



REPORT

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

Project No. G103017649

Date: January 27, 2018

REPORT NO. 103017649CHI-058

TEST OF ONE LED WALL SCONCE

MODEL NO. 700OWASHH93016DBUNV
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 700OWASHH93016DBUNV. The sample was received by Intertek on January 22, 2018, in undamaged condition and one sample was tested as received. The sample designation was AH01222018114900-058.

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

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SUMMARY

Model No.: 700OWASHH93016DBUNV
Description: LED Wall Sconce

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	1406	1346
Total Power (W)	18.52	18.23
Luminaire Efficacy (LPW)	75.92	73.83

Criteria	Result
Power Factor	0.969
Current ATHD %	15.92
Correlated Color Temperature (CCT - K)	3055
Color Rendering Index (CRI - Ra)	92.3
Color Rendering Index (CRI - R9)	63.7
DUV	0.001
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.248
Chromaticity Coordinate (v')	0.522
BUG Rating	B1-U0-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	VBU	VBU	01/27/18
Newport Thermohygrometer	iServer	146382	03/22/17	03/22/18	01/27/18
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	01/27/18
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	01/25/18
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	01/25/18
Elgar AC Power Supply	CW1251	146112	VBU	VBU	01/25/18
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	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

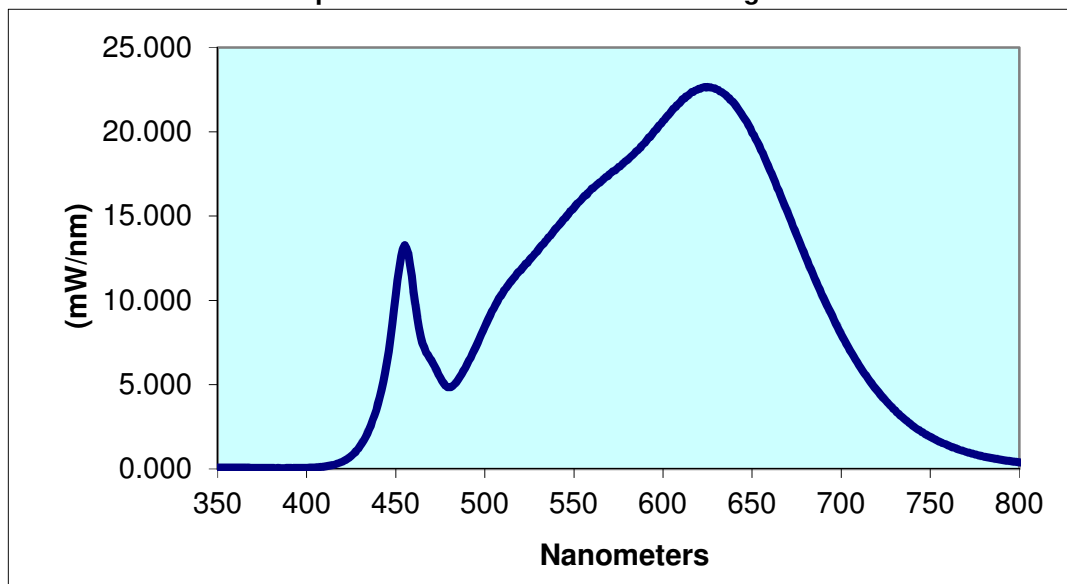
Intertek Sample No.	Base Orientation	Input Voltage {VAC}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01222018114900-058	UP	120.0	159.3	18.52	0.969	15.92	1406	75.92

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')
3055	92.3	63.7	0.001	0.435	0.407	0.248	0.522

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.089	440	3.864	530	12.99	620	22.55	710	6.171
355	0.090	445	6.325	535	13.63	625	22.67	715	5.383
360	0.091	450	10.37	540	14.28	630	22.52	720	4.682
365	0.083	455	13.28	545	14.88	635	22.21	725	4.058
370	0.076	460	10.56	550	15.50	640	21.67	730	3.505
375	0.071	465	7.459	555	16.07	645	20.91	735	3.011
380	0.064	470	6.445	560	16.62	650	19.97	740	2.584
385	0.061	475	5.422	565	17.03	655	18.91	745	2.217
390	0.062	480	4.854	570	17.49	660	17.73	750	1.907
395	0.065	485	5.308	575	17.91	665	16.50	755	1.632
400	0.075	490	6.206	580	18.33	670	15.19	760	1.408
405	0.098	495	7.253	585	18.83	675	13.91	765	1.194
410	0.147	500	8.448	590	19.36	680	12.60	770	1.020
415	0.249	505	9.519	595	20.02	685	11.35	775	0.873
420	0.434	510	10.44	600	20.65	690	10.16	780	0.741
425	0.770	515	11.18	605	21.25	695	9.091		
430	1.358	520	11.78	610	21.81	700	7.995		
435	2.333	525	12.39	615	22.25	705	7.043		

Spectral Data Over Visible Wavelengths



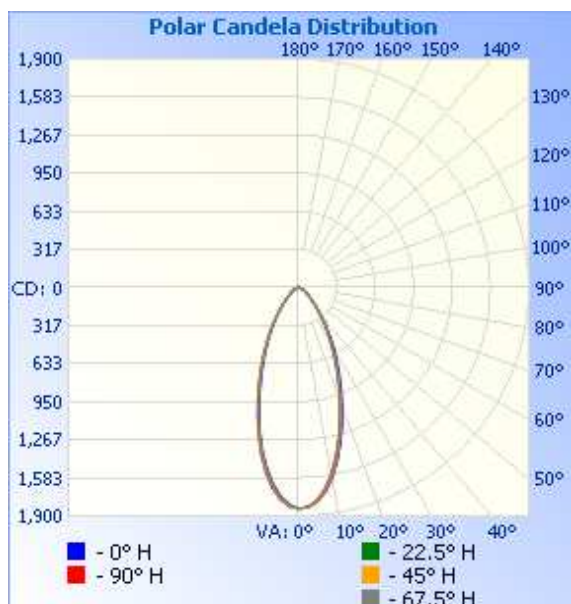
RESULTS OF TEST (cont'd)

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)
AH01222018114900-058	UP	120.0	156.7	18.23	0.970	1346	73.83

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	25	45	67.5	90
0	1838	1838	1838	1838	1838
5	1788	1832	1830	1827	1823
10	1605	1788	1783	1776	1768
15	1338	1707	1702	1691	1679
20	1055	1597	1592	1579	1563
25	798	1465	1457	1442	1426
30	588	1318	1308	1294	1278
35	406	1168	1157	1145	1130
40	270	1022	1012	1001	987
45	178	888	878	868	856
50	121	765	756	747	738
55	86	652	644	636	628
60	63	551	543	536	530
65	47	462	453	448	443
70	36	383	374	370	366
75	4	313	306	302	300
80	0	254	250	246	245
85	0	206	203	201	199
90	0	168	166	164	163
95	0	138	137	135	135
100	0	115	114	113	113
105	0	97	96	96	95
110	0	82	82	81	81
115	0	70	70	70	70
120	0	60	60	60	60
125	0	52	52	52	52
130	0	46	46	46	46
135	0	40	40	40	40
140	0	32	32	31	31
145	0	12	12	12	13
150	0	3	4	4	4
155	0	1	1	1	1

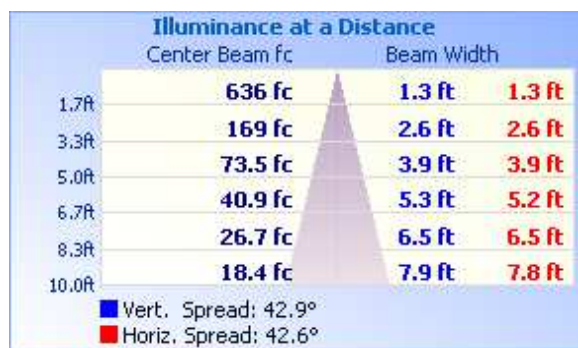


RESULTS OF TEST (cont'd)

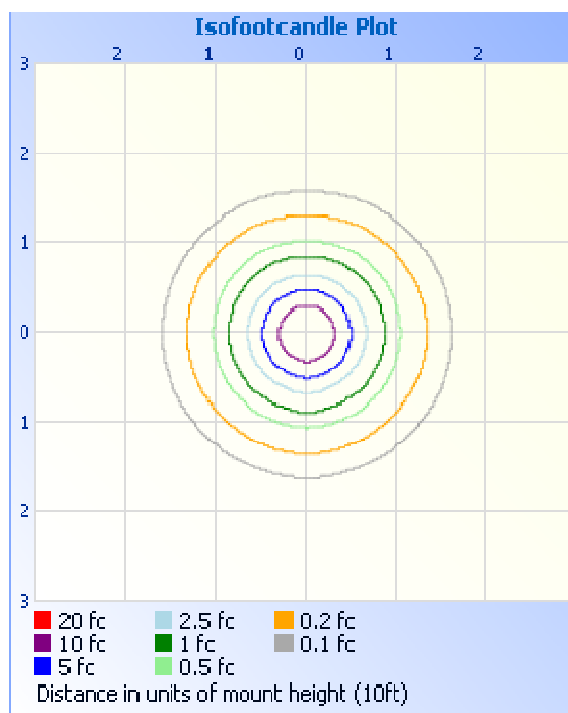
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	855.1	63.5
0-40	1088	80.9
0-60	1293	96.1
60-90	53.0	3.9
0-90	1346	100.0
90-180	0.0	0.0
0-180	1346	100.0

Luminaire Classification System (LCS)

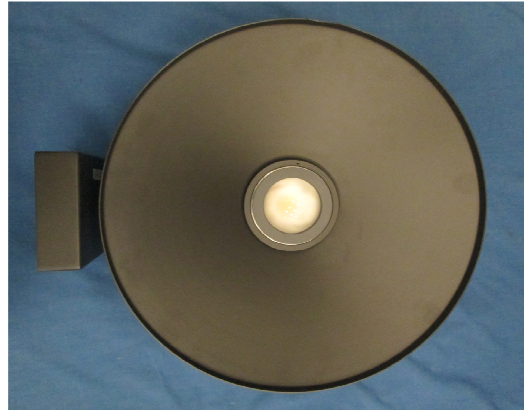
LCS	Zone	Lumens	% Luminaire
FL	(0-30)	437.0	32.4
FM	(30-60)	223.4	16.6
FH	(60-80)	27.2	2.0
FVH	(80-90)	0.0	0.0
BL	(0-30)	419.9	31.2
BM	(30-60)	214.6	15.9
BH	(60-80)	25.9	1.9
BVH	(80-90)	0.0	0.0
UL	(90-100)	0.0	0.0
UH	(100-180)	0.0	0.0
Total		1348.0	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	161.8	12.0
10-20	353.8	26.3
20-30	339.5	25.2
30-40	233.3	17.3
40-50	130.2	9.7
50-60	74.0	5.5
60-70	44.8	3.3
70-80	8.2	0.6
80-90	0.0	0.0

BUG Rating: B1-U0-G0
 IES Classification: Type VS
 Longitudinal Classification: Very Short

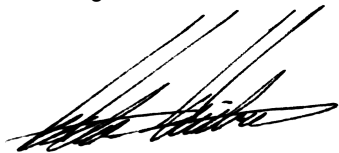
PICTURES (not to scale)



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