



REPORT

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

Project No. G103017649

Date: April 26, 2017

REPORT NO. 103017649CHI-007

TEST OF ONE 4' SUSPENDED MERGE LINEAR LUMINAIRE

MODEL NO. SLS3433SXXX835W
LED MODEL NO. NICHIA NFSL757D-V1
DRIVER MODEL NO. (2) ERP ESS020W-0450-42

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 SLS3433SXXX835W. The sample was received by Intertek on April 6, 2017, in undamaged condition and one sample was tested as received. The sample designation was 04062017115221X.

DATES OF TESTS: April 20, 2017 through April 26, 2017.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



SUMMARY

Model No.:	SLS3433SXXX835W
Description:	4' Suspended Merge linear luminaire

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	3295	3242
Total Power (W)	35.02	35.09
Luminaire Efficacy (LPW)	94.09	92.39

Criteria	Result
Power Factor at 120Vac	0.990
Power Factor at 277Vac	0.948
Current ATHD % at 120Vac	11.19
Current ATHD % at 277Vac	12.18
Correlated Color Temperature (CCT - K)	3466
Color Rendering Index (CRI - Ra)	83.9
Color Rendering Index (CRI - R9)	17.3
DUV	0.000
Chromaticity Coordinate (x)	0.407
Chromaticity Coordinate (y)	0.391
Chromaticity Coordinate (u')	0.237
Chromaticity Coordinate (v')	0.512

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	04/26/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	04/26/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	04/26/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	04/26/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	04/26/17
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	04/20/17
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	04/20/17
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	04/20/17
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	04/20/17
Newport Humidity Recorder	iTHX-SD	146382	06/27/16	06/27/17	04/20/17
Yokogawa Power Meter	WT1600	146768	01/10/17	01/10/18	04/20/17
Fluke J/KTemperature Meter	52	146004	01/10/17	01/10/18	04/20/17



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

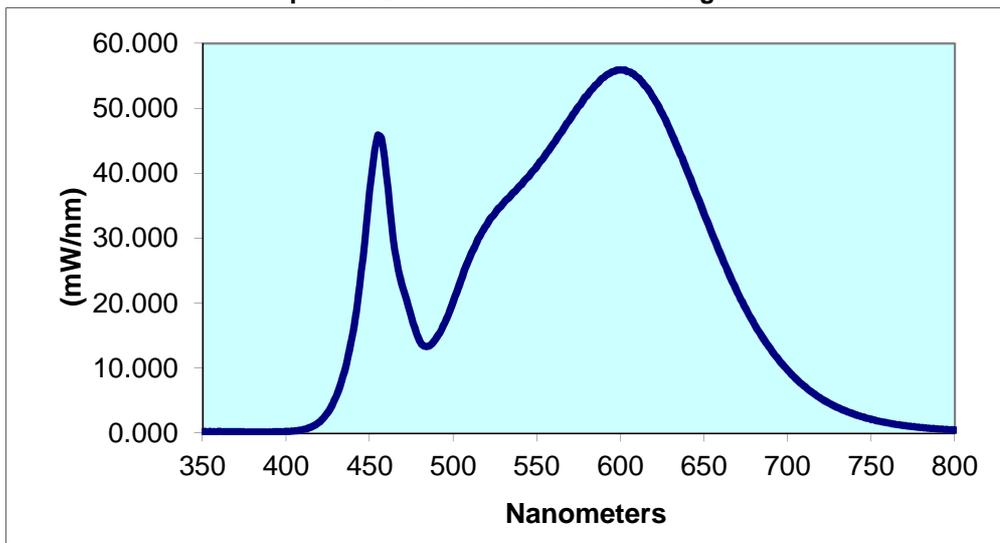
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Input Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
04062017115221X	Down	120.0 277.0	294.9 137.6	35.02 36.13	0.990 0.948	11.19 12.18	3295	94.09
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')	
3466	83.9	17.3	0.000	0.407	0.391	0.237	0.512	

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
350	0.223	440	15.57	530	35.41	620	51.55	710	7.224
355	0.231	445	24.82	535	36.76	625	49.26	715	6.219
360	0.238	450	37.20	540	38.15	630	46.48	720	5.331
365	0.226	455	45.90	545	39.47	635	43.53	725	4.593
370	0.190	460	39.92	550	41.09	640	40.33	730	3.941
375	0.180	465	28.23	555	42.82	645	37.06	735	3.376
380	0.176	470	22.25	560	44.64	650	33.77	740	2.899
385	0.166	475	17.90	565	46.47	655	30.56	745	2.496
390	0.182	480	14.20	570	48.40	660	27.47	750	2.135
395	0.198	485	13.39	575	50.32	665	24.50	755	1.833
400	0.246	490	14.69	580	51.97	670	21.68	760	1.573
405	0.331	495	17.01	585	53.58	675	19.16	765	1.343
410	0.532	500	20.24	590	54.76	680	16.84	770	1.157
415	0.933	505	23.79	595	55.66	685	14.75	775	0.996
420	1.745	510	27.16	600	55.93	690	12.87	780	0.855
425	3.194	515	29.94	605	55.64	695	11.17		
430	5.686	520	32.07	610	54.81	700	9.684		
435	9.607	525	33.86	615	53.43	705	8.369		

Spectral Data Over Visible Wavelengths



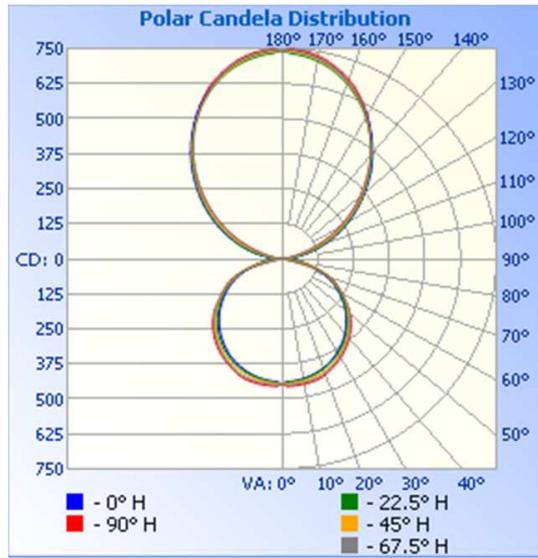
RESULTS OF TEST (cont'd)

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)
04062017115221X	Down	120.0	295.1	35.09	0.991	3242	92.39

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	446	446	446	446	446
5	438	439	443	449	454
10	433	435	441	448	453
15	426	428	436	443	449
20	416	418	428	436	441
25	403	406	416	420	425
30	386	390	398	404	409
35	366	372	379	385	389
40	344	349	357	363	367
45	318	323	332	338	341
50	290	295	304	310	312
55	261	264	274	278	275
60	227	231	241	240	240
65	191	196	201	207	209
70	152	159	165	171	168
75	113	119	127	109	90
80	73	81	51	16	15
85	34	22	9	10	10
90	3	3	4	4	4
95	26	12	7	6	6
100	68	60	36	24	22
105	114	110	88	68	62
110	165	160	144	124	117
115	218	213	201	184	177
120	272	268	258	244	239
125	327	323	316	305	302
130	382	378	372	364	362
135	440	433	428	423	424
140	493	486	484	481	484
145	544	538	538	537	542
150	592	586	587	589	595
155	635	628	632	636	642
160	673	665	670	675	682
165	705	695	700	706	712
170	726	717	723	729	735
175	739	730	737	744	747
180	743	743	743	743	743

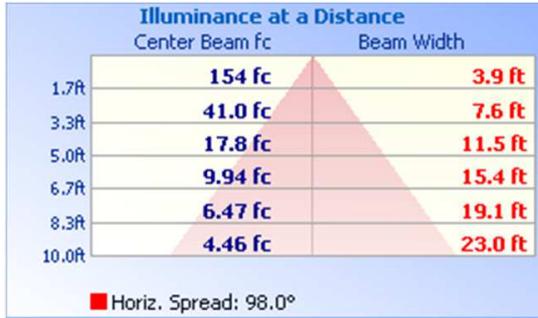


RESULTS OF TEST (cont'd)

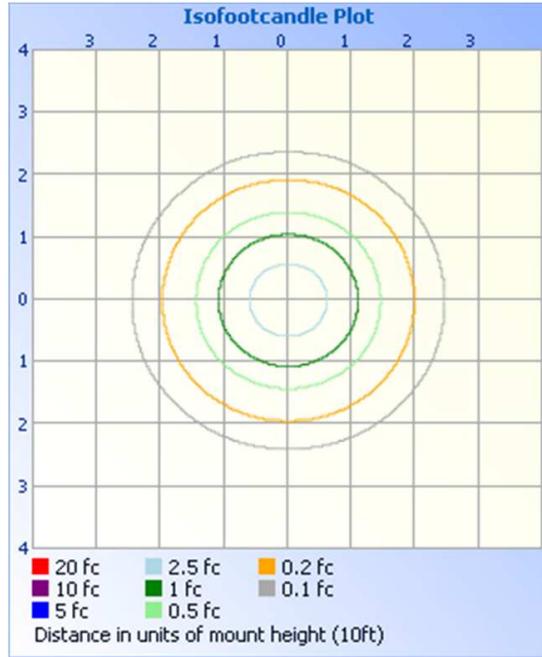
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	356.1	11.0
0-40	592.1	18.3
0-60	1087	33.5
60-90	332.1	10.2
0-90	1419	43.8
90-180	1822.0	56.2
0-180	3242	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	42.3	1.3
10-20	123.1	3.8
20-30	190.6	5.9
30-40	236.1	7.3
40-50	254.1	7.8
50-60	240.7	7.4
60-70	197.4	6.1
70-80	114.4	3.5
80-90	20.3	0.6
90-100	17.4	0.5
100-110	96.6	3.0
110-120	198.4	6.1
120-130	281.8	8.7
130-140	331.5	10.2
140-150	337.1	10.4
150-160	291.6	9.0
160-170	197.9	6.1
170-180	70.0	2.2

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