



# GONIOPHOTOMETER TEST REPORT

## IES LM79-08 Section 9.3

TÜV SÜD America

### Photometric Testing and Evaluation in Accordance with LM79-2008

Report Prepared for:

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**Sample Tested:** GTSOLM21-HI-GR-T3  
**Sample Description:** LED Luminaire Global  
**Manufacturer:** Tech LED LLC

**Technical Report Number:** 72106423-10-GONI  
**Report Issue Date:** June 25<sup>th</sup>, 2015  
**Total Number of Pages:** 6 (including this page)

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# GONIOPHOTOMETRIC TEST REPORT IES LM79-2008

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June 25, 2015

## Summary of Key Test Results

Model# **GTSOLM21-HI-GR-T3**

Manufacturer Global Tech LED LLC

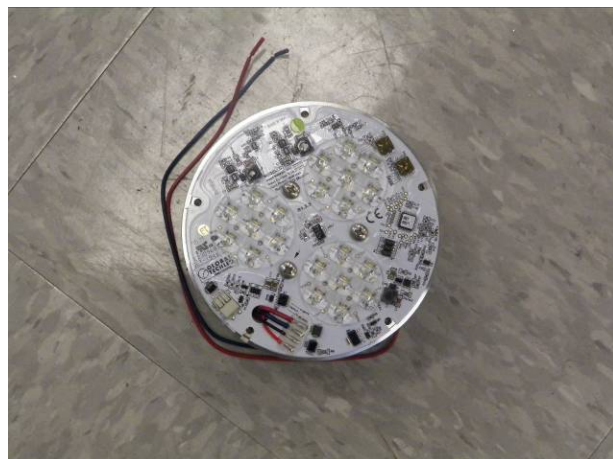
TÜV Sample# 1910-8

Date of Test June 25, 2015

### Notes:

Tested in FBU orientation (Fixture Base Up)

Type 3 optics



<b>Parameter</b>	<b>Measured Result</b>
Luminous Flux	<b>5,388 Lumens</b>
Input Power	<b>60.22 Watts</b>
Efficacy	<b>89.47 Lumens/Watt</b>
Beam Angle	<b>85.7° (V) / 46.4° (H)</b>
Stabilization Time	<b>31 minutes</b>

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-T3	
	Goniophotometer (120V)	
Total Luminous Flux (Lumens)	5,388	
Luminous Efficacy (Lumens/Watt)	89.47	

Electrical Results	Global Tech LED LLC: GTSOLM21-HI-GR-T3	
	Goniophotometer (120V)	
Input Power (Watts)	60.22	
Input Voltage (Volts AC)	119.91	
Input Current (Amps)	.500	
Power Factor	.995	
Input Frequency (Hertz)	60	
A-THD (Current %)	9.06	

Additional Parameters	Global Tech LED LLC: GTSOLM21-HI-GR-T3	
	Goniophotometer (120V)	
Stabilization Time (Light and Power)	31 minutes	
Test Geometry Configuration	Type C	
Ambient Temperature	24.4°C	

### Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0-60	3,593.50	66.70%
60-90	1,766.50	32.80%
70-100	771.6	14.30%
90-120	27.5	0.50%
0-90	5,360.00	99.50%
90-180	28.8	0.50%
0-180	5,388.80	100%





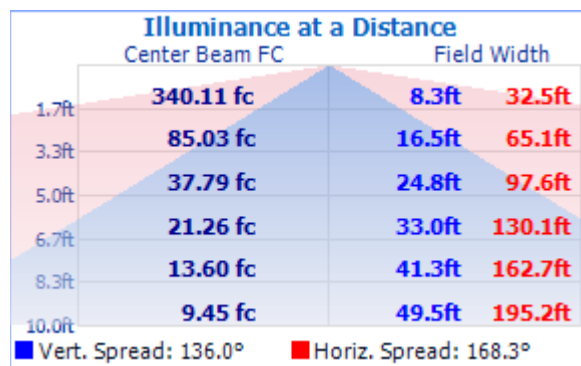
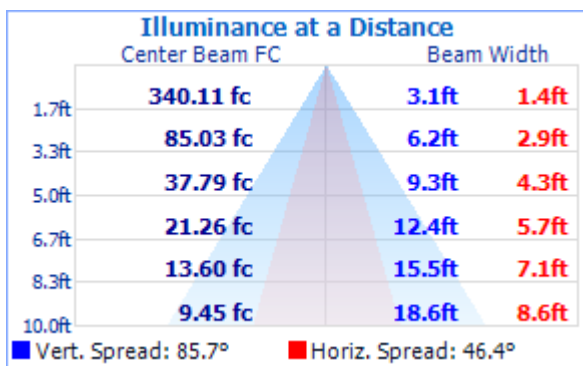
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## Test Results – Illuminance Plots

The following images depict the illuminance characteristics of the luminaire.

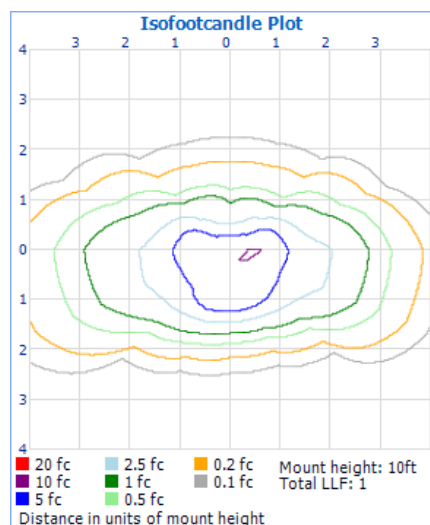


Beam Angle = 85.7° (V) / 46.4° (H)

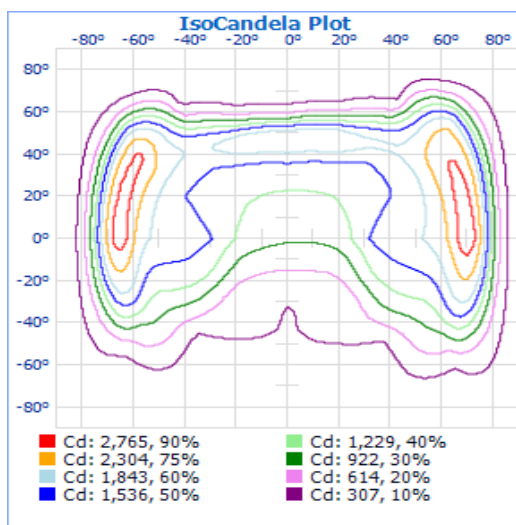
Field Angle = 136.0° (V) / 168.3° (H)

## Test Results – Candela Plots

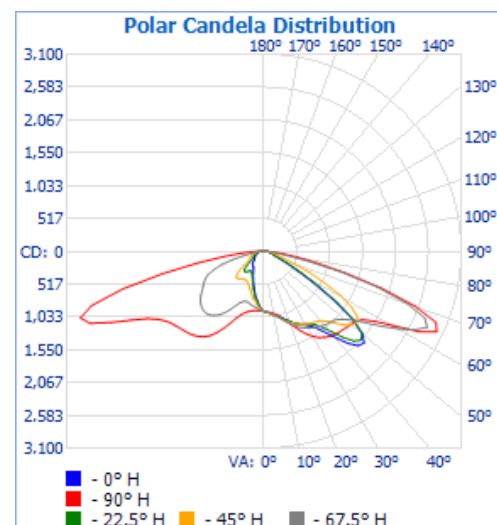
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = **3,072.4** at Horizontal: 270.0°, Vertical: 70.0°

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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 3<sup>rd</sup> 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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