



REPORT

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

Project No. G103017649

Date: April 25, 2017

REPORT NO. 103017649CHI-001

TEST OF ONE 4' SUSPENDED MERGE LINEAR LUMINAIRE

MODEL NO. SLS3470SXXX835W
LED MODEL NO. NICHIA NFSL757D-V1
DRIVER MODEL NO. ERP ESP040W-0900-42

RENDERED TO

GENERATION BRANDS
7400 LINDER AVE
SKOKIE, IL 60077

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

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00779063-2.

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 prototype sample of model number SLS3470SXXX835W. The sample was received by Intertek on April 6, 2017, in undamaged condition and one sample was tested as received. The sample designation was 04062017115221R.

DATES OF TESTS: April 18, 2017 through April 25, 2017.

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SUMMARY

Model No.:	SLS3470SXXX835W
Description:	4' Suspended Merge linear luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	2825	2719
Total Power (W)	36.10	35.99
Luminaire Efficacy (LPW)	78.25	75.55

Criteria	Result
Power Factor at 120Vac	0.988
Power Factor at 277Vac	0.926
Current ATHD % at 120Vac	11.73
Current ATHD % at 277Vac	15.15
Correlated Color Temperature (CCT - K)	3513
Color Rendering Index (CRI - Ra)	84.1
Color Rendering Index (CRI - R9)	17.4
DUV	0.001
Chromaticity Coordinate (x)	0.404
Chromaticity Coordinate (y)	0.389
Chromaticity Coordinate (u')	0.236
Chromaticity Coordinate (v')	0.510

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/11/16	07/11/17	04/25/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	04/25/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	04/25/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	04/25/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	04/25/17
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	04/18/17
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	04/18/17
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	04/18/17
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	04/18/17
Newport Humidity Recorder	iTHX-SD	146382	06/27/16	06/27/17	04/18/17
Yokogawa Power Meter	WT1600	146768	01/10/17	01/10/18	04/18/17
Fluke J/KTemperature Meter	52	146004	01/10/17	01/10/18	04/18/17

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

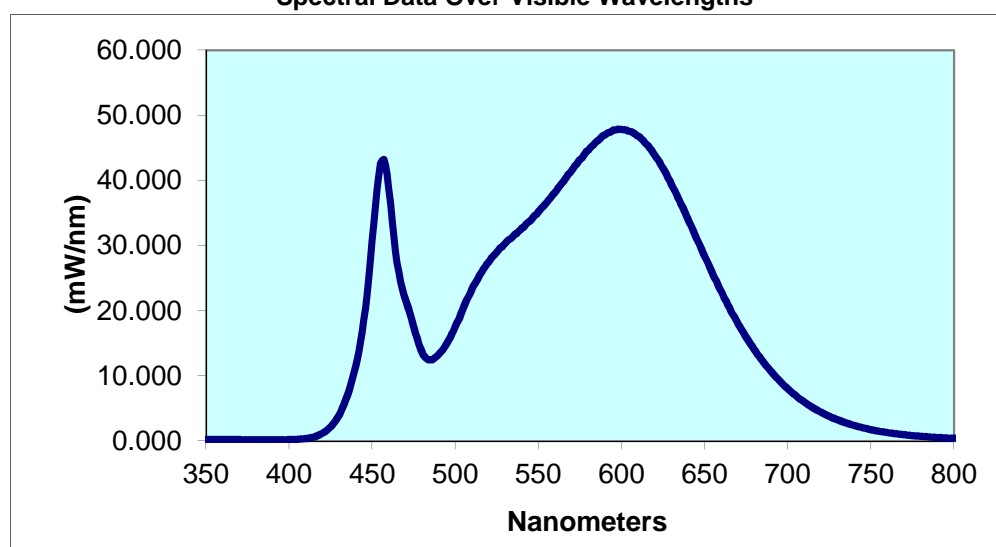
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

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)
04062017115221R	Down	120.0	304.5	36.10	0.988	11.73	2825	78.25
		277.0	140.8	36.11	0.926	15.15		
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')	
3513	84.1	17.4	0.001	0.404	0.389	0.236	0.510	

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.199	440	11.45	530	30.35	620	43.89	710	5.959
355	0.214	445	18.56	535	31.49	625	41.89	715	5.119
360	0.211	450	30.75	540	32.69	630	39.43	720	4.408
365	0.198	455	42.51	545	33.79	635	36.86	725	3.775
370	0.182	460	38.72	550	35.18	640	34.06	730	3.241
375	0.158	465	27.34	555	36.65	645	31.18	735	2.773
380	0.161	470	21.76	560	38.20	650	28.36	740	2.387
385	0.149	475	17.58	565	39.84	655	25.59	745	2.039
390	0.150	480	13.65	570	41.52	660	22.96	750	1.751
395	0.164	485	12.46	575	43.21	665	20.44	755	1.499
400	0.189	490	13.28	580	44.62	670	18.07	760	1.291
405	0.243	495	14.98	585	45.99	675	15.93	765	1.100
410	0.355	500	17.51	590	46.98	680	13.98	770	0.945
415	0.618	505	20.43	595	47.71	685	12.23	775	0.810
420	1.162	510	23.26	600	47.81	690	10.66	780	0.700
425	2.178	515	25.61	605	47.53	695	9.257		
430	3.953	520	27.45	610	46.78	700	8.002		
435	6.942	525	29.00	615	45.57	705	6.919		

Spectral Data Over Visible Wavelengths



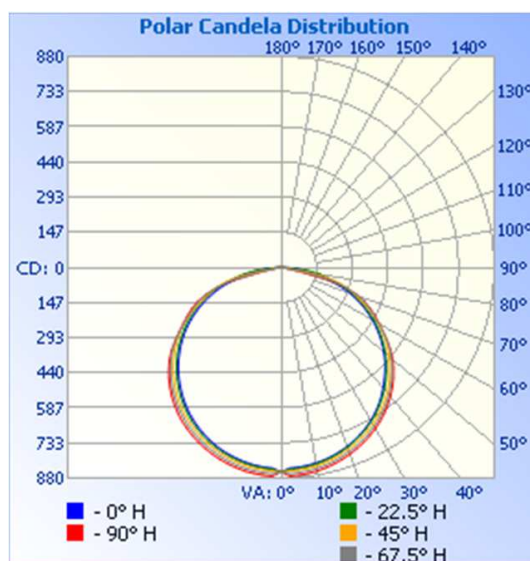
RESULTS OF TEST (cont'd)

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)
04062017115221R	Down	120.0	304.6	35.99	0.985	2719	75.55

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	854	854	854	854	854
5	837	842	849	860	870
10	829	833	841	852	863
15	815	819	827	838	849
20	796	799	808	819	830
25	771	773	785	796	806
30	738	743	756	767	777
35	701	706	722	733	742
40	656	663	682	693	702
45	606	615	634	646	655
50	555	562	583	596	602
55	497	505	527	535	533
60	434	443	466	464	466
65	366	378	390	402	406
70	292	309	321	335	332
75	215	233	250	219	190
80	138	159	108	29	24
85	65	51	12	12	11
90	0	0	0	0	0

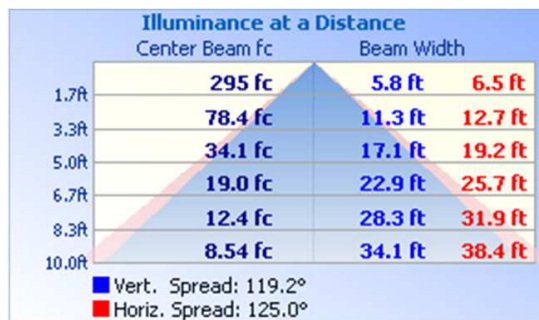


RESULTS OF TEST (cont'd)

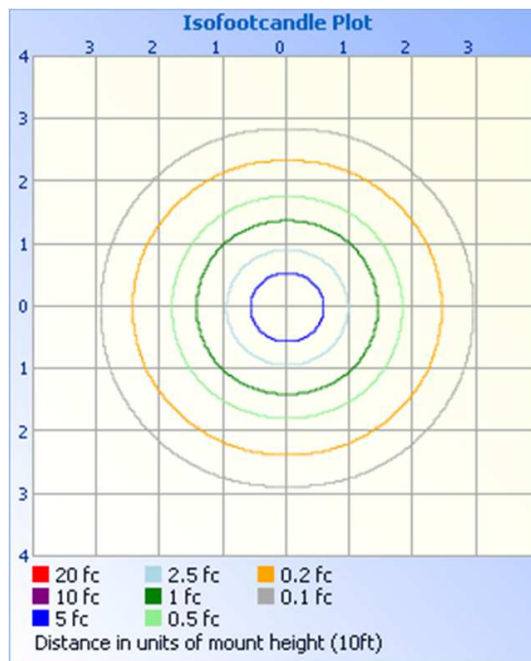
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	676.6	24.9
0-40	1126	41.4
0-60	2075	76.3
60-90	643.8	23.7
0-90	2719	100.0
90-180	0.0	0.0
0-180	2719	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	80.9	3.0
10-20	234.0	8.6
20-30	361.7	13.3
30-40	449.6	16.5
40-50	485.8	17.9
50-60	463.3	17.0
60-70	382.5	14.1
70-80	225.5	8.3
80-90	35.8	1.3

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:



Jehue Williams
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division