



IESNA LM79-2008 Test Report

TÜV SÜD America

Photometric Testing and Evaluation in Accordance with LM79-2008

Report Prepared for:

David Delgado
Applications Engineer

Maxlite Inc.
12 York Ave.
West Caldwell, NJ 07006
United States

Telephone: (800) 555-5629

Sample Tested: 7A19DLED27/7A19GUDLED27
Sample Description: 7W A19 2700K LED Integral Lamp
Manufacturer: Maxlite, Inc.

Technical Report Number: JI1405265-LM79
Report Issue Date: May 29th, 2014
Total Number of Pages: 8 (including this page)

Report Prepared by:

Byrd Evans
TÜV SÜD Project Handler

Report Reviewed by:

Bryan Cubitt
TÜV SÜD Program Manager



IESNA LM79-2008 TEST REPORT

Report# Ji1405265-LM79

May 29, 2014

Summary of Key Test Results

Model# **7A19DLED30/7A19GUDLED30**

Manufacturer **Maxlite, Inc.**

TÜV Sample# 1342-1

Date of Test May 19th 2014

Notes: Tested in intended orientation
(LBU – Lamp Base Up)



Parameter	Measured Result
Luminous Flux	535.8 Lumens
Input Power	6.659 Watts
Efficacy	80.46 Lumens/Watt
C.C.T.	2802 K
C.R.I. (R _a)	81.8
Beam Spread	N/A - Omnidirectional
Stabilization Time	45 minutes

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



IESNA LM79-2008 TEST REPORT

Report# Ji1405265-LM79

May 29, 2014

TABLE OF CONTENTS

Test Results4

Spectral Flux and Chromaticity Diagram5

Zonal Lumen Summary5

Illuminance Plots.....6

Candela Plots6

Photometric Testing Information7

Equipment List:8





IESNA LM79-2008 TEST REPORT

May 29, 2014

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	Maxlite - 7A19DLED27/7A19GUDLED27	
	Integrating Sphere	
Total Luminous Flux (Lumens)	535.8	
Luminous Efficacy (Lumens/Watt)	80.46	
Total Radiant Flux (Watts)	1.7	
Correlated Color Temperature (CCT)	2802	
Color Rendering Index (CRI – R _a)	81.8	
R ₉ Value	11.5	
Chromaticity (Chroma x / Chroma y)	0.4474 / 0.4007	
Chromaticity (Chroma u / Chroma v)	0.2589 / 0.3477	
Chromaticity (Chroma u' / Chroma v')	0.2589 / 0.5216	
D _{uv} Value	-0.00262	

Electrical Results (120V unless stated otherwise)	Maxlite - 7A19DLED27/7A19GUDLED27	
	Integrating Sphere	
Input Power (Watts)	6.659	
Input Voltage (Volts AC)	120.06	
Input Current (Amps)	0.062	
Power Factor @120VAC	0.895	
Input Frequency (Hertz)	60.0	
A-THD @120VAC (Current %)	40.88%	

Additional Parameters	Maxlite - 7A19DLED27/7A19GUDLED27	
	Integrating Sphere	Goniophotometer
Stabilization Time (Light and Power)	45 minutes	55 minutes
Test Geometry Configuration	4π	Type C
Ambient Temperature	24.1°C	24.8°C
Spacing Criteria	N/A	



IESNA LM79-2008 TEST REPORT

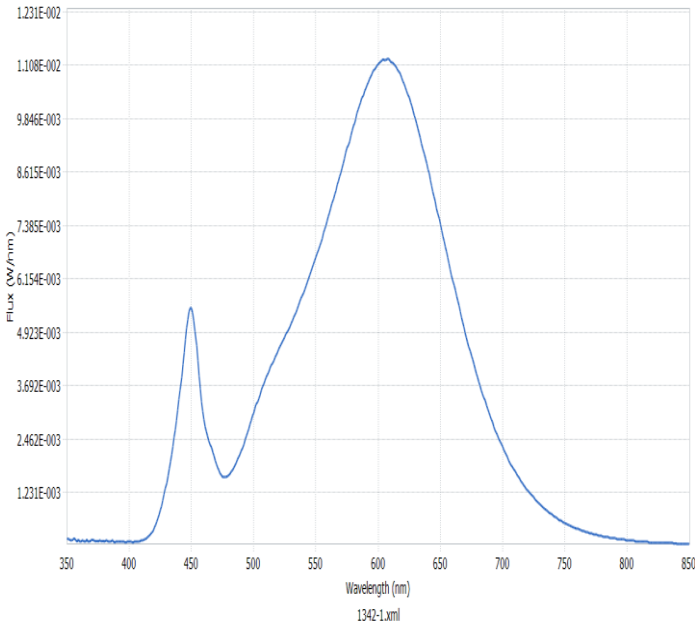
Report# Ji1405265-LM79

May 29, 2014

Spectral Flux and Chromaticity Diagram

Spectral Flux

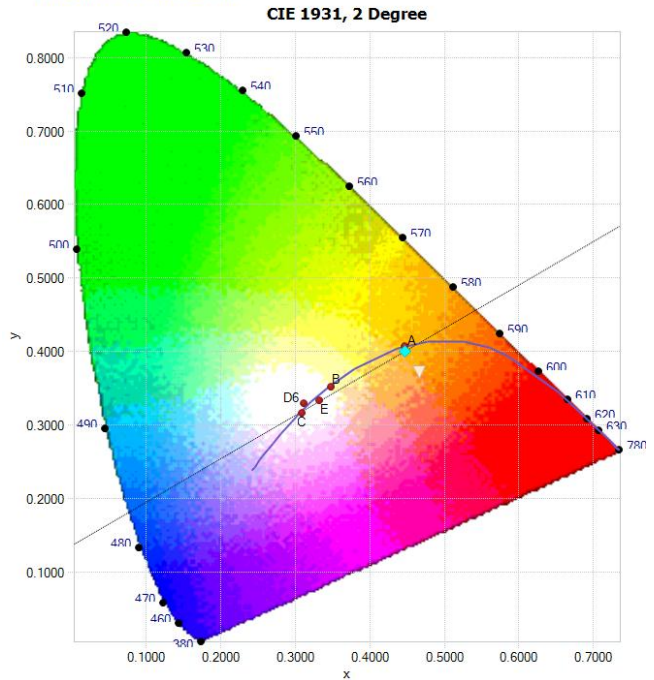
▼ SPECTRAL FLUX GRAPH:



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

Chromaticity Diagram

▼ CHROMATICITY DIAGRAM:



Tristimulus values (from page 4):

$$x / y = 0.4474 / 0.4007$$

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

Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0 - 60	142.1	26.8 %
60 - 90	148.2	27.9 %
0 - 90	290.3	54.7 %
90 - 180	240.8	45.3 %
0 - 180	531.1	100.0 %

TUV SUD America, Inc.
5945 Cabot Parkway, Suite 100,
Alpharetta GA 30005

Telephone: 678-341-5900 www.tuvamerica.com

Page 5

NRG_F_10.04

Confidential Report



Lab Code: 500065-0

TUV SUD America is accredited under the NVLAP EEL program.



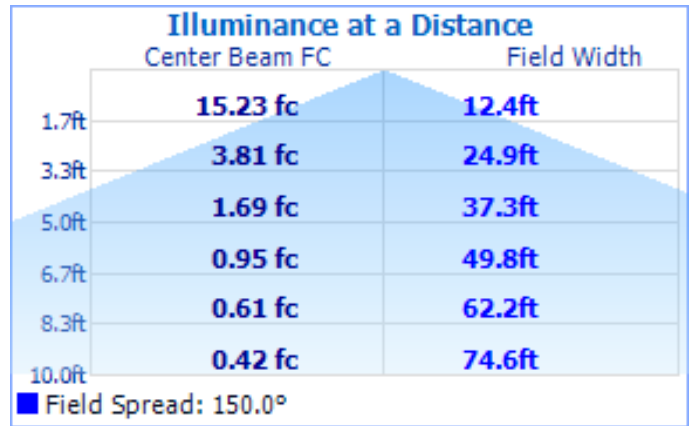
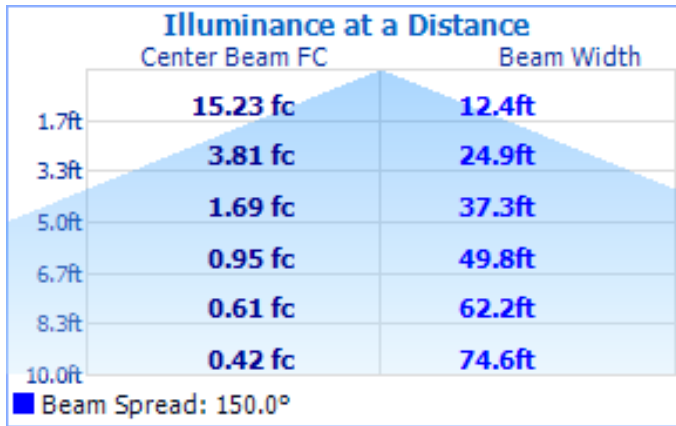


IESNA LM79-2008 TEST REPORT

May 29, 2014

Test Results – Illuminance Plots

The following images depict the illuminance characteristics of the luminaire.

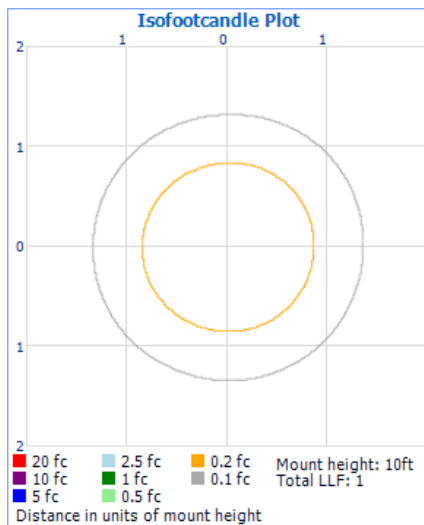


Beam Angle = N/A

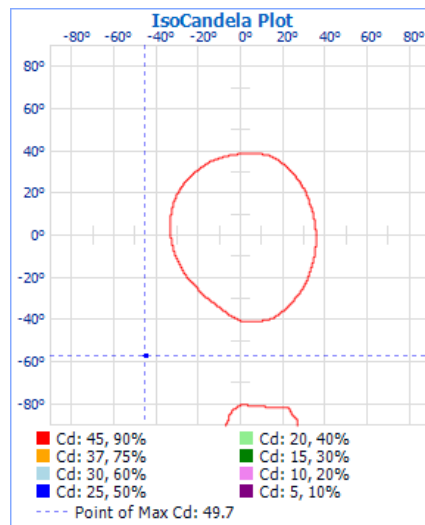
Field Angle = N/A

Test Results – Candela Plots

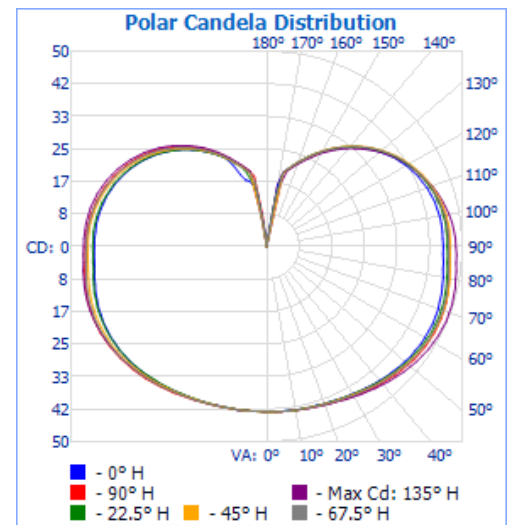
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = **148.6** at Horizontal: 67.5°, Vertical: 70.0°



IESNA LM79-2008 TEST REPORT

May 29, 2014

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.....

TÜV SÜD America, Inc.

5945 Cabot Parkway, Suite 100,
Alpharetta GA 30005

Telephone: 678-341-5900 www.tuvamerica.com

Page 7

NRG_F_10.04

Confidential Report



Lab Code: 500065-0

TÜV SÜD America is
accredited under the
NVLAP EEL program.



IESNA LM79-2008 TEST REPORT

Report# Ji1405265-LM79

May 29, 2014

TÜV SÜD Photometric Testing Information (continued)

Goniophotometer

The Goniophotometer is a Mirror based 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: 112-A
Voltage: 16.52 Volts DC
Wattage: 150.0 Watts
Calibration Current: 4.816 Amperes
Luminous Intensity: 151.5 Candelas
Calibration Date: 02-13-2011 (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	SPH002	weekly
Spectroradiometer	Labsphere CDS1100	ATLE0046	9/7/2014
Power Analyzer	Yokogawa WT210	ATLE0076	6/5/2014
Power Source	Chroma 61602	AC003	N/A
Thermometer	Fluke 52-II	ATLE0118	1/16/2015
TÜV SÜD Mirror Goniophotometer System – contains the following:			
Goniophotometer	M.E. GONC02	GON002	Weekly
Spectroradiometer	Gigahertz Optik P9801	GIG002	Weekly
Power Analyzer	Yokogawa WT210	ATLE0031	11/21/2014
Power Source	Chroma 61603	AC007	N/A

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government

TÜV SÜD America, Inc.
5945 Cabot Parkway, Suite 100,
Alpharetta GA 30005

Telephone: 678-341-5900 www.tuvamerica.com

Page 8

NRG_F_10.04

Confidential Report



TÜV SÜD America is accredited under the NVLAP EEL program.

