



# REPORT

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

Project No. G101518786

Date: June 4, 2015

REPORT NO. 101518786CHI-110

TEST OF ONE LED SUSPENSION LUMINAIRE

MODEL NO. SU833SCLED827  
LED MODEL NO. EVERLIGHT 67-21S/KK2C-H2727M3N42936Z6/2T  
DRIVER MODEL NO. LTF TA75WA24LED-0005

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 500506211.

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 SU833SCLED827. The sample was received by Intertek on June 1, 2015, in undamaged condition and one sample was tested as received. The sample designation was 06012015035339.

DATES OF TESTS: June 3, 2015 through June 4, 2015.



SUMMARY

Model No.:	SU833SCLED827
Description:	LED Suspension Luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	2660	2615
Total Power (W)	67.59	65.85
Luminaire Efficacy (LPW)	39.35	39.71

Criteria	Result
Power Factor	0.958
Current ATHD %	28.66
Correlated Color Temperature (CCT - K)	2592
Color Rendering Index (CRI - Ra)	85.8
Color Rendering Index (CRI - R9)	17.5
DUV	0.001
Chromaticity Coordinate (x)	0.468
Chromaticity Coordinate (y)	0.410
Chromaticity Coordinate (u')	0.268
Chromaticity Coordinate (v')	0.528

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU
3 Meter Sphere	SPR600	CHI0088	VBU	VBU
Elgar AC Power Supply	CW1251M	146112	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
Newport Humidity Recorder	iTHX-SD	146382	07/02/14	07/02/15
Yokogawa Power Meter	WT1600	146768	01/15/15	01/15/16
Omega Temperature Meter	MDSi8	146139	04/03/15	04/03/16
Yokogawa Power Meter	WT210	146919	07/16/14	07/16/15
Omega Thermometer	DPI8-C24	146920	10/09/14	10/09/15
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
Newport Hygrometer	iServer	146956	01/06/15	01/06/16
Elgar, AC Power Supply	CW1251P	146918	VBU	VBU



## 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 Three Meter 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**

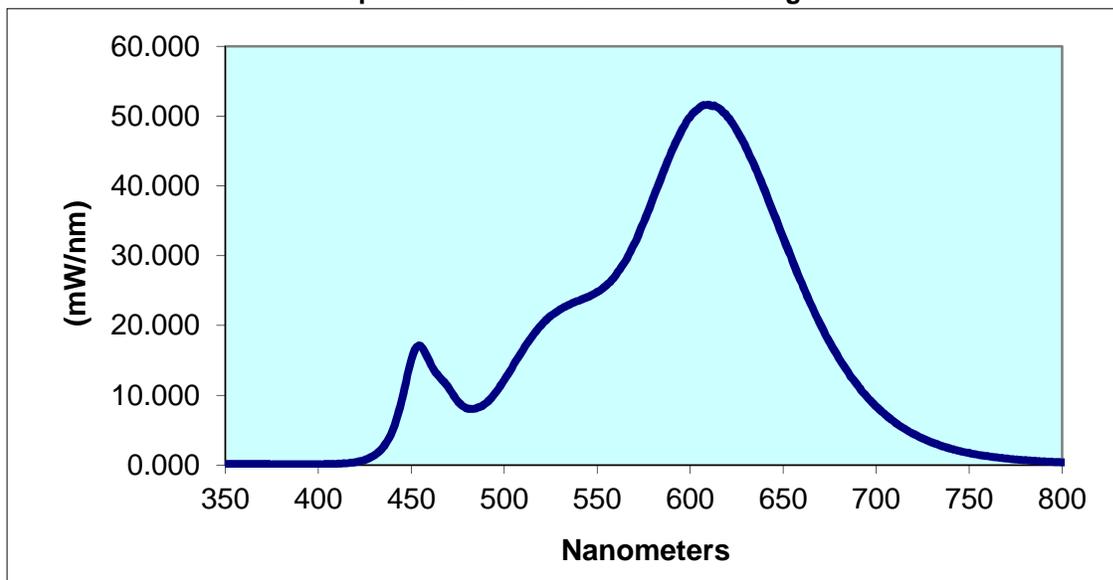
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
06012015035339	HORIZONTAL	120.0	588.2	67.59	0.958	28.66	2660	39.35

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')
2592	85.8	17.5	0.001	0.468	0.410	0.268	0.528

**Spectral Distribution over Visible Wavelengths**

nm	mW/nm								
350	0.13	440	4.951	530	22.3	620	49.92	710	6.119
355	0.127	445	9.416	535	22.98	625	47.99	715	5.221
360	0.125	450	15.05	540	23.53	630	45.48	720	4.455
365	0.116	455	17.08	545	24.09	635	42.56	725	3.8
370	0.107	460	14.69	550	24.79	640	39.39	730	3.233
375	0.091	465	12.68	555	25.77	645	36.02	735	2.745
380	0.092	470	11.07	560	27.23	650	32.6	740	2.323
385	0.089	475	9.132	565	29.19	655	29.26	745	1.976
390	0.084	480	8.119	570	31.74	660	26.05	750	1.704
395	0.089	485	8.137	575	34.8	665	22.95	755	1.451
400	0.091	490	8.828	580	38.22	670	20.13	760	1.244
405	0.112	495	10.23	585	41.71	675	17.58	765	1.067
410	0.15	500	12.17	590	45.02	680	15.28	770	0.911
415	0.237	505	14.36	595	47.74	685	13.23	775	0.779
420	0.399	510	16.45	600	49.91	690	11.39	780	0.671
425	0.736	515	18.42	605	51.24	695	9.803		
430	1.372	520	20.08	610	51.63	700	8.392		
435	2.598	525	21.37	615	51.21	705	7.176		

**Spectral Data Over Visible Wavelengths**



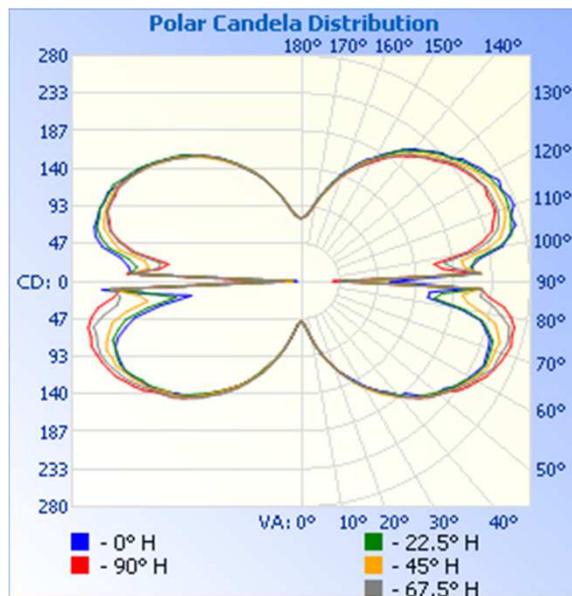
RESULTS OF TEST (cont'd)

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 (Lumens Per Watt)
06012015035339	HORIZONTAL	119.9	572.9	65.85	0.959	2615	39.71

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	50	50	50	50	50
5	57	57	57	56	55
10	74	74	73	73	72
15	93	94	93	92	91
20	112	113	113	112	111
25	130	132	132	132	131
30	149	151	152	150	150
35	167	168	171	168	167
40	185	184	188	187	188
45	201	203	203	204	205
50	217	216	218	219	219
55	228	228	232	232	236
60	238	240	242	245	249
65	246	248	251	258	260
70	244	247	252	260	266
75	233	236	249	263	266
80	197	202	224	248	260
85	157	173	197	220	230
90	109	53	56	46	39
95	209	208	200	187	174
100	250	245	231	215	206
105	271	266	256	248	241
110	276	269	265	255	252
115	270	269	263	255	251
120	264	263	257	250	249
125	253	252	247	243	240
130	238	239	234	232	229
135	228	226	222	218	217
140	214	212	206	206	202
145	196	195	191	189	189
150	177	175	174	172	170
155	160	157	157	154	153
160	140	139	136	138	136
165	118	118	116	116	115
170	99	98	97	98	97
175	83	84	83	82	82
180	78	78	78	78	78



RESULTS OF TEST (cont'd)

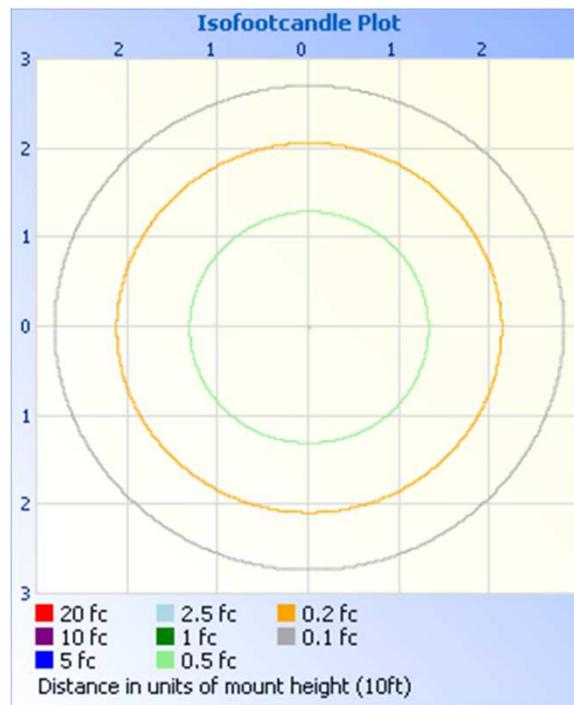
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	93.6	3.6
0-40	199.5	7.6
0-60	562.7	21.5
60-90	710.6	27.2
0-90	1273	48.7
90-180	1342	51.3
0-180	2615	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	5.9	0.2
10-20	26.6	1.0
20-30	61.2	2.3
30-40	105.9	4.0
40-50	157.1	6.0
50-60	206.1	7.9
60-70	247.7	9.5
70-80	258.6	9.9
80-90	204.3	7.8
90-100	199.4	7.6
100-110	263.8	10.1
110-120	256.4	9.8
120-130	218.6	8.4
130-140	169.9	6.5
140-150	119.4	4.6
150-160	72.1	2.8
160-170	33.7	1.3
170-180	8.4	0.3

PICTURE (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:



Tim Quigley  
Engineer  
Lighting Division

Attachment: None

Report Reviewed By:



Vladimir Kozak  
Senior Associate Engineer  
Lighting Division