



# REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100257567

Date: November 12, 2010

REPORT NO. 100257567CRT-001

TEST OF ONE LED PAR38

MODEL NO. AE26PAR38182710

RENDERED TO

NEXXUS LIGHTING INC.  
124 FLOYD SMITH DRIVE  
SUITE 300  
CHARLOTTE, NC 28262

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.

AUTHORIZATION: The testing performed was authorized by signed quote number 500267129.

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 28 samples of model number AE26PAR38182710. The samples were received by Intertek on October 27, 2010, in undamaged condition, and one sample was tested as received. The sample designation was N7754L.

DATES OF TESTS: November 10, 2010 through November 11, 2010.

SUMMARY

Model No.: AE26PAR38182710
Description: LED PAR38

Criteria	Result
Total Lumen Output	808.9 Lumens
Total Power	17.19 W
Luminaire Efficacy	47.06
Power Factor	0.980
Current ATHD	19.66 %
Color Rendering Index (CRI)	84.0
Correlated Color Temperature (CCT)	2741 K
Chromaticity Coordinate (x)	0.456
Chromaticity Coordinate (y)	0.409
Chromaticity Coordinate (u')	0.261
Chromaticity Coordinate (v')	0.526

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Xitron Power Analyzer	2503H	E235	04/09/10	04/09/11
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
Yokogawa Power Analyzer	WT210	E464	04/19/10	04/19/11
Leeds & Northup Standard Resistor	Manganin	Y089	02/10/10	02/10/11
Data Precision Digital Voltmeter	3600	V124	02/10/10	02/10/11
Fluke Multimeter	45	M133	02/10/10	02/10/11
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	03/17/11
NIST Spectral Flux Standard Source	RF0605	---	11/29/06	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 Spectroradiometer	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

<u>Model No.</u>	<u>Total Hours</u>
AE26PAR38182710	3

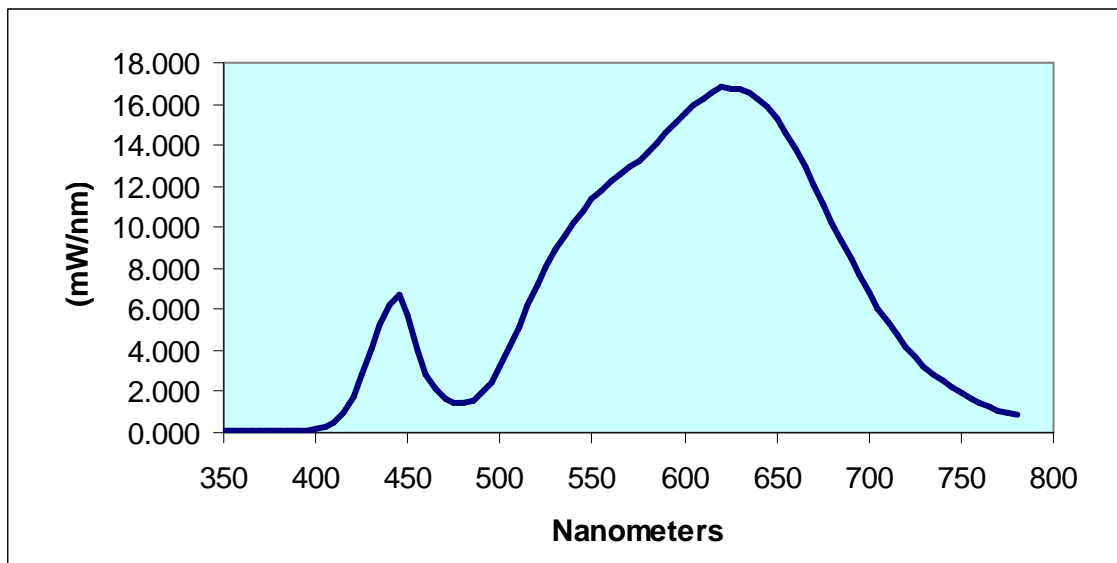


**RESULTS OF TESTS**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
AE26PAR38182710							
350	0.136	460	2.816	570	12.945	680	10.227
355	0.102	465	2.135	575	13.274	685	9.368
360	0.112	470	1.682	580	13.668	690	8.469
365	0.104	475	1.448	585	14.136	695	7.642
370	0.109	480	1.421	590	14.598	700	6.824
375	0.098	485	1.569	595	15.111	705	6.080
380	0.081	490	1.904	600	15.547	710	5.414
385	0.086	495	2.460	605	15.938	715	4.796
390	0.109	500	3.248	610	16.231	720	4.210
395	0.119	505	4.166	615	16.556	725	3.711
400	0.152	510	5.181	620	16.791	730	3.244
405	0.276	515	6.204	625	16.775	735	2.836
410	0.503	520	7.224	630	16.722	740	2.488
415	0.958	525	8.109	635	16.523	745	2.193
420	1.735	530	8.928	640	16.245	750	1.920
425	2.841	535	9.649	645	15.824	755	1.679
430	4.087	540	10.262	650	15.275	760	1.455
435	5.208	545	10.789	655	14.593	765	1.266
440	6.242	550	11.343	660	13.796	770	1.111
445	6.733	555	11.781	665	12.952	775	0.958
450	5.746	560	12.222	670	12.036	780	0.835
455	4.033	565	12.583	675	11.099		

**NEXXUS**  
**Sample No. N7754L**  
**Model No. AE26PAR38182710**  
**Spectral Data Over Visible Wavelengths**



## RESULTS OF TESTS (cont'd)

### Photometric Measurements at 25°C – Integrating Sphere Method

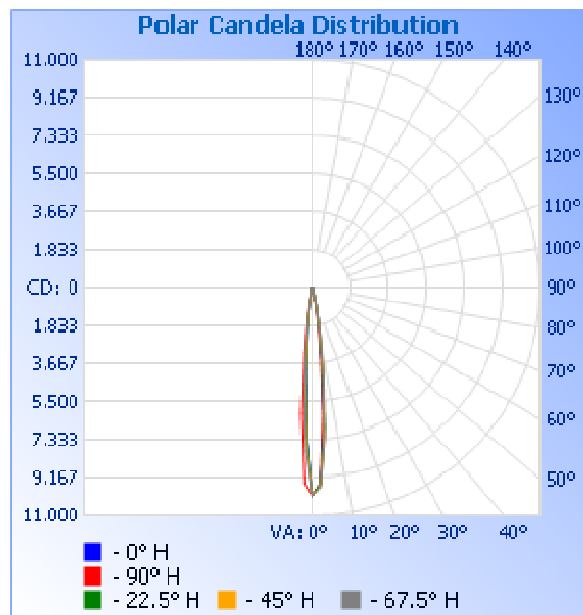
Intertek Sample No.	Current ATHD (%)	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
AE26PAR38182710							
N7754L	19.66	2741	84.0	0.456	0.409	0.261	0.526

### 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)
AE26PAR38182710							
N7754L	UP	120.0	146.2	17.19	0.980	808.9	47.06

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

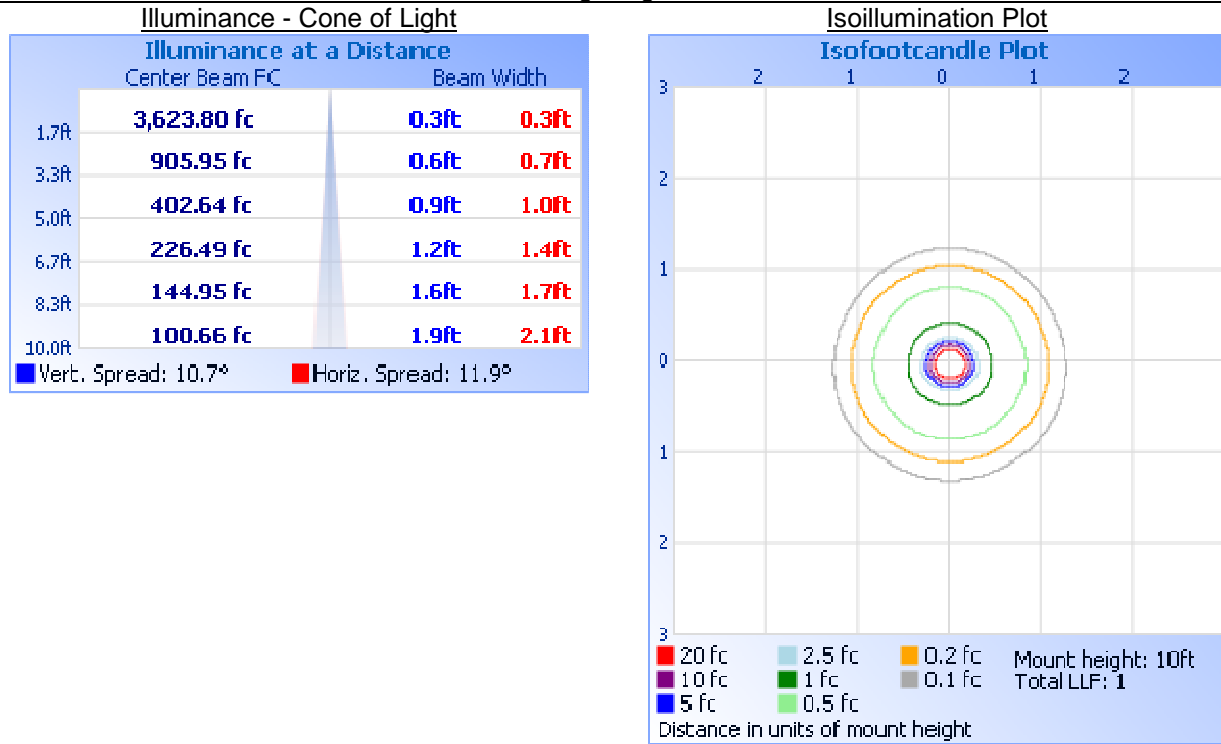
Angle	0	22.5	45	67.5	90
AE26PAR38182710					
0	10066	10066	10066	10066	10066
5	6725	6793	7060	7199	6118
10	2050	2074	2220	2292	1700
15	584	583	612	622	413
20	206	204	207	207	186
25	142	140	140	139	127
30	104	104	105	104	96
35	115	114	111	109	111
40	115	114	114	113	110
45	82	82	83	82	77
50	54	52	52	53	49
55	36	35	35	35	32
60	24	23	22	24	22
65	18	18	18	18	16
70	14	13	14	14	12
75	10	9	9	8	7
80	4	4	4	4	3
85	0	1	0	0	0
90	0	0	0	0	0



## RESULTS OF TESTS (cont'd)

### Illumination Plots

Model No.: AE26PAR38182710  
Mounting Height: 10 ft.



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

Zone	Lumens	% Luminaire
<b>AE26PAR38182710</b>		
0-30	627.7	77.6
0-40	695.7	86.0
0-60	784.1	96.9
60-90	24.7	3.1
0-90	808.9	100.0
90-180	0.0	0.0
0-180	808.9	100.0

### Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
<b>AE26PAR38182710</b>				
Field (10%):	59.1	478.2	24.3	23.9
Beam (50%):	26.5	214.5	11.9	10.7
Total:	100.6	813.5		

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:



Jeffrey Davis  
Associate Engineer  
Lighting Division

Attachment: None

Report Reviewed By:



Jacki Swiernik  
Project Engineer  
Lighting Division