

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER
700LSWIT3B-LED930

REPORT NUMBER
104097742CHI-003B

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. 700LSWIT3B-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 700LSWIT3B-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 4, 2019 through October 17, 2019.

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SUMMARY

MODEL NO:	700LSWIT3B-LED930
DESCRIPTION:	WIT Linear Suspension Luminaire

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	3930.0	3866.3
Input Power (W) @ 120 (VAC)	57.74	57.60
Lumen Efficacy (lm/W)	68.1	67.1
Input Power Factor @ 120 (VAC)	0.982	0.987

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	8.15
Correlated Color Temperature (K)	2994
Color Rendering Index - Ra	94.7
Color Rendering - R9	70.8
DUV	0.0025
Chromaticity Coordinate (x)	0.434
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	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	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.

TEST REPORT

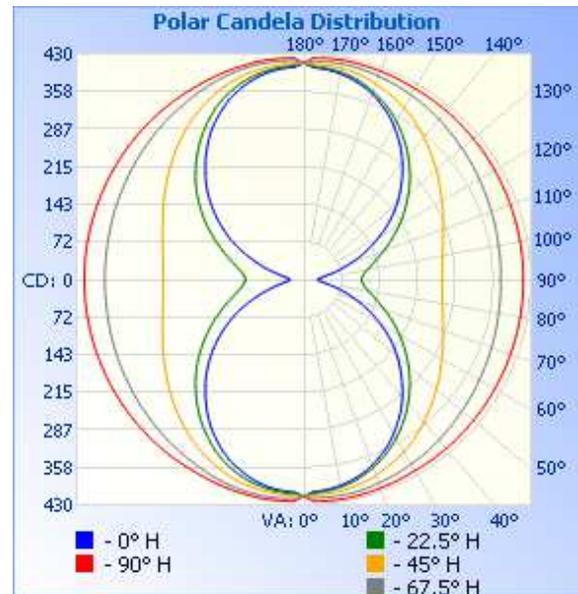
RESULTS OF TESTS

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	120.1	485.9	57.60	0.987	3866.3	67.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	413	413	413	413	413
5	404	406	411	417	424
10	398	402	409	418	425
15	390	394	405	416	424
20	377	382	398	413	423
25	360	367	389	410	422
30	340	349	379	406	421
35	317	329	367	403	420
40	290	307	354	399	420
45	262	284	341	394	419
50	232	259	327	390	419
55	201	234	314	387	418
60	166	209	302	383	417
65	132	184	291	381	417
70	98	161	281	378	416
75	68	141	273	376	416
80	43	125	267	374	416
85	30	114	263	374	416
90	26	109	262	372	416
95	30	114	263	374	416
100	43	125	267	374	416
105	68	141	273	376	416
110	98	161	281	378	416
115	132	184	291	381	417
120	166	209	302	383	417
125	201	234	314	387	418
130	232	259	327	390	419
135	262	284	341	394	419
140	290	307	354	399	420
145	317	329	367	403	420
150	340	349	379	406	421
155	360	367	389	410	422
160	377	382	398	413	423
165	390	394	405	416	424
170	398	402	409	418	425
175	404	406	411	417	424
180	413	413	413	413	413



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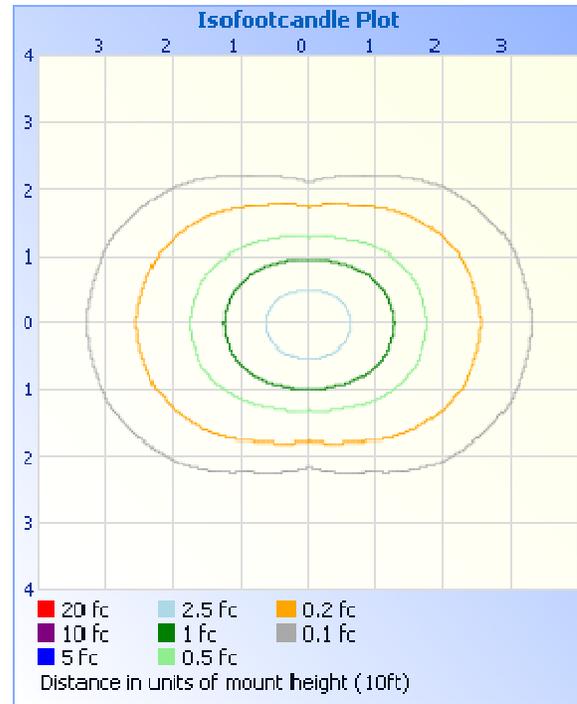
RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT
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Illuminance at a Distance		
	Center Beam fc	Beam Width
1.7ft	143 fc	
3.3ft	37.9 fc	
5.0ft	16.5 fc	
6.7ft	9.20 fc	
8.3ft	6.00 fc	
10.0ft	4.13 fc	



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	334.8	8.7
0-40	565.7	14.6
0-60	1109.8	28.7
60-90	823.5	21.3
70-100	809.2	20.9
90-120	823.5	21.3
0-90	1933.3	50.0
90-180	1933.1	50.0
0-180	3866.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	39.3	1.0
10-20	114.9	3.0
20-30	180.5	4.7
30-40	231.0	6.0
40-50	264.0	6.8
50-60	280.1	7.2
60-70	281.7	7.3
70-80	274.4	7.1
80-90	267.4	6.9
90-100	267.4	6.9
100-110	274.4	7.1
110-120	281.7	7.3
120-130	280.1	7.2
130-140	263.9	6.8
140-150	230.9	6.0
150-160	180.4	4.7
160-170	114.9	3.0
170-180	39.3	1.0

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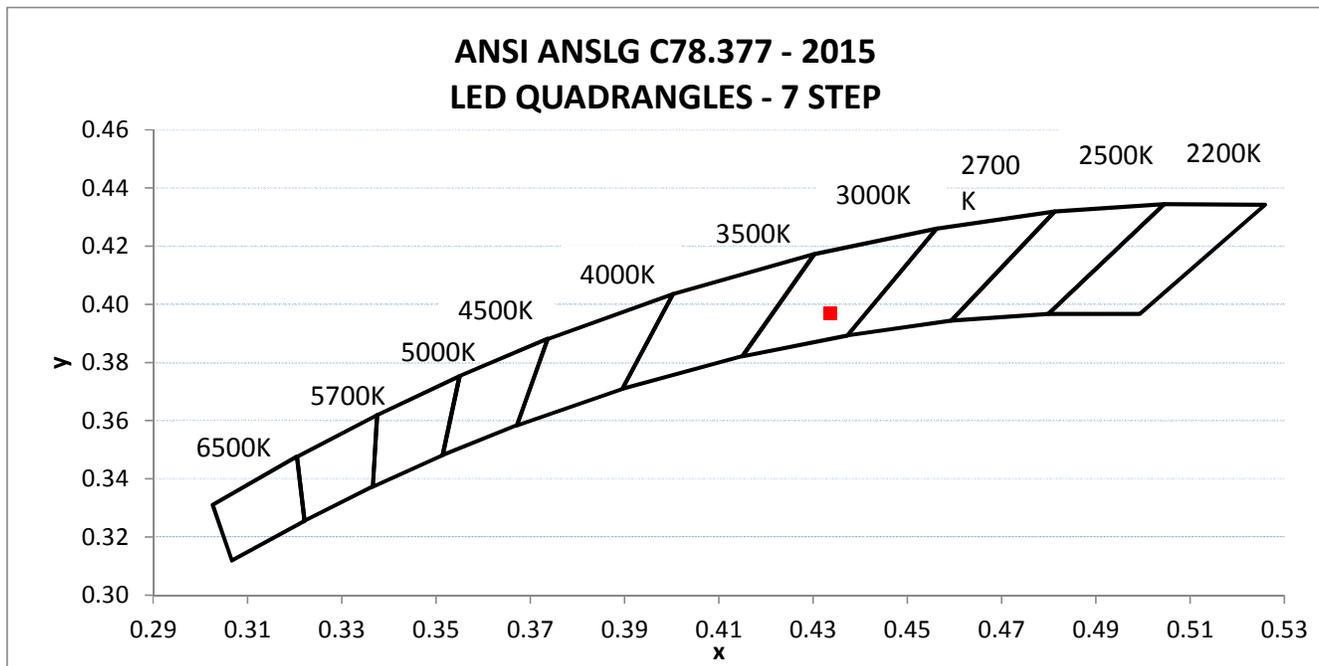
RESULTS OF TESTS

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	490.20	57.74	0.982	8.15

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
3930.0	68.1	2994	94.7	70.8	0.0025

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.434	0.397	0.252	0.518



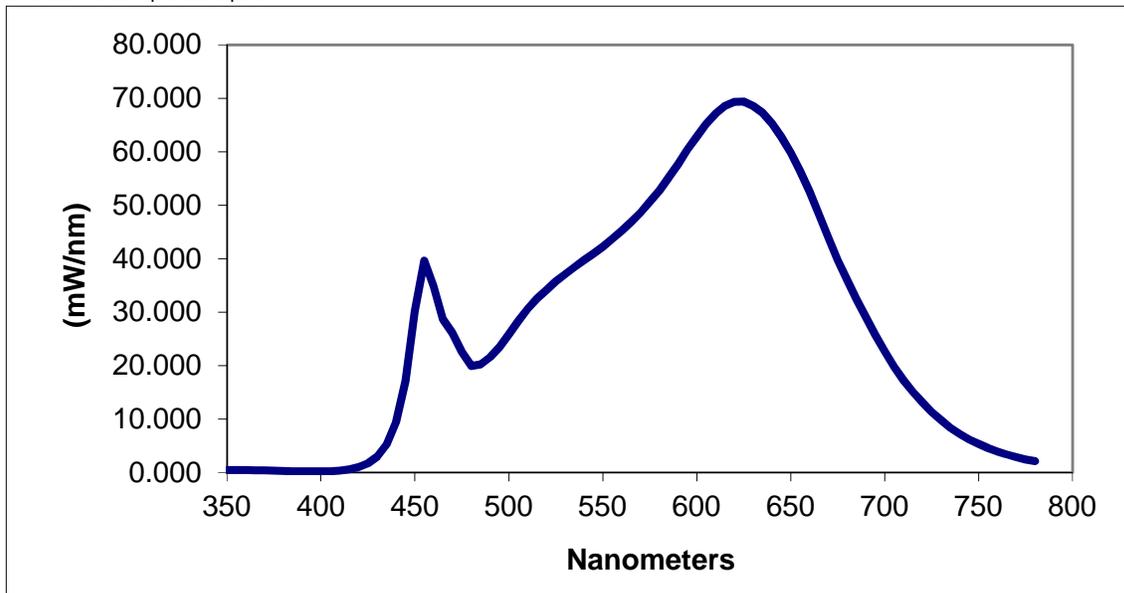
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RESULTS OF TESTS

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	0.493	460	34.867	570	48.654	680	35.991
355	0.485	465	28.635	575	50.672	685	32.440
360	0.487	470	26.110	580	52.722	690	29.072
365	0.427	475	22.559	585	55.205	695	25.771
370	0.387	480	19.944	590	57.679	700	22.652
375	0.328	485	20.240	595	60.406	705	19.807
380	0.287	490	21.615	600	62.874	710	17.269
385	0.245	495	23.470	605	65.161	715	15.107
390	0.222	500	25.914	610	67.117	720	13.135
395	0.217	505	28.355	615	68.571	725	11.378
400	0.224	510	30.625	620	69.351	730	9.807
405	0.257	515	32.585	625	69.403	735	8.404
410	0.376	520	34.172	630	68.579	740	7.220
415	0.591	525	35.754	635	67.297	745	6.190
420	1.001	530	37.132	640	65.316	750	5.335
425	1.704	535	38.474	645	62.780	755	4.574
430	2.993	540	39.757	650	59.804	760	3.941
435	5.289	545	40.932	655	56.425	765	3.362
440	9.376	550	42.250	660	52.549	770	2.878
445	17.109	555	43.662	665	48.339	775	2.458
450	30.189	560	45.259	670	43.929	780	2.112
455	39.629	565	46.832	675	39.752		

*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:

Tim Quigley

Timothy Quigley
Project Engineer
Lighting Division

Report Reviewed By:

Jeffrey 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				