



REPORT

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

Project No. G101299898

Date: August 15, 2013

REPORT NO. 101299898CHI-002

TEST OF ONE 13" WHITE UNILUME LED UNDER CABINET LUMINAIRE

MODEL NO. 700UCF1392W-LED

RENDERED TO

GENERATION BRANDS, LLC
7401 NORTH HAMLIN AVENUE
SKOKIE, IL 60076

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 500472787.

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 700UCF1392W-LED. The sample was received by Intertek on August 8, 2013, in undamaged condition and one sample was tested as received. The sample designation was CHI08082013012912.

DATE OF TESTS: August 12, 2013



SUMMARY

Model No.:	700UCF1392W-LED
Description:	13" White Unilume LED Under Cabinet Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	363.4	360.2
Total Power (W)	7.960	7.967
Luminaire Efficacy (LPW)	45.65	45.21

Criteria	Result
Power Factor	0.933
Current ATHD %	26.14
Correlated Color Temperature (CCT - K)	2681
Color Rendering Index (CRI - Ra)	89.6
Color Rendering Index (CRI - R9)	67.9
DUV	0.002
Chromaticity Coordinate (x)	0.458
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.264
Chromaticity Coordinate (v')	0.525

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU
3 Meter Sphere	SPR600	CHI0088	VBU	VBU
Elgar AC Power Supply	CW1251M	146112	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
Newport Humidity Recorder	iTHX-SD	146382	09/14/12	09/14/13
Yokoga Power Meter	WT1600	146769	05/17/13	05/17/14
Omega Temperature Meter	MDSi8	146139	06/20/13	06/20/14
Yokogawa Power Meter	WT210	146919	12/21/12	12/21/13
Omega Thermometer	DPI8-C24	146920	11/15/12	11/15/13
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
Newport Hygrometer	iServer	146960	02/21/13	02/21/14
Elgar, AC Power Supply	CW1251P	146918	VBU	VBU
Cole-Parmer Triple Timer	94440-00	CHI0041	06/20/13	06/20/14



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

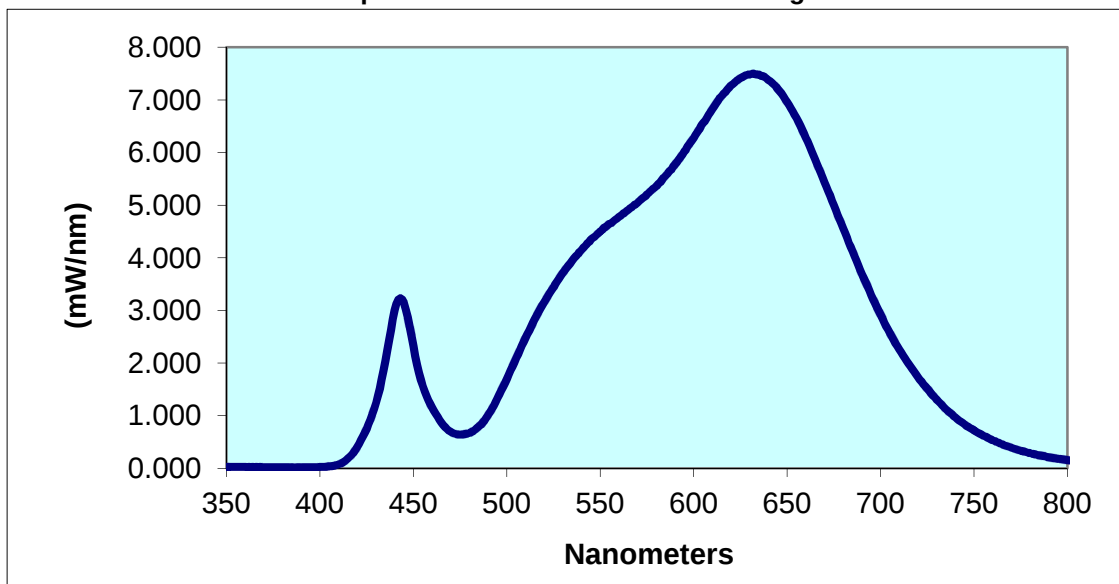
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
CHI08082013012912	UP	120.0	71.08	7.960	0.933	26.14	363.4	45.65

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')
2681	89.6	67.9	0.002	0.458	0.406	0.264	0.525

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.02	440	3.007	530	3.714	620	7.274	710	2.259
355	0.025	445	3.15	535	3.943	625	7.417	715	1.989
360	0.024	450	2.321	540	4.15	630	7.484	720	1.737
365	0.021	455	1.563	545	4.343	635	7.483	725	1.508
370	0.021	460	1.158	550	4.5	640	7.377	730	1.304
375	0.019	465	0.869	555	4.649	645	7.211	735	1.124
380	0.017	470	0.693	560	4.779	650	6.957	740	0.966
385	0.017	475	0.64	565	4.911	655	6.655	745	0.832
390	0.016	480	0.673	570	5.046	660	6.276	750	0.719
395	0.02	485	0.793	575	5.208	665	5.87	755	0.618
400	0.023	490	1.01	580	5.363	670	5.437	760	0.531
405	0.035	495	1.325	585	5.559	675	4.992	765	0.457
410	0.073	500	1.702	590	5.774	680	4.558	770	0.391
415	0.185	505	2.092	595	6.017	685	4.122	775	0.333
420	0.405	510	2.478	600	6.276	690	3.696	780	0.286
425	0.749	515	2.829	605	6.561	695	3.289		
430	1.245	520	3.155	610	6.824	700	2.918		
435	2.036	525	3.439	615	7.077	705	2.567		

Spectral Data Over Visible Wavelengths



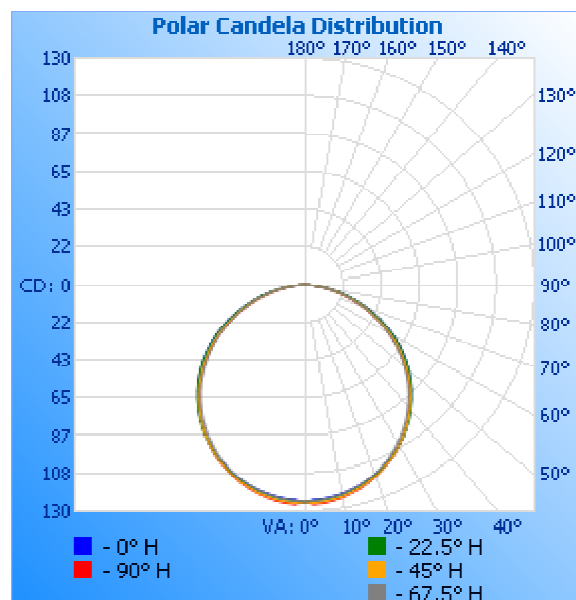
RESULTS OF TEST (cont'd)

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 (Lumens Per Watt)
CHI08082013012912	UP	120.0	71.16	7.967	0.933	360.2	45.21

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	125	125	125	125	125
5	123	124	125	124	126
10	122	122	124	122	124
15	120	120	121	119	121
20	116	117	117	116	118
25	112	112	112	111	113
30	106	107	107	105	107
35	100	101	100	98	100
40	93	94	93	91	93
45	85	86	84	83	84
50	77	77	76	74	75
55	68	68	66	64	65
60	58	58	56	54	55
65	47	47	45	44	44
70	36	36	34	33	33
75	25	25	23	23	22
80	14	14	14	13	13
85	5	6	6	5	4
90	0	0	0	0	0

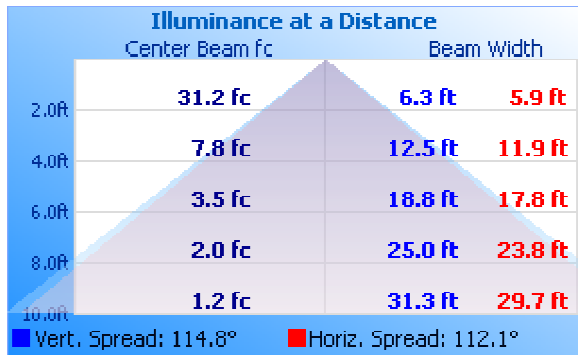


RESULTS OF TEST (cont'd)

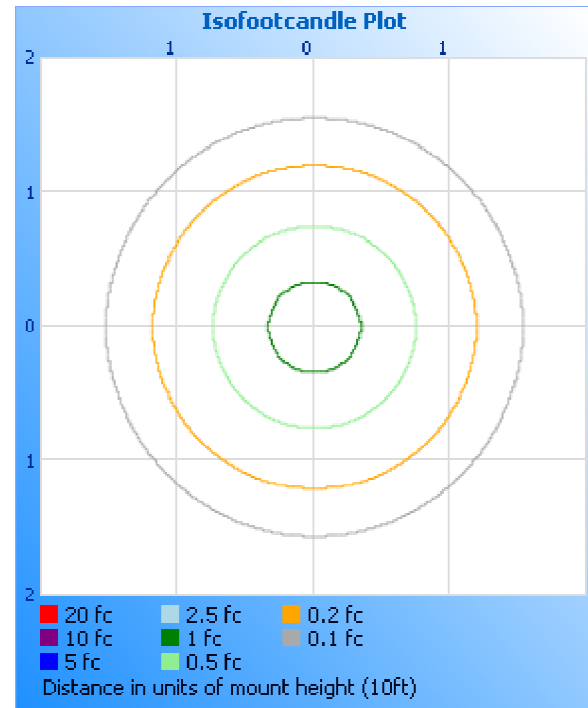
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	97.3	27.0
0-40	159.8	44.4
0-60	284.0	78.8
60-90	76.2	21.2
0-90	360.2	100.0
90-180	0.0	0.0
0-180	360.2	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	11.8	3.3
10-20	33.9	9.4
20-30	51.6	14.3
30-40	62.5	17.3
40-50	65.1	18.1
50-60	59.1	16.4
60-70	44.8	12.4
70-80	25.1	7.0
80-90	6.4	1.8

PICTURE (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:



Tim Quigley
Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Joe Schledorn
Project Engineer
Lighting Division