



REPORT

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

Project No. G102602453

Date: October 3, 2017

REPORT NO. 102602453CHI-009

TEST OF ONE LINEAR LED LIGHTING

MODEL NO. NSDWP-5W-36IN-30K-SN
LED MODEL NO. SOLARISE SS5L-36IN-30K
DRIVER MODEL NO. MEANWELL APV-16-24

RENDERED TO

PURE EDGE LIGHTING
1718 WEST FULLERTON
CHICAGO, IL 60614

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

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00685500-1.

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 NSDWP-5W-36IN-30K-SN. The sample was received by Intertek on September 27, 2017, in undamaged condition and one sample was tested as received. The sample designation was AH09272017034932A.

DATES OF TESTS: October 2, 2017 through October 3, 2017.



SUMMARY

Model No.:	NSDWP-5W-36IN-30K-SN
Description:	Linear LED Lighting

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	555.4	531.9
Total Power (W)	14.75	14.76
Luminaire Efficacy (LPW)	37.65	36.04

Criteria	Result
Power Factor at 120Vac	0.504
Power Factor at 240Vac	0.458
Current ATHD % at 120Vac	84.86
Current ATHD % at 240Vac	88.46
Correlated Color Temperature (CCT - K)	2873
Color Rendering Index (CRI - Ra)	93.8
Color Rendering Index (CRI - R9)	82.8
DUV	0.004
Chromaticity Coordinate (x)	0.441
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.256
Chromaticity Coordinate (v')	0.519

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	10/02/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	10/02/17
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV	10/02/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	10/02/17
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV	10/02/17
Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBV	VBV	10/03/17
Elgar AC Power Supply	CW1251M	146113	VBV	VBV	10/03/17
Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV	10/03/17
Yokogawa Power Analyzer	WT1600	146767	04/05/17	04/05/18	10/03/17
Omega Temperature	MDSi8	146873	07/20/17	07/20/18	10/03/17
Newport Thermohygrometer	iTHX-M	146382	12/21/16	12/21/17	10/03/17



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

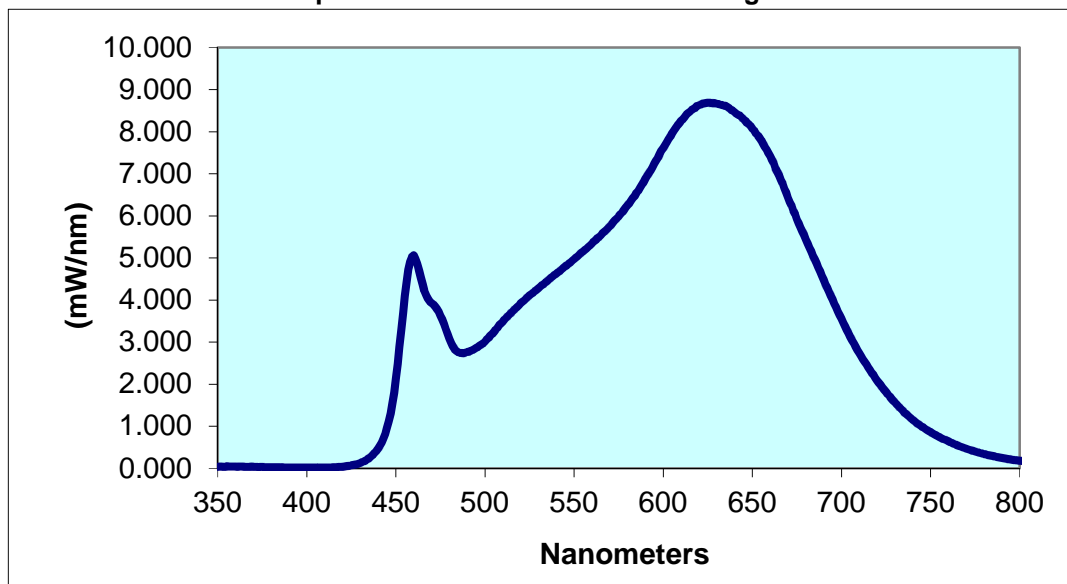
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

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)
AH09272017034932A	Up	120.0	243.8	14.75	0.504	84.86	555.4	37.65
		240.0	135.2	14.86	0.458	88.46		
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')	
2873	93.8	82.8	0.004	0.441	0.398	0.256	0.519	

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.039	440	0.468	530	4.279	620	8.624	710	2.742
355	0.048	445	0.951	535	4.451	625	8.686	715	2.399
360	0.041	450	2.129	540	4.620	630	8.667	720	2.090
365	0.033	455	4.100	545	4.800	635	8.609	725	1.815
370	0.033	460	5.058	550	4.972	640	8.468	730	1.565
375	0.036	465	4.366	555	5.153	645	8.297	735	1.348
380	0.028	470	3.932	560	5.344	650	8.071	740	1.157
385	0.023	475	3.632	565	5.540	655	7.796	745	0.998
390	0.020	480	3.088	570	5.750	660	7.421	750	0.863
395	0.021	485	2.760	575	5.984	665	6.954	755	0.742
400	0.018	490	2.764	580	6.250	670	6.438	760	0.645
405	0.019	495	2.862	585	6.553	675	5.922	765	0.548
410	0.021	500	3.014	590	6.885	680	5.440	770	0.468
415	0.027	505	3.247	595	7.234	685	4.971	775	0.399
420	0.039	510	3.482	600	7.608	690	4.481	780	0.342
425	0.070	515	3.712	605	7.960	695	4.012		
430	0.130	520	3.918	610	8.254	700	3.553		
435	0.245	525	4.108	615	8.478	705	3.123		

Spectral Data Over Visible Wavelengths



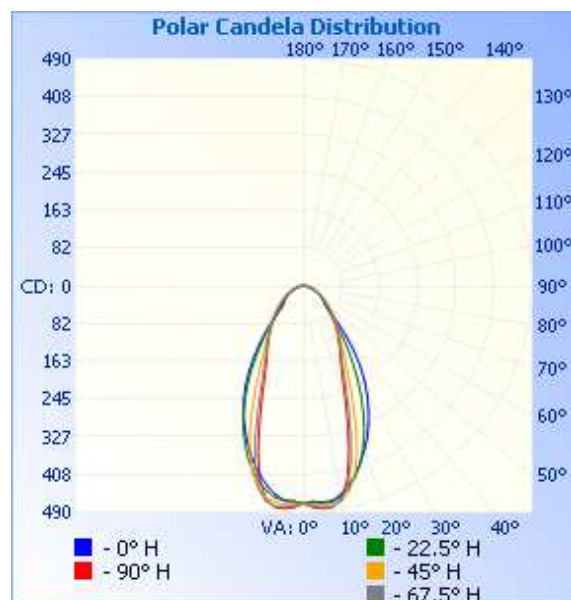
RESULTS OF TEST (cont'd)

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)
AH09272017034932A	Up	120.0	251.0	14.76	0.490	531.9	36.04

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	471	471	471	471	471
5	470	473	477	481	484
10	459	464	473	470	468
15	425	428	423	394	377
20	380	374	330	282	262
25	330	305	236	202	191
30	273	230	172	160	155
35	212	165	136	132	128
40	143	114	111	109	103
45	81	80	90	86	79
50	59	60	73	69	64
55	51	53	56	56	51
60	41	44	45	44	40
65	32	35	35	32	29
70	24	26	25	21	19
75	18	18	17	13	7
80	11	10	10	7	1
85	5	4	4	2	0
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

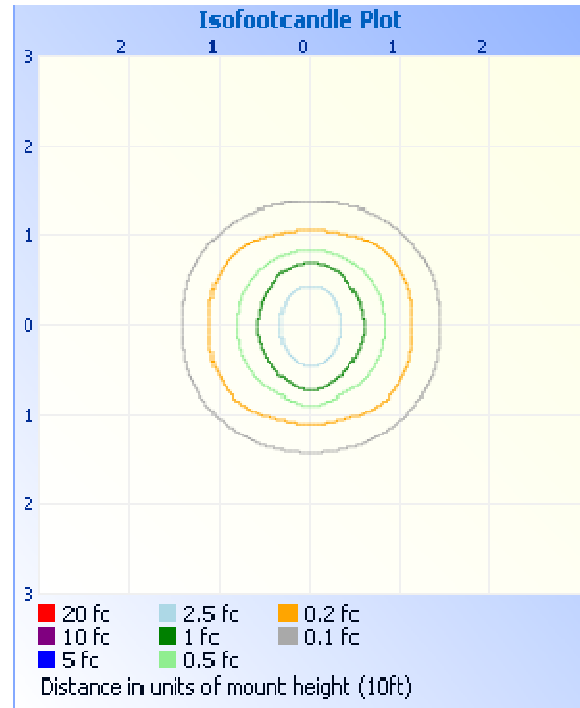
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



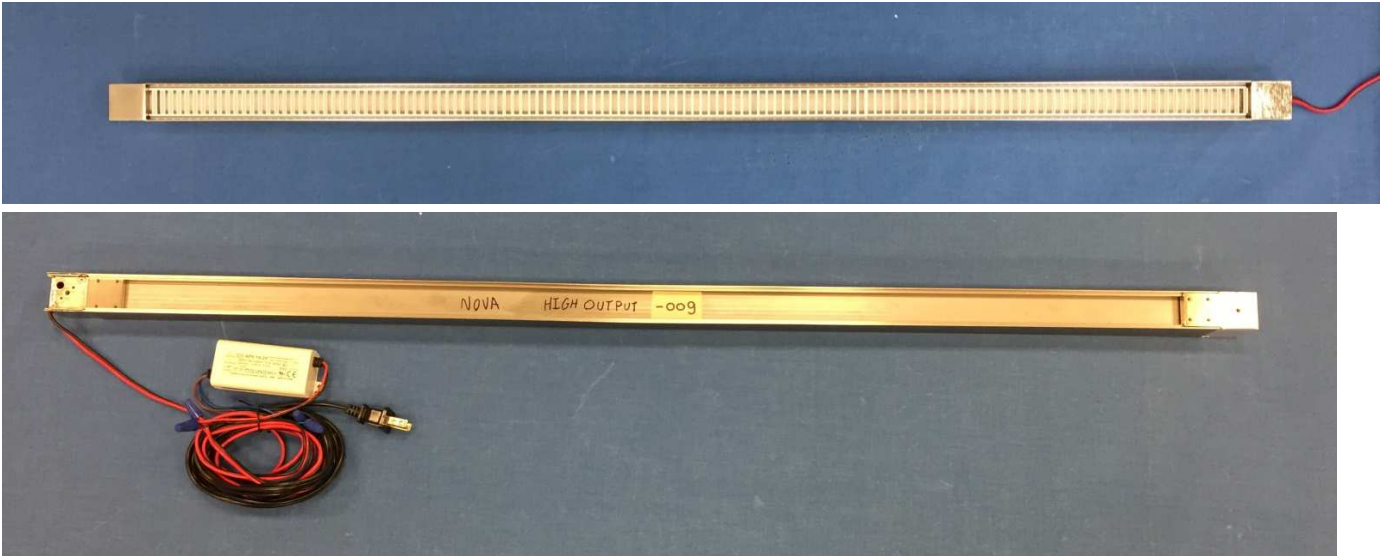
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	272.8	51.3
0-40	366.2	68.8
0-60	479.5	90.2
60-90	52.4	9.8
0-90	531.9	100.0
90-180	0.0	0.0
0-180	531.9	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	45.1	8.5
10-20	112.3	21.1
20-30	115.5	21.7
30-40	93.4	17.6
40-50	65.3	12.3
50-60	48.0	9.0
60-70	32.6	6.1
70-80	16.0	3.0
80-90	3.8	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:



Jehue Williams
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division