





Test Report issued under the responsibility of:



<b>TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires</b>	
<b>Report Number</b> .....	6051921.50P
<b>Date of issue</b> .....	2019-06-18
<b>Total number of pages</b> .....	53
<b>Name of Testing Laboratory preparing the Report</b> .....	DEKRA Testing and Certification (Shanghai) Ltd. 3/F, #250, Jiangchangsan Road building 16 Headquarter Economy Park Shibe Hi-Tech Park, Zhabei District, Shanghai, P.R.C 200436
<b>Applicant's name</b> .....	Lumileds Malaysia Sdn. Bhd
<b>Address</b> .....	No. 3 , Lintang Bayan Lepas 8, Phase 4, Bayan Lepas Industrial Park, 11900 Penang, Malaysia
<b>Test specification:</b>	
<b>Standard</b> .....	IEC TR 62778:2014 (Second Edition)
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC62778A
<b>Test Report Form(s) Originator</b> .....	TÜV SÜD Product Service GmbH
<b>Master TRF</b> .....	Dated 2016-02
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<b>Test item description</b> ..... :	LED module	
<b>Trade Mark</b> ..... :	LUMILEDS	
<b>Manufacturer</b> ..... :	Lumileds Malaysia Sdn. Bhd. No. 3 , Lintang Bayan Lepas 8, Phase 4, Bayan Lepas Industrial Park, 11900 Penang, Malaysia	
<b>Model/Type reference</b> ..... :	L2C5 series Detailed lists refer to Appendix 2: Model List	
<b>Ratings</b> ..... :	Voltage: 41,5 Vdc, current: 600-3200 mA Detailed information please refer to Appendix 2: Model List.	
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	DEKRA Testing and Certification (Shanghai) Ltd.
	<b>Testing location/ address</b> .....:	3/F, #250, Jiangchangsan Road building 16 Headquarter Economy Park Shibe Hi-Tech Park, Zhabei District, Shanghai, P.R.C 200436
<input type="checkbox"/>	<b>Associated CB Testing Laboratory:</b>	
	<b>Testing location/ address</b> .....:	
	<b>Tested by (name, function, signature)</b> .....:	Yuting Peng 
	<b>Approved by (name, function, signature)</b> ....:	Hanson Zhang 
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	
	<b>Testing location/ address</b> .....:	
	<b>Tested by (name, function, signature)</b> .....:	
	<b>Approved by (name, function, signature)</b> .....:	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	
	<b>Testing location/ address</b> .....:	
	<b>Tested by (name + signature)</b> .....:	
	<b>Witnessed by (name, function, signature)</b> .....:	
	<b>Approved by (name, function, signature)</b> .....:	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3:</b>	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	
	<b>Testing location/ address</b> .....:	

Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .....		
Approved by (name, function, signature).....:		
Supervised by (name, function, signature) .....		

<p><b>List of Attachments (including a total number of pages in each attachment):</b></p> <ul style="list-style-type: none"> <li>● Appendix 1: Photo Documentation</li> <li>● Appendix 2: Model List</li> <li>● Appendix 3: Relative Spectrum Of Tested Sample(s)</li> <li>● Appendix 4: Table 6.1 Based On IEC 62471:2006</li> <li>● Appendix 5: Table 6.1 Based On EN62471:2008, Attachment To IEC 62471 European Group Differences And National Differences</li> <li>● Appendix 6: Blue Light Hazard-Forward Current Relationship (Non-mandatory Information)</li> </ul>	
<p><b>Summary of testing:</b></p>	
<p><b>Tests performed (name of test and test clause):</b></p> <p>These tests fulfil the requirements of standard ISO/IEC 17025. When determining the test conclusion, the Measurement Uncertainty of test has been considered.</p> <p>The tested sample of L2C5-50701208F1500 Have been tested according to the IEC 62471 (first edition, 2006-07) <b>at 200mm</b> and been classified as <b>RG 2 at 1800mA and RG1 at 763mA</b> Have been tested according to the EN 62471:2008 <b>at 200mm</b> and been classified as <b>RG 2 at 1800mA and RG1 at 763mA</b> Have been tested according to the IEC/TR 62778:2014 and been classified as <b>RG 2 at 1800mA and RG1 Unlimited at 763mA for blue light hazard.</b></p> <p>L2C5-40701208F1500 Have been tested according to the IEC 62471 (first edition, 2006-07) <b>at 200mm</b> and been classified as <b>RG 2 at 1800mA and RG1 at 1053mA</b> Have been tested according to the EN 62471:2008 <b>at 200mm</b> and been classified as <b>RG 2 at 1800mA and RG1 at 1053mA</b> Have been tested according to the IEC/TR 62778:2014 and been classified as <b>RG 2 at 1800mA and RG1 Unlimited at 1053mA for blue light hazard.</b></p> <p>L2C5-30901208F15-L Have been tested according to the IEC 62471 (first edition, 2006-07) <b>at 200mm</b> and been classified as <b>RG 1.</b> Have been tested according to the EN 62471:2008 <b>at 200mm</b> and been classified as <b>RG 1.</b> Have been tested according to the IEC/TR 62778:2014 and been classified as <b>RG 1 Unlimited for blue light hazard.</b></p>	<p><b>Testing location:</b></p> <p>DEKRA Testing and Certification (Shanghai) Ltd. 3/F, #250, Jiangchangsan Road building 16 Headquater Economy Park Shibe Hi-Tech Park, Zhabei District, Shanghai, P.R.C 200436</p>

<p>L2C5-65701208F1500 Have been tested according to the IEC 62471 (first edition, 2006-07) <b>at 200mm</b> and been classified as <b>RG 2</b> Have been tested according to the EN 62471:2008 <b>at 200mm</b> and been classified as <b>RG 2</b> Have been tested according to the IEC/TR 62778:2014 and been classified as <b>RG 2 for blue light hazard.</b></p>	
<p><b>Summary of compliance with National Differences (List of countries addressed): EN Standards</b></p> <p>EN 62471:2008</p> <p><input checked="" type="checkbox"/> <b>The product fulfills the requirements</b></p>	

<p><b>Copy of marking plate:</b> <b>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.</b></p> <p>N/A</p>
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<b>Test item particulars .....</b>	
<b>Product evaluated .....</b>	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire
<b>Rated voltage (V).....</b>	41,5 Vdc
<b>Rated current (mA).....</b>	600-3200 mA
<b>Rated CCT (K) .....</b>	--
<b>Rated Luminance (Mcd/m<sup>2</sup>).....</b>	--
<b>Component report data used .....</b>	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp Report number: --
<b>Possible test case verdicts:</b>	
- 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)	
<b>Testing .....</b> : --	
<b>Date of receipt of test item.....</b>	2019-04-08
<b>Date (s) of performance of tests .....</b>	2019-04-08 to 2019-04-09
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.  <b>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</b>  The product complied with the following standards: <input checked="" type="checkbox"/> IEC 62471:2006 <input checked="" type="checkbox"/> EN 62471:2008 <input type="checkbox"/> IEC/TR 62471-2:2009 <input checked="" type="checkbox"/> IEC/TR 62778:2014	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60529:</b>	
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.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable

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

**Name and address of factory (ies)..... :** Lumileds Malaysia Sdn. Bhd.  
No. 3 , Lintang Bayan Lepas 8, Phase 4, Bayan Lepas Industrial Park, 11900 Penang, Malaysia

**General product information:**

Full tests were performed on model L2C5-50701208F1500, L2C5-40701208F1500, L2C5-30901208F15-L, L2C5-65701208F1500..

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

The sample of L2C5-50701208F1500 was tested at 200mm from the light source. CCT of spectral irradiance was found at 4573 K.

The sample of L2C5-40701208F1500 was tested at 200mm from the light source. CCT of spectral irradiance was found at 3816 K.

The sample of L2C5-30901208F15-L was tested at 200mm from the light source. CCT of spectral irradiance was found at 3230 K.

The sample of L2C5-65701208F1500 was tested at 200mm from the light source. CCT of spectral irradiance was found at 6144 K.

**Amendment 1 report: (6039987.50P)**

This report is issued to suspend the original test report 6039987.50P, dated on 2018-09-28, to include following changed and/or additions:

- Add new model: See New Model list

After review, no test was considered necessary.

Base on the Model list which listed on the appendix 2, The tested sample can be considered as

typical product  worst product

Which the results can be reference used for the other models.

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

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict
<b>7</b>	<b>MEASUREMENT INFORMATION FLOW</b>		<b>P</b>
<b>7.1</b>	<b>Basic flow</b>		<b>P</b>
	'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
<b>7.2</b>	<b>Conditions for the radiance measurement</b>		<b>P</b>
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
<b>7.3</b>	<b>Special cases (I): Replacement by a lamp or LED module of another type</b>		<b>N/A</b>
	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
<b>7.4</b>	<b>Special cases (II): Arrays and clusters of primary light sources</b>		<b>N/A</b>
	LED package is evaluated as ..... : <input type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited		N/A
	$E_{thr}$ of LED package applies to array		N/A
<b>8</b>	<b>RISK GROUP CLASSIFICATION</b>		<b>P</b>
	Risk group achieved:		P
	-...Risk Group 0 unlimited		N/A
	-...Risk Group 1 unlimited		P
	- $E_{thr}$ ..... (lx) : Distance to reach RG1 ..... (m) :	Refer to the Supplementary information of <b>TABLE: Spectroradiometric measurement</b> as following	P



IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Spectroradiometric measurement				
Measurement performed on:		<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
Model number .....		L2C5-50701208F1500		
Test voltage (V) .....		--		—
Test current (mA) .....		1800 mA		—
Test frequency (Hz) .....		--		—
Ambient, t(°C) .....		25°C		—
Measurement distance .....		<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
Source size .....		<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
Field of view .....		<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	4573	
x/y colour coordinates			0,3599 / 0,3720	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> •sr <sup>1</sup> )	2,20E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	2,51E+07	@11mrad
Illuminance	E	lx	8,58E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1164 lx D <sub>min</sub> = 1718 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-50701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	1350 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	4509	
x/y colour coordinates			0,3626 / 0,3756	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	1,66E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	1,95E+07	@11mrad
Illuminance	E	lx	6,50E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1164 lx D <sub>min</sub> = 1718 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-50701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	900 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	4677	
x/y colour coordinates			0,3560 / 0,3672	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	1,16E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	1,42E+07	@11mrad
Illuminance	E	lx	4,54E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1164 lx D <sub>min</sub> = 1718 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-50701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	450 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	4561	
x/y colour coordinates			0,3609 / 0,3754	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	5,91E+03	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	7,69E+06	@11mrad
Illuminance	E	lx	2,31E+04	
Supplementary information: N/A				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-40701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	1800 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3816	
x/y colour coordinates			0,3904 / 0,3869	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	1,55E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	2,67E+07	@11mrad
Illuminance	E	lx	9,17E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1726 lx D <sub>min</sub> = 1457 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-40701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	1350 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3799	
x/y colour coordinates			0,3920 / 0,3897	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	1,26E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	2,11E+07	@11mrad
Illuminance	E	lx	7,45E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1726 lx D <sub>min</sub> = 1457 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-40701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	900 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3705	
x/y colour coordinates			0,3980 / 0,3959	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	8,52E+03	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	1,46E+07	@11mrad
Illuminance	E	lx	5,04E+04	
Supplementary information: N/A				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number .....	L2C5-40701208F1500		
	Test voltage (V) .....	--		—
	Test current (mA) .....	450 mA		—
	Test frequency (Hz) .....	--		—
	Ambient, t(°C) .....	25°C		—
	Measurement distance .....	<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
	Source size .....	<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
	Field of view .....	<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3668	
x/y colour coordinates			0,4016 / 0,4019	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	4,27E+03	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	7,41E+06	@11mrad
Illuminance	E	lx	2,48E+04	
Supplementary information: N/A				



IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
Measurement performed on:		<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
Model number .....		L2C5-30901208F15-L		
Test voltage (V) .....		41,5 Vdc		—
Test current (mA) .....		1800mA		—
Test frequency (Hz) .....		--		—
Ambient, t(°C) .....		25°C		—
Measurement distance .....		<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
Source size .....		<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
Field of view .....		<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	3230	
x/y colour coordinates			0,4218 /0,3991	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	7,82E+03	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	1,68E+07	@11mrad
Illuminance	E	lx	5,56E+04	
Supplementary information: N/A				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE:Spectroradiometric measurement				
Measurement performed on:		<input type="checkbox"/> LED package <input checked="" type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
Model number .....		L2C5-65701208F1500		
Test voltage (V) .....		41,5 Vdc		—
Test current (mA) .....		1800 mA		—
Test frequency (Hz) .....		--		—
Ambient, t(°C) .....		25°C		—
Measurement distance .....		<input checked="" type="checkbox"/> 20 cm <input type="checkbox"/> ... cm		—
Source size .....		<input checked="" type="checkbox"/> Non-small <input type="checkbox"/> Small :		—
Field of view .....		<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1,7 mrad (for small sources)		—
Item	Symb ol	Units	Result	Remark
Correlated colour temperature	CCT	K	6144	
x/y colour coordinates			0,3178 / 0,3485	
Blue light hazard radiance	L <sub>B</sub>	W/(m <sup>2</sup> ·sr <sup>1</sup> )	2,02E+04	@11mrad
Blue light hazard irradiance	E <sub>B</sub>	W/m <sup>2</sup>	--	
Luminance	L	cd/m <sup>2</sup>	2,32E+07	@11mrad
Illuminance	E	lx	7,05E+04	
Supplementary information: Per IEC/TR 62778:2014 E <sub>thr</sub> = 1149 lx D <sub>min</sub> = 1587 mm				

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	<b>TABLE: Angular light distribution</b>	<b>N/A</b>

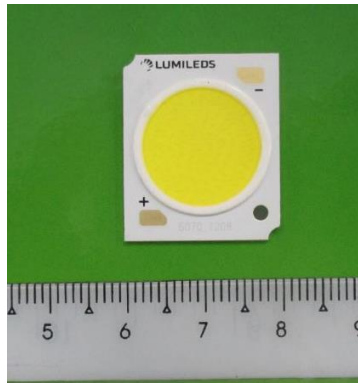
**List of test equipment used:**

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.

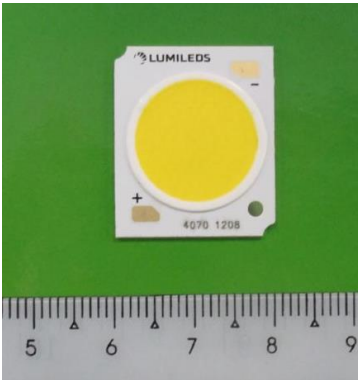
Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
7	Irradiance measurements Radiance measurements	IDR 300 Monochromator (SH 344)	200-3000nm	/	/
7	Radiance measurements	S009 Telescope (SH 345)	300-1400nm	/	/
7	Radiance measurements	SRS 12 Radiance Standard (SH 348)	300-1400nm	2019/2/27	2020/2/26
7	Irradiance measurements	CL6 Spectral irradiance standard (SH 350)	300-3000nm	2019/2/27	2020/2/26
7	Irradiance measurements	CL7 Spectral irradiance standard (SH 351)	200-400nm	2019/2/27	2020/2/26
7	Irradiance measurements	Photometric detector head (SH 359)	380nm-800nm	2019/2/26	2020/2/25
7	Irradiance measurements Radiance measurements	Wattmeter (SH030)	500V,40A	2018/10/09	2019/10/09

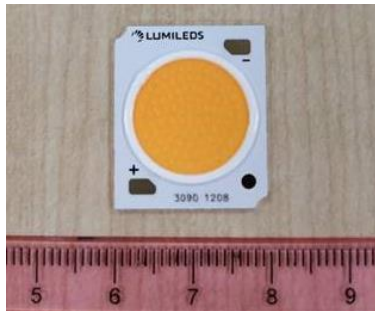
Appendix 1: Photo Documentation



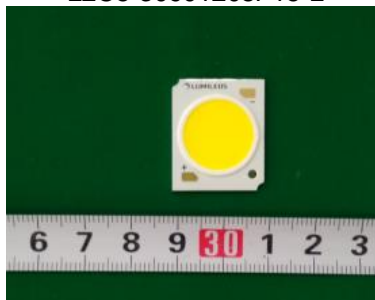
L2C5-50701208F1500



L2C5-40701208F1500



L2C5-30901208F15-L



L2C5-65701208F1500

Overview

**Appendix 2: Model List**

L2C5-AABBCCCCDEEFF

where

AA: Nominal CCT (27=2700K, 30=3000K, 32=3200K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K)

BB: Minimum CRI (70=70CRI, 80=80CRI, 90=90CRI, 95=95CRI)

CCCC: Product configuration (1202, 1203, 1204, 1205, 1208, 1211, 1216)

D: Options for product specification (F, X)

EE: Light emitting surface (LES) size (H6=6.5mm, 09=9mm, 13=13mm, 15=15mm, 19=19mm, 23=23mm)

FF: Options for product specification (00, PL, 0L, -L, B0, 10)

Commercial Part number	Configuration	LES (mm)	Max Current (mA)	Max Voltage (V)	Nominal CCT (K)	Minimum CRI	Typical Flux (lm)	Typ Flux Density (lm/mm <sup>2</sup> )	Forward Current (mA)	RG Rating at forward current	RG Rating at max current
L2C5-65701208F1500	1208	15	1800	41.5	6500	70	4962	28.1	NA	NA	RG2
L2C5-65701208F150L	1208	15	1800	41.5	6500	70	4962	28.1	NA	NA	RG2
L2C5-65701211F1900	1211	19	2400	41.5	6500	70	6686	23.6	NA	NA	RG2
L2C5-65701211F190L	1211	19	2400	41.5	6500	70	6686	23.6	NA	NA	RG2
L2C5-65701216F2300	1216	23	3200	41.5	6500	70	8931	21.5	NA	NA	RG2
L2C5-65701216F230L	1216	23	3200	41.5	6500	70	8931	21.5	NA	NA	RG2
L2C5-57701208F1500	1208	15	1800	41.5	5700	70	5093	28.8	NA	NA	RG2
L2C5-57701208F150L	1208	15	1800	41.5	5700	70	5093	28.8	NA	NA	RG2
L2C5-57801208F1500	1208	15	1800	41.5	5700	80	4891	27.7	NA	NA	RG2
L2C5-57801208F150L	1208	15	1800	41.5	5700	80	4891	27.7	NA	NA	RG2
L2C5-57801205F1300	1205	13	1200	41.5	5700	80	3261	24.6	NA	NA	RG2
L2C5-57701211F1900	1211	19	2400	41.5	5700	70	6863	24.2	NA	NA	RG2
L2C5-57701211F190L	1211	19	2400	41.5	5700	70	6863	24.2	NA	NA	RG2
L2C5-57801211F1900	1211	19	2400	41.5	5700	80	6531	23.0	NA	NA	RG2
L2C5-57801211F190L	1211	19	2400	41.5	5700	80	6531	23.0	NA	NA	RG2

TRF No. IEC62778A

L2C5-57701216F2300	1216	23	3200	41.5	5700	70	9167	22.1	NA	NA	RG2
L2C5-57701216F230L	1216	23	3200	41.5	5700	70	9167	22.1	NA	NA	RG2
L2C5-57801216F2300	1216	23	3200	41.5	5700	80	8803	21.2	NA	NA	RG2
L2C5-57801216F230L	1216	23	3200	41.5	5700	80	8803	21.2	NA	NA	RG2
L2C5-50701208F1500	1208	15	1800	41.5	5000	70	5243	29.7	763	RG1	RG2
L2C5-50701208F150L	1208	15	1800	41.5	5000	70	5243	29.7	763	RG1	RG2
L2C5-50801208F1500	1208	15	1800	41.5	5000	80	4905	27.8	763	RG1	RG2
L2C5-50801208F150L	1208	15	1800	41.5	5000	80	4905	27.8	763	RG1	RG2
L2C5-50801203F0900	1203	9	600	41.5	5000	80	1635	25.7	254	RG1	RG2
L2C5-50801203F090L	1203	9	600	41.5	5000	80	1635	25.7	254	RG1	RG2
L2C5-50701211F1900	1211	19	2400	41.5	5000	70	7062	24.9	1017	RG1	RG2
L2C5-50701211F190L	1211	19	2400	41.5	5000	70	7062	24.9	1017	RG1	RG2
L2C5-50801205F1300	1205	13	1200	41.5	5000	80	3270	24.6	509	RG1	RG2
L2C5-50801205F130L	1205	13	1200	41.5	5000	80	3270	24.6	509	RG1	RG2
L2C5-50801211F1900	1211	19	2400	41.5	5000	80	6550	23.1	1017	RG1	RG2
L2C5-50801211F190L	1211	19	2400	41.5	5000	80	6550	23.1	1017	RG1	RG2
L2C5-50701216F2300	1216	23	3200	41.5	5000	70	9364	22.5	1356	RG1	RG2
L2C5-50701216F230L	1216	23	3200	41.5	5000	70	9364	22.5	1356	RG1	RG2
L2C5-50801216F2300	1216	23	3200	41.5	5000	80	8830	21.3	1356	RG1	RG2
L2C5-50801216F230L	1216	23	3200	41.5	5000	80	8830	21.3	1356	RG1	RG2
L2C5-40701208F1500	1208	15	1800	41.5	4000	70	5243	29.7	1053	RG1	RG2
L2C5-40701208F150L	1208	15	1800	41.5	4000	70	5243	29.7	1053	RG1	RG2
L2C5-40801208F1500	1208	15	1800	41.5	4000	80	4905	27.8	1053	RG1	RG2
L2C5-40801208F150L	1208	15	1800	41.5	4000	80	4905	27.8	1053	RG1	RG2
L2C5-40701203F0900	1203	9	600	41.5	4000	70	1743	27.4	351	RG1	RG2
L2C5-40701203F090L	1203	9	600	41.5	4000	70	1743	27.4	351	RG1	RG2
L2C5-40701205F1300	1205	13	1200	41.5	4000	70	3486	26.3	702	RG1	RG2

L2C5-40701205F130L	1205	13	1200	41.5	4000	70	3486	26.3	702	RG1	RG2
L2C5-40801203F0900	1203	9	600	41.5	4000	80	1635	25.7	351	RG1	RG2
L2C5-40801203F090L	1203	9	600	41.5	4000	80	1635	25.7	351	RG1	RG2
L2C5-40701211F1900	1211	19	2400	41.5	4000	70	7062	24.9	1404	RG1	RG2
L2C5-40701211F190L	1211	19	2400	41.5	4000	70	7062	24.9	1404	RG1	RG2
L2C5-40901208F1500	1208	15	1800	41.5	4000	90	4370	24.7	1053	RG1	RG2
L2C5-40801205F1300	1205	13	1200	41.5	4000	80	3270	24.6	702	RG1	RG2
L2C5-40801205F130L	1205	13	1200	41.5	4000	80	3270	24.6	702	RG1	RG2
L2C5-40901208F15PL	1208	15	1800	41.5	4000	90	4214	23.8	1053	RG1	RG2
L2C5-40801211F1900	1211	19	2400	41.5	4000	80	6550	23.1	1404	RG1	RG2
L2C5-40801211F190L	1211	19	2400	41.5	4000	80	6550	23.1	1404	RG1	RG2
L2C5-40701216F2300	1216	23	3200	41.5	4000	70	9364	22.5	1872	RG1	RG2
L2C5-40701216F230L	1216	23	3200	41.5	4000	70	9364	22.5	1872	RG1	RG2
L2C5-40901203F09PL	1203	9	600	41.5	4000	90	1405	22.1	351	RG1	RG2
L2C5-40901205F1300	1205	13	1200	41.5	4000	90	2913	21.9	702	RG1	RG2
L2C5-40801216F2300	1216	23	3200	41.5	4000	80	8830	21.3	1872	RG1	RG2
L2C5-40801216F230L	1216	23	3200	41.5	4000	80	8830	21.3	1872	RG1	RG2
L2C5-40901205F13PL	1205	13	1200	41.5	4000	90	2809	21.2	702	RG1	RG2
L2C5-40901211F1900	1211	19	2400	41.5	4000	90	5840	20.6	1404	RG1	RG2
L2C5-40901211F19PL	1211	19	2400	41.5	4000	90	5654	19.9	1404	RG1	RG2
L2C5-40901216F23PL	1216	23	3200	41.5	4000	90	7585	18.3	1872	RG1	RG2
L2C5-35801208F1500	1208	15	1800	41.5	3500	80	4811	27.2	1053	RG1	RG2
L2C5-35801208F150L	1208	15	1800	41.5	3500	80	4811	27.2	1053	RG1	RG2
L2C5-35801203F0900	1203	9	600	41.5	3500	80	1578	24.8	351	RG1	RG2
L2C5-35801203F090L	1203	9	600	41.5	3500	80	1578	24.8	351	RG1	RG2
L2C5-35801205F1300	1205	13	1200	41.5	3500	80	3200	24.1	702	RG1	RG2
L2C5-35801205F130L	1205	13	1200	41.5	3500	80	3200	24.1	702	RG1	RG2



L2C5-35901208F15PL	1208	15	1800	41.5	3500	90	4104	23.2	1053	RG1	RG2
L2C5-35801211F1900	1211	19	2400	41.5	3500	80	6340	22.4	1404	RG1	RG2
L2C5-35801211F190L	1211	19	2400	41.5	3500	80	6340	22.4	1404	RG1	RG2
L2C5-35901203F09PL	1203	9	600	41.5	3500	90	1368	21.5	351	RG1	RG2
L2C5-35901205F13PL	1205	13	1200	41.5	3500	90	2736	20.6	702	RG1	RG2
L2C5-35801216F2300	1216	23	3200	41.5	3500	80	8508	20.5	1872	RG1	RG2
L2C5-35801216F230L	1216	23	3200	41.5	3500	80	8508	20.5	1872	RG1	RG2
L2C5-35901211F1900	1211	19	2400	41.5	3500	90	5688	20.1	1404	RG1	RG2
L2C5-35901211F19PL	1211	19	2400	41.5	3500	90	5479	19.3	1404	RG1	RG2
L2C5-35901216F23PL	1216	23	3200	41.5	3500	90	7386	17.8	1872	RG1	RG2
L2C5-32901208X15B0	1208	15	1800	41.5	3200	90	3967	22.4	1053	RG1	RG2
L2C5-32901205X13B0	1205	13	1200	41.5	3200	90	2646	19.9	702	RG1	RG2
L2C5-30901208F15-L	1208	15	1800	41.5	3000	90	3350	19.0	NA	NA	RG1
L2C5-30701208F1500	1208	15	1800	41.5	3000	70	4933	27.9	NA	NA	RG1
L2C5-30701208F150L	1208	15	1800	41.5	3000	70	4933	27.9	NA	NA	RG1
L2C5-30801208F1500	1208	15	1800	41.5	3000	80	4717	26.7	NA	NA	RG1
L2C5-30801208F150L	1208	15	1800	41.5	3000	80	4717	26.7	NA	NA	RG1
L2C5-30801208F15PL	1208	15	1800	41.5	3000	80	4585	25.9	NA	NA	RG1
L2C5-30701203F0900	1203	9	600	41.5	3000	70	1639	25.8	NA	NA	RG1
L2C5-30701203F090L	1203	9	600	41.5	3000	70	1639	25.8	NA	NA	RG1
L2C5-30701205F1300	1205	13	1200	41.5	3000	70	3287	24.8	NA	NA	RG1
L2C5-30701205F130L	1205	13	1200	41.5	3000	70	3287	24.8	NA	NA	RG1
L2C5-30801203F0900	1203	9	600	41.5	3000	80	1547	24.3	NA	NA	RG1
L2C5-30801203F090L	1203	9	600	41.5	3000	80	1547	24.3	NA	NA	RG1
L2C5-30801203F09PL	1203	9	600	41.5	3000	80	1528	24.0	NA	NA	RG1
L2C5-30801205F1300	1205	13	1200	41.5	3000	80	3137	23.6	NA	NA	RG1
L2C5-30801205F130L	1205	13	1200	41.5	3000	80	3137	23.6	NA	NA	RG1

L2C5-30701211F1900	1211	19	2400	41.5	3000	70	6644	23.4	NA	NA	RG1
L2C5-30701211F190L	1211	19	2400	41.5	3000	70	6644	23.4	NA	NA	RG1
L2C5-30901208X15B0	1208	15	1800	41.5	3000	90	4084	23.1	NA	NA	RG1
L2C5-30801205F13PL	1205	13	1200	41.5	3000	80	3056	23.0	NA	NA	RG1
L2C5-30901208F1500	1208	15	1800	41.5	3000	90	4043	22.9	NA	NA	RG1
L2C5-30901208F150L	1208	15	1800	41.5	3000	90	3899	22.1	NA	NA	RG1
L2C5-30901208F15PL	1208	15	1800	41.5	3000	90	3899	22.1	NA	NA	RG1
L2C5-30801211F1900	1211	19	2400	41.5	3000	80	6216	21.9	NA	NA	RG1
L2C5-30801211F190L	1211	19	2400	41.5	3000	80	6216	21.9	NA	NA	RG1
L2C5-30801211F19PL	1211	19	2400	41.5	3000	80	6122	21.6	NA	NA	RG1
L2C5-30701216F2300	1216	23	3200	41.5	3000	70	8875	21.4	NA	NA	RG1
L2C5-30701216F230L	1216	23	3200	41.5	3000	70	8875	21.4	NA	NA	RG1
L2C5-30901203F0900	1203	9	600	41.5	3000	90	1344	21.1	NA	NA	RG1
L2C5-30901205X13B0	1205	13	1200	41.5	3000	90	2735	20.6	NA	NA	RG1
L2C5-30901205F1300	1205	13	1200	41.5	3000	90	2708	20.4	NA	NA	RG1
L2C5-30901203F090L	1203	9	600	41.5	3000	90	1296	20.4	NA	NA	RG1
L2C5-30901203F09PL	1203	9	600	41.5	3000	90	1296	20.4	NA	NA	RG1
L2C5-30801216F2300	1216	23	3200	41.5	3000	80	8342	20.1	NA	NA	RG1
L2C5-30801216F230L	1216	23	3200	41.5	3000	80	8342	20.1	NA	NA	RG1
L2C5-30801216F23PL	1216	23	3200	41.5	3000	80	8252	19.9	NA	NA	RG1
L2C5-30901205F130L	1205	13	1200	41.5	3000	90	2611	19.7	NA	NA	RG1
L2C5-30901205F13PL	1205	13	1200	41.5	3000	90	2611	19.7	NA	NA	RG1
L2C5-30901211X19B0	1211	19	2400	41.5	3000	90	5510	19.4	NA	NA	RG1
L2C5-30901211F1900	1211	19	2400	41.5	3000	90	5455	19.2	NA	NA	RG1
L2C5-30901211F190L	1211	19	2400	41.5	3000	90	5255	18.5	NA	NA	RG1
L2C5-30901211F19PL	1211	19	2400	41.5	3000	90	5255	18.5	NA	NA	RG1
L2C5-30801204F1300	1204	13	900	41.5	3000	80	2376	17.9	NA	NA	RG1

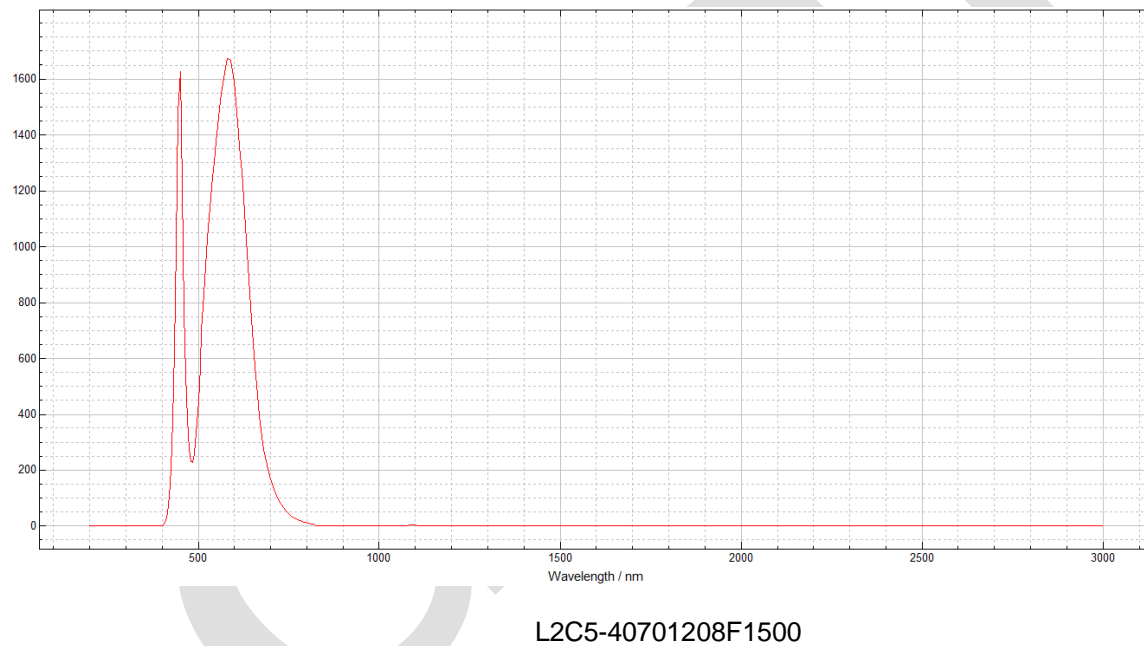
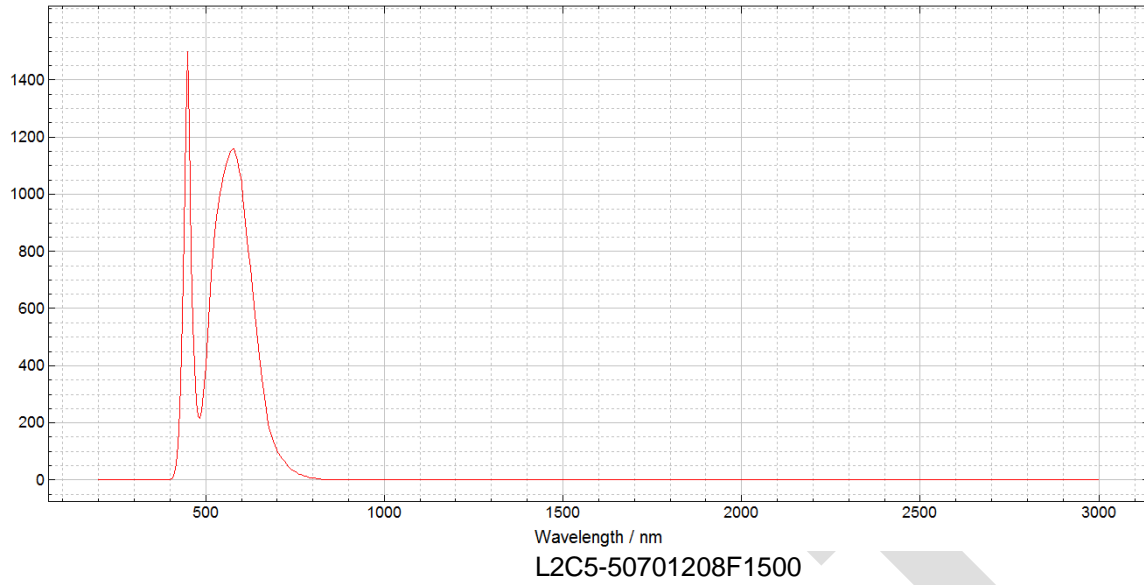
L2C5-30901216F2300	1216	23	3200	41.5	3000	90	7300	17.6	NA	NA	RG1
L2C5-30901203F09-L	1203	9	600	41.5	3000	90	1115	17.5	NA	NA	RG1
L2C5-30901216F230L	1216	23	3200	41.5	3000	90	7039	16.9	NA	NA	RG1
L2C5-30901216F23PL	1216	23	3200	41.5	3000	90	7039	16.9	NA	NA	RG1
L2C5-30901205F13-L	1205	13	1200	41.5	3000	90	2210	16.7	NA	NA	RG1
L2C5-30901211F19-L	1211	19	2400	41.5	3000	90	4600	16.2	NA	NA	RG1
L2C5-30901204F1300	1204	13	900	41.5	3000	90	2061	15.5	NA	NA	RG1
L2C5-30901216F23-L	1216	23	3200	41.5	3000	90	6050	14.6	NA	NA	RG1
<b>L2C5-30951208F1500</b>	<b>1208</b>	<b>15</b>	<b>1800</b>	<b>41.5</b>	<b>3000</b>	<b>95</b>	<b>3500</b>	<b>19.8</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-30951203F0900</b>	<b>1203</b>	<b>9</b>	<b>600</b>	<b>41.5</b>	<b>3000</b>	<b>95</b>	<b>1170</b>	<b>18.4</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-30951205F1300</b>	<b>1205</b>	<b>13</b>	<b>1200</b>	<b>41.5</b>	<b>3000</b>	<b>95</b>	<b>2330</b>	<b>17.6</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-30951211F1910</b>	<b>1211</b>	<b>19</b>	<b>2400</b>	<b>41.5</b>	<b>3000</b>	<b>95</b>	<b>4690</b>	<b>16.5</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
L2C5-27801208F1500	1208	15	1800	41.5	2700	80	4528	25.6	NA	NA	RG1
L2C5-27801208F150L	1208	15	1800	41.5	2700	80	4528	25.6	NA	NA	RG1
L2C5-27801203F0900	1203	9	600	41.5	2700	80	1510	23.7	NA	NA	RG1
L2C5-27801203F090L	1203	9	600	41.5	2700	80	1510	23.7	NA	NA	RG1
L2C5-27801205F1300	1205	13	1200	41.5	2700	80	3019	22.7	NA	NA	RG1
L2C5-27801205F130L	1205	13	1200	41.5	2700	80	3019	22.7	NA	NA	RG1
L2C5-27901208F1500	1208	15	1800	41.5	2700	90	3901	22.1	NA	NA	RG1
L2C5-27801211F1900	1211	19	2400	41.5	2700	80	6046	21.3	NA	NA	RG1
L2C5-27801211F190L	1211	19	2400	41.5	2700	80	6046	21.3	NA	NA	RG1
L2C5-27901208F150L	1208	15	1800	41.5	2700	90	3762	21.3	NA	NA	RG1
L2C5-27901203F0900	1203	9	600	41.5	2700	90	1300	20.4	NA	NA	RG1
L2C5-27901203F090L	1203	9	600	41.5	2700	90	1254	19.7	NA	NA	RG1
L2C5-27801216F2300	1216	23	3200	41.5	2700	80	8150	19.6	NA	NA	RG1
L2C5-27801216F230L	1216	23	3200	41.5	2700	80	8150	19.6	NA	NA	RG1
L2C5-27901205F1300	1205	13	1200	41.5	2700	90	2601	19.6	NA	NA	RG1

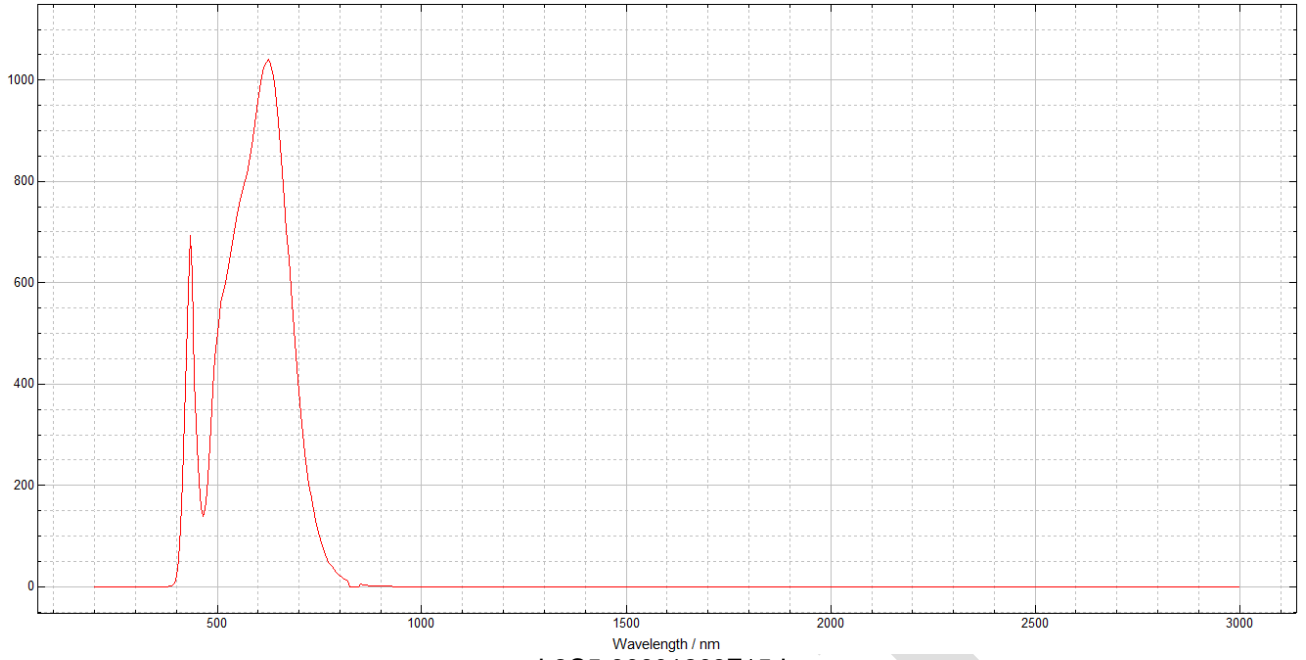
L2C5-27901205F130L	1205	13	1200	41.5	2700	90	2508	18.9	NA	NA	RG1
L2C5-27901211F1900	1211	19	2400	41.5	2700	90	5213	18.4	NA	NA	RG1
L2C5-27901211F190L	1211	19	2400	41.5	2700	90	5022	17.7	NA	NA	RG1
L2C5-27801204F1300	1204	13	900	41.5	2700	80	2324	17.5	NA	NA	RG1
L2C5-27901216F2300	1216	23	3200	41.5	2700	90	7021	16.9	NA	NA	RG1
L2C5-27901216F230L	1216	23	3200	41.5	2700	90	6771	16.3	NA	NA	RG1
L2C5-27901204F1300	1204	13	900	41.5	2700	90	2003	15.1	NA	NA	RG1
<b>L2C5-27951208F1500</b>	<b>1208</b>	<b>15</b>	<b>1800</b>	<b>41.5</b>	<b>2700</b>	<b>95</b>	<b>3350</b>	<b>19.0</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-27951203F0900</b>	<b>1203</b>	<b>9</b>	<b>600</b>	<b>41.5</b>	<b>2700</b>	<b>95</b>	<b>1110</b>	<b>17.4</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-27951205F1300</b>	<b>1205</b>	<b>13</b>	<b>1200</b>	<b>41.5</b>	<b>2700</b>	<b>95</b>	<b>2230</b>	<b>16.8</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>
<b>L2C5-27951211F1910</b>	<b>1211</b>	<b>19</b>	<b>2400</b>	<b>41.5</b>	<b>2700</b>	<b>95</b>	<b>4480</b>	<b>15.8</b>	<b>NA</b>	<b>NA</b>	<b>RG1</b>

## New Model List

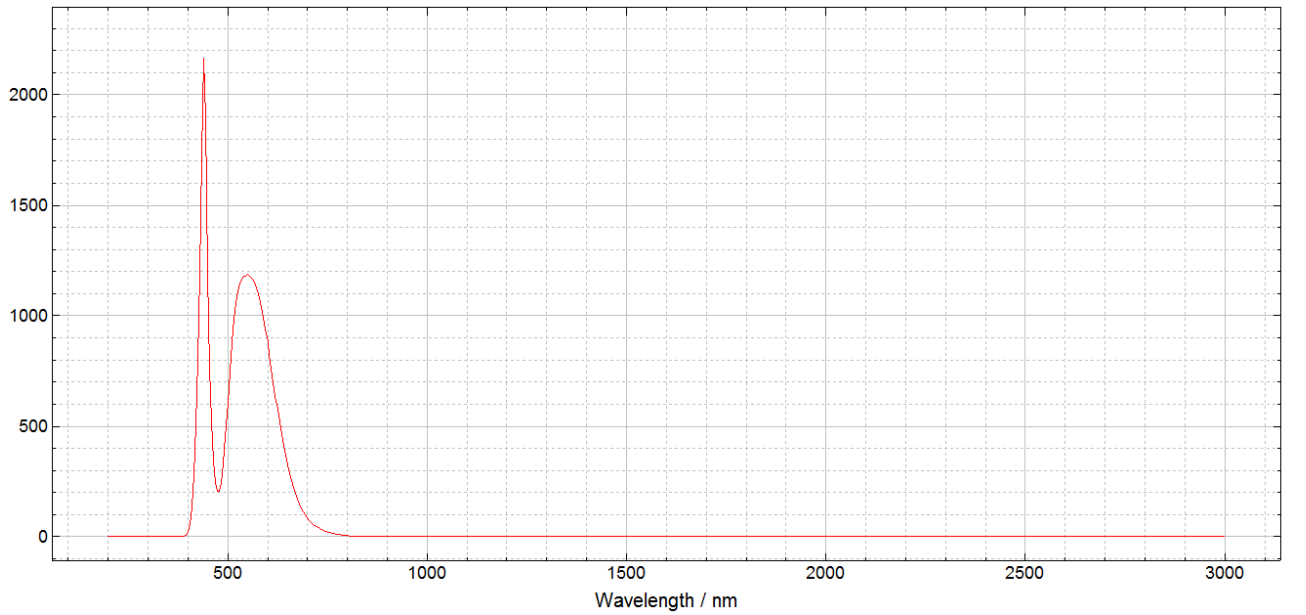
Commercial Part number	Configuration	LES (mm)	Max Current (mA)	Max Voltage (V)	Nominal CCT (K)	Minimum CRI	Typical Flux (lm)	Typ Flux Density (lm/mm <sup>2</sup> )	Forward Current (mA)	RG Rating at forward current	RG Rating at max current
L2C5-30901202X09B0	1202	9	400	41.5	3000	90	810	12.7	NA	NA	RG1
L2C5-30801203F09P0	1203	9	600	41.5	3000	80	1508	23.7	NA	NA	RG1
L2C5-30901203F09P0	1203	9	600	41.5	3000	90	1310	20.6	NA	NA	RG1
L2C5-30901203X09B0	1203	9	600	41.5	3000	90	1344	21.1	NA	NA	RG1
L2C5-30900406X09B0	0406	9	1200	13.8	3000	90	810	12.7	NA	NA	RG1
L2C5-30801205F13P0	1205	13	1200	41.5	3000	80	3059	23.0	NA	NA	RG1
L2C5-30901205F13P0	1205	13	1200	41.5	3000	90	2640	19.9	NA	NA	RG1
L2C5-30801208F15P0	1208	15	1800	41.5	3000	80	4600	26.0	NA	NA	RG1
L2C5-30901208F15P0	1208	15	1800	41.5	3000	90	3942	22.3	NA	NA	RG1
L2C5-30801211F19P0	1211	19	2400	41.5	3000	80	6147	21.7	NA	NA	RG1
L2C5-30901211F19P0	1211	19	2400	41.5	3000	90	5319	18.8	NA	NA	RG1
L2C5-30901216F23P0	1216	23	3200	41.5	3000	90	7081	17.0	NA	NA	RG1
L2C5-35901203F09P0	1203	9	600	41.5	3500	90	1363	21.4	351	RG1	RG2
L2C5-35901205F13P0	1205	13	1200	41.5	3500	90	2746	20.7	702	RG1	RG2
L2C5-35901208F15P0	1208	15	1800	41.5	3500	90	4100	23.2	1053	RG1	RG2
L2C5-35901211F19P0	1211	19	2400	41.5	3500	90	5546	19.6	1404	RG1	RG2
L2C5-40901203F09P0	1203	9	600	41.5	4000	90	1390	21.8	351	RG1	RG2
L2C5-40901205F13P0	1205	13	1200	41.5	4000	90	2840	21.4	702	RG1	RG2
L2C5-40901208F15P0	1208	15	1800	41.5	4000	90	4261	24.1	1053	RG1	RG2
L2C5-40901211F19P0	1211	19	2400	41.5	4000	90	5694	20.1	1404	RG1	RG2

Appendix 3: Relative Spectrum Of Tested Sample(s)





L2C5-30901208F15-L



L2C5-65701208F1500

Appendix 4: Table 6.1 Based On IEC 62471:2006

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 1800mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471									
Clause	Requirement + Test				Result – Remark				Verdict
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,86E+03	10000	2,20E+04	4000000	3,17E+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/ $\alpha$	2,52E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,51	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									



DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 1350mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471									
Clause	Requirement + Test				Result – Remark				Verdict
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	4,76E+03	10000	1,66E+04	4000000	3,04E+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/ $\alpha$	2,03E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,45	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 900mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	3,32E+03	10000	1,16E+04	4000000	2,13E+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/ $\alpha$	1,42E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,32	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 450mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471									
Clause	Requirement + Test				Result – Remark				Verdict
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,69E+03	10000	5,91E+03	4000000	
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/ $\alpha$	7,24E+04	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,16	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 1800mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,41E+03	10000	1,55E+04	4000000	1,92E+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/ $\alpha$	2,05E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,83	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 1350mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	4,39E+03	10000	1,26E+04	4000000	1,71E+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/ $\alpha$	1,64E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,61	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 900mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	2,97E+03	10000	8,52E+04	4000000	
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/ $\alpha$	1,12E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,44	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 450mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 6.1 Emission limits for risk groups of continuous wave lamps									P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,48E+03	10000	4,27E+03	4000000	
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/ $\alpha$	5,51E+04	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,22	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L2C5-30901208F15-L, Evaluation Distance: 200mm, Angular subtense of the apparent source  $\alpha$ : 75 mrad

IEC 62471									
Clause	Requirement + Test				Result – Remark				Verdict
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	2,95E+03	10000	7,82E+03	4000000	
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/ $\alpha$	1,23E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	1,08	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									



DUT: L2C5-65701208F1500, Evaluation Distance: 200mm, Angular subtense of the apparent source  $\alpha$ : 75 mrad

IEC 62471									
Clause	Requirement + Test				Result – Remark				Verdict
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps								P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	0,003		0,03	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	0,0000	33		100	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	7,72E+03	10000	2,02E+04	4000000	3,63E+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/ $\alpha$	2,43E+05	28000/ $\alpha$		71000/ $\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	--	6000/ $\alpha$		6000/ $\alpha$	
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,29	570		3200	
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

Appendix 5: Table 6.1 Based On EN62471:2008, Attachment To IEC 62471 European Group Differences And National Differences

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 1800mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,86E+03	10000	2,20E+04	4000000	3,17E+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/ $\alpha$	2,52E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 $\leq \alpha \leq$ 0,011	--					
				6000/ $\alpha$ 0,011 $\leq \alpha \leq$ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,47	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 1350mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	4,76E+03	10000	1,66E+04	4000000	3,04E+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/ $\alpha$	2,03E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,45	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 900mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	3,32E+03	10000	1,16E+04	4000000	2,13E+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/ $\alpha$	1,42E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,32	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-50701208F1500, Evaluation Distance: 200mm, Test current: 450mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,69E+03	10000	5,91E+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/ $\alpha$	7,24E+04	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 $\leq \alpha \leq$ 0,011	--					
				6000/ $\alpha$ 0,011 $\leq \alpha \leq$ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,16	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 1800mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	5,41E+03	10000	1,55E+04	4000000	1,92E+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/ $\alpha$	2,05E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,83	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 1350mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	4,39E+03	10000	1,26E+04	4000000	1,71E+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/ $\alpha$	1,64E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,61	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 900mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	2,97E+03	10000	8,52E+04	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/ $\alpha$	1,12E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,44	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										



DUT: L2C5-40701208F1500, Evaluation Distance: 200mm, Test current: 450mA, Angular subtense of the apparent source  $\alpha$ : 100 mrad

EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	1,48E+03	10000	4,27E+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/ $\alpha$	5,51E+04	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,22	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-30901208F15-L, Evaluation Distance: 200mm, Angular subtense of the apparent source  $\alpha$ : 75 mrad

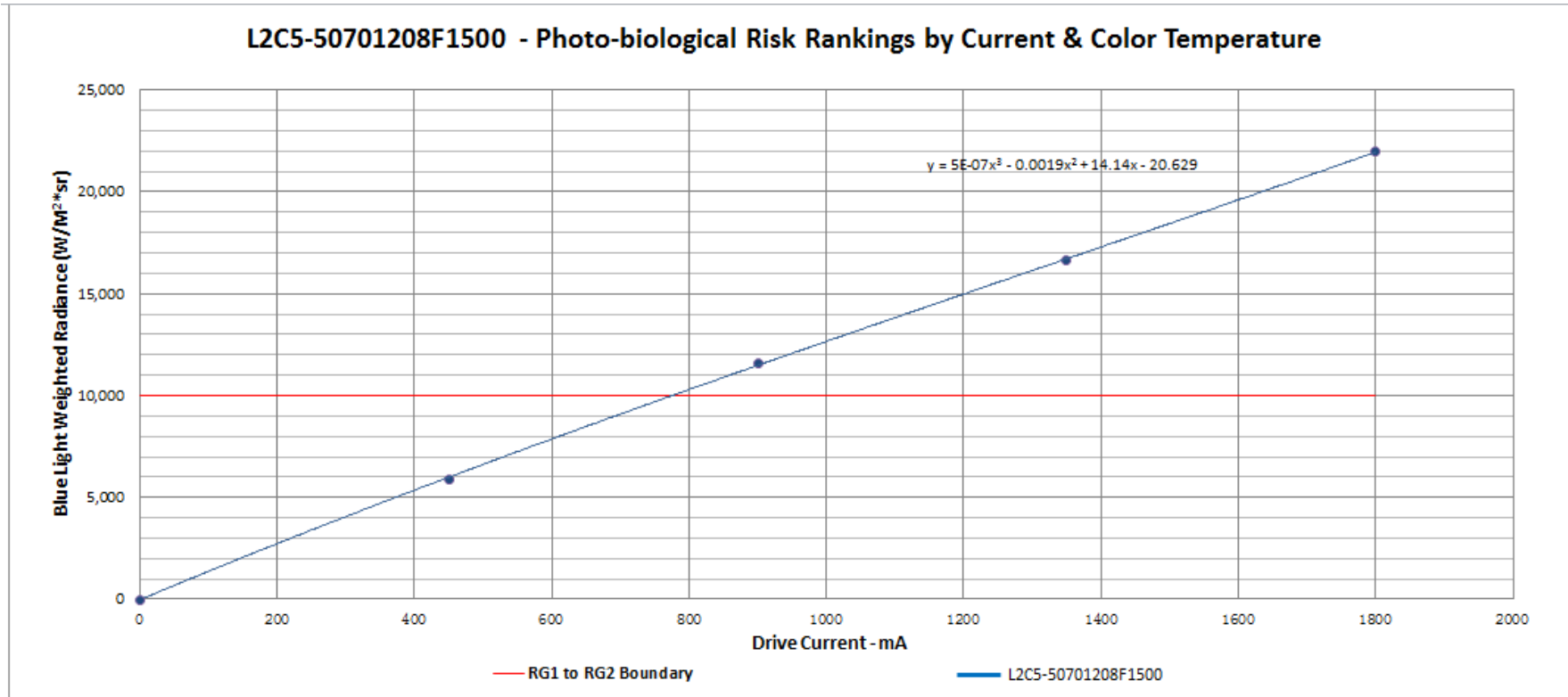
EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	2,95E+03	10000	7,82E+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/ $\alpha$	1,23E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 ≤ $\alpha$ ≤ 0,011	--					
				6000/ $\alpha$ 0,011 ≤ $\alpha$ ≤ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	1,08	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p> <p>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.</p>										

DUT: L2C5-65701208F1500, Evaluation Distance: 200mm, Angular subtense of the apparent source  $\alpha$ : 75 mrad

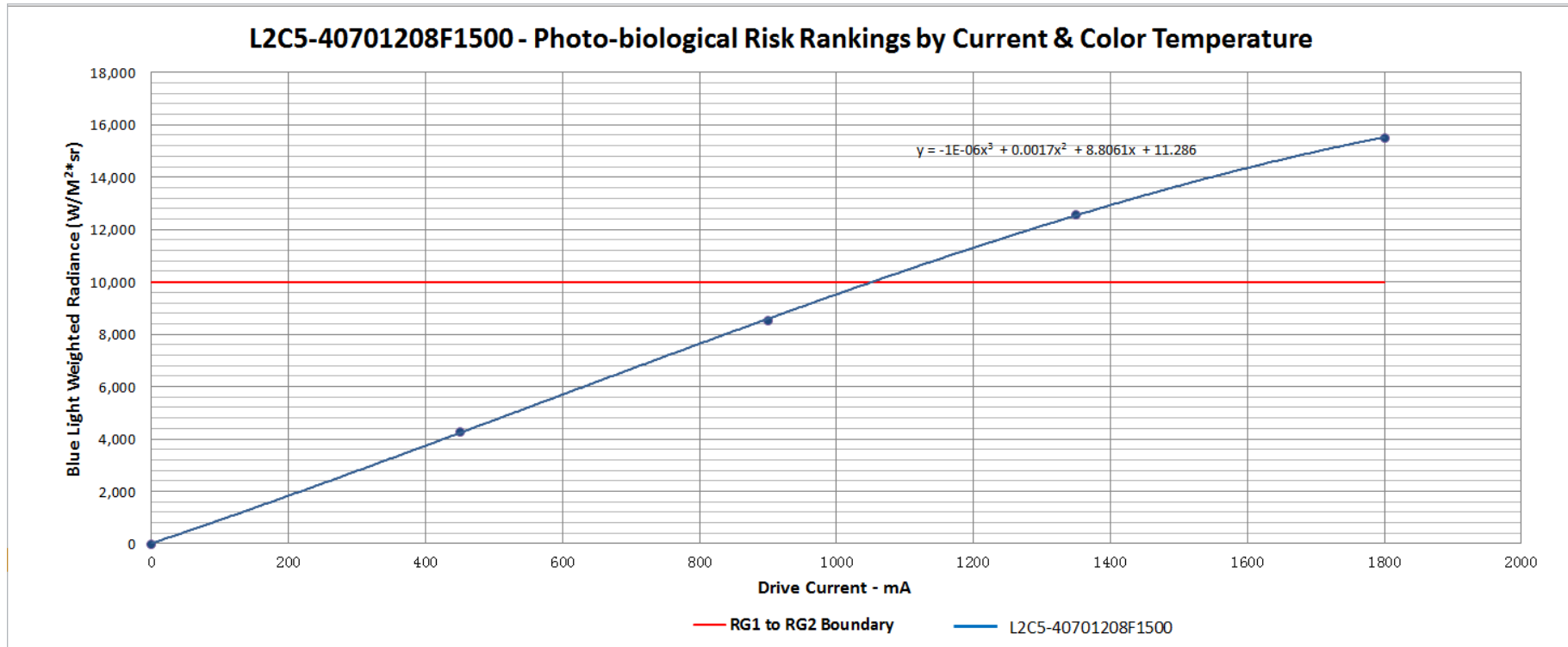
EN 62471										
Clause	Requirement + Test			Result – Remark				Verdict		
<b>Table 6.1</b>	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)								P	
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0,001	0,0000	--	--	--	--	
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	0,33	0,0000	--	--	--	--	
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	7,72E+03	10000	2,02E+04	4000000	3,63E+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/ $\alpha$	2,43E+05	28000/ $\alpha$		71000/ $\alpha$		
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017 $\leq \alpha \leq$ 0,011	--					
				6000/ $\alpha$ 0,011 $\leq \alpha \leq$ 0,1	--					
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	0,29	570		3200		
<p>* Small source defined as one with <math>\alpha &lt; 0,011</math> 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.</p>										

Appendix 6: Blue Light Hazard-Forward Current Relationship (Non-mandatory Information)

The diagram below shows the different blue light hazards against different forward currents. It is additional information for reference only.



Product ID:	Measured CCT:	Drive Currents (mA)					Regression Formula:	Fit to RG2 Line:	Current @ RG-1 to RG-2 Boundary, mA:
		0	450	900	1350	1800			
L2C5-50701208F1500	4573 K	0	5910	11606	16630	21968	$y=5E-07x^3-0.0019x^2+14.14x-20.629$	10000	763



Product ID:	Measured CCT:	Drive Currents (mA)					Regression Formula:	Fit to RG2 Line:	Current @ RG-1 to RG-2 Boundary, mA:
		0	450	900	1350	1800			
L2C5-40701208F1500	4731 K	0	4275	8523	12585	15512	$y = -1E-06x^3 + 0.0017x^2 + 8.8061x + 11.286$	10000	1053