FOR THE SCOPE OF
ACCREDITATION UNDER NVLAP LAB
CODE 100402-0.

REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100346803

Original Issue Date: April 18, 2011
Revision Date: May 13, 2011

REPORT NO. 100346803CRT-002

TEST OF ONE LED PAR38 LAMP

MODEL NO. LP15566FL4D

RENDERED TO

LITETRONICS INTERNATIONAL INC.
4101 WEST 123RD STREET
ALSIP, IL 60803

Revision Note May 13, 2011: This report was revised to add photometric and electrical measurements from the integrating sphere test.

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

LABORATORY NOTE: The laboratory that conducted the testing detailed in this report has been Qualified, Verified, and Recognized for LM-79 Testing for ENERGY STAR for SSL by US DOE's CALiPER program.

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

AUTHORIZATION: The testing performed was authorized by signed quote number 500287913.

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 Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model number LP15566FL4D. The sample was received by Intertek on March 4, 2011, in undamaged condition, and one sample was tested as received. The sample designation was L10817L.

DATES OF TESTS: April 8, 2011 through April 14, 2011.

SUMMARY

Model No.:	LP15566FL4D
Description:	15W PAR38 MED 120V FL 3000K 50,000H DIM

Criteria	Result Sphere	Result Distribution
Total Lumen Output (lm)	799.2	772.1
Total Power (W)	14.56	14.57
Luminaire Efficacy (lm/W)	54.89	52.99
Power Factor	0.972	0.973
Current ATHD (%)	20.2	
Color Rendering Index (CRI) -Ra	83.07	
Duv	0.002	
Correlated Color Temperature (CCT)	3011 K	
Chromaticity Coordinate (x)	0.433	
Chromaticity Coordinate (y)	0.397	
Chromaticity Coordinate (u')	0.251	
Chromaticity Coordinate (v')	0.518	

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Elgar AC Power Supply	CW1251	--	--	--
Yokogawa Power Analyzer	WT1600	E462	06/11/10	06/11/11
Labsphere Diode Array	DAS 1100	N714	Before Use	Before Use
Leeds & Northup Standard Resistor	Manganin	Y089	02/17/11	02/17/12
Data Precision Digital Voltmeter	3600	V124	02/17/11	02/17/12
Fluke Multimeter	45	M133	02/17/11	02/17/12
Fluke Temperature Meter	52	T801	06/11/10	06/11/11
Kikusui DC Power Supply	35-10L	E160	---	---
Sorenson DC Power Supply	DLM150-20E	--	---	---
UDT Optometer	S370	N301	Before Use	Before Use
ITS Two Meter Diameter Integrating Sphere	---	N308	Before Use	Before Use
ITS Ten Foot Diameter Integrating Sphere	---	N307	Before Use	Before Use
NIST Luminous Flux Standard Sources	---	150-14, 8043, 8830	03/17/10	03/17/12
NIST Spectral Flux Standard Source	RF1024	---	09/18/10	100 hours of use
LSI High Speed Mirror Goniophotometer	6440	--	Before Use	Before Use
Labsphere CDS 1100 CCD Spectroradiometer	CDS1100	--	Before Use	Before Use
Optronics Spectroradiomter	EL750D	E288	Before Use	Before Use

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

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.

Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model DAS 1100 Diode 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.

Estimated Total Operating Time

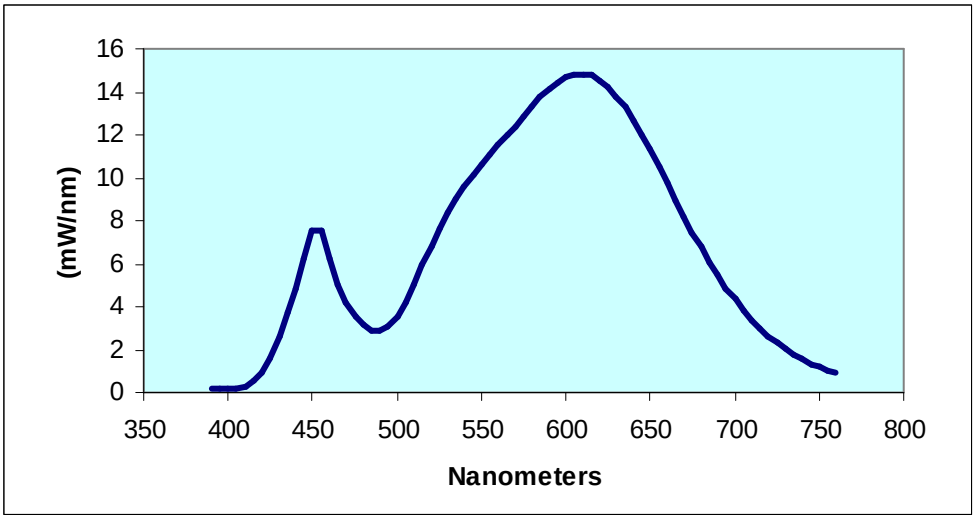
Model No.	Total Hours
LP15566FL4D	5

RESULTS OF TESTS

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
			LP15566FL4D				
390	0.1558	500	3.5314	610	14.8110	720	2.6322
395	0.1508	505	4.2143	615	14.7470	725	2.3152
400	0.1733	510	5.0565	620	14.5560	730	2.0143
405	0.2235	515	5.9466	625	14.2310	735	1.7695
410	0.3164	520	6.8188	630	13.8060	740	1.5430
415	0.5200	525	7.6404	635	13.2760	745	1.3422
420	0.9225	530	8.3826	640	12.6760	750	1.1861
425	1.6053	535	9.0255	645	12.0280	755	1.0419
430	2.5682	540	9.5778	650	11.3250	760	0.8971
435	3.6888	545	10.1030	655	10.5510		
440	4.8694	550	10.5940	660	9.7684		
445	6.2514	555	11.0920	665	8.9744		
450	7.5037	560	11.5770	670	8.2023		
455	7.5051	565	11.9980	675	7.4655		
460	6.2424	570	12.4180	680	6.7491		
465	4.9938	575	12.8760	685	6.0912		
470	4.1758	580	13.3280	690	5.4750		
475	3.5716	585	13.7780	695	4.8785		
480	3.1279	590	14.1860	700	4.3390		
485	2.8978	595	14.4590	705	3.8471		
490	2.8782	600	14.6770	710	3.3946		
495	3.0808	605	14.8020	715	2.9974		

LITETRONICS
Sample No. L10817L
Model No. LP15566FL4D
Spectral Data Over Visible Wavelengths



RESULTS OF TESTS (cont'd)

Photometric and Electrical Measurements at 25℃ – Integrating Sphere Method

Intertek Sample No.	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')
				LP15566FL4D				
L10817L	3011	83.07	27.06	0.002	0.433	0.397	0.251	0.518

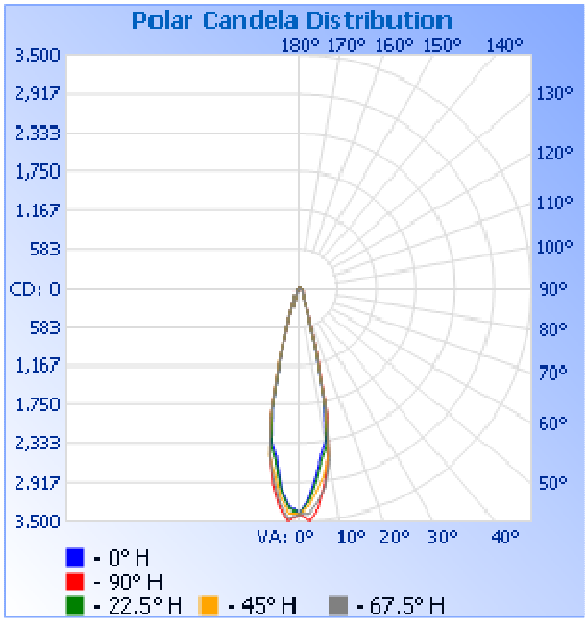
Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
				LP15566FL4D				
L10817L	UP	120.0	124.9	14.56	0.972	20.2	799.2	54.89

Photometric and Electrical Measurements – 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)
				LP15566FL4D			
L10817L	UP	120.0	124.9	14.57	0.973	772.1	52.99

Intensity (Candlepower) Summary at 25℃ - Candelas

Angle	0	22.5	45	67.5	90
			LP15566FL4D		
0	3385	3385	3385	3385	3385
5	2835	2909	3047	3221	3314
10	2330	2412	2564	2629	2535
15	917	947	958	1006	1067
20	215	223	218	223	243
25	127	128	127	128	131
30	100	100	98	98	98
35	72	73	77	76	78
40	71	71	72	72	72
45	64	62	66	67	68
50	59	58	60	60	59
55	24	30	29	30	31
60	8	9	9	9	9
65	4	4	4	4	4
70	1	1	1	2	1
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

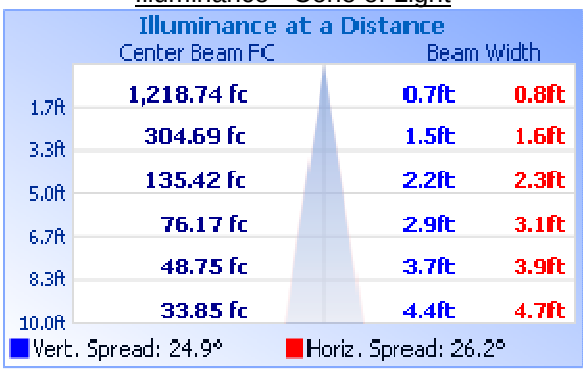


RESULTS OF TESTS (cont'd)

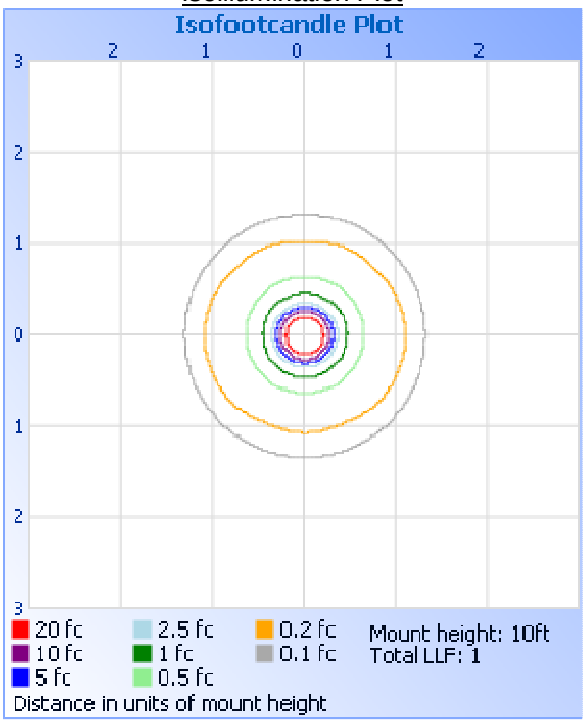
Illumination Plots

Model No.: LP15566FL4D
Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25℃

Zone	Lumens	% Luminaire
	LP15566FL4D	
0-30	639.9	82.9
0-40	689.3	89.3
0-60	767.6	99.4
60-90	4.5	0.6
0-90	772.1	100.0
90-180	0.0	0.0
0-180	772.1	100.0

Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
		LP15566FL4D		
Field (10%):	72.9	562.9	37.8	37.3
Beam (50%):	51.7	399.0	26.2	24.9
Total:	100.0	772.1		

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:

Steven Mosier
Technician I
Lighting Division

Report Reviewed By:

for

Jeffrey Davis
Associate Engineer
Lighting Division

Attachment: None