



FOR THE SCOPE OF
ACCREDITATION UNDER A2LA
TO ISO/IEC 17025:2005.

REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G101589308

Date: April 3, 2014

REPORT NO. 101589308LAX-023

TEST OF ONE PROTON LED STROBE FULL ON LIGHT FIXTURE

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 500515440.

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 PROTON LED STROBE FULL ON Light Fixture. The sample was received by Intertek on March 21, 2014, in undamaged condition and one sample was tested as received. The sample designation was LAN1403210902-023.

DATES OF TESTS: April 2, 2014

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SUMMARY

Description:	PROTON LED STROBE FULL ON Light Fixture
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Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	3954	3805
Total Power (W)	64.81	66.05
Luminaire Efficacy (LPW)	61.01	57.61

Criteria	Result
Power Factor	0.980
Current ATHD %	7.60
Correlated Color Temperature (CCT - K)	6861
Color Rendering Index (CRI - Ra)	85.3
Color Rendering Index (CRI - R9)	24.7
DUV	0.002
Chromaticity Coordinate (x)	0.307
Chromaticity Coordinate (y)	0.323
Chromaticity Coordinate (u')	0.196
Chromaticity Coordinate (v')	0.464

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
LabSphere Power Supply	LPS-100-0833	000832	05/23/13	05/23/14
LapSphere 3M Integrating Sphere	CA-11821-LRT	000830	VBV	VBV
LabSphere Spectrometer	CDS-3020	000834	VBV	VBV
California Instruments Power Supply	CSW5550	001338	N/A	N/A
Yokogawa Power Meter	WT333	001319	05/10/13	05/10/14
Extech Instruments Stop Watch	N/A	001380	04/22/13	04/22/14
Lab Monitor	iBTHX-W	000886	09/10/13	09/10/14
LSI High Speed Mirror Goniometer	6440T	000943	03/31/14	04/07/14
Elgar Power Supply	CW1251	000944	VBV	VBV
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	N/A	001380	04/22/13	04/22/14
Tape measure	N/A	000684	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

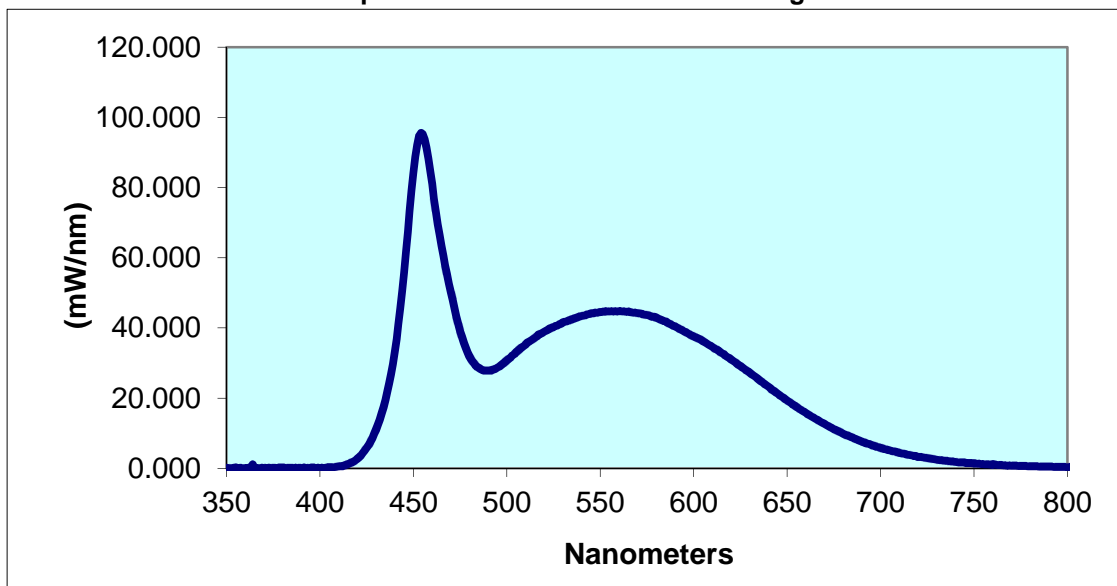
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN1403210902-023	UP	120.1	550.7	64.81	0.980	7.60	3954	61.01

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')
6861	85.3	24.7	0.002	0.307	0.323	0.196	0.464

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.188	440	33.190	530	41.560	620	31.040	710	4.387
355	0.277	445	55.720	535	42.490	625	29.140	715	3.803
360	0.056	450	84.160	540	43.410	630	27.240	720	3.205
365	-0.036	455	95.260	545	44.110	635	25.170	725	2.873
370	0.089	460	81.100	550	44.480	640	23.220	730	2.483
375	0.057	465	63.430	555	44.710	645	21.200	735	2.113
380	0.134	470	50.230	560	44.740	650	19.310	740	1.824
385	0.073	475	39.090	565	44.640	655	17.530	745	1.579
390	0.095	480	31.920	570	44.180	660	15.770	750	1.337
395	0.129	485	28.670	575	43.640	665	14.150	755	1.155
400	0.111	490	27.830	580	42.910	670	12.630	760	1.135
405	0.267	495	28.700	585	41.820	675	11.110	765	0.903
410	0.489	500	30.710	590	40.440	680	9.859	770	0.740
415	1.156	505	33.120	595	38.970	685	8.712	775	0.638
420	2.701	510	35.290	600	37.590	690	7.580	780	0.557
425	5.787	515	37.190	605	36.170	695	6.628		
430	10.970	520	38.900	610	34.570	700	5.799		
435	19.480	525	40.240	615	32.850	705	5.095		

Spectral Data Over Visible Wavelengths



RESULTS OF TEST (cont'd)

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

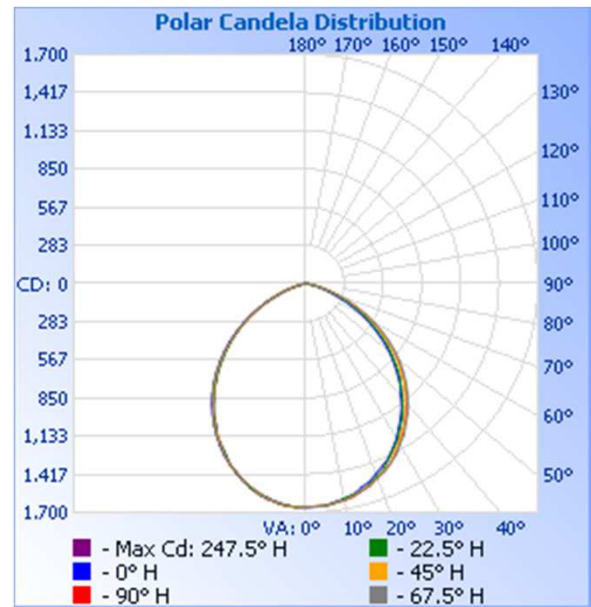
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
LAN1403210902-023	UP	119.9	563.6	66.05	0.978	3805	57.61

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value, 665.5 at Horizontal: 247.5Å°, Vertical: 2.5Å°

Maximum Candela Value: 1666

Angle	0	22.5	45	67.5	90
0	1658	1656	1656	1657	1658
5	1654	1657	1656	1656	1656
10	1622	1618	1632	1632	1634
15	1568	1593	1585	1591	1592
20	1502	1519	1537	1534	1533
25	1431	1433	1467	1466	1472
30	1330	1342	1363	1378	1372
35	1213	1227	1266	1276	1262
40	1083	1100	1140	1163	1149
45	951	970	1015	1040	1017
50	807	820	871	898	883
55	645	674	721	745	726
60	488	518	563	580	572
65	326	361	403	413	409
70	181	222	255	253	258
75	84	110	125	127	125
80	25	32	36	36	38
85	5	7	8	8	8
90	2	1	2	1	2

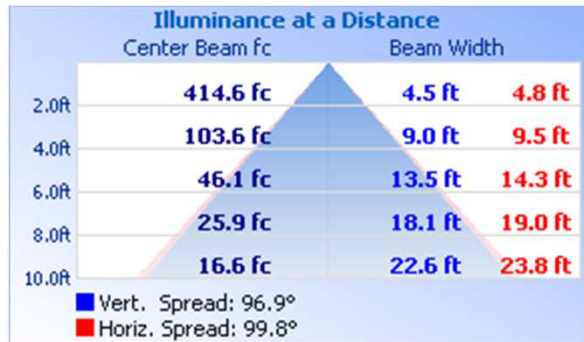


RESULTS OF TEST (cont'd)

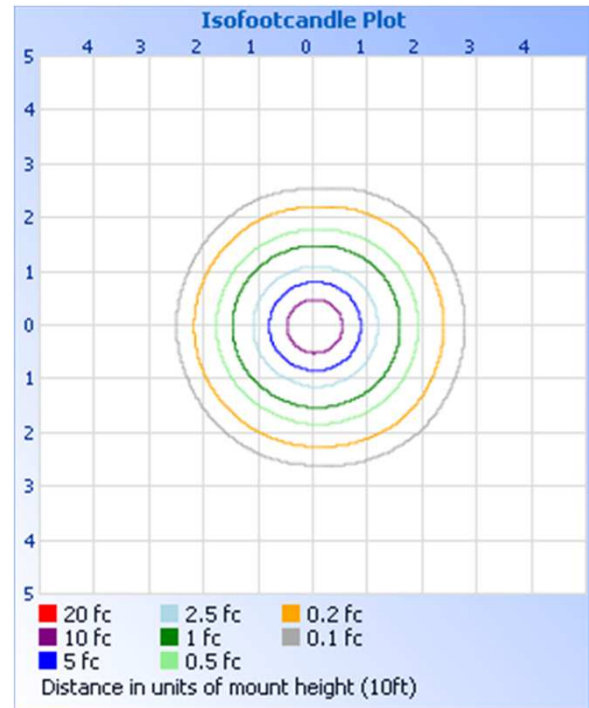
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1258	33.1
0-40	2018	53.0
0-60	3344	87.9
60-90	461.1	12.1
0-90	3804	100.0
90-180	0.1	0.0
0-180	3805	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	156.7	4.1
10-20	444.0	11.7
20-30	657.3	17.3
30-40	759.9	20.0
40-50	737.5	19.4
50-60	588.0	15.5
60-70	342.3	9.0
70-80	108.9	2.9
80-90	9.8	0.3
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:



Ameet Alawi
Technician
Lighting Division

Attachment: None

Report Reviewed By:



Kenda Branch
Engineer
Lighting Division

