REPORT

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

Project No. G103017649 Date: January 28, 2018

REPORT NO. 103017649CHI-057

TEST OF ONE LED WALL SCONCE

MODEL NO. 700OWASHH93008CBUNV
LED MODEL NO. (CITIZEN) CLU038-1206C4-303H5K2
DRIVER MODEL NO. LTF DS18W440C2040LI3UD-0000

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 700OWASHH93008CBUNV. The sample was received by Intertek on January 22, 2018, in undamaged condition and one sample was tested as received. The sample designation was AH01222018114900-057.

DATES OF TESTS: January 25, 2018 through January 28, 2018.

SUMMARY

Model No.: 700OWASHH93008CBUNV
Description: LED Wall Sconce

	Result	
Criteria	Sphere	Goniometer
Total Lumen Output (Lumens)	1189	1164
Total Power (W)	18.13	18.08
Luminaire Efficacy (LPW)	65.58	64.38

Criteria	Result
Power Factor	0.959
Current ATHD %	15.31
Correlated Color Temperature (CCT - K)	3003
Color Rendering Index (CRI - Ra)	91.6
Color Rendering Index (CRI - R9)	58.8
DUV	0.001
Chromaticity Coordinate (x)	0.438
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.523
BUG Rating	B1-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	01/28/18
Omega Newport Thermometer	DPI8-C24	146920	10/04/17	10/04/18	01/28/18
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	01/28/18
Newport Thermohygrometer	iServer	146382	03/22/17	03/22/18	01/28/18
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	01/28/18
Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBU	VBU	01/25/18
Elgar AC Power Supply	CW1251M	146113	VBU	VBU	01/25/18
Sorenson DC Power Supply	XFR150-8	146847	VBU	VBU	01/25/18
Yokogawa Power Analyzer	WT1600	146767	04/05/17	04/05/18	01/25/18
Omega Temperature	MDSi8	146873	07/20/17	07/20/18	01/25/18
Newport Thermohygrometer	iTHX-M	146382	07/14/17	07/14/18	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

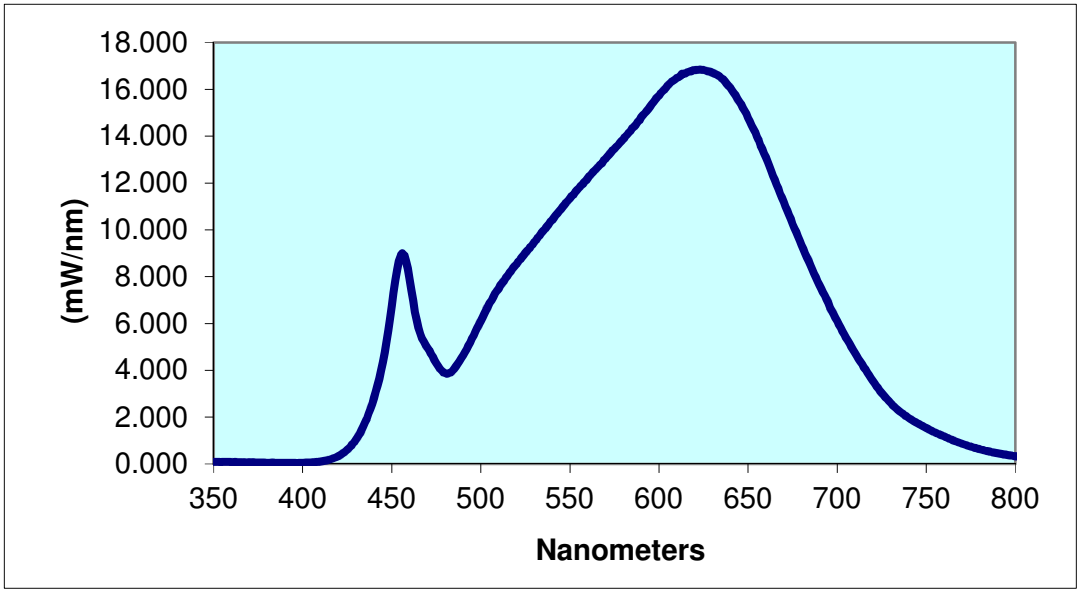
Intertek Sample No.	Base Orientation	Input Voltage {VAC}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01222018114900-057	UP	120.0	157.5	18.13	0.959	15.31	1189	65.58

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')
3003	91.6	58.8	0.001	0.438	0.407	0.250	0.523

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.091	440	2.810	530	9.480	620	16.81	710	4.747
355	0.087	445	4.343	535	9.955	625	16.83	715	4.129
360	0.079	450	6.755	540	10.41	630	16.72	720	3.557
365	0.079	455	8.914	545	10.89	635	16.48	725	3.033
370	0.074	460	7.921	550	11.36	640	16.06	730	2.601
375	0.068	465	5.819	555	11.78	645	15.50	735	2.258
380	0.052	470	4.968	560	12.21	650	14.78	740	1.973
385	0.051	475	4.308	565	12.62	655	13.98	745	1.741
390	0.046	480	3.872	570	13.04	660	13.10	750	1.538
395	0.048	485	4.065	575	13.46	665	12.13	755	1.346
400	0.051	490	4.641	580	13.89	670	11.19	760	1.181
405	0.067	495	5.349	585	14.34	675	10.27	765	1.014
410	0.102	500	6.110	590	14.81	680	9.354	770	0.868
415	0.184	505	6.868	595	15.26	685	8.491	775	0.742
420	0.334	510	7.489	600	15.73	690	7.645	780	0.634
425	0.611	515	8.052	605	16.17	695	6.889		
430	1.055	520	8.543	610	16.49	700	6.101		
435	1.766	525	9.022	615	16.68	705	5.396		

Spectral Data Over Visible Wavelengths



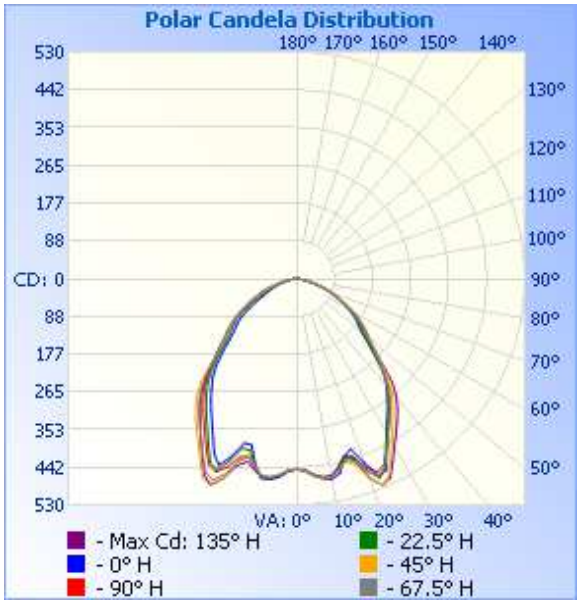
RESULTS OF TEST (cont'd)

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)
AH01222018114900-057	UP	120.0	157.7	18.08	0.956	1164	64.38

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	25	45	67.5	90
0	446	446	446	446	446
5	462	450	450	451	451
10	475	463	463	463	462
15	431	471	472	471	470
20	457	473	472	471	470
25	494	455	457	458	453
30	418	431	443	439	430
35	369	437	459	449	438
40	325	477	498	481	469
45	263	505	522	498	490
50	199	486	508	486	481
55	170	449	474	456	453
60	138	418	443	426	425
65	104	393	415	400	400
70	75	370	391	377	378
75	39	348	368	355	356
80	21	326	343	330	333
85	8	298	310	298	304
90	1	262	276	272	273
95	4	231	247	245	244
100	4	204	221	222	218
105	7	188	204	204	200
110	7	174	187	185	181
115	4	157	168	165	161
120	2	139	147	144	142
125	0	121	128	125	123
130	0	104	109	107	106
135	0	88	93	91	91
140	0	73	76	75	76
145	0	54	57	57	57
150	0	37	40	40	41
155	0	28	29	30	30
160	0	20	20	21	21
165	0	13	13	14	14
170	0	7	7	7	8
175	0	3	3	3	3
180	0	1	1	1	2

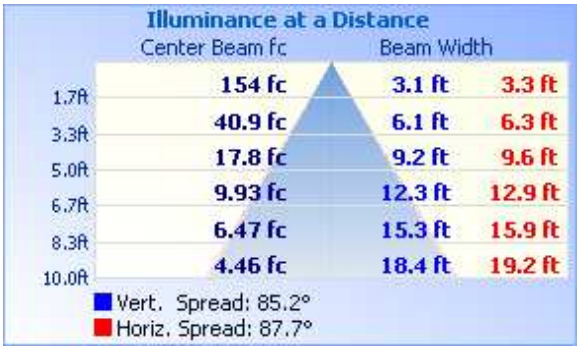


RESULTS OF TEST (cont'd)

Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



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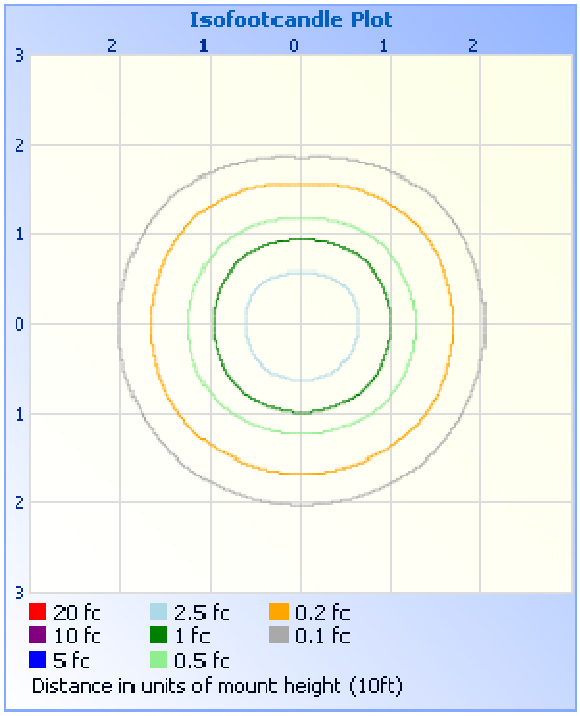

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	390.7	33.6
0-40	628.7	54.0
0-60	995.8	85.5
60-90	156.5	13.4
0-90	1152	99.0
90-180	12.1	1.0
0-180	1164	100.0

Luminaire Classification System (LCS)

LCS	Zone	Lumens	% Luminaire
FL	(0-30)	196.3	16.9
FM	(30-60)	302.8	26.0
FH	(60-80)	75.8	6.5
FVH	(80-90)	4.7	0.4
BL	(0-30)	194.5	16.7
BM	(30-60)	302.6	26.0
BH	(60-80)	71.6	6.1
BVH	(80-90)	4.5	0.4
UL	(90-100)	3.3	0.3
UH	(100-180)	8.9	0.8
Total		1165.0	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	44.4	3.8
10-20	127.0	10.9
20-30	219.3	18.8
30-40	237.9	20.4
40-50	208.5	17.9
50-60	158.7	13.6
60-70	102.7	8.8
70-80	44.6	3.8
80-90	9.2	0.8
90-100	3.3	0.3
100-110	5.0	0.4
110-120	3.5	0.3
120-130	0.4	0.0

BUG Rating: B1-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
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Report Reviewed By:

Timothy Quigley
Engineer
Lighting Division

Attachment: None