



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100203550

Date: October 18, 2010

REPORT NO. 100203550CRT-010a

TEST OF ONE LED PAR38

MODEL NO. AE26PAR38185060

RENDERED TO

NEXXUS LIGHTING INC.
124 FLOYD SMITH DRIVE
SUITE 300
CHARKITTE, 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 quotes number 500259127 and 500254075.

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 AE26PAR38185060. The sample was received by Intertek on August 26, 2010, in undamaged condition, and one sample was tested as received. The sample designation was N5602L.

DATES OF TESTS: September 14, 2010 through October 8, 2010.

SUMMARY

Model No.:	AE26PAR38185060
Description:	LED PAR38

Criteria	Result	
	Sphere	Distribution
Total Lumen Output (lm)	937.6	906.5
Total Power (W)	20.01	20.04
Luminaire Efficacy (lm/W)	46.86	45.24
Power Factor	0.857	0.858

Criteria	Result
Color Rendering Index (CRI)	89.2
Correlated Color Temperature (CCT)	4835 K
Chromaticity Coordinate (x)	0.349
Chromaticity Coordinate (y)	0.348
Chromaticity Coordinate (u')	0.215
Chromaticity Coordinate (v')	0.484

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	03/17/2010	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>
AE26PAR38185060	4

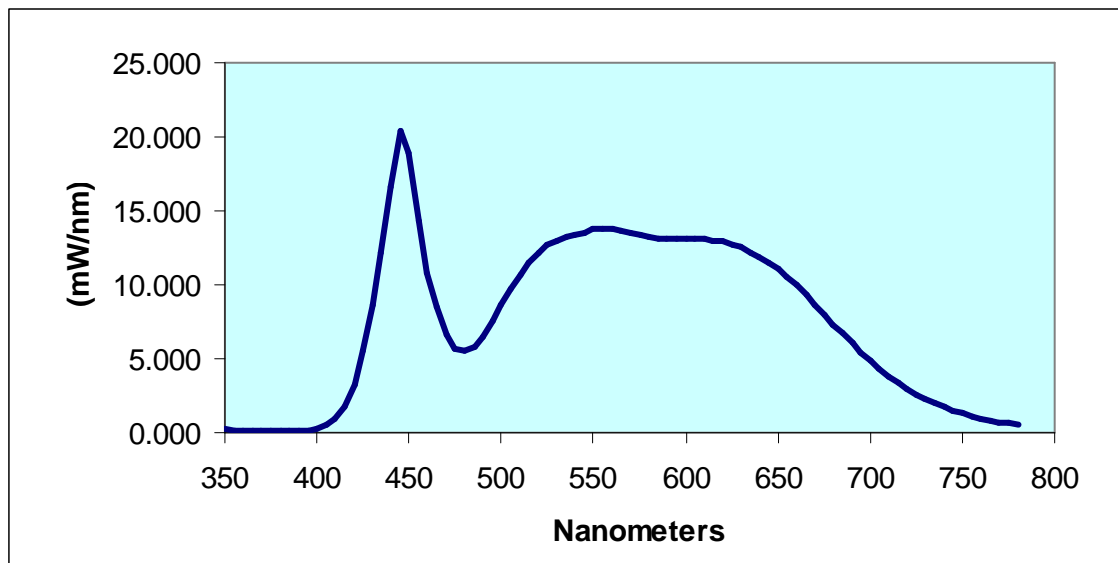


RESULTS OF TESTS

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
AE26PAR38185060							
350	0.218	460	10.848	570	13.547	680	7.364
355	0.149	465	8.464	575	13.385	685	6.697
360	0.123	470	6.652	580	13.228	690	6.046
365	0.128	475	5.678	585	13.172	695	5.449
370	0.113	480	5.495	590	13.158	700	4.856
375	0.109	485	5.801	595	13.176	705	4.333
380	0.127	490	6.527	600	13.158	710	3.827
385	0.127	495	7.535	605	13.156	715	3.369
390	0.134	500	8.634	610	13.063	720	2.981
395	0.188	505	9.729	615	13.037	725	2.609
400	0.271	510	10.698	620	12.951	730	2.282
405	0.493	515	11.525	625	12.716	735	1.980
410	0.943	520	12.189	630	12.523	740	1.724
415	1.821	525	12.641	635	12.152	745	1.509
420	3.302	530	13.014	640	11.865	750	1.303
425	5.602	535	13.300	645	11.504	755	1.129
430	8.621	540	13.444	650	11.100	760	0.983
435	12.176	545	13.580	655	10.561	765	0.857
440	16.595	550	13.760	660	9.974	770	0.736
445	20.379	555	13.768	665	9.386	775	0.642
450	18.925	560	13.753	670	8.673	780	0.552
455	14.262	565	13.696	675	8.014		

NEXXUS
Sample No. N5602L
Model No. AE26PAR38185060
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	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
AE26PAR38185060						
N5602L	4835	89.2	0.349	0.348	0.215	0.484

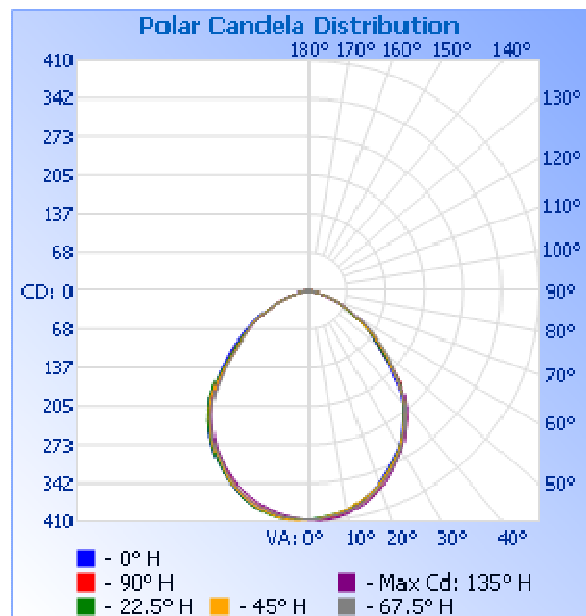
Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
AE26PAR38185060							
N5602L	UP	120.0	194.9	20.01	0.857	937.6	46.86

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)
AE26PAR38185060							
N5602L	UP	120.0	193.4	20.04	0.858	906.5	45.24

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
AE26PAR38185060					
0	406	406	406	406	406
5	403	401	402	404	405
10	396	395	394	398	398
15	381	381	380	386	386
20	364	366	366	370	371
25	343	345	346	350	349
30	321	323	324	327	327
35	292	294	296	299	300
40	263	264	266	267	267
45	215	228	224	226	231
50	172	175	184	189	174
55	135	136	140	149	141
60	105	103	104	111	104
65	76	74	79	81	76
70	50	53	54	54	54
75	27	27	29	32	26
80	9	10	10	13	9
85	1	2	2	2	2
90	0	0	0	0	0

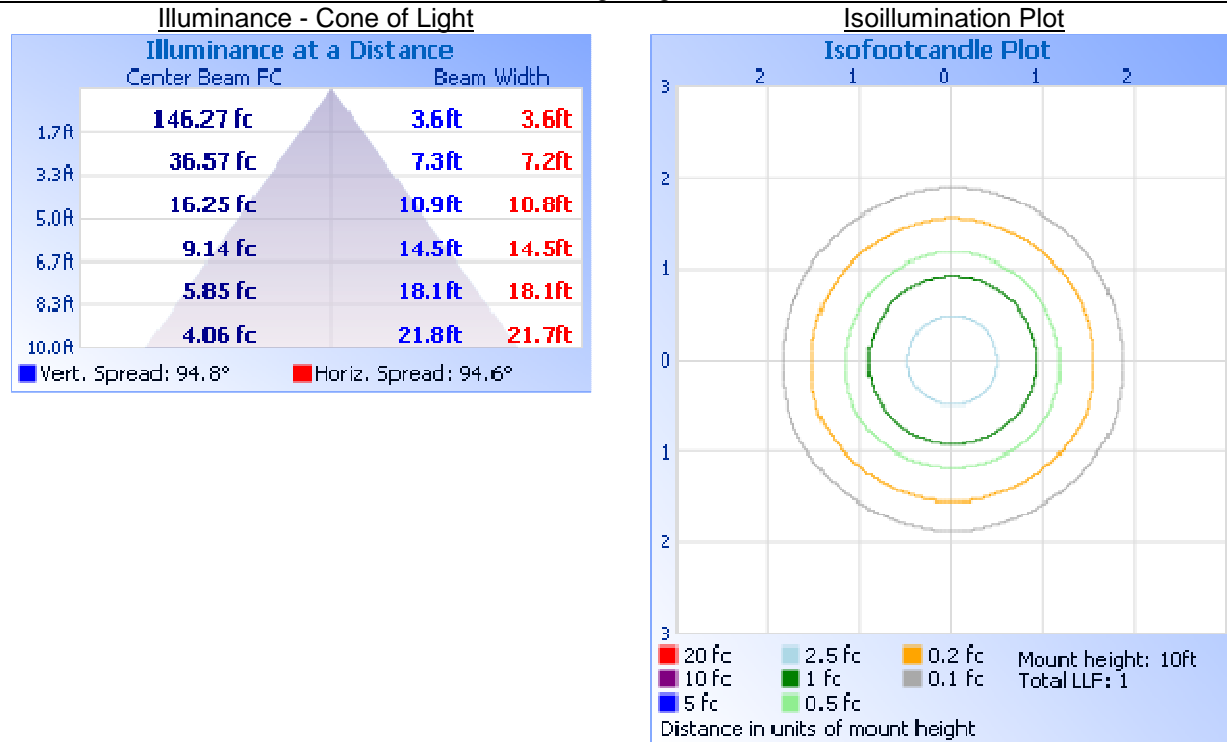




RESULTS OF TESTS (cont'd)

Illumination Plots

Model No.: AE26PAR38185060
Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
AE26PAR38185060		
0-30	308.2	34.0
0-40	494.9	54.6
0-60	794.3	87.6
60-90	110.9	12.2
0-90	905.3	99.9
90-180	1.2	0.1
0-180	906.5	100.0

