



8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Report No: L091501601

Date: 9/10/2015



NVLAP LAB CODE 200927-0

Report No: L091501601

Report Prepared For: HK Lighting Group
3529 Old Conejo Road #118

Model Number: ZXL-16-AMB-30D

Test: Electrical and Photometric tests

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. Catalog number is ZXL-16-AMB-30D. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 8/31/15

Date of Tests: 9/9/15 - 9/10/15

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-S1	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
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

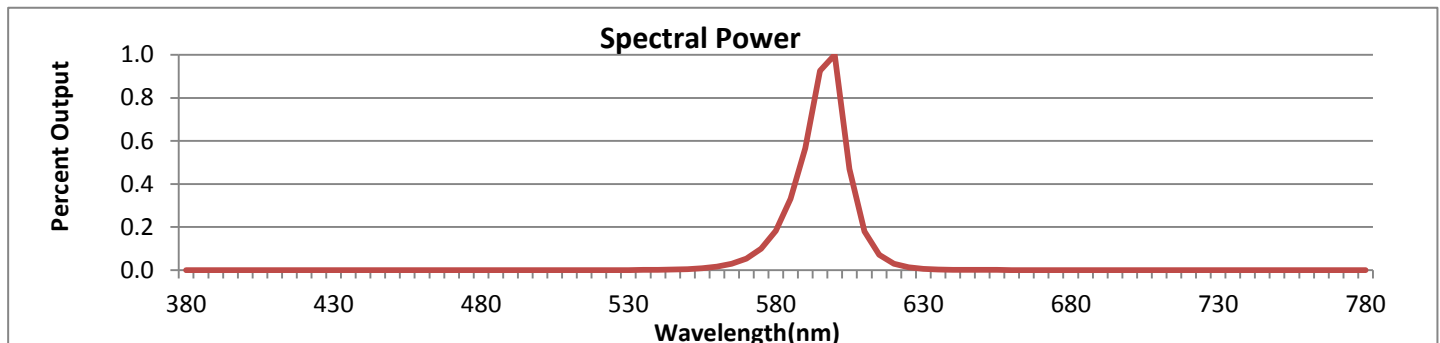
*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	HK Lighting Group
Model Number:	ZXL-16-AMB-30D
Driver Model Number:	HATCH LC12-0700P-120-B
Total Lumens:	68.80
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.08
Input Power (W):	8.51
Input Power Factor:	0.95
Current ATHD @ 120V(%):	20%
Current ATHD @ 277V(%):	N/A
Efficacy:	8
Color Rendering Index (CRI):	-22
Correlated Color Temperature (K):	1494
Chromaticity Coordinate x:	0.5961
Chromaticity Coordinate y:	0.4031
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:55
Total Operating Time (Hours):	2:35
Off State Power(W):	0.00



FIG. 1 LUMINAIRE



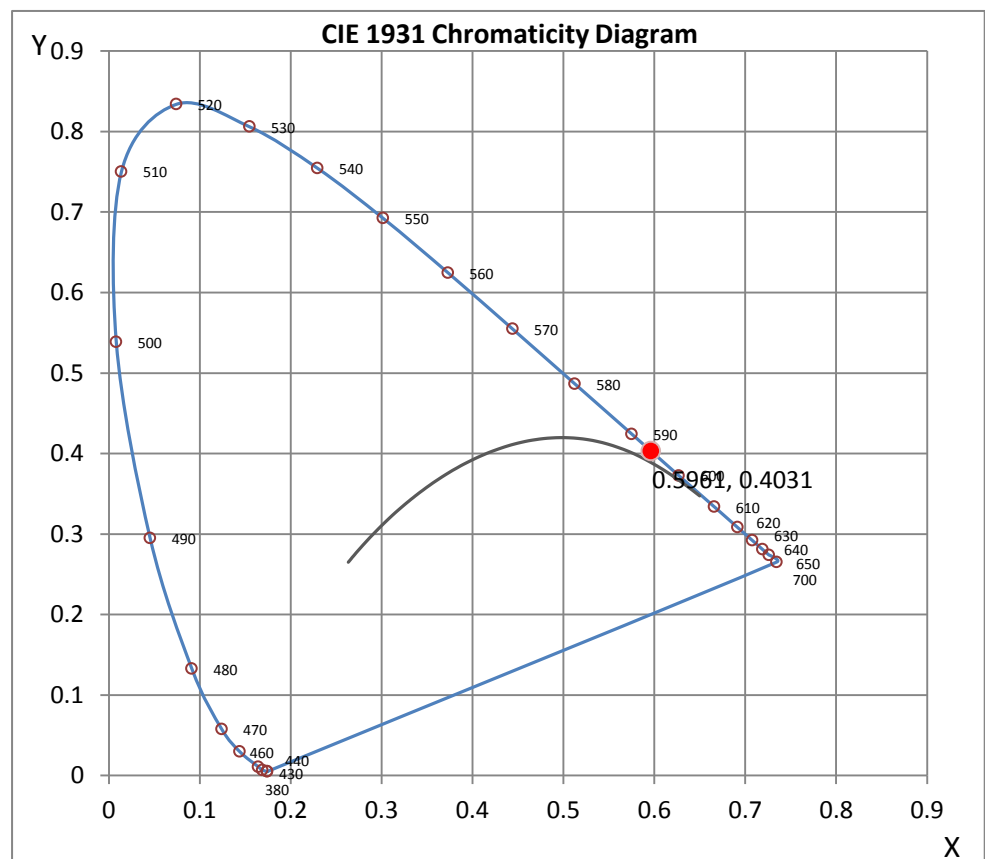
Wavelength	W/m ² nm	440	0.0000	510	0.0001	580	0.1832	650	0.0006	720	0.0001
380	0.0000	450	0.0000	520	0.0001	590	0.5657	660	0.0003	730	0.0001
390	0.0000	460	0.0000	530	0.0003	600	1.0000	670	0.0002	740	0.0001
400	0.0001	470	0.0001	540	0.0013	610	0.1799	680	0.0001	750	0.0001
410	0.0001	480	0.0001	550	0.0045	620	0.0297	690	0.0001	760	0.0000
420	0.0001	490	0.0001	560	0.0159	630	0.0061	700	0.0001	770	0.0000
430	0.0001	500	0.0001	570	0.0530	640	0.0015	710	0.0001	780	0.0001

CRI & CCT

x	0.5961
y	0.4031
u'	0.3588
v'	0.5460
CRI	-21.70
CCT	1494
Duv	0.00909

R Values

R1	-33.29
R2	54.28
R3	14.74
R4	-68.79
R5	-40.75
R6	45.97
R7	-9.51
R8	-136.50
R9	-385.25
R10	33.29
R11	-93.77
R12	-1.73
R13	-13.53
R14	44.66





8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Report No: L091501601

Date: 9/10/2015



NVLAP LAB CODE 200927-0

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 : JEFF AHN

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 8*

**All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.*



8165 E. Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Photometric Test Report

IES FLOOD REPORT

PHOTOMETRIC FILENAME : L091501601.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L091501601
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 9/10/2015
[MANUFAC] HK LIGHTING GROUP
[LUMCAT] ZXL-16-AMB-30D
[LUMINAIRE] AMBER LED ACCENT LIGHT
[BALLASTCAT] HATCH LC12-0700P-120-B
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 8.51W
[TEST PROCEDURE] IESNA:LM-79-08

Note: Candela values converted from Type-C to Type-B

CHARACTERISTICS

NEMA Type	5 H x 5 V
Maximum Candela	99.99
Maximum Candela Angle	0H -1V
Horizontal Beam Angle (50%)	46.2
Vertical Beam Angle (50%)	46.4
Horizontal Field Angle (10%)	78.3
Vertical Field Angle (10%)	79.8
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	38
Beam Efficiency	N.A.
Field Lumens	58
Field Efficiency	N.A.
Spill Lumens	11
Luminaire Lumens	69
Total Efficiency	N.A.
Total Luminaire Watts	8.51
Ballast Factor	1.00

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L091501601.IES

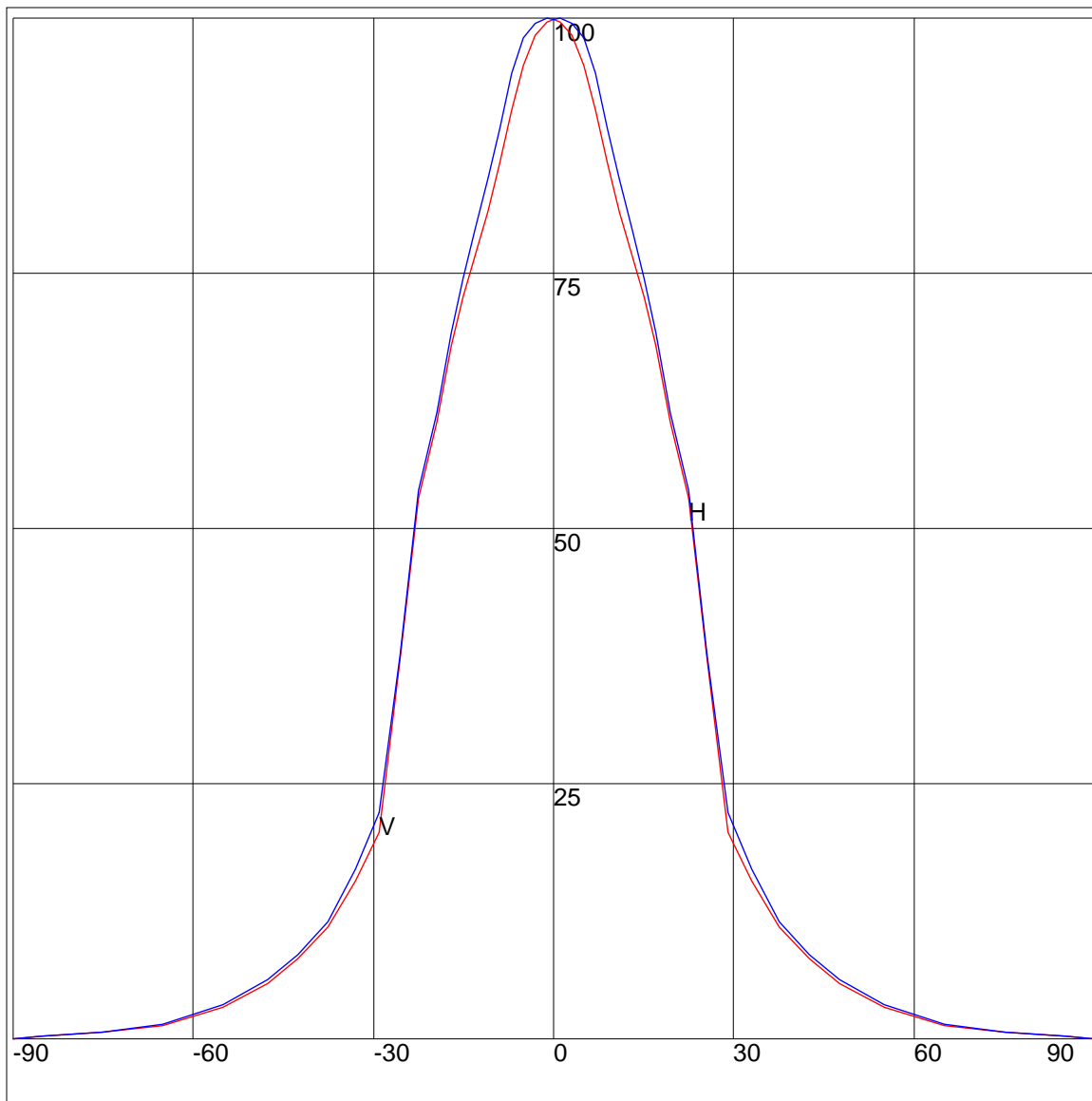
AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	.26	85	.26
75	.66	75	.71
65	1.34	65	1.44
55	3.11	55	3.38
47.5	5.47	47.5	5.88
42.5	7.86	42.5	8.3
37.5	11.04	37.5	11.56
33	15.47	33	16.66
29	20.24	29	22.2
25.5	37.29	25.5	37.68
22.5	53.05	22.5	53.76
19.5	60.42	19.5	61.35
17	67.91	17	69.15
15	72.63	15	74.55
13	76.69	13	79.3
11	81.1	11	84.26
9	85.82	9	89.15
7	91.02	7	94.52
5	95.33	5	98.09
3	98.37	3	99.48
1	99.63	1	99.99
0	99.81	0	99.81
-1	99.63	-1	99.99
-3	98.37	-3	99.48
-5	95.33	-5	98.09
-7	91.02	-7	94.52
-9	85.82	-9	89.15
-11	81.1	-11	84.26
-13	76.69	-13	79.3
-15	72.63	-15	74.55
-17	67.91	-17	69.15
-19.5	60.42	-19.5	61.35
-22.5	53.05	-22.5	53.76
-25.5	37.29	-25.5	37.68
-29	20.24	-29	22.2
-33	15.47	-33	16.66
-37.5	11.04	-37.5	11.56
-42.5	7.86	-42.5	8.3
-47.5	5.47	-47.5	5.88
-55	3.11	-55	3.38
-65	1.34	-65	1.44
-75	.66	-75	.71
-85	.26	-85	.26
-90	0	-90	0

ZONAL LUMEN SUMMARY

Zone	%
0-20	41.1
0-30	69.7
0-40	82.4
0-60	94.9
0-80	99.3
0-90	100
10-90	89.4
20-40	41.3
20-50	49.8
40-70	15.5
60-80	4.4
70-80	1.4
80-90	0.7
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

AXIAL CANDELA DISPLAY

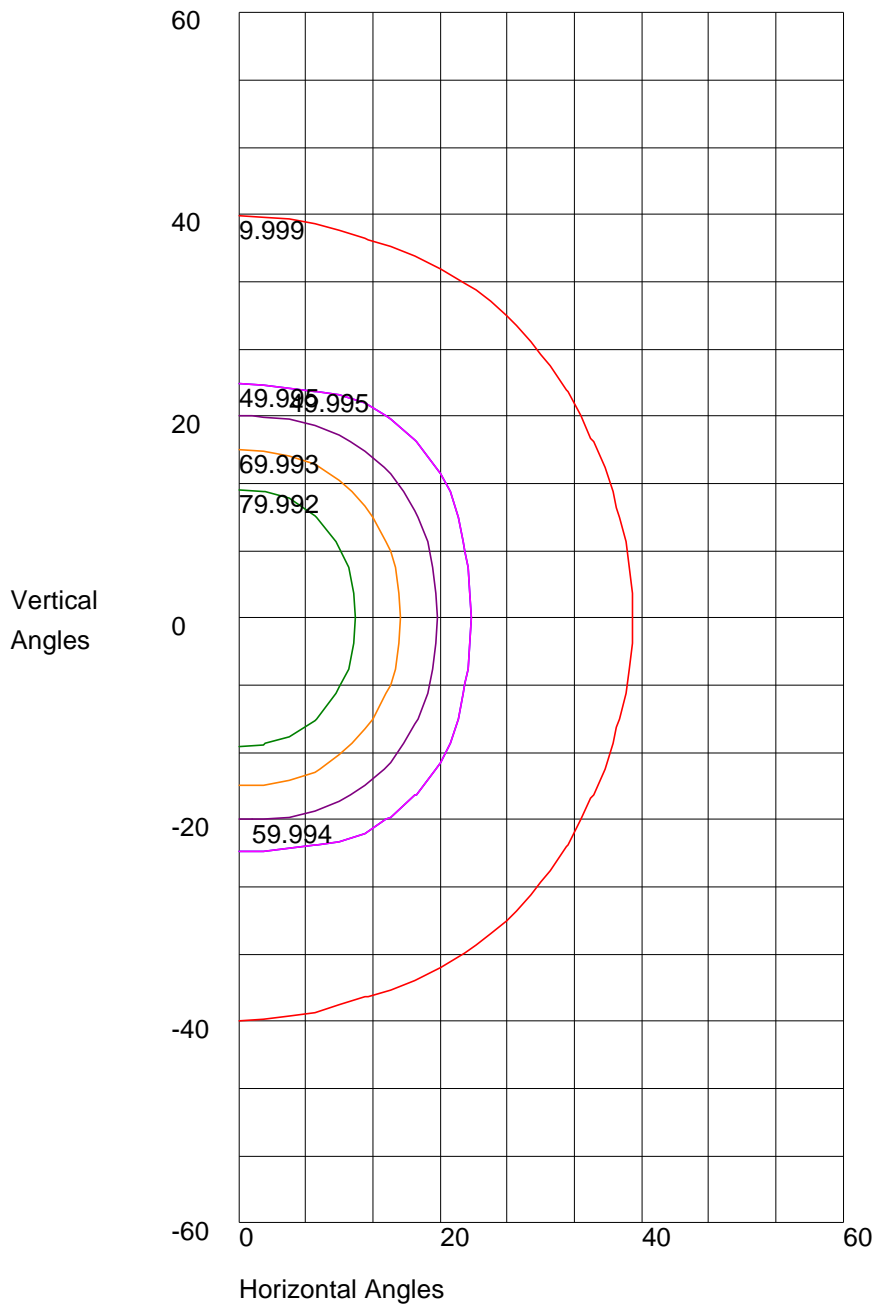


Maximum Candela = 99.99 Located At Horizontal Angle = 0, Vertical Angle = -1

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 99.99 Located At Horizontal Angle = 0, Vertical Angle = -1
50% Maximum Candela = 49.995
10% Maximum Candela = 9.999