



REPORT

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

Project No. G101299898

Date: August 16, 2013

REPORT NO. 101299898CHI-004

TEST OF ONE 30" WHITE UNILUME LED UNDER CABINET LUMINAIRE

MODEL NO. 700UCF3092W-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 700UCF3092W-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 CHI08082013013252.

DATES OF TESTS: August 13, 2013 through August 14, 2013.



SUMMARY

Model No.:	700UCF3092W-LED
Description:	30" White Unilume LED Under Cabinet Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	912.3	891.8
Total Power (W)	18.32	18.35
Luminaire Efficacy (LPW)	49.8	48.6

Criteria	Result
Power Factor	0.974
Current ATHD %	21.38
Correlated Color Temperature (CCT - K)	2723
Color Rendering Index (CRI - Ra)	89.7
Color Rendering Index (CRI - R9)	67.2
DUV	0.003
Chromaticity Coordinate (x)	0.453
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.262
Chromaticity Coordinate (v')	0.522

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

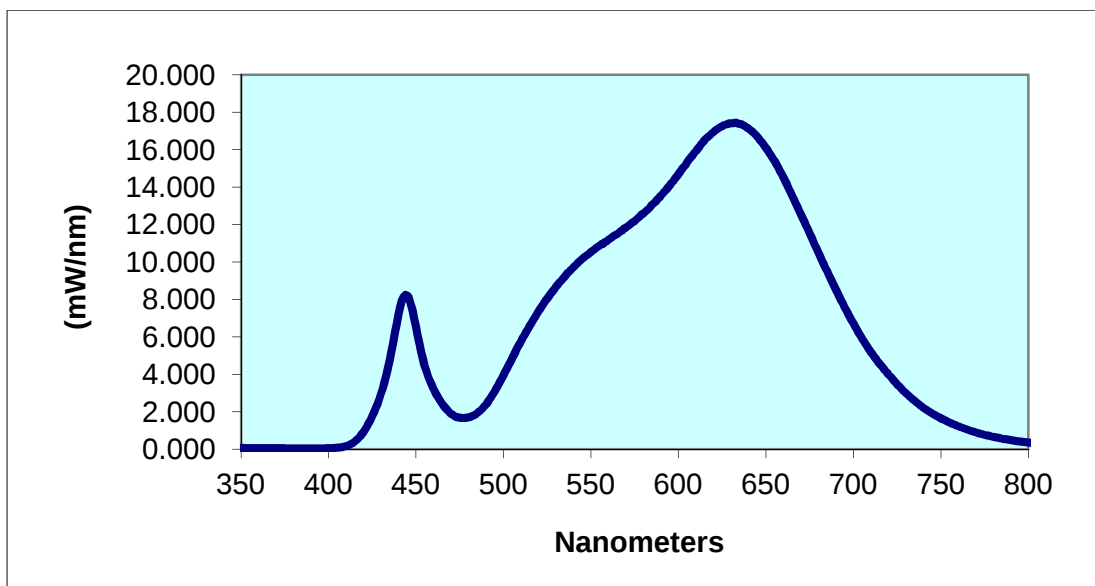
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
CHI08082013013252	UP	120.0	156.7	18.32	0.974	21.38	912.3	49.8

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')
2723	89.7	67.2	0.003	0.453	0.401	0.262	0.522

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.06	440	7.196	530	8.669	620	16.94	710	5.195
355	0.061	445	8.221	535	9.216	625	17.27	715	4.561
360	0.059	450	6.54	540	9.716	630	17.42	720	3.997
365	0.059	455	4.443	545	10.16	635	17.38	725	3.467
370	0.051	460	3.247	550	10.53	640	17.14	730	2.999
375	0.049	465	2.425	555	10.88	645	16.7	735	2.581
380	0.043	470	1.886	560	11.19	650	16.1	740	2.219
385	0.037	475	1.675	565	11.51	655	15.39	745	1.909
390	0.041	480	1.699	570	11.85	660	14.52	750	1.645
395	0.043	485	1.925	575	12.19	665	13.55	755	1.418
400	0.051	490	2.388	580	12.6	670	12.55	760	1.219
405	0.077	495	3.092	585	13.07	675	11.53	765	1.049
410	0.158	500	3.942	590	13.56	680	10.52	770	0.896
415	0.402	505	4.851	595	14.09	685	9.518	775	0.766
420	0.919	510	5.746	600	14.7	690	8.519	780	0.654
425	1.772	515	6.593	605	15.34	695	7.579		
430	2.949	520	7.372	610	15.93	700	6.725		
435	4.756	525	8.04	615	16.52	705	5.907		

Spectral Data Over Visible Wavelengths



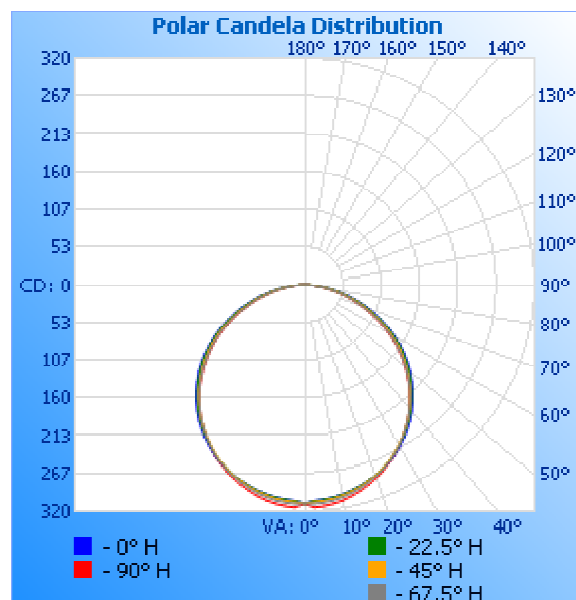
RESULTS OF TEST (cont'd)

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)
CHI08082013013252	Select One	120.1	156.9	18.35	0.974	891.8	48.6

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	309	309	309	309	309
5	305	305	307	309	314
10	302	302	303	305	309
15	296	296	297	298	302
20	288	287	288	289	291
25	277	276	276	277	279
30	265	263	262	263	264
35	250	248	246	246	246
40	233	230	228	227	227
45	214	211	208	207	206
50	192	190	186	184	184
55	169	167	163	160	160
60	144	142	138	136	134
65	118	116	112	109	108
70	91	89	85	82	81
75	64	62	58	56	55
80	36	36	33	32	31
85	13	15	14	12	11
90	0	0	0	0	0

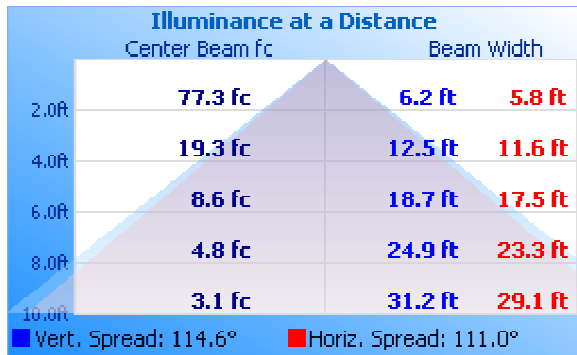


RESULTS OF TEST (cont'd)

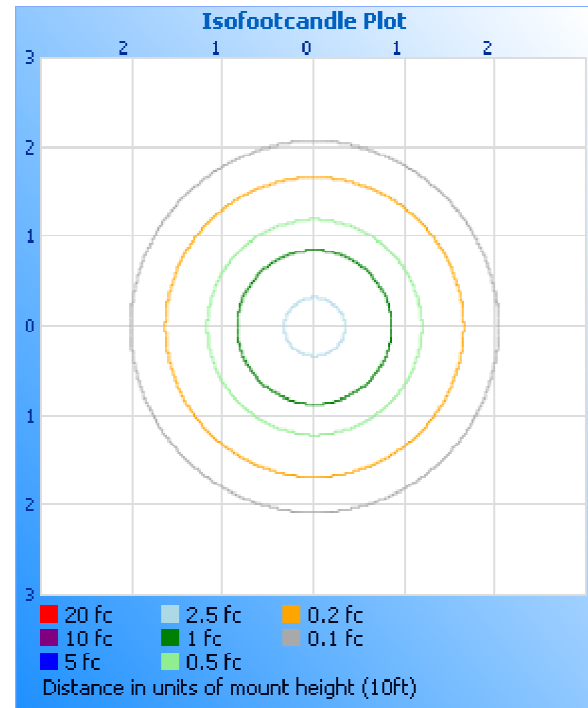
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	240.7	27.0
0-40	395.1	44.3
0-60	702.5	78.8
60-90	189.3	21.2
0-90	891.8	100.0
90-180	0.0	0.0
0-180	891.8	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	29.2	3.3
10-20	83.9	9.4
20-30	127.6	14.3
30-40	154.4	17.3
40-50	161.1	18.1
50-60	146.3	16.4
60-70	111.3	12.5
70-80	62.2	7.0
80-90	15.8	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:

Report Reviewed By:



Tim Quigley
Engineer
Lighting Division



Joe Schledorn
Project Engineer
Lighting Division

Attachment: None