

Report reference No RSZ161229550-03A1

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Date of issue 2016-12-29

Testing laboratory Bay Area Compliance Laboratories Corp. (Dongguan)

China.

Testing location Same as above

Applicant Hongli Zhihui Group Co.,Ltd.

China

Standard IEC 62471:2006

Test sample(s) received...... 2016-12-29

Procedure deviation N.A.

Non-standard test method N.A.

This test report is for the customer shown above and their specific product only. It may not be duplicated or used in part except in full without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

Type of test object LED

Trademark N.A.

Model/type reference HL-AT-2835FVW-S1-08-PCT-HR3

Manufacturer..... Hongli Zhihui Group Co.,Ltd.

NO.1, Xianke Yi Road, Huadong Town, Huadu District, Guangzhou,

China

Rating Input: 9.5V_{dc,} 150mA

Copy of marking plate:

None





Tested lamp	: LED	
Tested lamp system	: N.A.	
Lamp cap	: N.A.	
Bulb	: N.A.	
Rated of the lamp	: N.A.	
Furthermore marking on the lamp	: N.A.	
Seasoning of lamps according EN standard		
Used measurement instrument	: See appendix B for details	
Temperature by measurement		
Information for safety use		

-test object does not meet the requirement......F(ail)

The test results presented in this report relates 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 point is used as the decimal separator.

List of test equipment must be kept on file and available for review.

This report consists of 15 pages and following appendixes:

Appendix A EUT photos

Appendix B Test equipment list

This product is LED chip, test model is HL-AT-2835FVW-S1-08-PCT-HR3. Rated input is 9.5Vdc, 150mA.

This report is based on the BACL report No.: RSZ160505550-03, the differences are that the Applicant and Manufacturer changed from "Guangzhou Hongli Opto-Electronic Co.,Ltd." to "Hongli Zhihui Group Co.,Ltd.", t, and model No. Changed to "HL-AT-2835FVW-S1-08-PCT-HR3". So it don't need to add tests.

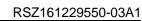




RSZ161229550-03A1

	IEC 62471:2006				
Clause	Requirement + Test	Result - Remark	Verdict		
	t _{max} ≤10000/E _{UVA} s		N		
4.3.3	Retinal blue light hazard exposure limit		Р		

To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, B(_), i.e., the blue-light weighted radiance , LB, shall not exceed the levels defined by:





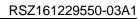
	IEC 62471:2006		
Clause	Requirement + Test	Result - Remark	Verdict
	$L_{\rm IR} = \sum_{780}^{1400} L_{\lambda} \cdot R(\lambda) \cdot \Delta \lambda \le \frac{6000}{\alpha} \qquad \qquad \text{W·m}^{-2} \cdot \text{sr}^{-1}$	See the Table 6.1	P
4.3.7	Infrared radiation hazard exposure limits for the eye		P
The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis),ocular exposure to infrared radiation, EIR,over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:			N
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta \lambda \le 18000 \cdot t^{-0.75}$ W·m ⁻²		N
	For times greater than 1000 s the limit becomes:		Р
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta \lambda \le 100 $ W·m ⁻²	See the Table 6.1	Р
4.3.8	Thermal hazard exposure limit for the skin		Р
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		Р

$$E_{\mathsf{H}} \cdot t = \sum_{380}^{3000} \sum_{t} E_{\lambda}(\lambda, t) \cdot \Delta t \cdot \Delta \lambda \le 20000 \cdot t^{0,25}$$

$$\mathsf{J} \cdot \mathsf{m}^{-2}$$

$$\mathsf{E}_{\mathsf{H}} \cdot \mathsf{t} = \mathsf{0JE}$$



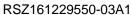




	IEC 62471:2006		
Clause	Requirement + Test	Result - Remark	Verdict
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.		N
5.3.2	Calculations		Р
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		Р
5.3.3	Measurement uncertainty		Р
	The quality of all measurement results must be quantified by an analysis of the uncertainty.		Р
6	LAMP CLASSIFICATION		Р
	For the purposes of this standard it was decided that the values shall be reported as follows:		P
	– for lamps intended for general lighting service, the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm		N
	 for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm 	At a distance of 200mm	Р
6.1	Continuous wave lamps		Р
6.1.1	Exempt Group		Р
	In the except group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		Р
	 an actinic ultraviolet hazard (ES) within 8-hours exposure (30000 s), nor 		Р
	 a near-UV hazard (EUVA) within 1000 s, (about 16 min), nor 		Р
	 a retinal blue-light hazard (LB) within 10000 s (about 2,8 h), nor 		Р
	- a retinal thermal hazard (LR) within 10 s, nor		Р
	 an infrared radiation hazard for the eye (EIR) within 1000 s 		Р









		IEC 62471:2006		
Clause	Requirement + Test		Result - Remark	Verdict

	ons for assessing retinal hazard	is irom broadband optical
sources		
300	0.01	-
305	0.01	-
310	0.01	-
315	0.01	-
320	0.01	-
325	0.01	-
330	0.01	-
335	0.01	-
340	0.01	-
345	0.01	-
350	0.01	-
355	0.01	-
360	0.01	
365	0.01	-
370	0.01	-
375	0.01	-
380	0.01	0.1
385	0.013	0.13
390	0.025	0.25
395	0.05	0.5
400	0.10	1.0
405	0.20	2.0
410	0.40	4.0
415	0.80	8.0
420	0.90	9.0
425	0.95	9.5
430	0.98	9.8
435	1.00	10.0
440	1.00	10.0
445	0.97	9.7
450	0.94	9.4
455	0.90	9.0
460	0.80	8.0
465	0.70	7.0
470	0.62	6.2
475	0.55	5.5
480	0.45	4.5
485	0.40	4.0
490	0.22	2.2
495	0.16 10 ^[(450-λ)/50]	1.6
500-600	10 ^[(450-λ)/50]	1.0
600-700	0.001	1.0
700-1050	0.013	1.0 10 ^[(700-λ)/500]
1050-1150	0.025	0.2
1150-1200	0.05	0.2 ^{100.02(1150-λ)}
1200-1400	0.10	0.02

^{* 1} Wavelengths chosen are representative: other values should be obtained by logarithmic interpolational intermediate wavelengths.



