



TEST REPORT IEC TR 62778 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires	
Report Number	4791475312.4-1
Date of issue	2024-10-25
Total number of pages.....	12 including attachments
Name of Testing Laboratory preparing the Report	UL Verification Services (Guangzhou) Co., Ltd.
Applicant's name	Paragon Semiconductor Lighting Technology Co., Ltd.
Address	3F No 369 Sec 2 Wenhua 2Nd Rd New Taipei City, 244 TW
Test specification:	
Standard.....	IEC TR 62778:2014 (Second Edition)
Test procedure	Informative Report
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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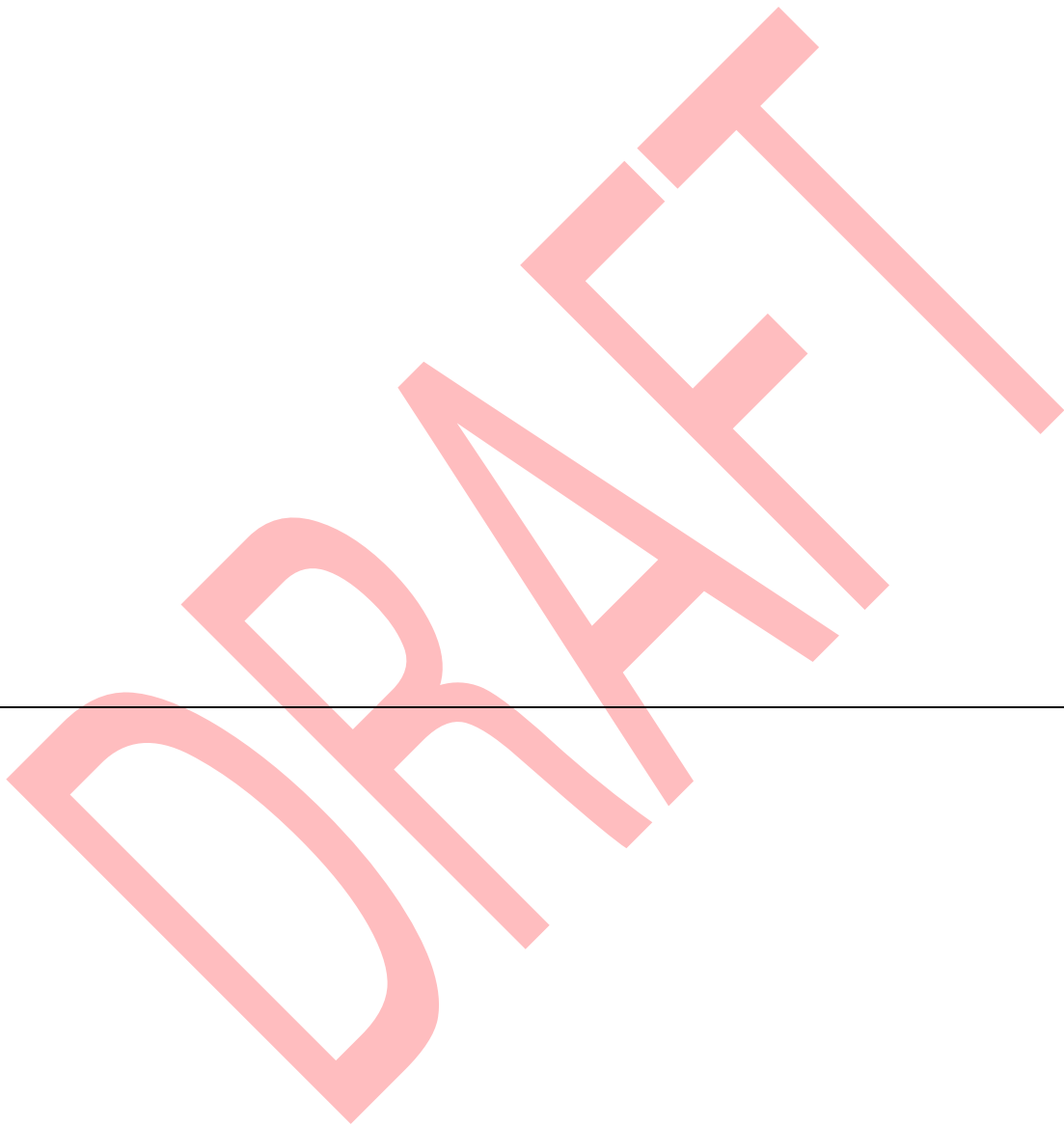
Test item description :	LED luminaire	
Trade Mark :	ParaDenko	
Manufacturer	Paragon Semiconductor Lighting Technology Co., Ltd.	
Family Model/Type reference	TTL-035-50-200V	
Ratings :	200 V AC, 50/60 Hz, 5000 K	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	Testing Laboratory:	UL Verification Services (Guangzhou) Co., Ltd.
	Testing location/ address	Room 101, 201, 301, 501, 502, 503, Building A1, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China.
<input type="checkbox"/>	Associated Testing Laboratory:	
	Testing location/ address	
	Tested by (name, function, signature) :	Project handler: Susie Shao
	Approved by (name, function, signature) .. :	Reviewer:
Testing procedure: CTF Stage 1:		
	Testing location/ address	
	Tested by (name, function, signature) :	
	Approved by (name, function, signature) .. :	
Testing procedure: CTF Stage 2:		
	Testing location/ address	
	Tested by (name + signature) :	
	Witnessed by (name, function, signature) . :	
	Approved by (name, function, signature) .. :	
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
	Testing location/ address	
	Tested by (name, function, signature) :	
	Witnessed by (name, function, signature) . :	
	Approved by (name, function, signature) .. :	
	Supervised by (name, function, signature) :	

List of Attachments (including a total number of pages in each attachment):	
Components List	(Enclosure 1): 1 page
Photographs	(Enclosure 2): 1 page
Summary of testing: Risk Group 1	
Tests performed (name of test and test clause): IEC TR 62778 Edition 2.0 2014-06 7.2 Conditions for the radiance measurement IEC 62471 First Edition 2006-07 5.2.2 Radiance measurements	Testing location: UL Verification Services (Guangzhou) Co., Ltd. Room 101, 201, 301, 501, 502, 503, Building A1, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China
Summary of compliance with National Differences (List of countries addressed): N/A	
<input type="checkbox"/> The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)	
The measurement uncertainties stated in this Test Report are estimated according to the Quality Procedure ULID-000496 (00-LC-S0278).	
If requested, UL Verification Services (Guangzhou) Co., Ltd. will be able to estimate the uncertainty contribution for all the quantities stated in this Test Report.	
Simple Acceptance decision rule is applied when risk level is classified for the measurement result of the sample received.	

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.

Not provided by the manufacturer



Test item particulars	N/A
Product evaluated	<input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input checked="" type="checkbox"/> Luminaire
Rated voltage (V)	200 Vac
Rated current (mA)	N/A
Rated CCT (K)	5000
Rated Luminance (Mcd/m²)	N/A
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	2024-09-05 (Sample ID: 7573122-3)
Date (s) of performance of tests	2024-10-18
General remarks:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

General product information:

The product is a LED luminaire with build-in COB light source.

The measure has been performed on the luminaire, at the distance of 200 mm from detector to the glass cover, in the direction of maximum light output, to determinate (according to IEC TR 62778) the Lb value of the product.

Since this value is less than $10000 \text{ W}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$ the product is classified **RISK GROUP 1**. See also the next pages for results.

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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		P
	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		P
	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	Risk Group 1 (luminaire)	N/A
	- E_{thr} (lx) : Distance to reach RG1 (m) :		N/A

TABLE: Spectroradiometric measurement					P
Measurement performed on:		<input type="checkbox"/> LED package <input type="checkbox"/> LED module <input type="checkbox"/> Lamp <input checked="" type="checkbox"/> Luminaire			
Model number		TTL-035-50-200V			
Test voltage (V)		200 Vac			—
Test current (A)		-			—
Test frequency (Hz)		50			—
Ambient, t (°C)		25.1			—
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	Symbol	Units	Result	Remark	
Correlated colour temperature	CCT	K	5420	For reference	
x/y colour coordinates			x: 0.3344 y: 0.3457	For reference	
Blue light hazard radiance	L _B	W/(m ² •sr ¹)	2.150e+003	Measured value	
Blue light hazard irradiance	E _B	W/m ²	-	-	
Luminance	L	cd/m ²	3.004e+006	Measured value	
Illuminance	E	lx	-	-	
Supplementary information: Risk Group Classification: Risk Group 1					

TABLE: Angular light distribution		N/A
Not needed		

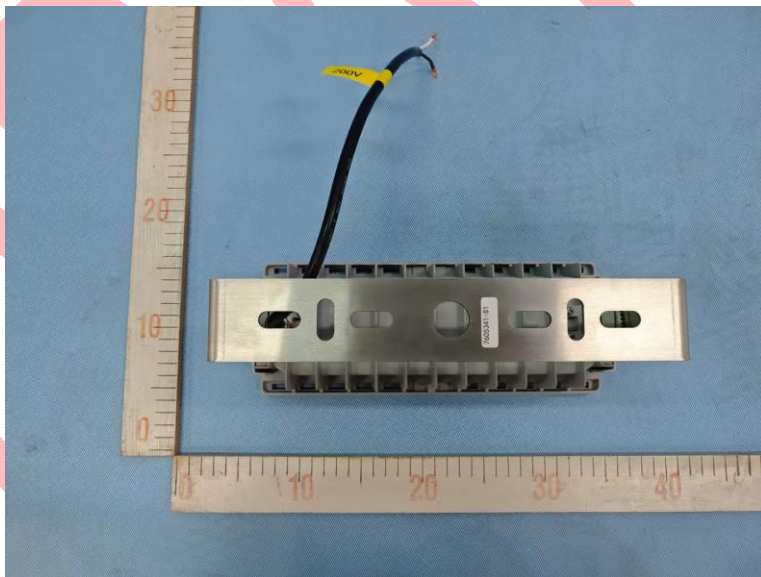
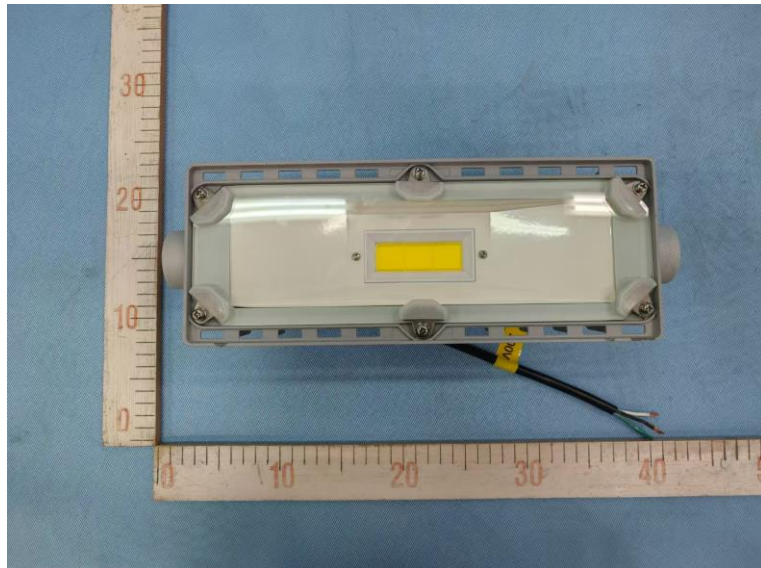
	Enclosure 1: Components List	
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The following components were found in the tested luminaire:

Component	Manufacturer	Type model	Ratings / Technical data
LED COB	ParagonLED	7LDHT-304-07240-200V-5000-G31	220 mA, 5000 K
Reflector	Zhaoqing Hongwang Metal Industry Co., Ltd.	QG24048378AY6W	SUS 304, T=0.6mm
Glass Cover	XINYI GLASS	6A	6T

Enclosure 2: Photographs	
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General view of the luminaire



END OF TEST REPORT