



GONIOPHOTOMETER TEST REPORT

IES LM79-08 Section 9.3

TÜV SÜD America

Photometric Testing and Evaluation in Accordance with LM79-2008

Report Prepared for:

Michael Prainito
Marketing Manager

Global Tech LED LLC
8901 Quality Road
Bonita Springs, FL 34135
United States

Telephone: (877) 748-5533

Sample Tested: GTSOLM21-HI-GR-50D
Sample Description: LED Luminaire
Manufacturer: Global Tech LED LLC

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Report Prepared by:

Laymond Drummond
TÜV SÜD Project Handler

Report Reviewed by:

Bryan Cubitt
TÜV SÜD Program Manager



GONIOPHOTOMETRIC TEST REPORT IES LM79-2008

Report# 72106423-09-GONI

June 25, 2015

Summary of Key Test Results

Model# **GTSOLM21-HI-GR-50D**

Manufacturer Global Tech LED LLC

TÜV Sample# 1910-9

Date of Test June 25, 2015

Notes:

Tested in FBU orientation (Fixture Base Up)

50 degree optics

Parameter	Measured Result
Luminous Flux	5,007 Lumens
Input Power	59.35 Watts
Efficacy	84.36 Lumens/Watt
Beam Angle	41.2° (V) / 41.2° (H)
Stabilization Time	34 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	Global Tech LED LLC: GTSOLM21-HI-GR-50D
	Goniophotometer (120V)
Total Luminous Flux (Lumens)	5,007
Luminous Efficacy (Lumens/Watt)	84.36

Electrical Results	Global Tech LED LLC: GTSOLM21-HI-GR-50D
	Goniophotometer (120V)
Input Power (Watts)	59.35
Input Voltage (Volts AC)	119.97
Input Current (Amps)	.500
Power Factor	.995
Input Frequency (Hertz)	60
A-THD (Current %)	9.07

Additional Parameters	Global Tech LED LLC: GTSOLM21-HI-GR-50D
	Goniophotometer (120V)
Stabilization Time (Light and Power)	34 minutes
Test Geometry Configuration	Type C
Ambient Temperature	24.1°C

Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0-60	4,794.60	95.70%
60-90	161.8	3.20%
70-100	108	2.20%
90-120	40	0.80%
0-90	4,956.40	99%
90-180	51.2	1%
0-180	5,007.60	100%

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

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

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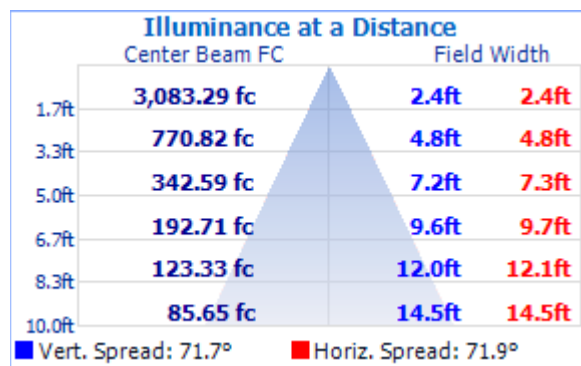
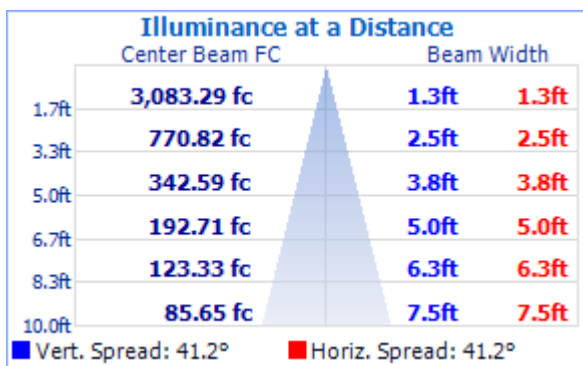
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Test Results – Illuminance Plots

The following images depict the illuminance characteristics of the luminaire.

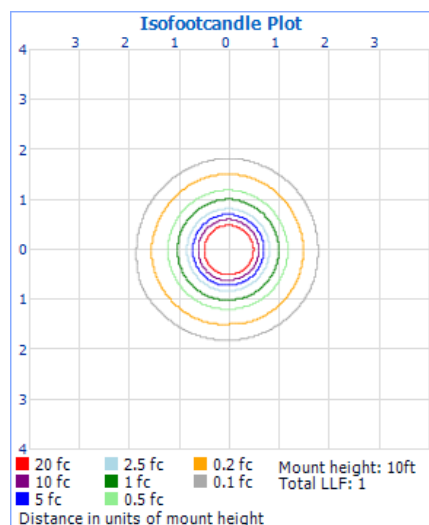


Beam Angle = 41.2° (V) / 41.2° (H)

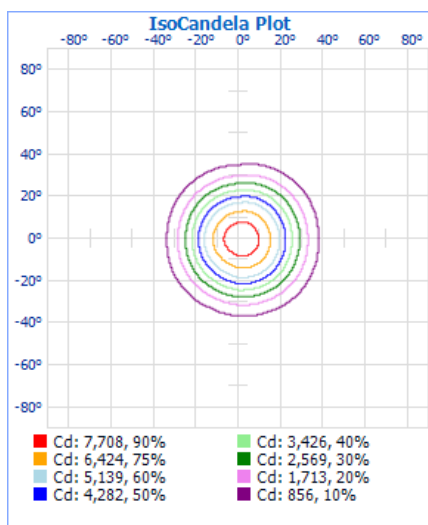
Field Angle = 71.7° (V) / 71.9° (H)

Test Results – Candela Plots

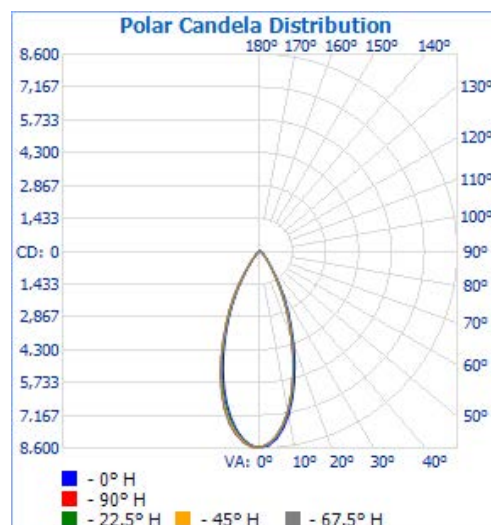
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = 8,564.7 at Horizontal: 0.0°, Vertical: 0.0°

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5945 Cabot Parkway, Suite 100,
Alpharetta GA 30005

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

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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 a goniophotometer, located in an accredited, temperature and humidity-controlled, draft free photometric laboratory.

Sample Stabilization

The sample (UUT) is placed on a goniophotometer 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.

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 Mirror Goniophotometer System – contains the following:			
Goniophotometer	M.E. GONC02	GON002	Weekly
Spectroradiometer	Gigahertz Optik P9801	GIG002	Weekly
Power Analyzer	Yokogawa WT210	ATLE0031	11/21/2015
Power Source	Chroma 61603	AC007	N/A

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 5945 Cabot Parkway, Suite 100,
 Alpharetta GA 30005
 Telephone: 678-341-5900 www.tuvamerica.com

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