



IESNA LM79-2008 Test Report

TÜV SÜD America

Photometric Testing and Evaluation in Accordance with LM79-2008

Report Prepared for:

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Sample Tested: 8BR30DLED27/G2
Representative Models: 44ZX52
Sample Description: 8W LED BR30 2700K
Manufacturer: Maxlite, Inc.

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Summary of Key Test Results

Model# **8BR30DLED27/G2**
Manufacturer **Maxlite, Inc.**
TÜV Sample# **2058-2**
Date of Test **July 31, 2015**



Notes:

Tested in Lamp Base Up orientation
Equal to Maxlite model # 44ZX52

Parameter	Measured Result
Luminous Flux	676.6 Lumens
Input Power	7.63 Watts
Efficacy	88.70 Lumens/Watt
C.C.T.	2708 K
C.R.I. (R _a)	80.7
Beam Angle	110.3° (V) / 110.2° (H)
Stabilization Time	49 minutes

The above results are recorded / derived from measurements in accordance with LM79-08



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Test Results

The following results were obtained after stabilization of the sample in accordance with the requirements set forth in section 5.0 of IES LM79-2008. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.

Photometric Results	8BR30DLED27/G2	
	Integrating Sphere	
Luminous Flux (Lumens)	676.6	
Efficacy (Lumens/Watt)	88.70	
Color Temperature (CCT K)	2708	
Color Rendering Index (CRI)	80.7	
R ₉ Value	2.0	
Radiant Flux (W/nm)	2.1	
Chroma x / Chroma y	0.4586	0.4095
Chroma u / Chroma v	0.2622	0.3512
Chroma u' / Chroma v'	0.2622	0.5267
Duv	-0.00033	

Electrical Results	8BR30DLED27/G2	
	Integrating Sphere	
Input Power (Watts)	7.63	
Input Voltage (Volts)	120.09	
Input Current (Amps)	0.070	
Power Factor	0.909	
THD-A%	34.04	
Input Frequency (Hz)	60.0	

Additional Parameters	8BR30DLED27/G2	
	Integrating Sphere	Goniophotometer
Stabilization Time (Light and Power)	60 minutes	49 minutes
Test Geometry Configuration	4π	Type C
Spectroradiometer	Labsphere CDS1100	Gigahertz Optik P9801
Ambient Temperature	25.1°C	24.5°C





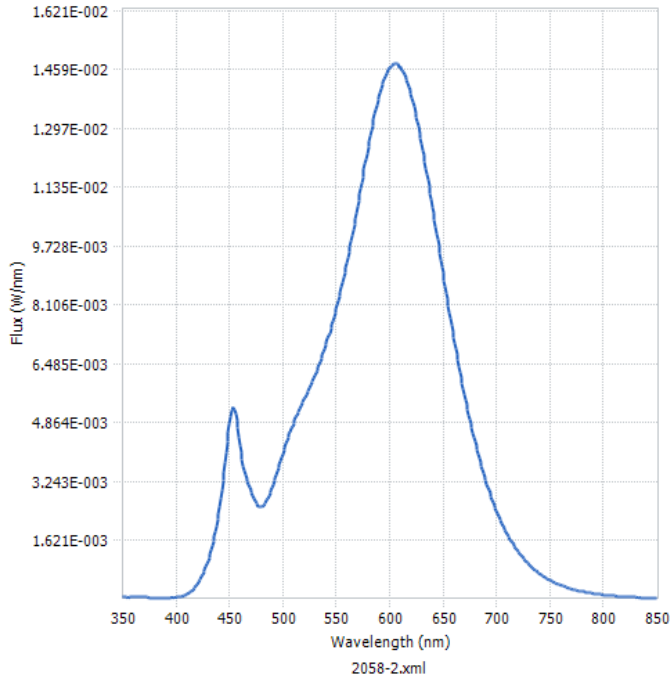
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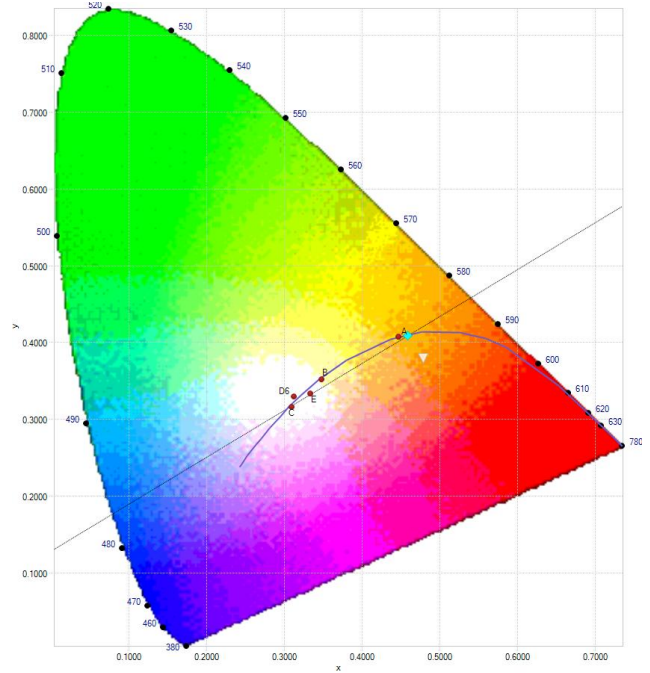
Spectral Flux and Chromaticity Diagram

Spectral Flux



**Spectral response of the Radiant Flux
(350nm to 850nm)**

Chromaticity Diagram



Tristimulus values (from page 4):

$$x / y = 0.4586 / 0.4095$$

The locations on the diagram of the CCT coordinates are indicated by the blue diamond.

Zonal Lumen Summary

Zone	Lumens	% Lamp
0 - 60	472.5	69.9%
60 - 90	164.9	24.4%
0 - 90	637.4	94.2%
90 - 180	38.9	5.8%
0 - 180	676.3	100.0%

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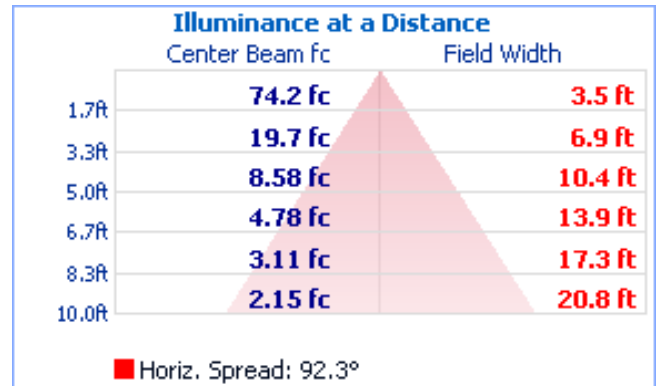
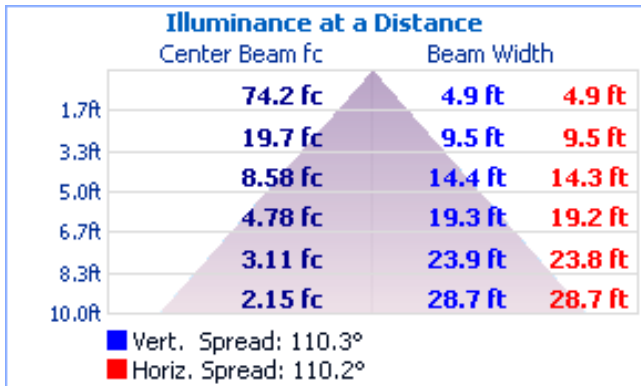


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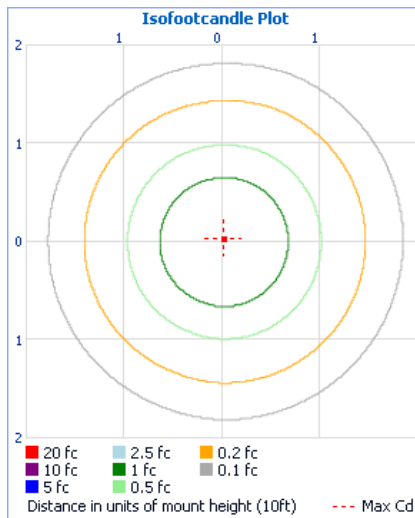
Test Results – Illuminance Plots

The following images depict the illuminance characteristics of the luminaire.

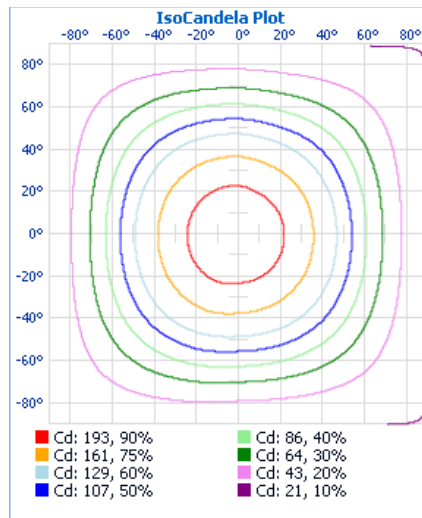


Test Results – Candela Plots

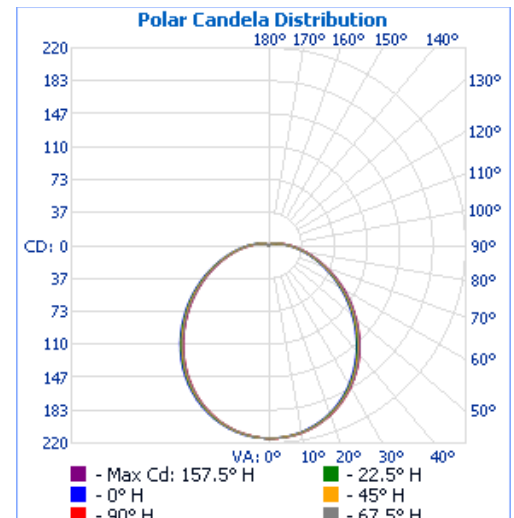
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = **214.7** at Horizontal: 157.5°, Vertical: 2.5°





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TÜV SÜD Photometric Testing Information

Testing is performed in accordance with the procedures outlined in IESNA LM79-2008. The sample is evaluated for photometric and electrical characteristics using an integrating sphere and a goniophotometer, located in an accredited, temperature and humidity-controlled, draft free photometric laboratory.

Sphere Geometry

The integrating spheres used for measurement utilize a “ 4π geometry” configuration in accordance with section 9 of IES LM-79-2008 and is applicable for all types of SSL products (directional and non-directional light projections). The spectroradiometer is an array-type detector manufactured and calibrated by Labsphere (Model# CDS1100).

Self-Absorption Correction

The integrating sphere uses self-absorption correction to eliminate errors due to mismatches between the standard reference lamp and the test samples being measured. This auxiliary correction lamp is a halogen type lamp powered by a calibrated Lamp Power Supply manufactured and calibrated by Labsphere (model LPS150). Ambient temperature is measured using a thermocouple located inside the integrating sphere at the same height as the sample under test (UUT) and not more than 1 meter in horizontal distance away from the sample (section 2.2 of LM79-2008). The thermocouple is located behind a baffle in order to eliminate any direct optical radiation from the sample under test.

Sample Stabilization

The sample (UUT) is placed inside the integrating sphere and powered by a regulated and conditioned alternating or direct current supply. The stabilization times shown on the results pages of this report denote the time of the 3rd measurement (of the 3 consecutive readings) since this is the minimum time that the sample is assumed to have taken to reach stabilization in accordance with section 5.0 of LM79-2008.

Sphere Calibration

The integrating sphere is calibrated using a quartzline halogen lamp with the following specifications:

Manufacturer: EYE Lighting International

Model# J94/JD28V75W

Voltage = 28.0 Volts DC

Wattage = 75.0 Watts

Calibration Current = 2.679 Amperes

Luminous Flux = 1685 Lumens

Calibration Date = 2-17-2011 (calibrated by Labsphere – NIST traceable).

Continued.....

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TÜV SÜD Photometric Testing Information (continued)

Goniophotometer

The Goniophotometer is a Type C optical measurement system in accordance with section 9.3.1 of IESNA LM79-2008.

Goniophotometer Calibration

The Goniophotometer is calibrated using a frosted tungsten filament FDS/DZE lamp with the following specifications:

- Manufacturer: General Electric
- Part Number: CSB-110
- Lamp Number: 105-A
- Voltage: 16.71 Volts DC
- Wattage: 150.0 Watts
- Calibration Current: 4.847 Amperes
- Luminous Intensity: 166.3 Candelas
- Calibration Date: 11-07-2011 (NIST traceable)

TÜV SÜD Test Equipment List:

TÜV SÜD Sphere System – contains the following:			
Description	Manufacturer / Model#	TÜV SÜD Ref#	Calibration Due Date
Integrating Sphere	Labsphere LM760	SPH003	weekly
Spectroradiometer	Labsphere CDS1100	ATLE0048	9/7/2015
Power Analyzer	Yokogawa WT210	ATLE0076	6/19/2016
Power Source	Chroma 61602	AC003	N/A
Thermometer	Fluke 52-II	ATLE0119	2/27/2016
TÜV SÜD Goniophotometer System – contains the following:			
Goniophotometer	M.E. GONC01	GON001	weekly
Spectroradiometer	Gigahertz Optik P9801	GIG001	weekly
Power Analyzer	Yokogawa WT210	ATLE0059	3/26/2016
Power Source	Chroma 61602	AC006	N/A

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