



8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Report No: L062012601



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Issue Date: 6/24/2020

Report Prepared For: HK Lighting Group
3529 Old Conejo Rd #118, Newbury Park, CA 91320

Model Number: ZXL-08-WM-SQ

Test: Photometric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:

IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products

ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 6/19/20

Date of Tests: 6/22/20 - 6/24/20

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

General Information

Manufacturer:	HK Lighting Group
Model Number:	ZXL-08-WM-SQ
Driver Model Number:	N/A

Photometric & Electrical Test Results

Total Lumens:	17.21
Efficacy:	5.80
Input Voltage (VAC/60Hz):	12.02
Input Current (Amp):	0.4140
Input Power (W):	2.97
Input Power Factor:	0.5960
Current ATHD (%):	64.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:15

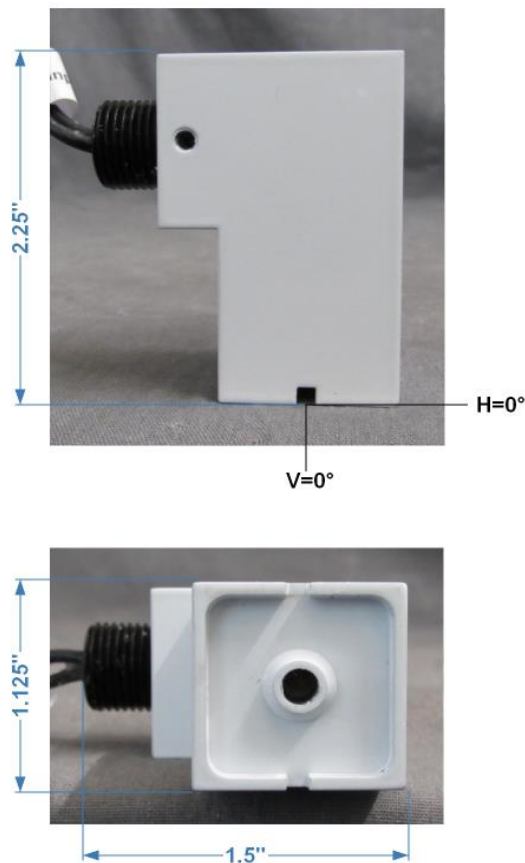


FIG. 1 LUMINAIRE



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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 9*



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L062012601.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L062012601
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 6/24/2020
[MANUFAC] HK Lighting Group
[LUMCAT] ZXL-08-WM-SQ
[LUMINAIRE] WALL MOUNT
[BALLASTCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 12.02VAC, 2.97W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	17
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	6
Total Luminaire Watts	2.97
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.44
Spacing Criterion (90-270)	0.44
Spacing Criterion (Diagonal)	0.42
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.02 ft (Diameter)
Luminous Width (90-270)	0.02 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	74066	74066	74066
55	55502	55502	55502
65	46978	46978	46978
75	43645	43645	43645
85	39275	39275	39275

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L062012601.IES

CANDELA TABULATION

	<u>0</u>
0	62.99
1	63.01
2	62.93
3	62.65
4	62.02
5	60.90
6	59.11
7	56.94
8	54.10
9	49.72
10	46.26
12	35.59
14	25.95
16	17.06
18	10.67
20	6.30
22	4.13
24	3.33
26	2.91
28	2.62
30	2.39
35	2.05
40	1.82
45	1.53
50	1.19
55	0.93
60	0.75
65	0.58
70	0.45
75	0.33
80	0.21
85	0.10
90	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L062012601.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	11.29	N.A.	65.60
0-30	12.85	N.A.	74.70
0-40	14.15	N.A.	82.20
0-60	16.17	N.A.	93.90
0-80	17.10	N.A.	99.30
0-90	17.21	N.A.	100.00
10-90	11.87	N.A.	69.00
20-40	2.86	N.A.	16.60
20-50	4.03	N.A.	23.40
40-70	2.60	N.A.	15.10
60-80	0.93	N.A.	5.40
70-80	0.35	N.A.	2.00
80-90	0.11	N.A.	0.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	17.21	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	5.34
10-20	5.95
20-30	1.56
30-40	1.30
40-50	1.17
50-60	0.85
60-70	0.58
70-80	0.35
80-90	0.11
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L062012601.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	121	121	121	121	118	118	118	118	112	112	112	108	108	108	103	103	103	101
1	115	112	109	107	112	110	107	105	106	104	102	102	100	99	98	97	96	94
2	109	104	100	97	107	103	99	96	99	96	94	96	94	92	94	92	90	88
3	104	98	93	89	102	97	92	89	94	90	87	92	88	86	89	87	85	83
4	100	93	87	83	98	92	87	83	89	85	82	87	84	81	86	83	80	79
5	96	88	83	79	94	87	82	78	85	81	78	84	80	77	82	79	76	75
6	92	84	79	75	91	83	78	75	82	77	74	81	77	74	79	76	73	72
7	89	81	75	72	88	80	75	71	79	74	71	78	74	71	77	73	70	69
8	86	78	72	69	85	77	72	69	76	72	68	75	71	68	74	71	68	67
9	83	75	70	66	82	74	70	66	74	69	66	73	69	66	72	68	66	64
10	81	72	67	64	80	72	67	64	71	67	64	71	67	64	70	66	64	62

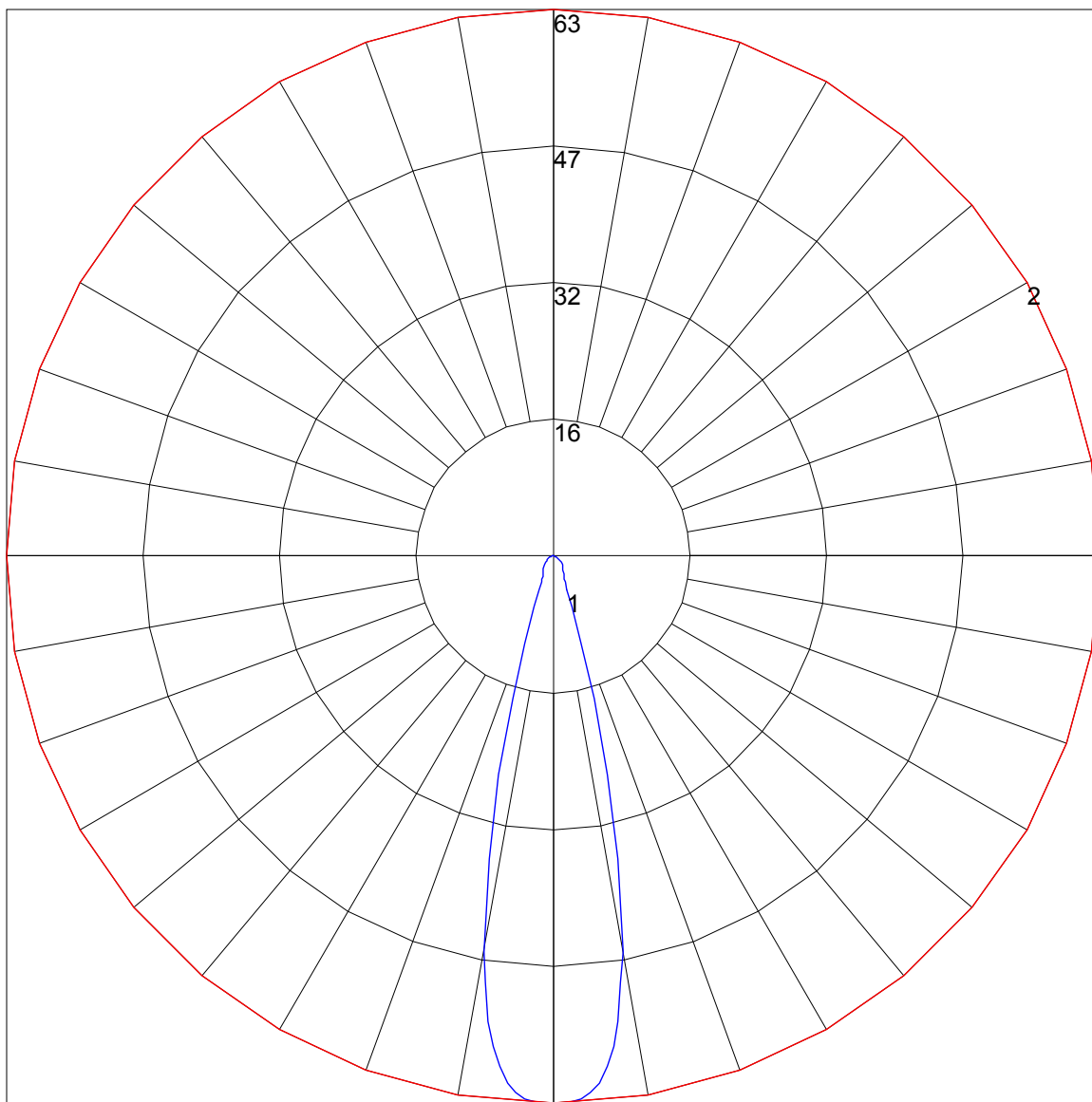
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L062012601.IES

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	21.5	22.6	21.8	22.9	23.3	21.5	22.6	21.8	22.9	23.3
	3H	23.0	24.1	23.4	24.4	24.8	23.0	24.1	23.4	24.4	24.8
	4H	23.7	24.6	24.1	25.0	25.4	23.7	24.6	24.1	25.0	25.4
	6H	24.2	25.1	24.6	25.5	25.9	24.2	25.1	24.6	25.5	25.9
	8H	24.4	25.2	24.8	25.6	26.0	24.4	25.2	24.8	25.6	26.0
	12H	24.5	25.3	24.9	25.7	26.1	24.5	25.3	24.9	25.7	26.1
4H	2H	21.9	22.9	22.3	23.2	23.6	21.9	22.9	22.3	23.2	23.6
	3H	23.7	24.5	24.1	24.9	25.3	23.7	24.5	24.1	24.9	25.3
	4H	24.5	25.2	25.0	25.7	26.1	24.5	25.2	25.0	25.7	26.1
	6H	25.2	25.8	25.6	26.2	26.7	25.2	25.8	25.6	26.2	26.7
	8H	25.4	26.0	25.9	26.4	26.9	25.4	26.0	25.9	26.4	26.9
	12H	25.6	26.1	26.1	26.6	27.0	25.6	26.1	26.1	26.6	27.0
8H	4H	24.8	25.4	25.3	25.8	26.3	24.8	25.4	25.3	25.8	26.3
	6H	25.6	26.0	26.1	26.5	27.0	25.6	26.0	26.1	26.5	27.0
	8H	25.9	26.3	26.4	26.8	27.3	25.9	26.3	26.4	26.8	27.3
	12H	26.2	26.5	26.7	27.0	27.6	26.2	26.5	26.7	27.0	27.6
12H	4H	24.8	25.3	25.3	25.8	26.3	24.8	25.3	25.3	25.8	26.3
	6H	25.6	26.0	26.2	26.5	27.1	25.6	26.0	26.2	26.5	27.1
	8H	26.0	26.4	26.5	26.9	27.4	26.0	26.4	26.5	26.9	27.4

Maximum UGR = 27.6

POLAR GRAPH



Maximum Candela = 63.01 Located At Horizontal Angle = 0, Vertical Angle = 1

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)