



REPORT

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

Project No. G101299898

Date: August 16, 2013

REPORT NO. 101299898CHI-003

TEST OF ONE 19" WHITE UNILUME LED UNDER CABINET LUMINAIRE

MODEL NO. 700UCF1992W-LED

RENDERED TO

GENERATION BRANDS, LLC
7400 LINDER AVENUE
SKOKIE, IL 60077

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 700UCF1992W-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 CHI08082013013116.

DATES OF TESTS: August 12, 2013 through August 14, 2013.

SUMMARY

Model No.:	700UCF1992W-LED
Description:	19" White Unilume LED Under Cabinet Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	498.2	500.3
Total Power (W)	10.07	10.09
Luminaire Efficacy (LPW)	49.47	49.58

Criteria	Result
Power Factor	0.949
Current ATHD %	25.72
Correlated Color Temperature (CCT - K)	2712
Color Rendering Index (CRI - Ra)	89.5
Color Rendering Index (CRI - R9)	68.0
DUV	0.001
Chromaticity Coordinate (x)	0.457
Chromaticity Coordinate (y)	0.408
Chromaticity Coordinate (u')	0.262
Chromaticity Coordinate (v')	0.526

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

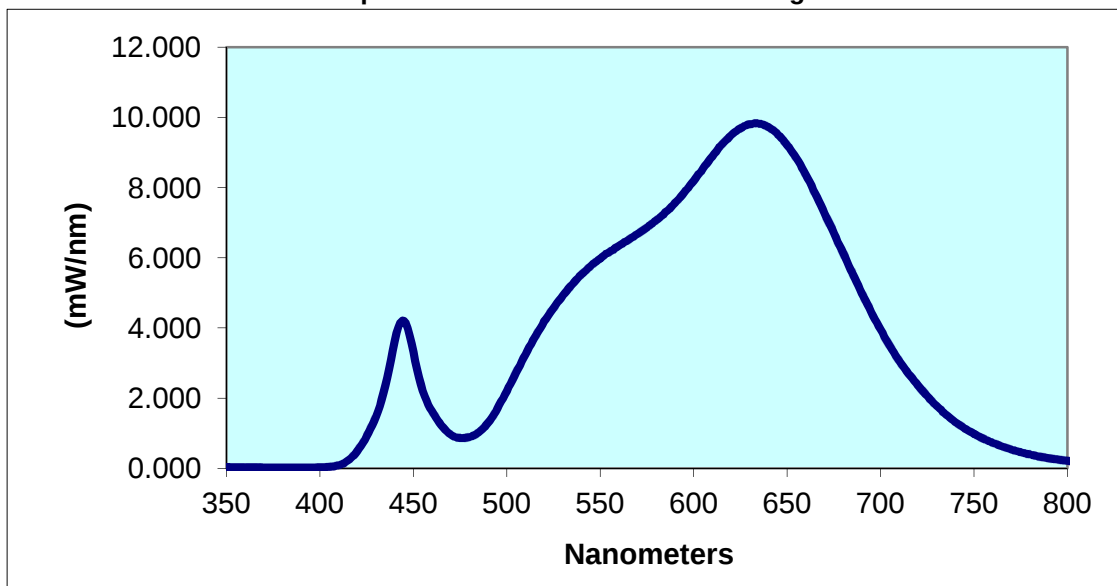
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
CHI08082013013116	UP	120.0	88.43	10.07	0.949	25.72	498.2	49.47

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')
2712	89.5	68.0	0.001	0.457	0.408	0.262	0.526

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.03	440	3.612	530	4.929	620	9.49	710	3.062
355	0.029	445	4.203	535	5.239	625	9.696	715	2.695
360	0.025	450	3.315	540	5.521	630	9.809	720	2.362
365	0.025	455	2.208	545	5.771	635	9.824	725	2.058
370	0.024	460	1.623	550	5.98	640	9.728	730	1.78
375	0.023	465	1.226	555	6.168	645	9.516	735	1.53
380	0.022	470	0.956	560	6.346	650	9.212	740	1.318
385	0.017	475	0.86	565	6.511	655	8.836	745	1.136
390	0.021	480	0.889	570	6.685	660	8.37	750	0.98
395	0.022	485	1.024	575	6.861	665	7.842	755	0.843
400	0.026	490	1.295	580	7.072	670	7.272	760	0.726
405	0.041	495	1.704	585	7.307	675	6.698	765	0.622
410	0.087	500	2.197	590	7.569	680	6.131	770	0.533
415	0.217	505	2.724	595	7.856	685	5.557	775	0.455
420	0.482	510	3.245	600	8.191	690	4.987	780	0.39
425	0.906	515	3.738	605	8.548	695	4.456		
430	1.475	520	4.188	610	8.89	700	3.951		
435	2.358	525	4.568	615	9.228	705	3.483		

Spectral Data Over Visible Wavelengths



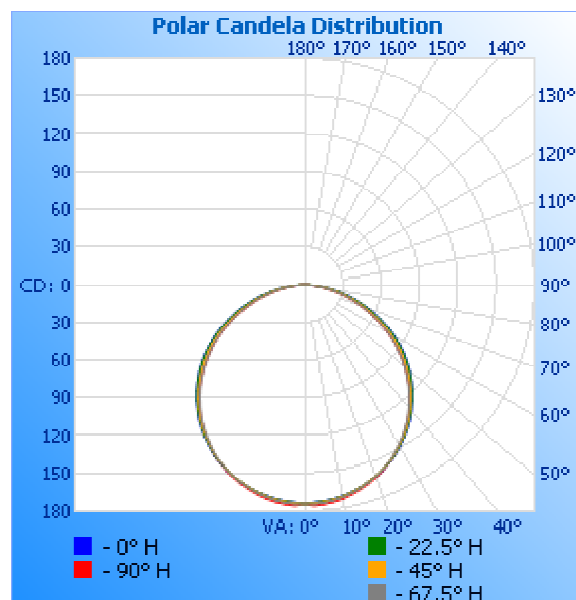
RESULTS OF TEST (cont'd)

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)
CHI08082013013116	UP	120.0	88.63	10.09	0.949	500.3	49.58

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	174	174	174	174	174
5	173	173	173	174	175
10	171	171	171	172	173
15	167	167	168	168	169
20	163	162	162	162	164
25	156	156	156	156	156
30	149	149	148	147	148
35	140	140	139	138	139
40	130	130	129	127	128
45	119	119	117	115	116
50	108	107	105	102	103
55	95	94	92	89	89
60	81	80	77	75	75
65	66	66	63	60	60
70	51	50	48	45	45
75	35	35	32	31	30
80	20	20	18	18	17
85	7	8	8	6	6
90	0	0	0	0	0

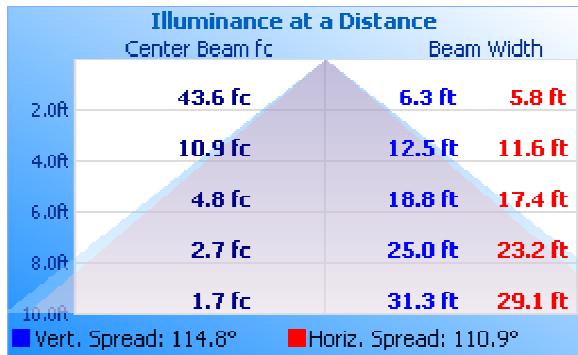


RESULTS OF TEST (cont'd)

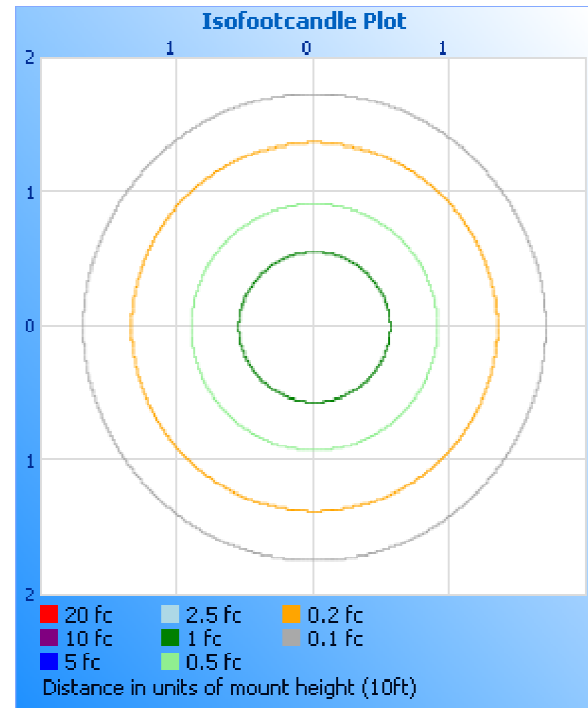
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	135.7	27.1
0-40	222.7	44.5
0-60	395.0	78.9
60-90	105.4	21.1
0-90	500.3	100.0
90-180	0.0	0.0
0-180	500.3	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	16.5	3.3
10-20	47.3	9.5
20-30	71.9	14.4
30-40	86.9	17.4
40-50	90.4	18.1
50-60	81.9	16.4
60-70	62.1	12.4
70-80	34.6	6.9
80-90	8.7	1.7

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