

GENERATION BRANDS, LLC

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700CNDR19R-LEDWD

REPORT NUMBER

103643585CHI-098

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. 700CNDR19R-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 700CNDR19R-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 AH05152019114818-098.

DATE OF TESTS

May 17, 2019 through May 22, 2019.

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SUMMARY

MODEL NO:	700CNDR19R-LEDWD
DESCRIPTION:	LED Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	186.4	187.2
Input Power (W) @ 120 (VAC)	9.07	9.080
Lumen Efficacy (lm/W)	20.6	20.6
Input Power Factor @ 120 (VAC)	0.962	0.962

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	27.80
Correlated Color Temperature (K)	2736
Color Rendering Index - Ra	92.5
Color Rendering - R9	61.3
DUV	0.0055
Chromaticity Coordinate (x)	0.448
Chromaticity Coordinate (y)	0.394
Chromaticity Coordinate (u')	0.262
Chromaticity Coordinate (v')	0.519

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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

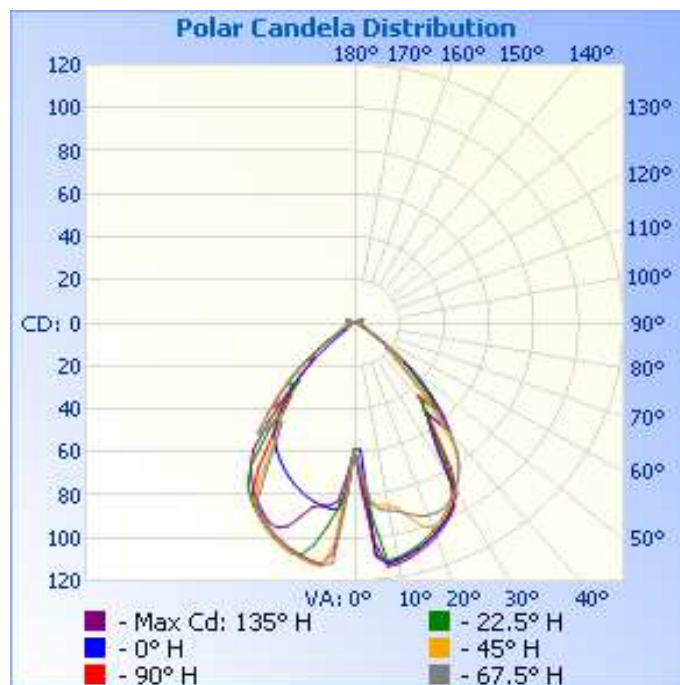
RESULTS OF TESTS

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)
AH05152019114818-098	Base Up	120.1	78.6	9.080	0.962	187.2	20.6

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	59	59	59	59	59
5	109	92	83	84	107
10	112	111	86	88	112
15	109	108	93	92	109
20	104	103	101	95	104
25	99	97	97	95	99
30	88	89	90	90	91
35	59	61	81	81	64
40	66	47	60	66	44
45	49	46	32	39	48
50	32	30	28	18	30
55	16	14	14	14	14
60	8	7	7	6	7
65	4	4	4	4	4
70	3	3	3	2	3
75	2	2	2	2	2
80	2	2	2	1	2
85	1	2	2	1	2
90	2	2	2	2	2
95	3	3	3	2	3
100	3	3	3	2	3
105	2	2	2	2	2
110	4	4	4	3	4
115	2	2	2	1	2



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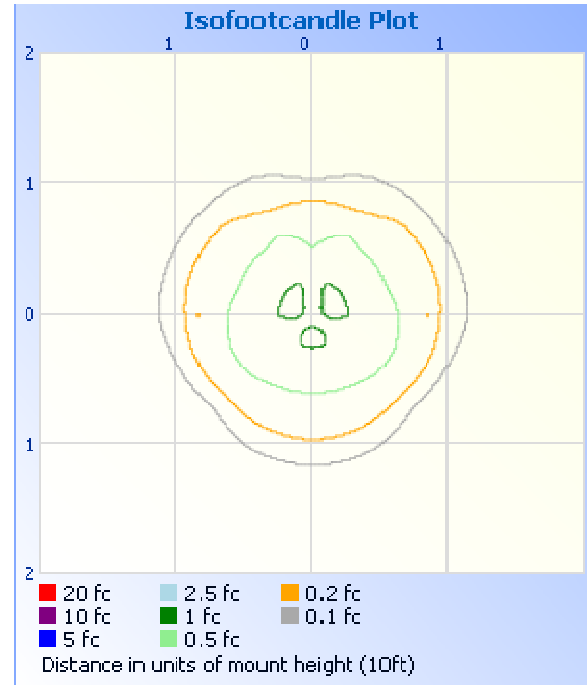
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RESULTS OF TESTS

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	82.7	44.2
0-40	125.9	67.2
0-60	171.8	91.8
60-90	8.4	4.5
70-100	7.0	3.7
90-120	7.0	3.8
0-90	180.2	96.2
90-180	7.0	3.8
0-180	187.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	9.3	4.9
10-20	29.2	15.6
20-30	44.2	23.6
30-40	43.2	23.1
40-50	32.7	17.4
50-60	13.3	7.1
60-70	4.3	2.3
70-80	2.1	1.1
80-90	2.0	1.0
90-100	2.9	1.6
100-110	2.5	1.4
110-120	1.6	0.8

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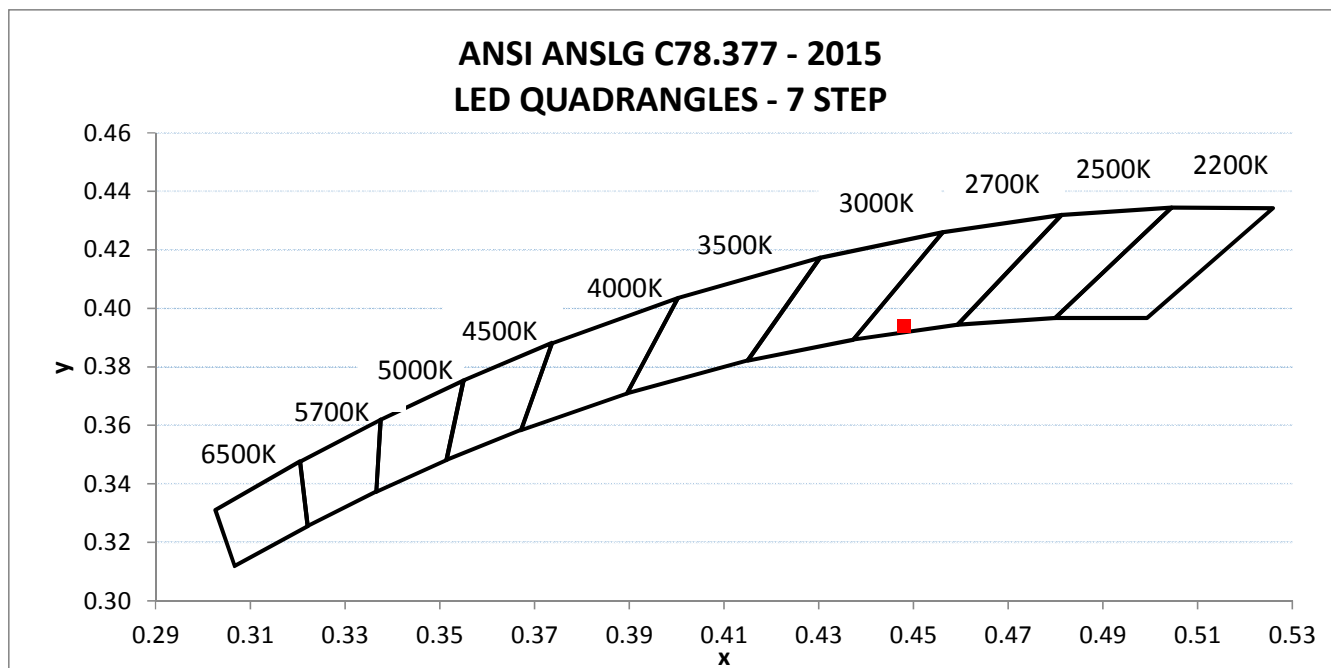
RESULTS OF TESTS

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 (%)
AH05152019114818-098	Base Up	120.00	78.53	9.07	0.962	27.80

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
186.4	20.6	2736	92.5	61.3	0.0055

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.448	0.394	0.262	0.519



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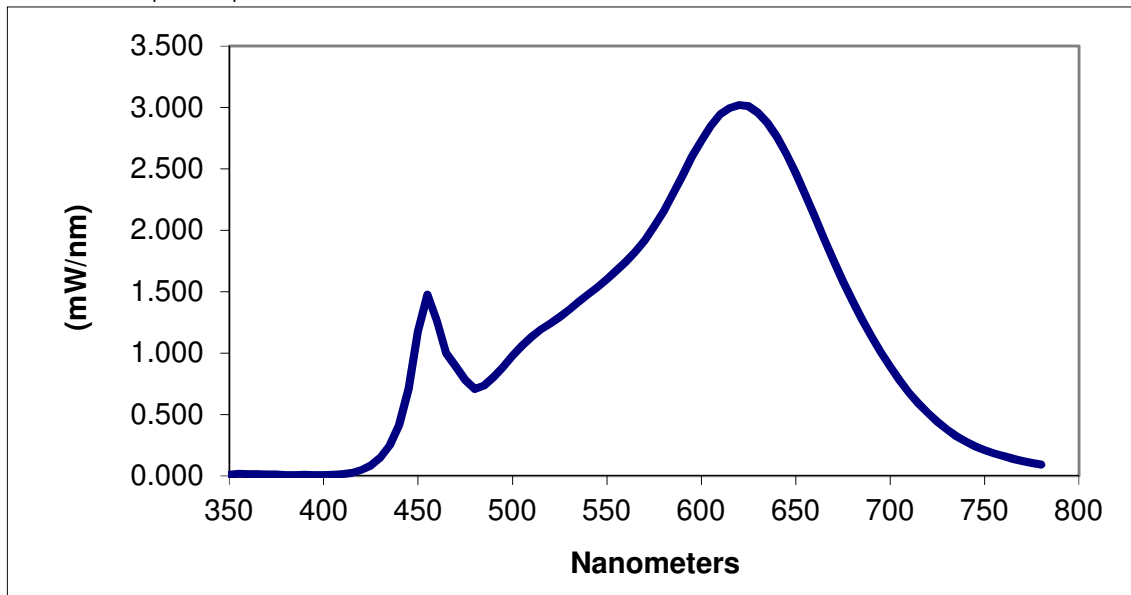
TEST REPORT

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	0.011	460	1.264	570	1.917	680	1.428
355	0.017	465	0.998	575	2.031	685	1.279
360	0.015	470	0.892	580	2.153	690	1.139
365	0.015	475	0.780	585	2.295	695	1.011
370	0.011	480	0.709	590	2.444	700	0.889
375	0.012	485	0.737	595	2.599	705	0.778
380	0.009	490	0.807	600	2.730	710	0.677
385	0.007	495	0.884	605	2.850	715	0.590
390	0.009	500	0.978	610	2.945	720	0.512
395	0.007	505	1.060	615	2.995	725	0.441
400	0.008	510	1.132	620	3.020	730	0.380
405	0.009	515	1.192	625	3.011	735	0.325
410	0.014	520	1.241	630	2.956	740	0.281
415	0.027	525	1.294	635	2.876	745	0.242
420	0.048	530	1.354	640	2.761	750	0.211
425	0.086	535	1.417	645	2.622	755	0.184
430	0.149	540	1.479	650	2.464	760	0.162
435	0.249	545	1.536	655	2.292	765	0.140
440	0.415	550	1.602	660	2.111	770	0.122
445	0.711	555	1.672	665	1.931	775	0.106
450	1.177	560	1.745	670	1.752	780	0.093
455	1.477	565	1.823	675	1.585		

*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				