

GENERATION BRANDS, LLC

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700GMBMP19CS-LED927

REPORT NUMBER

103643585CHI-108

ISSUE DATE

May 31, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: May 31, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700GMBMP19CS-LED927

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 700GMBMP19CS-LED927. The sample was received by Intertek on May 15, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH05152019114818-108.

DATE OF TESTS

May 21, 2019 through May 30, 2019.

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SUMMARY

MODEL NO:	700GMBMP19CS-LED927
DESCRIPTION:	LED Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	3278.3	3161.2
Input Power (W) @ 120 (VAC)	40.53	40.70
Lumen Efficacy (lm/W)	80.9	77.7
Input Power Factor @ 120 (VAC)	0.949	0.948

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	32.95
Correlated Color Temperature (K)	2758
Color Rendering Index - Ra	91.3
Color Rendering - R9	51.8
DUV	0.0012
Chromaticity Coordinate (x)	0.457
Chromaticity Coordinate (y)	0.414
Chromaticity Coordinate (u')	0.260
Chromaticity Coordinate (v')	0.528

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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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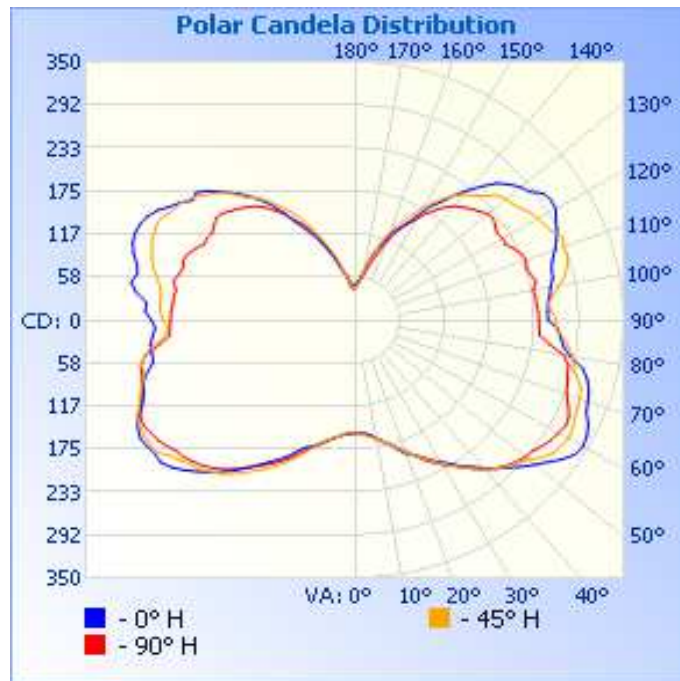
RESULTS OF TESTS

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)
AH05152019114818-108	Base Up	120.0	357.5	40.70	0.948	3161.2	77.7

INTENSITY SUMMARY - CANDELAS

Angle	0	90	180	270	360
0	154	154	154	154	154
5	154	156	155	156	154
10	163	164	163	164	163
15	174	175	174	175	174
20	193	189	184	189	193
25	205	209	204	209	205
30	222	226	223	226	222
35	242	245	245	245	242
40	262	264	269	264	262
45	283	280	291	280	283
50	305	290	311	290	305
55	330	298	317	298	330
60	343	307	322	307	343
65	336	308	312	308	336
70	323	294	292	294	323
75	314	286	280	286	314
80	285	277	268	277	285
85	269	242	264	242	269
90	252	240	265	240	252
95	253	238	272	238	253
100	259	236	296	236	259
105	265	237	294	237	265
110	278	238	308	238	278
115	290	229	308	229	290
120	302	222	297	222	302
125	300	223	278	223	300
130	281	225	269	225	281
135	262	214	246	214	262
140	230	202	221	202	230
145	195	182	192	182	195
150	163	156	153	156	163
155	137	134	128	134	137
160	114	105	100	105	114
165	92	80	76	80	92
170	66	60	62	60	66
175	52	49	44	49	52
180	44	44	44	44	44



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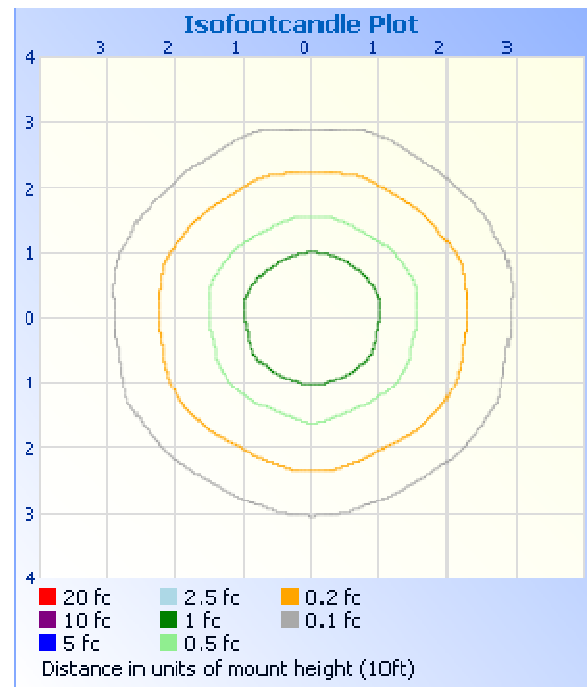
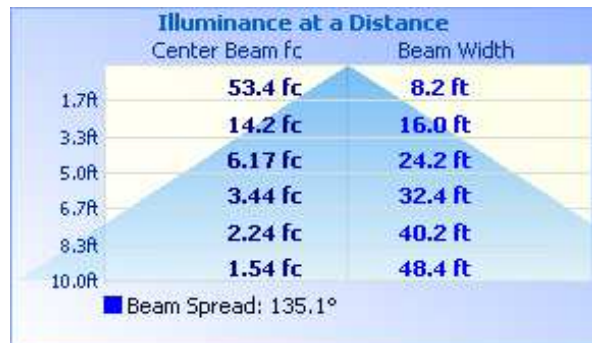
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RESULTS OF TESTS

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	162.0	5.1
0-40	317.3	10.0
0-60	813.5	25.7
60-90	898.3	28.4
70-100	856.6	27.1
90-120	814.8	25.8
0-90	1711.7	54.1
90-180	1449.5	45.9
0-180	3161.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	15.1	0.5
10-20	50.0	1.6
20-30	96.9	3.1
30-40	155.3	4.9
40-50	219.6	6.9
50-60	276.6	8.7
60-70	309.8	9.8
70-80	309.1	9.8
80-90	279.4	8.8
90-100	268.1	8.5
100-110	277.1	8.8
110-120	269.7	8.5
120-130	234.7	7.4
130-140	182.1	5.8
140-150	121.8	3.9
150-160	65.6	2.1
160-170	25.2	0.8
170-180	5.2	0.2

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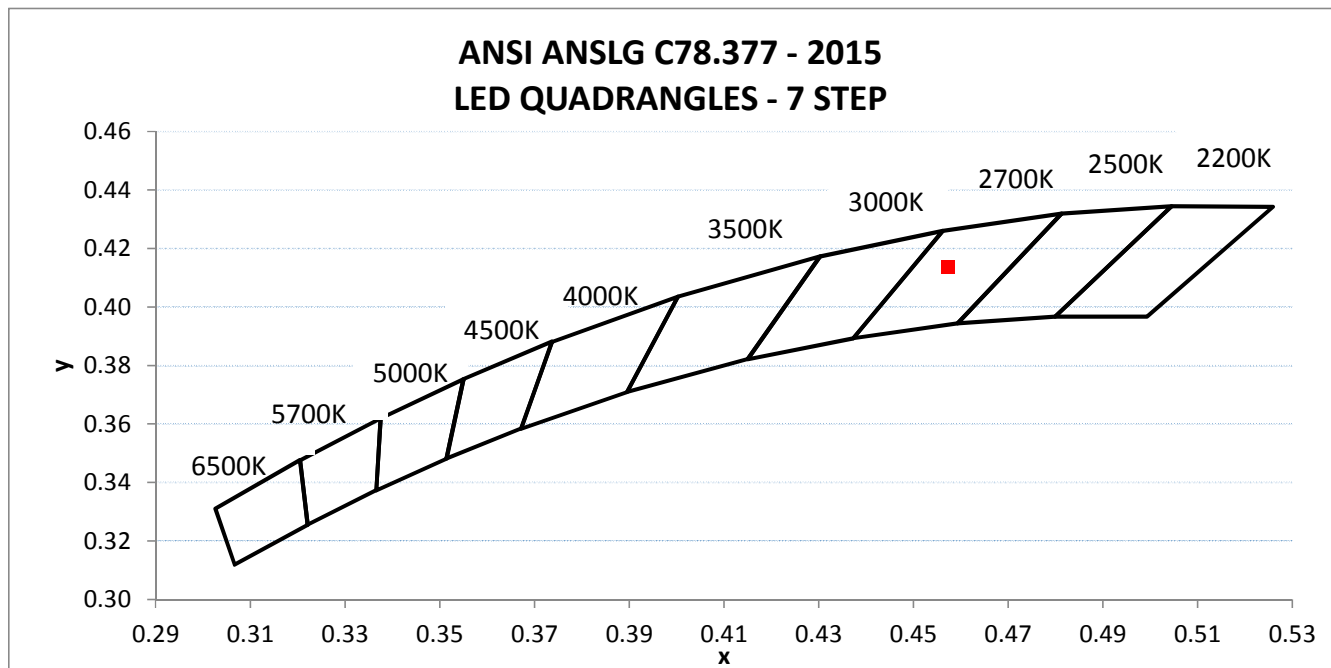
RESULTS OF TESTS

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 (%)
AH05152019114818-108	Base Up	120.03	355.67	40.53	0.949	32.95

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
3278.3	80.9	2758	91.3	51.8	0.0012

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.457	0.414	0.260	0.528



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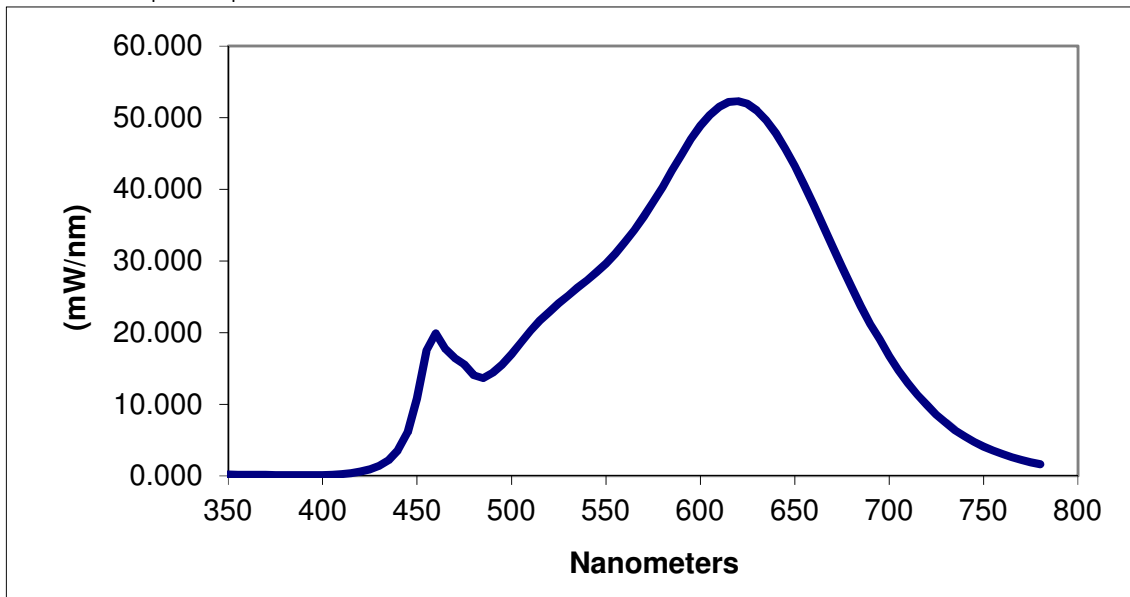
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RESULTS OF TESTS

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	0.206	460	19.915	570	36.209	680	26.394
355	0.191	465	17.726	575	38.224	685	23.723
360	0.180	470	16.486	580	40.333	690	21.224
365	0.166	475	15.585	585	42.634	695	19.126
370	0.156	480	14.059	590	44.830	700	16.729
375	0.139	485	13.679	595	46.996	705	14.737
380	0.127	490	14.434	600	48.867	710	12.935
385	0.130	495	15.524	605	50.381	715	11.313
390	0.123	500	16.998	610	51.519	720	9.889
395	0.137	505	18.619	615	52.183	725	8.570
400	0.144	510	20.282	620	52.298	730	7.428
405	0.189	515	21.710	625	51.931	735	6.401
410	0.267	520	22.921	630	50.972	740	5.534
415	0.397	525	24.089	635	49.626	745	4.767
420	0.602	530	25.182	640	47.826	750	4.109
425	0.915	535	26.276	645	45.678	755	3.544
430	1.419	540	27.341	650	43.242	760	3.069
435	2.230	545	28.417	655	40.604	765	2.622
440	3.606	550	29.662	660	37.799	770	2.238
445	6.069	555	31.043	665	34.955	775	1.929
450	10.809	560	32.615	670	31.999	780	1.655
455	17.490	565	34.267	675	29.200		

*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				