



REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G102046181

Date: January 29, 2016

REPORT NO. 102046181CHI-025

TEST OF ONE SURFACE MOUNT LUMINAIRE

MODEL NO. LWL07485000L30D2
LED MODEL NO. NICHIA NFSL757-D-V1
DRIVER MODEL NO. ADVANCE XI054C150V054DNT1

RENDERED TO

AFX INC
2345 N. ERNIE KRUEGER CIRCLE
WAUKEGAN, IL. 60087

TEST: Electrical and Photometric tests as required to the IESNA test standard.

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number 500582114.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2012: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number LWL07485000L30D2. The sample was received by Intertek on January 26, 2016, in undamaged condition and one sample was tested as received. The sample designation was AH01262016041713-25.

DATES OF TESTS: January 28, 2016 through January 29, 2016.

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SUMMARY

Model No.:	LWL07485000L30D2
Description:	SURFACE MOUNT LUMINAIRE

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	4417	4273
Total Power (W)	59.48	59.47
Luminaire Efficacy (LPW)	74.26	71.85

Criteria	Result
Power Factor at 120Vac	0.991
Power Factor at 277Vac	0.950
Current ATHD % at 120Vac	11.89
Current ATHD % at 277Vac	18.59
Correlated Color Temperature (CCT - K)	3125
Color Rendering Index (CRI - Ra)	94.0
Color Rendering Index (CRI - R9)	65.4
DUV	0.001
Chromaticity Coordinate (x)	0.427
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.247
Chromaticity Coordinate (v')	0.518

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/14/15	07/14/16	01/29/16
Omega Newport Thermometer	DPI8-C24	146920	10/09/15	10/09/16	01/29/16
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	01/29/16
Newport Thermohygrometer	iServer	146956	01/04/16	01/04/17	01/29/16
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	01/29/16
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	01/28/16
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	01/28/16
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	01/28/16
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	01/28/16
Newport Humidity Recorder	iTHX-SD	146382	07/09/15	07/09/16	01/28/16
Yokogawa Power Meter	WT1600	146768	01/14/16	01/14/17	01/28/16
Omega Temperature Meter	MDSi8	146139	04/03/15	04/03/16	01/28/16



TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model CDS 1100 CCD Array Spectroradiometer and Two Meter or Ten Foot Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

RESULTS OF TEST

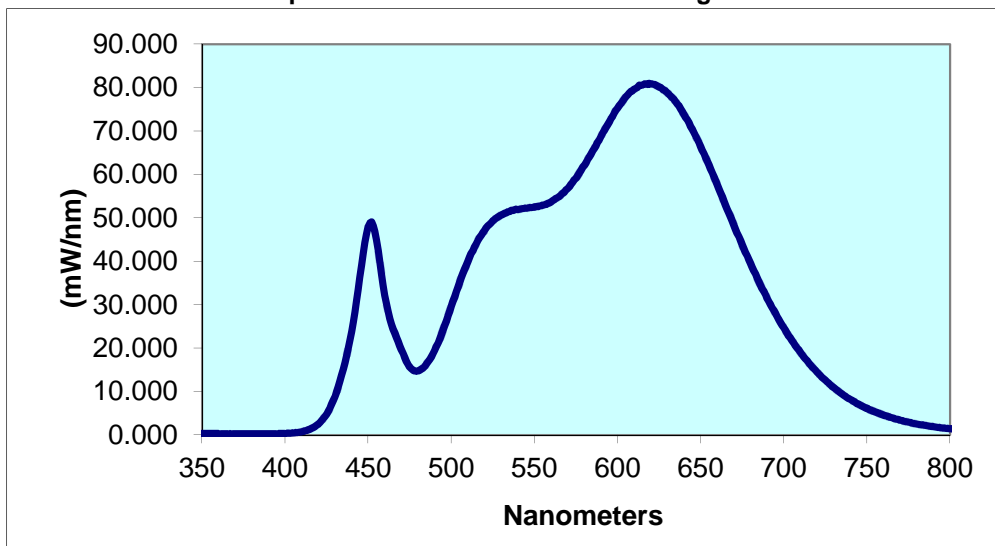
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01262016041713-25	Up	120.0 277.0	500.0 220.8	59.48 58.09	0.991 0.950	11.89 18.59	4417	74.26
Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')	
3125	94.0	65.4	0.001	0.427	0.398	0.247	0.518	

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.309	440	23.79	530	50.67	620	80.78	710	19.01
355	0.307	445	36.20	535	51.47	625	80.18	715	16.59
360	0.292	450	47.93	540	51.90	630	78.79	720	14.46
365	0.257	455	45.02	545	52.24	635	76.72	725	12.60
370	0.250	460	32.17	550	52.48	640	73.79	730	10.91
375	0.238	465	24.41	555	52.91	645	70.39	735	9.456
380	0.204	470	19.60	560	53.66	650	66.46	740	8.174
385	0.200	475	15.67	565	54.92	655	62.23	745	7.070
390	0.223	480	14.77	570	56.78	660	57.70	750	6.119
395	0.259	485	16.32	575	59.14	665	52.89	755	5.296
400	0.334	490	19.45	580	62.12	670	48.33	760	4.588
405	0.476	495	24.09	585	65.41	675	43.83	765	3.965
410	0.762	500	29.63	590	68.81	680	39.50	770	3.412
415	1.357	505	35.12	595	72.10	685	35.42	775	2.942
420	2.519	510	39.96	600	75.18	690	31.50	780	2.531
425	4.836	515	44.01	605	77.86	695	28.01		
430	8.834	520	47.14	610	79.65	700	24.68		
435	15.17	525	49.33	615	80.61	705	21.70		

Spectral Data Over Visible Wavelengths



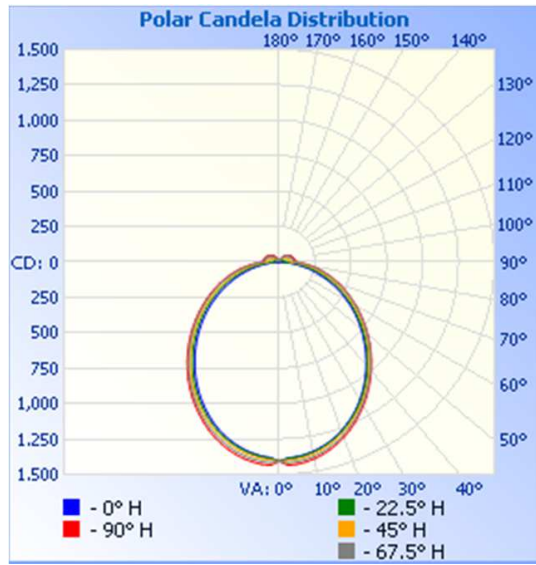
RESULTS OF TEST (cont'd)

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01262016041713-25	Up	120.0	500.0	59.47	0.991	4273	71.85

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	1406	1406	1406	1406	1406
5	1380	1385	1398	1415	1432
10	1358	1362	1376	1393	1410
15	1320	1324	1339	1355	1371
20	1268	1272	1287	1302	1316
25	1202	1207	1222	1237	1249
30	1124	1133	1148	1161	1171
35	1037	1047	1067	1078	1087
40	944	957	977	989	996
45	847	863	884	897	903
50	750	765	789	802	807
55	650	667	693	709	713
60	550	569	598	615	619
65	448	472	504	523	529
70	347	377	412	436	442
75	250	284	325	351	357
80	158	196	240	267	275
85	74	114	158	186	193
90	9	45	87	114	122
95	2	34	74	100	110
100	2	33	71	96	107
105	2	31	68	93	102
110	2	29	65	89	98
115	2	25	61	84	93
120	2	20	57	79	88
125	3	19	52	74	82
130	3	17	45	68	75
135	4	16	35	59	67
140	5	14	31	47	56
145	5	13	27	38	40
150	5	11	22	32	35
155	6	10	19	26	27
160	6	8	16	20	21
165	6	7	11	16	16
170	6	7	8	10	10
175	6	6	6	7	6
180	6	6	6	6	6

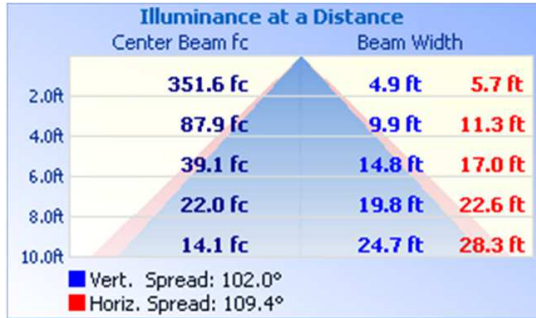


RESULTS OF TEST (cont'd)

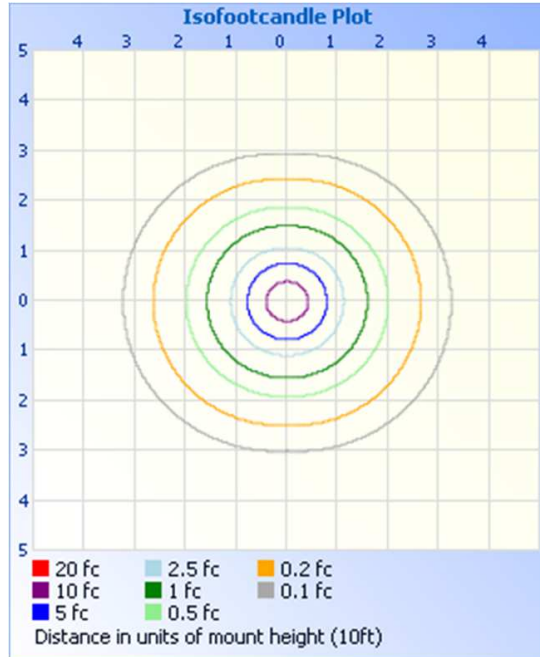
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1071	25.1
0-40	1733	40.5
0-60	3016	70.6
60-90	974.0	22.8
0-90	3990	93.4
90-180	282.6	6.6
0-180	4273	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	132.8	3.1
10-20	377.0	8.8
20-30	561.1	13.1
30-40	661.7	15.5
40-50	674.2	15.8
50-60	609.4	14.3
60-70	486.4	11.4
70-80	328.3	7.7
80-90	159.4	3.7
90-100	73.6	1.7
100-110	64.9	1.5
110-120	52.9	1.2
120-130	39.6	0.9
130-140	25.9	0.6
140-150	14.4	0.3
150-160	7.5	0.2
160-170	3.1	0.1
170-180	0.7	0.0

PICTURES (not to scale)



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:



Vladimir Kozak
Senior Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division