



REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G101607677

Date: June 9, 2014

REPORT NO. 101607677LAX-016

TEST OF ONE 6000K COOL 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 through June 6, 2014.

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SUMMARY

Model No.:	DW PROFILE
Description:	6000K COOL WHITE 17 BEAM ANGLE

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	4355	4522
Total Power (W)	129.6	129.6
Luminaire Efficacy (LPW)	33.6	34.89

Criteria	Result
Power Factor	0.972
Current ATHD %	12.58
Correlated Color Temperature (CCT - K)	6943
Color Rendering Index (CRI - Ra)	92.7
Color Rendering Index (CRI - R9)	81.9
DUV	0.003
Chromaticity Coordinate (x)	0.308
Chromaticity Coordinate (y)	0.313
Chromaticity Coordinate (u')	0.201
Chromaticity Coordinate (v')	0.459

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

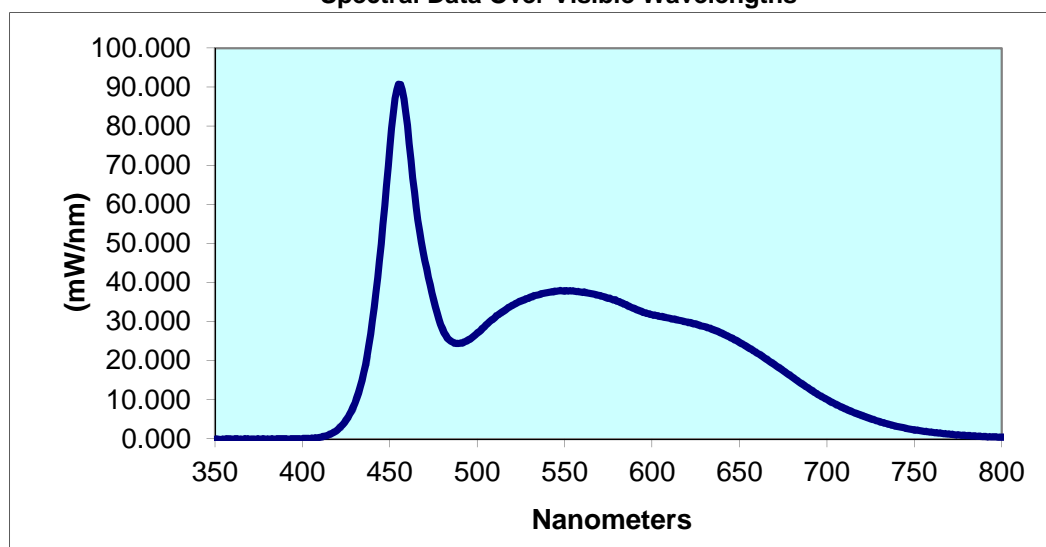
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN1405291025-003	LINEAR	120.0	1110	129.6	0.972	12.58	4355	33.6

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')
6943	92.7	81.9	0.003	0.308	0.313	0.201	0.459

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	-0.042	440	30.180	530	36.260	620	29.890	710	7.801
355	-0.038	445	49.900	535	36.900	625	29.380	715	6.829
360	-0.050	450	74.760	540	37.480	630	28.740	720	5.962
365	-0.034	455	90.780	545	37.790	635	27.940	725	5.183
370	-0.037	460	80.240	550	37.840	640	27.010	730	4.453
375	-0.001	465	59.350	555	37.830	645	25.910	735	3.799
380	-0.013	470	45.660	560	37.560	650	24.710	740	3.241
385	-0.016	475	35.450	565	37.200	655	23.400	745	2.745
390	-0.017	480	28.210	570	36.710	660	22.000	750	2.337
395	-0.026	485	25.010	575	36.000	665	20.530	755	1.976
400	0.068	490	24.480	580	35.250	670	19.010	760	1.722
405	0.164	495	25.370	585	34.370	675	17.430	765	1.447
410	0.461	500	27.090	590	33.320	680	15.880	770	1.204
415	1.050	505	29.180	595	32.390	685	14.300	775	1.047
420	2.341	510	31.060	600	31.790	690	12.780	780	0.858
425	4.873	515	32.730	605	31.320	695	11.350		
430	9.206	520	34.190	610	30.860	700	10.090		
435	16.900	525	35.280	615	30.430	705	8.896		

Spectral Data Over Visible Wavelengths



RESULTS OF TEST (cont'd)

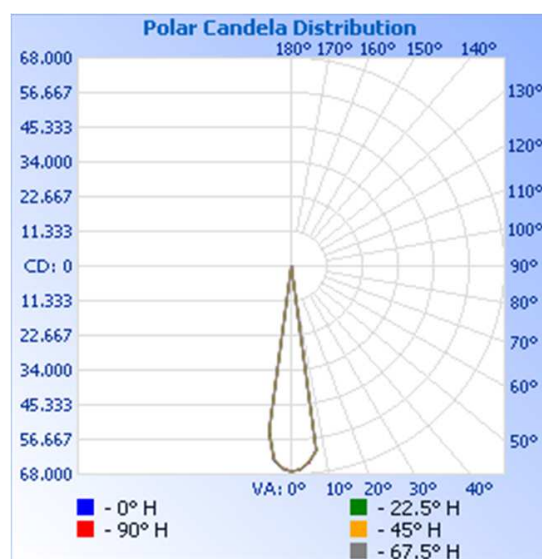
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

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	120.0	1111	129.6	0.972	4522	34.89

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 66951

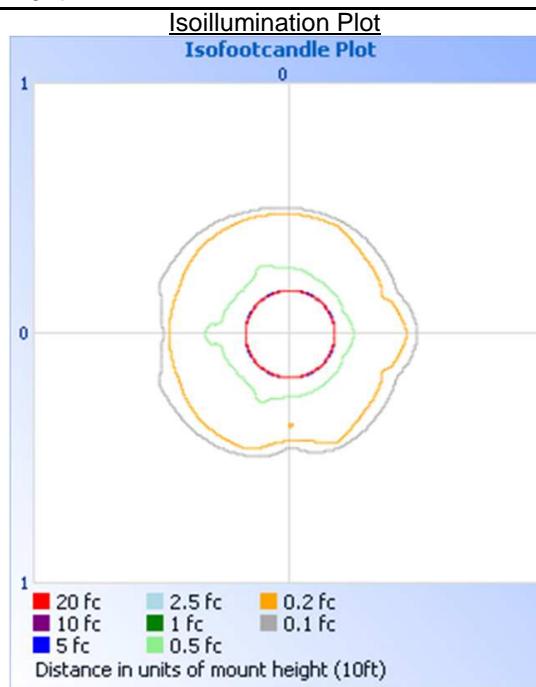
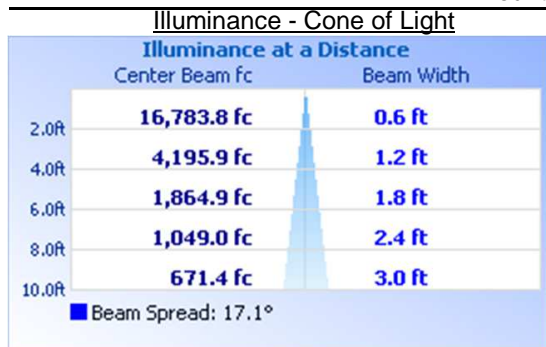
Angle	0	22.5	45	67.5	90
0	67135	67012	67045	67008	66951
5	64368	64081	63978	64124	64432
10	89	86	103	96	102
15	37	47	40	41	47
20	23	29	36	27	33
25	8	29	16	10	25
30	0	0	1	0	0
35	1	2	0	5	0
40	0	0	3	0	0
45	1	0	5	0	0
50	4	0	0	0	0
55	0	0	0	0	5
60	0	0	1	0	12
65	2	0	0	0	0
70	2	1	0	0	1
75	0	0	0	1	2
80	0	0	0	0	6
85	0	0	1	0	6
90	0	0	0	7	0



RESULTS OF TEST (cont'd)

Illumination Plots

Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	4508	99.7
0-40	4510	99.7
0-60	4515	99.8
60-90	6.6	0.1
0-90	4522	100.0
90-180	0.5	0.0
0-180	4522	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	0.0	0.0
10-20	4483	99.1
20-30	15.0	0.3
30-40	10.1	0.2
40-50	2.1	0.0
50-60	2.8	0.1
60-70	2.7	0.1
70-80	1.5	0.0
80-90	2.6	0.1
90-100	0.5	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

Attachment: None

Report Reviewed By:



Kenda Branch
Engineer
Lighting Division