

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA LM-79 test standard.

MODEL NUMBER

700**PNT**-LED930

REPORT NUMBER

104206403CHI-053

ISSUE DATE

March 13, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: March 13, 2020

TEST REPORT

TEST OF ONE MINI PONTE PENDANT

MODEL NO. 700**PNT**-LED930
LED MODEL NO. LUMINUS CXM-6-30-90-36-AC40
DRIVER MODEL NO. LTF DL18W200C40R-0000

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE IL 60077

STATEMENT OF LIMITATIONS

NVLAP Lab Code 600186-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01040682-1.

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 700**PNT**-LED930. The sample was received by Intertek on February 26, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH02262020084625.

DATE OF TESTS

February 26, 2020 through March 9, 2020.

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SUMMARY

MODEL NO:	700**PNT**-LED930
DESCRIPTION:	Mini Ponte Pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	349.8	364.2
Input Power (W) @ 12 (VAC)	9.11	9.08
Lumen Efficacy (lm/W)	38.4	40.1
Input Power Factor () @ 12 (VAC)	0.913	0.914

CRITERIA	RESULTS
Input Current ATHD (%) @ 12 (VAC)	36.96
Correlated Color Temperature (K)	3007
Color Rendering Index - Ra	92.7
Color Rendering - R9	69.6
DUV	0.0010
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.251
Chromaticity Coordinate (v')	0.520

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2019	7/1/2020
Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
Elgar, AC Power Supply	CW1251	146111	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	7/2/2019	7/2/2020
Newport Thermohygrometer	iTHX-M	146961	7/26/2019	7/26/2020

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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.

TEST REPORT

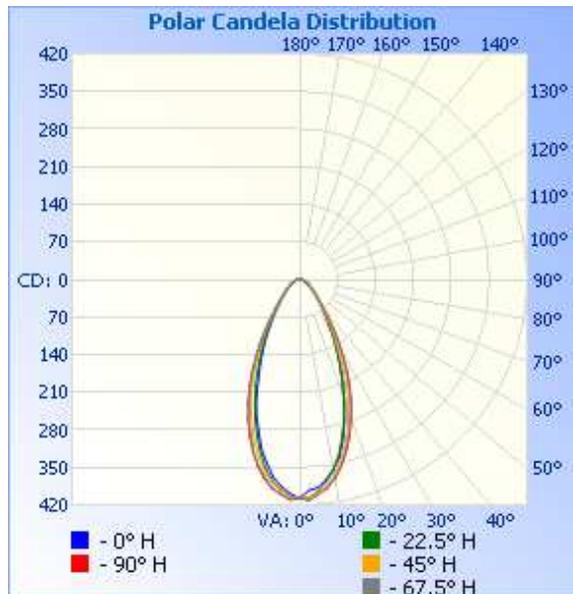
RESULTS OF TESTS

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)
AH02262020084625	Base Up	12.0	828.0	9.08	0.914	364.2	40.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	407	407	407	407	407
5	389	395	400	402	400
10	359	360	370	374	376
15	309	303	321	330	332
20	242	240	261	276	278
25	178	176	194	213	219
30	128	124	134	152	156
35	87	86	90	101	105
40	60	60	61	66	68
45	45	43	44	46	46
50	34	32	33	33	34
55	26	25	25	26	26
60	20	19	20	20	20
65	16	15	15	16	16
70	12	11	12	12	12
75	9	8	8	8	8
80	6	6	6	6	6
85	5	4	4	4	4
90	3	3	3	2	2
95	2	1	1	1	1



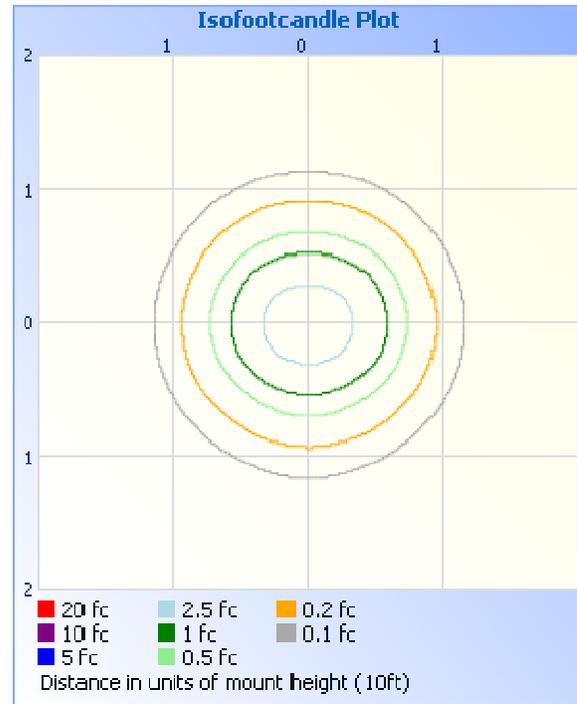
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RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT
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ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	214.6	58.9
0-40	274.9	75.5
0-60	333.4	91.6
60-90	29.1	8.0
70-100	15.2	4.2
90-120	1.6	0.4
0-90	362.5	99.6
90-180	1.6	0.4
0-180	364.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	36.9	10.1
10-20	87.8	24.1
20-30	90.0	24.7
30-40	60.3	16.6
40-50	35.3	9.7
50-60	23.2	6.4
60-70	15.4	4.2
70-80	9.1	2.5
80-90	4.6	1.3
90-100	1.5	0.4
100-110	0.1	0.0

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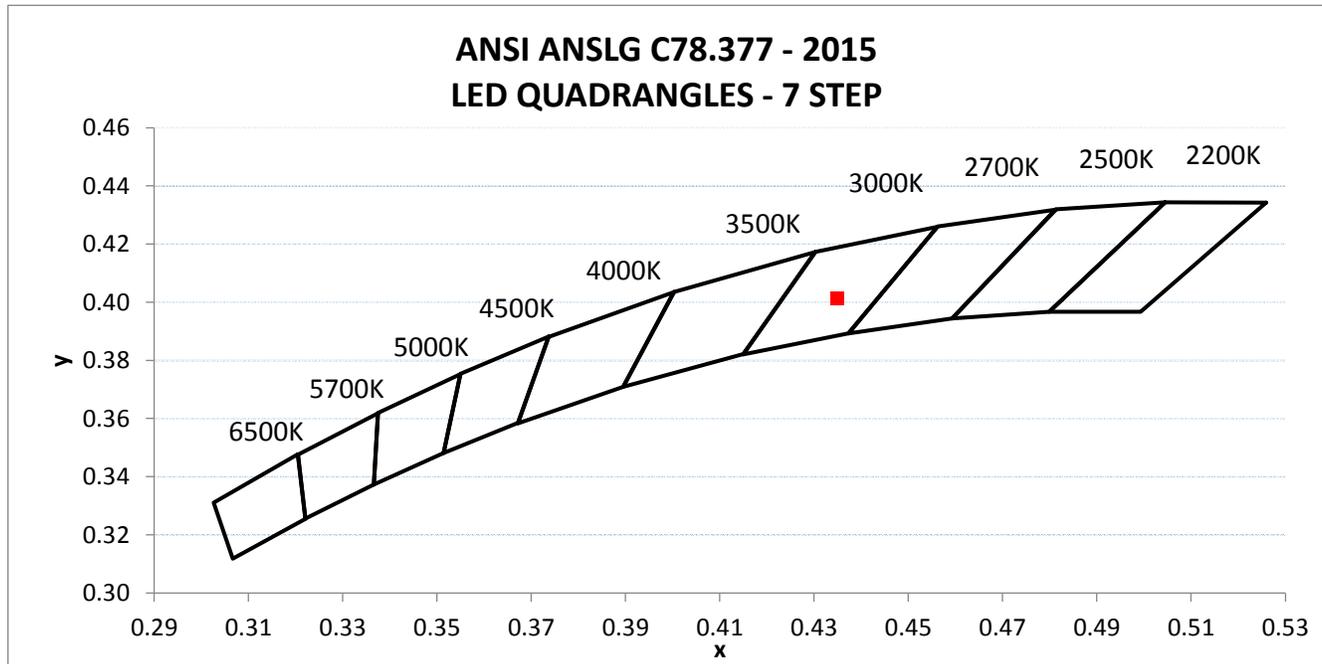
RESULTS OF TESTS

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 (%)
AH02262020084625	Base Up	12.00	831.60	9.11	0.913	36.96

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
349.8	38.4	3007	92.7	69.6	0.0010

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.435	0.401	0.251	0.520



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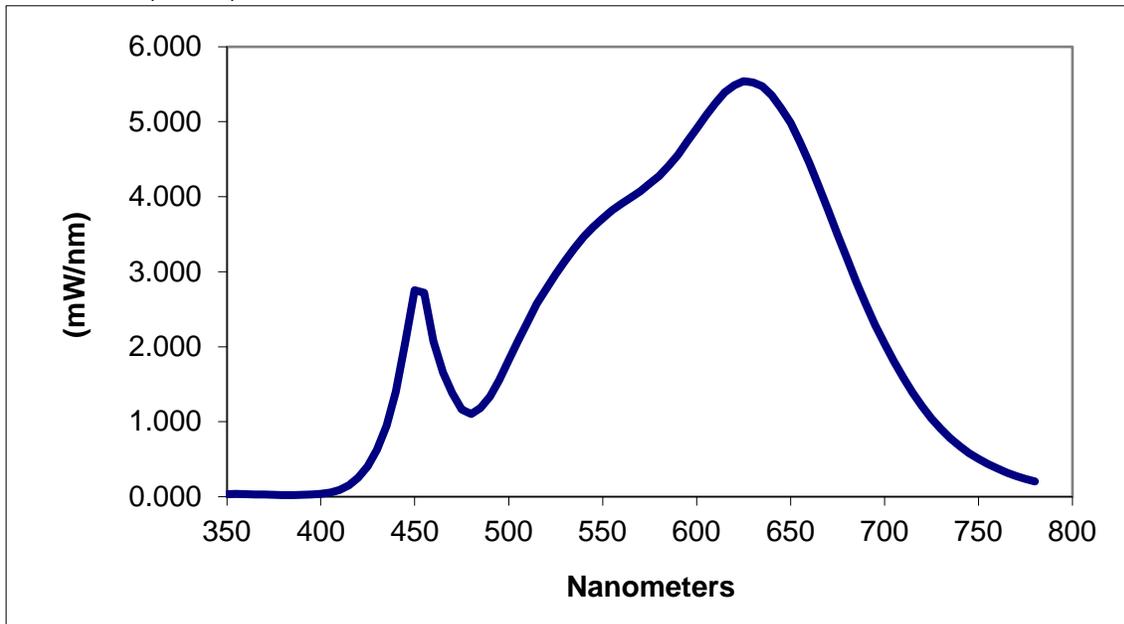
TEST REPORT

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	0.036	460	2.073	570	4.074	680	3.176
355	0.038	465	1.658	575	4.173	685	2.864
360	0.032	470	1.382	580	4.274	690	2.566
365	0.031	475	1.164	585	4.408	695	2.292
370	0.029	480	1.102	590	4.555	700	2.041
375	0.026	485	1.181	595	4.732	705	1.807
380	0.023	490	1.337	600	4.906	710	1.585
385	0.023	495	1.557	605	5.081	715	1.386
390	0.025	500	1.822	610	5.249	720	1.204
395	0.029	505	2.080	615	5.390	725	1.046
400	0.038	510	2.328	620	5.483	730	0.903
405	0.055	515	2.573	625	5.542	735	0.781
410	0.090	520	2.776	630	5.523	740	0.675
415	0.153	525	2.966	635	5.471	745	0.582
420	0.253	530	3.148	640	5.347	750	0.505
425	0.405	535	3.313	645	5.179	755	0.436
430	0.626	540	3.470	650	4.983	760	0.377
435	0.945	545	3.596	655	4.730	765	0.322
440	1.402	550	3.712	660	4.445	770	0.276
445	2.064	555	3.818	665	4.141	775	0.236
450	2.755	560	3.907	670	3.819	780	0.203
455	2.718	565	3.985	675	3.497		

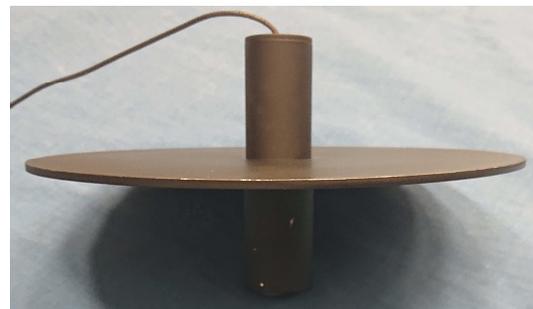
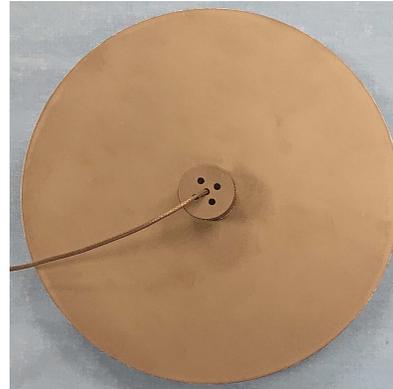
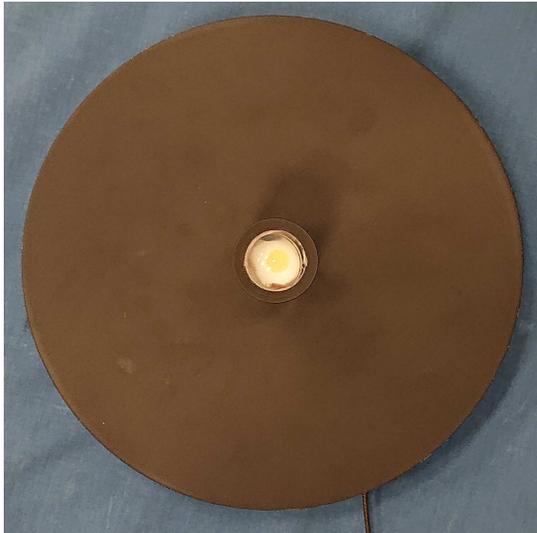
*Without correction of sample absorption.



End Of Test Results

TEST REPORT

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:

Ian Smith
Engineer
Lighting Division

Report Reviewed By:

Jeff Davis
N.A. Technical Lead
Lighting Division

Attachments: IES File

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				