

Report No.: GZES200101032431

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: H150

Ratings: 24 V DC; 1080 mA; 25.92 W; 6500 K

Test result: See Page 4-8.

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

been considered.

Mex Tap

Reviewer

E&E Safety Laboratory

Justin Lie

Justin Xie Sr Project Engineer



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Copy of marking plate

N/A

Summary of testing:

The Unit Under Test operated at constant 24 V DC and measured Light Distribution, total luminous flux, luminous efficacy, CCT and colour rendering index. Kept the all LEDs in panel (see the **Photo documentation** for reference) at light down direction when testing.

Test item particulars.....

Lamp cap —

Lamp identification —

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:

Flexible 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: 24.0 V DC Input Current: 1.103 A

Total Operating Time: 100 min
Stabilization Time 35 min
Power: 26.472 W

Total Luminous Flux: 3769.65 Im
Luminous Efficacy: 142.4 Im/W

Beam Angle : H: 118.4°; V: 117.6°

ZONAL LUMEN SUMMARY

γ(°)	Zone	γ(°)	Zone
	lumens		lumens
0-10	115.76	90-100	9.59
10-20	335.49	100-110	6.04
20-30	518.72	110-120	6.64
30-40	638.17	120-130	6.89
40-50	676.60	130-140	6.56
50-60	620.94	140-150	5.56
60-70	472.85	150-160	4.07
70-80	265.97	160-170	2.45
80-90	76.56	170-180	0.62

γ(°)	Zone	% Lamp	γ(°)	Zone	% Lamp
	lumens			lumen	
0-30	969.97	18.40%	60-90	815.38	0.00%
0-40	1608.14	32.96%	90-120	22.28	0.00%
0-60	2905.69	71.05%	90-130	29.16	0.00%
0-90	3721.07	100.00%	90-150	41.28	0.00%
0-120	3743.35	100.00%	90-180	48.42	0.00%
0-180	3769.65	100.00%	0-62.11	3015.72	0.00%

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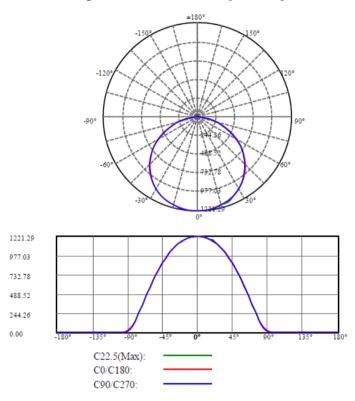
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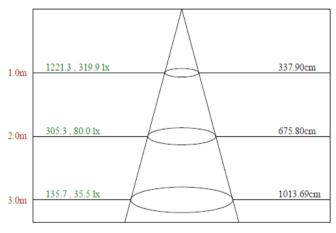
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Light distribution Curve [unit: cd]



Lux Distance Curve



Beam angle of C22.5 plane 118.76 Max, Ave

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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	1217.81	1211.43	1198.67	1174.30	1141.81	1101.19	1049.56	990.96	922.50
22.5	1218.39	1213.17	1200.99	1178.36	1148.77	1111.64	1061.16	1006.62	941.06
45.0	1217.81	1214.33	1202.73	1184.16	1156.89	1119.18	1072.19	1018.23	954.99
67.5	1217.81	1216.65	1206.21	1188.80	1159.79	1126.72	1079.73	1027.51	964.85
90.0	1221.29	1218.97	1209.69	1191.12	1163.85	1128.46	1082.05	1028.09	966.01
112.5	1221.87	1220.13	1210.27	1190.54	1163.27	1127.30	1082.63	1026.35	962.53
135.0	1220.13	1217.81	1207.37	1189.38	1162.69	1125.56	1079.15	1019.97	955.57
157.5	1224.19	1220.71	1207.95	1187.06	1156.31	1115.70	1070.44	1009.53	942.80
180.0	1217.81	1217.23	1209.69	1194.02	1168.50	1147.96	1103.40	1051.07	986.43
202.5 225.0	1218.39 1217.81	1216.07	1206.79 1202.73	1187.06	1243.92 1159.56	1135.95	1088.72 1074.85	1033.43 1019.27	965.49
247.5	1217.81	1213.75 1213.17	1199.83	1181.84 1179.52	1160.66	1127.65 1118.19	1074.85	1009.27	951.51 940.02
270.0	1221.29	1214.91	1200.99	1179.52	1160.66	1117.09	1065.75	1009.29	932.19
292.5	1221.29	1216.65	1203.89	1180.68	1160.49	1121.79	1072.77	1014.17	940.31
315.0	1220.13	1216.65	1206.21	1185.90	1159.91	1132.35	1081.41	1028.27	956.50
337.5	1224.19	1221.29	1211.43	1194.02	1165.60	1140.59	1095.97	1041.73	973.50
360.0	1217.81	1211.43	1198.67	1174.30	1141.81	1101.19	1049.56	990.96	922.50
	2227.02		2250.07	2274.00	22-72.02		2040.00	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
C/y(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	845.33	758.88	656.19	552.92	438.62	324.90	215.89	115.17	48.27
22.5	867.38	783.25	686.36	585.99	472.85	353.91	247.39	143.19	67.13
45.0	883.62	798.34	706.67	608.62	500.70	388.15	275.59	168.54	82.56
67.5	889.43	813.42	717.69	619.64	512.89	393.95	323.74	180.09	89.12
90.0	894.07	808.78	717.11	618.48	511.72	399.17	306.74	177.19	85.06
112.5	890.01	808.78	713.05	613.26	503.60	390.47	304.48	166.80	75.60
135.0	880.72	791.96	702.61	597.01	486.78	373.06	263.29	148.70	62.37
157.5 180.0	865.64 913.74	774.55 831.58	676.50 739.04	570.32 630.84	457.19 519.85	342.89 404.91	224.71 282.67	128.69 170.23	49.66 82.91
202.5	895.05	805.82	710.84	606.82	486.78	370.33	252.50	148.99	66.49
225.0	870.98	783.66	687.00	581.12	466.01	341.96	226.16	125.61	48.45
247.5	862.27	767.30	667.27	559.82	442.57	318.23	203.53	105.30	35.45
270.0	852.53	762.31	662.46	554.31	436.59	312.31	196.34	98.28	27.97
292.5	861.58	771.88	673.77	559.01	442.80	326.30	208.75	106.87	34.17
315.0	879.80	787.37	691.70	586.39	473.20	357.28	238.17	127.47	48.10
337.5	900.91	816.90	723.14	621.26	503.43	387.91	269.79	155.26	71.19
360.0	845.33	758.88	656.19	552.92	438.62	324.90	215.89	115.17	48.27
CI . (0)		05.0	100.0	105.0	****	1150	120.0	105.0	720.0
C/γ(°) 0.0	90.0 15.03	95.0 6.32	100.0 6.27	105.0 6.73	110.0 7.25	115.0 7.77	120.0 8.24	125.0 8.76	130.0 9.17
22.5	21.93	7.37	6.27	6.61	7.14	7.72	8.18	8.70	9.11
45.0	29.01	7.72	5.86	6.21	6.73	7.31	7.83	8.35	8.70
67.5	30.11	7.31	5.28	5.57	6.15	6.61	7.14	7.66	8.18
90.0	25.12	7.31	4.76	5.11	5.57	6.09	6.67	7.14	7.66
112.5	20.48	6.09	4.64	4.99	5.45	5.92	6.38	6.90	7.43
135.0	17.00	5.11	4.82	5.11	5.57	5.98	6.44	6.96	7.43
157.5	13.11	5.22	4.93	5.28	5.74	6.21	6.61	7.14	7.54
180.0	27.04	7.25	5.92	6.27	6.73	7.31	7.77	8.30	8.76
202.5	19.15	6.27	5.80	6.21	6.67	7.19	7.66	8.12	8.59
225.0	10.97	5.69	5.63	5.98	6.44	6.90	7.43	7.89	8.30
247.5	6.85	4.99	5.16	5.63	6.15	6.61	7.08	7.54	8.01
270.0 292.5	5.69 6.85	4.58	4.87 4.82	5.34 5.28	5.86 5.80	6.38	6.90 6.85	7.37 7.37	7.83 7.83
315.0	0.85 11.66	4.64 5.11	4.82 5.05	5.28	5.80	6.44	6.96	7.48	7.83
337.5	22.98	6.09	4.87	5.28	5.80	6.38	6.96	7.43	7.89
360.0	15.03	6.32	6.27	6.73	7.25	7.77	8.24	8.76	9.17
300.0	10.00	0.52	0.27	0.70	1.20		0.24	0.70	5.11

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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	9.46	9.63	9.69	9.63	9.46	9.34	9.28	9.28	9.34
22.5	9.40	9.57	9.63	9.57	9.46	9.28	9.28	9.28	9.28
45.0	9.11	9.28	9.40	9.40	9.28	9.11	9.11	9.11	9.11
67.5	8.59	8.76	8.93	8.88	8.82	8.76	8.70	8.76	8.88
90.0	8.06	8.35	8.53	8.53	8.47	8.35	8.35	8.41	8.59
112.5	7.83	8.18	8.35	8.35	8.24	8.12	8.06	8.24	8.41
135.0	7.77	8.06	8.24	8.30	8.18	8.06	8.06	8.12	8.30
157.5	7.89	8.18	8.24	8.24	8.18	8.01	8.01	8.06	8.18
180.0	9.05	9.34	9.46	9.46	9.40	9.28	9.22	9.22	9.28
202.5	8.93	9.22	9.40	9.40	9.34	9.22	9.11	9.05	9.17
225.0	8.64	8.99	9.17	9.17	9.11	8.99	8.88	8.88	8.99
247.5	8.41	8.70	8.88	8.93	8.76	8.70	8.53	8.47	8.64
270.0	8.12	8.41	8.64	8.64	8.59	8.47	8.35	8.35	8.47
292.5	8.12	8.41	8.53	8.53	8.47	8.35	8.30	8.24	8.35
315.0	8.30	8.53	8.59	8.59	8.47	8.41	8.30	8.30	8.30
337.5	8.24	8.47	8.59	8.53	8.41	8.35	8.18	8.18	8.18
360.0	9.46	9.63	9.69	9.63	9.46	9.34	9.28	9.28	9.34

C /y(°)	180.0
0.0	9.34
22.5	9.28
45.0	9.11
67.5	8.82
90.0	8.59
112.5	8.41
	8.35
157.5	8.24
180.0	8.18
202.5	0.00
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	9.34

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II) Color Characteristics

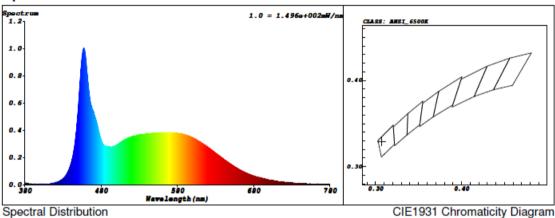
24 V DC Test Voltage: Input Current: 1.100 A **Total Operating Time:** 74 min Stabilization Time: 62 min Power. 26.4 W

Chromaticity Coordinate: x=0.3071; y=0.3289

u'=0.1940; v'=0.4674

6.01 x 10⁻³ Correlated Color Temperature: 6816 K Color Render Index Ra: 84.2 R9: 16

Spectrum





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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 (Im)	3000



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4 List of equipment used

Registration No	Equipment name	Cal. Due Date (cycle in years)
GZE003-16	AC/DC Power supply	2020/6/13
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
GZE012-54	True RMS Multimeter	2020/2/25



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