

GENERATION BRANDS, LLC

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700TDSLACS-LED927

REPORT NUMBER

103643585CHI-112

ISSUE DATE

May 30, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: May 30, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700TDSLACS-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 700TDSLACS-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 AH05152019114818-112.

DATE OF TESTS

May 20, 2019 through May 29, 2019.

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SUMMARY

MODEL NO:	700TDISLACS-LED927
DESCRIPTION:	LED Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	378.5	364.3
Input Power (W) @ 120 (VAC)	3.92	3.91
Lumen Efficacy (lm/W)	96.6	93.2
Input Power Factor () @ 120 (VAC)	0.865	0.864

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	57.32
Correlated Color Temperature (K)	2752
Color Rendering Index - Ra ()	90.8
Color Rendering - R9 ()	50.0
DUV ()	0.0008
Chromaticity Coordinate (x)	0.457
Chromaticity Coordinate (y)	0.413
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 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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TEST REPORT

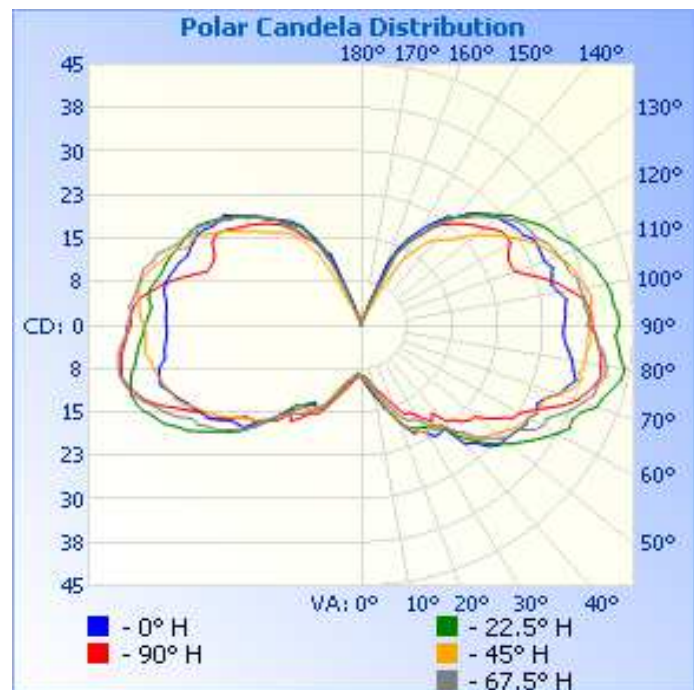
RESULTS OF TESTS

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)
AH05152019114818-112	Base Up	119.9	37.7	3.91	0.864	364.3	93.2

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	9	9	9	9	9
5	10	10	10	10	9
10	12	12	11	11	10
15	15	14	14	13	12
20	18	17	17	16	14
25	21	20	20	18	17
30	21	20	21	19	18
35	23	22	21	21	20
40	27	25	24	24	22
45	30	29	28	28	24
50	31	32	29	30	25
55	32	35	31	31	28
60	32	37	32	35	30
65	32	38	33	36	34
70	35	41	35	39	38
75	37	43	38	40	40
80	35	44	38	41	40
85	34	43	38	39	39
90	34	43	38	37	38
95	34	42	38	37	38
100	33	41	38	37	35
105	33	40	36	36	31
110	32	38	35	35	27
115	32	36	33	34	27
120	31	34	30	32	28
125	30	32	27	31	28
130	29	30	24	29	26
135	27	27	21	27	25
140	24	24	19	24	23
145	22	21	16	21	20
150	18	17	12	17	17
155	15	13	3	14	14
160	4	2	2	3	3
165	1	1	2	1	1



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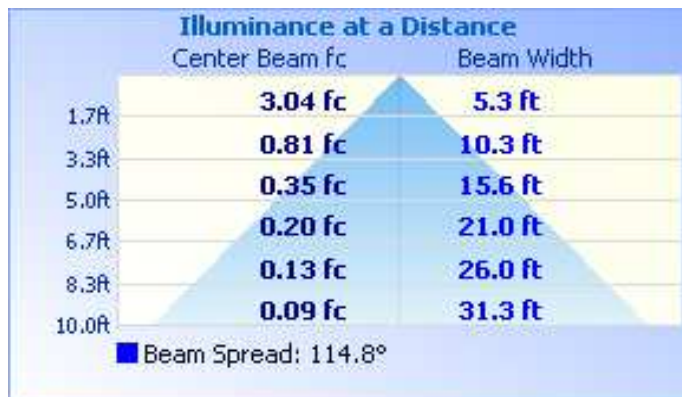
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RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	12.5	3.4
0-40	24.9	6.8
0-60	72.4	19.9
60-90	117.2	32.2
70-100	123.0	33.8
90-120	110.3	30.3
0-90	189.6	52.0
90-180	174.8	48.0
0-180	364.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	0.9	0.3
10-20	3.6	1.0
20-30	7.9	2.2
30-40	12.5	3.4
40-50	19.9	5.5
50-60	27.6	7.6
60-70	34.8	9.5
70-80	40.8	11.2
80-90	41.6	11.4
90-100	40.6	11.1
100-110	37.4	10.3
110-120	32.3	8.9
120-130	26.7	7.3
130-140	19.6	5.4
140-150	12.7	3.5
150-160	5.1	1.4
160-170	0.4	0.1

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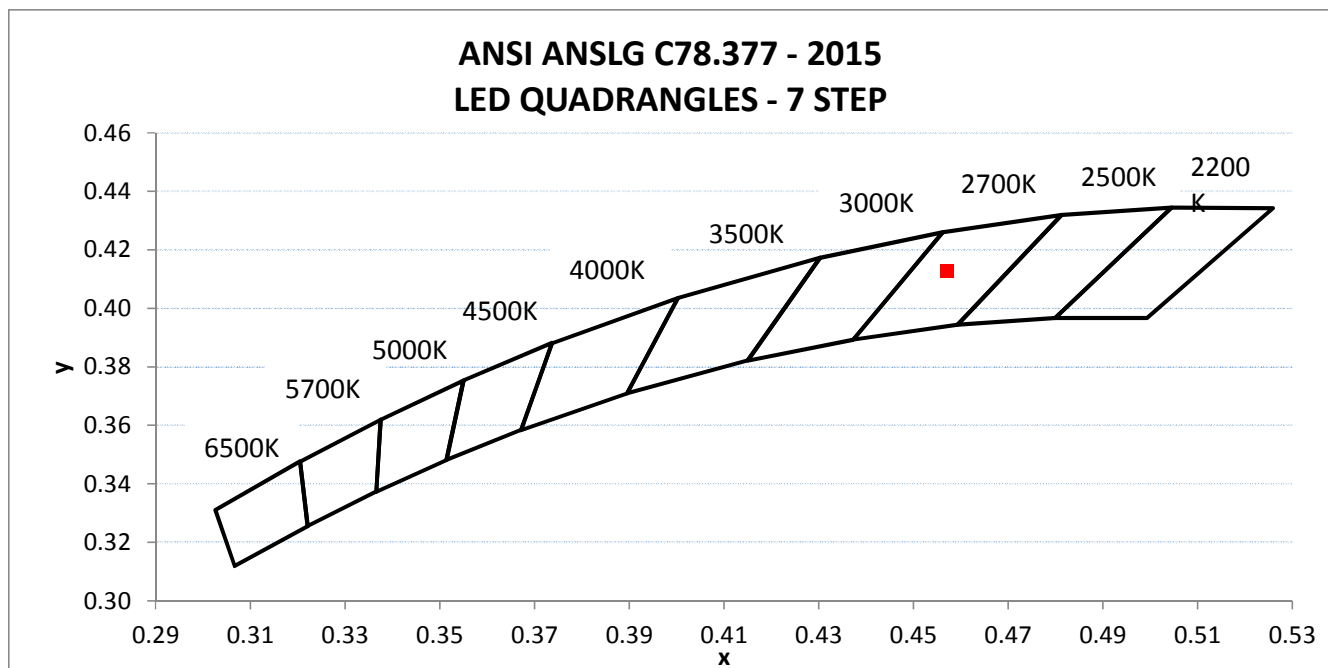
RESULTS OF TESTS

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 (%)
AH05152019114818-112	Base Up	120.03	37.76	3.92	0.865	57.32

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
378.5	96.6	2752	90.8	50.0	0.0008

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.457	0.413	0.260	0.528



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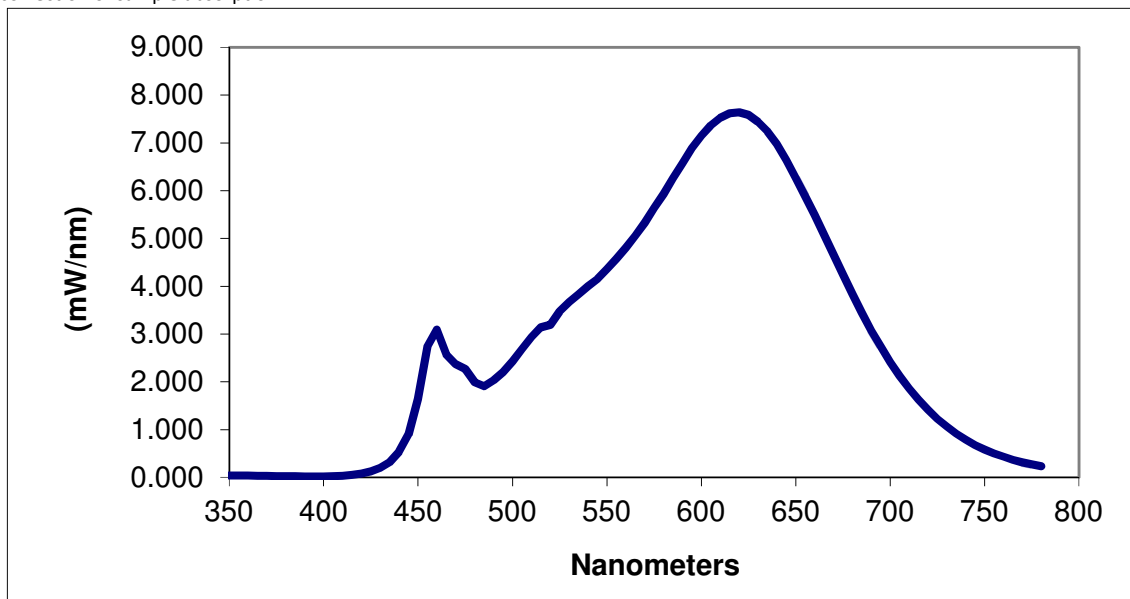
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RESULTS OF TESTS

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	0.037	460	3.094	570	5.331	680	3.837
355	0.041	465	2.571	575	5.635	685	3.445
360	0.036	470	2.371	580	5.936	690	3.076
365	0.036	475	2.272	585	6.262	695	2.745
370	0.033	480	1.991	590	6.574	700	2.413
375	0.027	485	1.905	595	6.888	705	2.122
380	0.025	490	2.038	600	7.150	710	1.860
385	0.024	495	2.205	605	7.369	715	1.625
390	0.022	500	2.430	610	7.530	720	1.416
395	0.019	505	2.684	615	7.621	725	1.226
400	0.020	510	2.939	620	7.641	730	1.063
405	0.025	515	3.141	625	7.587	735	0.915
410	0.035	520	3.192	630	7.439	740	0.789
415	0.052	525	3.476	635	7.244	745	0.678
420	0.081	530	3.672	640	6.978	750	0.585
425	0.125	535	3.827	645	6.640	755	0.501
430	0.199	540	4.006	650	6.267	760	0.431
435	0.322	545	4.153	655	5.889	765	0.370
440	0.532	550	4.359	660	5.493	770	0.316
445	0.906	555	4.572	665	5.083	775	0.272
450	1.643	560	4.809	670	4.658	780	0.233
455	2.748	565	5.055	675	4.249		

*Without correction of sample absorption.



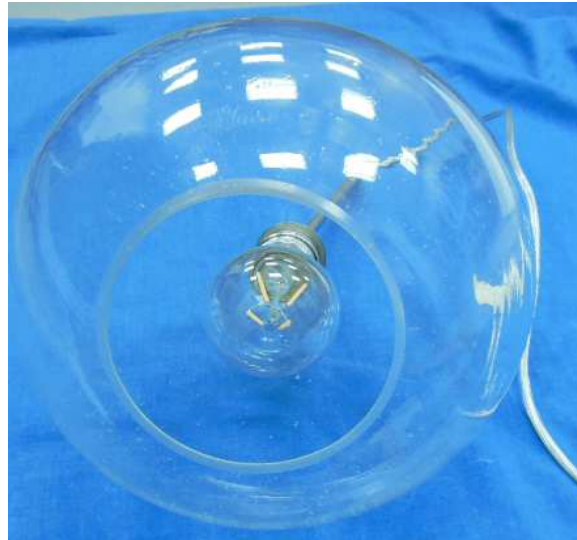
End Of Test Results

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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				