



REPORT

25800 COMMERCE DRIVE, LAKE FOREST, CA 92630

Project No. G101607677

Date: June 9, 2014

REPORT NO. 101607677LAX-018

TEST OF ONE 3000K WARM WHITE 17 BEAM ANGLE

MODEL NO. DW PROFILE

RENDERED TO

ELATION PROFESSIONAL
6122 S. EASTERN AVE.
COMMERCE, CA, 90040

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

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number 500519256.

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

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number DW PROFILE. The sample was received by Intertek on May 29, 2014, in undamaged condition and one sample was tested as received. The sample designation was LAN1405291025-003.

DATES OF TESTS: June 5 2014

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SUMMARY

Model No.:	DW PROFILE
Description:	3000K WARM WHITE 17 BEAM ANGLE

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	3686	3827
Total Power (W)	130.2	130.2
Luminaire Efficacy (LPW)	28.31	29.39

Criteria	Result
Power Factor	0.973
Current ATHD %	12.26
Correlated Color Temperature (CCT - K)	3267
Color Rendering Index (CRI - Ra)	93.8
Color Rendering Index (CRI - R9)	77.4
DUV	0.003
Chromaticity Coordinate (x)	0.416
Chromaticity Coordinate (y)	0.390
Chromaticity Coordinate (u')	0.243
Chromaticity Coordinate (v')	0.512

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
LabSphere Power Supply	LPS-100-0833	000832	05/12/14	06/12/14
LapSphere 3M Integrating Sphere	CA-11821-LRT	000830	05/12/14	06/12/14
LabSphere Spectrometer	CDS-3020	000834	05/12/14	06/12/14
California Instruments Power Supply	CSW5550	001338	VBU	VBU
Power Meter, Digital	WT210	000912	03/14/14	03/14/15
Extech Instruments Stop Watch	N/A	001380	11/05/13	11/05/14
Omega Environmental Monitor	N/A	000886	09/10/13	09/10/14
LSI High Speed Mirror Goniometer	6440T	000943	05/12/14	06/12/14
Elgar Power Supply	CW1251	000944	VBU	VBU
Yokogawa Power Analyzer	WT210	000945	11/14/13	11/14/14
Omega Environmental Monitor	N/A	000882	09/09/13	09/09/14
Extech Instruments Stop Watch	365510	001380	11/05/13	11/05/14
Tape measure	33-428	000678	12/09/13	12/09/14

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 CDS 3020 Spectrometer and Three Meter 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 spectrometer 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

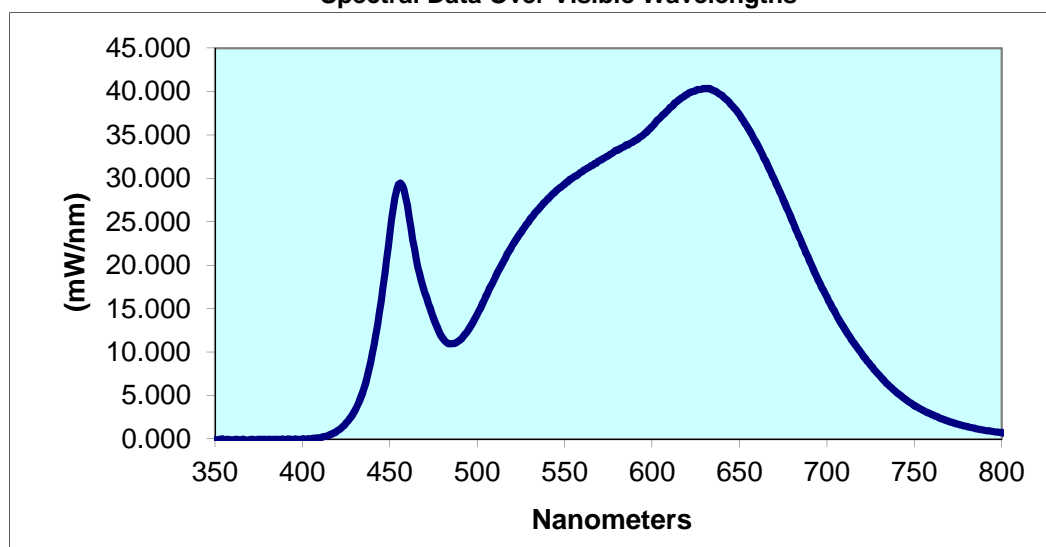
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN1405291025-003	LINEAR	120.1	1115	130.2	0.973	12.26	3686	28.31

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
3267	93.8	77.4	0.003	0.416	0.390	0.243	0.512

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	-0.077	440	9.837	530	25.240	620	39.660	710	12.720
355	-0.116	445	15.900	535	26.450	625	40.150	715	11.140
360	-0.087	450	23.710	540	27.570	630	40.340	720	9.768
365	-0.073	455	29.300	545	28.560	635	40.110	725	8.485
370	-0.062	460	26.840	550	29.330	640	39.550	730	7.286
375	-0.065	465	20.760	555	30.140	645	38.530	735	6.241
380	-0.055	470	16.830	560	30.790	650	37.290	740	5.322
385	-0.046	475	13.840	565	31.440	655	35.700	745	4.541
390	-0.057	480	11.650	570	32.060	660	33.940	750	3.856
395	-0.038	485	10.950	575	32.620	665	31.970	755	3.277
400	-0.009	490	11.410	580	33.220	670	29.810	760	2.817
405	0.049	495	12.630	585	33.840	675	27.530	765	2.380
410	0.169	500	14.370	590	34.370	680	25.210	770	1.995
415	0.421	505	16.440	595	35.020	685	22.840	775	1.684
420	0.958	510	18.490	600	36.000	690	20.510	780	1.426
425	1.835	515	20.470	605	37.070	695	18.300		
430	3.278	520	22.280	610	38.110	700	16.280		
435	5.730	525	23.780	615	39.020	705	14.410		

Spectral Data Over Visible Wavelengths



RESULTS OF TEST (cont'd)

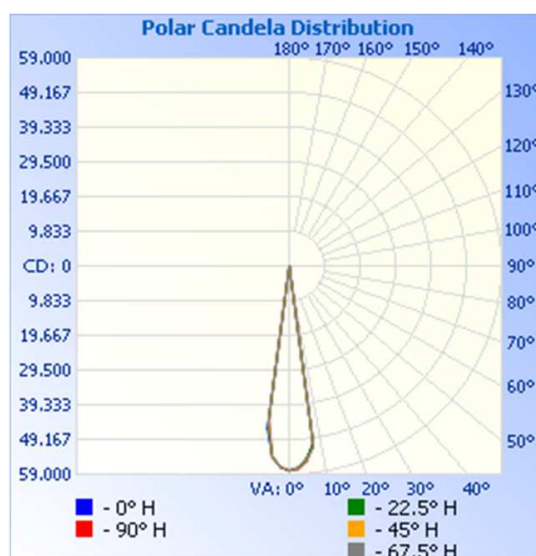
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
LAN1405291025-003	UP	120.1	1115	130.2	0.972	3827	29.39

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 58003

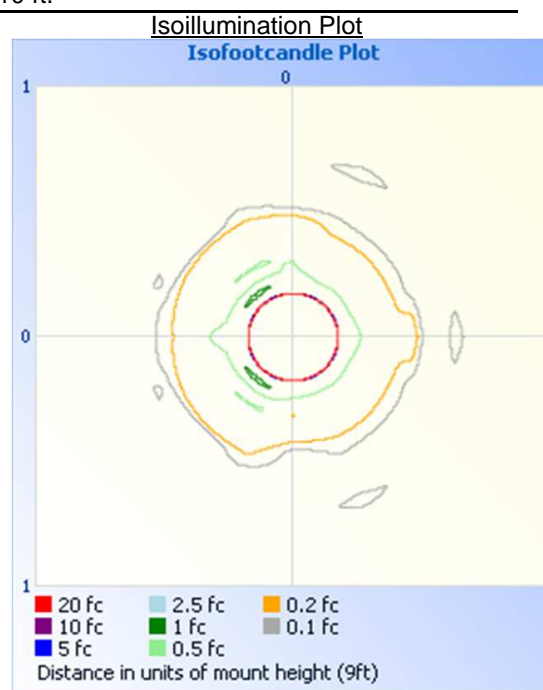
Angle	0	22.5	45	67.5	90
0	57888	57951	57942	58030	58003
5	54735	54825	55154	55451	55618
10	74	82	74	70	70
15	33	28	32	28	42
20	28	26	36	29	30
25	5	15	17	11	34
30	3	0	0	0	0
35	0	22	3	0	0
40	0	7	0	0	4
45	11	3	0	0	0
50	12	1	1	0	2
55	0	0	0	0	3
60	0	15	0	0	0
65	0	0	6	0	0
70	0	2	0	3	10
75	4	2	0	0	5
80	4	0	6	5	0
85	0	0	0	0	0
90	0	0	0	0	3



RESULTS OF TEST (cont'd)

Illumination Plots

Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	3817	99.7
0-40	3819	99.8
0-60	3821	99.9
60-90	5.4	0.1
0-90	3827	100.0
90-180	0.1	0.0
0-180	3827	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	0.0	0.0
10-20	3795	99.2
20-30	12.9	0.3
30-40	8.7	0.2
40-50	1.9	0.0
50-60	1.4	0.0
60-70	1.3	0.0
70-80	1.6	0.0
80-90	1.8	0.0
90-100	0.1	0.0

PICTURE (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:



Erik Linares
Technician
Lighting Division

Report Reviewed By:



Kenda Branch
Engineer
Lighting Division

Attachment: None