



Reflector Lamp Test Report

Relevant Standards
IES LM-79-2008, IES LM-20-1994
ANSI C82.77

Prepared For
Nexus Lighting, Inc.
Geoffrey Gibbs Jr
124 Floyd Smith Drive
Suite 300
Charlotte, NC 28262

Catalog Number
AACMMR162760

LTL Test Number
22661

Test Date

2011-03-07

Prepared By

Brian Moyer, Engineer

Approved By

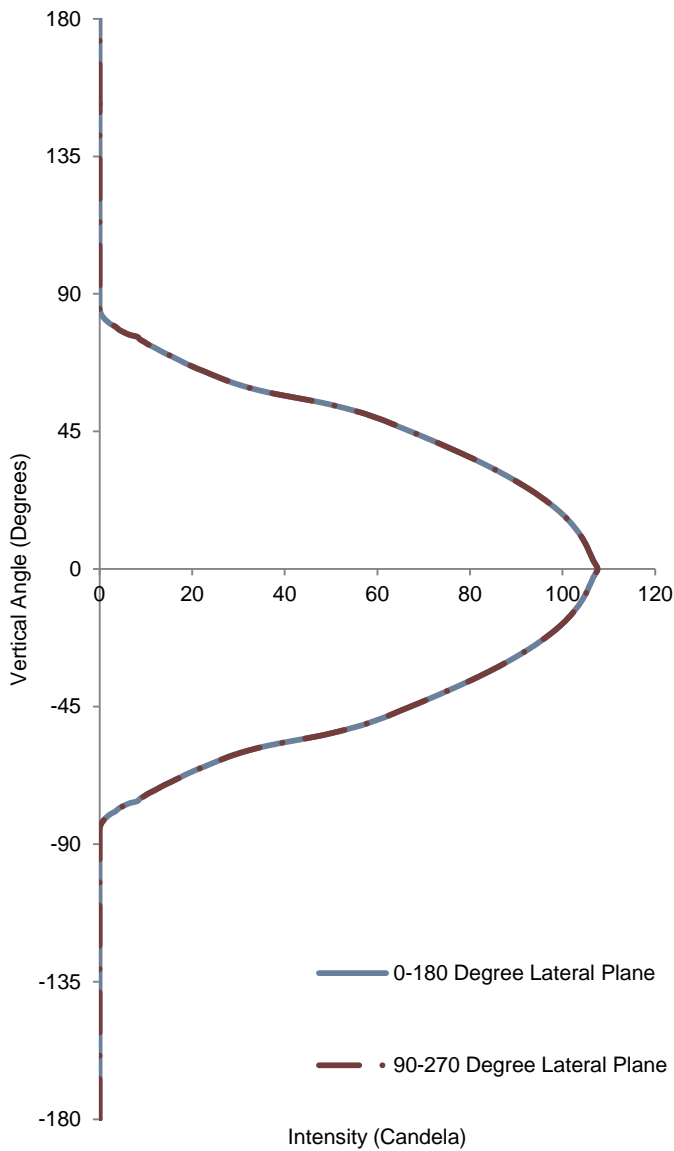
Tracy Silvert, Manager I

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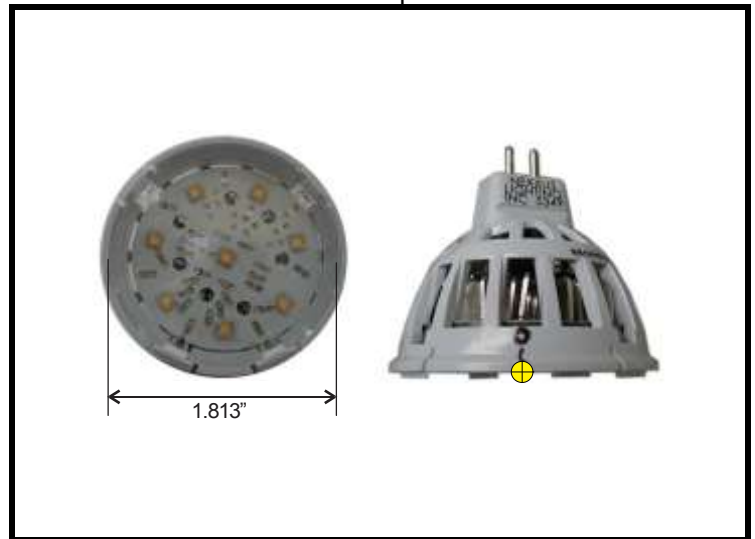


Lamp Description: Molded plastic housing with clear plastic enclosure
Catalog Number: AACMMR162760
Lamp: One 6.5 watt MR16 GU5.3 LED replacement lamp with eight white LEDs
Lamp Catalog Number: Array Lighting AACMMR162760
Mounting: VBU

Intensity vs Vertical Angle



Lamp



Test Conditions

Test Temperature: 24.7 °C
Voltage: 12.00 VAC
Current: 0.7458 A
Power: 5.932 W
Power Factor: 0.663
Frequency: 60 Hz

Total Lumen Output: 257.2 Lumens
Luminaire Efficacy: 43.4 Lumens/Watt
CIE Type: Direct
Spacing Criterion: 1.22 All Directions

Center Beam Intensity: 107.6 Candela
Central Cone Intensity: 106.8 Candela
Beam Flux: 196 Lumens
Beam Angle 0-180: 104.6 Degrees
Beam Angle 90-270: 104.6 Degrees
Field Angle 0-180: 146.5 Degrees
Field Angle 90-270: 146.5 Degrees

Data was acquired using the calibrated photodetector method of absolute photometry. A spectral mismatch correction factor was employed based on the spectral responsivity of the photodetector and the spectral power distribution of the test subject.



Candela Tabulation

Lateral Angle (Degrees)

Vertical Angle (Degrees)

Table with 17 columns (0, 22.5, 45, 67.5, 90, 112.5, 135, 157.5, 180, 202.5, 225, 247.5, 270, 292.5, 315, 337.5) and 17 rows (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180). Values range from 107.6 down to 0.0.



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **											
0	313.6	313.6	313.6	313.6	306.2	306.2	306.2	306.2	299.0	299.0	299.0	299.0
1	291.0	279.4	269.0	259.7	283.9	273.4	263.9	255.4	277.1	267.6	259.0	251.3
2	267.6	246.9	229.9	215.8	260.7	241.9	226.3	213.2	254.3	237.1	222.8	210.7
3	245.8	218.9	198.3	182.1	239.4	214.7	195.7	180.5	233.3	210.8	193.1	178.9
4	226.2	195.2	172.9	156.0	220.2	191.7	170.9	154.9	214.6	188.4	168.9	153.9
5	208.7	175.2	152.2	135.4	203.2	172.3	150.6	134.7	198.0	169.5	149.1	134.0
6	193.1	158.2	135.2	118.9	188.1	155.7	134.0	118.4	183.3	153.3	132.8	117.9
7	179.2	143.7	121.1	105.5	174.7	141.6	120.1	105.1	170.4	139.5	119.2	104.7
8	166.9	131.3	109.3	94.4	162.8	129.5	108.5	94.1	158.9	127.7	107.7	93.8
9	155.9	120.5	99.3	85.1	152.2	119.0	98.7	84.9	148.6	117.5	98.0	84.7
10	146.2	111.3	90.8	77.3	142.7	109.9	90.3	77.2	139.5	108.6	89.7	77.0

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **										
0	285.7	285.7	285.7	285.7	273.6	273.6	273.6	262.4	262.4	262.4	257.2
1	264.5	256.8	249.8	243.4	247.0	241.3	236.0	237.8	233.3	229.1	224.0
2	242.3	228.2	216.2	205.9	220.0	210.0	201.3	212.4	204.2	196.9	191.6
3	222.0	203.3	188.2	175.8	196.4	183.6	172.8	190.0	179.2	169.9	164.7
4	204.2	182.1	165.2	151.8	176.3	161.7	149.8	170.9	158.3	147.9	142.6
5	188.5	164.1	146.3	132.5	159.2	143.5	131.2	154.6	140.8	129.8	124.6
6	174.6	148.8	130.5	116.9	144.6	128.3	115.9	140.6	126.2	114.9	109.9
7	162.4	135.7	117.3	104.0	132.0	115.6	103.3	128.6	113.8	102.6	97.7
8	151.7	124.4	106.2	93.3	121.2	104.8	92.7	118.3	103.4	92.2	87.5
9	142.1	114.6	96.8	84.3	111.9	95.6	83.9	109.3	94.4	83.5	78.9
10	133.6	106.1	88.7	76.7	103.7	87.7	76.3	101.5	86.7	76.0	71.7

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	64580	64580	64580
	45	57040	57040	57040
	55	48190	48190	48190
	65	31300	31300	31300
	75	20450	20450	20450
	85	109	109	109

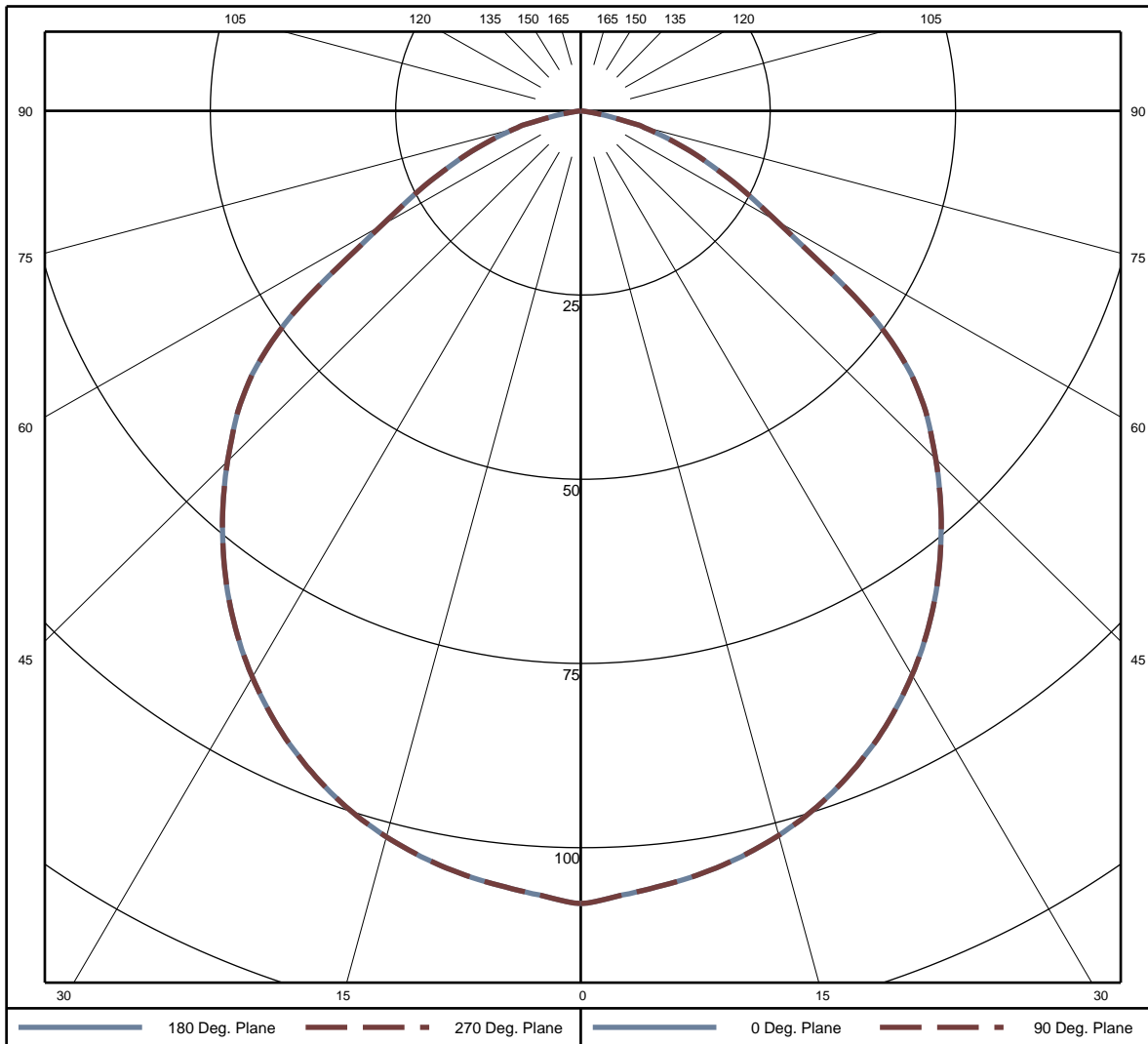
This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this data for other ballast/lamp combinations may produce erroneous results. 2) This test was conducted in a controlled laboratory environment where the ambient temperature was held at 25°C ±1°C. Field performance may differ particularly in regards to change in luminous output as a result of difference in ambient temperature and method of mounting the luminaire.



Zonal Lumen Tabulation (5 degree zones)

Table with 8 columns: Zone (Degrees), Lumens, Zone (Degrees), Lumens, Zone (Degrees), Lumens, Zone (Degrees), Lumens. It lists lumen values for 5-degree zones from 0-5 to 175-180 degrees.

Polar Plot (Candela)





Integrating Sphere Test Report

Relevant Standards
IES LM-79-2008
ANSI C78.377-2008, ANSI C82.77
CIE 13.3-1995, CIE 15-2004

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Jeffrey Lockner, Engineer

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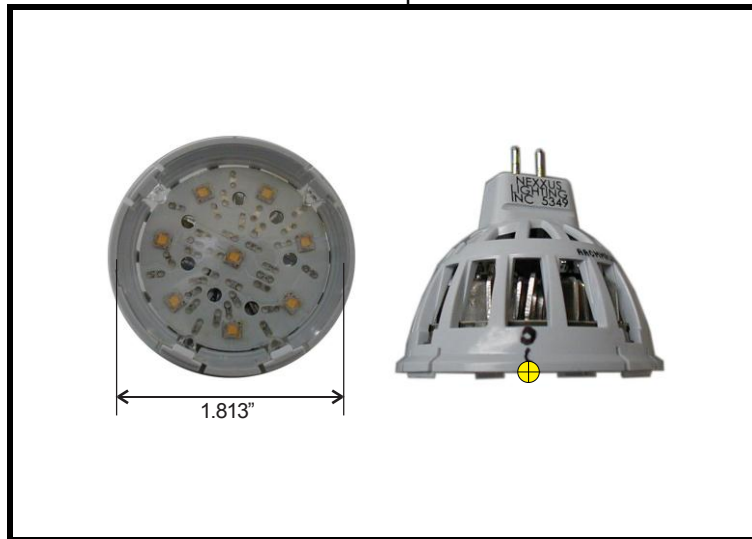
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Mounting: VBU

Lamp



Summary of Results

Radiant Flux:	953.9 mW
Luminous Flux:	257.5 Lumens
Lamp Efficacy:	43.4 Lumens/Watt
CCT:	2519 K
CRI (Ra):	84.2
Chromaticity (x):	0.4750
Chromaticity (y):	0.4132
Chromaticity (u):	0.2711
Chromaticity (v):	0.3537
Duv:	0.0004

Test Conditions

Test Temperature:	24.7 °C
Voltage:	12.00 VAC
Current:	0.7428 A
Power:	5.928 W
Power Factor:	0.664
Frequency:	60 Hz

Testing was performed in a Labsphere SLMS7650 two meter integrating sphere using the 4π geometry method, a Labsphere CDS 1100 spectrometer, and LightMtrX software.
Absorption correction was employed for this measurement.

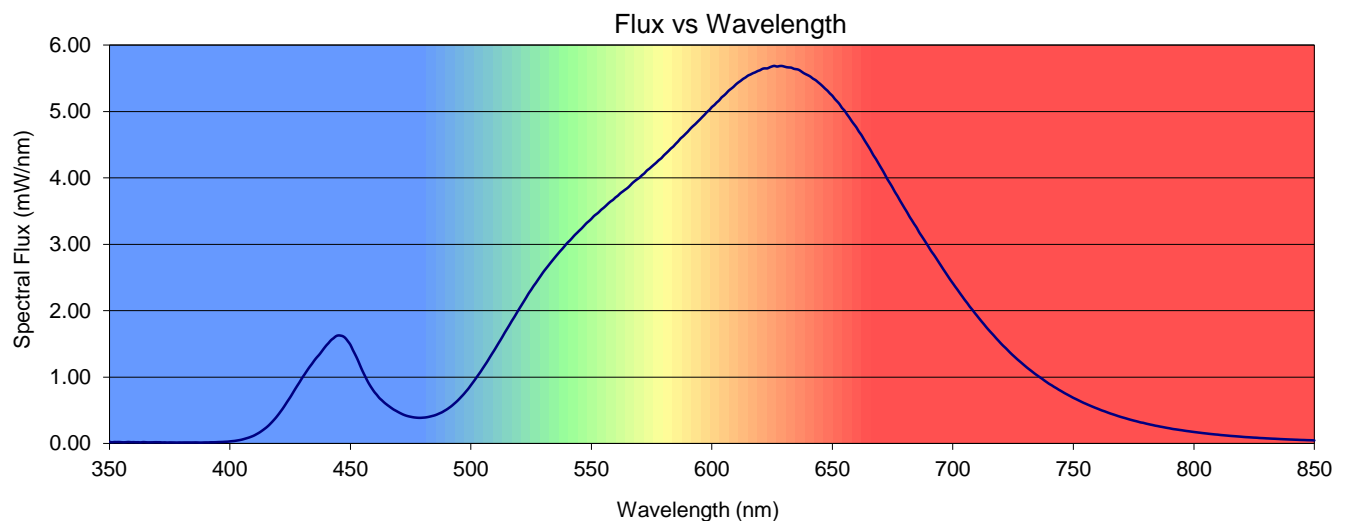
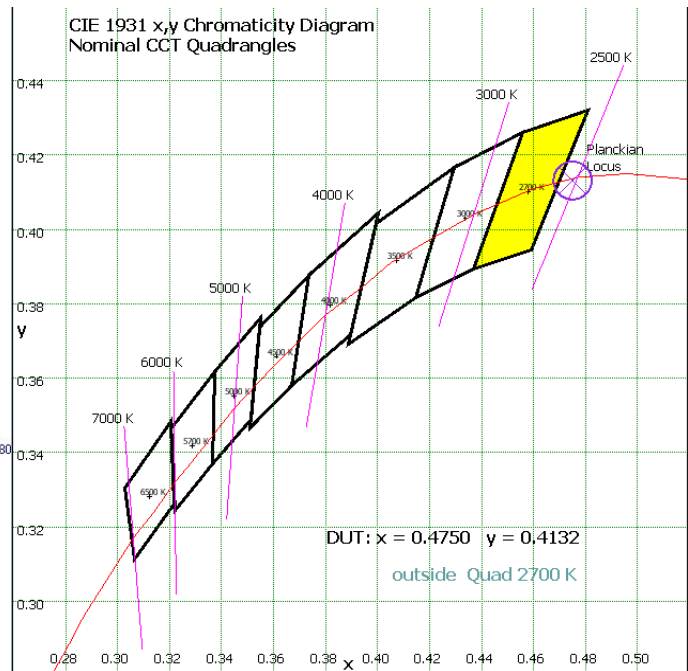
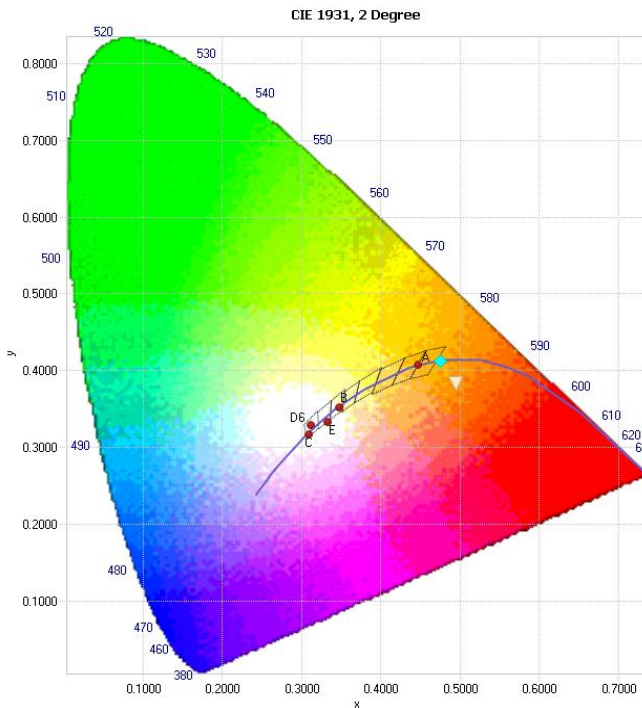


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4750	0.4132	0.2711	0.3537	0.2711	0.5306	0.0004

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.2	84.5	88.1	88.9	84.0	81.5	82.1	89.3	75.1	43.6	70.1	81.2	63.0	84.6	92.6





Spectral Power Distribution

Table with 16 columns (λ(nm), mW/nm) and 40 rows of spectral data points.