^2	780-3000 nm	**P**
8. E_H	0,000 W/m^2	3556,56 W/m^2	380-3000 nm	**P**

EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

Model: RS-2252 (4000K) is in Exempt group.

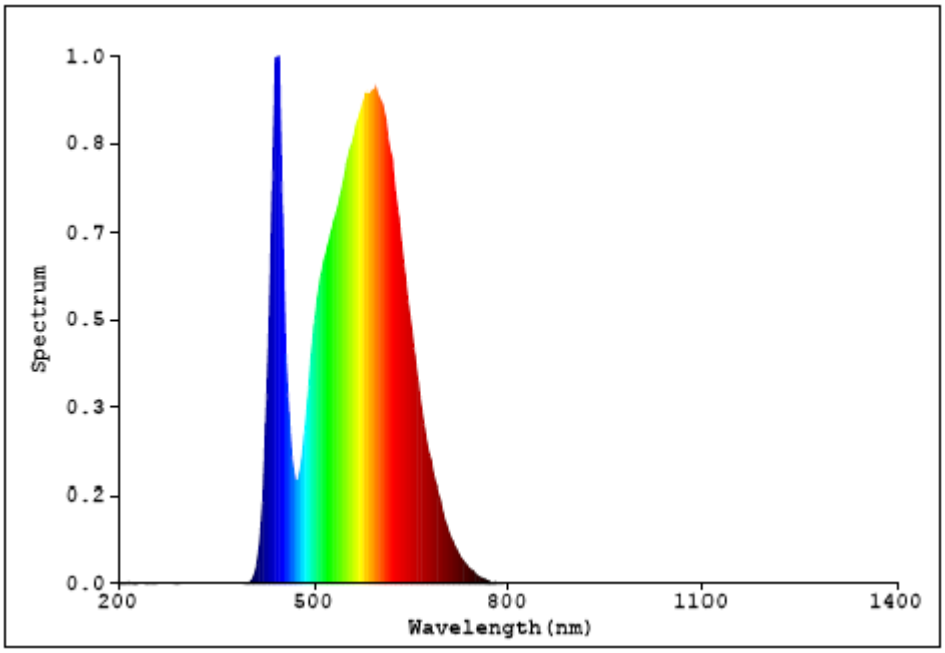


Test data:

Optical hazard	Test result	Used hazard exposure limit		Ref.
1. E_S	2,7e-05 W/m^2	0,001 W/m^2	200-400 nm	**P**
2. E_{UVA}	2,5e-03 W/m^2	0,33 W/m^2	315-400 nm	**P**
3. L_B	1,6e-03 W/m^2	100 W/m^2	300-700 nm	**P**
4. $E_{B(small\ source)}$	-	-	300-700 nm	**N/A**
5. L_R	2,4e+02 W/m^{2}sr	2,8 x10^5 W/m^{2}sr	380-1400 nm	**P**
6. L_{IR}	1,2e+00 W/m^{2}sr	6 x10^{4}W/m^{2}sr	780-1400 nm	**P**
7. E_{IR}	0,000 W/m^2	100 W/m^2	780-3000 nm	**P**
8. E_H	0,000 W/m^2	3556,56 W/m^2	380-3000 nm	**P**

EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

Model: RS-2266-2 (4000K) is in Exempt group.

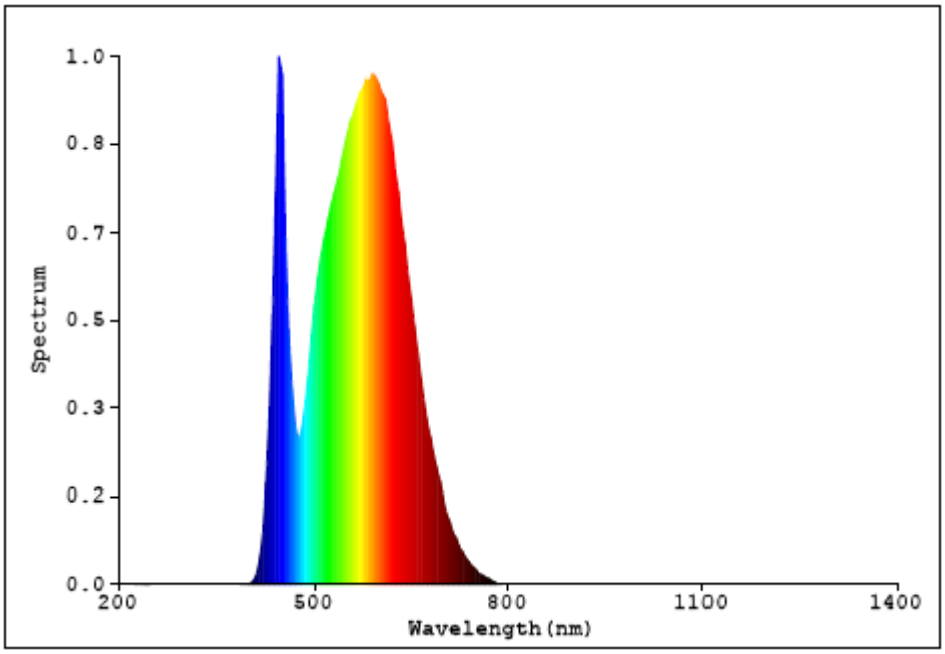


Test data:

Optical hazard	Test result	Used hazard exposure limit		Ref.
1. E_S	5,5e-05 W/m^2	0,001 W/m^2	200-400 nm	**P**
2. E_{UVA}	1,2e-04 W/m^2	0,33 W/m^2	315-400 nm	**P**
3. L_B	5,3e-01 W/m^2	100 W/m^2	300-700 nm	**P**
4. $E_{B(small\ source)}$	-	-	300-700 nm	**N/A**
5. L_R	2,7e+03 W/m^{2}sr	2,8 x10^5 W/m^{2}sr	380-1400 nm	**P**
6. L_{IR}	2,8e-02 W/m^{2}sr	6 x10^{4}W/m^{2}sr	780-1400 nm	**P**
7. E_{IR}	0,000 W/m^2	100 W/m^2	780-3000 nm	**P**
8. E_H	0,000 W/m^2	3556,56 W/m^2	380-3000 nm	**P**

EN 62471			
Clause	Requirement + Test	Result - Remark	Verdict

Model: RS-2276B (4000K) is in Exempt group.



Test data:

Optical hazard	Test result	Used hazard exposure limit		Ref.
1. E_S	3,5e-05 W/m^2	0,001 W/m^2	200-400 nm	**P**
2. E_{UVA}	8,7e-05 W/m^2	0,33 W/m^2	315-400 nm	**P**
3. L_B	8,4e+01 W/m^2	100 W/m^2	300-700 nm	**P**
4. $E_{B(small\ source)}$	-	-	300-700 nm	**N/A**
5. L_R	4,2e+04 W/m^{2}sr	2,8 x10^5 W/m^{2}sr	380-1400 nm	**P**
6. L_{IR}	4,6e-01 W/m^{2}sr	6 x10^{4}W/m^{2}sr	780-1400 nm	**P**
7. E_{IR}	0,000 W/m^2	100 W/m^2	780-3000 nm	**P**
8. E_H	0,000 W/m^2	3556,56 W/m^2	380-3000 nm	**P**

---End of Report ---

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	1.	温湿度记录仪 Temperature & Humidity Datalogger	FW01002-7	5～40℃/20～90%RH	2014-03-06 1 year	U=0.5℃ U=2%RH k=2
☒	2.	数显式干燥箱 Oven	FW01003-2	40～300℃	2014-03-03 1 year	U=0.3℃ k=2
☒	3.	温度数据采集仪 Temperature Recorder	FW01004-1	Type J 0～400℃ /60CH	2014-03-03 1 year	U=0.3℃ k=2
☒	4.	数字功率计 Power Meter	FW01005-10	20A/300V/50～60Hz 4KW	2014-03-04 1 year	voltage: 0.10% (200V/50Hz/60Hz) current: 0.13% (10A/50Hz/60Hz) power: 0.16% (2000W/50Hz/60Hz) frequency: 0.06 Hz (50Hz) PF: 0.001 (PF =1) k=2
☒	5.	耐压（绝缘电阻）测试仪 Dielectric & Insulation Resistance Tester	FW01006-1	AC:0.5～5 KV, 0.5～100Ma(50/60 Hz); DC0.5～6KV, 0.5～20mA; 10～900 Sec; 1～5000M	2014-03-04 1 year	AC:0.40%(2.000KV/50Hz), /0.40%(2.000KV/60Hz DC: 0.40% (2.000KV) AC:0.70%(10mA/50Hz), /0.70%(10mA/60Hz), DC:0.70%(10mA) Time: 0.20s(20s), frequency: 0.05% (50Hz), insulation resistance: 0.10%(10MΩ /500V)/ voltage: 0.10%(500V) k=2
☒	6.	泄漏电流仪 AC leakage current tester	FW01008-1	0.2～0.6mA/0～300V/30A	2014-03-04 1 year	Leakage current: 0.90%(1000uA/50Hz/E), 0.90%(1000uA/60Hz/A) Test voltage: 0.15%(200V/50Hz) , 0.15%(200V/60Hz) T:0.2S k=2
☒	7.	接地电阻测试仪 Grounding Resistance Tester	FW01009-2	5～30A, 13～250mΩ	2014-03-04 1 year	Resistance:0.20% (100mΩ); Current: 0.30% (25A) T: 0.20s(60s) k=2

XJF 2014-10-13 Checked

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	8.	恒温恒湿试验箱 Environmental Chamber	FW01010-1	-40℃/0℃ -100℃;25-32℃ /88～95%RH	2014-03-03 1 year	Temperature: U=0.3℃ humidity: U=2.0%RH K=2
☐	9.	坡度测量仪 Stability Angle Gauge	FW01011-1	5°～90°	2014-03-03 1 year	U=0.1° k=2
☒	10.	球压试验装置 Ball Pressure	FW01012-1	R2.5mm/20N	2014-03-03 1 year	U=0.05mm U=0.05N k=2
☒	11.	指针式推拉力计 Force Gauge	FW01013-1	1～300N	2014-03-03 1 year	U=0.3%FS k=2
☒	12.	数字式万用表 Digital Multimeter	FW01014-1	AC 600V/AC 10A/ DC 1000V/AC/DC 10A/ 10MΩ	2014-03-04 1 year	DCV:0.12%(1V) ACV:0.19%(100V/50Hz), 0.19%(100V/60Hz), DCA:0.16%(10mA) ACA:0.22%(100mA/50Hz), 0.22%(100mA/60Hz) , R:0.11%(1kΩ) k=2
☐	13.	弹簧冲击锤 Spring hammer	FW01018-1	0.5J	2014-03-05 1 year	U=0.016J k=2
☒	14.	弹簧冲击锤 Spring hammer	FW01018-3	0.2J	2014-03-05 1 year	U=0.016J k=2
☒	15.	弹簧冲击锤 Spring hammer	FW01018-4	0.35J	2014-03-05 1 year	U=0.016J k=2
☒	16.	电子秤 Balance	FW01020-4	100g～15000g	2014-01-07 1 year	U=0.5g k=2
☒	17.	数显卡尺 Caliper	FW01021-1	1～120mm/0.01mm	2014-03-03 1 year	U=0.01mm k=2
☒	18.	扭力计 Torsion Tester	FW01022-1	4～20Kgf.cm	2014-03-03 1 year	U_{rel}=1.4% k=2
☐	19.	漏电起痕试验仪 Tracking Tester	FW01023-1	100～600V/0.1～ 1.0A/30s	2014-03-03 1 year	U=0.65%(500V) U=0.5%(1.000A) U=0.02mm U=0.02mm U=0.02N U=1° U=1° U=0.2s U=0.2s k=2
☒	20.	示波仪 Oscillograph	FW01024-1	0～300MHz-2CH TIME/DIV 2ns～5	2013-11-15 1 year	Vertical part: 0.50% (0.1V/div) scanning part: 0.50% (1ms/div) k=2
☒	21.	灼热丝试验装置 Glow wire Tester	FW01028-1	960℃/60s	2014-03-03 1 year	U=0.01mm U=0.02N U=0.1mm U=0.2s U=1℃ k=2
☒	22.	针焰试验仪 Needle-flame Tester	FW01032-1	700℃/30s	2014-03-03 1 year	U=0.1mm U=1° U=0.2s U=1℃ k=2

XJF 2014-12-03 Checked

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	23.	测试指 Finger	FW02035-1	IEC60335/Figure 1 (IEC61032 probe B)	2014-03-07 1 year	U=0.02mm U=6′ k=2
☐	24.	测试棒 Probe	FW02035-2	IEC60335/Figure 3 (IEC61032 probe 41)	2014-03-07 1 year	U=0.02mm k=2
☐	25.	试验销 Pin	FW02035-3	IEC60335/Figure 2 (IEC61032 probe 13)	2014-03-07 1 year	U=0.02mm k=2
☐	26.	关节试验指 Finger	FW02035-7	IEC60335 (IEC61032 probe 18)	2014-03-07 1 year	U=0.05mm k=2
☐	27.	标准试验指 Finger	FW02035-9	IEC60335(Φ12) (IEC61032 probe B)	2014-03-07 1 year	U=0.02mm U=10′ k=2
☐	28.	标准试验指甲 Test Fingernail	FW02035-11	IEC60335/ Figure 7 (IEC61032 probe 11) /10, 20, 30N	2014-03-07 1 year	U=0.05mm U=6′ U=0.5N k=2
☐	29.	试验刮针 Test scratch-pin	FW02035-24	EN 60335-1 21.2	2014-03-07 1 year	U=0.01mm U=6' k=2
☒	30.	带推力直指试验指 Finger with force	FW02035-26	IEC61032/ probe11 ℄12mm, 50N	2014-03-07 1 year	U=0.02mm U=6' U=0.5N k=2
☒	31.	标准测试针 Probe	FW02035-19	IEC61032 probeD	2014-03-07 1 year	U=0.02mm k=2
☐	32.	标准测试棒 Probe	FW02035-20	IEC61032 probeC	2014-03-07 1 year	U=0.02mm k=2
☒	33.	钢卷尺 Tape Measure	FW02036-1	0～3000mm	2014-03-07 1 year	U=0.3mm k=2
☐	34.	精密电阻 Precision resistor	FW02037-1	0.0024840Ω	2014-03-04 1 year	ACR:0.20% DCR:0.13% k=2
☒	35.	热电偶 Thermocouple	FW01039-1	10～300℃	2014-03-07 1 year	U=0.2℃ k=2
☐	36.	EN 防水试验装置 Protection against water test device	FW02046-1	IPX1- IPX6	2014-03-03 1 year	U=0.1mm U=1° U=0.2s U=0.4%FS U_{rel}=0.3% U=0.05r/min k=2

XJF 2014-10-13 Checked

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☐	37.	防尘试验箱 Dustproof chamber	FW01066-1	IP5X- IP6X	2014-03-03 1 year	Size:U=1mm U=3um U=0.4%FS U=0.003mm Time:U=0.2s K=2
☐	38.	E27 型螺口灯头量规（通规） E27 Go lampholder gauge	FW02067-6		2014-03-10 1 year	K=2
☐	39.	E27 型螺口灯头量规（止规） E27 Not-Go lampholder gauge	FW02067-7		2014-03-10 1 year	K=2
☐	40.	E27 型螺口灯头量规（焊锡高度规） E27 Solder height lampholder gauge	FW02067-8		2014-03-10 1 year	K=2
☐	41.	E27 型螺口灯头量规（接触性能规） E27 Contact performance lampholder gauge	FW02067-9		2014-03-10 1 year	K=2
☐	42.	E27 型螺口灯头量规(防意外触电规) E27 accidental electrocution protection lampholder gauge	FW02067-10		2014-03-10 1 year	K=2
☐	43.	E14 型螺口灯头量规（通规） E14 Go lampholder gauge	FW02067-1		2014-03-10 1 year	K=2
☐	44.	E14 型螺口灯头量规（止规） E14 Not-Go lampholder gauge	FW02067-2	XJF 2014-10-13 Checked	2014-03-10 1 year	K=2
☐	45.	E14 型螺口灯头量规（焊锡高度规） E14 Solder height lampholder gauge	FW02067-3		2014-03-10 1 year	K=2

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☐	46.	E14 型螺口灯头量规（接触性能规） E14 Contact performance lampholder gauge	FW02067-4		2014-03-10 1 year	K=2
☐	47.	E14 型螺口灯头量规(防意外触电规) E14 accidental electrocution protection lampholder gauge	FW02067-5		2014-03-10 1 year	K=2
☐	48.	GU10 灯头通止规 GU10 Go & Not-go gauge	FW02100-1	7006-121-1	2014-06-26 1 year	U=0.006mm U=10' k=2
☐	49.	G13 成品灯头通规 G13 Go gauge	FW02102-1	7006-45-4	2014-06-26 1 year	k=2

光生物学专用 For photobiological safety test

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	50.	光生物安全紫外线泄露光谱分析系统 Spectral analysis system for photobiological safety and UV leak of lamps and lamp systems	FW01725-1	Wave length: 200-800nm CCT: 1000K-25000K CRI: ≤100.0 Luminous flux: 0.1lm-199999lm	2014-03-06 1 year	Irradiance U=20% CCT U=20K Wave length U=0.2nm Illuminance: U=2.2% Luminance: U=2.5% k=2
☒	51.	高精度快速光谱辐射计（光生物安全紫外线泄露光谱分析系统） High accuracy array spectroradio meter	FW01725-1	波长：200-3000nm 色温:1000K-25000K 显色指数：≤100.0 光通量: 0.1lm-199999lm	2014-03-06 1 year	幅照度 U=20% 色温 U=20K 波长 U=0.2nm 照度：U=2.2% 亮度:U=2.5% k=2

仪 器 清 单(Equipment list)

Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	52.	标准亮度源 （标准反射白板） Standard luminance source	FW01727-1	¢60 ρ=100%	2014-03-07 1 year	Luminance: U=2.5% CCT: U=15K Chromaticity coordinate: Ux, y=0.005 k=2
☒	53.	精密数显直流稳流稳压电源 D.C. power supply	FW01729-1	Max. output DCV:30V DCA:5A P:150VA Vrms:0.5mA Irms:0.5mA	2014-03-06 1 year	DCV:U=0.01% DCA:U=0.06% k=2
☒	54.	高稳定紫外线标准辐射电源 Power supply for standard UV radiation lamp	FW01732-1	Rated voltage: 0-250V Rated current: 300Ma Lamp cathode preheat voltage (DC) :10V(before lighten) 7V(after lighten) Max. continuous power output: 30VA	2014-03-06 1 year	U=0.2% K=2
☒	55.	紫外辐射标准灯 standard UV radiation lamp	SW01069-1	110-430nm	2013-10-29 2 year	K=1
☒	56.	D204BH 光辐射强度标准灯 Standard optical radiation intensity lamp	FW01733-2	Reference current 4.88A Reference voltage 14.99V 250-2500nm	2014-03-07 2 year	K=2
☒	57.	智能变频交流电源 A.C. power supply	FW01705-1	Input:220V 50/60Hz Output:150V/300 V 54A/27A 6000VA	2014-03-06 1 year	ACV:U=0.2% ACA:U=0.3% K=2

2014-10-13 Checked

仪 器 清 单(Equipment list)

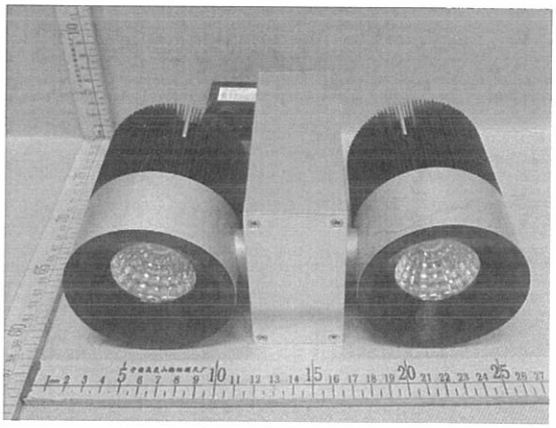
Address: 2/F,2nd Building,Sunlink International Machinery City,Chencun Town, Shunde District,Foshan 528313,Guangdong,China.

Attached to test report: 16061443 001

	NO	仪 器 名 称 Equipment Name	内部编号 Internal No	参数规格 Specification	校验日期/周期 Cal. Date/ Period	不确定度 Uncertainty
☒	58.	温湿度记录仪 Temperature & Humidity Datalogger	FW01713-3	5～40℃/20～90% RH	2014-03-11 1 year	humidity: U=3.0% RH Temperature: U=0.6℃ K=2

Prüfbericht-Nr.: *Test Report No.:*	16061445 001	**Auftrags-Nr.:** *Order No.:*	174022946	Seite 1 von 11 *Page 1 of 11*
Kunden-Referenz-Nr.: *Client Reference No.:*	60001344	**Auftragsdatum:** *Order date.:*	10. 07. 2014	
Auftraggeber: *Client:*	Foshan Ronse Lighting Technology Co., Ltd. Liansha Industrial Zone, Jinsha, Danzao, Nanhai, Foshan, Guangdong 528223 P.R. China			
Prüfgegenstand: *Test item:*	LED Spot Light			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	Refer to section 3.1			
Auftrags-Inhalt: *Order content:*	CE EMF service			
Prüfgrundlage: *Test specification:*	EN 62493:2010			

Wareneingangsdatum: *Date of receipt:*	25. 07. 2014
Prüfmuster-Nr.: *Test sample No.:*	Engineering samples
Prüfzeitraum: *Testing period:*	Refer to test report
Ort der Prüfung: *Place of testing:*	Refer to section 2.1
Prüflaboratorium: *Testinglaboratory:*	TÜV Rheinland (Guangdong) Ltd.
Prüfergebnis*: *Test result*:*	Pass



geprüft von / *tested by:*

2014.10.10 Jeffery Xie/Project Manager Jeffxie

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by:*

2014.10.10 Ivan Wu/Reviewer Ivan Wu

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other:*

Zustand des PrüfgegenstandesbeiAnlieferung: *Condition of the test item at delivery:*
Prüfmuster vollständig und unbeschädigt
Test item complete and undamaged

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nichtgetestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

TEST SUMMARY

4.1 Mains Terminals Disturbance Voltage (20 kHz - 30MHz)

RESULT: Pass

4.2 Radiated Electromagnetic Disturbances (100 kHz – 30 MHz)

RESULT: Pass

4.3 Radiated Disturbances (30MHz – 300 MHz)

RESULT: Pass

4.4 Induced Current Density (20kHz – 10MHz)

RESULT: Pass

Contents

1. General Remarks

None.

2. Test Sites

2.1 Test Facilities

WALTEK SERVICES (FO SHAN) CO., LTD.
No.13-19, 2/F, 2nd Building, Sunlink International Machinery City, Chencun Town, Shunde District, Foshan. 528313, Guangdong, China

The test at this test site has been conducted under the supervision of a TÜV Rheinland engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Test Equipment	Model	Manufacturer	Serial No.	Cal Until
WALTEK SERVICES (FO SHAN) CO., LTD.				
Disturbance Voltage ☒				
EMI Test Receiver	ESCI	R&S	101178	09.Jan.2015
LISN	ENV216	R&S	101215	09.Jan.2015
Cable	CBL2-NN-3M	HUBER+SUHNER	2230300	09.Jan.2015
Switch	RSU/M2	ESE	---	09.Jan.2015
Radiated electromagnetic disturbance(9kHz to 30MHz) ☒				
EMI Test Receiver	ESCI	R&S	101178	09.Jan.2015
Three Loops Antenna	HXYZ9170	SCHWARZBECK	213	09.Jan.2015
CDN method for Lighting Equipments' Radiated Disturbance ☒				
EMI Test Receiver	ESCI	R&S	101178	09.Jan.2015
CDN	M016	TESEQ	31586	09.Jan.2015
Cable	CBL2-NN-3M	HUBER+SUHNER	2230300	09.Jan.2015
Induced Current Density ☒				
EMI Test Receiver	ESCI	R&S	101178	09.Jan.2015
"Van der Hoofden" test head	VDHH 9502	Schwarzbeck	9502-028	09.Jan.2015

☐***: Not Used***
☒***: Used***

3. General Product Information

This kind of product is other lighting equipment defined in Table A.1 of EN 62493:2010.
The following submitted samples in section 3.2 are LED Spot Light.
All models have four kinds of LED drivers. Among them, with the same LED driver, only their appearance and rated power are different.
Therefore, EMF tests were performed on four representative models RS-2238-2, RS-2256-2, RS-2266-2 and RS-2276B which represent four kinds of LED drivers,

All models' SAR tests have been evaluated in EMC report 16061444 001.

3.1 Ratings and System Details

Model list	Rated Power(W)	Rated input voltage	LED driver	Protection class
RS-2238	15W	AC220-240V, 50/60Hz	KED24W420R07E-1	I
RS-2238-2	2x15W		KED24W420R07E-1	
RS-2252	20W		KED24W550R07E-1	
RS-2252A	20W		KED24W550R07E-1	
RS-2257A	20W		KED24W550R07E-1	
RS-2271A	15W		KED24W420R07E-1	
RS-2271B	20W		KED24W550R07E-1	
RS-2252C	15W		KED24W420R07E-1	
RS-2252D	20W		KED24W550R07E-1	
RS-2263A	20W		KED24W550R07E-1	
RS-2256	20W		KED24W550R07E-1	
RS-2256-2	2x20W		KED24W550R07E-1	
RS-2262A	40W		KED36W850R08E-1	
RS-2262	40W		KED36W850R08E-1	
RS-2266	30W		KED36W700R08E-1	
RS-2266-2	2x30W		KED36W700R08E-1	

Model list	Rated Power(W)	Rated input voltage	LED driver	Protection class
RS-2271C	30W		KED36W700R08E-1	
RS-2270A	40W		KED36W850R08E-1	
RS-2252E	30W		KED36W700R08E-1	
RS-2263B	30W		KED36W700R08E-1	
RS-2262B	40W		KED36W850R08E-1	
RS-2277A	40W		KED36W850R08E-1	
RS-2277B	40W		KED36W850R08E-1	
RS-2277C	30W		KED36W700R08E-1	
RS-2276A	25W		KED36W700R08E-1	
RS-2276B	40W		KED36W850R08E-1	
RS-2275D	30W		KED36W700R08E-1	
RS-2240	15W		KED24W420R07E-1	
RS-2241	15W		KED24W420R07E-1	
RS-2250	15W		KED24W420R07E-1	
RS-2250-2	2x15W		KED24W420R07E-1	

Refer to Technical Documentation for further information.

4. Test Results

4.1 Mains Terminals Disturbance Voltage (20 kHz-30MHz)

RESULT: **Pass**

The details refer to EMC report 16061444 001.

4.2 Radiated Electromagnetic Disturbances (100 kHz – 30 MHz)

RESULT: **Pass**

The details refer to EMC report 16061444 001.

4.3 Radiated Disturbances (30MHz – 300 MHz)

RESULT: **Pass**

The details refer to EMC report 16061444 001.

4.4 Induced Current Density (20kHz – 10MHz)

RESULT: **Pass**

Date of Testing	:	2014-09-28
Test procedure	:	EN 62493:2010, Clause 6
Frequency range	:	20 kHz -10 MHz
Kind of test site	:	Shielded Room
Limits	:	EN 62493:2010, Clause 4.2

Test setup

Input voltage	:	AC245V, 50Hz
Operation mode	:	On
Test configuration	:	Table-top
Temperature	:	23.2°C
Measurement distance	:	50 cm
Number of Measurement point	:	1
Measurement Uncertainty	:	23.72%

Measurement

F_{limit}	:	0.85
$F_{measured}$	:	RS-2238-2: 0.0238; RS-2256-2: 0.0237; RS-2266-2: 0.0235; RS-2276B: 0.0239

5. Test Set-up Photos

Photograph 1: Set-up for Induced Current Density (20kHz – 10MHz)

6. List of Tables

7. List of Photographs