

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700MDP3CRR

REPORT NUMBER

103982892CHI-006

ISSUE DATE

July 10, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: July 10, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700MDP3CRR
LED MODEL NO. BRIDGELUX BXEN-30G-13H-9C-00-0-0
DRIVER MODEL NO. MACRON MDR60824100LC

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE, IL 60077

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00981438-0.

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 700MDP3CRR. The sample was received by Intertek on June 14, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH06142019092403-006.

DATE OF TESTS

June 25, 2019 through July 10, 2019.

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SUMMARY

MODEL NO:	700MDP3CRR
DESCRIPTION:	LED pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1430.3	1404.4
Input Power (W) @ 120 (VAC)	44.17	44.17
Lumen Efficacy (lm/W)	32.4	31.8
Input Power Factor @ 120 (VAC)	0.993	0.991

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	5.19
Correlated Color Temperature (K)	3025
Color Rendering Index - Ra	91.0
Color Rendering - R9	57.9
DUV	0.0003
Chromaticity Coordinate (x)	0.436
Chromaticity Coordinate (y)	0.404
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.521

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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	146382	4/17/2019	4/17/2020
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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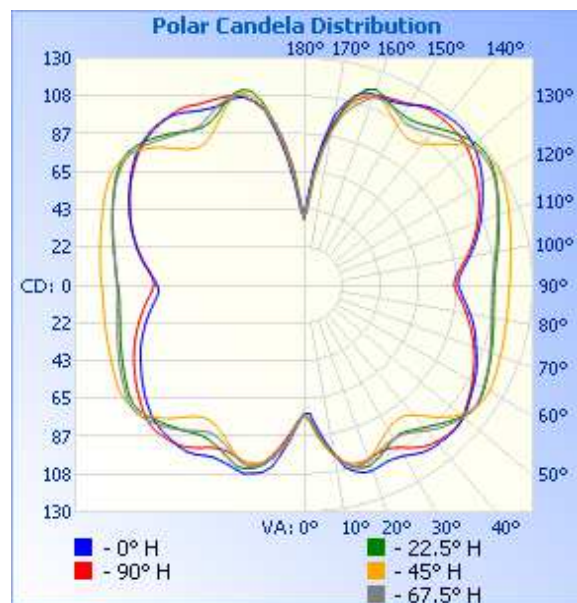
RESULTS OF TESTS

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)
AH06142019092403-006	Base Up	120.1	371.4	44.17	0.991	1404.4	31.8

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	74	74	74	74	74
5	82	87	86	85	85
10	99	100	100	99	98
15	110	108	107	108	106
20	113	110	106	108	106
25	112	106	101	104	105
30	113	102	95	102	107
35	117	102	93	103	114
40	119	106	97	109	117
45	119	112	107	114	119
50	118	117	116	118	118
55	115	120	120	120	114
60	112	118	122	118	110
65	108	116	120	115	107
70	104	113	119	113	103
75	100	111	118	110	98
80	96	109	117	108	94
85	91	108	117	107	89
90	88	108	117	107	85
95	90	109	118	108	88
100	96	112	119	111	94
105	101	114	122	114	100
110	107	118	124	117	105
115	112	122	127	121	110
120	117	126	129	125	114
125	122	128	128	126	118
130	126	127	123	124	121
135	127	123	115	119	123
140	126	118	106	114	124
145	124	113	103	110	123
150	120	113	106	110	120
155	116	115	112	114	118
160	116	119	116	115	116
165	112	112	110	106	109
170	98	92	90	90	94
175	68	62	62	64	66
180	38	38	38	38	38



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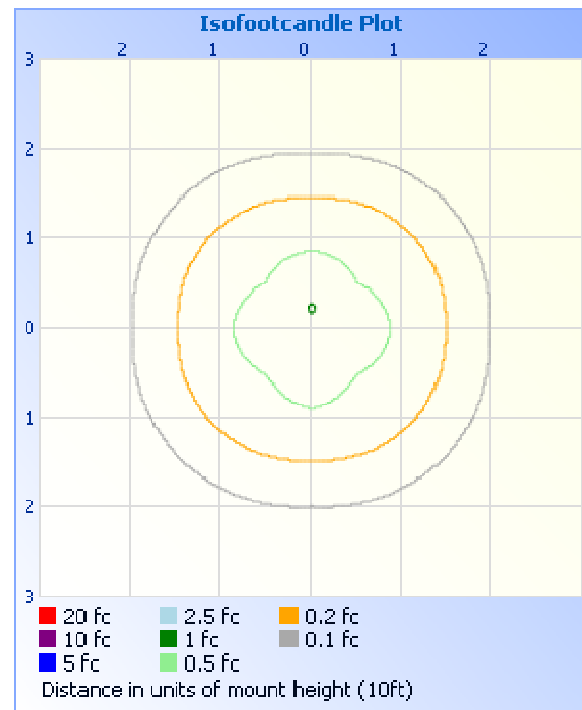
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RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT

Illuminance at a Distance		
	Center Beam fc	Beam Width
1.7ft	25.6 fc	
3.3ft	6.79 fc	
5.0ft	2.96 fc	
6.7ft	1.65 fc	
8.3ft	1.07 fc	
10.0ft	0.74 fc	



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	87.4	6.2
0-40	153.0	10.9
0-60	346.1	24.6
60-90	342.1	24.4
70-100	344.5	24.5
90-120	352.0	25.1
0-90	688.2	49.0
90-180	716.2	51.0
0-180	1404.4	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	8.7	0.6
10-20	30.3	2.2
20-30	48.5	3.5
30-40	65.6	4.7
40-50	87.4	6.2
50-60	105.7	7.5
60-70	113.0	8.0
70-80	114.9	8.2
80-90	114.2	8.1
90-100	115.4	8.2
100-110	118.4	8.4
110-120	118.3	8.4
120-130	111.3	7.9
130-140	92.3	6.6
140-150	70.1	5.0
150-160	52.5	3.7
160-170	31.0	2.2
170-180	7.0	0.5

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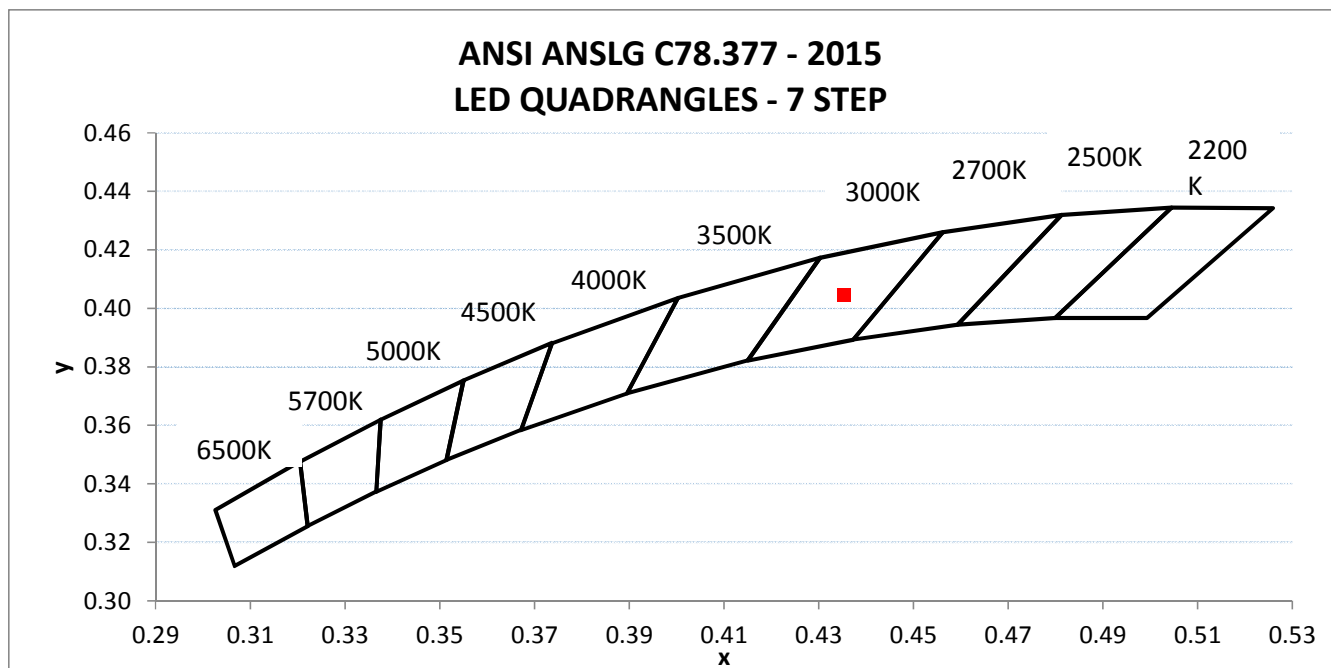
RESULTS OF TESTS

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 (%)
AH06142019092403-006	Base Up	120.01	370.52	44.17	0.993	5.19

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1430.3	32.4	3025	91.0	57.9	0.0003

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.436	0.404	0.250	0.521



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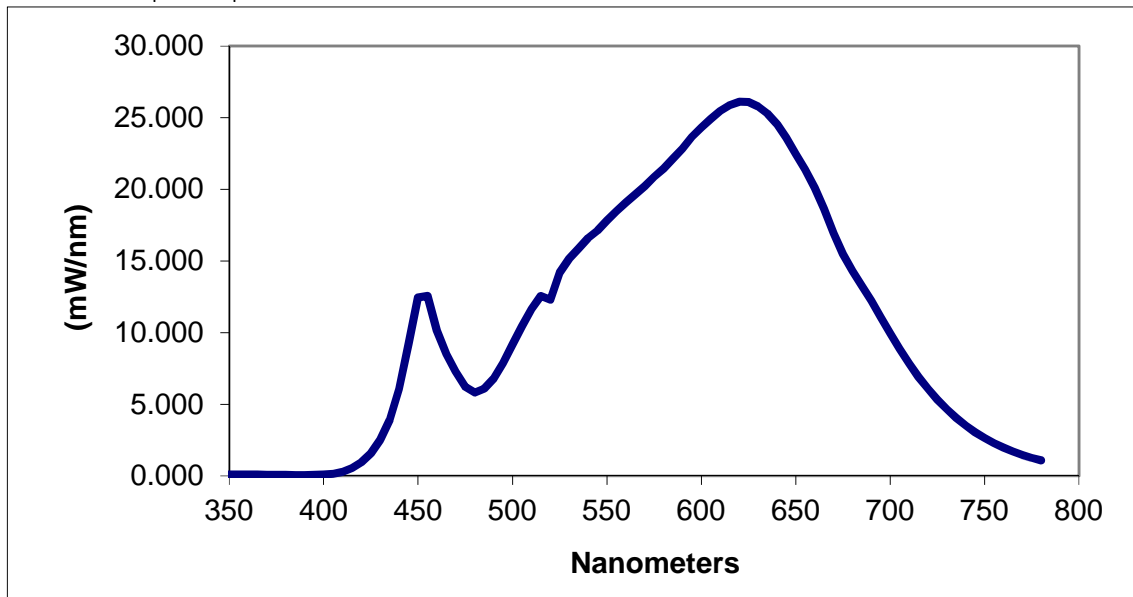
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RESULTS OF TESTS

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	0.119	460	10.163	570	20.230	680	14.300
355	0.111	465	8.511	575	20.875	685	13.285
360	0.109	470	7.307	580	21.448	690	12.227
365	0.105	475	6.223	585	22.153	695	11.103
370	0.092	480	5.823	590	22.840	700	9.953
375	0.084	485	6.096	595	23.651	705	8.877
380	0.079	490	6.812	600	24.317	710	7.858
385	0.072	495	7.884	605	24.921	715	6.925
390	0.072	500	9.204	610	25.461	720	6.091
395	0.087	505	10.448	615	25.878	725	5.343
400	0.098	510	11.660	620	26.106	730	4.660
405	0.157	515	12.570	625	26.097	735	4.053
410	0.295	520	12.300	630	25.789	740	3.521
415	0.552	525	14.200	635	25.301	745	3.054
420	0.959	530	15.183	640	24.557	750	2.650
425	1.580	535	15.876	645	23.587	755	2.292
430	2.520	540	16.613	650	22.458	760	1.979
435	3.933	545	17.116	655	21.393	765	1.707
440	6.061	550	17.830	660	20.103	770	1.473
445	9.251	555	18.452	665	18.642	775	1.269
450	12.465	560	19.074	670	16.949	780	1.099
455	12.574	565	19.635	675	15.485		

*Without correction of sample absorption.



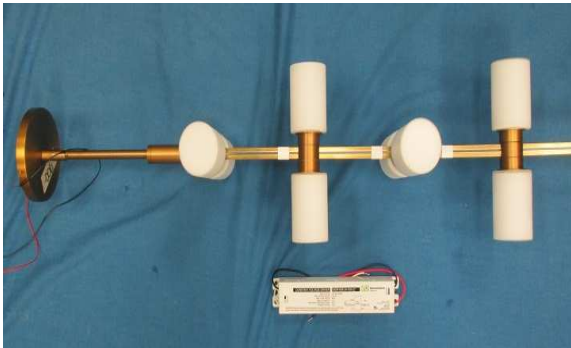
End Of Test Results

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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:

Timothy Quigley
Project Engineer
Lighting Division

Report Reviewed By:

Hector Huitron
Associate Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

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