

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER
700FJMANCLCLSS-LED

REPORT NUMBER
103982892CHI-003

ISSUE DATE
June 25, 2019

REVISION DATE
None

DOCUMENT CONTROL NUMBER
TBD
© 2017 INTERTEK



REPORT NO.: 103982892CHI-003

REPORT DATE: June 25, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700FJMANCLCLSS-LED
LED MODEL NO. NORLUX N0900-0149-R02
DRIVER MODEL NO. N/A

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 700FJMANCLCLSS-LED. The sample was received by Intertek on June 14, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH06142019092403-003.

DATE OF TESTS

June 22, 2019 through June 24, 2019.

REPORT NO.: 103982892CHI-003

REPORT DATE: June 25, 2019

TEST REPORT

SUMMARY

MODEL NO:	700FJMANCLCLSS-LED
DESCRIPTION:	LED pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	377.8	367.2
Input Power (W) @ 12 (VAC)	5.72	5.59
Lumen Efficacy (lm/W)	66.0	65.7
Input Power Factor @ 12 (VAC)	0.965	0.959

CRITERIA	RESULTS
Input Current ATHD (%) @ 12 (VAC)	25.11
Correlated Color Temperature (K)	3048
Color Rendering Index - Ra	83.8
Color Rendering - R9	9.5
DUV	0.0007
Chromaticity Coordinate (x)	0.433
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.520

REPORT NO.: 103982892CHI-003

REPORT DATE: June 25, 2019

TEST REPORT

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	VBU	VBU
Newport Thermohygrometer	iServer	146957	12/11/2018	12/11/2019
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU
3 Meter Sphere	SPR600	CHI0088	VBU	VBU
Elgar AC Power Supply	CW1251	146112	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
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

REPORT NO.: 103982892CHI-003

REPORT DATE: June 25, 2019

TEST REPORT

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

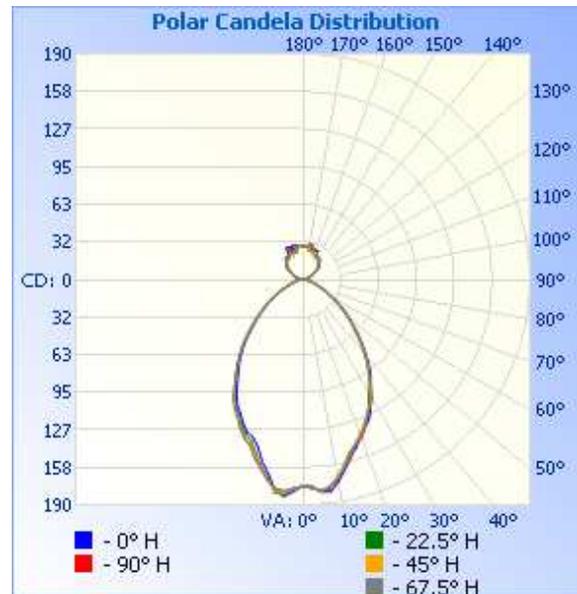
RESULTS OF TESTS

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)
AH06142019092403-003	Base Up	12.0	486.4	5.59	0.959	367.2	65.7

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	174	174	174	174	174
5	180	179	178	178	179
10	172	168	169	170	172
15	154	151	152	153	156
20	140	140	140	142	143
25	131	127	127	126	128
30	113	111	113	114	115
35	99	96	96	97	97
40	82	80	80	81	82
45	65	63	64	64	65
50	51	49	50	50	50
55	39	37	37	37	37
60	28	26	26	26	27
65	18	17	17	17	17
70	12	11	11	11	11
75	8	7	7	7	7
80	5	5	5	5	5
85	4	4	3	3	3
90	3	3	2	2	2
95	2	2	2	2	2
100	2	2	2	2	2
105	3	3	3	3	3
110	5	5	5	5	6
115	9	8	8	8	8
120	11	11	10	10	10
125	15	14	14	14	14
130	18	17	16	17	17
135	20	19	19	19	18
140	22	21	20	21	21
145	23	22	22	22	22
150	22	24	23	22	22
155	26	25	26	26	26
160	26	25	25	26	26
165	27	25	26	28	30
170	27	29	30	32	29
175	29	29	29	28	29
180	28	28	28	28	28



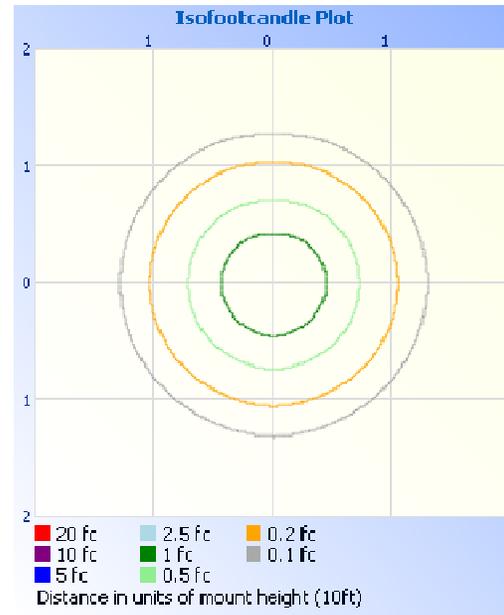
TEST REPORT

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	118.6	32.3
0-40	179.2	48.8
0-60	262.9	71.6
60-90	29.2	7.9
70-100	13.5	3.7
90-120	13.1	3.6
0-90	292.1	79.5
90-180	75.2	20.5
0-180	367.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	16.8	4.6
10-20	43.1	11.7
20-30	58.7	16.0
30-40	60.6	16.5
40-50	49.9	13.6
50-60	33.7	9.2
60-70	17.7	4.8
70-80	7.7	2.1
80-90	3.8	1.0
90-100	2.0	0.5
100-110	3.3	0.9
110-120	7.8	2.1
120-130	12.4	3.4
130-140	14.5	3.9
140-150	13.6	3.7
150-160	11.5	3.1
160-170	7.4	2.0
170-180	2.7	0.7

TEST REPORT

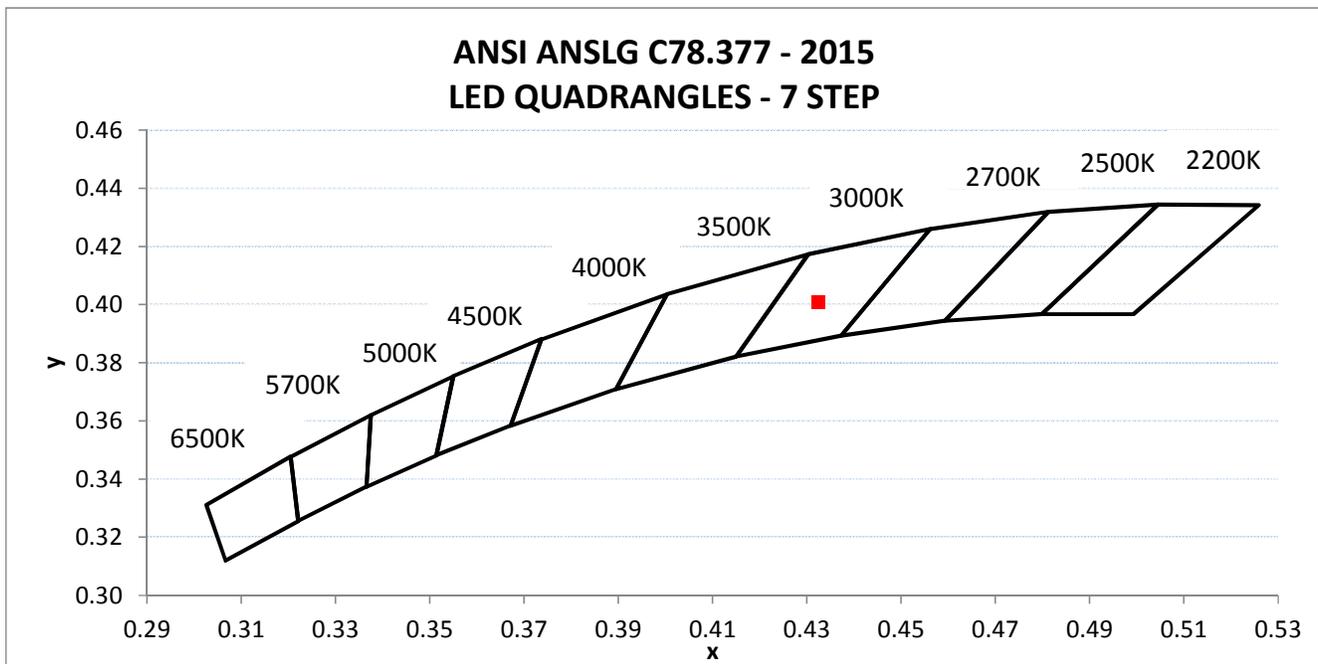
RESULTS OF TESTS

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 (%)
AH06142019092403-003	Base Up	12.01	493.92	5.72	0.965	25.11

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
377.8	66.0	3048	83.8	9.5	0.0007

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.433	0.401	0.249	0.520



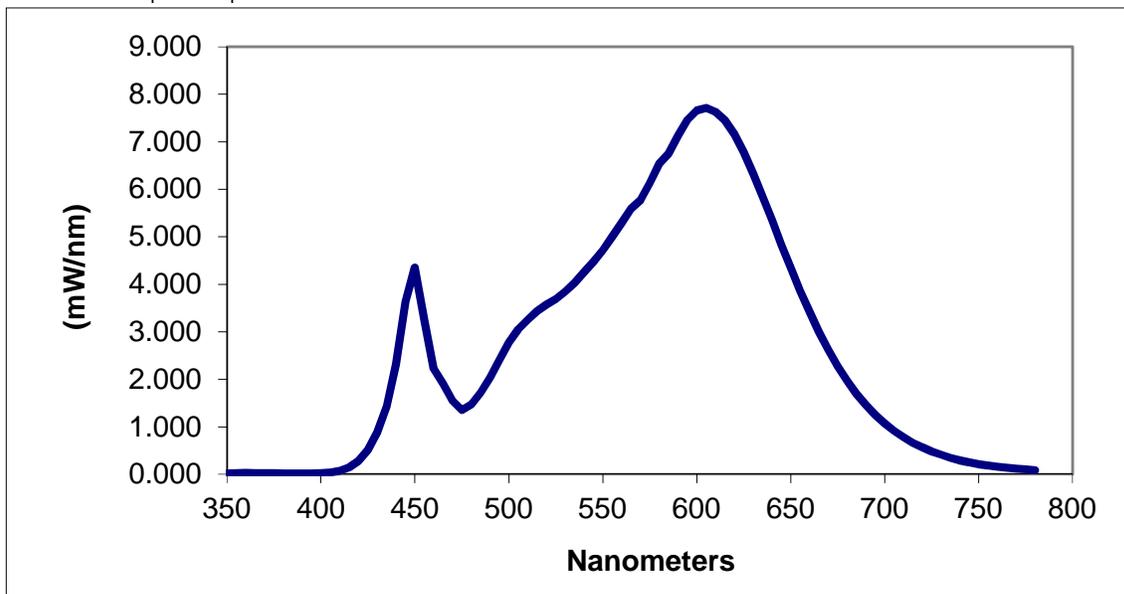
TEST REPORT

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	0.017	460	2.232	570	5.772	680	1.967
355	0.025	465	1.906	575	6.128	685	1.695
360	0.032	470	1.552	580	6.540	690	1.460
365	0.029	475	1.354	585	6.752	695	1.253
370	0.023	480	1.474	590	7.133	700	1.072
375	0.024	485	1.720	595	7.460	705	0.917
380	0.017	490	2.041	600	7.662	710	0.780
385	0.020	495	2.406	605	7.712	715	0.664
390	0.018	500	2.771	610	7.627	720	0.566
395	0.017	505	3.051	615	7.454	725	0.483
400	0.025	510	3.257	620	7.156	730	0.412
405	0.039	515	3.435	625	6.786	735	0.347
410	0.074	520	3.573	630	6.326	740	0.295
415	0.147	525	3.691	635	5.850	745	0.251
420	0.282	530	3.849	640	5.357	750	0.216
425	0.513	535	4.030	645	4.834	755	0.188
430	0.880	540	4.261	650	4.344	760	0.162
435	1.435	545	4.474	655	3.864	765	0.138
440	2.314	550	4.721	660	3.423	770	0.118
445	3.635	555	5.000	665	3.002	775	0.103
450	4.349	560	5.298	670	2.622	780	0.089
455	3.250	565	5.594	675	2.274		

*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:

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				