REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. 100105619 Date: July 2, 2010

REPORT NO. 100105619CRT-002

TEST OF ONE LED PAR38 LAMPS

MODEL NO. AE26PAR38183015

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 500226735.

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 15 samples of model number AE26PAR38183015. The samples were received by Intertek on June 28, 2010, in undamaged condition, and one sample was tested as received. The sample designation was N5541L.

DATES OF TESTS: June 30, 2010 through July 1, 2010.

SUMMARY

Model No.:	AE26PAR38183015
Description:	PAR38 LED LAMPS

Criteria	Result
Total Lumen Output	896.7
Total Power	19.73W
Luminaire Efficacy	45.45
Power Factor	0.976
Color Rendering Index (CRI)	84.95
Correlated Color Temperature (CCT)	3039K
Chromaticity Coordinate (x)	0.427
Chromaticity Coordinate (y)	0.388
Chromaticity Coordinate (u')	0.251
Chromaticity Coordinate (v')	0.514

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
NIST Luminous Flux Standard Sources	---	150-14, 8043, 8830	03/17/2010	03/17/2011
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

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
AE26PAR38183015	3

RESULTS OF TESTS

Photometric Measurements at 25℃ – Integrating Sphe re Method

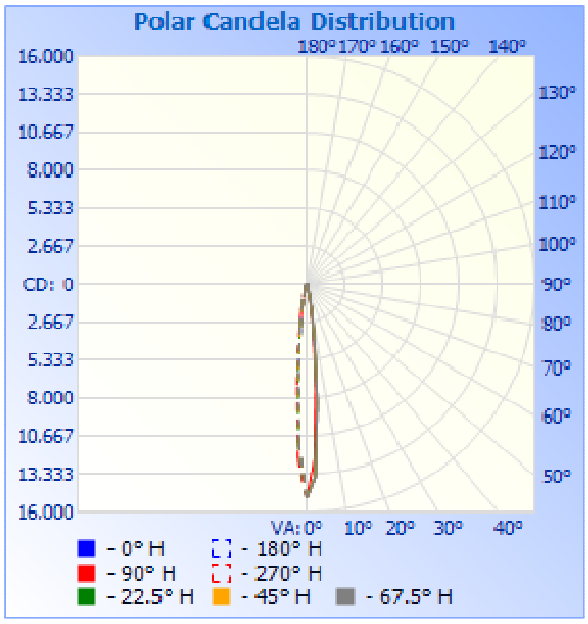
Intertek Sample No.	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
AE26PAR38183015						
N5541L	3039	84.95	0.427	0.388	0.251	0.514

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)
AE26PAR38183015							
N5541L	Up	120.0	168.6	19.73	0.976	896.7	45.45

Intensity (Candlepower) Summary at 25℃ - Candelas

Angle	0	22.5	45	67.5	90
AE26PAR38183015					
0	15018	15018	15018	15018	15018
5	8393	8236	8350	8363	7131
10	2161	2100	2143	2150	1892
15	491	487	508	525	459
20	190	191	191	190	185
25	135	134	134	135	132
30	110	109	110	113	113
35	129	129	126	122	127
40	122	122	121	119	112
45	83	80	79	78	71
50	49	49	46	47	42
55	26	26	25	25	23
60	14	13	12	10	11
65	5	4	8	5	4
70	0	1	2	3	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

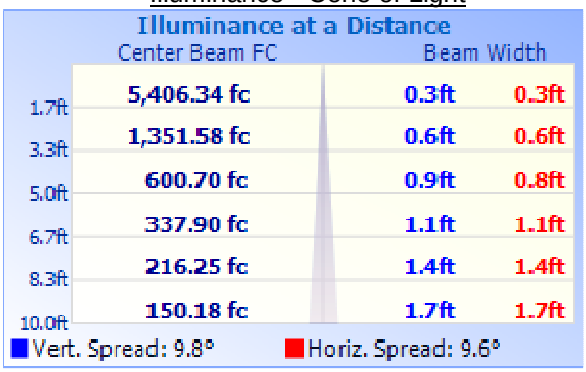


RESULTS OF TESTS (cont'd)

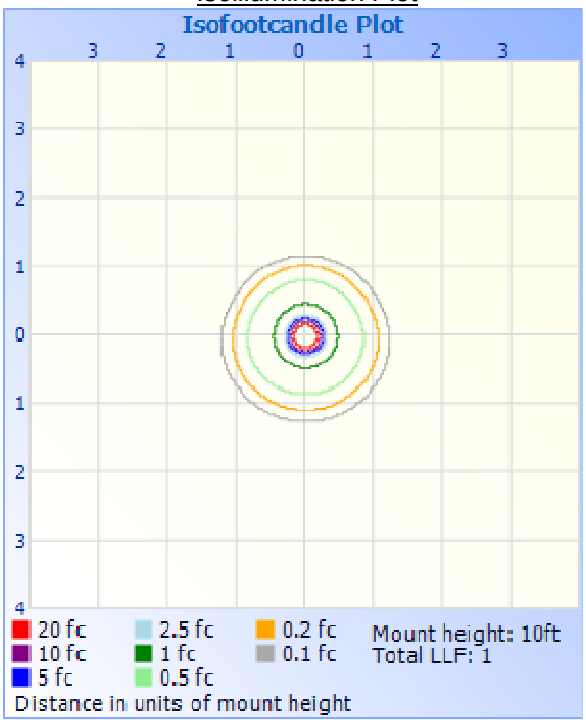
Illumination Plots

Model No.: AE26PAR38183015
Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25℃

Zone	Lumens	% Luminaire
AE26PAR38183015		
0-30	739.9	82.5
0-40	815.9	91.0
0-60	891.8	99.4
60-90	5.0	0.6
0-90	896.7	100
90-180	0	0
0-180	896.7	100

Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
AE26PAR38183015				
Field (10%)	59.9	537.6	22.1	21.9
Beam (50%)	29.2	261.6	9.6	9.8
Total	100.6	902.5		

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
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Lighting Division

Report Reviewed By:

Jacki Swiernik
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Lighting Division

Attachment: None