



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: May 11, 2011

Revision Date: May 24, 2011

REPORT NO. 100346803CRT-011

TEST OF ONE LED PAR38 LAMP

MODEL NO. LP10566SP4D

RENDERED TO

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

Revision Note May 24, 2011: This report was revised to correct the lamp description on page 2.

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 LP10566SP4D. The sample was received by Intertek on April 12, 2011, in undamaged condition, and one sample was tested as received. The sample designation was L11321L.

DATES OF TESTS: April 29, 2011 through May 5, 2011.

SUMMARY

Model No.: LP10566SP4D
Description: 10W PAR38 MED 120V SP 3000K 50,000H DIM

Criteria	Result	
	Sphere	Distribution
Total Lumen Output (lm)	591.9	546.7
Total Power (W)	9.71	9.650
Luminaire Efficacy (lm/W)	60.96	56.65
Power Factor	0.991	0.992
Current ATHD (%)	11.10	
Color Rendering Index (CRI) -Ra	82.5	
Duv	0.001	
Correlated Color Temperature (CCT)	3002	
Chromaticity Coordinate (x)	0.435	
Chromaticity Coordinate (y)	0.400	
Chromaticity Coordinate (u')	0.251	
Chromaticity Coordinate (v')	0.520	

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
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	--	---	---
NIST Spectral Flux Standard Source	RF1024	---	09/18/10	100 hours of use
Elgar AC Power Supply	CW1251	--	--	--
Yokogawa Power Meter	WT210	E464	04/19/11	04/19/12
LSI High Speed Mirror Goniometer	6440	--	w/use	w/use
Cole Parmer Hygro Thermometer	445703	T1357	10/12/10	10/12/11
Xitron Power Analyzer	2503AH	E235	04/20/11	04/20/12
ITS 2 Meter Sphere	W/ CDS 600	N308	w/use	w/use
Fluke Temp Meter	53 II	N1324	03/11/11	03/11/12
Elgar Power Supply	CW1251	NA	NA	NA



## 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

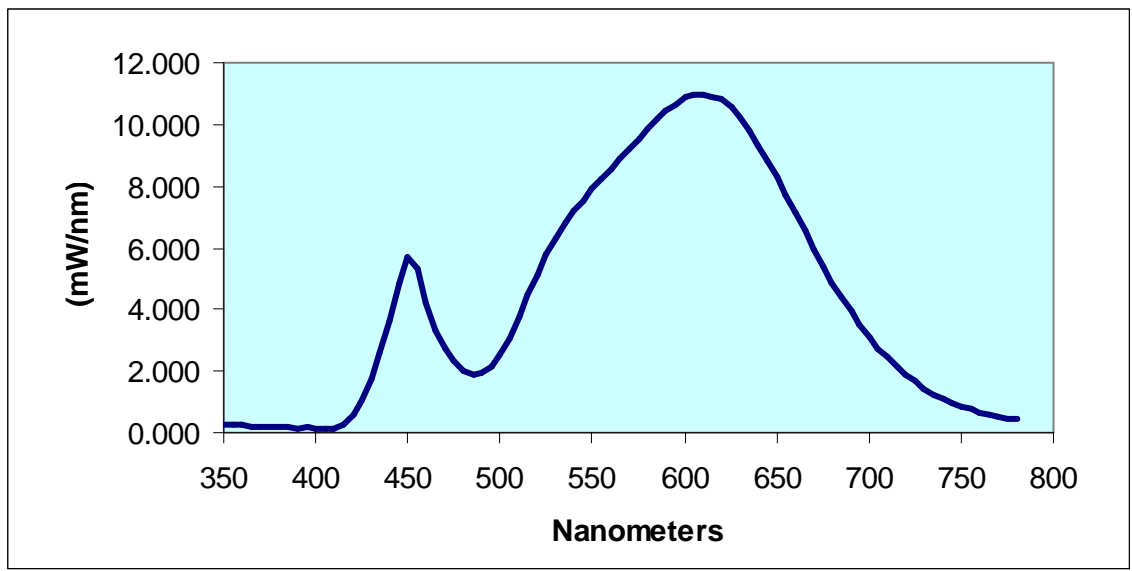
<u>Model No.</u>	<u>Total Hours</u>
LP10566SP4D	7

**RESULTS OF TESTS**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
LP10566SP4D							
350	0.291	460	4.219	570	9.213	680	4.889
355	0.232	465	3.303	575	9.540	685	4.383
360	0.231	470	2.739	580	9.859	690	3.932
365	0.215	475	2.303	585	10.152	695	3.502
370	0.202	480	2.018	590	10.446	700	3.110
375	0.194	485	1.888	595	10.664	705	2.755
380	0.176	490	1.925	600	10.884	710	2.433
385	0.189	495	2.110	605	10.945	715	2.126
390	0.133	500	2.531	610	10.975	720	1.887
395	0.186	505	3.080	615	10.916	725	1.656
400	0.118	510	3.749	620	10.810	730	1.449
405	0.121	515	4.462	625	10.572	735	1.262
410	0.159	520	5.142	630	10.239	740	1.114
415	0.281	525	5.764	635	9.807	745	0.980
420	0.556	530	6.314	640	9.324	750	0.874
425	1.033	535	6.784	645	8.824	755	0.771
430	1.735	540	7.180	650	8.283	760	0.677
435	2.593	545	7.547	655	7.708	765	0.592
440	3.610	550	7.885	660	7.132	770	0.529
445	4.880	555	8.251	665	6.551	775	0.480
450	5.732	560	8.591	670	5.952	780	0.436
455	5.351	565	8.903	675	5.399		

**LITETRONICS**  
**Sample No. L11321L**  
**Model No. LP10566SP4D**  
**Spectral Data Over Visible Wavelengths**



## RESULTS OF TESTS (cont'd)

### Photometric and Electrical Measurements at 25°C – 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')
LP10566SP4D								
L11321L	3002	82.5	25.7	0.001	0.435	0.400	0.251	0.520

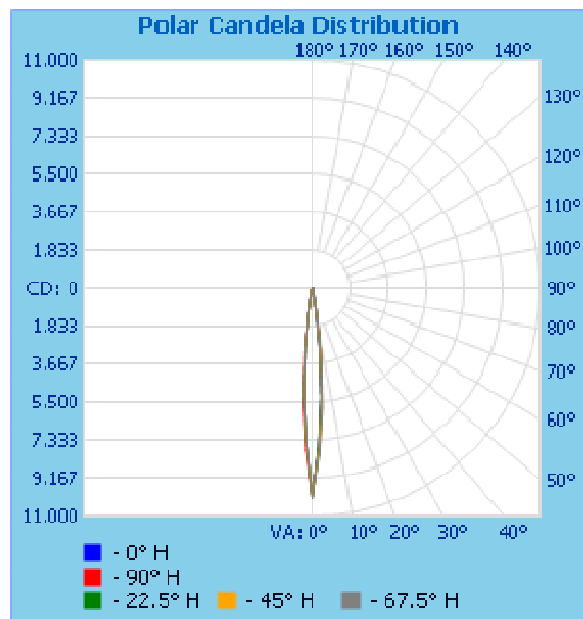
Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
LP10566SP4D								
L11321L	UP	120.0	81.6	9.71	0.991	11.10	591.9	60.96

### 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)
LP10566SP4D							
L11321L	UP	120.0	81.02	9.650	0.992	546.7	56.65

### Intensity (Candlepower) Summary at 25°C - Candelas

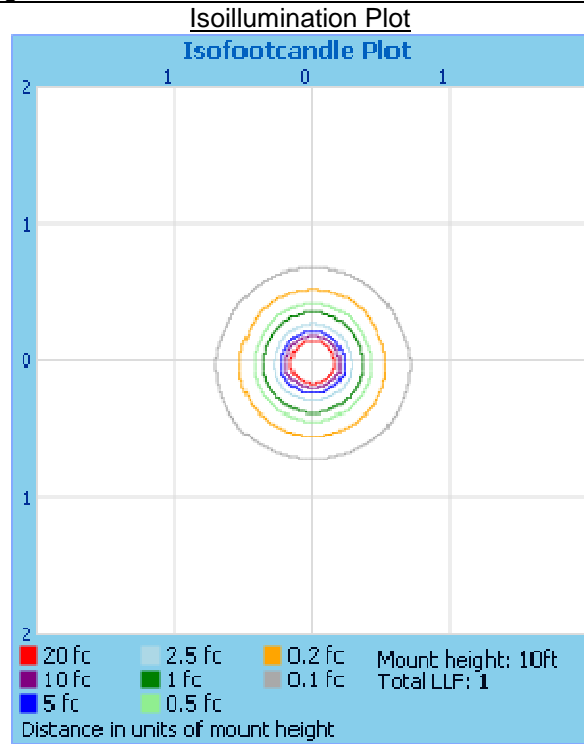
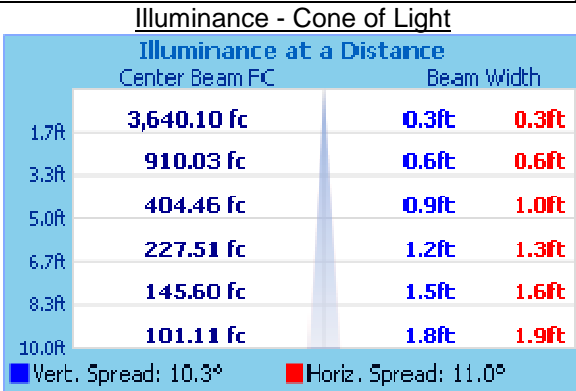
Angle	0	22.5	45	67.5	90
LP10566SP4D					
0	10111	10111	10111	10111	10111
5	5290	5310	5559	5819	5517
10	1308	1224	1408	1582	1377
15	329	325	324	324	306
20	132	128	128	127	119
25	47	45	46	45	43
30	26	26	26	26	25
35	20	19	20	19	19
40	14	14	14	14	14
45	11	10	11	10	10
50	9	9	9	9	9
55	9	9	9	8	9
60	8	8	8	7	8
65	9	7	9	7	9
70	12	11	12	11	11
75	4	5	5	5	4
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.: LP10566SP4D  
Mounting Height: 10 ft.



### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
LP10566SP4D		
0-30	505.7	92.5
0-40	517.2	94.6
0-60	532.6	97.4
60-90	14.1	2.6
0-90	546.7	100.0
90-180	0.0	0.0
0-180	546.7	100.0

### Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
LP10566SP4D				
Field (10%):	72.8	398.1	22.3	22.0
Beam (50%):	32.1	175.5	11.0	10.3
Total:	101.8	556.5		

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

Attachment: None

Report Reviewed By:

Jeffrey Davis  
Senior Associate Engineer  
Lighting Division