

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700LSWIT1B-LED930

REPORT NUMBER

104097742CHI-003

ISSUE DATE

October 24, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST REPORT

TEST OF ONE WIT LINEAR SUSPENSION LUMINAIRE

MODEL NO. 700LSWIT1B-LED930
LED MODEL NO. SEOUL 3528
DRIVER MODEL NO. MACRON GBLD001

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE, IL, 60077

AUTHORIZATION

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

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 700LSWIT1B-LED930. The sample was received by Intertek on September 25, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH09252019095945-003.

DATE OF TESTS

October 3, 2019 through October 17, 2019.

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SUMMARY

MODEL NO:	700LSWIT1B-LED930
DESCRIPTION:	WIT Linear Suspension Luminaire

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1871.1	1848.7
Input Power (W) @ 120 (VAC)	31.52	31.30
Lumen Efficacy (lm/W)	59.4	59.1
Input Power Factor @ 120 (VAC)	0.966	0.967

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	14.42
Correlated Color Temperature (K)	2988
Color Rendering Index - Ra	94.6
Color Rendering - R9	69.1
DUV	0.0023
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.252
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	7/1/2019	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	12/11/2018	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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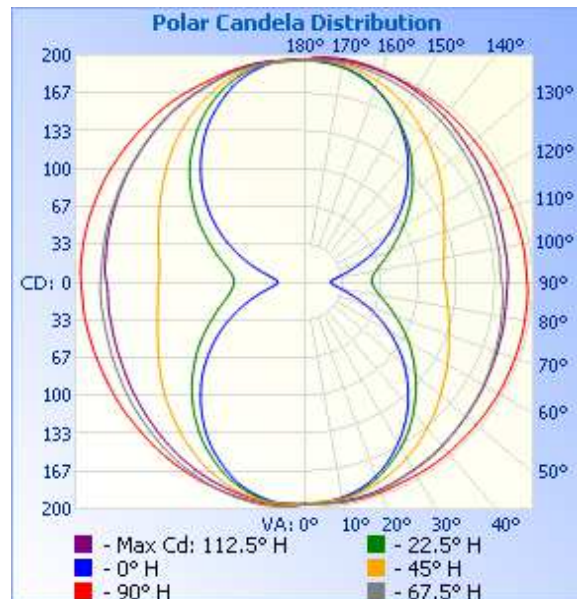
RESULTS OF TESTS

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)
AH09252019095945-003	Horizontal	120.1	269.5	31.30	0.967	1848.7	59.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	196	196	196	196	196
5	195	195	194	196	196
10	193	194	194	197	197
15	189	190	192	197	197
20	182	185	188	195	197
25	174	177	184	193	196
30	164	169	179	192	196
35	153	160	174	190	197
40	142	149	168	189	197
45	128	138	162	186	196
50	115	127	156	184	196
55	100	116	150	183	196
60	86	106	145	181	196
65	71	95	140	180	196
70	56	84	135	178	196
75	43	75	131	177	196
80	32	67	128	176	196
85	26	62	125	175	196
90	23	59	123	173	195
95	26	60	122	172	194
100	32	65	124	173	194
105	43	72	127	173	194
110	56	80	130	174	193
115	71	90	135	175	193
120	86	100	141	177	194
125	100	112	147	179	194
130	115	123	153	181	194
135	128	134	160	184	195
140	142	146	166	186	196
145	153	156	172	188	196
150	164	165	179	191	197
155	174	174	184	193	197
160	182	182	188	194	198
165	189	188	192	196	198
170	193	193	195	196	198
175	195	195	196	196	198
180	196	196	196	196	196



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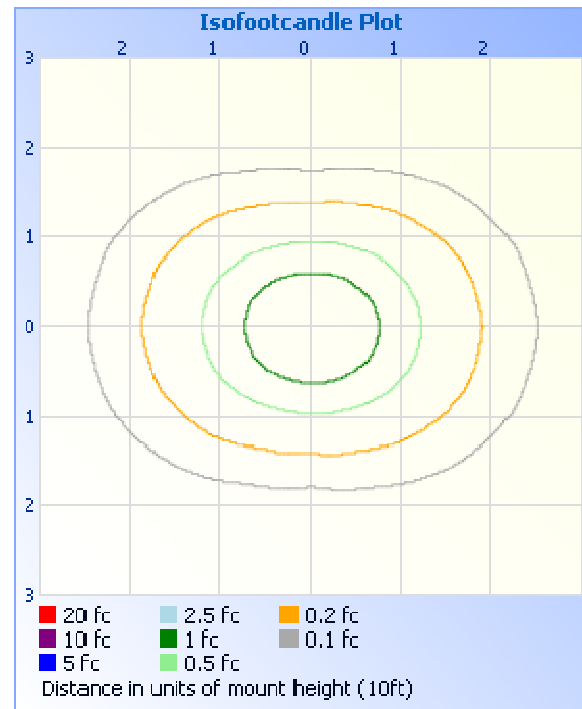
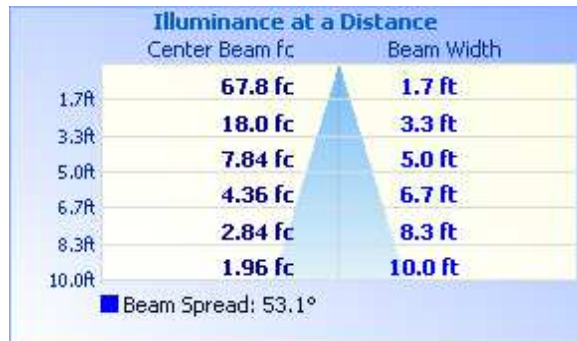
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RESULTS OF TESTS

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	159.1	8.6
0-40	268.8	14.5
0-60	527.5	28.5
60-90	396.9	21.5
70-100	391.6	21.2
90-120	396.9	21.5
0-90	924.4	50.0
90-180	924.3	50.0
0-180	1848.7	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	18.7	1.0
10-20	54.7	3.0
20-30	85.7	4.6
30-40	109.6	5.9
40-50	125.4	6.8
50-60	133.4	7.2
60-70	134.9	7.3
70-80	132.5	7.2
80-90	129.6	7.0
90-100	129.6	7.0
100-110	132.5	7.2
110-120	134.9	7.3
120-130	133.4	7.2
130-140	125.3	6.8
140-150	109.6	5.9
150-160	85.7	4.6
160-170	54.7	3.0
170-180	18.7	1.0

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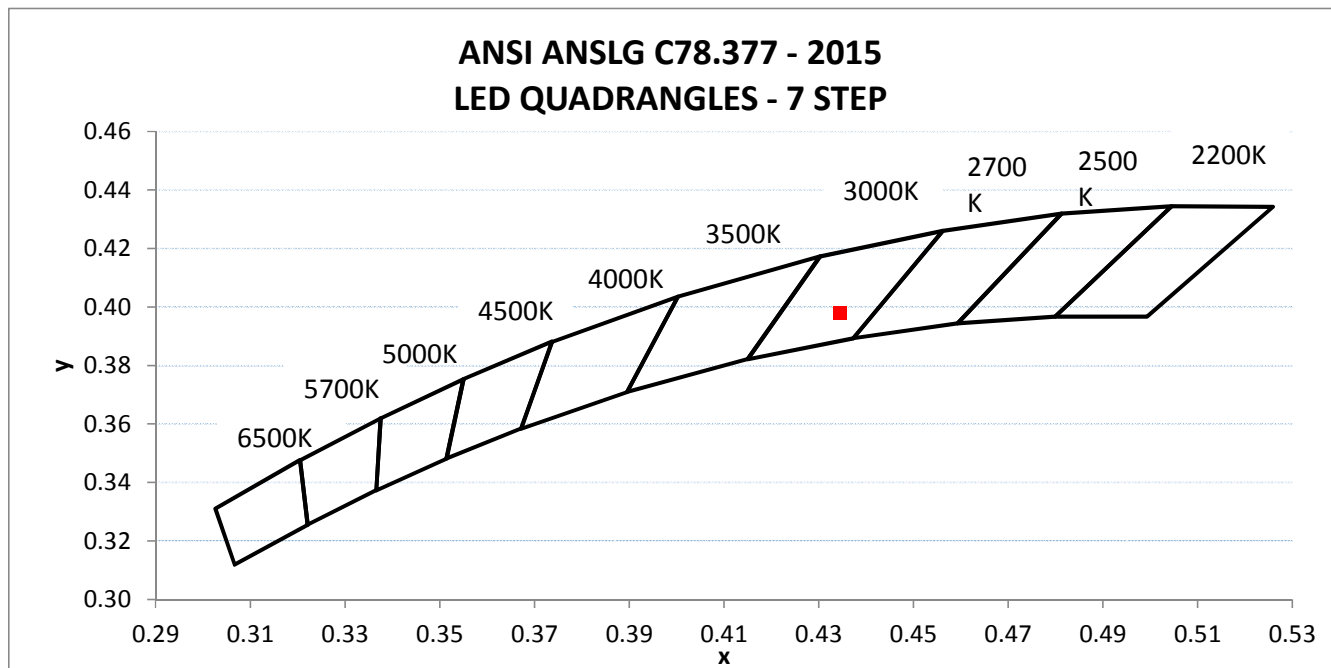
RESULTS OF TESTS

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 (%)
AH09252019095945-003	Horizontal	120.02	271.89	31.52	0.966	14.42

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1871.1	59.4	2988	94.6	69.1	0.0023

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.435	0.398	0.252	0.519



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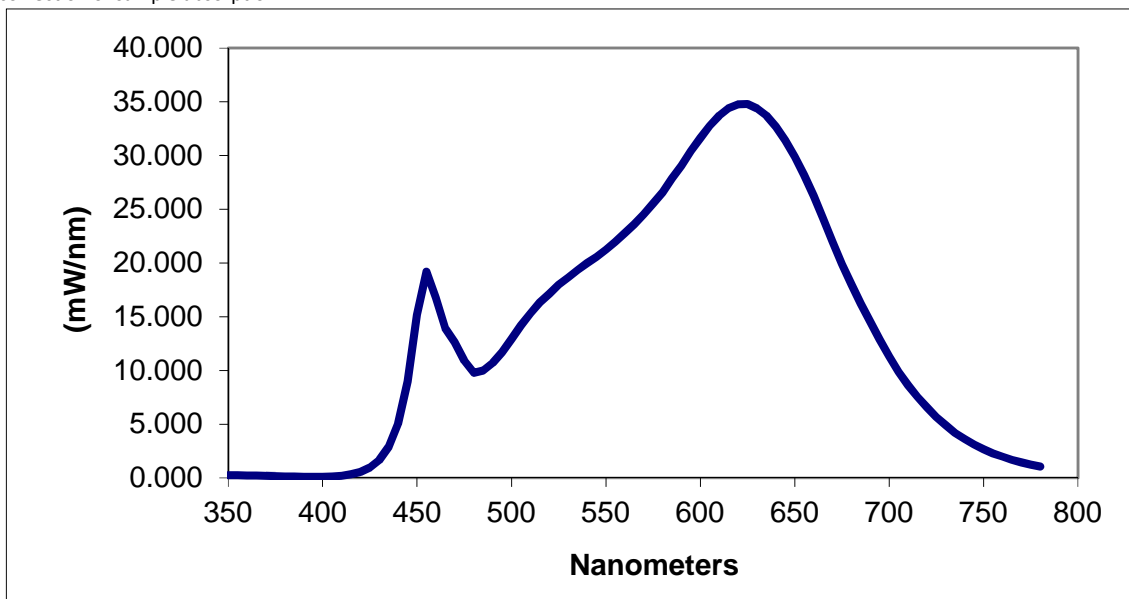
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RESULTS OF TESTS

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	0.265	460	16.789	570	24.515	680	17.999
355	0.263	465	13.885	575	25.543	685	16.225
360	0.239	470	12.612	580	26.583	690	14.528
365	0.228	475	10.935	585	27.844	695	12.886
370	0.196	480	9.796	590	29.062	700	11.318
375	0.175	485	9.993	595	30.417	705	9.891
380	0.139	490	10.717	600	31.643	710	8.633
385	0.134	495	11.692	605	32.768	715	7.564
390	0.118	500	12.949	610	33.720	720	6.565
395	0.119	505	14.190	615	34.409	725	5.693
400	0.118	510	15.336	620	34.777	730	4.907
405	0.147	515	16.324	625	34.784	735	4.208
410	0.211	520	17.156	630	34.366	740	3.619
415	0.342	525	17.962	635	33.714	745	3.108
420	0.570	530	18.661	640	32.673	750	2.675
425	0.964	535	19.335	645	31.390	755	2.297
430	1.671	540	19.993	650	29.893	760	1.981
435	2.916	545	20.569	655	28.179	765	1.693
440	5.068	550	21.258	660	26.253	770	1.444
445	8.995	555	21.979	665	24.168	775	1.233
450	15.190	560	22.796	670	21.973	780	1.063
455	19.197	565	23.593	675	19.905		

*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:

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				