



REPORT

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

Project No. G102602453

Date: October 3, 2017

REPORT NO. 102602453CHI-012

TEST OF ONE LINEAR LED LIGHTING

MODEL NO. NSDBP-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 NSDBP-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 AH09272017034932D.

DATES OF TESTS: October 3, 2017



SUMMARY

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

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	324.4	312.6
Total Power (W)	14.75	14.75
Luminaire Efficacy (LPW)	21.99	21.19

Criteria	Result
Power Factor at 120Vac	0.499
Power Factor at 240Vac	0.459
Current ATHD % at 120Vac	48.76
Current ATHD % at 240Vac	88.45
Correlated Color Temperature (CCT - K)	2954
Color Rendering Index (CRI - Ra)	93.4
Color Rendering Index (CRI - R9)	79.2
DUV	0.003
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.396
Chromaticity Coordinate (u')	0.253
Chromaticity Coordinate (v')	0.518

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	10/03/17
Omega Thermometer	DPI8-C24	146920	10/07/16	10/07/17	10/03/17
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV	10/03/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	10/03/17
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV	10/03/17
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

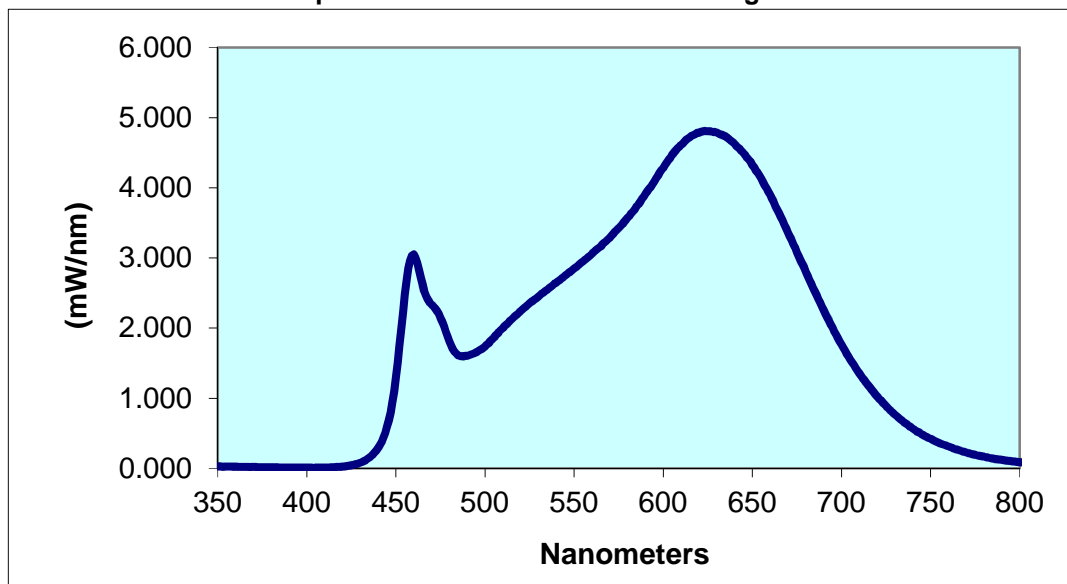
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

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)
AH09272017034932D	Up	120.0 240.0	246.2 135.2	14.75 14.90	0.499 0.459	48.76 88.45	324.4	21.99
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')	
2954	93.4	79.2	0.003	0.435	0.396	0.253	0.518	

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.028	440	0.289	530	2.449	620	4.786	710	1.358
355	0.025	445	0.584	535	2.548	625	4.808	715	1.183
360	0.024	450	1.292	540	2.646	630	4.787	720	1.027
365	0.022	455	2.479	545	2.750	635	4.728	725	0.890
370	0.020	460	3.049	550	2.848	640	4.628	730	0.767
375	0.017	465	2.618	555	2.952	645	4.495	735	0.660
380	0.017	470	2.335	560	3.059	650	4.326	740	0.568
385	0.013	475	2.152	565	3.165	655	4.132	745	0.488
390	0.013	480	1.817	570	3.289	660	3.899	750	0.422
395	0.011	485	1.611	575	3.423	665	3.634	755	0.361
400	0.012	490	1.607	580	3.573	670	3.368	760	0.312
405	0.011	495	1.656	585	3.736	675	3.084	765	0.266
410	0.012	500	1.738	590	3.911	680	2.802	770	0.226
415	0.016	505	1.866	595	4.091	685	2.528	775	0.194
420	0.025	510	1.997	600	4.284	690	2.255	780	0.166
425	0.044	515	2.125	605	4.471	695	2.004		
430	0.081	520	2.243	610	4.613	700	1.765		
435	0.154	525	2.352	615	4.722	705	1.552		

Spectral Data Over Visible Wavelengths



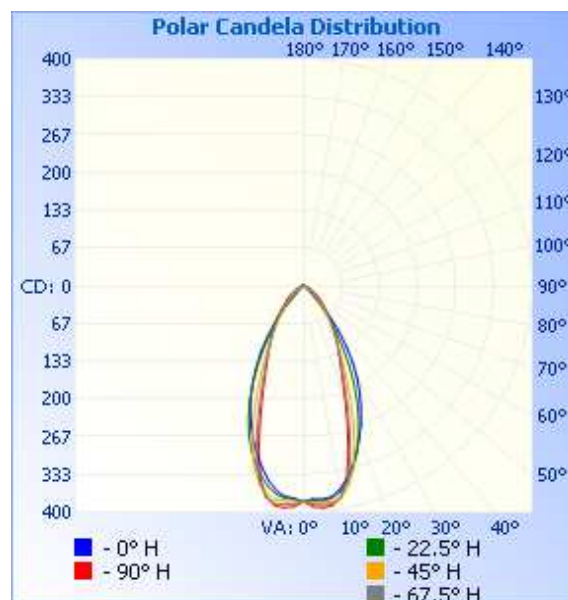
RESULTS OF TEST (cont'd)

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)
AH09272017034932D	Up	120.0	253.6	14.75	0.485	312.6	21.19

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	382	382	382	382	382
5	379	381	385	389	393
10	365	370	380	378	379
15	330	334	335	315	304
20	286	283	255	225	213
25	238	221	176	159	154
30	188	156	120	119	118
35	131	99	84	89	92
40	72	54	57	67	70
45	21	22	37	44	49
50	8	8	21	30	36
55	5	5	8	19	26
60	2	3	4	11	17
65	1	1	1	5	9
70	0	0	0	1	3
75	0	0	0	0	1
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

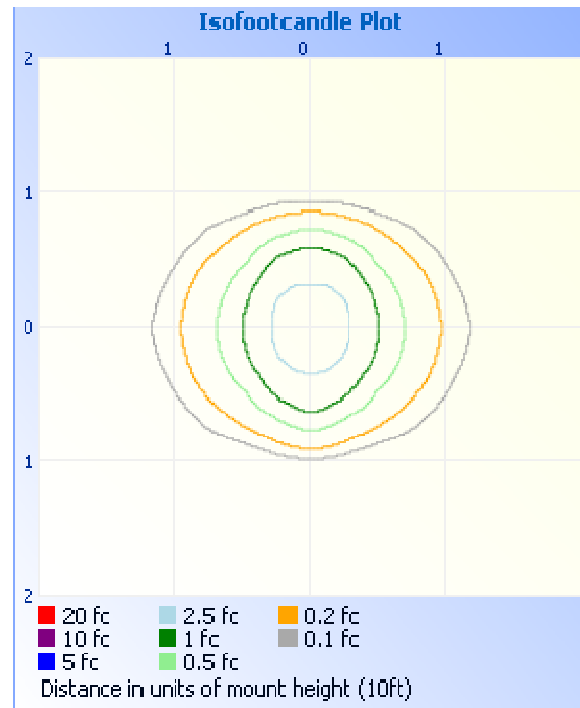
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



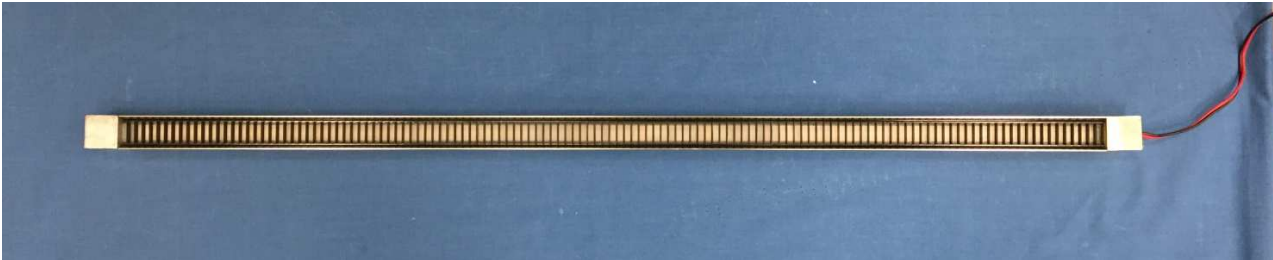
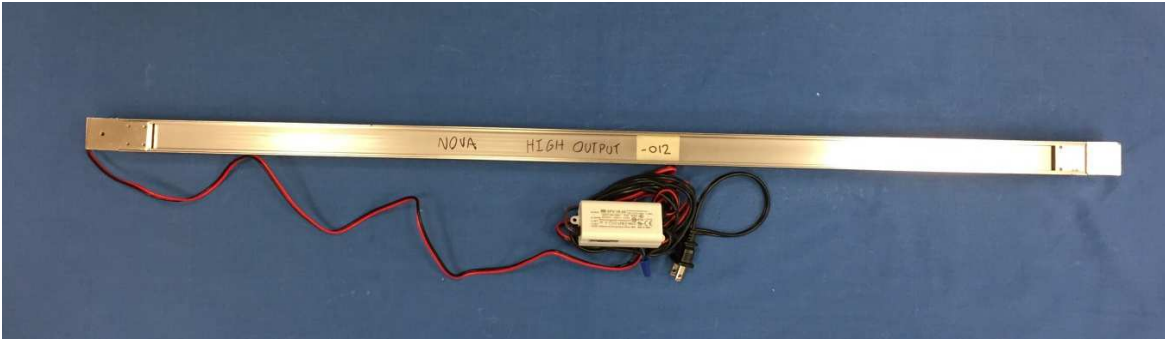
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	211.0	67.5
0-40	270.3	86.5
0-60	308.9	98.8
60-90	3.7	1.2
0-90	312.6	100.0
90-180	0.0	0.0
0-180	312.6	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	36.3	11.6
10-20	88.5	28.3
20-30	86.2	27.6
30-40	59.3	19.0
40-50	27.7	8.8
50-60	11.0	3.5
60-70	3.3	1.0
70-80	0.4	0.1
80-90	0.0	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:



Jehue Williams
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
Engineer
Lighting Division