





TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	
Report Number.....	6112063.50P V1.1
Date of issue	2023-12-12
Total number of pages	55
Name of Testing Laboratory preparing the Report	DEKRA Testing and Certification (Shanghai) Ltd. 3/F, #250, Jiangchangsan Road building 16 Headquarter Economy Park Shibei Hi-Tech Park, Jing'an District, Shanghai, P.R.C 200436
Applicant's name	Lumileds (Shanghai) Management Co. Ltd.
Address.....	Building 1-A, No.19&20, Lane 299, Wenshui Road, JingAn District, Shanghai, China
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
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Test item description	LED package	
Trade Mark	LUMILEDS	
Manufacturer	Lumileds (Shanghai) Management Co. Ltd. Building 1-A, No. 19&20, Lane 299, Wenshui Road, JingAn District, Shanghai, China	
Model/Type reference	LUXEON 5050 HE and LUXEON 5050 Round product family	
Ratings	Max current: 240 mA; Max voltage: 26,5 Vdc (Detailed lists refer to Appendix 2: Model List)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/> CB Testing Laboratory:	DEKRA Testing and Certification (Shanghai) Ltd.	
Testing location/ address	3/F, #250, Jiangchangsan Road building 16 Headquater Economy Park Shibei Hi-Tech Park, Jing'an District, Shanghai, P.R.C 200436	
<input type="checkbox"/> 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)
- Appendix 4: Table 6.1 Based On IEC 62471:2006
- Appendix 5: Table 6.1 Based On EN62471:2008, Attachment To IEC 62471 European Group Differences And National Differences
- Appendix 6: Blue Light Hazard-Forward Current Relationship (Non-mandatory Information)

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 L150-65705024000H0 has been tested according to the IEC 62471(first edition, 2006-07) **at 200mm** and been classified as **RG 2 at 240mA, 180mA, 120mA and RG1 at 60mA** has been tested according to the EN 62471:2008 **at 200mm** and been classified as **RG 2 at 240mA, 180mA, 120mA and RG1 at 60mA** has been tested according to the IEC/TR 62778:2014 and been classified as **RG 2 at 240mA, 180mA, 120mA and RG1 Unlimited at 60mA for blue light hazard.**

The tested sample of L150-65705024000H0 **Current at RG1 to RG2 boundary** was deducted to **67mA**. (See Appendix 6 for detail)

Testing location:

DEKRA Testing and Certification (Shanghai) Ltd.
3/F, #250, Jiangchangsan Road building 16
Headquater Economy Park Shibe Hi-Tech Park,
Jing'an District, Shanghai, P.R.C 200436

The tested sample of
L150-50705024000H0
has been tested according to the IEC 62471(first
edition, 2006-07) **at 200mm** and been classified
as **RG 2 at 240mA, 180mA, 120mA** and **RG1 at
60mA**
has been tested according to the EN 62471:2008
at 200mm and been classified as **RG 2 at 240mA,
180mA, 120mA** and **RG1 at 60mA**
has been tested according to the IEC/TR
62778:2014 and been classified as **RG 2 at
240mA, 180mA, 120mA** and **RG1 Unlimited at
60mA for blue light hazard.**

The tested sample of
L150-50705024000H0
Current at RG1 to RG2 boundary was deducted
to **83 mA**. (See Appendix 6 for detail)

The tested sample of
L150-4070502400000
has been tested according to the IEC 62471(first
edition, 2006-07) **at 200mm** and been classified
as **RG 2 at 240mA, 180mA** and **RG1 at 120mA,
60mA**
has been tested according to the EN 62471:2008
at 200mm and been classified as **RG 2 at 240mA,
180mA** and **RG1 at 120mA, 60mA**
has been tested according to the IEC/TR
62778:2014 and been classified as **RG 2 at
240mA, 180mA** and **RG1 Unlimited at 120mA,
60mA for blue light hazard.**

The tested sample of
L150-4070502400000
Current at RG1 to RG2 boundary was deducted
to **131mA**. (See Appendix 6 for detail)

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

EN 62471:2008

☒ **The product fulfills the requirements**

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.....:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire
Rated voltage (V)	Max voltage: 26,5 Vdc
Rated current (mA)	Max current: 240 mA
Rated CCT (K).....:	1800K / 2200K / 2700K / 3000K / 3500K / 4000K / 5000K / 5700K / 6500K
Rated Luminance (Mcd/m²)	--
Component report data used	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> 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 : 2023-12	
Date (s) of performance of tests : 2023-12	
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 <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator. 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 Decision rules applied Procedure 2 "Accuracy Method" as stated in the IEC Guide 115:2007.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62471-2:	
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 (Shanghai) Management Co. Ltd.
Building 1-A, No. 19&20, Lane 299, Wenshui Road,
JingAn District, Shanghai, China

General product information:

Full tests were performed on model L150-65705024000H0, L150-50705024000H0 and L150-4070502400000.

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

The sample of L150-65705024000H0 was tested at 200mm from the light source. The CCT of spectral irradiance was found at 6838 K.

The sample of L150-50705024000H0 was tested at 200mm from the light source. The CCT of spectral irradiance was found at 5120 K.

The sample of L150-4070502400000 was tested at 200mm from the light source. The CCT of spectral irradiance was found at 4180 K.

The samples of L150-65705024000H0, L150-50705024000H0 and L150-4070502400000 were tested at 60mA, 120mA, 180mA and 240mA.

Current RG1 to RG2 boundary was deducted to be 67mA for L150-65705024000H0, 83mA for L150-50705024000H0 and 131mA for L150-4070502400000. (See Appendix 6 for detail)

The threshold current RG1 to RG2 boundary for different CCT is summarized into the table of appendix 6.

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
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 : <input type="checkbox"/> RG0 unlimited <input type="checkbox"/> 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	L150-65705024000H0 (60mA) L150-50705024000H0 (60mA) L150-4070502400000 (120mA) L150-4070502400000 (60mA)	P
	- E_{thr} (lx) : Distance to reach RG1 (m) :	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:		<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number.....		L150-65705024000H0		
	Test voltage (V)		--		—
	Test current (mA)		240 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	6838	
x/y colour coordinates				0,3081 / 0,3212	
Blue light hazard radiance		L _B	W/(m²•sr¹)	3,39E+04	@11mrad
Blue light hazard irradiance		E _B	W/m²	--	
Luminance		L	cd/m²	2,55E+07	@11mrad
Illuminance		E	lx	5,40E+03	
Supplementary information: Per IEC/TR 62778:2014 Eth _r = 752 lx D _{min} = 536 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:		<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number.....		L150-65705024000H0		
	Test voltage (V)		--		—
	Test current (mA)		180 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	6760	
x/y colour coordinates				0,3091 / 0,3234	
Blue light hazard radiance		L _B	W/(m²•sr¹)	2,66E+04	@11mrad
Blue light hazard irradiance		E _B	W/m²	--	
Luminance		L	cd/m²	2,10E+07	@11mrad
Illuminance		E	lx	4,27E+03	
Supplementary information: Per IEC/TR 62778:2014 Eth _r = 757 lx Dmin= 475 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:		<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire		
	Model number.....		L150-65705024000H0		
	Test voltage (V)		--		—
	Test current (mA)		120 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	6681	
x/y colour coordinates				0,3100 / 0,3259	
Blue light hazard radiance		L _B	W/(m²•sr¹)	1,79E+04	@11mrad
Blue light hazard irradiance		E _B	W/m²	--	
Luminance		L	cd/m²	1,40E+07	@11mrad
Illuminance		E	lx	3,00E+03	
Supplementary information: Per IEC/TR 62778:2014 Eth _r = 785 lx Dmin= 391 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number.....	L150-65705024000H0			
	Test voltage (V)	--			—
	Test current (mA)	60 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	6596	
x/y colour coordinates				0,3110 / 0,3290	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	8,99E+03	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	7,29E+06	@11mrad
Illuminance		E	lx	1,59E+03	
Supplementary information: N/A					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number.....	L150-50705024000H0			
	Test voltage (V)	--			—
	Test current (mA)	240 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	5120	
x/y colour coordinates				0,3421 / 0,3533	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	2,74E+04	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	2,66E+07	@11mrad
Illuminance		E	lx	6,14E+03	
Supplementary information: Per IEC/TR 62778:2014 Ethr= 969 lx Dmin= 503 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number.....	L150-50705024000H0			
	Test voltage (V)	--			—
	Test current (mA)	180 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	5083	
x/y colour coordinates				0,3432 / 0,3556	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	2,15E+04	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	2,13E+07	@11mrad
Illuminance		E	lx	4,88E+03	
Supplementary information: Per IEC/TR 62778:2014 Ethr= 989 lx Dmin= 444 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number.....	L150-50705024000H0			
	Test voltage (V)	--			—
	Test current (mA)	120 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	5054	
x/y colour coordinates				0,3442 / 0,3578	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	1,41E+04	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	1,44E+07	@11mrad
Illuminance		E	lx	3,44E+03	
Supplementary information: Per IEC/TR 62778:2014 Ethr= 1023 lx Dmin= 367 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number.....	L150-50705024000H0			
	Test voltage (V)	--			—
	Test current (mA)	60 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	5016	
x/y colour coordinates				0,3455 / 0,3608	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	7,42E+03	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	7,86E+06	@11mrad
Illuminance		E	lx	1,81E+03	
Supplementary information: N/A					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number	L150-4070502400000			
	Test voltage (V)	--			—
	Test current (mA)	240mA			—
	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	4180	
x/y colour coordinates				0,3715/ 0,3664	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	1,70E+04	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	2,07E+07	@11mrad
Illuminance		E	lx	4,09E+03	
Supplementary information: Per IEC/TR 62778:2014 Ethr= 1220 lx Dmin= 366 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number	L150-4070502400000			
	Test voltage (V)	--			—
	Test current (mA)	180mA			—
	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	4162	
x/y colour coordinates				0,3726/ 0,3683	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	1,33E+04	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	1,94E+07	@11mrad
Illuminance		E	lx	4,06E+03	
Supplementary information: Per IEC/TR 62778:2014 Ethr= 1461 lx Dmin= 333 mm					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number	L150-4070502400000			
	Test voltage (V)	--			—
	Test current (mA)	120mA			—
	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	4142	
x/y colour coordinates				0,3738/ 0,3705	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	9,04E+03	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	1,38E+07	@11mrad
Illuminance		E	lx	2,87E+03	
Supplementary information: N/A					

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

	TABLE:Spectroradiometric measurement				
	Measurement performed on:	<input checked="" type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input type="checkbox"/> Luminaire			
	Model number	L150-4070502400000			
	Test voltage (V)	--			—
	Test current (mA)	60mA			—
	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	4128	
x/y colour coordinates				0,3750/ 0,3733	
Blue light hazard radiance		L _B	W/(m ² •sr ¹)	4,62E+03	@11mrad
Blue light hazard irradiance		E _B	W/m ²	--	
Luminance		L	cd/m ²	7,31E+06	@11mrad
Illuminance		E	lx	1,53E+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.

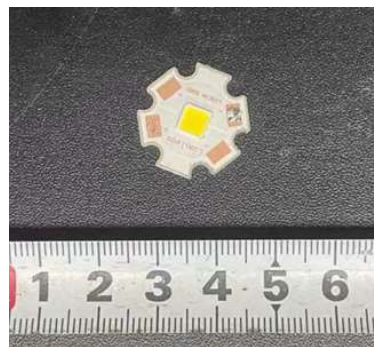
Note: This page may be removed when CTF stage 1 CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
7	Irradiance measurements Radiance measurements	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	2023/2/25	2024/2/24
7	Irradiance measurements	CL6 Spectral irradiance standard (SH 350)	300-3000nm	2023/2/25	2024/2/24
7	Irradiance measurements	CL7 Spectral irradiance standard (SH 351)	200-400nm	2023/2/25	2024/2/24
7	Irradiance measurements	Photometric detector head (SH 359)	380nm-800nm	2023/2/26	2024/2/25
7	Irradiance measurements Radiance measurements	Wattmeter (SH030)	500V,40A	2023/10/10	2024/10/10

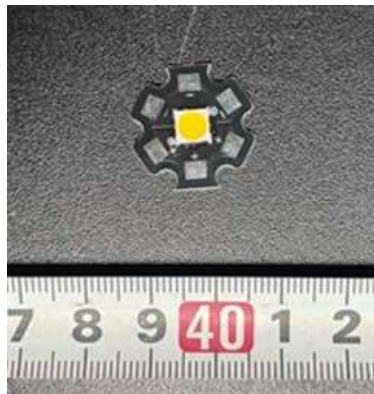
Appendix 1: Photo Documentation



L150-65705024000H0



L150-50705024000H0



L150-4070502400000

Appendix 2: Model List

Part number submitted for type testing as following:

Part number	CCT	CRI	Max Voltage (V)	Max Current (mA)
L150-65705024000H0	6500K	70	26,5	240
L150-50705024000H0	5000K	70	26,5	240
L150-4070502400000	4000K	70	26,5	240

L150-65705024000H0, with ANSI bin 6500K, and L150-50705024000H0, with ANSI bin 5000K, L150-4070502400000, with ANSI bin 4000K, are part of the LUXEON 5050 HE and Round product family. The test sample L150-65705024000H0 has highest CCT within the listed LUXEON 5050 HE and Round product family. The test sample L150-50705024000H0 has the highest typical flux within the listed LUXEON 5050 HE and Round product family. The present classification is thus valid (worst case) for all LUXEON 5050 HE and Round with part number L150-aabb50ccxxxyz where

aa - designates nominal ANSI CCT (18=1800K, 22=2200K, 27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K, 65=6500K);

bb - designates minimum CRI or high Gamut (70=70CRI, 80=80CRI, 90=90CRI, HG=high gamut);

cc - designates voltage (06=6V and 24=24V);

xxx - reserved for internal code, could be any alphanumeric characters from 0 to 9 and A to Z;

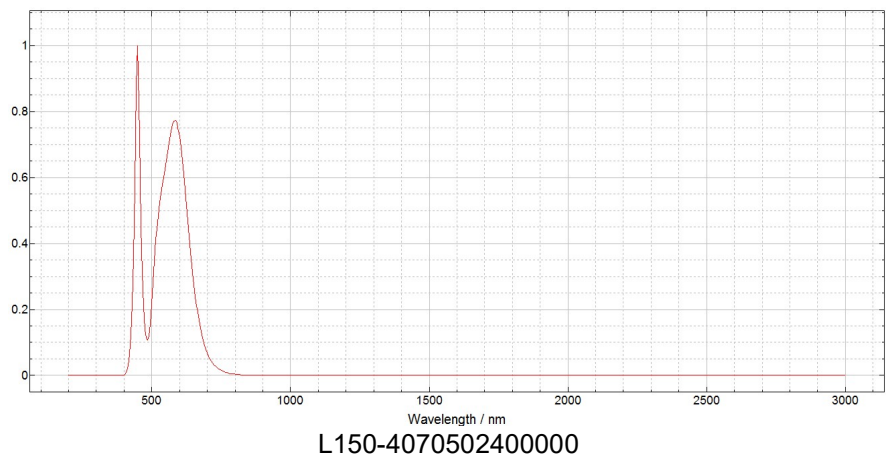
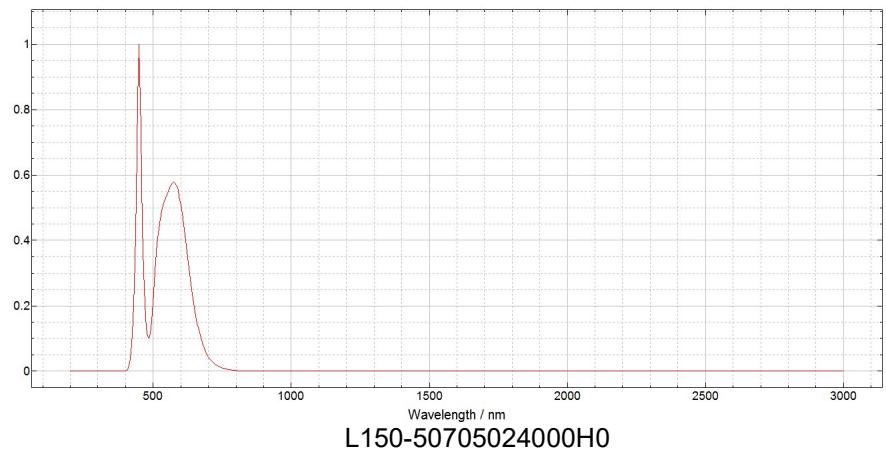
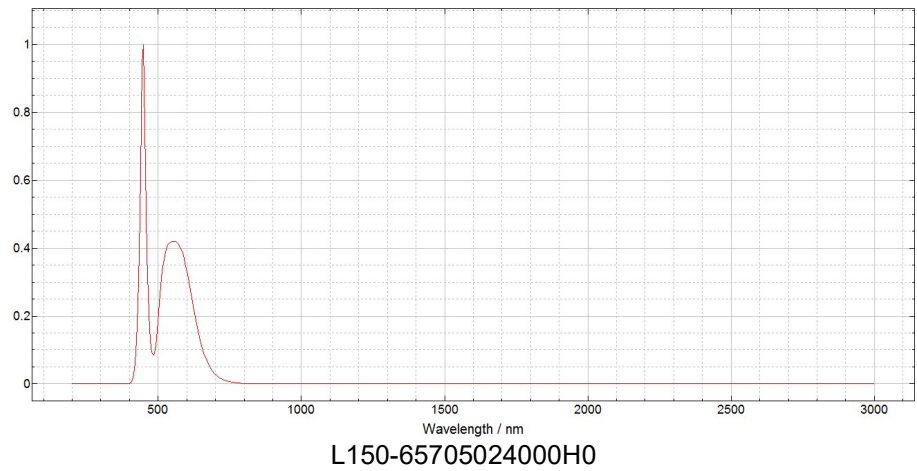
y - designates options for product specification (0= 5050 Round LES base part, H=5050 HE base part, and any other alphanumeric characters from 0 to 9 and A to Z);

z - reserved for internal code, could be any alphanumeric characters from 0 to 9 and A to Z.

Note that for 6V samples, the current is 4 times as much as that of 24V samples for same flux output and thereby the same risk. See the appendix below for an explanation of the type designation.

Part number	Designates nominal ANSI CCT	Designates minimum CRI	Max Voltage (V)	Max Current (mA)
L150-aabb5024xxxyz	aa	bb	26,5	240
L150-aabb5006xxxyz	aa	bb	6,6	800

Appendix 3: Relative Spectrum Of Tested Sample(s)



Appendix 4: Table 6.1 Based On IEC 62471:2006

DUT: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	6,42E+02	10000	3,39E+04	4000000	3,57E+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	3,83E+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	0,09	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: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	4,97E+02	10000	2,66E+04	4000000	2,71E+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/ α	3,09E+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	0,07	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: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	3,41E+02	10000	1,79E+04	4000000	1,89E+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	2,03E+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	0,06	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: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	1,76E+02	10000	8,99E+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/ α	1,03E+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 $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

DUT: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	5,40E+02	10000	2,74E+04	4000000	3,33E+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	3,23E+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	0,18	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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	4,20E+02	10000	2,15E+04	4000000	2,58E+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	2,54E+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	0,19	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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	2,89E+02	10000	1,41E+04	4000000	1,76E+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	1,67E+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	0,17	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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25 mrad

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					
				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	1,47E+02	10000	7,42E+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/ α	8,87E+04	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	0,17	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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25mrad

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					
				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	3,73E+02	10000	1,70E+04	4000000	3,26E+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	2,19E+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	0,07	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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25mrad

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					
				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	2,91E+02	10000	1,33E+04	4000000	2,54E+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	1,72E+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	0,06	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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25mrad

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					
				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	2,00E+02	10000	9,04E+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/ α	1,17E+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	0,04	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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25mrad

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					
				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	1,03E+02	10000	4,62E+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/ α	6,07E+04	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	0,05	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: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25 mrad

EN 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)								
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	S _{UV} (λ)	E _s	W•m ⁻²	0,001	0,0000	--	--	--	--
Near UV		E _{UVA}	W•m ⁻²	0,33	0,0000	--	--	--	--
Blue light	B(λ)	L _B	W•m ⁻² •sr ⁻¹	100	6,42E+02	10000	3,39E+04	4000000	3,57E+04
Blue light, small source	B(λ)	E _B	W•m ⁻²	0,01*	--	1,0		400	
Retinal thermal	R(λ)	L _R	W•m ⁻² •sr ⁻¹	28000/α	3,83E+05	28000/α		71000/α	
Retinal thermal, weak visual stimulus**	R(λ)	L _{IR}	W•m ⁻² •sr ⁻¹	545000 0,0017≤ α ≤ 0,011	--				
				6000/α 0,011≤ α ≤ 0,1	--				
IR radiation, eye		E _{IR}	W•m ⁻²	100	0,09	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.									

DUT: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	4,97E+02	10000	2,66E+04	4000000	2,71E+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/ α	3,09E+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	0,07	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

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.

DUT: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	3,41E+02	10000	1,79E+04	4000000	1,89E+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	2,03E+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	0,06	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

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.

DUT: L150-65705024000H0, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	1,76E+02	10000	8,99E+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	1,03E+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	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	5,40E+02	10000	2,74E+04	4000000	3,33E+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	3,23E+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	0,18	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	4,20E+02	10000	2,15E+04	4000000	2,58E+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	2,54E+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	0,19	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

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.

DUT: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	2,89E+02	10000	1,41E+04	4000000	1,76E+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	1,67E+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	0,17	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-50705024000H0, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25 mrad

EN 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)									
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	1,47E+02	10000	7,42E+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	8,87E+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	0,17	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

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.

DUT: L150-4070502400000, Evaluation Distance: 200mm, Test current: 240mA, Angular subtense of the apparent source α : 25mrad

EN 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)							
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	3,73E+02	10000	1,70E+04	4000000	3,26E+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	2,19E+05	28000/ α		71000/ α	
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/ α 0,011 $\leq \alpha \leq$ 0,1	--				
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0,07	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 180mA, Angular subtense of the apparent source α : 25mrad

EN 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)							
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	2,91E+02	10000	1,33E+04	4000000	2,54E+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	1,72E+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	0,06	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 120mA, Angular subtense of the apparent source α : 25mrad

EN 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)							
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	2,00E+02	10000	9,04E+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	1,17E+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	0,04	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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: L150-4070502400000, Evaluation Distance: 200mm, Test current: 60mA, Angular subtense of the apparent source α : 25mrad

EN 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)							
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	1,03E+02	10000	4,62E+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	6,07E+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	0,05	570		3200	
<p>* Small source defined as one with $\alpha < 0,011$ 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>									

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

Threshold drive current for RG1-RG2 boundary limit:

	Threshold drive Current (mA)	Nominal CCT		
		≤4000K	≤5000K	≤6500K
L150-aabb5024xxxzy	67 mA	RG1 unlimited	RG1 unlimited	RG1 unlimited
	83 mA	RG1 unlimited	RG1 unlimited	RG2
	120 mA	RG1 unlimited	RG2	RG2
	131 mA	RG1 unlimited	RG2	RG2
	240 mA	RG2	RG2	RG2
L150-aabb5006xxxzy	268 mA	RG1 unlimited	RG1 unlimited	RG1 unlimited
	332 mA	RG1 unlimited	RG1 unlimited	RG2
	480 mA	RG1 unlimited	RG2	RG2
	524 mA	RG1 unlimited	RG2	RG2
	800 mA	RG2	RG2	RG2

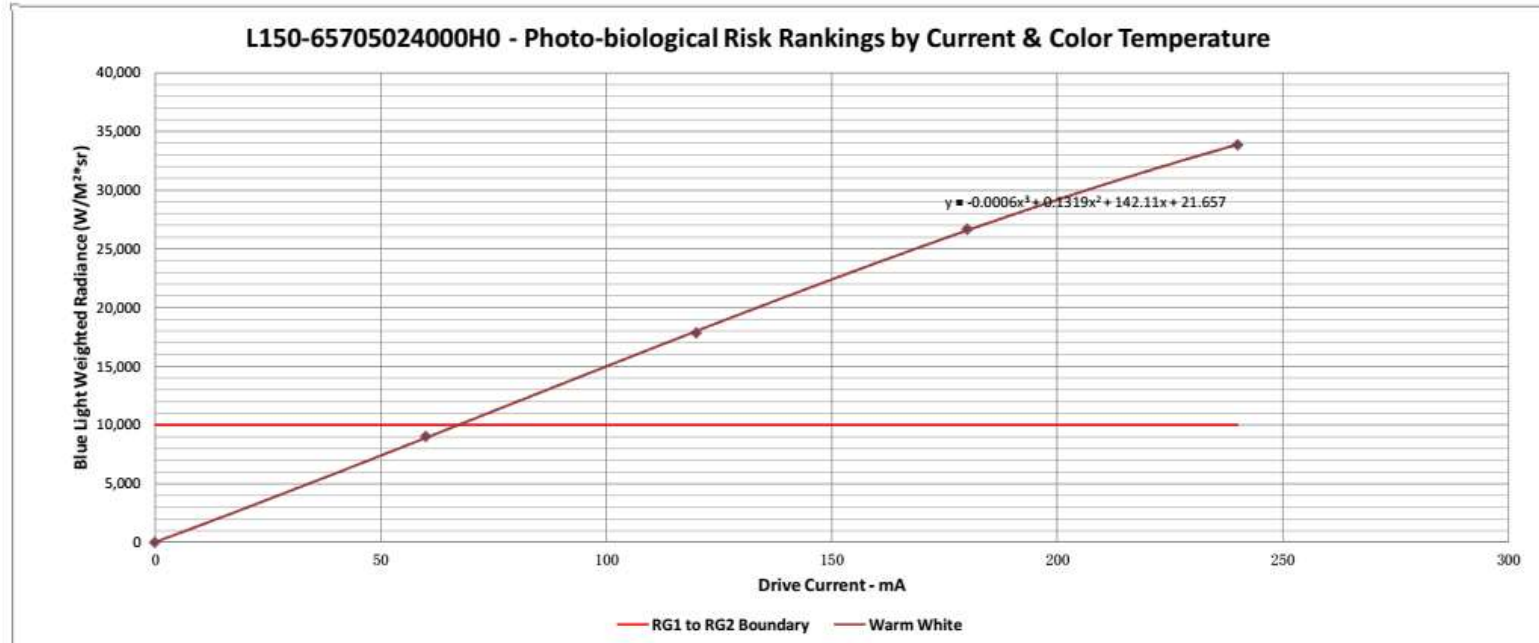
Note: where aa = nominal CCT; bb = min CRI; xxx= internal code, could be 0-9, A-Z; y= internal code, could be 0-9; z= internal code, could be 0-9, A-Z.

Ethr (lx) for RG1-RG2 boundary limit

		Nominal CCT		
	Threshold drive Current (mA)	≤4000K	≤5000K	≤6500K
L150-aabb5024xxxzy	67 mA	NA	NA	NA
	83 mA	NA	NA	785 lx
	120 mA	NA	1023 lx	785 lx
	131 mA	NA	1023 lx	785 lx
	240 mA	1461 lx	969 lx	752 lx
L150-aabb5006xxxzy	268 mA	NA	NA	NA
	332 mA	NA	NA	785 lx
	480 mA	NA	1023 lx	785 lx
	524 mA	NA	1023 lx	785 lx
	800 mA	1461 lx	969 lx	752 lx

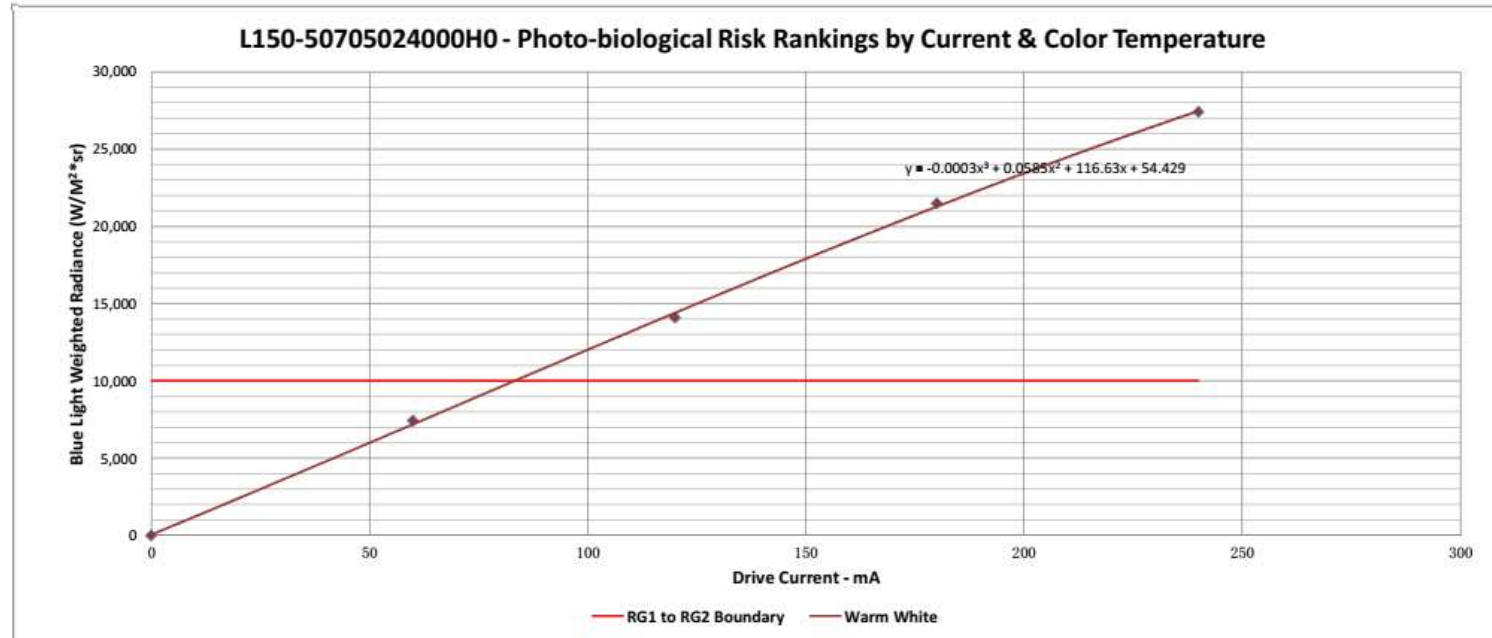
The diagram below shows the different blue light hazards against different forward currents. It is additional information for reference only.

L150-65705024000H0:



CCT Group:	Product ID:	Measured CCT:	Drive Currents (mA)					Regression Formula:	Fit to RG2 Line:	Current @ RG-1 to RG-2 Boundary, mA:
			0	60	120	180	240			
Warm White	L150-65705024000H0	6838K	0	8987	17863	26650	33854	$y = -6E-04x^3 + 0.1319x^2 + 142.11x + 21.657$	9955	67

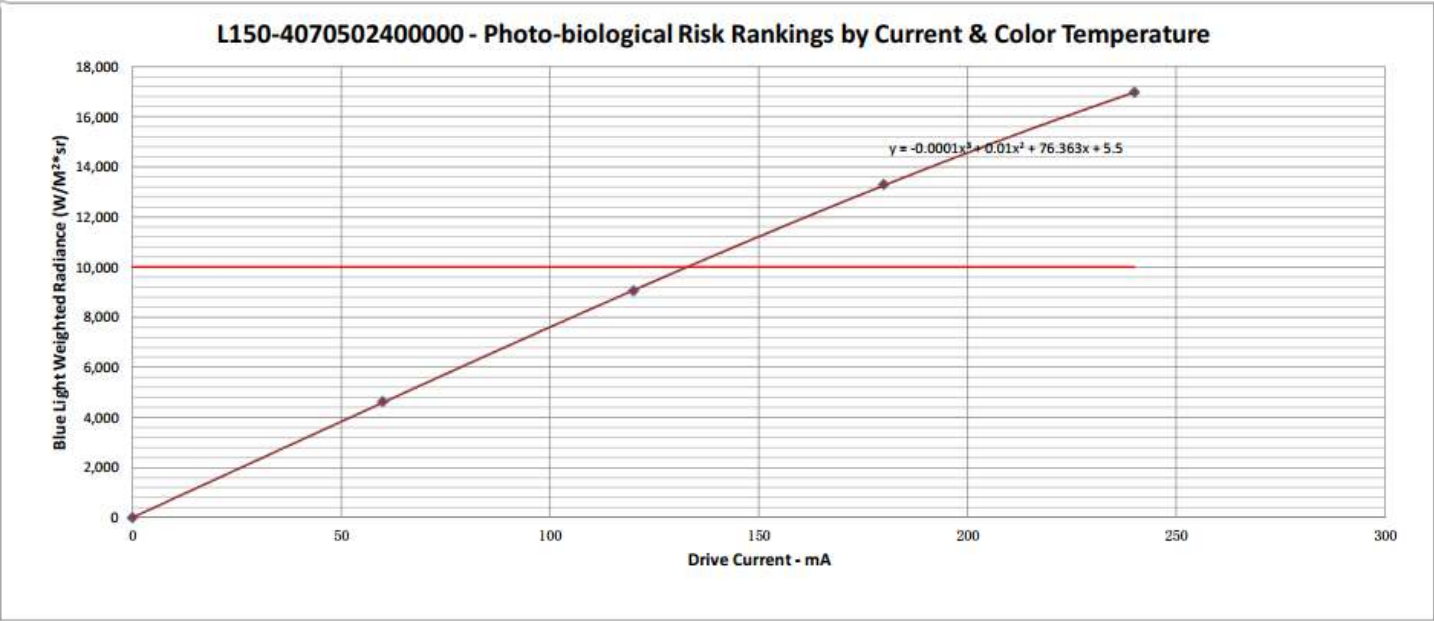
L150-50705024000H0:



		Drive Currents (mA)						Regression Formula:	Fit to RG2 Line:	Current @ RG-1 to RG-2 Boundary, mA:
CCT Group:	Product ID:	Measured CCT:	0	60	120	180	240			
Warm White	L150-50705024000H0	5120K	0	7419	14072	21493	27406	$y = -3E-04x^3 + 0.0585x^2 + 116.63x + 54.429$	9966	83

TRF No. IEC62778A

L150-4070502400000:



			Drive Currents (mA)					Regression Formula:	Fit to RG2 Line:	Current @ RG-1 to RG-2 Boundary, mA:
CCT Group:	Product ID:	Measured CCT:	0	60	120	180	240			
Warm White	L150-4070502400000	4180	0	4615	9038	13280	16967	$y = -1E-04x^3 + 0.01x^2 + 76.363x + 5.5$	9956	131

-----End-----