

# GENERATION BRANDS, LLC

## TEST REPORT

### SCOPE OF WORK

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

### MODEL NUMBER

700BCELI24C-LED930

### REPORT NUMBER

103643585CHI-105

### ISSUE DATE

May 21, 2019

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**REPORT NO.: 103643585CHI-105**

**REPORT DATE: May 21, 2019**

**TEST REPORT**

**TEST OF ONE LED BATH BAR**

MODEL NO. 700BCELI24C-LED930  
LED MODEL NO. EVERLIGHT 5630D  
DRIVER MODEL NO. LTF DA22W600C2742-3001

**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 700BCELI24C-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 AH05152019114818-105.

**DATE OF TESTS**

May 15, 2019 through May 16, 2019.

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**SUMMARY**

<b>MODEL NO:</b>	700BCELI24C-LED930
<b>DESCRIPTION:</b>	LED Bath Bar

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1909.4	1828.3
Input Power (W) @ 120 (VAC)	23.65	23.52
Lumen Efficacy (lm/W)	80.7	77.7
Input Power Factor @ 120 (VAC)	0.988	0.988

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	7.03
Correlated Color Temperature (K)	3013
Color Rendering Index - Ra	91.5
Color Rendering - R9	48.4
DUV	0.0006
Chromaticity Coordinate (x)	0.437
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.522

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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 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

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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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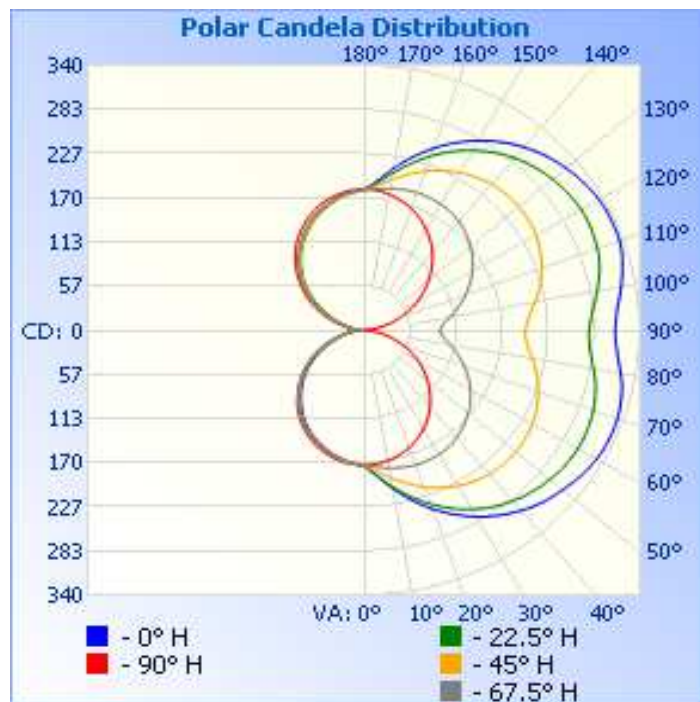
RESULTS OF TESTS

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)
AH05152019114818-105	Base Up	120.0	198.3	23.52	0.988	1828.3	77.7

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	180	180	177	175	173
5	197	196	187	178	171
10	216	213	198	181	168
15	235	229	209	183	164
20	252	245	219	185	158
25	269	259	227	185	151
30	284	271	234	184	142
35	296	282	239	181	133
40	307	290	242	176	121
45	316	296	243	171	109
50	323	301	243	164	96
55	329	304	242	156	83
60	332	304	238	147	69
65	333	303	232	137	55
70	331	298	225	126	40
75	326	292	216	114	26
80	317	283	206	103	13
85	310	278	199	95	3
90	311	280	201	96	3
95	318	287	209	104	12
100	326	297	220	116	25
105	333	304	230	128	40
110	336	308	236	139	55
115	336	310	243	150	70
120	333	308	246	159	85
125	328	305	248	167	99
130	321	300	248	174	112
135	312	293	246	180	125
140	301	284	243	184	137
145	288	273	237	187	147
150	274	260	230	188	156
155	257	246	222	189	164
160	239	230	212	188	171
165	221	213	202	186	176
170	201	197	191	184	179
175	186	184	183	181	181



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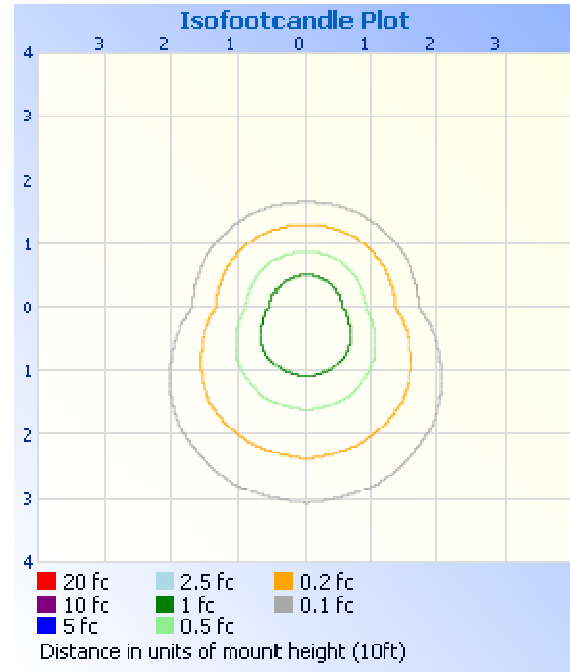
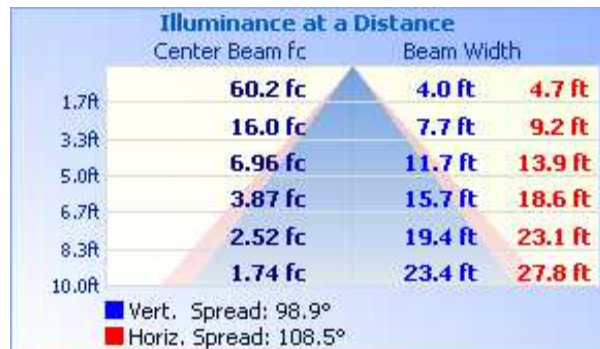
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RESULTS OF TESTS

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	153.7	8.4
0-40	267.1	14.6
0-60	541.3	29.6
60-90	370.4	20.3
70-100	339.2	18.6
90-120	369.0	20.2
0-90	911.7	49.9
90-180	916.5	50.1
0-180	1828.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	16.9	0.9
10-20	51.6	2.8
20-30	85.1	4.7
30-40	113.4	6.2
40-50	132.8	7.3
50-60	141.5	7.7
60-70	138.3	7.6
70-80	124.5	6.8
80-90	107.6	5.9
90-100	107.1	5.9
100-110	123.9	6.8
110-120	138.0	7.5
120-130	142.1	7.8
130-140	134.0	7.3
140-150	114.7	6.3
150-160	86.5	4.7
160-170	52.8	2.9
170-180	17.5	1.0

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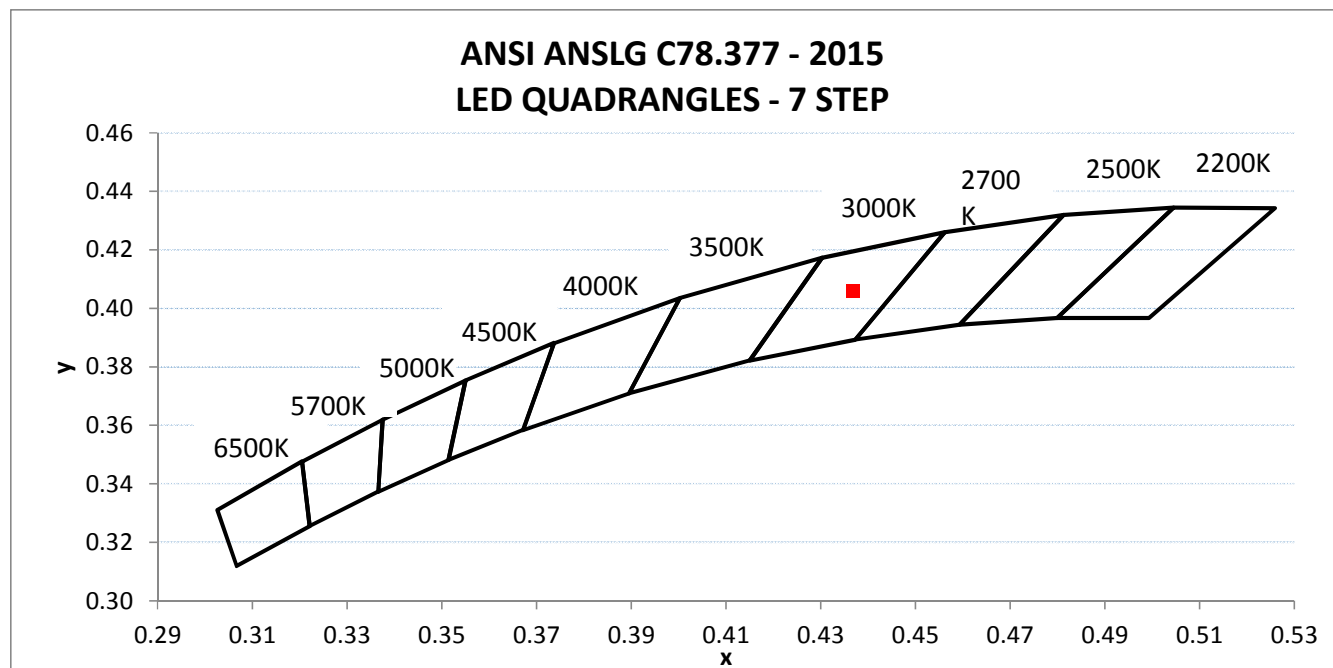
## RESULTS OF TESTS

### 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 (%)
AH05152019114818-105	Base Up	120.01	197.86	23.65	0.988	7.03

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1909.4	80.7	3013	91.5	48.4	0.0006

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.437	0.406	0.250	0.522





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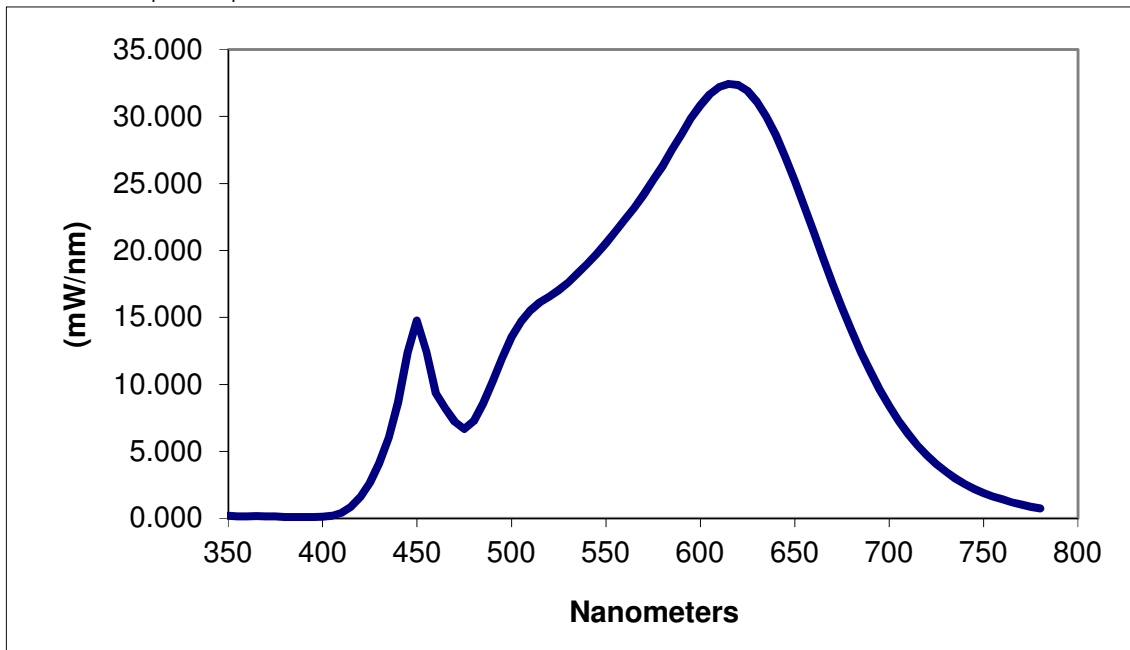
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RESULTS OF TESTS

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	0.186	460	9.334	570	24.189	680	14.021
355	0.156	465	8.188	575	25.254	685	12.424
360	0.148	470	7.227	580	26.318	690	10.958
365	0.169	475	6.664	585	27.522	695	9.607
370	0.140	480	7.259	590	28.671	700	8.380
375	0.135	485	8.591	595	29.875	705	7.299
380	0.107	490	10.219	600	30.844	710	6.318
385	0.108	495	11.936	605	31.646	715	5.449
390	0.101	500	13.543	610	32.213	720	4.706
395	0.108	505	14.672	615	32.433	725	4.044
400	0.128	510	15.525	620	32.345	730	3.479
405	0.196	515	16.128	625	31.922	735	2.982
410	0.409	520	16.564	630	31.077	740	2.567
415	0.853	525	17.029	635	29.986	745	2.209
420	1.579	530	17.622	640	28.597	750	1.899
425	2.655	535	18.268	645	26.965	755	1.628
430	4.123	540	19.001	650	25.190	760	1.404
435	6.017	545	19.718	655	23.311	765	1.199
440	8.654	550	20.546	660	21.389	770	1.022
445	12.372	555	21.418	665	19.458	775	0.875
450	14.772	560	22.327	670	17.524	780	0.746
455	12.418	565	23.179	675	15.735		

\*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:

*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				