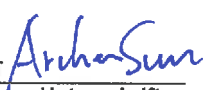



Prüfbericht-Nr.: <i>Test Report No.:</i>	17054612 001	Auftrags-Nr.: <i>Order No.:</i>	164045417	Seite 1 von 15 <i>Page 1 of 15</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2015-03-04	
Auftraggeber: <i>Client:</i>	Suzhou Radiant Lighting Technology Co.,Ltd Jiatai RD(W), Shuanglong Industrial Park, Fenghuang Town, Zhangjiagang City, Jiangsu, China			
Prüfgegenstand: <i>Test item:</i>	LED Fire Rated Downlight			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	See page 3			
Auftrags-Inhalt: <i>Order content:</i>	Type examination			
Prüfgrundlage: <i>Test specification:</i>	Annex III of ecodesign requirements of the EC regulation 1194/2012 and Annex II of EC regulation 2015/1428			
Wareneingangsdatum: <i>Date of receipt:</i>	2015-03-04	See photos in report.		
Prüfmuster-Nr.: <i>Test sample No.:</i>	Engineering samples			
Prüfzeitraum: <i>Testing period:</i>	2015-03-09 to 2016-06-23			
Ort der Prüfung: <i>Place of testing:</i>	See page 3			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Ltd			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:	kontrolliert von / reviewed by:			
2016-06-23 Archer Sun / Engineer <i>Date Name / Stellung</i>	 <i>Unterschrift</i>	2016-06-24 James Chen / Reviewer <i>Date Name / Stellung</i>	 <i>Unterschrift</i>	
Sonstiges / Other:				
<ul style="list-style-type: none"> - Test report issued for type examination only and Ecodesign requirements (Annex III) for EUT (LED lamp) of stage 1, 2 and 3 are fulfilled. - Attachment: Total 1 page of equipment list. 				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
<p>* 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</p> <p>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</p>				
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

Test item	
Description.....	LED Fire Rated Downlight
Trademark	N/A
Model and/or type reference	See model list
Manufacturer	Suzhou Radiant Lighting Technology Co.,Ltd Jitai RD(W),Shuanglong Industrial Park,Fenghuang Town,Zhangjiagang City,Jiangsu, China
Factory.....	Suzhou Radiant Lighting Technology Co.,Ltd Jitai RD(W),Shuanglong Industrial Park,Fenghuang Town,Zhangjiagang City,Jiangsu, China
Rating(s)	See model list

Test case verdicts	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
.....	
Testing	
Date of receipt of test item	2015.03.04
Date(s) of performance of test	2015.03.09 to 2016.06.23
.....	

General remarks

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

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

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

“(see appended table)” refers to a table appended to the report.

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

Remark:

1. Laboratory:

Name: CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

Building 28/29, Shigudong, Xili Industrial Area, Xili Street, Nanshan District, Shenzhen, Guangdong, China

2. Measurement was conducted at rating voltage and rating frequency and at a stable ambient temperature 25°C±1°C.

3. The tests were performed with the lamp in normal operating position, and adjust to maximum output light.

4. Only model 5RS015-2700 was tested as requirement, and comply with EC regulation 1194/2012& 2015/1428, this results don't represent other models, just for reference.

5. All luminaires are directional lamp.

Model list:

No.	Model	Rated voltage / frequency	Rated Power (W)	Rated Current (mA)	Φuse (lm)	CCT. (K)	Life time (hours)	Rated peak intensity (cd)
1	5RS015-2700	85Vac-264Vac	8	300	580	2700	30000	1100
2	5RS015-3000	85Vac-264Vac	8	300	600	3000	30000	1100
3	5RS015-3500	85Vac-264Vac	8	300	620	3500	30000	1100
4	5RS015-4000	85Vac-264Vac	8	300	640	4000	30000	1100
5	5RS015-5000	85Vac-264Vac	8	300	660	5000	30000	1100
6	5RS015-6500	85Vac-264Vac	8	300	680	6500	30000	1100

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
Annex III			
Ecodesign Requirements			
1	ENERGY EFFICIENCY REQUIREMENTS		P
1.1	Energy efficiency requirements for directional lamps		P
	P_{rated} is the rated power measured at nominal input voltage	See table 1 of this report	
	P_{cor} is and corrected where appropriate in accordance with Table 1 of Annex III of EC 1194. The correction factors are cumulative where appropriate.		
	- Lamps operating on external LED lamp control gear: $P_{rated} \times 1,10$	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	- Others not mention in table 1: $P_{rated} \times 1$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	Useful luminous flux (Φ_{use})	See table 1 of this report	
	- Directional lamps with a beam angle $\geq 90^\circ$ other than filament lamps and carrying a warning on their packaging in accordance with point 3.1.2(j) of this Annex: rated luminous flux in a 120° cone (Φ_{120°)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	- Other directional lamps: rated luminous flux in a 90° cone (Φ_{90°).	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	P_{ref} is the reference power obtained from the useful luminous flux of the lamp (Φ_{use}) by the following formula:		
	For models with $\Phi_{use} < 1300$ lumen: $0,88\sqrt{(\Phi_{use})+0,049\Phi_{use}}$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
	For models with $\Phi_{use} \geq 1300$ lumen: $0,07341\Phi_{use}$	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
	EEl= P_{cor} / P_{ref} in Stage 1:	See table 1 of this report	P
	- Other lamps: $\leq 0,50$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	P
	EEl= P_{cor} / P_{ref} in Stage 2:		P
	- Other lamps: $\leq 0,50$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	P
	EEl= P_{cor} / P_{ref} in Stage 3:		P
	- Other lamps: $\leq 0,20$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	P
2	FUNCTIONALITY REQUIREMENTS		P
2.2	Functionality requirements for non-directional and directional LED lamps		P
	Requirement as from stage 1, except where indicated otherwise		--
	Lamp survival factor at 6000h: From 1 March 2014: $\geq 0,90$		P
	Lumen Maintenance at 6000h: From 1 March 2014: $\geq 0,80$		P
	Number of switching cycles before failure		P

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
	- ≥ 15000 if rated lamp life ≥ 30000 h	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 15000 cycles	P
	- half the rated lamp life expressed in hours	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
	Starting time: $<0,5$ s	See table 2.1 of this report	P
	Lamp warm-up time to 95% Φ : $<2,0$ s	See table 2.1 of this report	P
	Premature failure rate at 1000h: $\leq 5,0\%$	See table 2.2 of this report	P
	Colour rendering (Ra)		P
	- ≥ 80	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> See table 2.1 of this report	P
	- ≥ 65 if the lamp is intended for outdoor or industrial applications	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
	Colour consistency: Variation of chromaticity coordinates within a six-step MacAdam ellipse or less	See table 2.1 of this report	P
	Lamp power factor for lamps with integrated control gear:		P
	$P \leq 2$ W: no requirement	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
	2 W $< P \leq 5$ W PF $>0,4$	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
	5 W $< P \leq 25$ W PF $>0,5$	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> See table 2.1 of this report	P
	$P > 25$ W PF $>0,9$	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
3	PRODUCT INFORMATION REQUIREMENTS		--
3.1	Product information requirements for directional lamps		P
	The following information shall be provided as from stage 1, except where otherwise stipulated. LED modules when marketed as part of a luminaire from which they are not intended to be removed by the end-user.		P
	The term 'energy-saving lamp' or any similar product related promotional statement about lamp efficacy may be used only if the energy efficiency index of the lamp (calculated in accordance with the method set out in point 1.1 of this Annex) is 0.40 or below.		P
3.1.1	Information to be displayed on the lamp itself		P
	Inclusion of safety-related information such as power and voltage	See marking plate on page 2	P
	If there is sufficient space available for it on the lamp without unduly obstructing the light coming from the lamp, below information shall also be displayed in a legible font on the surface.		P

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
	- Nominal useful luminous flux in unit 'lm'	Display on package	P
	- Colour temperature in unit 'K'	Display on package	P
	- Nominal beam angle in unit '°'	Display on package	P
3.1.2	Information to be visibly displayed to end-users, prior to their purchase, on the packaging and on free access websites		P
	The information in paragraphs (a) to (o) below shall be displayed on free access websites and in any other form the manufacturer deems appropriate. EN 14.12.2012 Official Journal of the European Union L 342/13	See table 3.1.2 of this report	P
	(a) Nominal useful luminous flux displayed in a font at least twice as large as any display of the nominal lamp power;		P
	(b) Nominal life time of the lamp in hours (not longer than the rated life time);		P
	(c) Colour temperature, as a value in Kelvins and also expressed graphically or in words;		P
	(d) Number of switching cycles before premature failure;		P
	(e) Warm-up time up to 60 % of the full light output (may be indicated as 'instant full light' if less than 1 second);		P
	(f) A warning if the lamp cannot be dimmed or can be dimmed only on specific dimmers; in the latter case a list of compatible dimmers shall be also provided on the manufacturer's website;		P
	(g) If designed for optimum use in non-standard conditions (such as ambient temperature $T_a \neq 25 \text{ }^\circ\text{C}$ or specific thermal management is necessary), information on those conditions;		N/A
	(h) Lamp dimensions in millimetres (length and largest diameter);		N/A
	(i) Nominal beam angle in degrees;		P
	(j) If the lamp's beam angle is $\geq 90^\circ$ and its useful luminous flux as defined in point 1.1 of this Annex is to be measured in a 120° cone, a warning that the lamp is not suitable for accent lighting;		N/A
	(k) If the lamp cap is a standardised type also used with filament lamps, but the lamp's dimensions are different from the dimensions of the filament lamp(s) that the lamp is meant to replace, a drawing comparing the lamp's dimensions to the dimensions of the filament lamp(s) it replaces;		N/A

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
	(l) An indication that the lamp is of a type listed in the first column of Table 6 may be displayed only if the luminous flux of the lamp in a 90° cone ($\Phi 90^\circ$) is not lower than the reference luminous flux indicated in Table 6 for the smallest wattage among the lamps of the type concerned.		N/A
	(m) An equivalence claim involving the power of a replaced lamp type may be displayed only if the lamp type is listed in Table 6 and if the luminous flux of the lamp in a 90° cone ($\Phi 90^\circ$) is not lower than the corresponding reference luminous flux in Table 6. The intermediate values of both the luminous flux and the claimed equivalent lamp power (rounded to the nearest 1 W) shall be calculated by linear interpolation between the two adjacent values.		N/A
	If the lamp contains mercury:		N/A
	(n) Lamp mercury content as X,X mg;		N/A
	(o) Indication of which website to consult in case of accidental lamp breakage to find instructions on how to clean up the lamp debris		N/A
3.1.3	Information to be made publicly available on free-access websites and in any other form the manufacturer deems appropriate As a minimum, the following information shall be expressed at least as values.	See table 3.1.3 of this report	P
	(a) The information specified in point 3.1.2;		P
	(b) Rated power (0,1 W precision);		P
	(c) Rated useful luminous flux;		P
	(d) Rated lamp life time;		P
	(e) Lamp power factor;		P
	(g) Starting time (as X,X seconds);		P
	(h) Colour rendering;		P
	(i) Colour consistency		P
	(j) Rated peak intensity in candela (cd);		P
	(k) Rated beam angle;		P
	(l) If intended for use in outdoor or industrial applications, an indication to this effect;		N/A
	(m) Spectral power distribution in the range 180-800 nm;		P
	If the lamp contains mercury:		N/A
	(n) Instructions on how to clean up the lamp debris in case of accidental lamp breakage;		N/A

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
	(o) Recommendations on how to dispose of the lamp at the end of its life for recycling in line with Directive 2012/19/EU of the European Parliament and of the Council (1).		N/A
3.2	Additional product information requirements for LED lamps replacing fluorescent lamps without integrated ballast		N/A
	In addition to the product information requirements according to point 3.1 of this Annex or point 3.1 of Annex II to Regulation (EC) No 244/2009, as from stage 1, manufacturers of LED lamps replacing fluorescent lamps without integrated ballast shall publish a warning on publicly available free-access websites and in any other form they deem appropriate that the overall energy efficiency and light distribution of any installation that uses such lamps are determined by the design of the installation.		N/A
	Claims that an LED lamp replaces a fluorescent lamp without integrated ballast of a particular wattage may be made only if:		—
	— the luminous intensity in any direction around the tube axis does not deviate by more than 25 % from the average luminous intensity around the tube, and		N/A
	— the luminous flux of the LED lamp is not lower than the luminous flux of the fluorescent lamp of the claimed wattage. The luminous flux of the fluorescent lamp shall be obtained by multiplying the claimed wattage with the minimum luminous efficacy value corresponding to the fluorescent lamp in Commission Regulation (EC) No 245/2009 (1), and		N/A
	— the wattage of the LED lamp is not higher than the wattage of the fluorescent lamp it is claimed to replace.		N/A
	The technical documentation file shall provide the data to support such claims.		N/A
3.3.	Product information requirements for equipment other than luminaires, designed for installation between the mains and the lamps		N/A
	As from stage 2, if the equipment provides no compatibility with any of the energy-saving lamps according to part 2.3 of this Annex, a warning that the equipment is not compatible with energy-saving lamps shall be published on publicly available free-access websites and in other forms the manufacturer deems appropriate.		N/A

Annex III ecodesign requirements of the EC regulation 1194/2012			
Clause	Requirement + Test	Result - Remark	Verdict
3.4	Product information requirements for lamp control gears		N/A
	As from stage 2, the following information shall be published on publicly available free access websites and in other forms the manufacturer deems appropriate:		—
	— Indication that the product is intended to be used as a lamp control gear,		N/A
	— If applicable, the information that the product may be operated in no-load mode.		N/A

Appendix-Test Data Sheet
Table 1 EEI:

Model: 5RS015-2700					
Sample No.	P (W)	Pcor (W) (correction factor=1.0)	Φ_{use} (lm)	$\text{Pref (W)} = \frac{0,88\sqrt{(\Phi_{\text{use}})+0,049}}{\Phi_{\text{use}}}$	EEI= Pcor / Pref
1	7.5	7.5	613.21	30.32	0.17
2	7.4	7.4	607.96	30.90	0.16
3	7.3	7.3	600.93	30.98	0.16
4	7.4	7.4	617.31	30.90	0.16
5	7.3	7.3	609.47	31.38	0.16
6	7.4	7.4	613.61	30.14	0.17
7	7.5	7.5	622.79	31.00	0.17
8	7.4	7.4	623.50	30.43	0.18
9	7.5	7.5	612.33	30.12	0.17
10	7.5	7.5	631.54	30.19	0.16
11	7.4	7.4	621.11	30.07	0.18
12	7.4	7.4	614.21	30.62	0.17
13	7.3	7.3	619.80	30.78	0.16
14	7.5	7.5	621.35	30.35	0.16
15	7.4	7.4	623.09	31.05	0.16
16	7.3	7.3	615.59	30.87	0.17
17	7.4	7.4	634.63	30.75	0.17
18	7.4	7.4	630.70	30.24	0.18
19	7.4	7.4	625.21	30.65	0.17
20	7.5	7.5	624.98	30.20	0.17
Average value	7.4	7.4	619.165	30.60	0.17

Table 2.1 Functionality requirements for stage 1-3:

Model: 5RS015-2700					
Sample No.	Starting time (ms)	Lamp warm-up time to 95%Φ (s)	Colour rendering	(SDCM)	Power factor
1	77.4	0.89	81.5	0.3	0.909
2	75.8	0.91	81.3	1.7	0.910
3	76.6	0.94	81.4	2.8	0.909
4	83.6	0.88	81.7	0.3	0.909
5	54.3	0.94	81.5	0.4	0.908
6	50.6	0.86	81.2	1.3	0.908
7	73.8	0.94	81.6	0.5	0.909
8	59.6	0.98	81.6	1.7	0.909
9	59.8	0.86	81.6	0.7	0.910
10	143.7	0.91	81.5	0.9	0.908
11	119.4	0.93	81.0	3.2	0.913
12	110.6	0.87	81.1	1.9	0.910
13	109.3	0.93	81.6	1.1	0.909
14	132.1	0.97	81.7	1.8	0.908
15	118.2	0.75	81.6	0.9	0.912
16	108.7	0.88	81.5	0.1	0.909
17	110.6	0.86	81.7	1.3	0.910
18	140.4	0.83	81.5	0.8	0.912
19	134.6	0.82	81.6	0.8	0.908
20	94.6	0.89	81.4	2.1	0.909
Average value	96.7	0.89	81.5	1.2	0.909

Table 2.2 Functionality requirements for stage stage 1:

Model: 5RS015-2700						
Sample No.	Luminous Flux at 6000 hours (lm)	6000 Hours Lumen Maintenance (%)	Lamp survival at 6000h (Y/N)	Premature failure rate at 1000 h (%)	Sample No.	Switching cycle (15000 cycle)
1	606.19	98.9%	Y	Pass	21	Y
2	588.88	96.9%	Y	Pass	22	Y
3	583.70	97.1%	Y	Pass	23	Y
4	600.60	97.3%	Y	Pass	24	Y
5	596.87	97.9%	Y	Pass	25	Y
6	597.52	97.4%	Y	Pass	26	Y
7	599.85	96.3%	Y	Pass	27	Y
8	605.05	97.0%	Y	Pass	28	Y
9	601.97	98.3%	Y	Pass	29	Y
10	609.65	96.5%	Y	Pass	30	Y
11	611.48	98.4%	Y	Pass	31	Y
12	613.19	99.8%	Y	Pass	32	Y
13	579.14	93.4%	Y	Pass	33	Y
14	609.54	98.1%	Y	Pass	34	Y
15	584.16	93.8%	Y	Pass	35	Y
16	583.13	94.7%	Y	Pass	36	Y
17	603.34	95.1%	Y	Pass	37	Y
18	632.41	100.3%	Y	Pass	38	Y
19	593.44	94.9%	Y	Pass	39	Y
20	605.24	96.8%	Y	Pass	40	Y
Average value	600.27	97.0%	--	--	Average value	--

Table 3 Parameters of the lamps:

Model: 5RS015-2700			
Sample No.	Beam angle(°)	Peak intensity (cd)	Colour temperature (K)
1	--	--	2722
2	--	--	2694
3	41.0	1132	2673
4	41.4	1114	2721
5	42.2	1071	2728
6	--	--	2704
7	42.2	1097	2718
8	41.5	1092	2695
9	--	--	2714
10	--	--	2713
11	--	--	2675
12	--	--	2696
13	--	--	2706
14	--	--	2691
15	--	--	2709
16	--	--	2728
17	--	--	2752
18	--	--	2713
19	--	--	2714
20	--	--	2688
Average value	41.7	1101	2708

Remarks:

The following information for model 5RS015-2700,5RS015-3000,5RS015-3500,5RS015-4000,5RS015-5000,5RS015-6500 were printed on packaging and listed on free access websites.

3.1.2 Packaging

- a) Useful Luminous Flux: 580,600,620,640660,680 lumen
- b) Life Time: 30000 hours
- c) 2700K,3000K,3500K,4000K,5000K,6500K
- d) Number of switching cycles before premature failure: 15000
- e) Instant full light

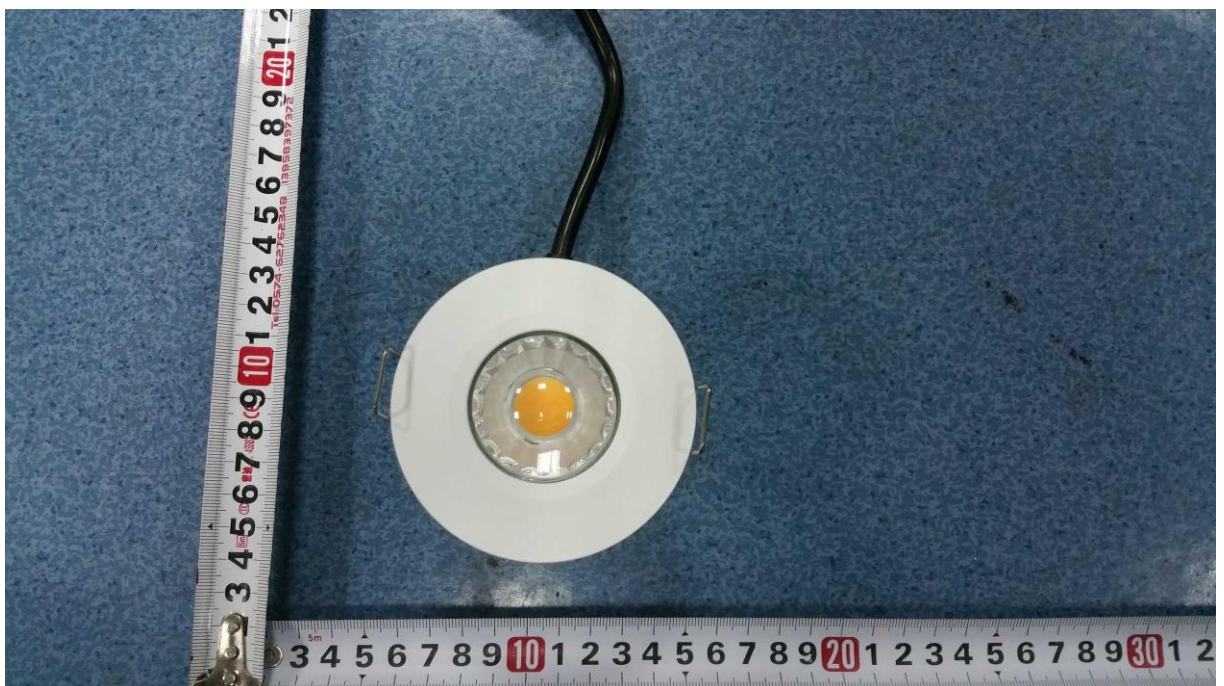
3.1.3 Website --- www.cnledas.com

- a) All information specified in point 3.1.2
- b) Rated Power: 8.0 W
- c) Useful Luminous Flux: 580,600,620,640660,680 lumen
- d) Rated Lamp Life Time: 30000 hours
- e) Lamp Power Factor: >0.9
- f) Lumen maintenance factor at the end of the nominal life: ≥70%
- g) Starting Time : <0.5 second
- h) Colour Rendering: >80
- i) SDCM: Within a six-step MacAdam ellipse
- j) Rated peak intensity: N/A
- k) Spectral power distribution in the range 180-800nm

Photos



Whole view



LED chip view

--The End--