

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700FJRVLWS-LED930

REPORT NUMBER

103982892CHI-012

ISSUE DATE

June 29, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

© 2017 INTERTEK



REPORT NO.: 103982892CHI-012

REPORT DATE: June 29, 2019

TEST REPORT

TEST OF ONE LED PENDANT

MODEL NO. 700FJRVLWS-LEDS930

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 700FJRVLWS-LEDS930. The sample was received by Intertek on June 14, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH06142019092403-12.

DATE OF TESTS

June 26, 2019 through June 28, 2019.

REPORT NO.: 103982892CHI-012

REPORT DATE: June 29, 2019

TEST REPORT

SUMMARY

MODEL NO:	700FJRVLWS-LED5930
DESCRIPTION:	LED pendant

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	140.3	139.2
Input Power (W) @ 12 (VAC)	6.98	7.30
Lumen Efficacy (lm/W)	20.1	19.1
Input Power Factor @ 12 (VAC)	0.927	0.935

CRITERIA	RESULTS
Input Current ATHD (%) @ 12 (VAC)	36.89
Correlated Color Temperature (K)	3008
Color Rendering Index - Ra	96.2
Color Rendering - R9	91.1
DUV	0.0029
Chromaticity Coordinate (x)	0.441
Chromaticity Coordinate (y)	0.413
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.525

REPORT NO.: 103982892CHI-012

TEST REPORT

REPORT DATE: June 29, 2019

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

REPORT NO.: 103982892CHI-012

REPORT DATE: June 29, 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.

REPORT NO.: 103982892CHI-012

TEST REPORT

REPORT DATE: June 29, 2019

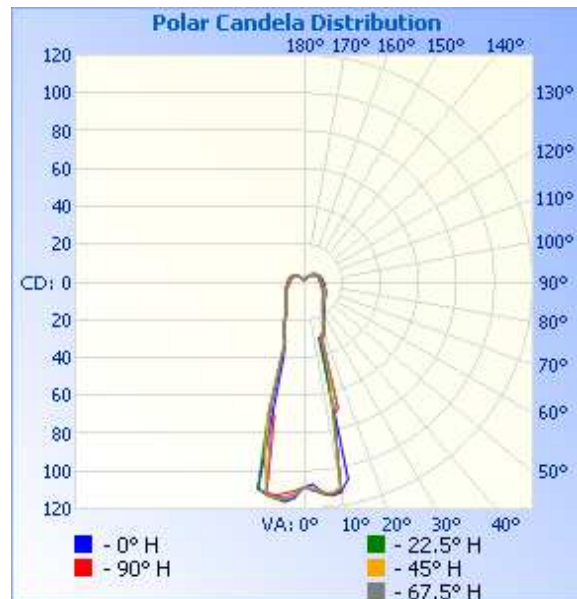
RESULTS OF TESTS

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)
AH06142019092403-12	Base Up	12.0	651.5	7.30	0.935	139.2	19.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	108	108	108	108	108
5	112	112	112	112	112
10	112	111	110	112	113
15	30	36	52	66	69
20	29	28	29	30	30
25	25	25	25	25	25
30	21	20	20	20	19
35	18	18	17	17	17
40	17	16	16	15	15
45	15	15	14	14	14
50	14	14	14	13	13
55	14	13	13	12	12
60	13	13	12	12	11
65	12	12	12	11	11
70	12	12	11	11	10
75	11	11	11	10	10
80	11	11	10	10	9
85	11	10	10	9	9
90	10	10	9	9	8
95	10	9	9	9	8
100	10	9	9	9	8
105	9	9	9	8	8
110	9	9	8	8	8
115	8	8	8	8	7
120	8	8	7	7	7
125	7	7	7	7	6
130	6	6	6	6	6
135	6	6	5	5	5
140	5	5	5	4	4
145	4	4	4	4	4
150	3	3	3	3	3
155	2	2	2	2	2
160	2	2	2	2	2
165	1	1	1	1	1
170	1	1	1	1	1
175	1	1	1	1	1
180	1	1	1	1	1



REPORT NO.: 103982892CHI-012

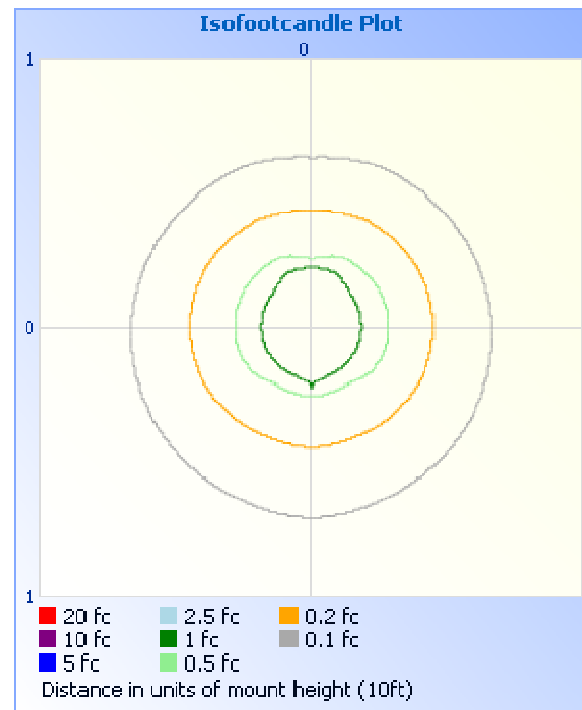
REPORT DATE: June 29, 2019

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	38.3	27.5
0-40	48.9	35.1
0-60	70.4	50.6
60-90	30.9	22.2
70-100	29.2	21.0
90-120	24.8	17.8
0-90	101.3	72.8
90-180	37.8	27.2
0-180	139.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	10.8	7.8
10-20	16.1	11.6
20-30	11.4	8.2
30-40	10.6	7.6
40-50	10.7	7.7
50-60	10.8	7.8
60-70	10.7	7.7
70-80	10.4	7.5
80-90	9.8	7.0
90-100	9.1	6.5
100-110	8.5	6.1
110-120	7.2	5.2
120-130	5.6	4.0
130-140	3.8	2.8
140-150	2.2	1.6
150-160	1.0	0.7
160-170	0.4	0.3
170-180	0.1	0.1

REPORT NO.: 103982892CHI-012

TEST REPORT

REPORT DATE: June 29, 2019

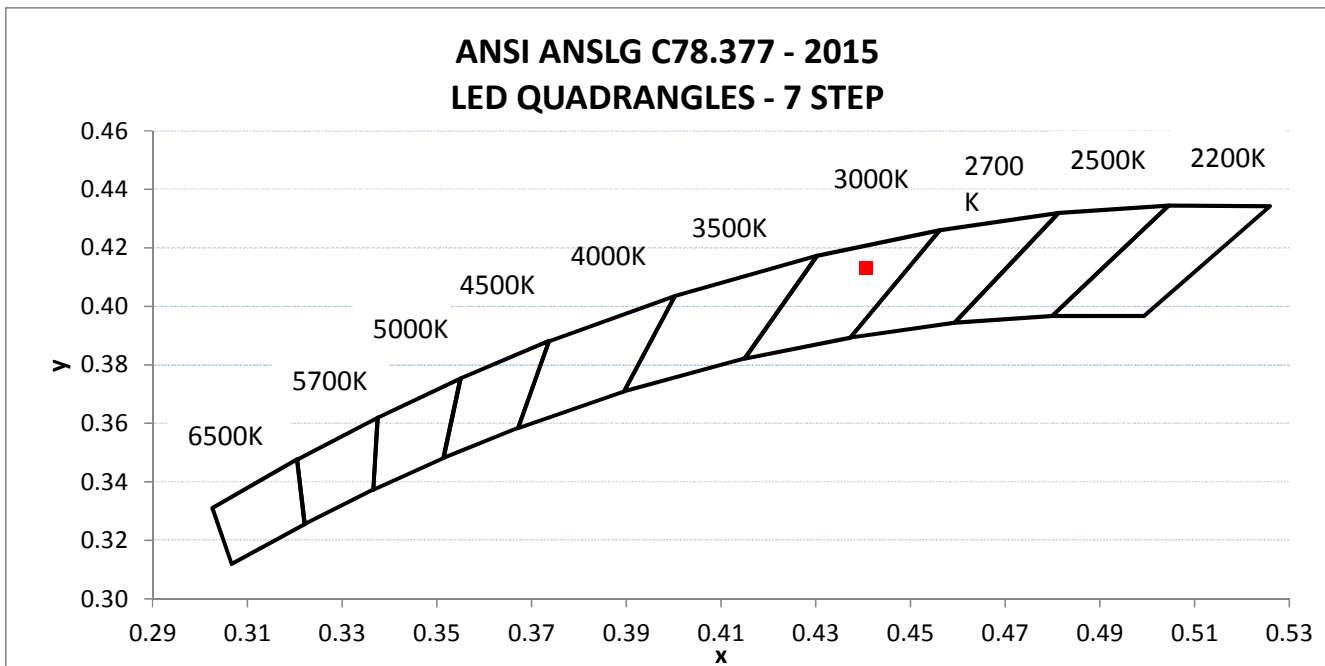
RESULTS OF TESTS

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 (%)
AH06142019092403-12	Base Up	11.99	628.10	6.98	0.927	36.89

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
140.3	20.1	3008	96.2	91.1	0.0029

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.441	0.413	0.249	0.525



REPORT NO.: 103982892CHI-012

TEST REPORT

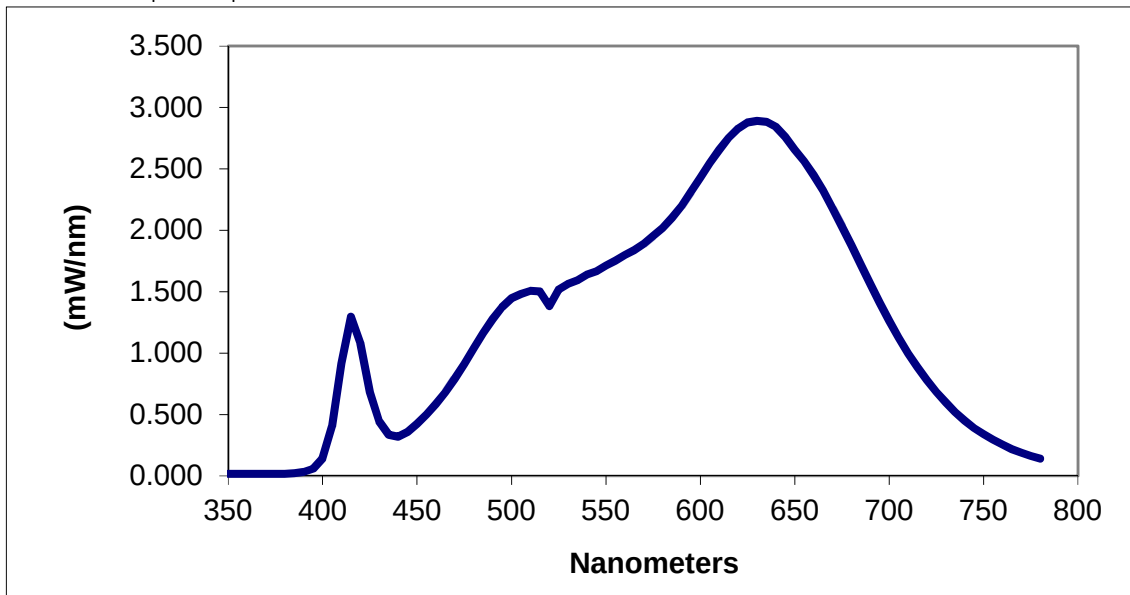
REPORT DATE: June 29, 2019

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	0.018	460	0.585	570	1.892	680	1.877
355	0.019	465	0.683	575	1.952	685	1.720
360	0.017	470	0.791	580	2.018	690	1.562
365	0.019	475	0.911	585	2.101	695	1.412
370	0.017	480	1.042	590	2.197	700	1.264
375	0.019	485	1.164	595	2.313	705	1.126
380	0.019	490	1.279	600	2.430	710	0.997
385	0.023	495	1.375	605	2.548	715	0.886
390	0.035	500	1.449	610	2.658	720	0.781
395	0.060	505	1.483	615	2.753	725	0.685
400	0.143	510	1.508	620	2.829	730	0.599
405	0.406	515	1.501	625	2.877	735	0.520
410	0.917	520	1.382	630	2.891	740	0.451
415	1.297	525	1.517	635	2.882	745	0.391
420	1.083	530	1.564	640	2.841	750	0.342
425	0.681	535	1.595	645	2.762	755	0.296
430	0.445	540	1.640	650	2.657	760	0.256
435	0.335	545	1.666	655	2.563	765	0.219
440	0.321	550	1.714	660	2.447	770	0.190
445	0.360	555	1.753	665	2.327	775	0.163
450	0.424	560	1.800	670	2.179	780	0.140
455	0.500	565	1.838	675	2.032		

*Without correction of sample absorption.



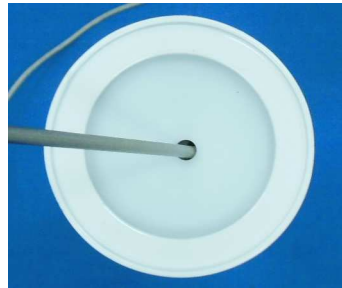
End Of Test Results

REPORT NO.: 103982892CHI-012

REPORT DATE: June 29, 2019

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				