



REPORT

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

Project No. G103017649

Date: September 19, 2017

REPORT NO. 103017649CHI-052

TEST OF ONE 4' MERGE LINEAR

MODEL NO. RLS34IXXX835WELV1
LED MODEL NO. NICHIA NFSL757D-V1
DRIVER MODEL NO. ERP ESP060W-1400-42

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 production sample of model number RLS34IXXX835WELV1. The sample was received by Intertek on September 13, 2017, in undamaged condition and one sample was tested as received. The sample designation was 09132017082611-052.

DATES OF TESTS: September 14, 2017 through September 19, 2017.



SUMMARY

Model No.:	RLS34IXXX835WELV1
Description:	4' Merge linear

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	4020	3833
Total Power (W)	57.19	57.27
Luminaire Efficacy (LPW)	70.29	66.93

Criteria	Result
Power Factor	0.983
Current ATHD %	11.90
Correlated Color Temperature (CCT - K)	3579
Color Rendering Index (CRI - Ra)	82.5
Color Rendering Index (CRI - R9)	13.9
DUV	0.001
Chromaticity Coordinate (x)	0.400
Chromaticity Coordinate (y)	0.386
Chromaticity Coordinate (u')	0.234
Chromaticity Coordinate (v')	0.509

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/10/17	07/10/18	09/19/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	09/19/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	09/19/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	09/19/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	09/19/17
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	09/14/17
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	09/14/17
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	09/14/17
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	09/14/17
Newport Humidity Recorder	iTHX-SD	146382	04/17/17	04/17/18	09/14/17
Yokogawa Power Meter	WT1600	146768	01/10/17	01/10/18	09/14/17
Fluke J/K Temperature Meter	52	146004	01/10/17	01/10/18	09/14/17



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 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 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

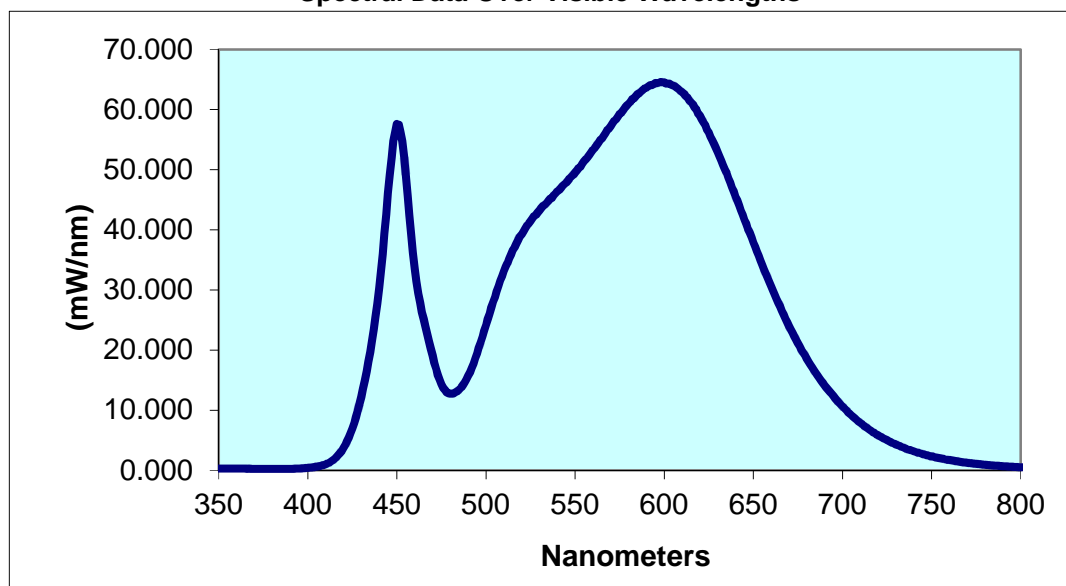
Intertek Sample No.	Base Orientation	Input Voltage {VAC}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
09132017082611-052	Up	120.0	484.8	57.19	0.983	11.90	4020	70.29

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')
3579	82.5	13.9	0.001	0.400	0.386	0.234	0.509

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.298	440	30.39	530	43.25	620	58.98	710	7.901
355	0.318	445	46.16	535	44.83	625	56.18	715	6.793
360	0.310	450	57.61	540	46.41	630	52.87	720	5.832
365	0.290	455	49.19	545	47.86	635	49.40	725	5.018
370	0.255	460	33.53	550	49.56	640	45.58	730	4.320
375	0.240	465	25.16	555	51.38	645	41.72	735	3.694
380	0.241	470	19.09	560	53.33	650	37.91	740	3.176
385	0.238	475	14.36	565	55.18	655	34.18	745	2.717
390	0.257	480	12.77	570	57.27	660	30.59	750	2.328
395	0.308	485	13.47	575	59.25	665	27.22	755	1.998
400	0.413	490	15.68	580	60.96	670	24.04	760	1.719
405	0.612	495	19.45	585	62.57	675	21.17	765	1.478
410	1.007	500	24.19	590	63.65	680	18.56	770	1.263
415	1.908	505	28.85	595	64.41	685	16.23	775	1.084
420	3.704	510	33.07	600	64.53	690	14.14	780	0.938
425	6.957	515	36.60	605	64.01	695	12.34		
430	12.23	520	39.21	610	62.95	700	10.63		
435	19.70	525	41.44	615	61.22	705	9.181		

Spectral Data Over Visible Wavelengths



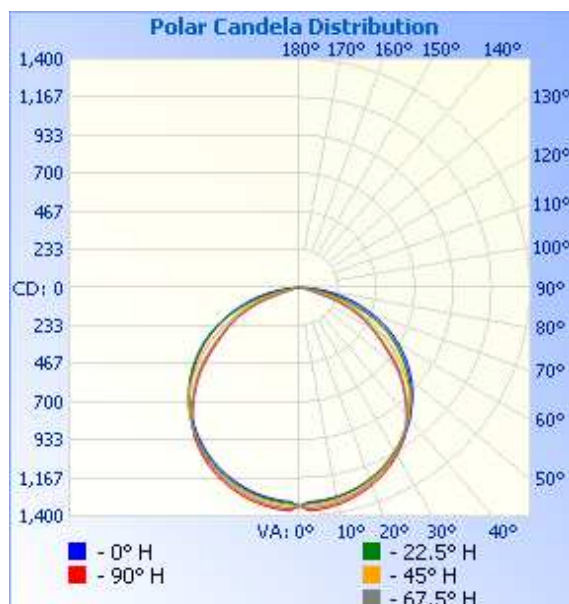
RESULTS OF TEST (cont'd)

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)
09132017082611-052	Up	120.0	484.6	57.27	0.984	3833	66.93

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	1338	1338	1338	1338	1338
5	1313	1318	1330	1348	1363
10	1302	1305	1316	1333	1348
15	1281	1281	1292	1308	1322
20	1251	1249	1260	1272	1286
25	1213	1208	1218	1228	1240
30	1165	1158	1166	1172	1184
35	1110	1100	1105	1107	1114
40	1044	1031	1033	1020	1014
45	969	954	950	908	902
50	887	866	840	794	778
55	795	770	722	656	636
60	695	666	590	528	516
65	588	546	452	416	398
70	468	414	334	276	255
75	347	275	193	94	72
80	226	152	47	44	44
85	104	23	21	21	21
90	4	2	2	2	2

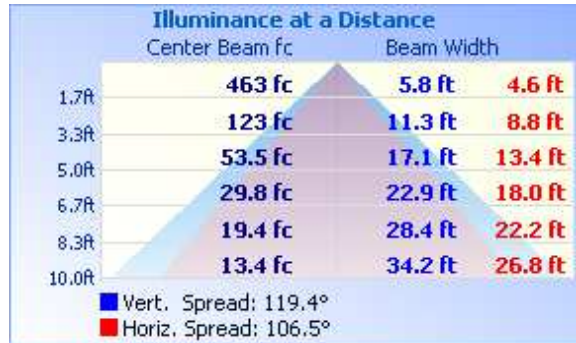


RESULTS OF TEST (cont'd)

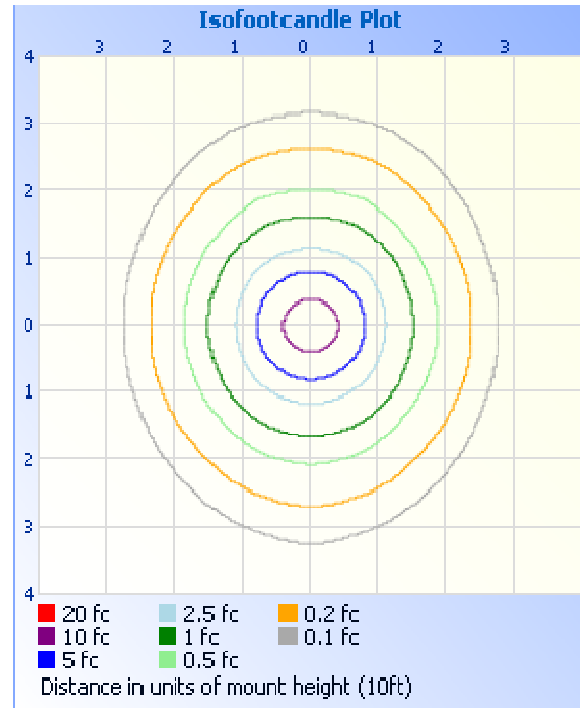
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1055	27.5
0-40	1745	45.5
0-60	3106	81.0
60-90	726.1	18.9
0-90	3832	100.0
90-180	0.3	0.0
0-180	3833	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	126.8	3.3
10-20	365.8	9.5
20-30	562.2	14.7
30-40	690.6	18.0
40-50	721.1	18.8
50-60	639.9	16.7
60-70	468.6	12.2
70-80	216.3	5.6
80-90	41.2	1.1
90-100	0.3	0.0

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:



Hector Huitron
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division