



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100082487

Original Issue Date: April 28, 2010

Revision Date: July 14, 2010

REPORT NO. 100082487CRT-002

TEST OF ONE LED LAMP
MODEL NO. AE26R3083060

RENDERED TO

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

REVISION NOTE JULY 14, 2010: This report was revised to change the model number by client request.

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 500222294.

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 10 sample of model number AE26R3083060. The sample were received by Intertek on April 9, 2010, in undamaged condition, and 10 sample was tested as received. The sample designations were N4865Lp through N4874LP.

DATES OF TESTS: April 19, 2010 through April 27, 2010

SUMMARY

Model No.: AE26R3083060
Description: LED PAR30/R30 LAMP

Criteria	Result
Total Lumen Output	507.8
Total Power	8.011W
Luminaire Efficacy	63.39
Power Factor	0.9244
Color Rendering Index (CRI)	84.00
Correlated Color Temperature (CCT)	3050K
Chromaticity Coordinate (x)	0.437
Chromaticity Coordinate (y)	0.411
Chromaticity Coordinate (u')	0.248
Chromaticity Coordinate (v')	0.524
Color Spatial Uniformity	max Δ = 0.0023

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Elgar AC Power Supply	1001SX	---	---	---
Xitron Power Analyzer	2503H	E235	04/09/10	04/09/11
Elgar AC Power Supply	CW1251	--	--	--
Yokogawa Power Analyzer	WT1600	E462	06/02/09	06//02/10
Labsphere Diode Array	DAS 1100	N714	Before Use	Before Use
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	06/09/09	06/09/10
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	---	150-25, 8036, 3062	12/09/08	12/09/09
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.

Color Spatial Uniformity

The spatial distribution of chromaticity coordinates (u' v') were measured within two vertical planes (CIE), 0° and 90° in vertical 10° increments until the light output dropped to below 10% of the maximum light output. The averaged weighted chromaticity coordinate was calculated from these points. The data was then analyzed to check for delta color differences of the u' , v' chromaticity coordinates.

Estimated Total Operating Time

10 HOURS

RESULTS OF TESTS

Photometric Measurements at 25°C – Integrating Sphere Method

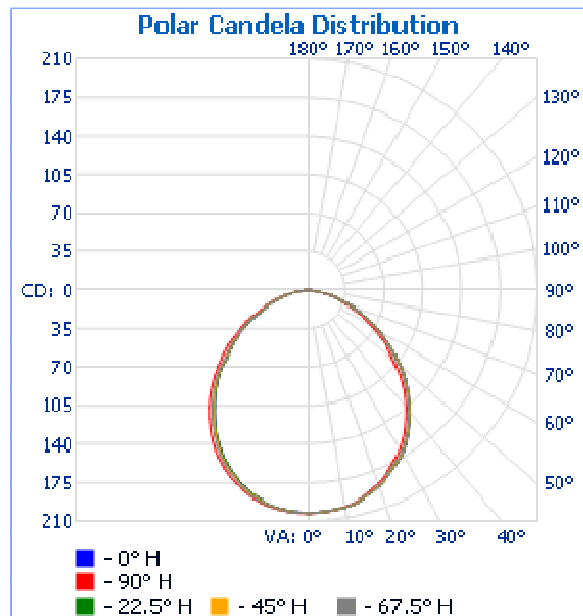
Intertek Sample No.	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
AE26R3083060						
N4865LP	3054	84.00	0.437	0.411	0.248	0.524
N4866LP	3053	84.00	0.437	0.411	0.248	0.524
N4867LP	3050	84.00	0.437	0.410	0.248	0.524
N4368LP	3047	84.00	0.437	0.410	0.248	0.524
N4869LP	3058	84.00	0.436	0.410	0.248	0.524
N4870LP	3044	84.00	0.438	0.411	0.248	0.524
N4871LP	3036	84.00	0.438	0.412	0.248	0.525
N4872LP	3037	84.00	0.438	0.411	0.248	0.524
N4873LP	3059	84.00	0.436	0.411	0.248	0.524
N4874LP	3063	84.00	0.436	0.410	0.248	0.523
Average	3050	84.00	0.437	0.411	0.248	0.524

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)
AE26R3083060							
N4865Lp	UP	120.0	72.24	8.011	0.9244	507.8	63.39

Intensity (Candlepower) Summary at 25°C - Candelas

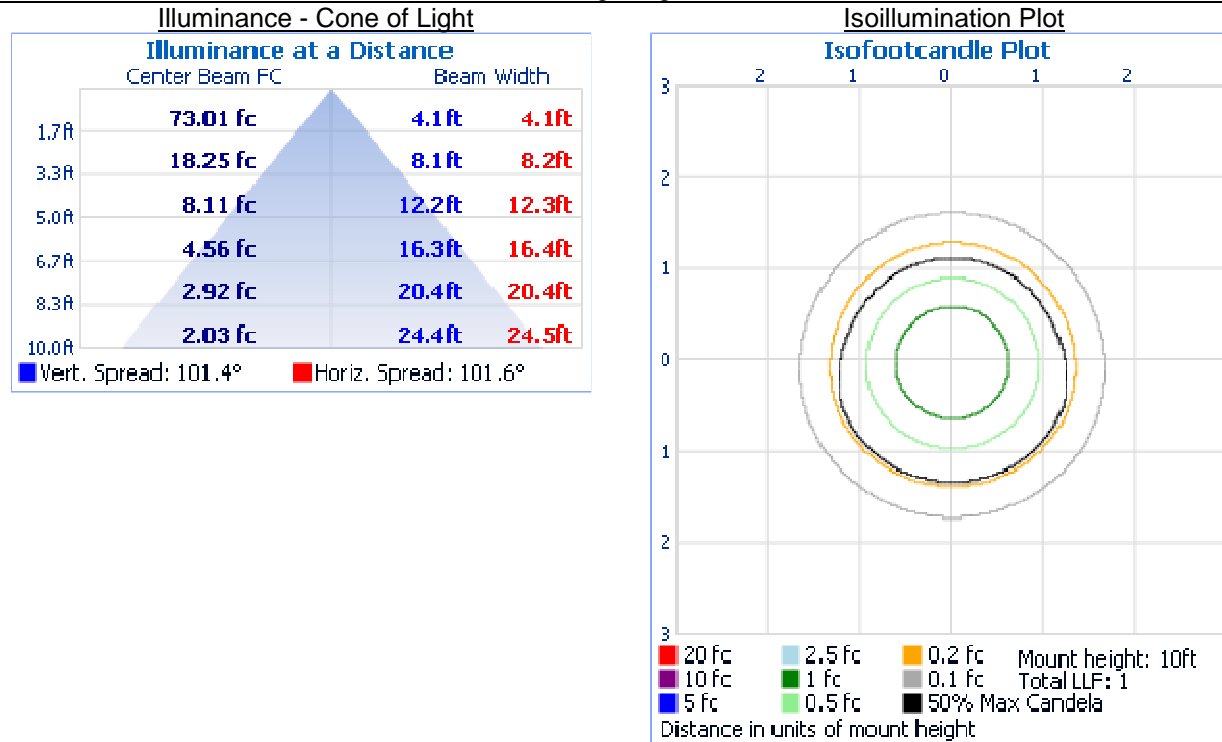
Angle	0	22.5	45	67.5	90
AE26R3083060					
0	203	203	203	203	203
5	202	202	202	202	202
10	201	201	201	200	200
15	196	196	196	195	195
20	190	190	190	189	188
25	181	181	181	180	178
30	172	172	172	170	168
35	159	159	159	158	154
40	145	145	145	144	139
45	129	129	128	127	123
50	112	112	112	110	104
55	94	94	94	93	88
60	77	76	76	75	70
65	60	59	59	58	54
70	43	43	43	42	38
75	28	28	28	27	24
80	14	15	15	14	12
85	5	5	5	5	3
90	0	0	0	0	0



RESULTS OF TESTS (cont'd)

Illumination Plots

Model No.: AE26R3083060
Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
AE26R3083060		
0-30	155.8	30.7
0-40	251.6	49.5
0-60	423.6	83.4
60-90	84.0	16.5
0-90	507.7	100.0
90-180	0.2	0.0
0-180	507.8	100.0

Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
AE26R3083060				
Field (10%):	97.8	496.9	153.2	152.7
Beam (50%):	69.5	352.8	101.6	101.4
Total:	100.0	507.7		

RESULTS OF TESTS (cont'd)

Color Spatial Uniformity

Sample No: AE26R3083060

Model No.: N4865Lp

Vertical Angle (°)	Horizontal Angle = 0°			Horizontal Angle = 90°		
	Candlepower (cd)	CIE' 1976 Chromaticity u'	CIE' 1976 Chromaticity v'	Candlepower (cd)	CIE' 1976 Chromaticity u'	CIE' 1976 Chromaticity v'
0	203	0.2461	0.5222	203	0.2461	0.5222
10	201	0.247	0.5224	200	0.2468	0.5226
20	190	0.2469	0.5227	188	0.2471	0.5232
30	172	0.2476	0.5236	168	0.2477	0.5241
40	145	0.2479	0.5242	139	0.2479	0.5252
50	112	0.2486	0.5253	104	0.2481	0.5255
60	77	0.2486	0.5255	70	0.2478	0.5259
70	43	0.2481	0.5258	38	0.2481	0.526

Weighted Average

u'	v'
0.2478	0.5245

Vertical Angle (°)	Horz. 0 Δu'	Horiz. 0 Δv'	Horz. 90 Δu'	Horiz. 90 Δv'
0	-0.0017	-0.0023	-0.0017	-0.0023
10	-0.0008	-0.0021	-0.0010	-0.0019
20	-0.0009	-0.0018	-0.0007	-0.0013
30	-0.0002	-0.0009	-0.0001	-0.0004
40	0.0001	-0.0003	0.0001	0.0007
50	0.0008	0.0008	0.0003	0.0010
60	0.0008	0.0010	0.0000	0.0014
70	0.0003	0.0013	0.0003	0.0015

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