



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 2, 2014

REPORT NO. 101589308LAX-001

TEST OF ONE LEVEL Q7 (IP) FULL ON LIGHT FIXURE

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 LEVEL Q7 (IP) 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 LAN1403210902-001.

DATES OF TESTS: March 31, 2014 through April 1, 2014.

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SUMMARY

Description:	LEVEL Q7 (IP) FULL ON Light Fixture
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Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	1080	1030
Total Power (W)	66.71	62.00
Luminaire Efficacy (LPW)	16.19	16.61

Criteria	Result
Power Factor	0.931
Current ATHD %	15.30
Correlated Color Temperature (CCT - K)	22000
Color Rendering Index (CRI - Ra)	55.1
Color Rendering Index (CRI - R9)	-223.3
DUV	0.044
Chromaticity Coordinate (x)	0.247
Chromaticity Coordinate (y)	0.173
Chromaticity Coordinate (u')	0.215
Chromaticity Coordinate (v')	0.340

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	VBU	VBU
LabSphere Spectrometer	CDS-3020	000834	VBU	VBU
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
Omega Environmental Monitor	N/A	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	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	N/A	001380	04/22/13	04/22/14
Tape Measure	33-428	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**

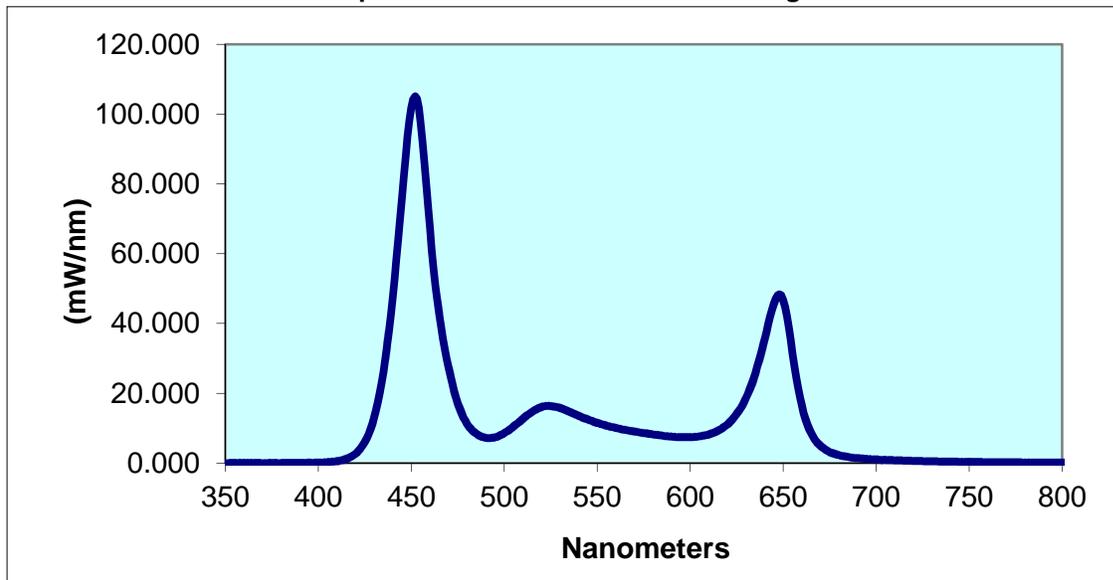
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN1403210902-001	UP	120.1	596.8	66.71	0.931	15.30	1080	16.19

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')
22000	55.1	-223.3	0.044	0.247	0.173	0.215	0.340

**Spectral Distribution over Visible Wavelengths**

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	-0.121	440	47.540	530	15.770	620	11.040	710	0.747
355	-0.016	445	76.200	535	14.660	625	14.000	715	0.656
360	0.049	450	101.900	540	13.480	630	18.610	720	0.562
365	-0.009	455	97.740	545	12.450	635	25.680	725	0.501
370	-0.071	460	67.200	550	11.510	640	35.500	730	0.431
375	-0.002	465	42.490	555	10.690	645	45.710	735	0.364
380	-0.005	470	27.450	560	10.030	650	46.780	740	0.330
385	0.021	475	17.060	565	9.494	655	31.470	745	0.284
390	0.020	480	11.190	570	9.012	660	16.430	750	0.259
395	0.032	485	8.341	575	8.566	665	8.551	755	0.225
400	0.089	490	7.189	580	8.167	670	4.907	760	0.189
405	0.212	495	7.329	585	7.854	675	3.117	765	0.183
410	0.473	500	8.560	590	7.532	680	2.214	770	0.146
415	1.146	505	10.440	595	7.346	685	1.697	775	0.118
420	2.624	510	12.650	600	7.366	690	1.380	780	0.111
425	6.017	515	14.670	605	7.610	695	1.148		
430	12.970	520	16.050	610	8.180	700	0.982		
435	26.130	525	16.300	615	9.257	705	0.846		

**Spectral Data Over Visible Wavelengths**





RESULTS OF TEST (cont'd)

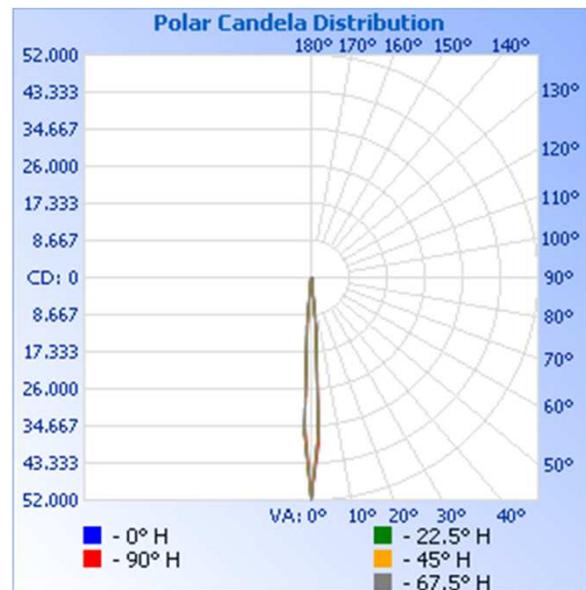
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

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)
LAN1403210902-001	UP	120.0	566.2	62.00	0.913	1030	16.61

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 51893

Angle	0	22.5	45	67.5	90
0	51893	51675	51763	51601	51344
5	11528	11441	11026	12006	13520
10	406	682	576	573	558
15	153	201	120	238	265
20	62	134	61	138	253
25	23	0	174	103	0
30	78	47	0	88	60
35	72	0	0	92	0
40	46	25	0	0	28
45	5	107	18	0	56
50	32	0	0	12	0
55	0	0	0	0	0
60	0	4	27	0	0
65	0	0	90	0	8
70	0	0	0	0	90
75	0	0	0	0	28
80	79	0	0	22	0
85	0	0	31	0	0
90	0	0	0	0	0



RESULTS OF TEST (cont'd)

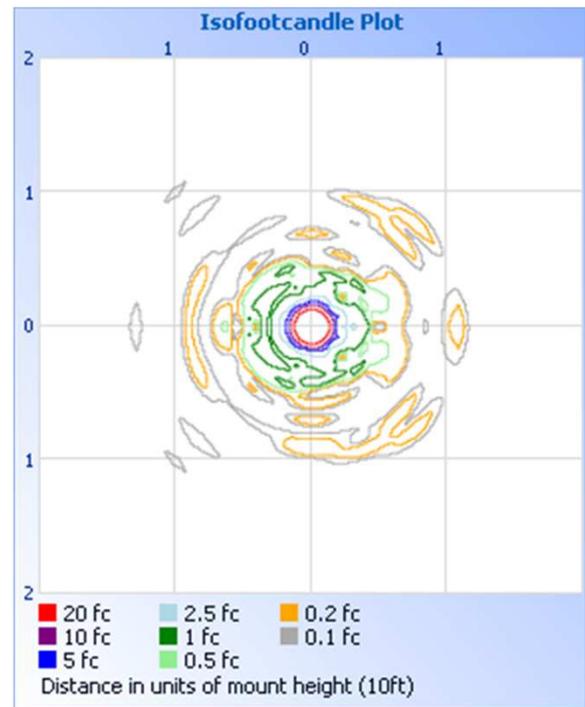
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	960.9	93.3
0-40	973.0	94.5
0-60	998.5	96.9
60-90	31.4	3.1
0-90	1030	100.0
90-180	0.0	0.0
0-180	1030	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	861.8	83.7
10-20	61.3	5.9
20-30	37.8	3.7
30-40	12.1	1.2
40-50	18.0	1.8
50-60	7.5	0.7
60-70	11.7	1.1
70-80	8.4	0.8
80-90	11.4	1.1

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:



Jesse Reyna  
Technician  
Lighting Division

Attachment: None

Report Reviewed By:



Kenda Branch  
Engineer  
Lighting Division

