

GENERATION BRANDS, LLC

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700CNDR29R-LEDWD

REPORT NUMBER

103643585CHI-099

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. 700CND29R-LEDWD
LED MODEL NO. LYNK LABS SRL46SS31P09W52WDIH-120

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 700CND29R-LEDWD. The sample was received by Intertek on May 15, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH05152019114818-099.

DATE OF TESTS

May 20, 2019 through May 23, 2019.

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SUMMARY

MODEL NO:	700CNDR29R-LEDWD
DESCRIPTION:	LED Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	334.0	322.2
Input Power (W) @ 120 (VAC)	18.39	18.39
Lumen Efficacy (lm/W)	18.2	17.5
Input Power Factor @ 120 (VAC)	0.981	0.981

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	19.71
Correlated Color Temperature (K)	2949
Color Rendering Index - Ra	94.7
Color Rendering - R9	74.9
DUV	0.0074
Chromaticity Coordinate (x)	0.430
Chromaticity Coordinate (y)	0.384
Chromaticity Coordinate (u')	0.255
Chromaticity Coordinate (v')	0.512

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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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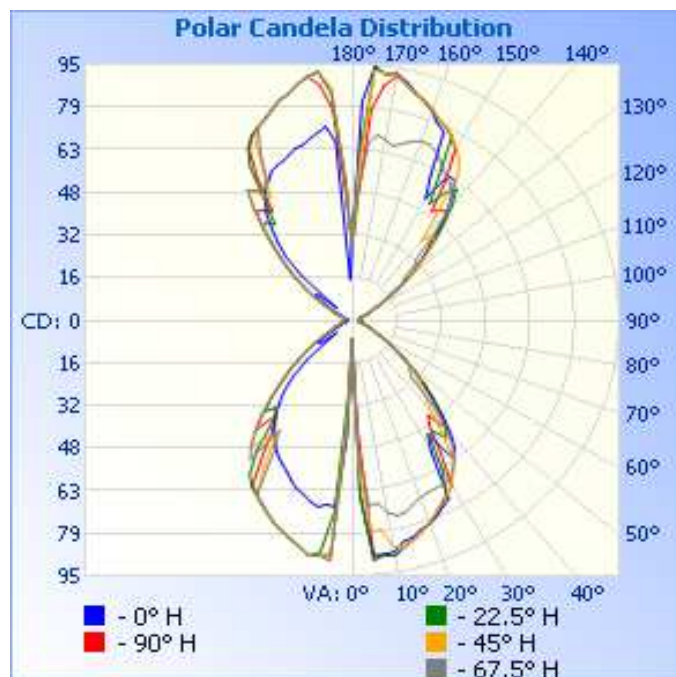
RESULTS OF TESTS

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)
AH05152019114818-099	Base Up	120.0	156.2	18.39	0.981	322.2	17.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	7	7	7	7	7
5	88	90	79	70	87
10	87	89	86	73	89
15	84	84	84	74	84
20	81	80	80	70	80
25	76	75	75	69	76
30	56	64	70	69	71
35	62	50	63	64	48
40	54	52	43	52	53
45	40	39	32	30	40
50	29	27	28	27	29
55	18	18	19	19	19
60	12	11	11	11	12
65	8	8	8	6	7
70	5	4	4	4	5
75	3	3	3	2	3
80	3	3	3	2	3
85	3	3	3	2	3
90	3	3	3	2	3
95	3	3	2	2	3
100	2	2	2	2	3
105	3	3	2	2	3
110	4	4	4	4	5
115	7	7	7	6	7
120	10	11	12	10	12
125	18	20	20	19	20
130	29	30	30	24	30
135	39	42	41	32	41
140	53	55	38	53	53
145	64	58	66	61	49
150	52	62	74	65	73
155	77	79	79	70	79
160	83	83	83	71	83
165	88	87	87	68	87
170	93	92	92	68	92
175	95	94	93	66	78
180	27	27	27	27	27



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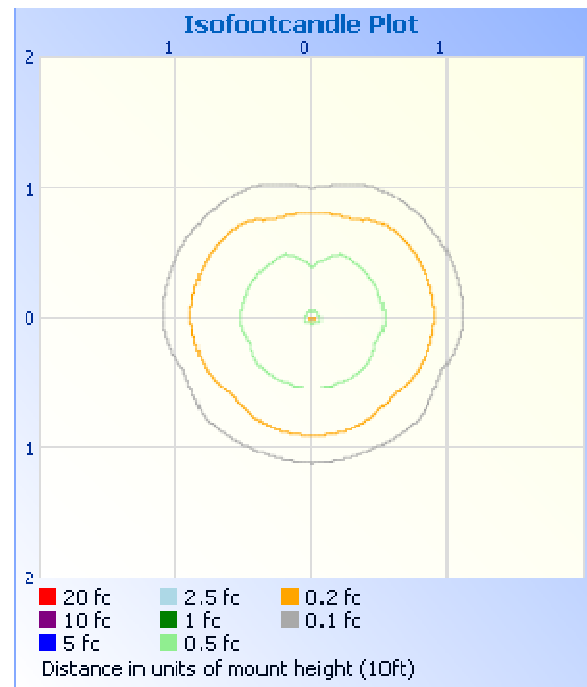
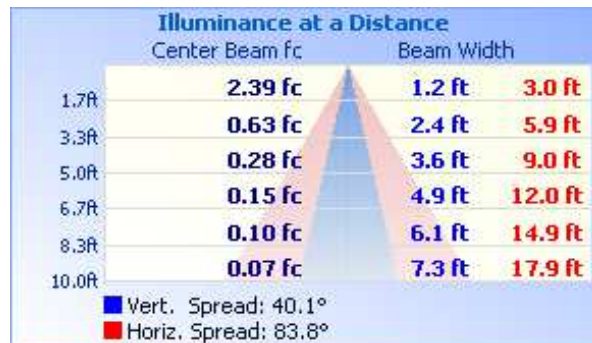
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RESULTS OF TESTS

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	64.2	19.9
0-40	99.4	30.8
0-60	145.6	45.2
60-90	13.8	4.3
70-100	9.4	2.9
90-120	12.9	4.0
0-90	159.4	49.5
90-180	162.8	50.5
0-180	322.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	7.4	2.3
10-20	23.1	7.2
20-30	33.7	10.5
30-40	35.2	10.9
40-50	29.3	9.1
50-60	16.9	5.2
60-70	7.3	2.3
70-80	3.4	1.1
80-90	3.1	1.0
90-100	2.9	0.9
100-110	3.0	0.9
110-120	7.0	2.2
120-130	17.3	5.4
130-140	30.2	9.4
140-150	36.3	11.3
150-160	34.7	10.8
160-170	23.7	7.3
170-180	7.8	2.4

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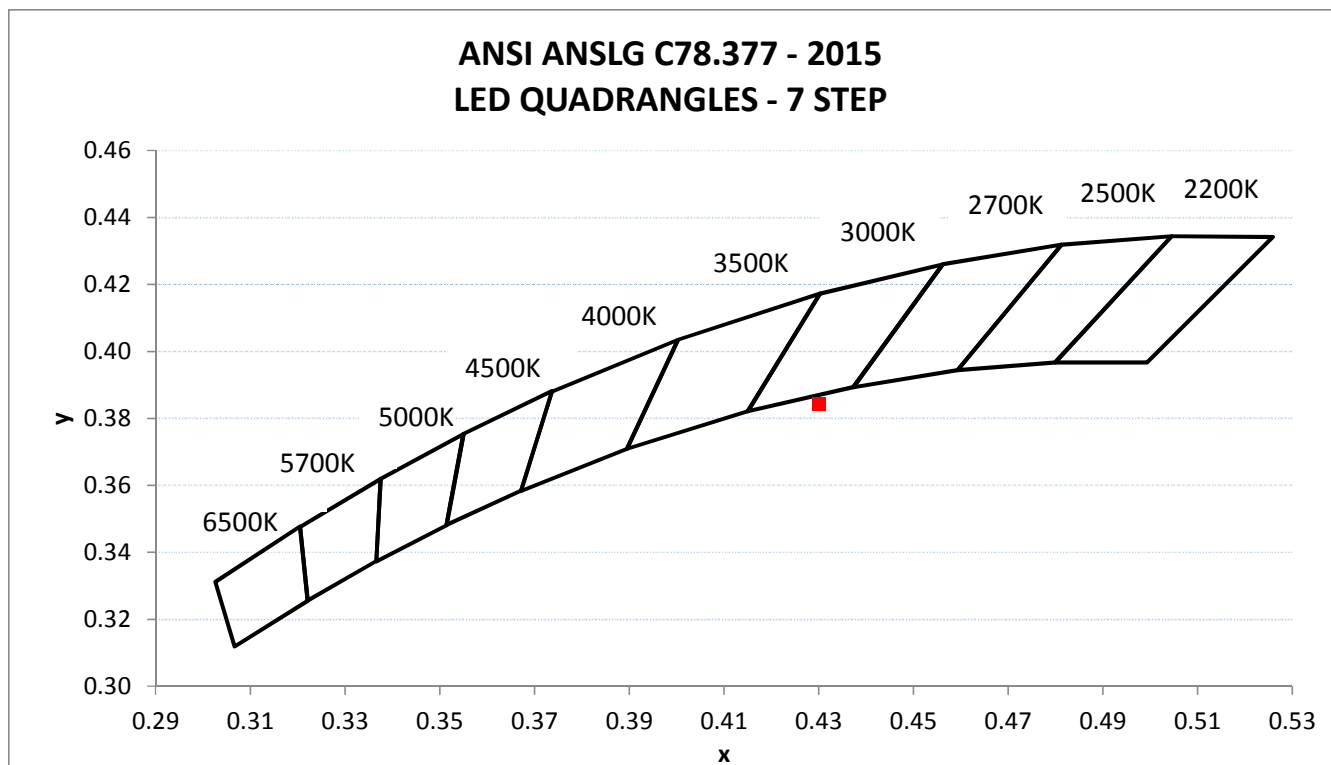
RESULTS OF TESTS

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 (%)
AH05152019114818-099	Base Up	120.01	156.23	18.39	0.981	19.71

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
334.0	18.2	2949	94.7	74.9	0.0074

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.430	0.384	0.255	0.512



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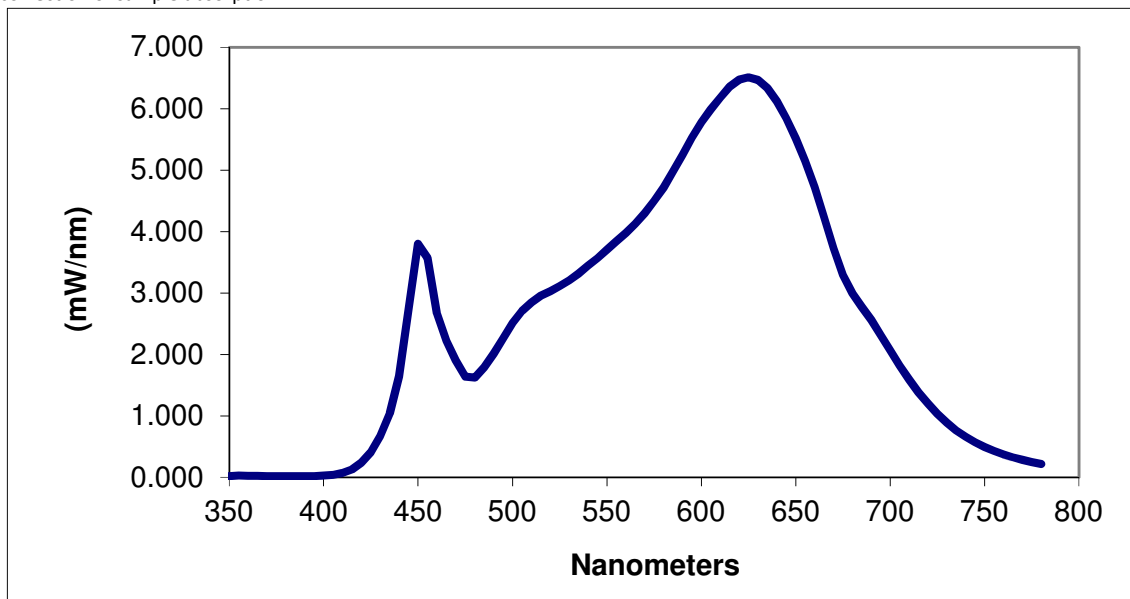
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RESULTS OF TESTS

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	0.021	460	2.676	570	4.303	680	2.996
355	0.028	465	2.226	575	4.500	685	2.774
360	0.026	470	1.904	580	4.717	690	2.563
365	0.024	475	1.638	585	4.978	695	2.319
370	0.021	480	1.627	590	5.248	700	2.068
375	0.022	485	1.792	595	5.525	705	1.822
380	0.018	490	2.013	600	5.781	710	1.592
385	0.020	495	2.261	605	5.992	715	1.383
390	0.019	500	2.516	610	6.183	720	1.202
395	0.022	505	2.710	615	6.361	725	1.037
400	0.031	510	2.851	620	6.476	730	0.891
405	0.042	515	2.960	625	6.512	735	0.768
410	0.072	520	3.030	630	6.469	740	0.660
415	0.129	525	3.113	635	6.337	745	0.571
420	0.239	530	3.208	640	6.118	750	0.495
425	0.411	535	3.318	645	5.842	755	0.431
430	0.671	540	3.449	650	5.515	760	0.376
435	1.040	545	3.568	655	5.151	765	0.328
440	1.643	550	3.710	660	4.725	770	0.286
445	2.747	555	3.842	665	4.241	775	0.249
450	3.804	560	3.981	670	3.728	780	0.218
455	3.571	565	4.126	675	3.296		

*Without correction of sample absorption.



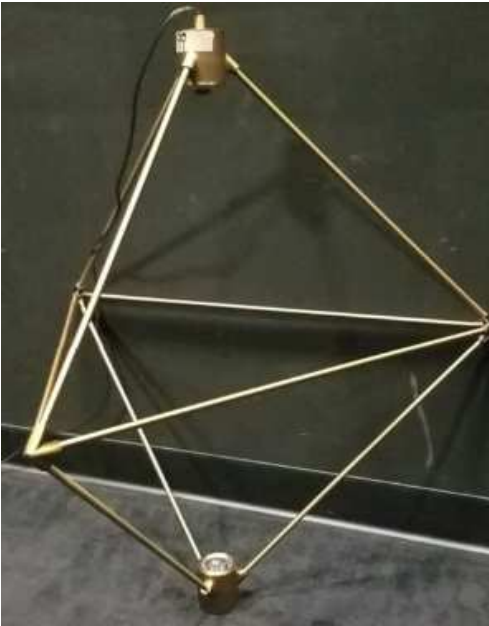
End Of Test Results

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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				