



REPORT

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

Project No. G102171228

Date: September 21, 2016

REPORT NO. 102171228CHI-060

TEST OF ONE LED WALL MOUNT

MODEL NO. 700OWTEG83012NCHDOUNV
LED MODEL NO. CITIZEN CLU028-1202C4-303M2K1
DRIVER MODEL NO. LTF DS20W350C3058LI2D010-0000

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 500606081.

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 700OWTEG83012NCHDOUNV. The sample was received by Intertek on September 16, 2016, in undamaged condition and one sample was tested as received. The sample designation was AH09162016092757-60.

DATES OF TESTS: September 20, 2016 through September 21, 2016.

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SUMMARY

Model No.: 700OWTEG83012NCHDOUNV
Description: LED Wall Mount

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	1212	1150
Total Power (W)	15.60	15.12
Luminaire Efficacy (LPW)	77.69	76.06

Criteria	Result
Power Factor	0.391
Current ATHD %	22.39
Correlated Color Temperature (CCT - K)	3070
Color Rendering Index (CRI - Ra)	84.5
Color Rendering Index (CRI - R9)	15.6
DUV	0.000
Chromaticity Coordinate (x)	0.432
Chromaticity Coordinate (y)	0.403
Chromaticity Coordinate (u')	0.248
Chromaticity Coordinate (v')	0.520
BUG Rating	B1-U0-G0
IES Classification	Type V
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	07/11/16	07/11/17	09/20/16
Omega Newport Thermometer	DPI8-C24	146920	10/09/15	10/09/16	09/20/16
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	09/20/16
Newport Thermohygrometer	iServer	146956	01/04/16	01/04/17	09/20/16
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	09/20/16
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	09/21/16
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	09/21/16
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	09/21/16
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	09/21/16
Newport Humidity Recorder	iTHX-SD	146382	06/27/16	06/27/17	09/21/16
Yokogawa Power Meter	WT1600	146768	01/14/16	01/14/17	09/21/16
Omega Temperature Meter	MDSi8	146139	03/21/16	03/21/17	09/21/16

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

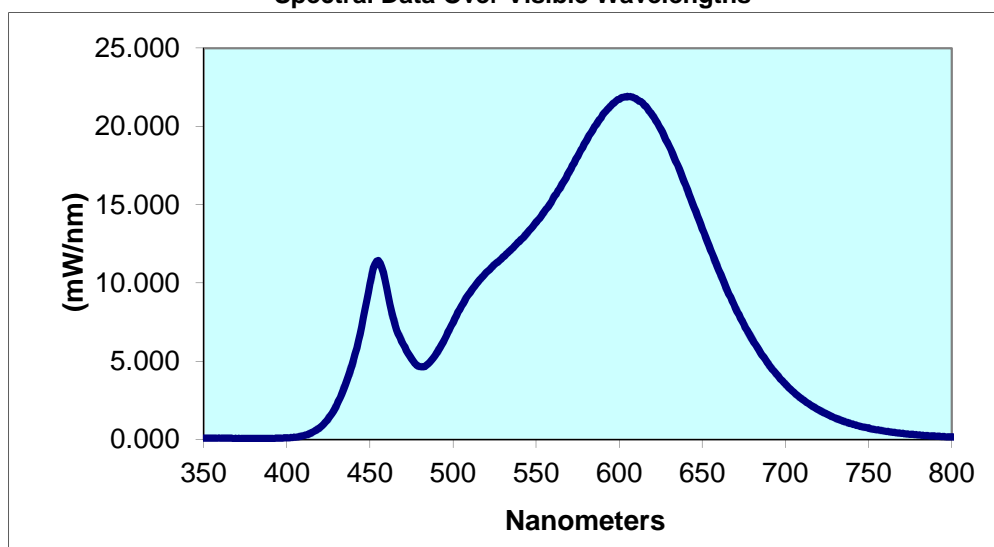
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH09162016092757-60	UP	120.0	332.6	15.60	0.391	22.39	1212	77.69

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')
3070	84.5	15.6	0.000	0.432	0.403	0.248	0.520

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.083	440	5.070	530	11.65	620	20.69	710	2.586
355	0.086	445	7.216	535	12.14	625	19.81	715	2.216
360	0.084	450	9.977	540	12.66	630	18.74	720	1.893
365	0.079	455	11.42	545	13.25	635	17.55	725	1.617
370	0.071	460	9.701	550	13.89	640	16.21	730	1.377
375	0.067	465	7.344	555	14.57	645	14.85	735	1.170
380	0.063	470	6.081	560	15.35	650	13.46	740	0.994
385	0.061	475	5.154	565	16.19	655	12.11	745	0.847
390	0.066	480	4.656	570	17.13	660	10.82	750	0.727
395	0.080	485	4.842	575	18.10	665	9.538	755	0.622
400	0.103	490	5.515	580	19.05	670	8.397	760	0.536
405	0.153	495	6.448	585	19.99	675	7.352	765	0.459
410	0.254	500	7.491	590	20.76	680	6.400	770	0.390
415	0.445	505	8.522	595	21.33	685	5.551	775	0.335
420	0.782	510	9.363	600	21.74	690	4.783	780	0.289
425	1.351	515	10.08	605	21.91	695	4.134		
430	2.209	520	10.67	610	21.78	700	3.535		
435	3.464	525	11.18	615	21.35	705	3.022		

Spectral Data Over Visible Wavelengths



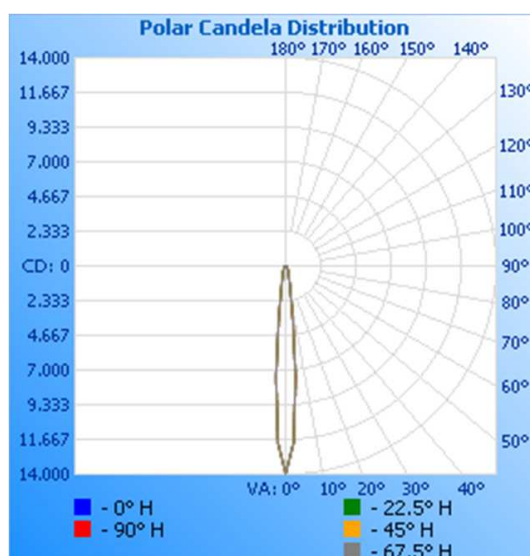
RESULTS OF TEST (cont'd)

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)
AH09162016092757-60	LINEAR	120.1	222.8	15.12	0.565	1150	76.06

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	13933	13933	13933	13933	13933
5	7479	7479	7479	7479	7479
10	1869	1869	1869	1869	1869
15	860	860	860	860	860
20	551	551	551	551	551
25	370	370	370	370	370
30	262	262	262	262	262
35	194	194	194	194	194
40	137	137	137	137	137
45	87	87	87	87	87
50	41	41	41	41	41
55	15	15	15	15	15
60	3	3	3	3	3
65	1	1	1	1	1
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

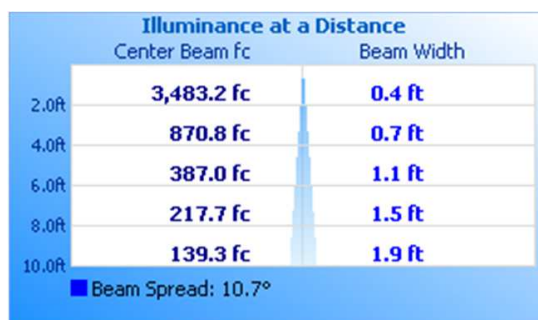


RESULTS OF TEST (cont'd)

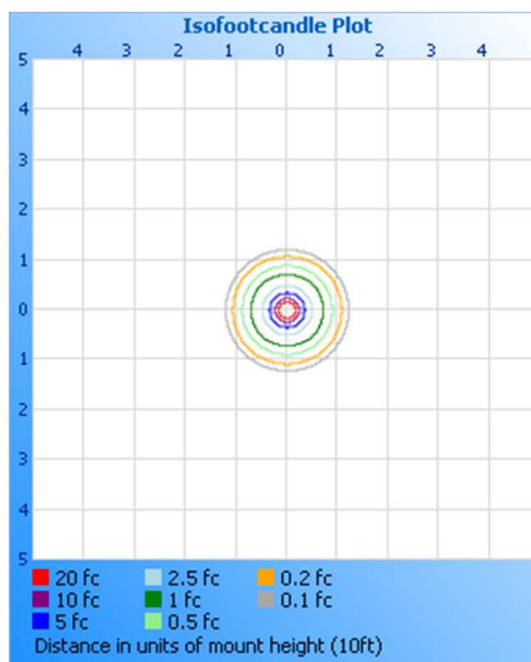
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	946.0	82.2
0-40	1068	92.8
0-60	1149	99.9
60-90	0.9	0.1
0-90	1150	100.0
90-180	0.0	0.0
0-180	1150	100.0

Luminaire Classification System (LCS)

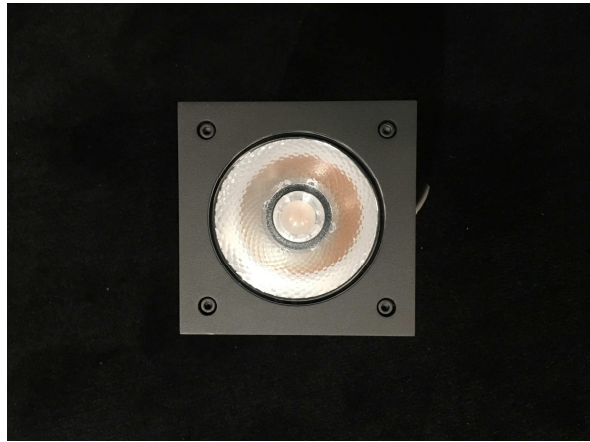
LCS	Zone	Lumens	% Luminaire
FL	(0-30)	483.1	41.3
FM	(30-60)	101.8	8.7
FH	(60-80)	0.4	0.0
FVH	(80-90)	0.0	0.0
BL	(0-30)	483.1	41.3
BM	(30-60)	101.8	8.7
BH	(60-80)	0.4	0.0
BVH	(80-90)	0.0	0.0
UL	(90-100)	0.0	0.0
UH	(100-180)	0.0	0.0
Total		1170.6	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	513.5	44.6
10-20	259.0	22.5
20-30	173.5	15.1
30-40	121.6	10.6
40-50	66.3	5.8
50-60	15.5	1.3
60-70	0.9	0.1
70-80	0.0	0.0
80-90	0.0	0.0

BUG Rating: B1-U0-G0
 IES Classification: Type V
 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.

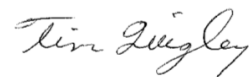
In Charge Of Tests:



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Lighting Division

Attachment: None

Report Reviewed By:



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