

TEST REPORT

The following tested product(s) were submitted and identified by the vendor as:

Applicant : HK Lighting Group
Address of Applicant : 3529 Old Conejo Road, Suite 118, Newbury Park, CA
91320
Testing Laboratory : SGS Taiwan Ltd., Optics Laboratory
Laboratory Address : No. 33, Wu Chyuan Road, New Taipei Industrial Park, Wu
Ku District, New Taipei City 24886, Taiwan (R.O.C.)
Product Name : GZXL-PL LED Module
Model / Serial Number : GZXL-PL-4.5x2.5
Manufacturer : HK Lighting Group
Test Standard/Method : According to Client's Test Methods
Rating : AC (100 to 240) V (50 / 60) Hz, 8 W
Tested Condition : AC 120 V 60 Hz
Date of Issue : May 27, 2014

The submitted products have been tested as requested and the following results were obtained, and the report, not applicable for lawsuit, refers only to the unit(s) submitted for test.

Test Results : -PLEASE SEE ATTACHED SHEETS-

**Signed for and on behalf of
SGS TAIWAN Ltd.**

Calvin Tzou
Technical Manager

1 DATE OF RECEIPT OF TEST ITEM

May 26, 2014

2 DATE(S) OF PERFORMANCE OF THE TEST

May 27, 2014

3 IDENTITY OF SAMPLES

Quantity	Model	Serial Number
1	GZXL-PL-4.5x2.5	# 1

4 TEST ITEMS**4.1 Total Luminous Flux (ψ_v)**

The test results were implemented referring to Clause 6.3 Luminous flux measurements on luminaires of Clause 6 PHOTOMETRIC METHODS AND PRACTICAL TEST PROCEDURES of CIE 121-1996.

4.2 Electrical Quantities

The test results were implemented referring to CIE 121-1996 THE PHOTOMETRY AND GONIOPHOTOMETRY OF LUMINAIRES.

4.3 Luminous Intensity Distribution

The test results of luminous intensity distribution were implemented referring to Clause 6.2 Luminous intensity distribution measurements of Clause 6 of CIE 121-1996, and CIE 70-1987 THE MEASUREMENT OF ABSOLUTE LUMINOUS INTENSITY DISTRIBUTIONS.

4.3.1 Polar Luminous Intensity Distribution**4.3.2 Cartesian Coordinates Luminous Intensity Distribution****4.3.3 Maximum Intensity****4.3.4 AAI Figure**

5 TEST CONDITIONSMain Test Equipment:

Name	Brand	Model	S/N	Traceability
Digital Power Meter / AC Source	YOKOGAWA / apc	WT-210 / AFC-500W	91JA13000 / F312120079	NMI
Goniophotometer / Standard Light Source	SGS Define (CZIBULA & GRUNDMANN GMBH / everfine) / Everfine	GO-R5000-GS-PLUS / D908S	12020002	NMI

Environmental Conditions:

Ambient temperature:	<u>(25 ± 1) °C</u>
Relative humidity:	<u>(60 ± 20) %RH</u>
Dark Room:	<u>< 0.05 lx</u>

DUT Conditions:

Power Input:	<u>AC 120 V 60 Hz</u>
Warm up time:	<u>> 60 minutes</u>
Dimension:	<u>L 150 mm x W 100 mm x H 20 mm</u>
Control Gear:	<u>HaTCH / LCB009-RL-UNI x 1 pcs</u>
Control Gear Spec.:	<u>I/P: AC (100 to 240) V (50 / 60) Hz, 155 mA;</u> <u>O/P: DC (4 to 13) V, 700 mA</u>

Measurement Conditions:

Orientation:	<u>Downward</u>
Goniophotometer:	<u>2.115 m (N.F.)</u>

6 TEST RESULTS6.1 Total Luminous Flux (ψ_v)

S/N	Total Luminous Flux	Note
# 1	429.78 lm	Stabilization

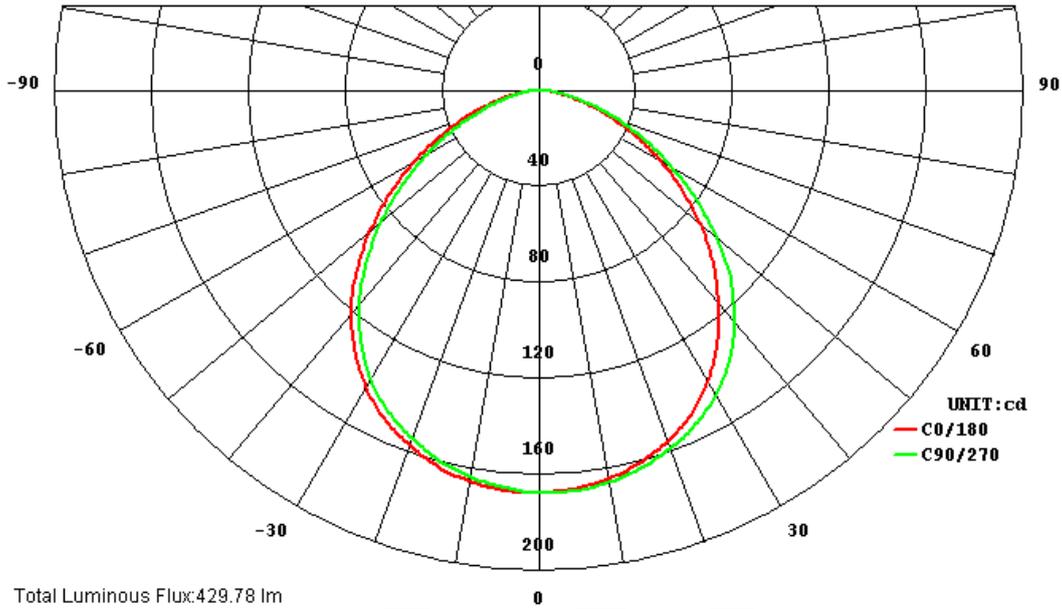
6.2 Electrical Quantities

S/N	Input Voltage	Input Current	Input Power	Power Factor	Note
# 1	120.00 Vac	0.1413 A	7.665 W	0.4522	Stabilization

6.3 Luminous Intensity Distribution

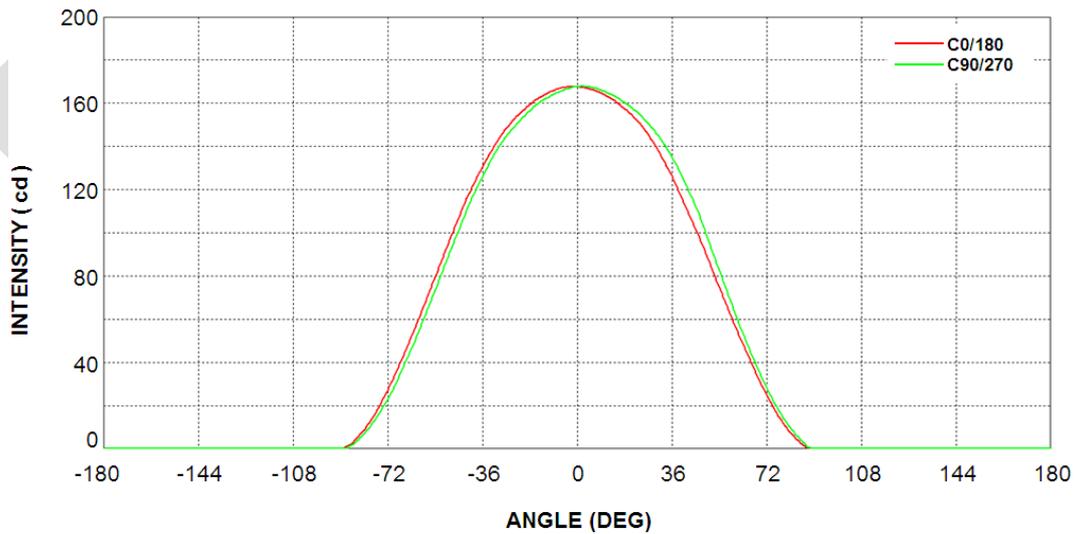
6.3.1 Polar Luminous Intensity Distribution

Polar Luminous Intensity Distribution



6.3.2 Cartesian Coordinates Luminous Intensity Distribution

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

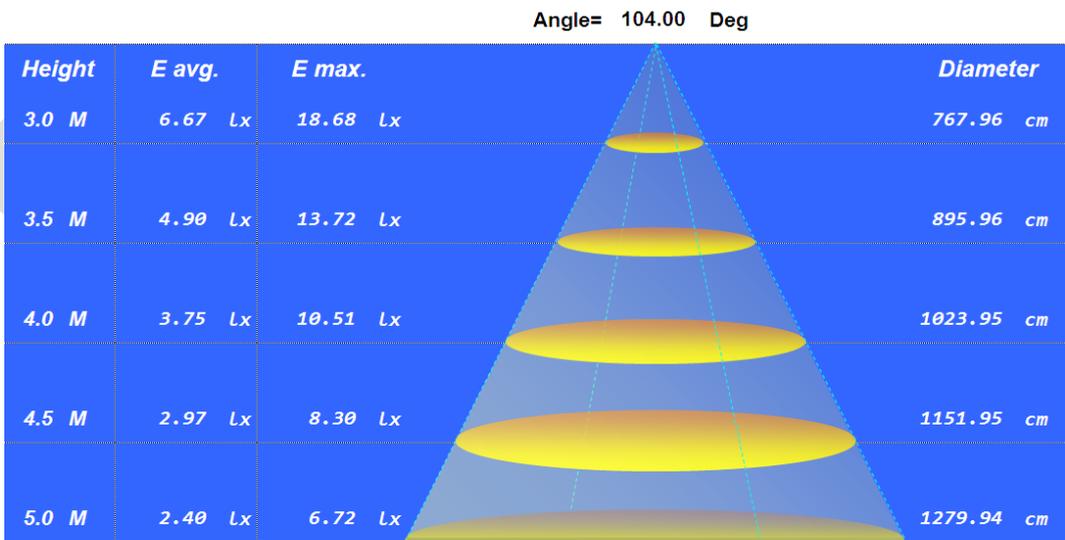
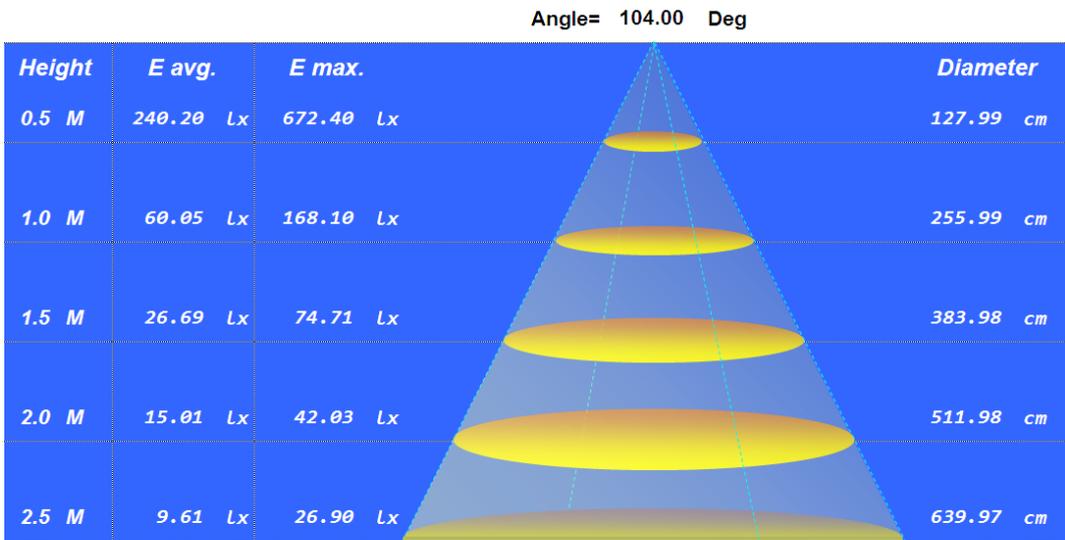


AVERAGE BEAM ANGLE (50%) : 104.00 DEG

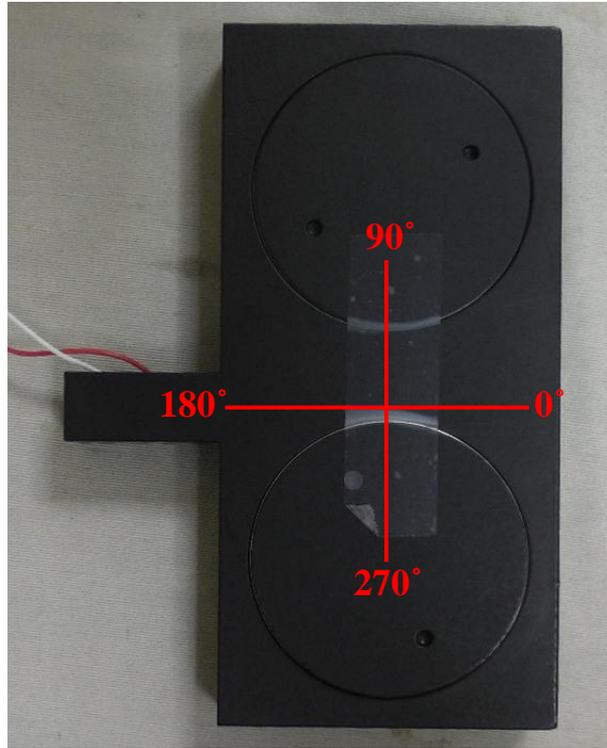
6.3.3 Maximum Intensity

S/N	Maximum Intensity	Note
# 1	167.89 cd	max. intensity @ (C=120°, Gamma=2.0°)

6.3.4 AAI Figure

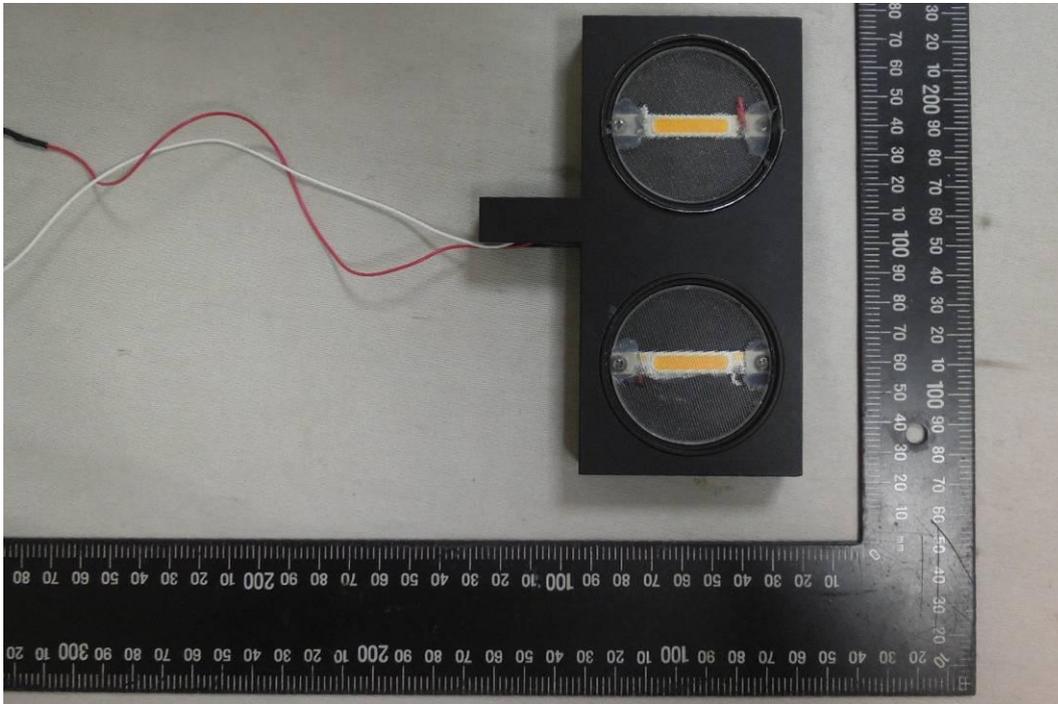


7 ANGLE DEFINITION

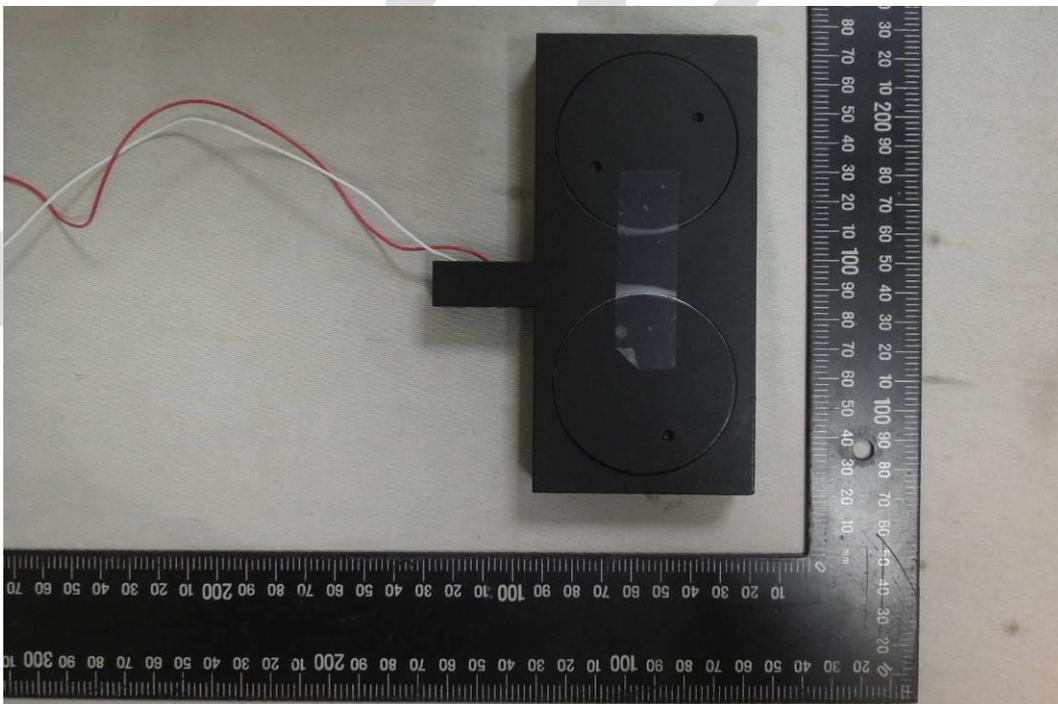


Back View

8 PHOTO



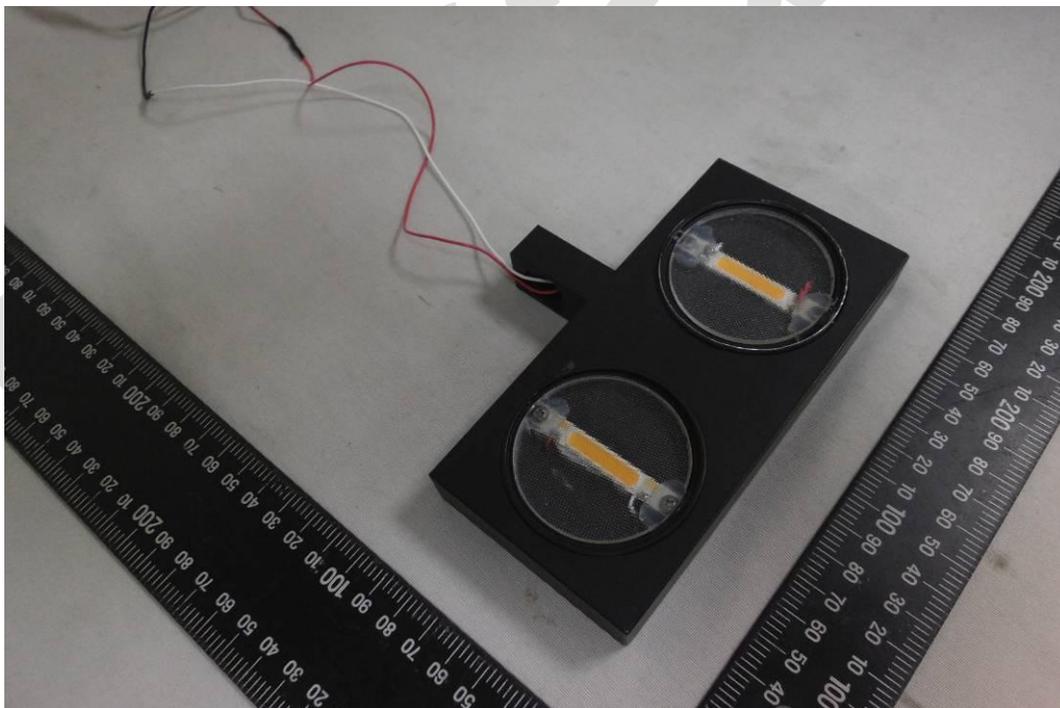
Front View



Back View



Control Gear



DUT

- End of Report -