

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700OCTUR8401220HUNV2S

REPORT NUMBER

103643585CHI-087

ISSUE DATE

April 29, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT NO.: 103643585CHI-087

REPORT DATE: April 29, 2019

TEST REPORT

TEST OF ONE LED LIGHT COLUMN

MODEL NO. 700OCTUR8401220HUNV2S
LED MODEL NO. CITIZEN CLU038-1205C4-302M2M2-F1
DRIVER MODEL NO. YG LS25W-36-C0700-RD

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE, IL, 60077

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00912313.

STANDARDS USED

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
ANSI NEMA ANSLG C78.377: 2015: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE

The client submitted one production sample of model number 700OCTUR8401220HUNV2S. The sample was received by Intertek on April 16, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH04162019023032-087.

DATE OF TESTS

April 26, 2019

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SUMMARY

MODEL NO:	700OCTUR8401220HUNV2S
DESCRIPTION:	LED Light Column

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	2211.9	2187.5
Input Power (W) @ 120 (VAC)	26.89	26.82
Lumen Efficacy (lm/W)	82.3	81.6
Input Power Factor @ 120 (VAC)	0.985	0.994

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	6.93
Correlated Color Temperature (K)	4048
Color Rendering Index - Ra	82.3
Color Rendering - R9	8.2
DUV	0.0025
Chromaticity Coordinate (x)	0.380
Chromaticity Coordinate (y)	0.383
Chromaticity Coordinate (u')	0.222
Chromaticity Coordinate (v')	0.505
Input Power Factor (W) @ 277 (VAC)	0.937
Input Current ATHD (%) @ 277 (VAC)	12.62

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/9/2018	7/9/2019
Omega Newport Thermometer	DPI8-C24	146920	10/4/2018	10/4/2019
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/11/2018	12/11/2019
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV
Labsphere Spectroradiometer	CDS1100	CHI0091	VBV	VBV
3 Meter Sphere	SPR600	CHI0088	VBV	VBV
Elgar AC Power Supply	CW1251	146112	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iTHX-SD	146961	7/23/2018	7/23/2019
Yokogawa Power Meter	WT1600	146769	4/3/2019	4/3/2020
Extech K Temperature Meter	SD200	CHI0207	4/3/2019	4/3/2020

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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 Spectroradiometer and integrating 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. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a 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 Type C Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the SSL sample.

Ambient temperature was measured equal to the height of the sample mounted on the goniometer equipment. The SSL sample was operated on the client provided driver at rated input volts in its designated orientation. The SSL sample was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

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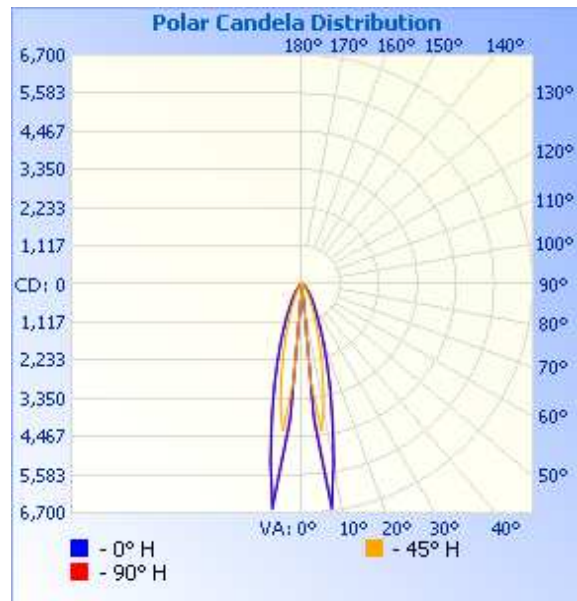
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR	LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)
AH04162019023032-087	Base Up	120.1	224.9	26.82	0.994	2187.5	81.6

INTENSITY SUMMARY - CANDELAS

Angle	0	45	90	135	180
0	16	16	16	16	16
5	4049	2860	3818	2860	4049
10	5275	3615	5313	3615	5275
15	3103	2094	3169	2094	3103
20	1805	1154	1841	1154	1805
25	1038	637	1074	637	1038
30	641	379	666	379	641
35	430	245	439	245	430
40	278	158	288	158	278
45	186	104	193	104	186
50	126	72	128	72	126
55	89	53	89	53	89
60	65	40	64	40	65
65	44	29	44	29	44
70	28	20	28	20	28
75	14	10	14	10	14
80	2	3	3	3	2
85	2	3	2	3	2
90	2	3	2	3	2
95	2	3	2	3	2
100	2	3	2	3	2
105	2	3	2	3	2
110	2	3	3	3	2
115	2	3	2	3	2
120	2	2	2	2	2
125	2	4	3	4	2
130	3	5	4	5	3
135	4	5	5	5	4
140	4	6	5	6	4
145	5	7	6	7	5
150	6	8	7	8	6
155	7	9	8	9	7
160	9	11	10	11	9
165	11	13	12	13	11
170	12	14	13	14	12
175	7	8	7	8	7
180	6	6	6	6	6



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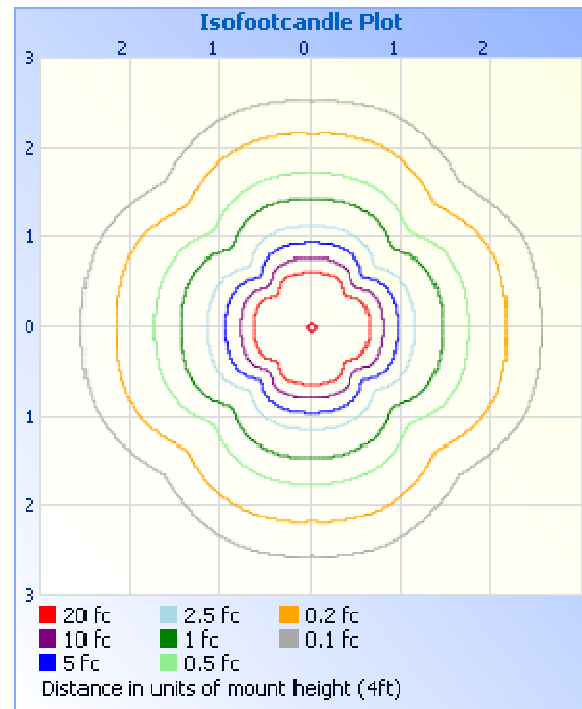
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 4ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1640.2	75.0
0-40	1889.9	86.4
0-60	2099.5	96.0
60-90	59.3	2.7
70-100	21.7	1.0
90-120	9.4	0.4
0-90	2158.9	98.7
90-180	28.6	1.3
0-180	2187.5	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	394.7	18.0
10-20	788.9	36.1
20-30	456.6	20.9
30-40	249.7	11.4
40-50	135.3	6.2
50-60	74.4	3.4
60-70	41.0	1.9
70-80	14.7	0.7
80-90	3.6	0.2
90-100	3.4	0.2
100-110	3.2	0.1
110-120	2.8	0.1
120-130	3.2	0.1
130-140	3.9	0.2
140-150	3.9	0.2
150-160	3.9	0.2
160-170	3.4	0.2
170-180	1.0	0.0

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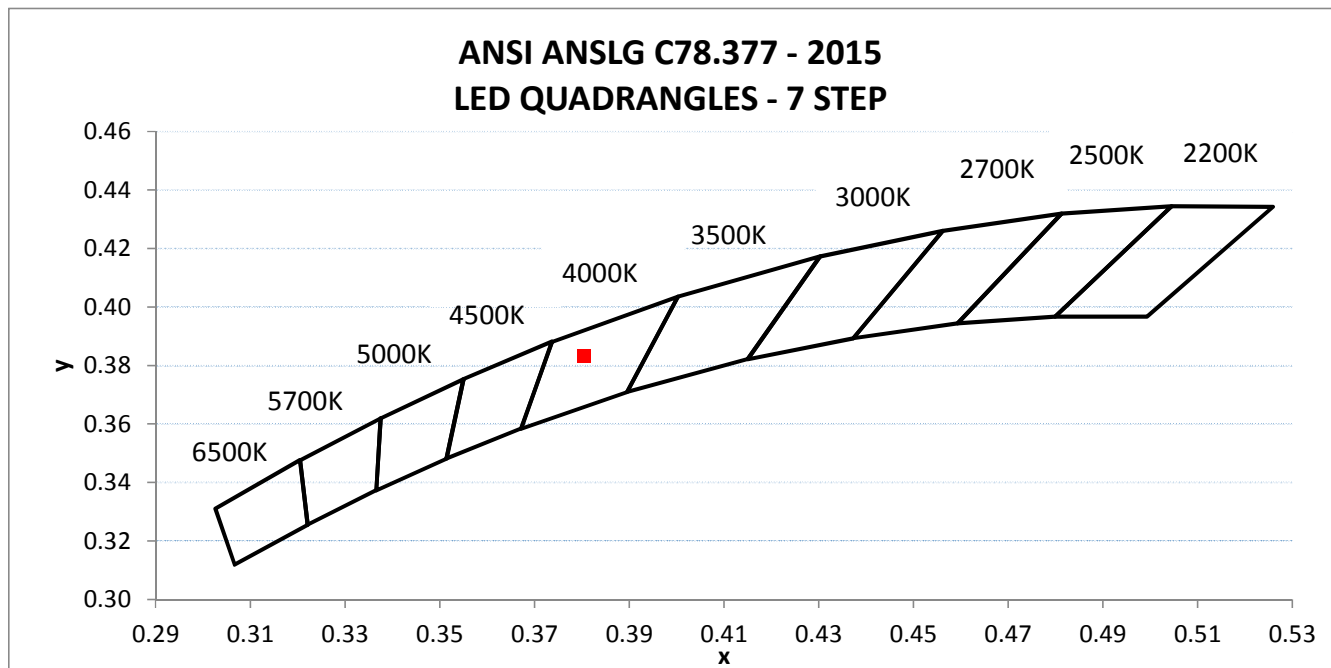
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR	INPUT CURRENT ATHD (%)
AH04162019023032-087	Base Up	120.0	227.6	26.89	0.985	6.93
		277.0	103.5	26.87	0.937	12.62

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
2211.9	82.3	4048	82.3	8.2	0.0025

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.380	0.383	0.222	0.505



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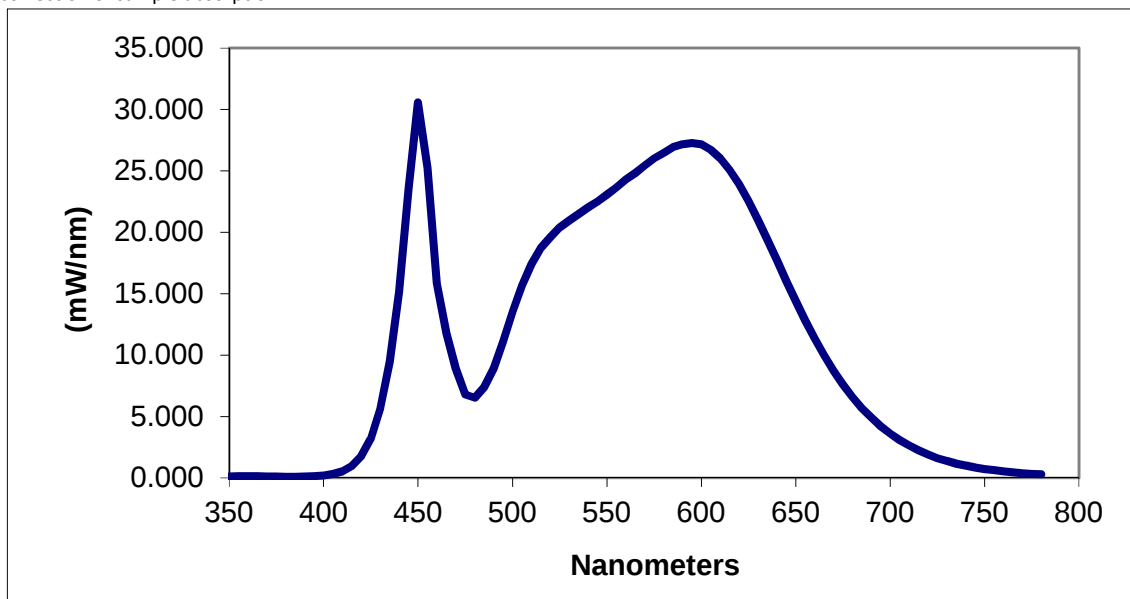
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.133	460	15.844	570	25.434	680	6.584
355	0.150	465	11.808	575	26.019	685	5.687
360	0.149	470	8.937	580	26.472	690	4.915
365	0.143	475	6.804	585	26.929	695	4.229
370	0.130	480	6.534	590	27.158	700	3.630
375	0.121	485	7.392	595	27.273	705	3.105
380	0.111	490	8.930	600	27.162	710	2.647
385	0.111	495	11.088	605	26.720	715	2.258
390	0.134	500	13.535	610	26.010	720	1.915
395	0.158	505	15.654	615	25.091	725	1.624
400	0.214	510	17.417	620	23.905	730	1.379
405	0.324	515	18.735	625	22.540	735	1.178
410	0.547	520	19.616	630	20.989	740	1.003
415	0.980	525	20.384	635	19.390	745	0.857
420	1.777	530	20.955	640	17.727	750	0.739
425	3.206	535	21.492	645	16.051	755	0.636
430	5.621	540	22.041	650	14.409	760	0.546
435	9.484	545	22.487	655	12.833	765	0.466
440	15.136	550	23.068	660	11.367	770	0.397
445	23.596	555	23.643	665	9.987	775	0.342
450	30.567	560	24.292	670	8.728	780	0.298
455	25.235	565	24.815	675	7.603		

*Without correction of sample absorption.



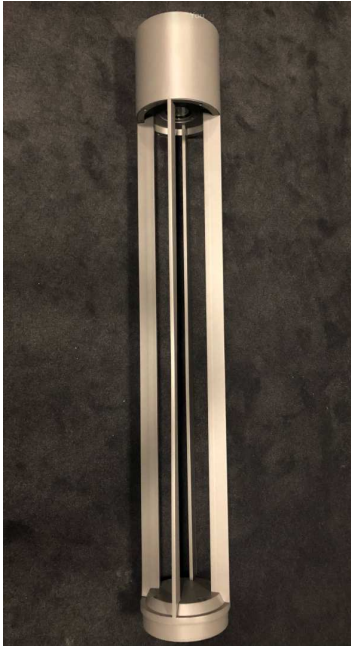
End Of Test Results

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PICTURES



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:



Timothy Quigley
Engineer
Lighting Division

Report Reviewed By:



Hector Huitron
Associate Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				