

GENERATION BRANDS, LLC

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700TDECGPCS-LED927

REPORT NUMBER

103643585CHI-102

ISSUE DATE

May 29, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: May 29, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700TDECGPCS-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 700TDECGPCS-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 AH05152019114818-102.

DATE OF TESTS

May 20, 2019 through May 24, 2019.

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SUMMARY

MODEL NO:	700TDECGPCS-LED927
DESCRIPTION:	LED Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	706.9	690.4
Input Power (W) @ 120 (VAC)	10.32	10.33
Lumen Efficacy (lm/W)	68.5	66.8
Input Power Factor @ 120 (VAC)	0.974	0.980

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	19.03
Correlated Color Temperature (K)	2688
Color Rendering Index - Ra	90.9
Color Rendering - R9	55.4
DUV	0.0024
Chromaticity Coordinate (x)	0.457
Chromaticity Coordinate (y)	0.405
Chromaticity Coordinate (u')	0.264
Chromaticity Coordinate (v')	0.525

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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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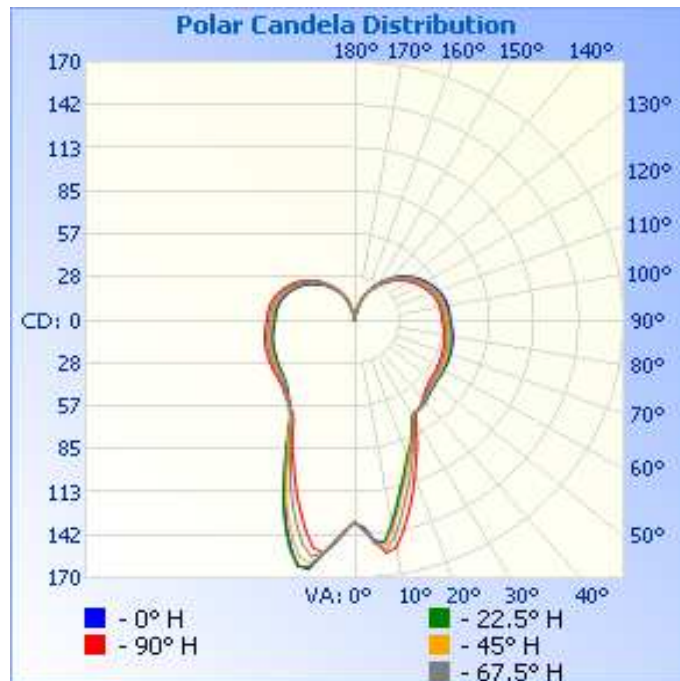
RESULTS OF TESTS

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)
AH05152019114818-102	Base Up	120.1	87.8	10.33	0.980	690.4	66.8

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	134	134	134	134	134
5	146	148	148	147	147
10	138	136	139	145	152
15	115	113	117	123	132
20	98	96	99	104	111
25	88	85	87	90	94
30	74	73	74	75	77
35	72	71	71	71	71
40	70	69	69	68	67
45	68	67	66	65	64
50	66	65	65	64	62
55	66	65	64	63	61
60	65	65	64	62	61
65	65	64	63	62	60
70	64	64	63	61	59
75	64	63	62	60	59
80	63	62	61	60	58
85	62	61	60	58	56
90	60	60	59	57	55
95	60	59	58	57	55
100	60	58	58	56	54
105	58	57	56	55	53
110	56	55	54	53	52
115	54	53	52	51	49
120	51	50	50	48	47
125	48	47	46	45	44
130	44	43	43	42	40
135	40	39	39	38	37
140	36	35	34	34	33
145	31	30	30	29	28
150	26	25	25	25	24
155	21	21	21	20	20
160	16	16	17	16	15
165	9	9	10	9	9
170	3	3	4	4	3



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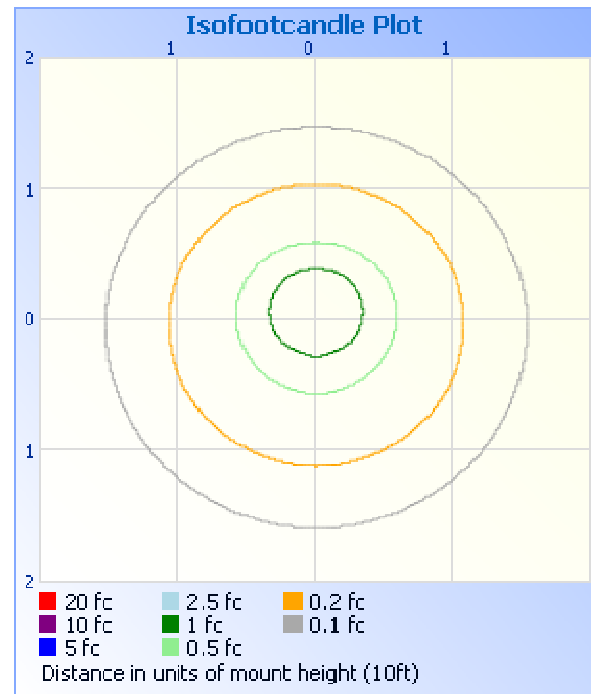
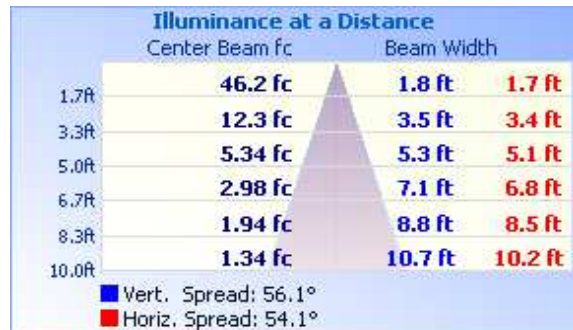
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RESULTS OF TESTS

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	94.5	13.7
0-40	139.4	20.2
0-60	244.2	35.4
60-90	183.1	26.5
70-100	183.5	26.6
90-120	165.0	23.9
0-90	427.3	61.9
90-180	263.1	38.1
0-180	690.4	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	14.2	2.1
10-20	37.1	5.4
20-30	43.2	6.3
30-40	44.9	6.5
40-50	49.8	7.2
50-60	55.1	8.0
60-70	59.5	8.6
70-80	62.0	9.0
80-90	61.6	8.9
90-100	60.0	8.7
100-110	56.2	8.1
110-120	48.9	7.1
120-130	39.2	5.7
130-140	28.5	4.1
140-150	18.0	2.6
150-160	9.4	1.4
160-170	2.9	0.4
170-180	0.1	0.0

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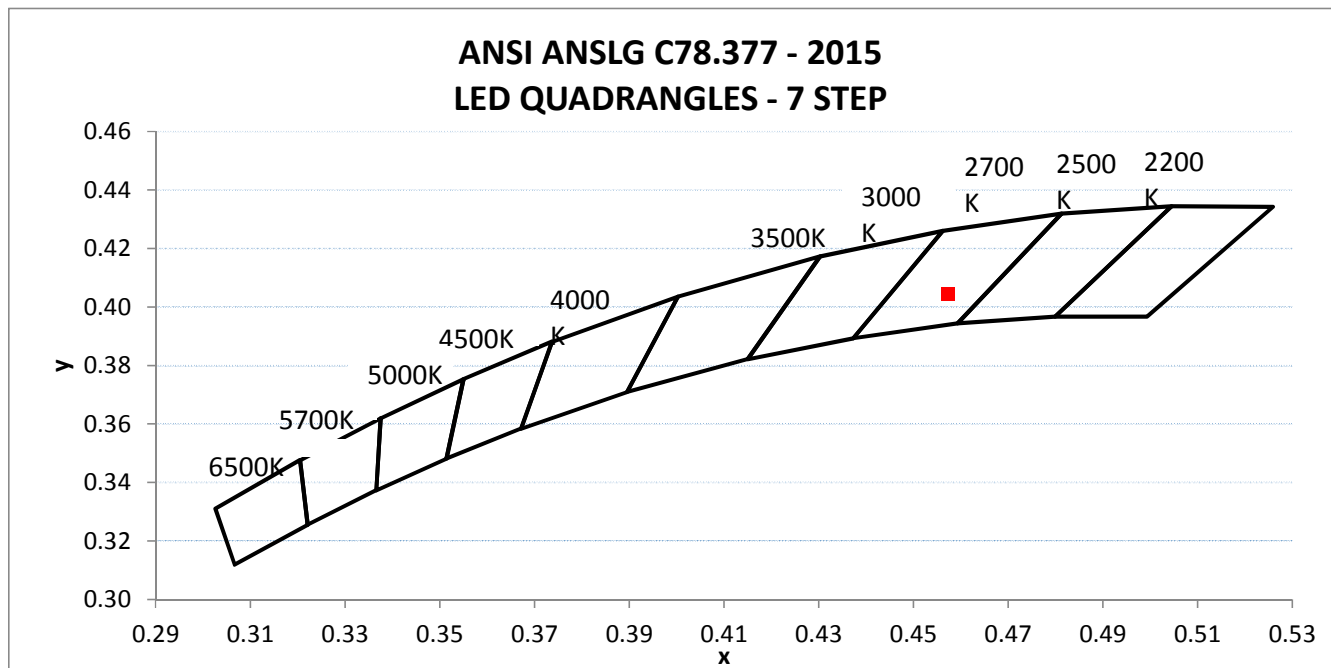
RESULTS OF TESTS

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 (%)
AH05152019114818-102	Base Up	120.00	88.31	10.32	0.974	19.03

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
706.9	68.5	2688	90.9	55.4	0.0024

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.457	0.405	0.264	0.525



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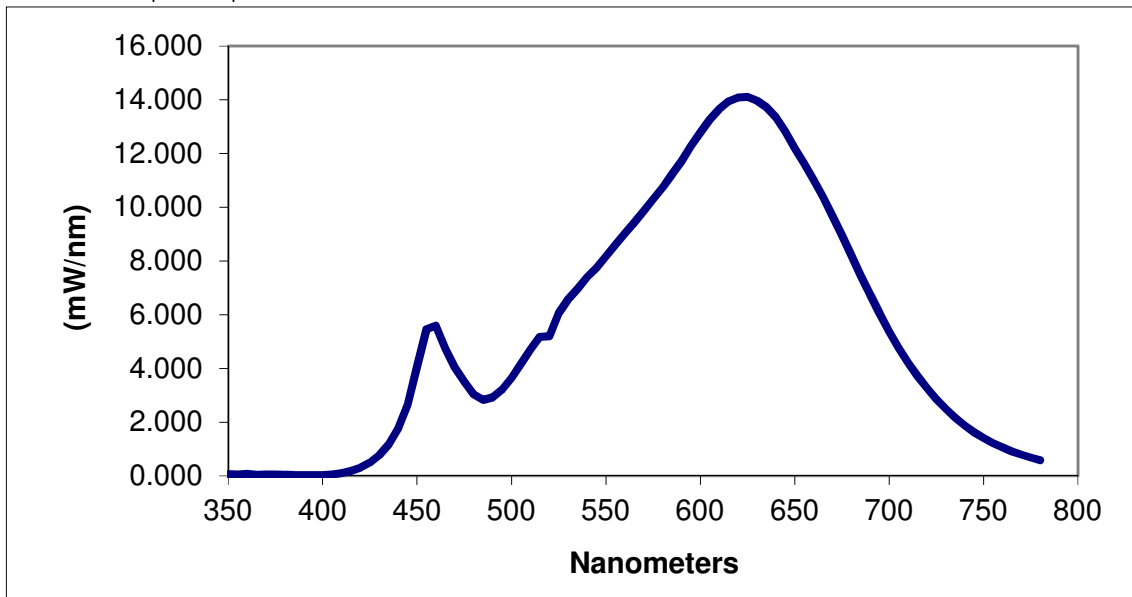
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RESULTS OF TESTS

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	0.069	460	5.589	570	9.857	680	8.205
355	0.060	465	4.736	575	10.303	685	7.451
360	0.084	470	4.042	580	10.737	690	6.738
365	0.048	475	3.509	585	11.225	695	6.043
370	0.060	480	3.035	590	11.720	700	5.380
375	0.057	485	2.826	595	12.277	705	4.773
380	0.047	490	2.925	600	12.783	710	4.213
385	0.036	495	3.211	605	13.258	715	3.725
390	0.038	500	3.653	610	13.659	720	3.269
395	0.035	505	4.162	615	13.935	725	2.858
400	0.039	510	4.710	620	14.086	730	2.497
405	0.056	515	5.179	625	14.108	735	2.160
410	0.102	520	5.199	630	13.961	740	1.879
415	0.184	525	6.062	635	13.724	745	1.631
420	0.313	530	6.584	640	13.344	750	1.414
425	0.497	535	6.968	645	12.822	755	1.225
430	0.768	540	7.403	650	12.194	760	1.068
435	1.174	545	7.735	655	11.631	765	0.916
440	1.759	550	8.181	660	11.014	770	0.791
445	2.652	555	8.598	665	10.383	775	0.684
450	4.048	560	9.024	670	9.669	780	0.587
455	5.458	565	9.423	675	8.963		

*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				