



TEST REPORT

Reference No...... : WTD22D04067568N001
Applicant..... : Blueview Elec-optic Tech Co., Ltd.
Address..... : No.1000, Section 2, 2nd Konggang Road, Southwest Aviation
Industrial Development Zone, Shuangliu District, Chengdu City,
Sichuan Province, P.R.China
Manufacturer..... : Blueview Elec-optic Tech Co., Ltd.
Address..... : No.1000, Section 2, 2nd Konggang Road, Southwest Aviation
Industrial Development Zone, Shuangliu District, Chengdu City,
Sichuan Province, P.R.China
Product Name..... : LED Strip
Model No...... : FN-FC-480-24
Ratings..... : 24VDC, 5W
Standards..... : Part 1: General Requirements And Tests
AS/NZS 60598.1:2017+A1:2017
In situ temperature measurement test (ISTMT) and TM-21-19*
Date of Receipt sample : 2022-04-29
Date of Test..... : 2022-04-29
Date of Issue..... : 2022-08-02
Test Result..... : See the attached sheets

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

Waltek Testing Group Co., Ltd.

**Address: No. 77, Houjie Section, Guantai Road, Houjie Town, Dongguan City,
Guangdong, China**

Tel : +86-769-2267 2998

Fax: +86-769-2267 6828

Compiled by:

Joe Huang / Project Engineer

Approved by:

Deval Qin / Designated Reviewer

**Trade Mark:**

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General remarks:

"(See Attachment #)" refers to additional information appended to the report.

"(See remark #)" refers to a remark appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

The clause marked * means the clause (s) is(are) out of the scope of the CNAS while being issued this test report.

Remark:

1. Measurement was conducted at voltage 24VDC and at a stable ambient temperature $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$.
2. All models are similar except to model name, colour temperature and enclosure shape are different. Unless otherwise specified, all tests were performed on model FN-FC-480-24 to represent the other similar models.
3. All tests at maximum power.
4. Detail information for models covered in this report as below:

Item	Model	Ratings	CCT	LED Type	Driver
1	FN-FC-480-24	24VDC, 5W	2700K	--	--

LED specification:

Model / Series	Manufacturer	V_F (V)	I_F (mA)	CCT (K)	Viewing angle (Deg)
SS-SD24-3P07S4P1S13-2790-A	Shenzhen Singsun technology Co., Ltd	24	450	2700K	--

Possible test case verdicts:

- test case does not apply to the test object: N/A (Not applicable)
- test object does meet the requirement: P (Pass)
- test object does not meet the requirement: F (Fail)

**1 - GENERAL INFORMATION****1.1 Product Description for Equipment under Test (EUT)****General Description:**

Product Type	LED Strip
Manufacturer	Blueview Elec-optic Tech Co., Ltd.
Product Model No.	FN-FC-480-24
Product Brand Name	--
Rated Voltage/Frequency	24VDC
Rated Power	5W
Nominal CCT	2700K

1.2 Information of LED Light Source(tested in IES LM-80 Test Report)

Model No.	SS-SD24-3P07S4P1S13-2790-A
LED Type	--
Manufacturer	Shenzhen Singsun technology Co., Ltd
Nominal CCT	2700K
Total Number of Test Units	20
Total Test Duration	9000 hours
Tested Driver Current	450mA
First Case Temperature	85 °C
Second Case Temperature	105 °C

1.3 Reference Standard

AS/NZS 60598.1:2017+A1:2017+A2:2020* Luminaires - Part 1: General requirements and tests
IES TM-21-19* TECHNICAL MEMORANDUM: PROJECTING LONG-TERM LUMEN, PHOTON, AND RADIANT FLUX MAINTENANCE OF LED LIGHT SOURCES
IES LM-80-15* Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules

1.4 Test Facility

The test facility used by Waltek Testing Group Co., Ltd. is located at No. 77, Houjie Section, Guantai Road, Houjie Town, Dongguan City, Guangdong, China

1.5 Test Summary

In-situ temperature measurement test (ISTMT) for one sample using AS/NZS 60598.1:2017+A1:2017+A2:2020*, including sections 12.4.1.

Statement confirming the measurement method follows IES LM-84-14 Annex A.

1.6 Test Equipment

Equipment	Model/Type	Cal. Due. Date
AC Power Source	ALL POWER APW-150	--
Power meter	YOKOGAWA WT310E	2023-01-11
Multimeter	FLUKE 15B	2023-01-11
Temperature Recorder	Agilent 34970A	2023-01-11



2 - Temperature Measurement Data

The samples were operated until constant temperatures were obtained. A temperature was considered constant if the sample was operating for at least three hours and upon three successive readings - taken at 15 minute intervals - were within one degree and were not rising.

Thermocouples were attached at locations described in the results by means of a cement made of water glass and Fuller's earth, solder, or epoxy.

3 - Life Measurement Data

Test Method:

Lumen maintenance life of LED light source and LED lamp or luminaire (if any) is the elapsed operating time over which an LED light source maintains a given percentage of its initial light output. L70 in this report is the time (in hours) when the light output from the LED has dropped to 70% of its initial output. A lumen maintenance test report of LED light sources was provided by client to calculate the lumen maintenance life according to IES TM-21-19. The calculator was developed by Light Naturally, version date 2021-10-26, and temperature interpolation type.

The LED light source is LED package, array, or module which is tested in IES LM-80 test report. Final product means LED lamp or luminaire which the LED light source will be included. Ts is the temperature of the thermocouple attachment point on the LED light source package as defined by the manufacturer of the LED light source. The in situ temperature of LED light source used in final product was used to calculate the lumen maintenance life of final product, if any.

Reported L70: For a sample size of 20 units or more, luminous flux values must not be projected beyond 6 times the total test duration (in hours) of measured data. For a sample size of 10 units to 19 units, luminous flux values must not be projected beyond 5.5 times the total test duration of measured data.

The LM-80 test data used in this report is from report No.: R2DG191101066-10-9000-M1 which is issued by Bay Area Compliance Laboratories Corp. (Dongguan) (Laboratory), issue date: 2022-03-01.

**4 - Appended-Test Data Sheet****4.1.1 Thermal Test Result of Product**

1.12 (12.4)	TABLE: Thermal tests of Section 12				P		
	Type reference	FN-FC-480-24			—		
	Lamp used.....	LED			—		
	Lamp control gear used.....	--			—		
	Mounting position of luminaire	As normal used			—		
	Supply wattage (W)	4.790			—		
	Supply current (A)	0.1996			—		
	Temperatures in test 1 - 4 below are corrected for ta (°C)	25			—		
	- abnormal operating mode	--			—		
	- test 1: rated voltage	24V			—		
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current	--			—		
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage	--			—		
	Through wiring or looping-in wiring loaded by a current of A during the test	--			—		
1.12 (12.5)	--	--			—		
Temperature measurements (°C)							
Part	Ambient	Cl. 12.4 – normal				Cl. 12.5 – abnormal	
		test 1	test 2	test 3	limit	test 4	limit
LED driver tc point	25	--	44.0	--	Ref.	--	--
Supplementary information:--							

**4.1.2 ISTMT Test Result of Product**

Ambient Temperature, °C :		25±1°C	Relative Humidity, % :		65%
Supply voltage:		24V DC	Type of thermocouples:		J
Test Product Model.	FN-FC-480-24				
Test LED Model.	SS-SD24-3P07S4P1S13-2790-A				
Test LED Driver Model.	--				
Number of Driver / Product	--				
Test Duration	≥3.5Hours				
Sample number	Test Location	Location Description		Test Result at 25°C (°C)	
#1	101	Temperature for LED #1		44.0	
LED drive current (Forward current of LEDs)*			200mA		
*Note:					

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**4.2 Test Data of LM-80 Test**

LM-80 Test Data: Sample Set 1		LM-80 Test Data: Sample Set 2	
Test product identifier	SS-SD24-3P07S4P1S13-2790-A	Test product identifier	SS-SD24-3P07S4P1S13-2790-A
Input power (W)	---	Input power (W)	---
Test case temperature (°C)	85	Test case temperature (°C)	105
Test drive current (mA)	450	Test drive current (mA)	450
Sample Size	20	Sample Size	20
Test duration (hours)	9000	Test duration (hours)	9000
Time (hours)	Avg. Luminous Flux (%)	Time (hours)	Avg. Luminous Flux (%)
0	100.00%	0	100.00%
1000	99.44%	1000	99.08%
2000	99.03%	2000	98.24%
3000	98.60%	3000	97.53%
4000	98.14%	4000	96.71%
5000	97.72%	5000	96.20%
6000	97.33%	6000	95.75%
7000	96.98%	7000	95.31%
8000	96.63%	8000	94.82%
9000	96.26%	9000	94.28%

4.3 Test Result of LM-80 Test

LM-80 Test Set	Test Set 1	Test Set 2
Description of LED Light source tested	SS-SD24-3P07S4P1S13-2790-A	SS-SD24-3P07S4P1S13-2790-A
Sample Size	20	20
DUT drive current used in the test (mA)	450	450
Test duration (hours)	9000	9000
Test duration used for projection (hours)	4000 to 9000	4000 to 9000
Tested case temperature (°C)	85	105
Flux maintenance	---	
α	3.828E-06	5.005E-06
B	0.996	0.987
Reported L(94) (9k)	15000	10000



4.4 TM-21 report

Model: FN-FC-480-24	
In-Situ Inputs	
Input Power for LED package/array/module (W):	---
Drive current for each LED package/array/module (mA):	200
In-situ case temperature (T_c , °C):	44.0
Percentage of initial lumens to project to (%):	94
Temperature only Interpolation	
$T_{s,1}$ (°C)	85
$T_{A,1}$ (K)	358.15
α_1	3.828E-06
B_1	0.996
$T_{s,2}$ (°C)	-
$T_{A,2}$ (K)	-
α_2	-
B_2	-
$T_{s,i}$ (°C)	44.0
$T_{s,i}$ (K)	317.15
A	-
m_B	-
b_B	-
α_i	3.828E-06
B_0	1.000
Reported L(94) (9k)	15000



Attachment 1: Photo document

Model: FN-FC-480-24



Photo 1



Photo 2



Photo 3



Photo 4

===== End of Report =====