

# GENERATION BRANDS, LLC

## TEST REPORT

### SCOPE OF WORK

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

### MODEL NUMBER

700FMOBLN-LED930

### REPORT NUMBER

103643585CHI-095

### ISSUE DATE

May 21, 2019

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**REPORT NO.: 103643585CHI-095**

**REPORT DATE: May 21, 2019**

**TEST REPORT**

TEST OF ONE LED FLUSHMOUNT

MODEL NO. 700FMOBLN-LED930

RENDERED TO:

GENERATION BRANDS, LLC  
7400 LINDER AVE.  
SKOKIE, IL 60077

**AUTHORIZATION**

The testing performed was authorized by signed quote number Qu-00912313-2 .

**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 700FMOBLN-LED930. The sample was received by Intertek on May 15, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH05152019114818-095.

**DATE OF TESTS**

May 16, 2019

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**REPORT NO.: 103643585CHI-095**

**REPORT DATE: May 21, 2019**

**TEST REPORT**

**SUMMARY**

<b>MODEL NO:</b>	700FMOBLN-LED930
<b>DESCRIPTION:</b>	LED flushmount

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1023.2	988.9
Input Power (W) @ 120 (VAC)	15.22	15.25
Lumen Efficacy (lm/W)	67.2	64.9
Input Power Factor ( ) @ 120 (VAC)	0.900	0.891

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	36.16
Correlated Color Temperature (K)	2921
Color Rendering Index - Ra	90.1
Color Rendering - R9	48.1
DUV	0.0016
Chromaticity Coordinate (x)	0.441
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.254
Chromaticity Coordinate (v')	0.521

**REPORT NO.: 103643585CHI-095**

**TEST REPORT**

**REPORT DATE: May 21, 2019**

**EQUIPMENT LIST**

<b>EQUIPMENT USED</b>	<b>MODEL</b>	<b>CONTROL</b>	<b>LAST CAL</b>	<b>CAL DUE</b>
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 2M Sphere & Spectroradiometer	CDS1100	146137	VBV	VBV
Elgar AC Power Supply	CW1251M	146113	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV
Yokogawa Power Analyzer	WT1600	146767	4/3/2019	4/3/2020
Omega Temperature	MDSi8	146873	7/10/2018	7/10/2019
Newport Thermohygrometer	iTHX-M	146961	7/23/2018	7/23/2019

**REPORT NO.: 103643585CHI-095**

**REPORT DATE: May 21, 2019**

**TEST REPORT**

**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.

REPORT NO.: 103643585CHI-095

TEST REPORT

REPORT DATE: May 21, 2019

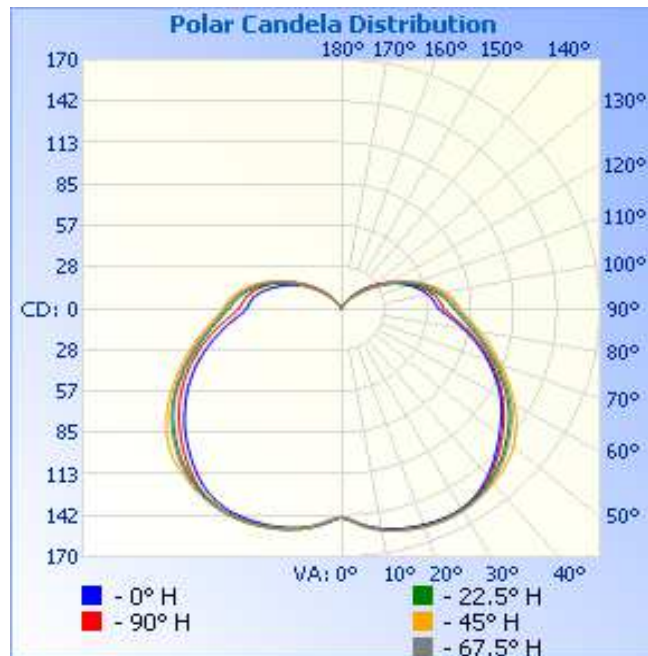
RESULTS OF TESTS

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)
AH05152019114818-095	Base Up	120.0	142.6	15.25	0.891	988.9	64.9

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	143	143	143	143	143
5	148	149	149	149	148
10	153	154	154	154	153
15	156	157	157	157	156
20	158	158	159	159	158
25	159	159	160	160	159
30	158	159	160	160	159
35	155	157	158	158	156
40	150	153	156	154	151
45	143	148	153	150	145
50	136	142	148	143	138
55	128	135	140	136	130
60	121	126	131	129	122
65	112	117	122	119	114
70	102	107	112	109	104
75	92	97	102	99	94
80	82	88	93	90	84
85	72	80	84	82	75
90	64	74	78	76	67
95	61	69	74	72	64
100	58	64	68	66	61
105	53	57	61	59	55
110	47	49	52	51	49
115	40	40	43	43	42
120	34	32	34	34	36
125	28	25	24	26	28
130	21	18	16	19	22
135	15	13	11	13	15
140	9	8	8	8	10
145	5	4	5	5	5
150	2	2	3	2	2



RESULTS OF TESTS

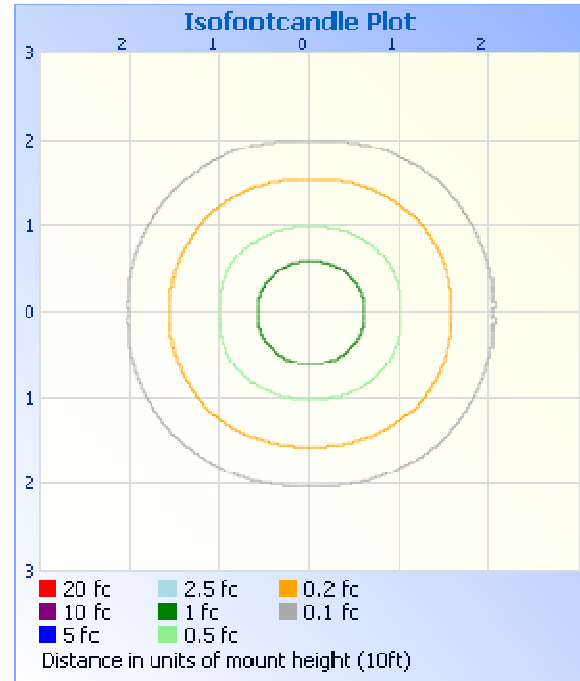
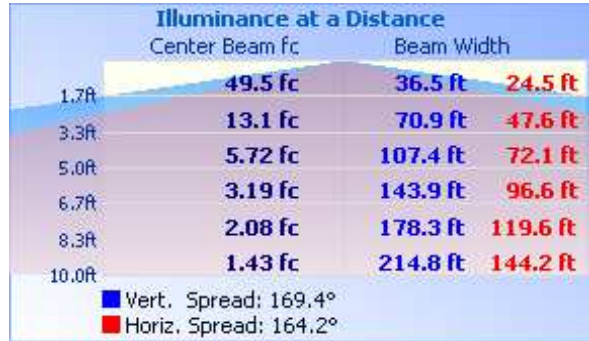
REPORT NO.: 103643585CHI-095

REPORT DATE: May 21, 2019

TEST REPORT

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

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	132.2	13.4
0-40	230.6	23.3
0-60	466.1	47.1
60-90	307.1	31.1
70-100	266.2	26.9
90-120	178.1	18.0
0-90	773.2	78.2
90-180	215.7	21.8
0-180	988.9	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	14.3	1.4
10-20	44.3	4.5
20-30	73.6	7.4
30-40	98.3	9.9
40-50	114.6	11.6
50-60	120.9	12.2
60-70	116.3	11.8
70-80	103.4	10.5
80-90	87.4	8.8
90-100	75.4	7.6
100-110	60.8	6.2
110-120	41.9	4.2
120-130	23.7	2.4
130-140	10.4	1.1
140-150	3.1	0.3
150-160	0.3	0.0

REPORT NO.: 103643585CHI-095

REPORT DATE: May 21, 2019

TEST REPORT

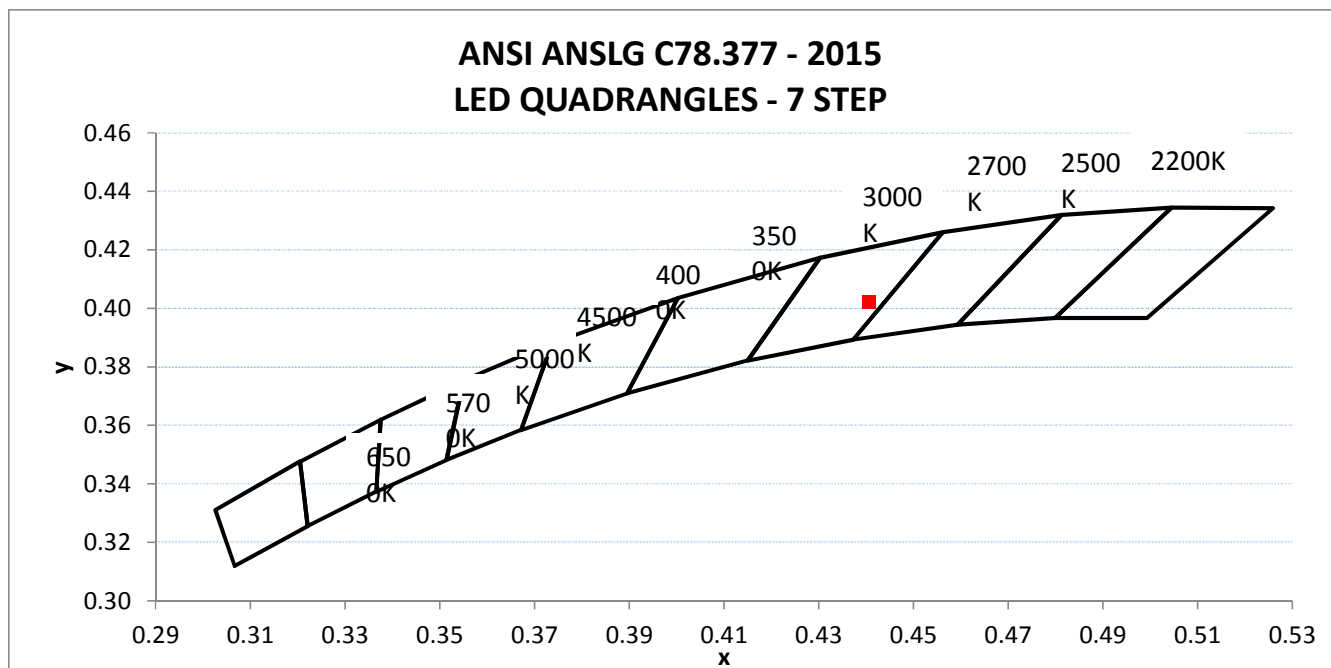
RESULTS OF TESTS

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 (%)
AH05152019114818-095	Base Up	120.02	140.96	15.22	0.900	36.16

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1023.2	67.2	2921	90.1	48.1	0.0016

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.441	0.402	0.254	0.521





REPORT NO.: 103643585CHI-095

TEST REPORT

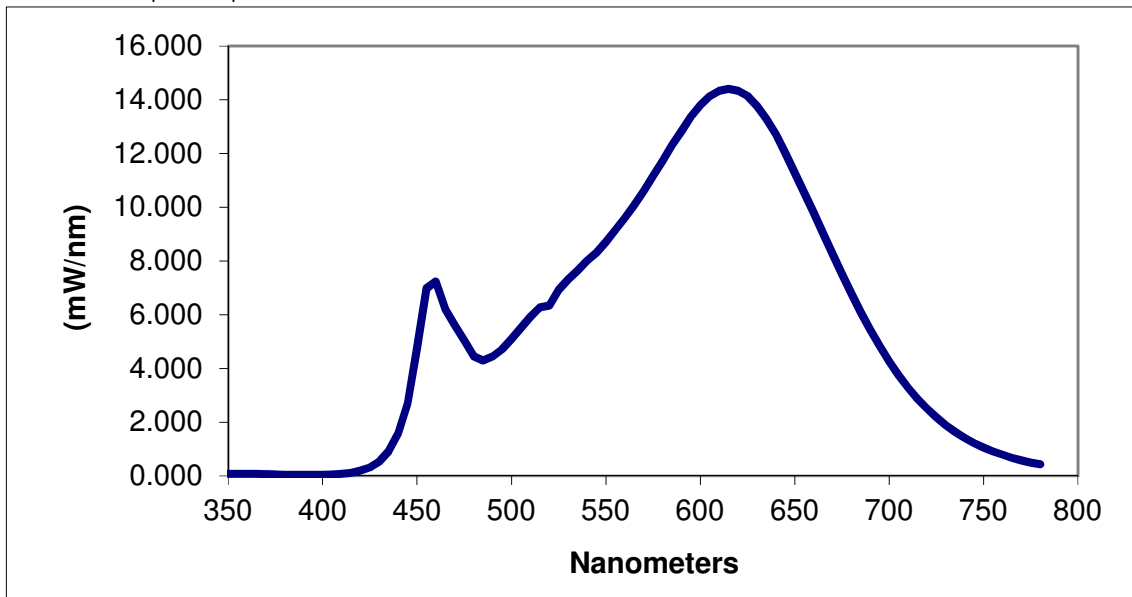
REPORT DATE: May 21, 2019

## 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	0.082	460	7.234	570	10.610	680	6.786
355	0.076	465	6.206	575	11.172	685	6.094
360	0.083	470	5.614	580	11.725	690	5.438
365	0.076	475	5.047	585	12.306	695	4.842
370	0.064	480	4.449	590	12.837	700	4.257
375	0.063	485	4.292	595	13.374	705	3.745
380	0.050	490	4.450	600	13.796	710	3.281
385	0.048	495	4.711	605	14.135	715	2.870
390	0.045	500	5.101	610	14.338	720	2.509
395	0.043	505	5.510	615	14.406	725	2.184
400	0.047	510	5.930	620	14.334	730	1.896
405	0.059	515	6.270	625	14.138	735	1.641
410	0.080	520	6.340	630	13.762	740	1.420
415	0.122	525	6.930	635	13.293	745	1.226
420	0.196	530	7.316	640	12.713	750	1.057
425	0.321	535	7.642	645	12.023	755	0.914
430	0.540	540	8.006	650	11.274	760	0.797
435	0.922	545	8.307	655	10.551	765	0.681
440	1.570	550	8.717	660	9.793	770	0.584
445	2.707	555	9.155	665	9.038	775	0.503
450	4.732	560	9.603	670	8.265	780	0.433
455	6.984	565	10.072	675	7.519		

\*Without correction of sample absorption.



End Of Test Results

**REPORT NO.: 103643585CHI-095**

**REPORT DATE: May 21, 2019**

**TEST REPORT**

**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:

*Tess Gallagher*

Tess Gallagher  
Engineer  
Lighting Division

Report Reviewed By:

*Tim Quigley*

Timothy Quigley  
Project Engineer  
Lighting Division

Attachments: IES File

**REVISION HISTORY**

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