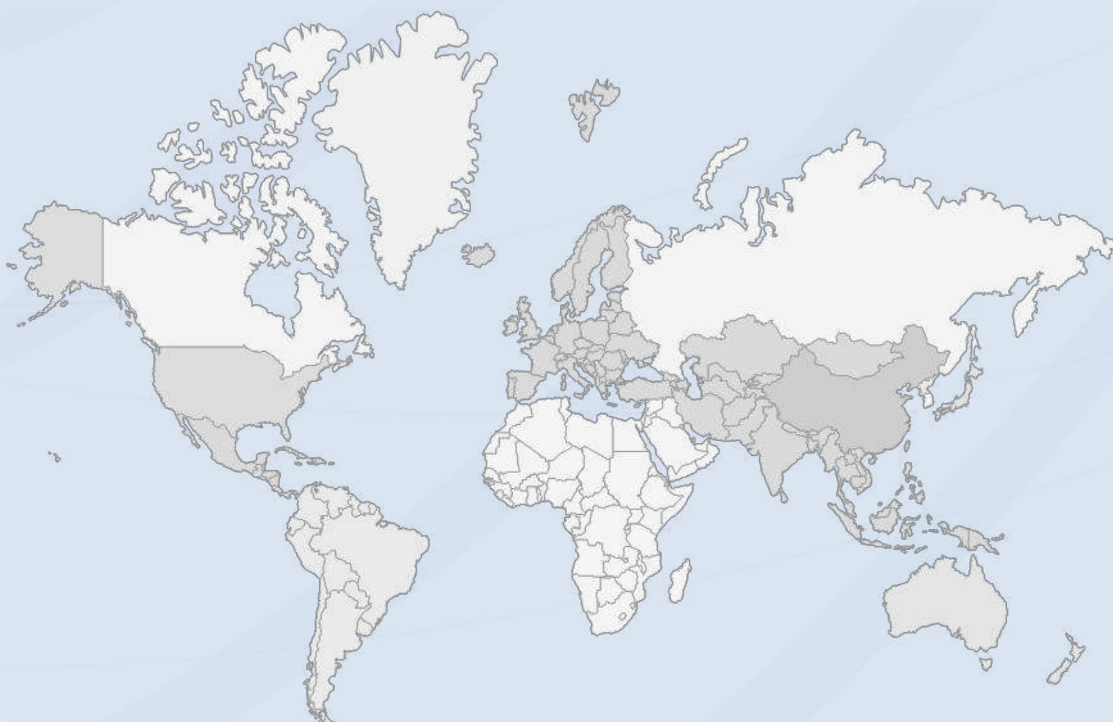


TEST REPORT

Report No......: NTC-SR2511025

Applicant's name.....: Signlite Opto-electronics Co.,Ltd

Address.....: 6F,121 Zhulongtian Road,Shuitian the Fourth Industrial
Park,Shuitian Community,Shiyan Town,Baoan
District,Shenzhen



DONGGUAN NEW TESTING CENTRE CO., LTD

©Address: 1F & 3F, No. 1 the 1st North Industry Road Songshan Lake Science & Technology Park
Dongguan, People's Republic of China 523808

☎Tel: +86-769-22212079

🌐Web: <http://www.ntc-cert.com>

✉E-mail: dave@ntc-cert.com

TEST REPORT IEC 62471 Photobiological safety of lamps and lamp systems	
Report Number.....:	NTC-SR2511025
Date of issue.....:	Nov, 28, 2025
Total number of pages.....:	18 Pages
Name of Testing Laboratory preparing the Report.....:	Dongguan New Testing Centre Co., Ltd 1F & 3F, No. 1 the 1st North Industry Road Songshan Lake Science & Technology Park Dongguan, People's Republic of China 523808
Applicant's name.....:	Signlite Opto-electronics Co.,Ltd
Address.....:	6F,121 Zhulongtian Road,Shuitian the Fourth Industrial Park,Shuitian Community,Shiyan Town,Baoan District,Shenzhen
Manufacturer's name.....:	Signlite Opto-electronics Co.,Ltd
Address.....:	6F,121 Zhulongtian Road,Shuitian the Fourth Industrial Park,Shuitian Community,Shiyan Town,Baoan District,Shenzhen
Test specification:	
Standard.....:	IEC 62471:2006
Test procedure.....:	Safety Test Report
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC62471B
Test Report Form(s) Originator.....:	VDE Testing and Certification Institute
Master TRF.....:	Dated 2018-08-16
Copyright © 2018 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
General disclaimer:	
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 NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	
Test item description.....:	COB Led Strip
Trade Mark.....:	N/A
Model/Type reference.....:	FYX08T480C
Ratings.....:	24VDC 0.44A 10.5W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

Jack Zhang

Tested by (name + signature)..... :

Jack Zhang

Approved by (+ signature)..... : Neil Zhong



Summary of testing:

1. Ambient temperature: 24,3°C, Humidity:47,6%,
 2. Measurement distance: 500 lx: Angular subtends: 0,0735.
- Conclusion: Sample tested is considered as RG0 for IEC 62471.

Tests performed (name of test and test clause):

All of tests were conducted on model FYX08T480C at maximum loading condition, which was considered representative for the series and give the most unfavourable test results.

Testing location:

Dongguan New Testing Centre Co., Ltd
1F & 3F, No. 1 the 1st North Industry Road Songshan Lake Science & Technology Park Dongguan, People's Republic of China 523808

Summary of compliance with National Differences (List of countries addressed):

EU Group Differences

☒ The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☐ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

Copy of marking plate:

N/A

For European market, the manufacturer name & address, importer name & address will be pasted on the products.

Note:

- The above markings are the minimum requirements required by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.
- The CE marking and WEEE symbol (if any) should be at least 5,0 mm and 7,0 mm respectively in height.
- According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.
- Attached near the LED module



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

Test item particulars:	LED strips
Classification of installation and use.....:	class III
Supply Connection.....:	Power cord
Tested lamp.....:	<input checked="" type="checkbox"/> continuous wave lamps <input type="checkbox"/> pulsed lamps
Tested lamp system.....:	
Lamp classification group.....:	<input checked="" type="checkbox"/> exempt <input type="checkbox"/> risk 1 <input type="checkbox"/> risk 2 <input type="checkbox"/> risk 3
Lamp cap.....:	N/A
Bulb.....:	N/A
Rated of the lamp.....:	N/A
Furthermore marking on the lamp.....:	N/A
Seasoning of lamps according IEC standard.....:	N/A
Used measurement instrument.....:	Lamps and lamp system Photobiological safety per-for mance test systems
Temperature by measurement.....:	24.3 °C
Information for safety use.....:	N/A
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A (Not applicable)
- test object does meet the requirement.....:	Pass (P)
- test object does not meet the requirement.....:	Fail (F)
Testing:	
Date of receipt of test items.....:	Nov, 20, 2025
Date(s) of performance of tests.....:	Nov, 20, 2025 to Nov, 21, 2025
General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report, a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>Throughout this report, a point (coma) is used as the decimal separator. List of test equipment must be kept on file and available for review. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty. The related applicable CTL decisions have been considered and the requirements found fulfilled.</p>	

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
4	EXPOSURE LIMITS		P
4.1	General		P
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		P
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds $10^4 \text{ cd}\cdot\text{m}^{-2}$	See Clause 4.3	N/A
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		P
	The exposure limit for effective radiant exposure is $30 \text{ J}\cdot\text{m}^{-2}$ within any 8-hour period		P
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broadband source, the effective integrated spectral irradiance, E_s , of the light source shall not exceed the levels defined by:		P
	$E_s \cdot t = \sum_{200}^{400} \sum_t E_{\lambda}(\lambda, t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta \lambda \leq 30 \quad \text{J}\cdot\text{m}^{-2}$		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		P
	$t_{\max} = \frac{30}{E_s} \quad \text{s}$		P
4.3.2	Near-UV hazard exposure limit for eye		P
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed $10000 \text{ J}\cdot\text{m}^{-2}$ for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA} , shall not exceed $10 \text{ W}\cdot\text{m}^{-2}$.		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		N/A
	$t_{\max} \leq \frac{10\,000}{E_{UVA}} \quad \text{s}$		N/A
4.3.3	Retinal blue light hazard exposure limit		P
	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, $B(\lambda)$, i.e., the blue-light weighted radiance, L_B , shall not exceed the levels defined by:		P
	$L_B \cdot t = \sum_{300}^{700} \sum_t L_{\lambda}(\lambda, t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta \lambda \leq 10^6 \quad \text{J} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	for $t \leq 10^4 \text{ s}$ $t_{\max} = \frac{10^6}{L_B}$	N/A

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
	$L_B = \sum_{300}^{700} L_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq 100 \quad W \cdot m^{-2} \cdot sr^{-1}$	for $t > 10^4$ s	P
4.3.4	Retinal blue light hazard exposure limit - small source		N/A
	Thus the spectral irradiance at the eye E_{λ} , weighted against the blue-light hazard function $B(\lambda)$ shall not exceed the levels defined by:	see table 4.2	N/A
	$E_B \cdot t = \sum_{300}^{700} \sum_t E_{\lambda}(\lambda, t) \cdot B(\lambda) \cdot \Delta\lambda \leq 100 \quad J \cdot m^{-2}$	for $t \leq 100$ s	N/A
	$E_B = \sum_{300}^{700} E_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq 1 \quad W \cdot m^{-2}$	for $t > 100$ s	N/A
4.3.5	Retinal thermal hazard exposure limit		N/A
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_{λ} , weighted by the burn hazard weighting function $R(\lambda)$ (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		N/A
	$L_R = \sum_{380}^{1400} L_{\lambda} \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{50\,000}{\alpha \cdot t^{0,25}} \quad W \cdot m^{-2} \cdot sr^{-1}$	($10 \mu s \leq t \leq 10$ s)	N/A
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		P
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR} , as viewed by the eye for exposure times greater than 10 s shall be limited to:		P
	$L_{IR} = \sum_{780}^{1400} L_{\lambda} \cdot R(\lambda) \cdot \Delta\lambda \leq \frac{6\,000}{\alpha} \quad W \cdot m^{-2} \cdot sr^{-1}$	$t > 10$ s	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, E_{IR} , over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		N/A
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 18\,000 \cdot t^{-0,75} \quad W \cdot m^{-2}$	$t \leq 1000$ s	N/A
	For times greater than 1000 s the limit becomes:		P
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 100 \quad W \cdot m^{-2}$	$t > 1000$ s	P
4.3.8	Thermal hazard exposure limit for the skin		P
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		P
	$E_H \cdot t = \sum_{380}^{3000} \sum_t E_{\lambda}(\lambda, t) \cdot \Delta\lambda \leq 20\,000 \cdot t^{0,25} \quad J \cdot m^{-2}$		P

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
5	MEASUREMENT OF LAMPS AND LAMP SYSTEMS		P
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N/A
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N/A
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.	Temperature maintained at 25±1°C; Relative humidity main-tained to less than 65%; Airflow minimized when measuring	P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		P
	– the manufacturer's recommendation		N/A
5.1.5	Lamp system operation		P
	The power source for operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC standard, or		N/A
	– the manufacturer's recommendation		P
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.		P
	Maximum aperture diameter 50 mm.		P
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	Alternative method		N/A
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N/A
5.2.3	Measurement of source size		P
	The determination of α , the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N/A
	The determination of Δt , the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.	see table 4.1	P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.	see Annex C in the norm	P
6	LAMP CLASSIFICATION		P
	For the purposes of this standard it was decided that the values shall be reported as follows:	see table 6.1	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		P
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		N/A
6.1	Continuous wave lamps		P
6.1.1	Except Group		P
	In the except group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_s) within 8-hours exposure (30000 s), nor		P
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16		P

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
	min), nor		
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		P
6.1.2	Risk Group 1 (Low-Risk)		N/A
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	– a retinal thermal hazard (L_R) within 10 s, nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 100 s are in Risk Group 1.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N/A
	Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard (L_{IR}), within 10 s are in Risk Group 2.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N/A
6.2	Pulsed lamps		N/A
	Pulse lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 s.		N/A
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manufacturer.		N/A
	The risk group determination of the lamp being tested shall be made as follows:		N/A

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
	– a lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk)		N/A
	– for single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance does is below the EL shall be classified as belonging to the Exempt Group		N/A
	– for repetitively pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL, shall be evaluated using the continuous wave risk criteria discussed in clause 6.1, using time averaged values of the pulsed emission		N/A

IEC 62471

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

Table 4.1	Spectral weighting function for assessing ultraviolet hazards for skin and eye	P
------------------	--	---

Wavelength ¹ λ , nm	UV hazard function $S_{uv}(\lambda)$	Wavelength λ , nm	UV hazard function $S_{uv}(\lambda)$
200	0,030	313*	0,006
205	0,051	315	0,003
210	0,075	316	0,0024
215	0,095	317	0,0020
220	0,120	318	0,0016
225	0,150	319	0,0012
230	0,190	320	0,0010
235	0,240	322	0,00067
240	0,300	323	0,00054
245	0,360	325	0,00050
250	0,430	328	0,00044
254*	0,500	330	0,00041
255	0,520	333*	0,00037
260	0,650	335	0,00034
265	0,810	340	0,00028
270	1,000	345	0,00024
275	0,960	350	0,00020
280*	0,880	355	0,00016
285	0,770	360	0,00013
290	0,640	365*	0,00011
295	0,540	370	0,000093
297*	0,460	375	0,000077
300	0,300	380	0,000064
303*	0,120	385	0,000053
305	0,060	390	0,000044
308	0,026	395	0,000036
310	0,015	400	0,000030

¹ Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths.

* Emission lines of a mercury discharge spectrum.

IEC 62471			
Clause	Requirement + Test	Result - Remark	Verdict
Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources		P
Wavelength nm	Blue-light hazard function B (λ)	Burn hazard function R (λ)	
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	1,6	
500-600	$10^{[(450-\lambda)/50]}$	1,0	
600-700	0,001	1,0	
700-1050		$10^{[(700-\lambda)/500]}$	
1050-1150		0,2	
1150-1200		$0,2 \cdot 10^{0,02(1150-\lambda)}$	
1200-1400		0,02	

IEC 62471

Clause	Requirement + Test			Result - Remark		Verdict
Table 5.4	Summary of the ELs for the surface of the skin or cornea (irradiance based values)					P
Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Limiting aperture rad (deg)	EL in terms of constant irradiance $W \cdot m^{-2}$	
Actinic UV skin & eye	$E_S = \sum E_\lambda \cdot S(\lambda) \cdot \Delta\lambda$	200 – 400	< 30000	1,4 (80)	30/t	
Eye UV-A	$E_{UVA} = \sum E_\lambda \cdot \Delta\lambda$	315 – 400	≤ 1000 >1000	1,4 (80)	10000/t 10	
Blue-light small source	$E_B = \sum E_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	≤ 100 >100	< 0,011	100/t 1,0	
Eye IR	$E_{IR} = \sum E_\lambda \cdot \Delta\lambda$	780 – 3000	≤ 1000 >1000	1,4 (80)	18000/t ^{0,75} 100	
Skin thermal	$E_H = \sum E_\lambda \cdot \Delta\lambda$	380 – 3000	< 10	2π sr	20000/t ^{0,75}	

Table 5.5	Summary of the ELs for the retina (radiance based values)				P
Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Field of view radians	EL in terms of constant radiance $W \cdot m^{-2} \cdot sr^{-1}$
Blue light	$L_B = \sum L_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	0,25 – 10 10-100 100-10000 ≥ 10000	$0,011 \cdot \sqrt{(t/10)}$ 0,011 $0,0011 \cdot \sqrt{t}$ 0,1	$10^6/t$ $10^6/t$ $10^6/t$ 100
Retinal thermal	$L_R = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	380 – 1400	< 0,25 0,25 – 10	0,0017 $0,011 \cdot \sqrt{(t/10)}$	$50000/(\alpha \cdot t^{0,25})$ $50000/(\alpha \cdot t^{0,25})$
Retinal thermal (weak visual stimulus)	$L_{IR} = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	780 – 1400	> 10	0,011	6000/α

IEC 62471

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

Test Results

Emission Limits for Risk Group of Continuous Wave Lamps

Risk	Units	Exempt		Low Risk		Mod Risk	
		Limit	Result	Limit	Result	Limit	Result
Actinic UV, Es	W·m-2	0.001	1.180E-08	0.003	1.180E-08	0.03	1.180E-08
Near UV, Euva	W·m-2	10	1.815E-04	33	1.815E-04	100	1.815E-04
Blue light, Lb	W·m-2·sr-1	100	1.316E+01	10000	1.107E+02	4000000	3.810E+02
Blue light, small source, Eb	W·m-2	-	-	-	-	-	-
Retinal thermal, Lr	W·m-2·sr-1	5.318E+05	0.000E+00	5.318E+05	0.000E+00	1.349E+06	0.000E+00
Retinal thermal, weak visual stimulus, Lir	W·m-2·sr-1	1.140E+05	0.000E+00	1.140E+05	0.000E+00	1.140E+05	0.000E+00
IR radiation, eye, Eir	W·m-2	100	0.000E+00	570	0.000E+00	3200	0.000E+00
IR radiation, skin, Eh	W·m-2	3556.56	0.000E+00	NA	NA	NA	NA

Angular subtense of apparent source

 $\alpha = 52.65 \text{ mrad}$

Averaged Luminance Test Results

Symbol	FOV(mrad)	Units	Results
L1	1.7	cd·m-2	4.056E+05
L2	11	cd·m-2	1.179E+05
L3	100	cd·m-2	1.401E+04

Over view of Classification

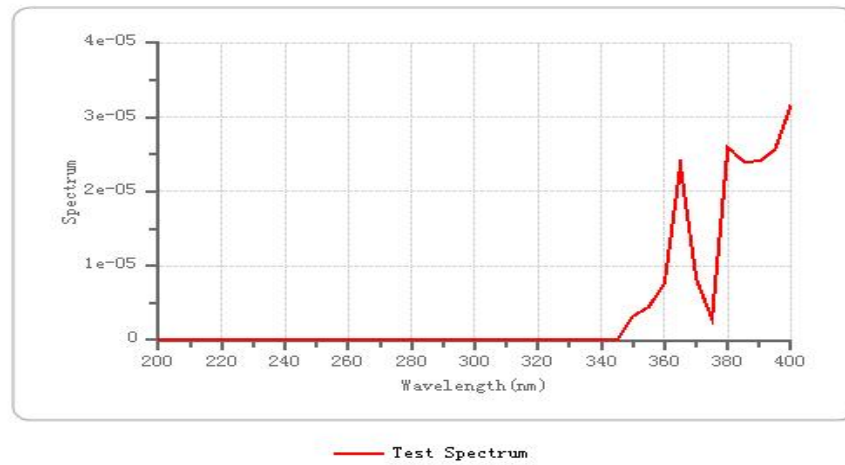
Hazard	Risk Group
Actinic UV	Exempt Group
Near UV	Exempt Group
Blue light	Exempt Group
Retinal thermal	Exempt Group
Retinal thermal, weak visual stimulus	Exempt Group
IR radiation, eye	Exempt Group
Classification group	Exempt Group

IEC 62471

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

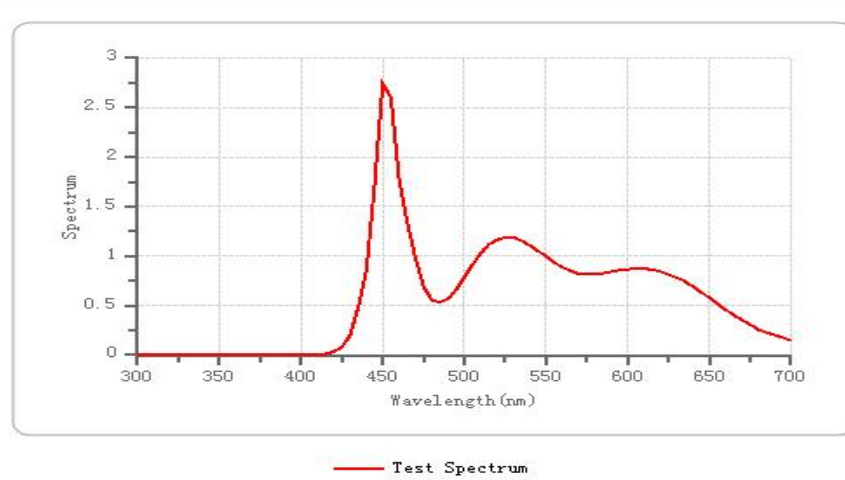
Spectral Distribution (200nm~400nm)

Es,Euva



Spectral Distribution (300nm~700nm)

Lb/Eb



Attachment 1: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

ATTACHMENT TO TEST REPORT IEC 62471
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Photobiological safety of lamps and lamps systems

Differences according to.....: EN 62471:2008

TRF template used.....: IECEE OD-2020-F2:2020, Ed. 1.1

Attachment Form No.....: EU_GD_IEC62471B

Attachment Originator.....: OVE

Master Attachment.....: Dated 2021-04-29

Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

	CENELEC COMMON MODIFICATIONS (EN)	P
4	EXPOSURE LIMITS	P
	Contents of the whole Clause 4 of EN 62471:2006 moved into a new informative Annex ZB	—
	Clause 4 replaced by the following:	P
	The original Clause 4 of EN 62471:2006 contains provisions governing limiting values for the exposure of persons falling within the area of the health and safety of workers. Within Europe those limiting values are already covered by the Artificial Optical Radiation Directive (2006/25/EC). Thus, the limits of the directive have to be applied instead of those fixed in EN 62471:2006.	N/A
	There are no differences in EN 62471:2008 regarding the classification of lamps according Clause 6 of EN 62471:2006.	—
4.1	General	N/A
	Delete the first paragraph.	—



the whole view of product

===== End Report =====