



# REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G102171228

Date: August 14, 2015

REPORT NO. 102171228CHI-002

TEST OF ONE LED LINEAR SUSPENSION

MODEL NO. 700LSSURGW-LED  
LED MODEL NO. EAGLERISE ELC-SL25  
DRIVER MODEL NO. LTF TA100W24LEDL2

RENDERED TO

GENERATION BRANDS  
7400 LINDER AVE  
SKOKIE, IL 60077

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

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number 500606081.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2012: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number 700LSSURGW-LED. The sample was received by Intertek on August 5, 2015, in undamaged condition and one sample was tested as received. The sample designation was AH08052015030609.

DATES OF TESTS: August 7, 2015 through August 14, 2015.

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SUMMARY

Model No.:	700LSSURGW-LED
Description:	LED Linear Suspension

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	2694	2756
Total Power (W)	52.14	57.13
Luminaire Efficacy (LPW)	51.67	48.24

Criteria	Result
Power Factor	0.531
Current ATHD %	30.17
Correlated Color Temperature (CCT - K)	3190
Color Rendering Index (CRI - Ra)	83.8
Color Rendering Index (CRI - R9)	11.5
DUV	0.002
Chromaticity Coordinate (x)	0.426
Chromaticity Coordinate (y)	0.405
Chromaticity Coordinate (u')	0.243
Chromaticity Coordinate (v')	0.520

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/14/15	07/14/16	08/14/15
Omega Thermometer	DPI8-C24	146920	10/09/14	10/09/15	08/14/15
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	08/14/15
Newport Hygrometer	iServer	146956	01/06/15	01/06/16	08/14/15
Elgar, AC Power Supply	CW1251P	146918	VBU	VBU	08/14/15
Labsphere 2M Sphere & Spectroradiation	CDS1100	146137	VBU	VBU	08/07/15
Elgar AC Power Supply	CW1251M	146113	VBU	VBU	08/07/15
Sorenson DC Power Supply	XFR150-8	146847	VBU	VBU	08/07/15
Yokogawa Power Analyzer	WT1600	146770	04/07/15	04/07/16	08/07/15
Omega Temperature	MDSi8	146873	07/09/15	07/09/16	08/07/15
Newport Thermohygrometer	iTHX-M	146382	07/09/15	07/09/16	08/07/15



## 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 Labsphere Model CDS 1100 CCD Array Spectroradiometer and Two Meter or Ten Foot 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. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa 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 LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

**RESULTS OF TEST**

**Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method**

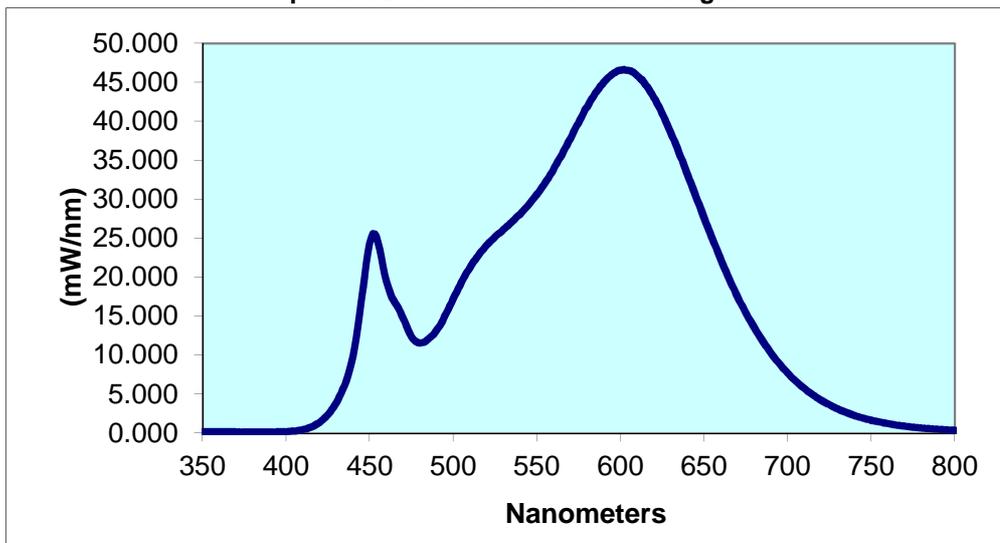
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH08052015030609	Up	120.0	0.818	52.14	0.531	30.17	2694	51.67

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
3190	83.8	11.5	0.002	0.426	0.405	0.243	0.520

**Spectral Distribution over Visible Wavelengths**

nm	mW/nm								
350	0.174	440	9.906	530	26.13	620	43.04	710	5.723
355	0.173	445	16.85	535	27.06	625	41.00	715	4.920
360	0.177	450	24.32	540	28.07	630	38.61	720	4.228
365	0.163	455	24.52	545	29.30	635	36.01	725	3.639
370	0.152	460	19.54	550	30.62	640	33.27	730	3.112
375	0.139	465	16.81	555	32.14	645	30.44	735	2.653
380	0.133	470	14.76	560	33.87	650	27.66	740	2.261
385	0.125	475	12.39	565	35.74	655	24.96	745	1.935
390	0.131	480	11.57	570	37.77	660	22.35	750	1.659
395	0.150	485	12.06	575	39.84	665	19.83	755	1.419
400	0.190	490	13.18	580	41.83	670	17.55	760	1.222
405	0.272	495	15.02	585	43.65	675	15.45	765	1.044
410	0.445	500	17.23	590	45.05	680	13.55	770	0.892
415	0.781	505	19.38	595	46.04	685	11.84	775	0.763
420	1.372	510	21.23	600	46.54	690	10.29	780	0.657
425	2.366	515	22.80	605	46.53	695	8.930		
430	3.891	520	24.12	610	45.88	700	7.717		
435	6.159	525	25.19	615	44.69	705	6.655		

**Spectral Data Over Visible Wavelengths**



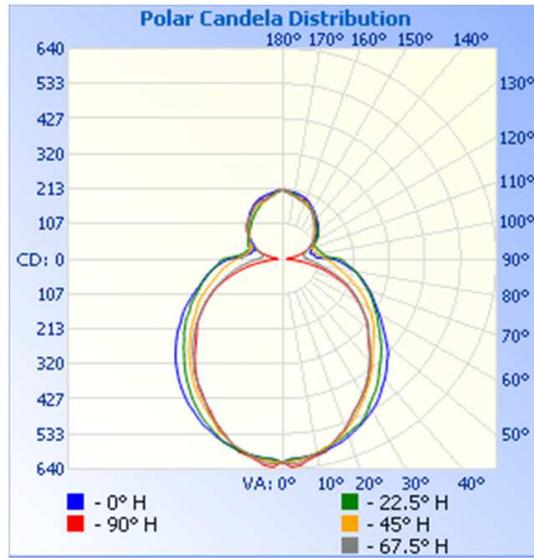
**RESULTS OF TEST (cont'd)**

**Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method**

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH08052015030609	Up	120.0	824.8	57.13	0.577	2756	48.24

**Intensity (Candlepower) Summary at 25°C - Candelas**

Angle	0	22.5	45	67.5	90
0	619	619	619	619	619
5	608	609	613	622	631
10	602	601	598	601	606
15	591	583	585	580	583
20	576	567	555	550	552
25	557	553	524	509	510
30	535	519	488	479	479
35	508	488	454	445	445
40	477	450	419	407	408
45	442	417	383	368	366
50	408	383	356	335	334
55	368	350	331	302	301
60	334	324	297	265	263
65	303	298	268	231	225
70	276	272	232	195	178
75	250	244	201	153	129
80	222	222	172	116	76
85	186	195	151	90	29
90	152	174	133	71	14
95	97	127	116	66	21
100	87	118	102	65	38
105	87	110	95	70	59
110	97	105	98	80	79
115	98	107	102	91	95
120	110	119	107	104	110
125	126	132	114	118	125
130	136	138	122	130	137
135	148	143	134	139	149
140	157	154	149	148	157
145	169	164	164	159	164
150	180	172	176	175	176
155	190	177	178	185	189
160	198	184	185	187	193
165	202	194	192	189	189
170	205	202	194	196	197
175	208	206	207	205	202
180	209	209	209	209	209

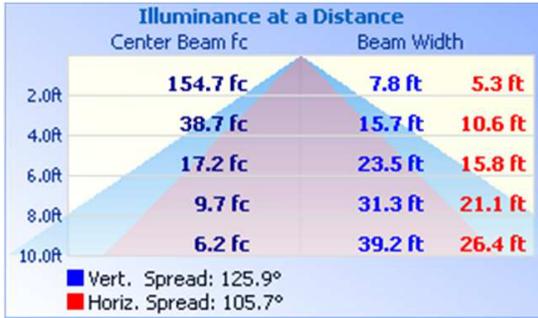


RESULTS OF TEST (cont'd)

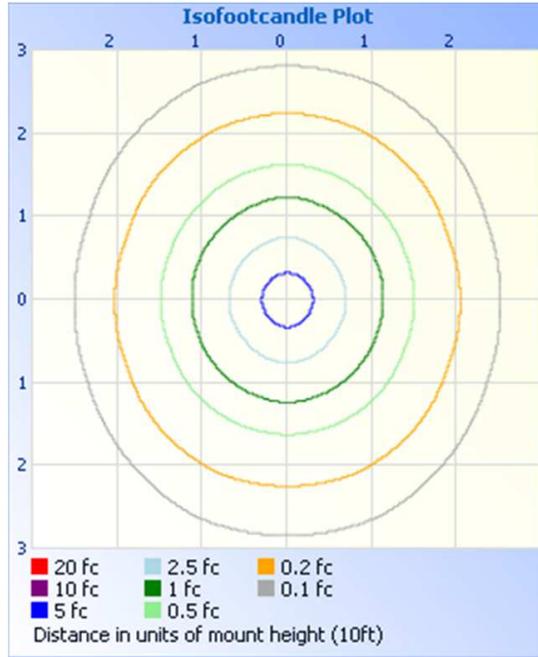
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



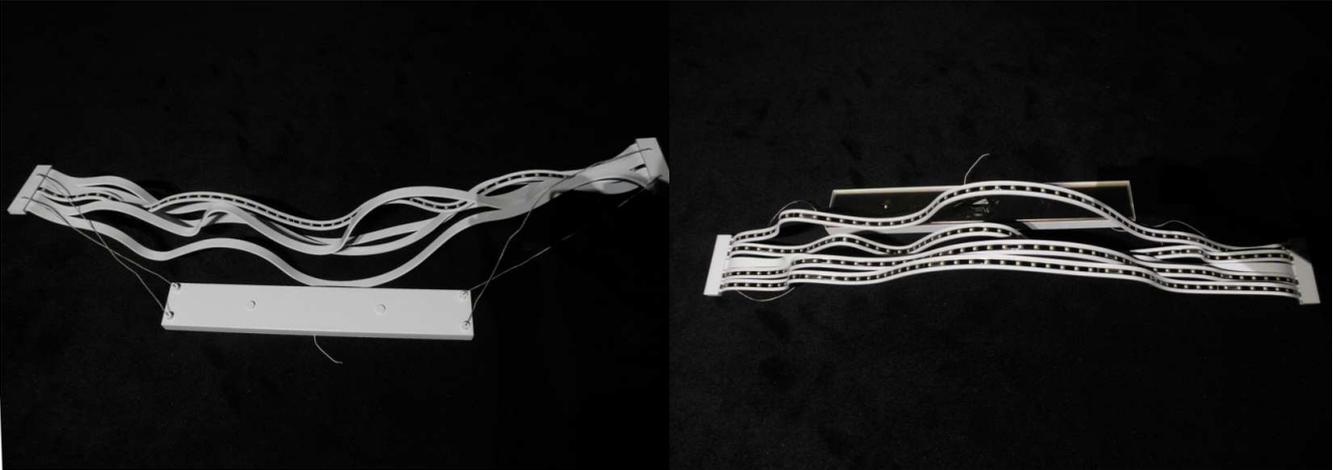
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	466.9	16.9
0-40	758.7	27.5
0-60	1360	49.4
60-90	621.1	22.5
0-90	1982	71.9
90-180	774.6	28.1
0-180	2756	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	58.3	2.1
10-20	164.6	6.0
20-30	244.0	8.9
30-40	291.8	10.6
40-50	306.4	11.1
50-60	295.4	10.7
60-70	261.1	9.5
70-80	208.2	7.6
80-90	151.8	5.5
90-100	104.4	3.8
100-110	92.7	3.4
110-120	100.3	3.6
120-130	109.2	4.0
130-140	109.8	4.0
140-150	101.7	3.7
150-160	83.4	3.0
160-170	54.0	2.0
170-180	19.2	0.7

PICTURES (not to scale)



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:



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Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley  
Engineer  
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