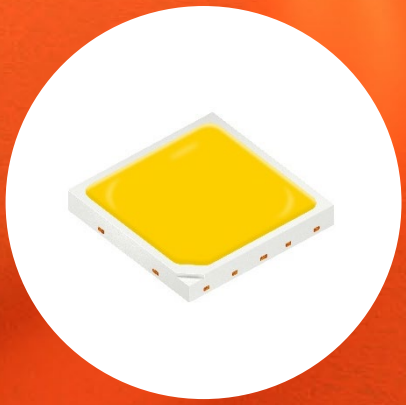

DURIS® S 5050

Photobiological Safety Report
IEC 62471:2006
EN 62471:2008
IEC TR 62778:2014

Sensing is life

ams OSRAM

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Further explanations:

Information: The information provided in this document consists of the list of individual LED types which are considered in the respective LED family.

Document: The document has the purpose to list the individual LED types which are considered in the respective LED family with respect to the photo optical safety.

Conditions: The photo optical safety tests according to IEC 62471:2006 have been conducted using the worst-case LED type of the LED family. Therefore, the less critical LED types are also grouped into the respective highest risk group determined by the worst-case LED types.

Test Report issued under the responsibility of:

DEKRA

TEST REPORT
IEC 62471
Photobiological safety of lamps and lamp systems

Report Reference No. .....:	6216321.50A
Date of issue ..... :	2025-01-21
Total number of pages ..... :	21
Name of Testing Laboratory preparing the Report ..... :	DEKRA Testing and Certification (Shanghai) Ltd. Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China
Applicant's name .....:	OSRAM Opto Semiconductor (M) Sdn. Bhd.
Address ..... :	Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia
Test specification:	
Standard ..... :	IEC 62471:2006
Test procedure ..... :	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No. .....:	IEC62471B
TRF Originator ..... :	VDE Testing and Certification Institute
Master TRF ..... :	Dated 2018-08-16

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

The purpose of this report is only for export activities.

Test item description .....:	LED package
Trade Mark .....:	DURIS
Manufacturer.....:	OSRAM Opto Semiconductor (M) Sdn. Bhd. Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia
Model/Type reference .....:	GW P9LR37.PM
Ratings .....:	Max current 800 mA
Additional information (Lamp classification group)……..:	GW P9LR37.PM (800mA) has been tested according to the IEC 62471 (first edition, 2006-07) for RG 2; GW P9LR37.PM (180mA) has been tested according to the IEC 62471 (first edition, 2006-07) for RG 1.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	DEKRA Testing and Certification (Shanghai) Ltd.	
Testing location/ address ..... :		Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China	
Tested by (name, function, signature) ..... :		Nancy Wang (Engineer)	
Approved by (name, function, signature) .. :		Hanson Zhang (Reviewer)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):

Test report constituents:

6216321.50A covering IEC 62471:2006 (total 21 pages)

6216321.50B covering EU GD to EN 62471:2008 (total 3 pages)

Summary of testing:

Tests performed (name of test and test clause):

These tests

Fulfil the requirements of standard ISO/IEC 17025.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

The tested sample of LED package list as below

GW P9LR37.PM (800mA)

have been tested according to the IEC 62471(first edition, 2006-07):

Model/Type reference	Test condition	Risk Group (according to IEC 62471 (first edition, 2006-07))
All models	☐ GLS ☐ Non GLS ☒ Worst Case	☐ Exempt ☐ RG 1 ☒ RG 2 ☐ RG 3

The tested sample of LED package list as below

GW P9LR37.PM (180mA)

have been tested according to the IEC 62471(first edition, 2006-07):

Model/Type reference	Test condition	Risk Group (according to IEC 62471 (first edition, 2006-07))
All models	☐ GLS ☐ Non GLS ☒ Worst Case	☐ Exempt ☒ RG 1 ☐ RG 2 ☐ RG 3

Testing location:

Testing location:

DEKRA Testing and Certification (Shanghai) Ltd.

Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China

Summary of compliance with National Differences:

List of countries addressed: EU Group Differences

☒ The product fulfills the requirements

EN 62471:2008

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

N/A

Test item particulars	See below
Tested lamp	☒ continuous wave lamps ☐ pulsed lamps
Tested lamp system	N/A
Lamp classification group	☐ exempt ☒ risk 1: 180 mA ☒ risk 2: 800 mA ☐ risk 3
Lamp cap	N/A
Bulb	LED
Rated of the lamp	Max current 800 mA
Furthermore marking on the lamp	N/A
Seasoning of lamps according IEC standard	N/A
Used measurement instrument	spectroradiometer
Temperature by measurement	23-28 °C
Information for safety use	--

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 ..... : 2025-01-16

Date (s) of performance of tests ..... : 2025-01-21

General remarks:

"(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 / ☐ point is used as the decimal separator.

The product complied with the following standards:

GLS	Non-GLS	Worst case (200mm)
☒ IEC 62471:2006	☒ IEC 62471:2006	☒ IEC 62471:2006
☐ IEC/TR 62471-2:2009	☐ IEC/TR 62471-2:2009	☐ IEC/TR 62471-2:2009
☒ EN 62471:2008	☒ EN 62471:2008	☒ EN 62471:2008
☐ IEC/TR 62778: 2014	☐ IEC/TR 62778: 2014	☐ IEC/TR 62778: 2014

This report should be read in conjunction with the attached pages concerned with the European group differences and national differences of the standards EN 62471:2008 with the reference number of 6216321.50B. (3 pages)

Decision rules applied Procedure 2 “Simple Acceptance” as stated in the IEC Guide 115:2023.

Manufacturer’s Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the	☐ **Yes** ☒ **Not applicable**

products from each factory has been provided .....:	
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	OSRAM Opto Semiconductor (M) Sdn. Bhd. Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia

General product information and other remarks:

Full tests were performed on model GW P9LR37.PM.

The product was considered as worst case which should be evaluated at 200mm.

The sample of GW P9LR37.PM was tested at 200mm from the light source.

Type test was performed according to IEC 62471:2006 procedure.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

4	EXPOSURE LIMITS		Verdict
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 cd·m^{-2}	see clause 4.3	P
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 J·m^{-2} within any 8-hour period		P
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broad-band source, the effective integrated spectral irradiance , E_S, of the light source shall not exceed the levels defined by:		P
	$E_s \cdot t = \sum_{200}^{400} \sum_{t} E_\lambda(\lambda,t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 30$ J·m^{-2}		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		P
	$t_{max} = \frac{30}{E_S}$ 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 J·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 W·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:		P
	$t_{max} \le \frac{10\,000}{E_{UVA}}$ s		P
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(λ), i.e., the blue-light weighted radiance , L_B, shall not exceed the levels defined by:		P
	$L_B \cdot t = \sum_{300}^{700} \sum_{t} L_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 10^6$ J · m^{-2} · sr^{-1}	for t ≤ 10^4 s $t_{max} = \frac{10^6}{L_B}$	P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$L_B = \sum_{300}^{700} L_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 100$ $W \cdot m^{-2} \cdot sr^{-1}$	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(λ) shall not exceed the levels defined by:	see table 4.2	N/A
	$E_B \cdot t = \sum_{300}^{700} \sum_{t} E_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 100$ $J \cdot m^{-2}$	for t ≤ 100 s	N/A
	$E_B = \sum_{300}^{700} E_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 1$ $W \cdot m^{-2}$	for t > 100 s	N/A
4.3.5	Retinal thermal hazard exposure limit		P
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_λ, weighted by the burn hazard weighting function R(λ) (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		P
	$L_R = \sum_{380}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{50\,000}{\alpha \cdot t^{0,25}}$ $W \cdot m^{-2} \cdot sr^{-1}$	(10 µs ≤ t ≤ 10 s)	P
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N/A
	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:	N/A	N/A
	$L_{IR} = \sum_{780}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{6\,000}{\alpha}$ $W \cdot m^{-2} \cdot sr^{-1}$	N/A	N/A
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:		P
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 18\,000 \cdot t^{-0,75}$ $W \cdot m^{-2}$	t ≤ 1000 s	P
	For times greater than 1000 s the limit becomes:		P
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 100$ $W \cdot m^{-2}$	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

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$E_H \cdot t = \sum_{380}^{3\,000} \sum_{t} E_\lambda(\lambda,t) \cdot \Delta t \cdot \Delta\lambda \le 20\,000 \cdot t^{0,25}$ J · m^{-2}		P
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.		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:		N/A
	– the appropriate IEC lamp standard, or		N/A
	– the manufacturer' s recommendation		P
5.1.5	Lamp system operation		N/A
	The power source for operation of the test lamp shall be provided in accordance with:		N/A
	– the appropriate IEC standard, or		N/A
	– the manufacturer' s recommendation		N/A
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		P
	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.		P
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	
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		N/A
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		P
6.1	Continuous wave lamps		P
6.1.1	Exempt Group		N/A
	In the exempt group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 8-hours exposure (30000 s), nor		N/A
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		N/A

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), 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 1000 s		N/A
6.1.2	Risk Group 1 (Low-Risk)	GW P9LR37.PM (180mA)	P
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		P
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		P
	– a retinal blue-light hazard (L_B) within 100 s, nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		P
	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.		P
6.1.3	Risk Group 2 (Moderate-Risk)	GW P9LR37.PM (800mA)	P
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		P
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		P
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		P
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		P
	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.		P
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		
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	

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)				
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)				
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

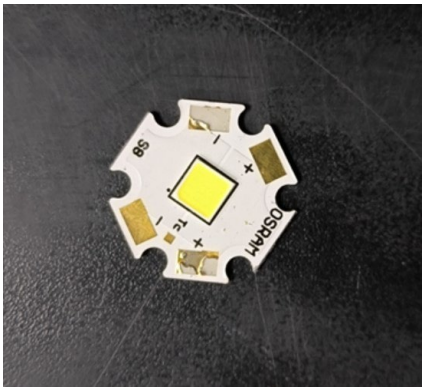
Table 6.1	Emission limits for risk groups of continuous wave lamps								
Risk	Action spectrum	Symbol	Units	Emission Measurement For GW P9LR37.PM (800mA)					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0,000	0,003		0,03	
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0,00	33		100	
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,77E+02	10000	1,97E+04	4000000	2,01E+04
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	1,0*	--	1,0		400	
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	2,28E+05	28000/α		71000/α	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/α	--	6000/α		6000/α	
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,03	570		3200	

* Small source defined as one with α < 0,011 radian. Averaging field of view at 10000 s is 0,1 radian.
** Involves evaluation of non-GLS source

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps									
Risk	Action spectrum	Symbol	Units	Emission Measurement For GW P9LR37.PM (180mA)					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0,000	0,003		0,03	
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0,00	33		100	
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,38E+02	10000	4,82E+03	4000000	
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	1,0*	--	1,0		400	
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	5,65E+04	28000/α		71000/α	
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/α	--	6000/α		6000/α	
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,04	570		3200	
* Small source defined as one with α < 0,011 radian. Averaging field of view at 10000 s is 0,1 radian. ** Involves evaluation of non-GLS source									

Appendix 1: Photo documentation

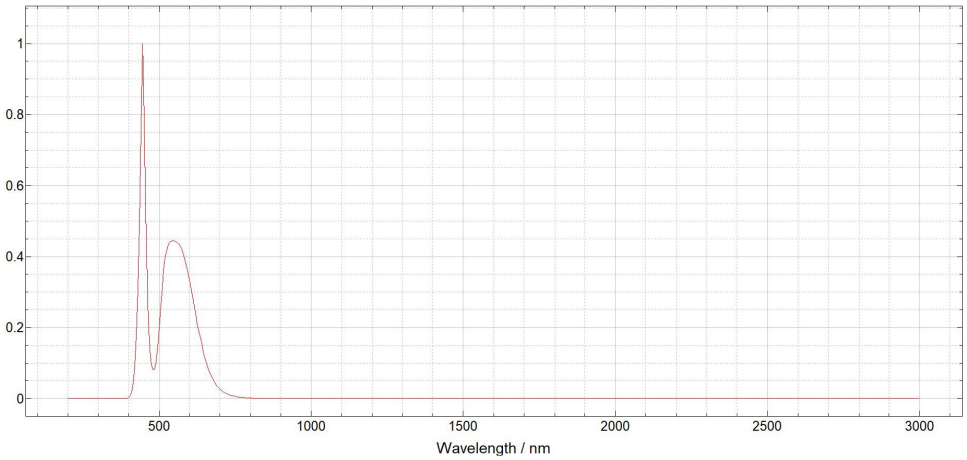


GW P9LR37.PM

Appendix 2: Model list

N/A

Appendix 3: Relative spectrum of tested sample



GW P9LR37.PM

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.
Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
7	Irradiance measurements Radiance measurements	IDR300 Monochromator (JD-PH 127)	200-3000nm	/	/
7	Radiance measurements	S009 Telescope (JD-PH 085)	300-1400nm	/	/
7	Radiance measurements	SRS12 Radiance Standard (JD-PH 138)	300-1400nm	2024/2/25	2025/2/24
7	Irradiance measurements	CL6 Spectral irradiance standard (JD-PH 136)	300-3000nm	2024/2/25	2025/2/24
7	Irradiance measurements	CL7 Spectral irradiance standard (JD-PH 137)	200-400nm	2024/2/25	2025/2/24
7	Irradiance measurements	Photometric detector head (JD-PH 028)	380nm-800nm	2024/2/26	2025/2/25
7	Irradiance measurements Radiance measurements	Wattmeter (JD-PH 001)	500V,40A	2024/10/10	2025/10/10

---The End---

IEC62471B ATTACHMENT			
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		
	CENELEC COMMON MODIFICATIONS (EN)		P
4	**EXPOSURE LIMITS**		P
	Contents of the whole Clause 4 of IEC 62471:2006 moved into a new informative Annex ZB		—
	Clause 4 replaced by the following:		P
	The original Clause 4 of IEC 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 IEC 62471:2006.		P
	There are no differences in EN 62471:2008 regarding the classification of lamps according Clause 6 of IEC 62471:2006.		—
4.1	General		P
	Delete the first paragraph.		—

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)	
	Test condition: ☐ GLS ☐ Non GLS ☒ Worst Case Lamp classification group: ☐ Exempt ☐ RG 1 ☒ RG 2 ☐ RG 3	

Risk	Action spectrum	Symbol	Units	Emission Measurement For GW P9LR37.PM (800mA)					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0,000	-	-	-	-
Near UV		E_{UVA}	$W \cdot m^{-2}$	0,33	0,00	-	-	-	-
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,77E+02	10000	1,97E+04	4000000	2,01E+04
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	0,01*	--	1,0		400	
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	2,28E+05	28000/α		71000/α	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	--				
				6000/α 0,011≤ α ≤ 0,1	--				
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,03	570		3200	

* Small source defined as one with α < 0,011 radian. Averaging field of view at 10000 s is 0,1 radian.
** Involves evaluation of non-GLS source

NOTE The action functions: see Table 4.1 and Table 4.2
The applicable aperture diameters: see 4.2.1
The limitations for the angular subtenses: see 4.2.2
The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)	
	Test condition: ☐ GLS ☐ Non GLS ☒ Worst Case Lamp classification group: ☐ Exempt ☒ RG 1 ☐ RG 2 ☐ RG 3	

Risk	Action spectrum	Symbol	Units	Emission Measurement For GW P9LR37.PM (180mA)					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0,000	-	-	-	-
Near UV		E_{UVA}	$W \cdot m^{-2}$	0,33	0,00	-	-	-	-
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,38E+02	10000	4,82E+03	4000000	
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	0,01*	--	1,0		400	
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	5,65E+04	28000/α		71000/α	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	--				
				6000/α 0,011≤ α ≤ 0,1	--				
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,04	570		3200	

* Small source defined as one with α < 0,011 radian. Averaging field of view at 10000 s is 0,1 radian.
** Involves evaluation of non-GLS source

NOTE The action functions: see Table 4.1 and Table 4.2
The applicable aperture diameters: see 4.2.1
The limitations for the angular subtenses: see 4.2.2
The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.

Test Report issued under the responsibility of:

DEKRA

TEST REPORT
IEC TR 62778
Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires

Report Number. ..... :	6216321.50P
Date of issue ..... :	2025-01-21
Total number of pages ..... :	15
Name of Testing Laboratory preparing the Report ..... :	DEKRA Testing and Certification (Shanghai) Ltd. Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China
Applicant's name ..... :	OSRAM Opto Semiconductor (M) Sdn. Bhd.
Address ..... :	Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia
Test specification:	
Standard ..... :	IEC TR 62778:2014 (Second Edition)
Test procedure ..... :	Type Test
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62778A
Test Report Form(s) Originator .... :	TÜV SÜD Product Service GmbH
Master TRF ..... :	Dated 2016-02

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

The purpose of this report is only for export activities.

Test item description ..... :	LED package		
Trade Mark ..... :	DURIS		
Manufacturer ..... :	OSRAM Opto Semiconductor (M) Sdn. Bhd. Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia		
Model/Type reference ..... :	GW P9LR37.PM		
Ratings ..... :	Max current 800 mA		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒ **CB Testing Laboratory:**	DEKRA Testing and Certification (Shanghai) Ltd.		
Testing location/ address.....	Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China		
☐ ~~Associated CB Testing Laboratory:~~			
~~Testing location/ address~~			
Tested by (name, function, signature) ..... :	Nancy Wang		
Approved by (name, function, signature) ..... :	Hanson Zhang		
☐ ~~Testing procedure: CTF Stage 1:~~			
~~Testing location/ address~~			
~~Tested by (name, function, signature)~~ ..... ÷			
~~Approved by (name, function, signature)~~ ..... ÷			
☐ ~~Testing procedure: CTF Stage 2:~~			
~~Testing location/ address~~			
~~Tested by (name + signature)~~ ..... ÷			
~~Witnessed by (name, function, signature)~~ ..... ÷			
~~Approved by (name, function, signature)~~ ..... ÷			

☐	~~Testing procedure: CTF Stage 3:~~		
☐	~~Testing procedure: CTF Stage 4:~~		
~~Testing location/ address .....~~			
~~Tested by (name, function, signature)~~ ..... ÷			
~~Witnessed by (name, function, signature)~~ ..... ÷			
~~Approved by (name, function, signature)~~ ..... ÷			
~~Supervised by (name, function, signature)~~ ..... ÷			

List of Attachments (including a total number of pages in each attachment):

- Appendix 1: Photo Documentation
- Appendix 2: Model List
- Appendix 3: Relative Spectrum Of Tested Sample(s)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
These tests fulfil the requirements of standard ISO/IEC 17025. When determining the test conclusion, the Measurement Uncertainty of test has been considered. The tested sample of GW P9LR37.PM (800mA) Have been tested according to the IEC/TR 62778:2014 and been classified as **RG 2 for blue light hazard**. The tested sample of GW P9LR37.PM (180mA) Have been tested according to the IEC/TR 62778:2014 and been classified as **RG 1 for blue light hazard**.	DEKRA Testing and Certification (Shanghai) Ltd. Building 1, No. 1050, Xingxian Road, Jiading District, Shanghai 201815, China

Summary of compliance with National Differences:

List of countries addressed: EU Group Differences

☒ The product fulfills the requirements
EN 62471:2008

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

N/A

Test item particulars.....:	See below
Product evaluated.....:	☒ **LED package** ☐ **LED module** ☐ **Lamp** ☐ **Luminaire**
Rated voltage (V) .....:	--
Rated current (mA) .....:	Max 800 mA
Rated CCT (K).....:	--
Rated Luminance (Mcd/m^2) .....:	--
Component report data used .....:	☒ **Not applicable** ☐ **LED package** ☐ **LED module** ☐ **Lamp** Report number: --
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 .....:	2025-01-16
Date (s) of performance of tests.....:	2025-01-21

General remarks:

"(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 / ☐ point is used as the decimal separator.

The product complied with the following standards:

☒IEC 62471:2006
☒EN 62471:2008
☐IEC/TR 62471-2:2009
☒IEC/TR 62778:2014

Decision rules applied Procedure 2 “Simple Acceptance” as stated in the IEC Guide 115:2023.

Manufacturer’s Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	OSRAM Opto Semiconductor (M) Sdn. Bhd. Bayan Lepas FIZ Phase 1, Bayan Lepas, Penang, 11900 Malaysia

General product information:

Full tests were performed on model GW P9LR37.PM.

The products considered as worst case which should be evaluated at 200mm.

The sample of GW P9LR37.PM was tested at 200mm from the light source.

Type test was performed according to IEC 62471:2006 procedure.

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

7	**MEASUREMENT INFORMATION FLOW**		**P**
7.1	**Basic flow**		**P**
	'Law of conservation of luminance' applied		N/A
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		N/A
	In case E_{thr} value for RG2 was established the peak value was derived from angular light distribution		N/A
7.2	**Conditions for the radiance measurement**		**P**
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
7.3	**Special cases (I): Replacement by a lamp or LED module of another type**		**N/A**
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	**Special cases (II): Arrays and clusters of primary light sources**		**N/A**
	LED package is evaluated as ..... :	☐ RG0 unlimited ☐ RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A
8	**RISK GROUP CLASSIFICATION**		**P**
	Risk group achieved:		P
	- .. Risk Group 0 unlimited		N/A
	- .. Risk Group 1 unlimited	GW P9LR37.PM (180mA)	P
	- E_{thr} ..... (lx) : Distance to reach RG1 ..... (m) :	GW P9LR37.PM (800mA) Refer to the Supplementary information of **TABLE:Spectroradiometric measurement** as following	P

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement		
	Measurement performed on:	☒ **LED package** ☐ **LED module** ☐ **Lamp** ☐ **Luminaire**	
	Model number.....	GW P9LR37.PM	
	Test voltage (V)	--	—
	Test current (mA)	800 mA	—
	Test frequency (Hz).....	--	—
	Ambient, t(°C)	25**°C**	—
	Measurement distance.....	☒ 20 cm ☐ ... cm	—
	Source size	☒ Non-small ☐ Small :	—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	—

Item	Symbol	Units	Result	Remark
Correlated colour temperature	CCT	K	6684	
x/y colour coordinates			0,3064 / 0,3264	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	1,97E+04	@11mrad
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	1,77E+07	@11mrad
Illuminance	E	lx	4,87E+03	

Supplementary information:

Per IEC/TR 62778:2014
Ethr= 898 lx

Dmin= 470 mm

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement		
	Measurement performed on:	☒ **LED package** ☐ **LED module** ☐ **Lamp** ☐ **Luminaire**	
	Model number.....	GW P9LR37.PM	
	Test voltage (V)	--	—
	Test current (mA)	180 mA	—
	Test frequency (Hz).....	--	—
	Ambient, t(°C)	25**°C**	—
	Measurement distance.....	☒ 20 cm ☐ ... cm	—
	Source size	☒ Non-small ☐ Small :	—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	—

Item	Symbol	Units	Result	Remark
Correlated colour temperature	CCT	K	6655	
x/y colour coordinates			0,3091 / 0,3346	
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	4,82E+03	@11mrad
Blue light hazard irradiance	E_B	W/m^2	--	
Luminance	L	cd/m^2	4,74E+06	@11mrad
Illuminance	E	lx	1,27E+03	

Supplementary information:
N/A

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

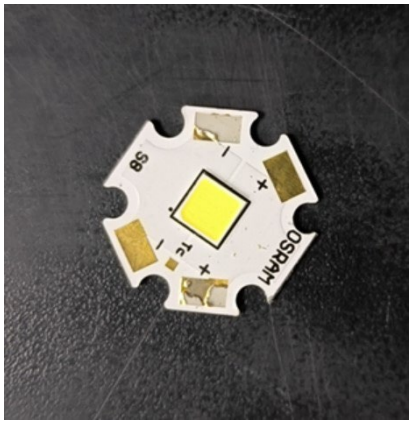
	TABLE: Angular light distribution	**N/A**

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to CTF stage 1 or CTF stage 2 procedure has been used.
Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
7	Irradiance measurements Radiance measurements	IDR300 Monochromator (JD-PH 127)	200-3000nm	/	/
7	Radiance measurements	S009 Telescope (JD-PH 085)	300-1400nm	/	/
7	Radiance measurements	SRS12 Radiance Standard (JD-PH 138)	300-1400nm	2024/2/25	2025/2/24
7	Irradiance measurements	CL6 Spectral irradiance standard (JD-PH 136)	300-3000nm	2024/2/25	2025/2/24
7	Irradiance measurements	CL7 Spectral irradiance standard (JD-PH 137)	200-400nm	2024/2/25	2025/2/24
7	Irradiance measurements	Photometric detector head (JD-PH 028)	380nm-800nm	2024/2/26	2025/2/25
7	Irradiance measurements Radiance measurements	Wattmeter (JD-PH 001)	500V,40A	2024/10/10	2025/10/10

Appendix 1: Photo Documentation

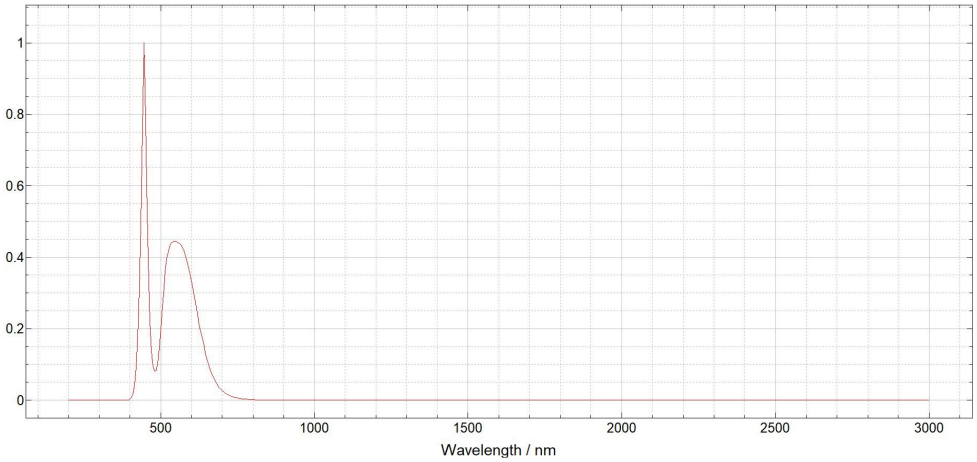


GW P9LR37.PM

Appendix 2: Model List

N/A

Appendix 3: Relative Spectrum Of Tested Sample(s)



GW P9LR37.PM

---The End---

Ref. Certif. No.
NL-114132

IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE)

Aspect Certificate of Conformity

Product	LED package
Name and address of the applicant	OSRAM Opto Semiconductor (M) Sdn Bhd Bayan Lepas FIZ Phase 1,Bayan Lepas, 11900 Penang Malaysia
Name and address of the manufacturer	OSRAM Opto Semiconductor (M) Sdn Bhd Bayan Lepas FIZ Phase 1,Bayan Lepas, 11900 Penang Malaysia
Name and address of the factory *Note: When more than one factory, please report on page 2*	OSRAM Opto Semiconductor (M) Sdn Bhd Bayan Lepas FIZ Phase 1,Bayan Lepas, 11900 Penang Malaysia ☐ Additional information on page 2
Ratings and principal characteristics	currents 180 and 800 mA
Trademark / Brand (if any)	DURIS
Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	GW P9LR37.PM
Additional information (if necessary may also be reported on page 2)	GW P9LR37.PM (800mA) has been tested according to the IEC 62471 (first edition, 2006-07) for RG 2; GW P9LR37.PM (180mA) has been tested according to the IEC 62471 (first edition, 2006-07) for RG 1. ☐ Additional information on page 2
A sample of the product was tested and found to be in conformity with	IEC 62471:2006 Comments: EU group differences have been applied
As shown in the Test Report Ref. No. which forms part of this Certificate	6216321.50A & 6216321.50B

This Certificate of Conformity, issued by the National Certification Body, certifies that the above have been found to be in conformity with all relevant requirements of IECEE Aspect Certification program. This Certificate covers the complete standard but the standard covers only part of the product safety or performance.

DEKRA Certification B.V.
Meander 1051
Arnhem, 6825 MJ
Netherlands

Date: 2025-01-21

Signature: Ted Gaertner

LED Family: **DURIS® S 5050**

Corresponding photobiological safety report:

6216321

Device name	Test Current	Test result (risk group)		
		IEC 62471:2006	EN 62471:2008	IEC TR 62778:2014
GW P9LR37.PM (Test component)	180mA	RG 1	RG 1	RG 1 Unlimited
	800mA	RG 2	RG 2	Ethr= 898 lx

This report can also be used as reference for below devices:

Device name	Current suitable for reference
GW P9LR37.EM	Up to 800mA
GW P9LR37.CM	Up to 800mA
GW P9LR38.PM	Up to 200mA
GW P9LR38.EM	Up to 200mA
GW P9LR38.CM	Up to 200mA

OSRAM Opto Semiconductors (M) Sdn Bhd
Bayan Lepas FIZ Phase 1
11900 Bayan Lepas
Penang, Malaysia.

ams-osram.com

Sensing is life