



REPORT

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

Project No. G101299898

Date: August 15, 2013

REPORT NO. 101299898CHI-001

TEST OF ONE 7" WHITE UNILUME LED UNDER CABINET LUMINAIRE

MODEL NO. 700UCF0792W-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 700UCF0792W-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 CHI08082013013018.

DATES OF TESTS: August 12, 2013 through August 13, 2013.

SUMMARY

Model No.:	700UCF0792W-LED
Description:	7" White Unilume LED Under Cabinet Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	176.4	175.9
Total Power (W)	4.803	4.819
Luminaire Efficacy (LPW)	36.73	36.5

Criteria	Result
Power Factor	0.993
Current ATHD %	9.66
Correlated Color Temperature (CCT - K)	2735
Color Rendering Index (CRI - Ra)	89.6
Color Rendering Index (CRI - R9)	68.7
DUV	0.001
Chromaticity Coordinate (x)	0.455
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.261
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

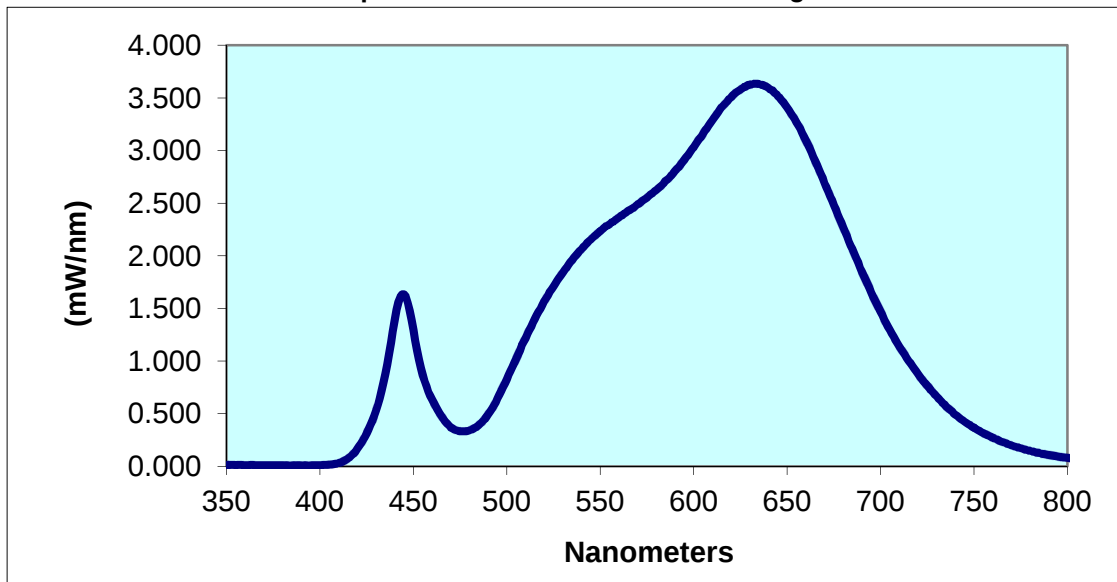
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
CHI08082013013018	UP	119.9	40.33	4.803	0.993	9.66	176.4	36.73

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')
2735	89.6	68.7	0.001	0.455	0.406	0.261	0.525

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.01	440	1.386	530	1.842	620	3.505	710	1.138
355	0.011	445	1.633	535	1.958	625	3.581	715	1.003
360	0.011	450	1.295	540	2.064	630	3.627	720	0.879
365	0.01	455	0.865	545	2.155	635	3.632	725	0.765
370	0.009	460	0.636	550	2.235	640	3.594	730	0.663
375	0.01	465	0.477	555	2.301	645	3.52	735	0.57
380	0.01	470	0.37	560	2.364	650	3.406	740	0.491
385	0.008	475	0.333	565	2.426	655	3.267	745	0.423
390	0.008	480	0.341	570	2.488	660	3.097	750	0.366
395	0.008	485	0.39	575	2.551	665	2.901	755	0.315
400	0.011	490	0.491	580	2.625	670	2.692	760	0.271
405	0.015	495	0.643	585	2.715	675	2.481	765	0.233
410	0.03	500	0.827	590	2.806	680	2.27	770	0.2
415	0.073	505	1.023	595	2.911	685	2.061	775	0.171
420	0.164	510	1.215	600	3.032	690	1.85	780	0.147
425	0.314	515	1.399	605	3.161	695	1.651		
430	0.529	520	1.566	610	3.288	700	1.467		
435	0.876	525	1.711	615	3.413	705	1.294		

Spectral Data Over Visible Wavelengths



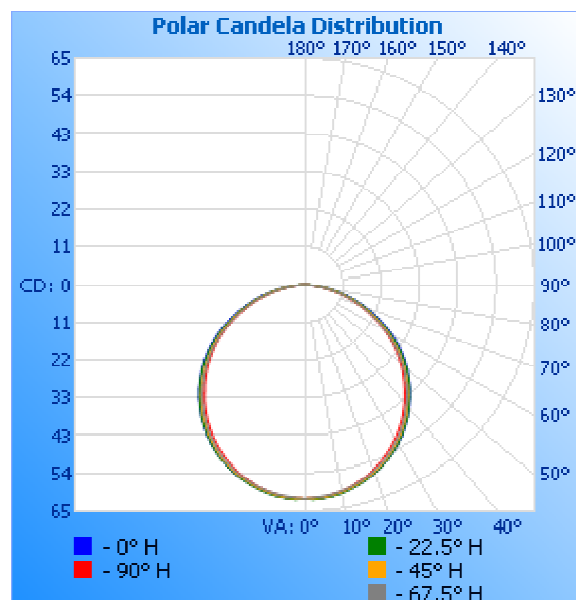
RESULTS OF TEST (cont'd)

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)
CHI08082013013018	UP	120.1	40.44	4.819	0.993	175.9	36.5

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	62	62	62	62	62
5	61	62	61	61	61
10	61	61	60	60	60
15	59	60	59	59	59
20	58	58	57	57	57
25	55	56	55	55	54
30	53	53	52	52	51
35	50	50	49	48	48
40	46	46	45	45	44
45	42	42	41	41	40
50	38	38	37	36	36
55	33	33	32	32	31
60	28	28	27	26	26
65	23	23	22	21	21
70	18	17	17	16	16
75	12	12	11	11	11
80	7	7	6	6	6
85	2	3	2	2	2
90	0	0	0	0	0

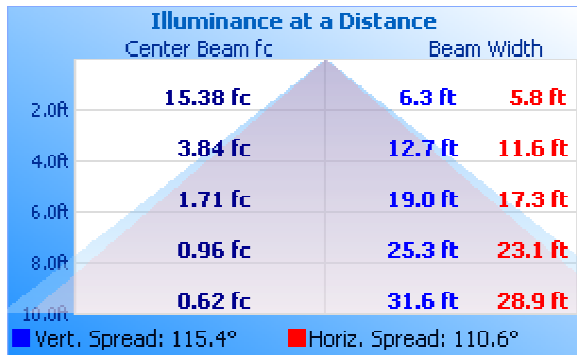


RESULTS OF TEST (cont'd)

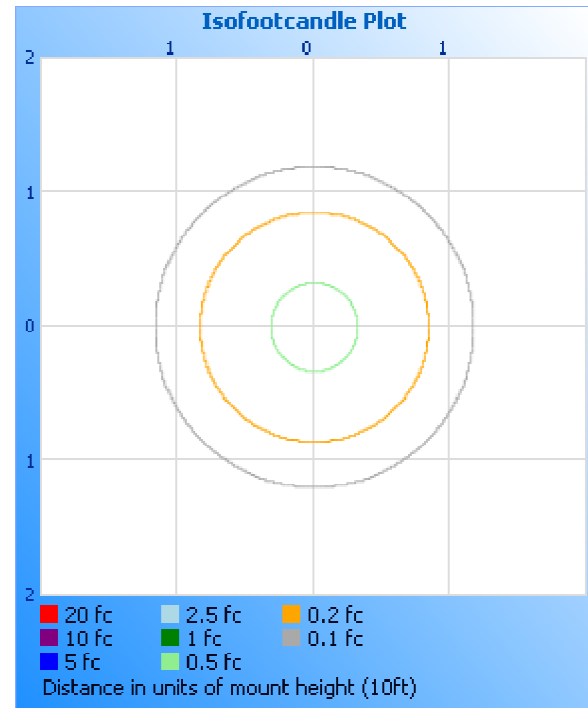
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	47.9	27.2
0-40	78.5	44.5
0-60	139.0	78.9
60-90	36.9	20.9
0-90	175.9	100.0
90-180	0.0	0.0
0-180	175.9	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	5.8	3.3
10-20	16.7	9.5
20-30	25.3	14.4
30-40	30.6	17.4
40-50	31.8	18.1
50-60	28.8	16.4
60-70	21.7	12.4
70-80	12.1	6.9
80-90	3.0	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