

Report No.: GZES200101033431

Date: 2020-06-01

The following sample(s) was/were submitted and identified on behalf of the client as:

Applicant: Blueview Elec-optic Tech Co., Ltd

No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial

Development Zone, Chengdu, Sichuan, China

Manufacturer: Same as applicant

Testing location/address: SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

198 Kezhu Road, Science City, Economic & Technology Development Area,

Guangzhou, Guangdong, China

Standard(s): IES LM-79-08

Test item description: 2835 3 LED waterproof white injection LED module

Trade Mark/Brand: —

Model/Type reference: STL-H-3

Ratings: 12 V DC; 100 mA; 1.08 W; 4500 K

Test result: See Page 4-8.

Remark: When determining for test conclusion, measurement uncertainty of tests has

been considered.

Alex Tan

Alex Tan Reviewer

E&E Safety Laboratory

Justin die

Sr Project Engineer



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Copy of marking plate

N/A

Summary of testing:

The Unit Under Test operated at constant 12 V DC and measured Light Distribution, total luminous flux, luminous efficacy, CCT and colour rendering index.

Test item particulars.....

Lamp cap: —

Lamp identification —

Ambient temperature 25 °C

IP number —

Possible test case verdicts:

- test object does meet the requirement...... P (Pass)

- test object does not meet the requirement...... F (Fail)

Testing

General product information:

LED module.



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1 Test conditions

Before measurements are taken, there is no seasoning for the LED luminaire(s), and the luminaire(s) was/were measured after reaching the stabilization. The sample was mounted at light down position. The ambient temperature during measurements was 25° C \pm 1° C.

The Total Luminous Flux and Light Distribution were measured by a calibrated Type C Goniophotometer, with photometric distance 7.30 m.

The Color Characteristics were measured by a calibrated 2m Integrating Sphere System which consists of an integrating sphere, spectroradiometer and software in 4 π geometry taken at least 5 nm intervals over the range of 380 to 780 nm. The coating reflectance is 98%.



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2 Test Results

I) The Luminous Flux, Luminous Efficacy and Light Distribution

Test Voltage: 12.0 V DC Input Current: 0.087 A

Total Operating Time: 69 min
Stabilization Time 42 min
Power: 1.044 W

Total Luminous Flux: 162.17 Im
Luminous Efficacy: 155.3 Im/W

Beam Angle : H: 170.6°; V: 170.4°

ZONAL LUMEN SUMMARY

γ(°)	Zone lumens	γ(°)	Zone lumens
0-10	1.09	90-100	1.58
10-20	3.54	100-110	0.27
20-30	6.76	110-120	0.10
30-40	11.34	120-130	0.07
40-50	17.56	130-140	0.05
50-60	26.46	140-150	0.04
60-70	41.32	150-160	0.02
70-80	41.65	160-170	0.01
80-90	10.29	170-180	0.00

γ(°)	Zone	% Lamp	γ(°)	Zone	% Lamp
	lumens			lumen	
0-30	11.40	7.03%	60-90	93.27	57.51%
0-40	22.74	14.02%	90-120	1.94	1.20%
0-60	66.76	41.17%	90-130	2.01	1.24%
0-90	160.03	98.68%	90-150	2.10	1.29%
0-120	161.98	99.88%	90-180	2.14	1.32%
0-180	162.17	100.00%	0-74.47	129.73	80.00%

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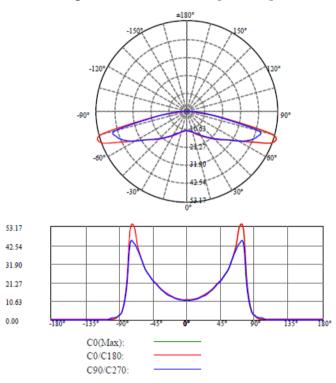
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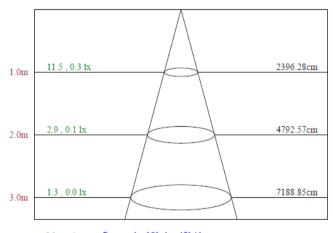
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Light distribution Curve [unit: cd]



Lux Distance Curve



 $Max \;,\; Ave \qquad \text{Beam angle of C0 plane } 170.46$

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Intensity data (cd)									
C/y(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	11.49	11.95	12.71	13.69	15.03	16.59	18.45	20.54	22.86
22.5	11.26	11.60	12.24	13.17	14.33	15.90	17.75	19.78	22.11
45.0	11.26	11.66	12.36	13.29	14.56	16.07	17.93	20.02	22.34
67.5 90.0	11.08 11.08	11.31 11.26	11.84 11.72	12.53 12.36	13.58 13.29	14.91 14.45	16.59 16.07	18.68 17.93	21.00 20.25
112.5	11.20	11.14	11.26	11.72	12.30	13.29	14.56	16.36	18.39
135.0	11.02	10.91	11.02	11.31	11.84	12.65	13.92	15.49	17.46
157.5	11.08	10.79	10.62	10.73	11.08	11.66	12.59	13.98	15.72
180.0	11.49	11.26	11.31	11.60	12.13	12.94	14.21	16.01	18.04
202.5 225.0	11.26 11.26	11.14 11.02	11.20 11.14	11.55 11.49	12.13 12.07	13.05 13.00	14.45 14.27	16.13 15.84	18.16 17.87
247.5	11.08	11.02	11.31	11.84	12.65	13.69	15.14	17.00	19.03
270.0	11.08	11.20	11.60	12.18	13.05	14.27	15.78	17.70	19.96
292.5	11.20	11.49	12.13	13.00	14.04	15.49	17.41	19.55	21.93
315.0	11.02	11.55	12.24	13.34	14.62	16.19	18.16	20.19	22.74
337.5	11.08	11.78	12.65	13.81	15.37	17.17	19.20	21.52	23.79
360.0	11.49	11.95	12.71	13.69	15.03	16.59	18.45	20.54	22.86
C/y(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	25.30	28.14	31.85	37.48	44.09	52.04	55.00	26.92	8.30
22.5	24.54	27.33	31.04	35.28	42.24	50.82	56.57	34.87	10.68
45.0 67.5	25.01 23.38	27.91 26.05	31.50 29.36	36.55 34.29	44.44 41.19	53.26 50.01	55.81 55.76	27.15 36.03	8.88 10.91
90.0	22.74	25.35	28.72	33.24	40.09	50.01	54.19	28.95	9.69
112.5	20.71	23.27	26.17	30.23	36.20	45.83	56.28	39.92	13.46
135.0	19.67	22.28	25.41	29.47	35.62	45.20	54.77	34.06	11.60
157.5	17.93	20.19	23.03	26.40	31.50	41.08	53.38	44.91	14.39
180.0 202.5	20.42 20.48	22.98 22.92	26.11 26.05	31.04 31.74	40.73 42.88	54.31 56.51	47.46 41.48	15.67 13.40	3.66 5.45
225.0	20.02	22.51	25.88	30.98	40.56	53.90	48.85	16.83	6.96
247.5	21.23	24.02	28.14	35.04	45.49	57.21	36.78	8.24	3.42
270.0	22.22	25.18	29.18	35.33	39.68	37.31	32.37	7.43	1.62
292.5	24.60	27.97	32.20	39.63	44.67	25.18	21.18	3.71	0.00
315.0 337.5	25.41 26.75	28.72 30.58	33.53 35.91	40.09 42.88	45.25 50.71	51.52 55.12	5.69 26.63	0.12 2.90	0.00 0.58
360.0	25.30	28.14	31.85	37.48	44.09	52.04	55.00	26.92	8.30
200.0	20.00	20.14	51.00	57.40	44.05	22.04	55.00	20.52	0.50
C/y(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0 22.5	2.90 4.29	0.81 2.03	0.29 0.93	0.35 0.23	0.41 0.23	0.41 0.23	0.35 0.17	0.35 0.12	0.29 0.12
45.0	3.77	2.03	1.16	0.23	0.23	0.23	0.17	0.12	0.12
67.5	4.58	2.38	1.28	0.35	0.00	0.00	0.00	0.00	0.00
90.0	4.06	2.03	1.10	0.12	0.00	0.00	0.00	0.00	0.00
112.5	5.40	2.44	1.16	0.06	0.00	0.00	0.00	0.00	0.00
135.0	4.53 4.53	1.86 0.29	0.23 0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5 180.0	1.45	0.29	0.41	0.41	0.00	0.00	0.00	0.00	0.00
202.5	2.49	1.04	0.29	0.35	0.35	0.35	0.29	0.23	0.23
225.0	3.02	1.10	0.52	0.23	0.23	0.17	0.12	0.12	0.12
247.5	1.74	0.87	0.52	0.12	0.06	0.00	0.00	0.00	0.00
270.0 292.5	0.70 0.29	0.81 0.93	0.70 0.29	0.00 0.06	0.00	0.00	0.00	0.00	0.00
315.0	0.29	0.29	0.29	0.06	0.00	0.00	0.00	0.00	0.00
337.5	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	2.90	0.81	0.29	0.35	0.41	0.41	0.35	0.35	0.29



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C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.29	0.29	0.29	0.29	0.23	0.23	0.29	0.23	0.29
22.5	0.12	0.12	0.06	0.12	0.06	0.06	0.06	0.06	0.06
45.0	0.06	0.06	0.00	0.00	0.00	0.00	0.06	0.00	0.06
67.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.23	0.29	0.29	0.29	0.23	0.23	0.17	0.23	0.17
202.5	0.23	0.23	0.23	0.23	0.17	0.17	0.17	0.17	0.12
225.0	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
247.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
292.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
337.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.29	0.29	0.29	0.29	0.23	0.23	0.29	0.23	0.29

C/γ(°)	180.0
0.0	0.17
22.5	0.06
45.0	0.00
67.5	0.00
90.0	0.00
112.5	0.00
135.0	0.00
157.5	0.00
180.0	0.17
202.5	0.06
225.0	0.00
247.5	0.00
270.0	0.00
292.5	0.00
315.0	0.00
337.5	0.00
360.0	0.17

100.0

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II) Color Characteristics

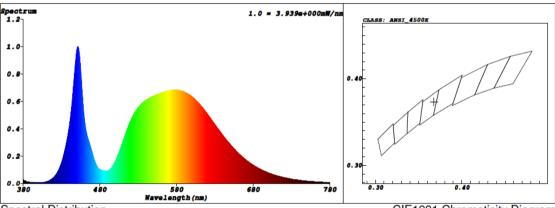
12 V DC Test Voltage: Input Current: 0.0869 A **Total Operating Time:** 65 min Stabilization Time: 49 min Power. 1.0428 W

Chromaticity Coordinate: x=0.3678; y=0.3733

u'=0.2181; v'=0.4982

2.31 x 10⁻³ Correlated Color Temperature: 4339 K Color Render Index Ra: 72.1 R9:

Spectrum



Spectral Distribution

CIE1931 Chromaticity Diagram



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3 Standard bulb used for system calibration

Model	D204H
Intensity Distribution Type	Omni-Directional Type
Calibration current(A)	5,0250
Reference voltage (V)	26,5
Calibration CCT (K)	3217
Calibration luminous Flux (lm)	3000



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4 List of equipment used

Registration No	Equipment name	Cal. Due Date (cycle in years)
GZE003-17	AC/DC Power supply	2020/12/15
GZE006-79	Digital power analyzer	2020/4/7
GZE126-12	Digital CC&CV DC power supply	2020/10/25
GZE126-13	Digital power analyzer	2020/10/30
GZE126-14	AC Testing power source	2020/10/25
GZE126-24	Standard light source	2020/6/25
GZE126-8	High accuracy array spectroradiometer	2020/10/29
GZE126-9	Integrating sphere	2022/12/29
GZE129-1	Goniophotometric system	2020/6/28
GZE012-53	True RMS Multimeter	2020/2/25



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Date: 2020-06-01

Photo documentation:

Details of:	View of the product	
View:		
⊠ general	/ 100	
☐ front		
☐ rear		
☐ right		
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