Test Report issued under the responsibility of:

SGS

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

Report Number. .....:	GZES170601035231
Date of issue .....:	2017-06-28
Total number of pages.....	8
Name of Testing Laboratory preparing the Report.....:	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch 198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China
Applicant's name .....:	Blueview Elec-optic Tech Co., Ltd.
Address .....:	No. 1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development, Chengdu, Sichuan, China.
Test specification:	
Standard .....:	IEC TR 62778:2014 (Second Edition)
Test procedure .....:	Test 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

SGS-CSTC STANDARDS TECHNICAL SERVICES CO.,LTD. GUANGZHOU BRANCH 广州分公司 广州标准技术服务有限公司 电子电气实验室 EMC LAB

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

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description .....:	Strip
Trade Mark .....:	Blueview
Manufacturer .....:	Same as applicant
Model/Type reference .....:	FX-3528-X-X-X series
Ratings .....:	FX-3528-X-12-X series: 12 V d.c. FX-3528-X-24-X series: 24 V d.c.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch	
Testing location/ address.....:		198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:		Alex Tan Alex Tan	
Approved by (name, function, signature)...:		Karen Xie Karen Xie	
☐	**Testing procedure: CTF Stage 1:**	**N/A**	
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**	**N/A**	
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**	**N/A**	
☐	**Testing procedure: CTF Stage 4:**	**N/A**	
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):
Attachment 1: Photo documentation (total 1 page).

Summary of testing:
The tests were conducted under 24 V which powered by DC power source.
After review, FN-3528-120-24-5000K was selected for testing as representative.

Tests performed (name of test and test clause):	**Testing location:**
All applicable test items.	Refer to page 1

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

☐ **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)**

Copy of marking plate:
N/A

Test item particulars.....:	
Product evaluated.....:	☐ **LED package** ☐ **LED module** ☐ **Lamp** ☒ **Luminaire**
Rated voltage (V) .....:	24 V d.c.
Rated current (mA) .....:	—
Rated CCT (K).....:	—
Rated Luminance (Mcd/m^2) .....:	—
Component report data used .....:	☒ **Not applicable** ☐ **LED package** ☐ **LED module** ☐ **Lamp** Report number:
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2017-06-27
Date (s) of performance of tests.....:	2017-06-27 to 2017-06-28

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.
When determining for test conclusion, measurement uncertainty of tests has been considered.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	Same as manufacturer

General product information:

The product can emit white light when powered.

FX-3528-X-X-X series

The 1st "x" in the type designation can be WS, WT and N, indicating the waterproof grade.

The 2st "x" in the type designation can be 1 to 500, indicating the quantity of LED.
The 3st "x" in the type designation can be 12 or 24, indicating the input voltage in Volts.
The 4st "x" in the type designation can be 2200K to 5000K, indicating the CCT of LED.

All models are identical in circuit design, PCB layout, component used except for model number and CCT.

IEC TR 62778			
Clause	Requirement + Test	Result - Remark	Verdict

7	**MEASUREMENT INFORMATION FLOW**		
7.1	**Basic flow**		—
	'Law of conservation of luminance' applied		N/A
	Use of only true luminance/radiance values		N/A
	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**		—
	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**		—
	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**		—
	LED package is evaluated as ..... :	☐ RG0 unlimited ☐ RG1 unlimited	N/A
	E_{thr} of LED package applies to array		N/A
8	**RISK GROUP CLASSIFICATION**		—
	Risk group achieved:		P
	- .. Risk Group 0 unlimited		P
	- .. Risk Group 1 unlimited		N/A
	- E_{thr} ..... (lx) : Distance to reach RG1 ..... (m) :		N/A

	TABLE: Spectroradiometric measurement		P
	Measurement performed on:	☐ **LED package** ☐ **LED module** ☐ **Lamp** ☒ **Luminaire**	
	Model number.....	FN-3528-120-24-5000K	
	Test voltage (V)	24 V	—
	Test current (mA)	—	—
	Test frequency (Hz).....	DC	—
	Ambient, t (°C).....	25	—
	Measurement distance	☒ 20 cm ☐ ... cm	—
	Source size	☒ Non-small ☐ Small : .... mm	—
	Field of view	☐ 100 mrad ☒ 11 mrad ☐ 1,7 mrad (for small sources)	—

Item	Symbol	Units	Result	Remark
Correlated colour temperature	CCT	K	5650	—
x/y colour coordinates			0,3291 / 0,3299	—
Blue light hazard radiance	L_B	$W/(m^2 \cdot sr^1)$	65,7	—
Blue light hazard irradiance	E_B	W/m^2	—	—
Luminance	L	kcd/m^2	73843	—
Illuminance	E	lx	—	—
				—

Supplementary information:
—

Attachment 1: Photo documentation

Details of: General view for the product

View:

☒ general

☐ front

☐ rear

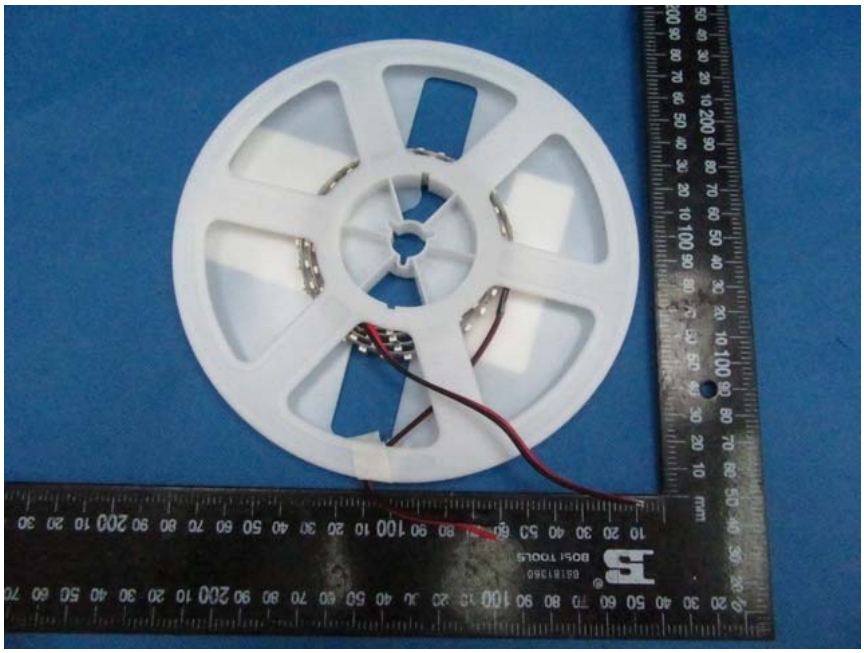
☐ right

☐ left

☐ top

☐ bottom

☐ internal



Details of: View for the LED

View:

☒ general

☐ front

☐ rear

☐ right

☐ left

☐ top

☐ bottom

☐ internal

— End of report —