



REPORT

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

Project No. G102602453

Date: October 18, 2016

REPORT NO. 102602453CHI-004

TEST OF ONE IN DRYWALL LINEAR DIRECT LED FIXTURE

MODEL NO. TL1A-5WDC-36IN-30K
LED MFR. NICHIA LED
DRIVER MODEL NO. LTF - DA25W24VBF1-000

RENDERED TO

EDGE LIGHTING
1718 W. FULLERTON AVE
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 production sample of model number TL1A-5WDC-36IN-30K. The sample was received by Intertek on October 11, 2016, in undamaged condition and one sample was tested as received. The sample designation was AH10112016053136.

DATES OF TESTS: October 14, 2016 through October 18, 2016.

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SUMMARY

Model No.:	TL1A-5WDC-36IN-30K
Description:	IN DRYWALL LINEAR DIRECT LED FIXTURE

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	721.8	686.0
Total Power (W)	15.55	15.52
Luminaire Efficacy (LPW)	46.42	44.20

Criteria	Result
Power Factor	0.970
Current ATHD %	10.79
Correlated Color Temperature (CCT - K)	2923
Color Rendering Index (CRI - Ra)	92.6
Color Rendering Index (CRI - R9)	63.4
DUV	0.003
Chromaticity Coordinate (x)	0.438
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.254
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	07/11/16	07/11/17	10/18/16
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	10/18/16
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	10/18/16
Newport Thermohygrometer	iServer	146956	01/04/16	01/04/17	10/18/16
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	10/18/16
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	10/14/16
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	10/14/16
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	10/14/16
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	10/14/16
Newport Humidity Recorder	iTHX-SD	146382	06/27/16	06/27/17	10/14/16
Yokogawa Power Meter	WT1600	146768	01/14/16	01/14/17	10/14/16
Omega Temperature Meter	MDSi8	146139	03/21/16	03/21/17	10/14/16

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

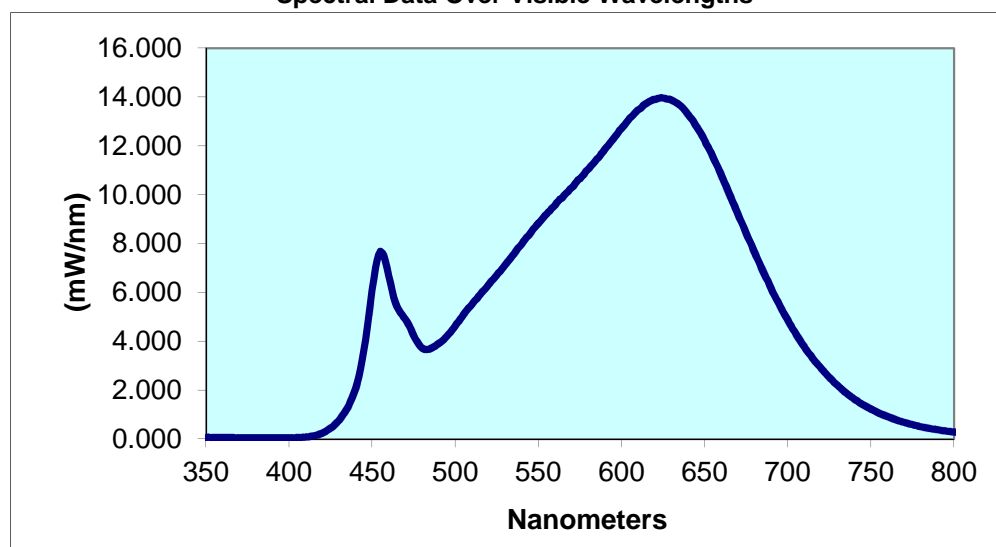
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH10112016053136	Up	120.0	133.5	15.55	0.970	10.79	721.8	46.42

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')
2923	92.6	63.4	0.003	0.438	0.398	0.254	0.519

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.060	440	2.068	530	7.131	620	13.90	710	3.764
355	0.058	445	3.609	535	7.555	625	13.96	715	3.297
360	0.051	450	6.100	540	7.981	630	13.88	720	2.892
365	0.052	455	7.677	545	8.420	635	13.66	725	2.523
370	0.044	460	6.689	550	8.829	640	13.29	730	2.189
375	0.042	465	5.412	555	9.213	645	12.81	735	1.892
380	0.037	470	4.900	560	9.567	650	12.23	740	1.633
385	0.036	475	4.240	565	9.934	655	11.56	745	1.410
390	0.035	480	3.725	570	10.29	660	10.83	750	1.226
395	0.038	485	3.698	575	10.65	665	10.02	755	1.053
400	0.043	490	3.904	580	11.05	670	9.216	760	0.919
405	0.053	495	4.213	585	11.45	675	8.419	765	0.790
410	0.075	500	4.628	590	11.88	680	7.638	770	0.678
415	0.132	505	5.094	595	12.28	685	6.894	775	0.586
420	0.241	510	5.512	600	12.70	690	6.158	780	0.502
425	0.443	515	5.915	605	13.13	695	5.496		
430	0.766	520	6.315	610	13.47	700	4.873		
435	1.266	525	6.715	615	13.74	705	4.293		

Spectral Data Over Visible Wavelengths



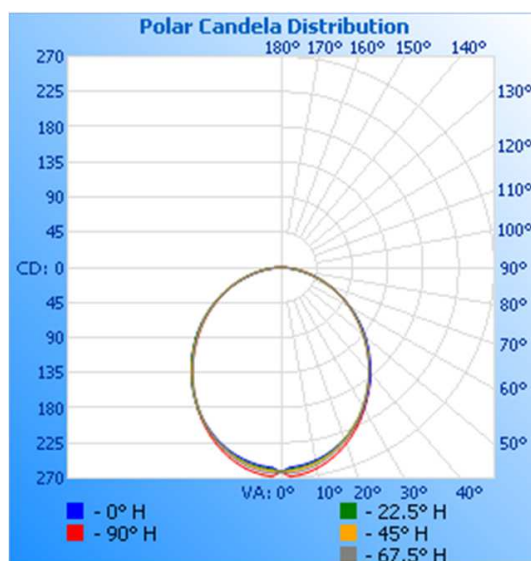
RESULTS OF TEST (cont'd)

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)
AH10112016053136	Up	120.0	133.3	15.52	0.970	686.0	44.20

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	262	262	262	262	262
5	255	257	259	262	267
10	251	253	254	257	261
15	244	245	246	248	252
20	234	234	235	237	240
25	223	221	222	223	226
30	209	207	207	208	210
35	193	190	191	191	193
40	176	173	173	173	175
45	158	156	155	155	156
50	140	137	137	136	137
55	120	119	118	118	119
60	101	99	99	99	100
65	81	80	80	80	81
70	61	61	62	62	63
75	42	42	43	44	45
80	24	25	26	27	28
85	9	10	12	13	14
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

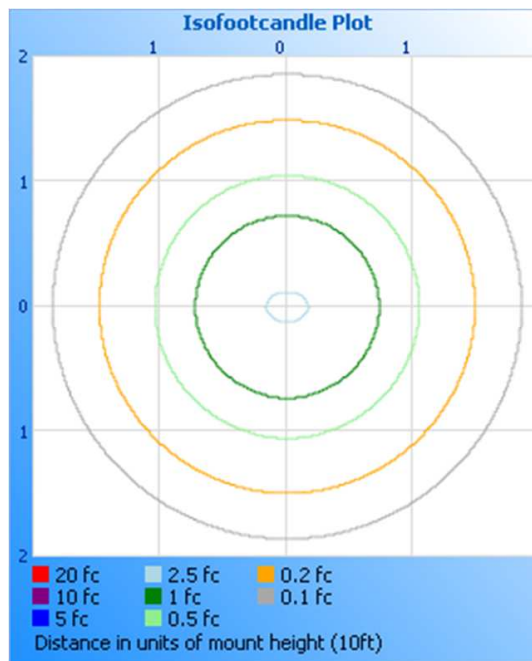
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



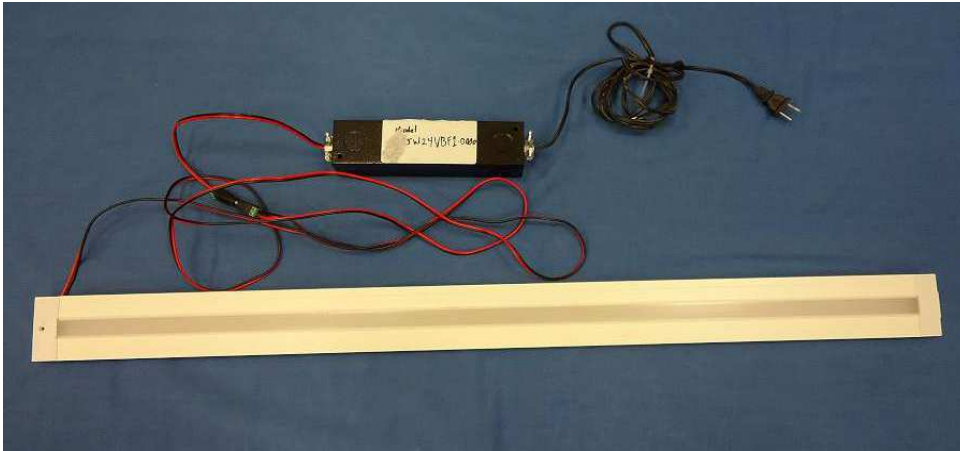
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	197.2	28.7
0-40	317.3	46.3
0-60	544.9	79.4
60-90	141.1	20.6
0-90	686.0	100.0
90-180	0.0	0.0
0-180	686.0	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	24.7	3.6
10-20	69.6	10.2
20-30	102.8	15.0
30-40	120.2	17.5
40-50	120.8	17.6
50-60	106.8	15.6
60-70	80.5	11.7
70-80	46.7	6.8
80-90	13.9	2.0

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