



REPORT

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

Project No. G103017649

Date: January 27, 2018

REPORT NO. 103017649CHI-055

TEST OF ONE LED WALL SCONCE

MODEL NO. 700OWASHL93012CHUNV
LED MODEL NO. (CITIZEN) CLU038-1206C4-303H5K2
DRIVER MODEL NO. LTF DS8W200C2040UDMB1

RENDERED TO

GENERATION BRANDS
7400 LINDER AVE.
SKOKIE, IL, 60077

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00779063-2.

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 700OWASHL93012CHUNV. The sample was received by Intertek on January 22, 2018, in undamaged condition and one sample was tested as received. The sample designation was AH01222018114900-055.

DATES OF TESTS: January 25, 2018 through January 27, 2018.

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SUMMARY

Model No.: 700OWASHL93012CHUNV
Description: LED Wall Sconce

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	618.8	590.8
Total Power (W)	8.159	8.180
Luminaire Efficacy (LPW)	75.84	72.22

Criteria	Result
Power Factor	0.961
Current ATHD %	13.93
Correlated Color Temperature (CCT - K)	3144
Color Rendering Index (CRI - Ra)	91.1
Color Rendering Index (CRI - R9)	57.9
DUV	0.003
Chromaticity Coordinate (x)	0.431
Chromaticity Coordinate (y)	0.409
Chromaticity Coordinate (u')	0.244
Chromaticity Coordinate (v')	0.522
BUG Rating	B0-U1-G0
IES Classification	Type VS
Longitudinal Classification	Very Short

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/10/17	07/10/18	01/27/18
Omega Newport Thermometer	DPI8-C24	146920	10/04/17	10/04/18	01/27/18
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV	01/27/18
Newport Thermohygrometer	iServer	146382	03/22/17	03/22/18	01/27/18
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV	01/27/18
Labsphere Spectroradiometer	CDS1100	CHI0091	VBV	VBV	01/25/18
3 Meter Sphere	SPR600	CHI0088	VBV	VBV	01/25/18
Elgar AC Power Supply	CW1251	146112	VBV	VBV	01/25/18
Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV	01/25/18
Newport Humidity Recorder	iTHX-SD	146961	07/14/17	07/14/18	01/25/18
Yokogawa Power Meter	WT1600	146768	10/03/17	10/03/18	01/25/18
Extech K Temperature Meter	SD200	CHI0207	04/05/17	04/05/18	01/25/18



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.

BUG Ratings (Backlight, Uplight, Glare) – for Outdoor Fixtures Only

Zonal Lumens were calculated and grouped using the formula in IESNA TM-15-11 for each zone as defined in the BUG addendum. The maximum lumen rating in each zone was compared against the BUG zonal requirements of Energy Star. Photometric Toolbox software was used to calculate results.

RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

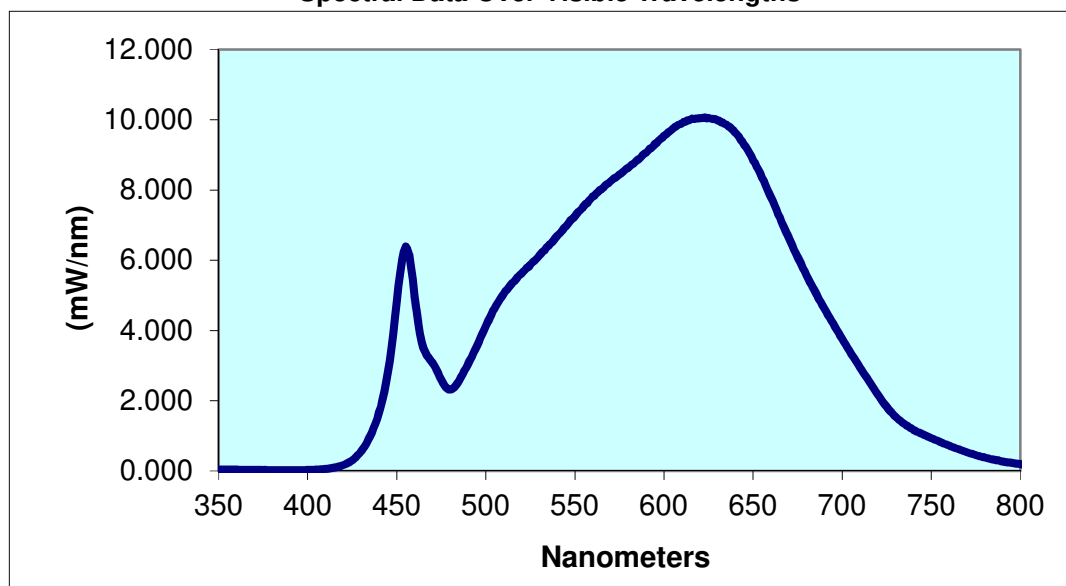
Intertek Sample No.	Base Orientation	Input Voltage {VAC}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01222018114900-055	UP	120.0	70.78	8.159	0.961	13.93	618.8	75.84

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')
3144	91.1	57.9	0.003	0.431	0.409	0.244	0.522

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.040	440	1.662	530	6.132	620	10.05	710	2.954
355	0.040	445	2.810	535	6.401	625	10.06	715	2.565
360	0.039	450	4.831	540	6.690	630	9.980	720	2.180
365	0.038	455	6.397	545	6.966	635	9.863	725	1.826
370	0.030	460	5.008	550	7.259	640	9.630	730	1.549
375	0.029	465	3.492	555	7.539	645	9.295	735	1.339
380	0.027	470	3.089	560	7.815	650	8.857	740	1.177
385	0.026	475	2.606	565	8.024	655	8.355	745	1.053
390	0.026	480	2.321	570	8.249	660	7.795	750	0.939
395	0.027	485	2.580	575	8.448	665	7.221	755	0.830
400	0.031	490	3.046	580	8.632	670	6.637	760	0.726
405	0.040	495	3.553	585	8.851	675	6.103	765	0.624
410	0.058	500	4.125	590	9.060	680	5.575	770	0.533
415	0.096	505	4.628	595	9.318	685	5.090	775	0.454
420	0.172	510	5.044	600	9.544	690	4.628	780	0.386
425	0.310	515	5.360	605	9.742	695	4.196		
430	0.555	520	5.616	610	9.902	700	3.759		
435	0.981	525	5.876	615	10.01	705	3.355		

Spectral Data Over Visible Wavelengths



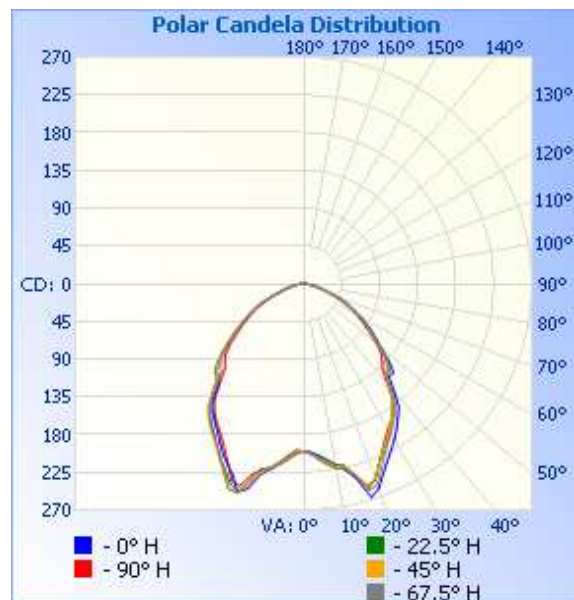
RESULTS OF TEST (cont'd)

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)
AH01222018114900-055	UP	120.0	71.03	8.180	0.960	590.8	72.22

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	25	45	67.5	90
0	200	200	200	200	200
5	206	203	203	203	203
10	219	207	209	211	210
15	240	213	215	217	217
20	260	220	222	224	223
25	234	222	223	225	226
30	215	238	235	237	236
35	195	256	254	258	252
40	166	247	248	255	249
45	151	233	233	240	233
50	122	222	221	227	220
55	98	212	211	215	209
60	77	204	203	206	200
65	58	194	193	198	193
70	37	184	184	189	184
75	21	174	173	178	173
80	12	157	157	160	154
85	4	146	145	144	138
90	0	145	142	140	132
95	1	133	133	132	125
100	1	117	118	119	114
105	2	105	105	106	102
110	1	94	94	94	90
115	1	84	83	83	80
120	2	74	73	73	70
125	2	63	63	64	61
130	1	54	54	54	52
135	0	44	43	44	42
140	0	33	33	34	33
145	0	25	25	25	24
150	0	19	19	19	18
155	0	15	14	14	14
160	0	11	10	10	10
165	0	7	7	7	6
170	0	4	4	3	3
175	0	1	1	1	1
180	0	1	1	1	1

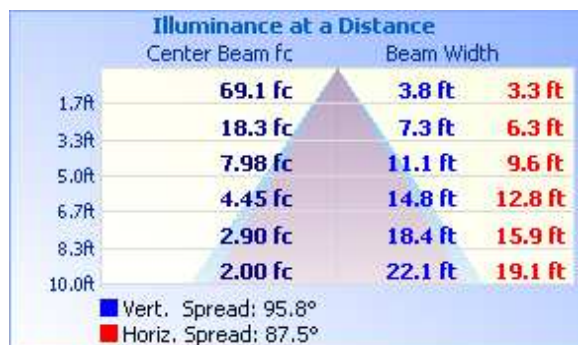


RESULTS OF TEST (cont'd)

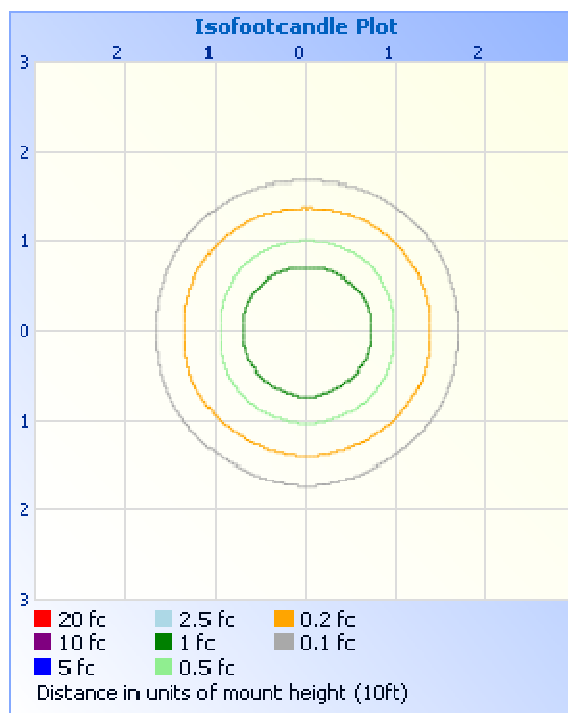
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	194.2	32.9
0-40	311.4	52.7
0-60	505.3	85.5
60-90	79.8	13.5
0-90	585.1	99.0
90-180	5.7	1.0
0-180	590.8	100.0

Luminaire Classification System (LCS)

LCS	Zone	Lumens	% Luminaire
FL	(0-30)	96.2	16.3
FM	(30-60)	153.8	26.0
FH	(60-80)	37.2	6.3
FVH	(80-90)	2.4	0.4
BL	(0-30)	97.9	16.6
BM	(30-60)	157.5	26.6
BH	(60-80)	37.8	6.4
BVH	(80-90)	2.4	0.4
UL	(90-100)	1.4	0.2
UH	(100-180)	4.3	0.7
Total		590.9	100.0

Zonal Lumens and Percentages at 25°C

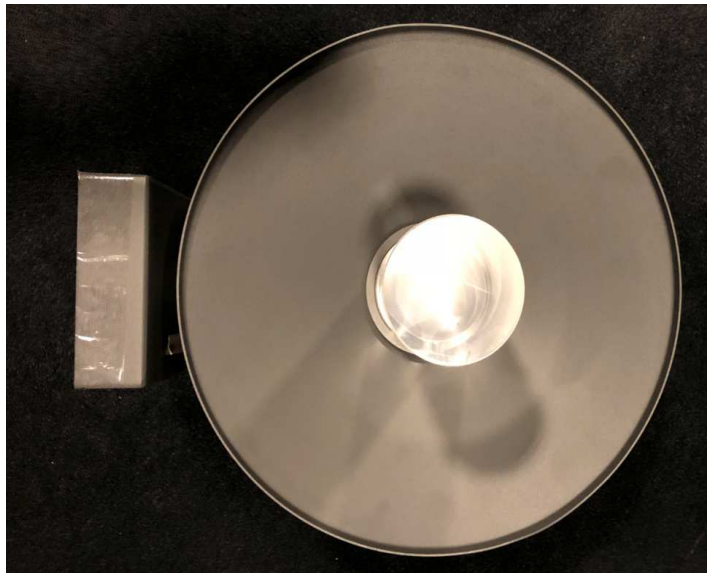
Zone	Lumens	% Luminaire
0-10	20.4	3.4
10-20	68.9	11.7
20-30	104.9	17.7
30-40	117.3	19.8
40-50	108.5	18.4
50-60	85.5	14.5
60-70	53.6	9.1
70-80	21.5	3.6
80-90	4.8	0.8
90-100	1.4	0.2
100-110	1.7	0.3
110-120	1.3	0.2
120-130	1.1	0.2
130-140	0.2	0.0

BUG Rating: B0-U1-G0

IES Classification: Type VS

Longitudinal Classification: Very Short

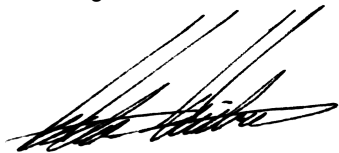
PICTURES (not to scale)



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.

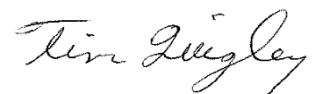
In Charge Of Tests:



Hector Huitron
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division