

# VISUAL COMFORT GROUP TEST REPORT

## SCOPE OF WORK

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

## MODEL NUMBER

700LSWIT2B-LED930

## REPORT NUMBER

104097742CHI-003A

## ISSUE DATE

October 24, 2019

## REVISION DATE

None

## DOCUMENT CONTROL NUMBER

TBD

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**REPORT DATE: October 24, 2019**

**TEST REPORT**

**TEST OF ONE WIT LINEAR SUSPENSION LUMINAIRE**

MODEL NO. 700LSWIT2B-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 700LSWIT2B-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**

<b>MODEL NO:</b>	700LSWIT2B-LED930
<b>DESCRIPTION:</b>	WIT Linear Suspension Luminaire

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	2936.6	2848.5
Input Power (W) @ 120 (VAC)	44.77	44.39
Lumen Efficacy (lm/W)	65.6	64.2
Input Power Factor @ 120 (VAC)	0.975	0.977

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	11.74
Correlated Color Temperature (K)	2981
Color Rendering Index - Ra	94.6
Color Rendering - R9	70.2
DUV	0.0027
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.397
Chromaticity Coordinate (u')	0.252
Chromaticity Coordinate (v')	0.518

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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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TEST REPORT

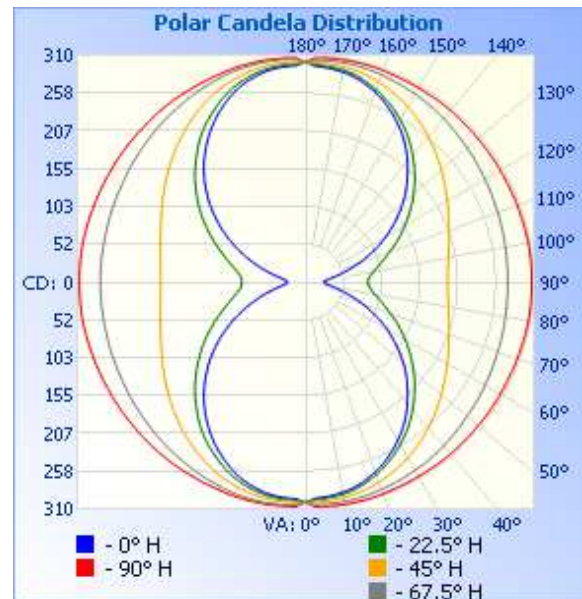
RESULTS OF TESTS

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)
AH09252019095945-003	Horizontal	120.0	378.7	44.39	0.977	2848.5	64.2

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	301	301	301	301	301
5	295	297	300	304	308
10	292	294	299	304	308
15	286	289	296	304	308
20	276	280	291	302	308
25	264	269	285	299	307
30	250	257	277	297	307
35	234	242	269	295	307
40	215	227	260	292	306
45	195	210	250	289	306
50	174	192	241	286	306
55	151	174	231	284	306
60	127	156	222	281	306
65	103	139	214	279	306
70	78	122	207	278	306
75	56	108	202	277	307
80	38	96	197	276	307
85	28	88	194	275	307
90	25	84	193	274	307
95	28	88	194	275	307
100	38	96	197	276	307
105	56	108	202	277	307
110	78	122	207	278	306
115	103	139	214	279	306
120	127	156	222	281	306
125	151	174	231	284	306
130	174	192	241	286	306
135	195	210	250	289	306
140	215	227	260	292	306
145	234	242	269	295	307
150	250	257	277	297	307
155	264	269	285	299	307
160	276	280	291	302	308
165	286	289	296	304	308
170	292	294	299	304	308
175	295	297	300	304	308
180	301	301	301	301	301



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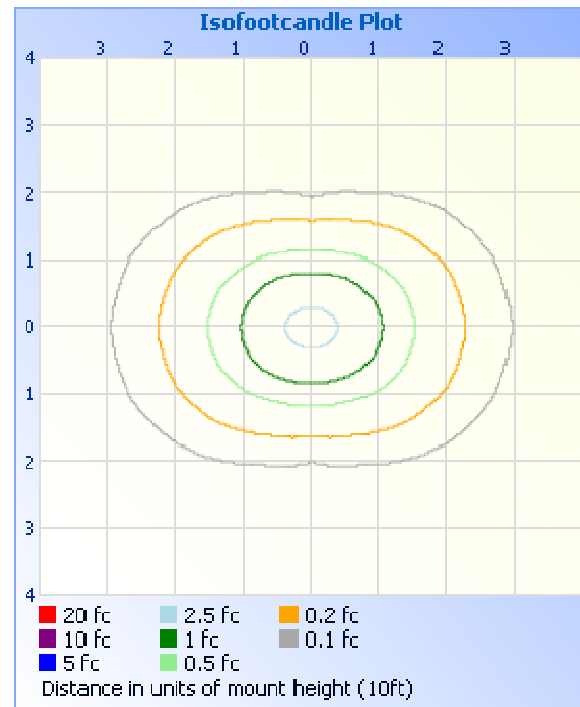
**TEST REPORT**

**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	<b>104 fc</b>	
3.3ft	<b>27.6 fc</b>	
5.0ft	<b>12.0 fc</b>	
6.7ft	<b>6.71 fc</b>	
8.3ft	<b>4.37 fc</b>	
10.0ft	<b>3.01 fc</b>	



**ZONAL LUMEN SUMMARY AND PERCENTAGES**

ZONE	LUMENS	% LUMINAIRE
0-30	244.7	8.6
0-40	414.0	14.5
0-60	813.6	28.6
60-90	610.7	21.4
70-100	602.0	21.1
90-120	610.7	21.4
0-90	1424.4	50.0
90-180	1424.2	50.0
0-180	2848.5	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	28.7	1.0
10-20	84.0	2.9
20-30	132.0	4.6
30-40	169.2	5.9
40-50	193.7	6.8
50-60	206.0	7.2
60-70	207.9	7.3
70-80	203.7	7.1
80-90	199.2	7.0
90-100	199.2	7.0
100-110	203.7	7.1
110-120	207.9	7.3
120-130	206.0	7.2
130-140	193.7	6.8
140-150	169.2	5.9
150-160	132.0	4.6
160-170	84.0	2.9
170-180	28.7	1.0

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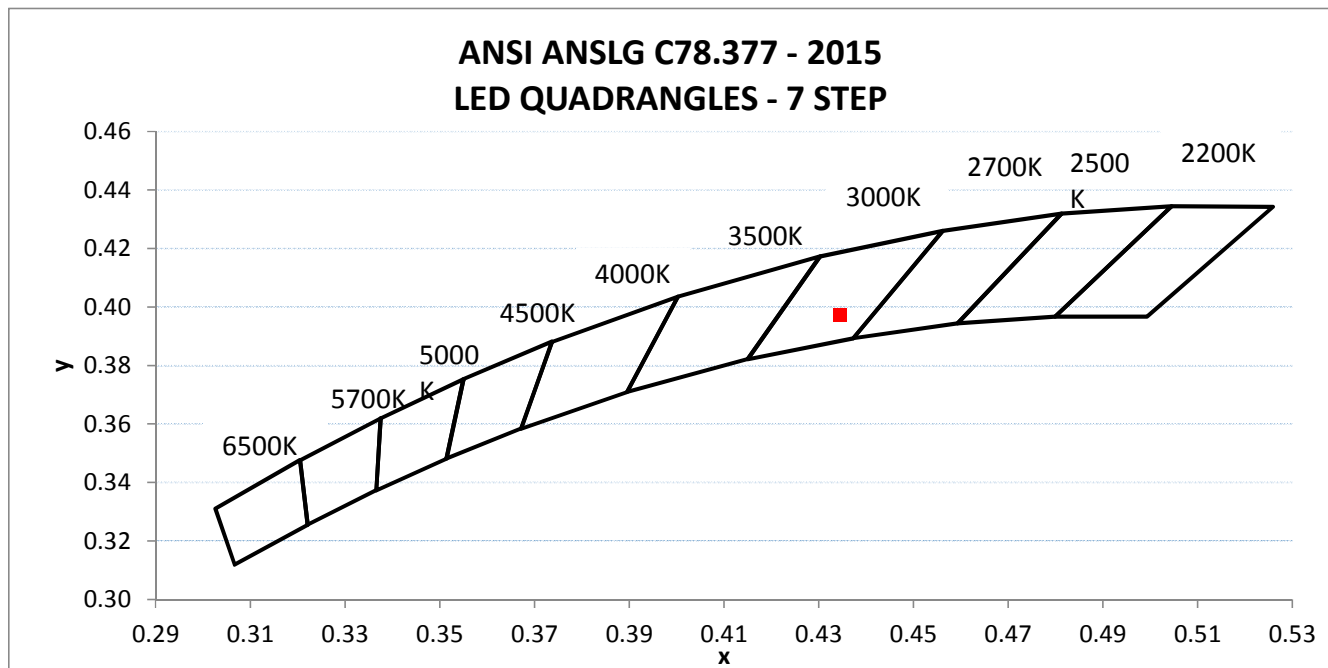
**RESULTS OF TESTS**

**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	120.01	382.75	44.77	0.975	11.74

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
2936.6	65.6	2981	94.6	70.2	0.0027

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.435	0.397	0.252	0.518



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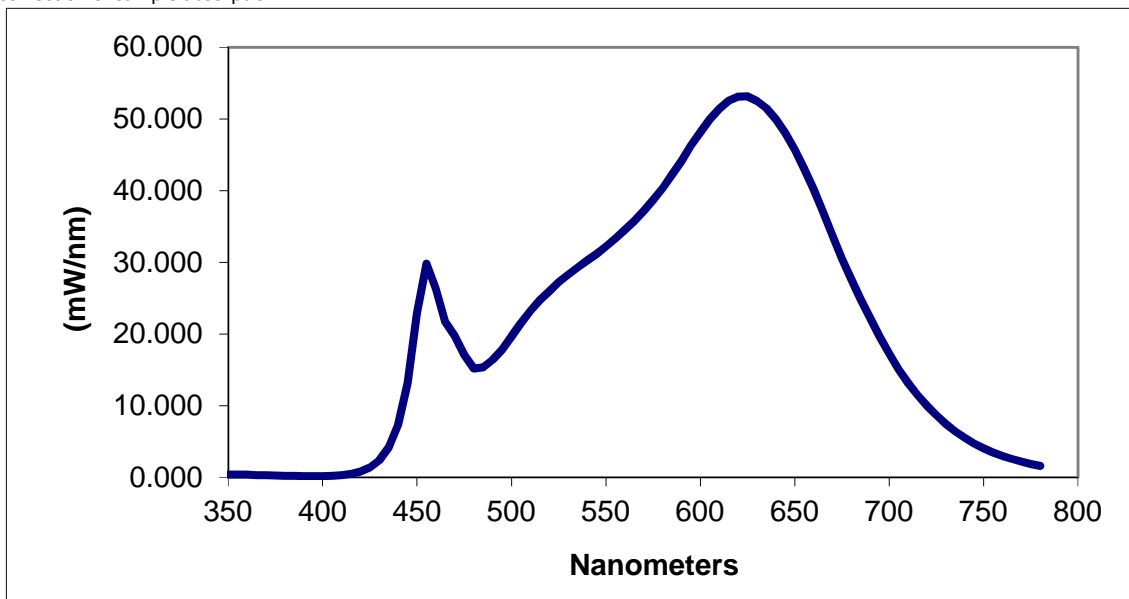
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RESULTS OF TESTS

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	0.394	460	26.331	570	37.168	680	27.606
355	0.406	465	21.669	575	38.720	685	24.818
360	0.388	470	19.713	580	40.354	690	22.188
365	0.328	475	17.092	585	42.244	695	19.651
370	0.319	480	15.153	590	44.151	700	17.267
375	0.257	485	15.347	595	46.287	705	15.091
380	0.231	490	16.403	600	48.182	710	13.175
385	0.199	495	17.806	605	49.941	715	11.518
390	0.188	500	19.691	610	51.438	720	10.015
395	0.173	505	21.525	615	52.539	725	8.685
400	0.180	510	23.260	620	53.113	730	7.467
405	0.207	515	24.723	625	53.170	735	6.407
410	0.298	520	26.002	630	52.508	740	5.512
415	0.483	525	27.210	635	51.519	745	4.734
420	0.804	530	28.281	640	49.976	750	4.071
425	1.367	535	29.299	645	48.018	755	3.494
430	2.380	540	30.269	650	45.704	760	3.003
435	4.174	545	31.170	655	43.089	765	2.569
440	7.335	550	32.218	660	40.164	770	2.196
445	13.177	555	33.314	665	37.031	775	1.880
450	22.915	560	34.534	670	33.705	780	1.614
455	29.820	565	35.742	675	30.535		

\*Without correction of sample absorption.



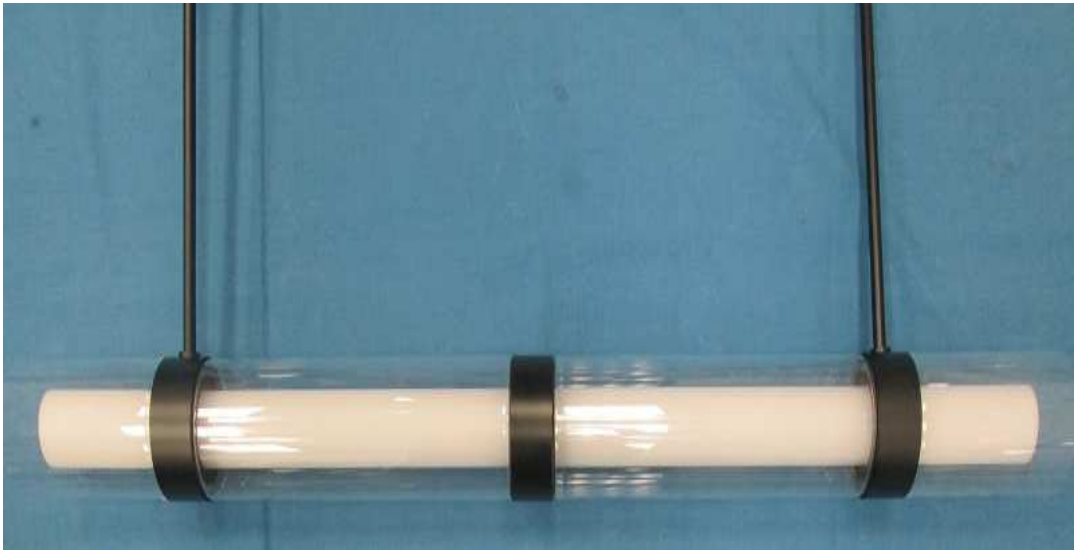
End Of Test Results

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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:

A handwritten signature in black ink, appearing to read "Tim Quigley".

Timothy Quigley  
Project Engineer  
Lighting Division

Report Reviewed By:

A handwritten signature in black ink, appearing to read "Jeff Davis".

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				