



REPORT

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

Project No. G102235195

Date: October 22, 2015

REPORT NO. 102235195CHI-009

TEST OF ONE LED UNDERCABINET

MODEL NO. DOT-SQ-1W-30D-30K-SA
LED MODEL NO. LUMILEDS LUXEON T

RENDERED TO

EDGE LIGHTING
1718 W. FULLERTON AVE
CHICAGO, IL 60614

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 Qu-00595093-1.

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 DOT-SQ-1W-30D-30K-SA. The sample was received by Intertek on October 8, 2015, in undamaged condition and one sample was tested as received. The sample designation was AH10082015032735-9.

DATES OF TESTS: October 15, 2015 through October 22, 2015.

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SUMMARY

Model No.:	DOT-SQ-1W-30D-30K-SA
Description:	LED Undercabinet

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	57.42	60.00
Total Power (W)	2.583	2.584
Luminaire Efficacy (LPW)	22.23	23.22

Criteria	Result
Power Factor	0.961
Current ATHD %	23.98
Correlated Color Temperature (CCT - K)	3147
Color Rendering Index (CRI - Ra)	85.9
Color Rendering Index (CRI - R9)	30.8
DUV	0.003
Chromaticity Coordinate (x)	0.423
Chromaticity Coordinate (y)	0.393
Chromaticity Coordinate (u')	0.246
Chromaticity Coordinate (v')	0.515

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	10/22/15
Omega Thermometer	DPI8-C24	146920	10/09/15	10/09/16	10/22/15
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV	10/22/15
Newport Hygrometer	iServer	146956	01/06/15	01/06/16	10/22/15
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV	10/22/15
Labsphere 2M Sphere & Spectroradiation	CDS600	146137	VBV	VBV	10/15/15
Elgar AC Power Supply	CW1251M	146113	VBV	VBV	10/15/15
Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV	10/15/15
Yokogawa Power Analyzer	WT1600	146770	04/07/15	04/07/16	10/15/15
Omega Temperature	MDSi8	146873	07/09/15	07/09/16	10/15/15
Newport Thermohygrometer	iTHX-M	146382	07/09/15	07/09/16	10/15/15

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

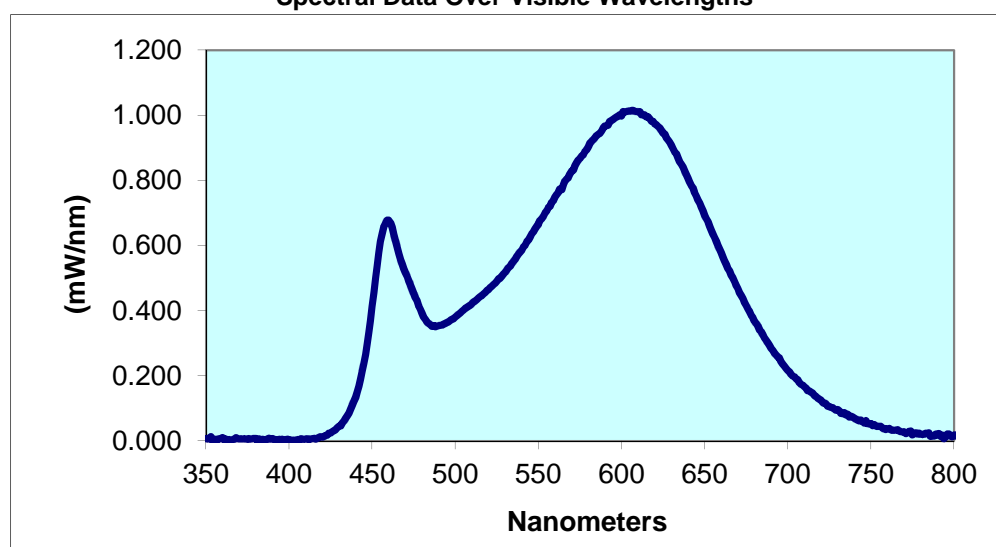
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH10082015032735-9	Up	120.0	22.40	2.583	0.961	23.98	57.42	22.23

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')
3147	85.9	30.8	0.003	0.423	0.393	0.246	0.515

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.007	440	0.134	530	0.518	620	0.974	710	0.166
355	0.002	445	0.236	535	0.551	625	0.946	715	0.146
360	0.010	450	0.413	540	0.586	630	0.908	720	0.125
365	0.003	455	0.613	545	0.626	635	0.857	725	0.106
370	0.006	460	0.678	550	0.667	640	0.807	730	0.096
375	0.005	465	0.597	555	0.707	645	0.752	735	0.079
380	0.007	470	0.517	560	0.749	650	0.693	740	0.070
385	0.002	475	0.453	565	0.788	655	0.635	745	0.059
390	0.007	480	0.392	570	0.829	660	0.578	750	0.053
395	0.003	485	0.357	575	0.868	665	0.522	755	0.044
400	0.003	490	0.354	580	0.904	670	0.468	760	0.037
405	0.004	495	0.364	585	0.938	675	0.415	765	0.033
410	0.006	500	0.381	590	0.968	680	0.368	770	0.027
415	0.008	505	0.402	595	0.988	685	0.327	775	0.019
420	0.012	510	0.422	600	0.998	690	0.284	780	0.021
425	0.024	515	0.443	605	1.012	695	0.255		
430	0.045	520	0.465	610	1.011	700	0.216		
435	0.078	525	0.491	615	0.995	705	0.191		

Spectral Data Over Visible Wavelengths



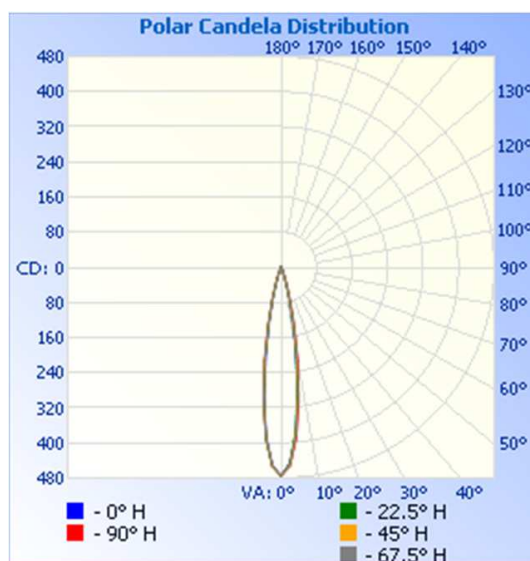
RESULTS OF TEST (cont'd)

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)
AH10082015032735-9	Up	120.0	29.71	2.584	0.725	60.00	23.22

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	475	475	475	475	475
5	380	374	381	385	391
10	188	189	198	209	216
15	62	63	69	77	81
20	16	17	19	22	24
25	6	6	6	7	7
30	2	3	3	3	3
35	2	2	2	2	2
40	1	2	2	2	2
45	1	1	1	1	1
50	1	1	1	1	1
55	1	1	1	1	1
60	0	1	1	1	1
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

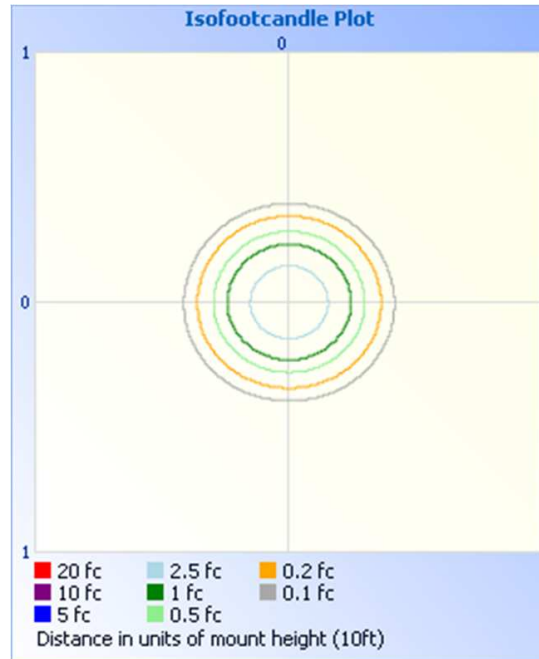
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



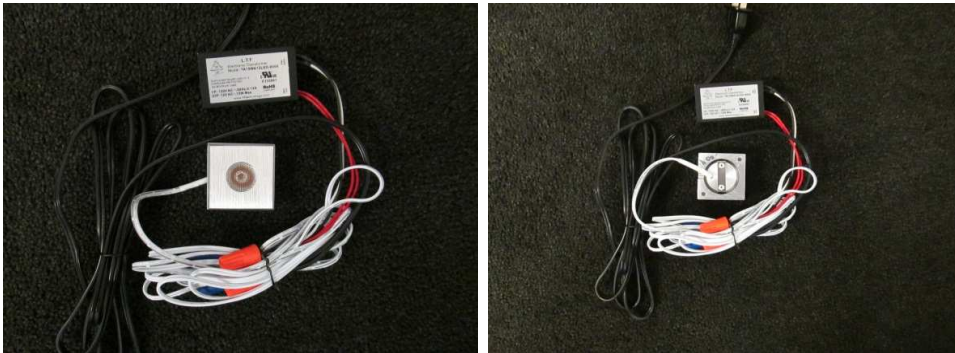
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	56.1	93.5
0-40	57.3	95.6
0-60	59.1	98.6
60-90	0.8	1.4
0-90	60.0	100.0
90-180	0.0	0.0
0-180	60.0	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	30.5	50.8
10-20	22.0	36.6
20-30	3.6	6.0
30-40	1.3	2.1
40-50	1.1	1.8
50-60	0.7	1.2
60-70	0.4	0.7
70-80	0.3	0.4
80-90	0.2	0.3

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:



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Lighting Division

Attachment: None

Report Reviewed By:



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Engineer
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