



**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:** GTSOL112-HI-GR-10D  
**Sample Description:** LED Module  
**Manufacturer:** Global Tech LED, LLC

**Technical Report Number:** 72112305-06-GONI  
**Report Issue Date:** January 18<sup>th</sup> 2016  
**Total Number of Pages:** 6 (including this page)

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# GONIOPHOTOMETRIC TEST REPORT IES LM79-2008

Report# 72112305-06-GONI

January 18, 2016

## Summary of Key Test Results

Model# **GTSOL112-HI-GR-10D**

Manufacturer Global Tech LED, LLC

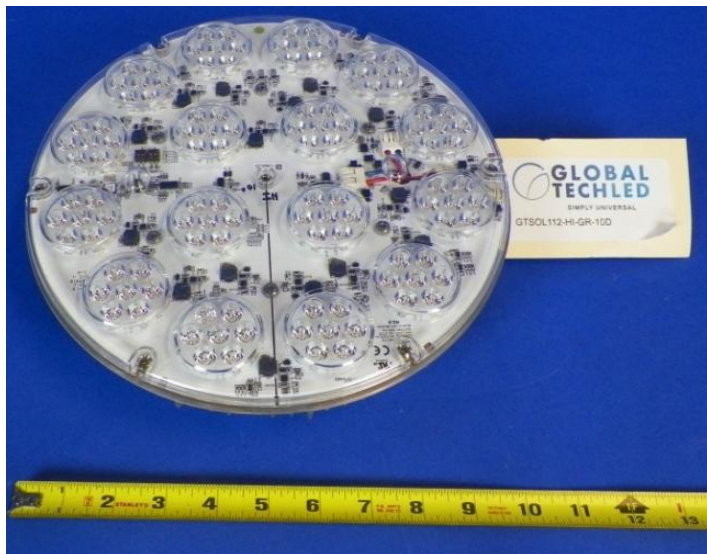
TÜV Sample# 2176-6 (Test Plan#6)

Date of Test January 14<sup>th</sup> 2016

Notes: Tested in intended orientation  
“Aperture Down”.

Driver: **HATCH LV150-24N-UNV-BB (x2)**

LED Chip: **Lumileds Luxeon Zes**



<b>Parameter</b>	<b>Measured Result</b>
Luminous Flux	<b>23,146 Lumens</b>
Input Power	<b>279.53 Watts</b>
Efficacy	<b>82.80 Lumens/Watt</b>
Beam Spread	<b>11.9°</b>
Stabilization Time	<b>49 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	GTSOL112-HI-GR-10D
	Goniophotometer (120V)
Total Luminous Flux (Lumens)	23,146
Luminous Efficacy (Lumens/Watt)	82.80

Electrical Results	GTSOL112-HI-GR-10D
	Goniophotometer (120V)
Input Power (Watts)	279.53
Input Voltage (Volts AC)	120.08
Input Current (Amps)	2.340
Power Factor	0.997
Input Frequency (Hertz)	60.0
A-THD (Current %)	4.34%

Additional Parameters	GTSOL112-HI-GR-10D
	Goniophotometer (120V)
Stabilization Time (Light and Power)	49 minutes
Test Geometry Configuration	Type C
Ambient Temperature	25.2°C

### Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0 - 60	21,134.2	91.3%
60 - 90	2,012.0	8.7%
0 - 90	23,146.2	100.0%
90 - 180	0.0	0.0%
0 - 180	23,146.2	100.0%





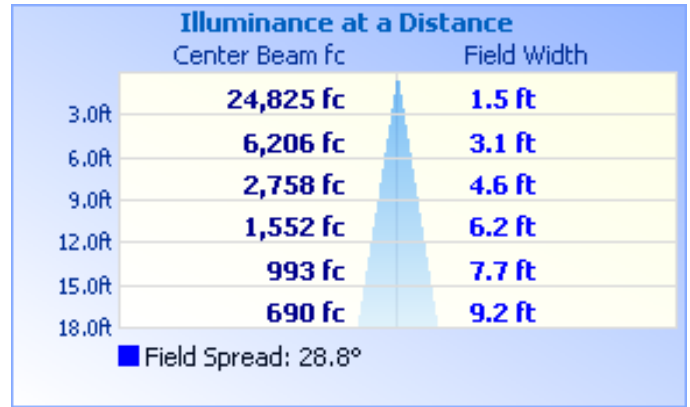
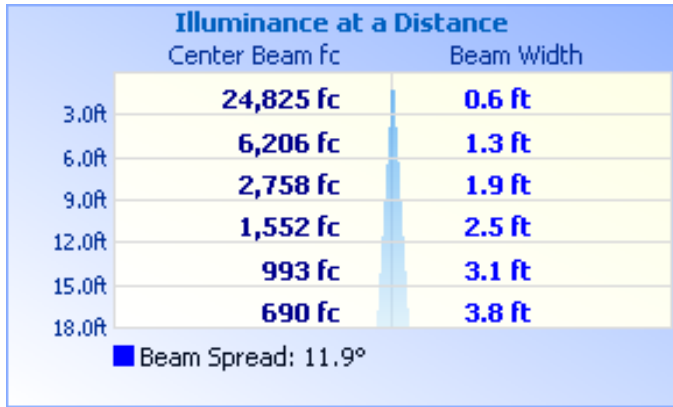
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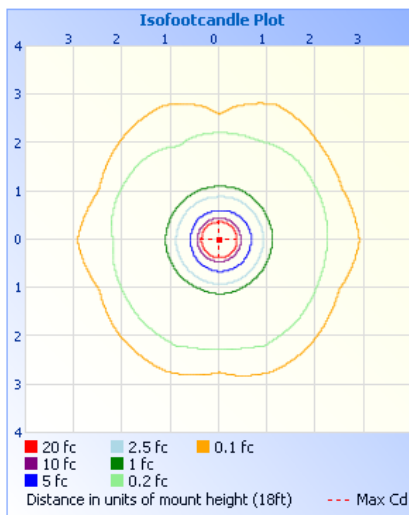
## Test Results – Illuminance Plots

The following images depict the illuminance characteristics of the Luminaire at a mount height of 18ft.

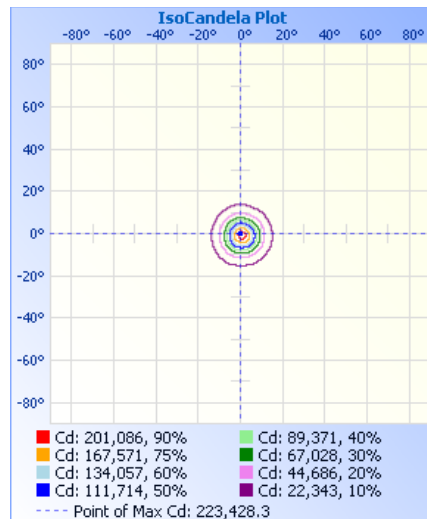


## Test Results – Candela Plots

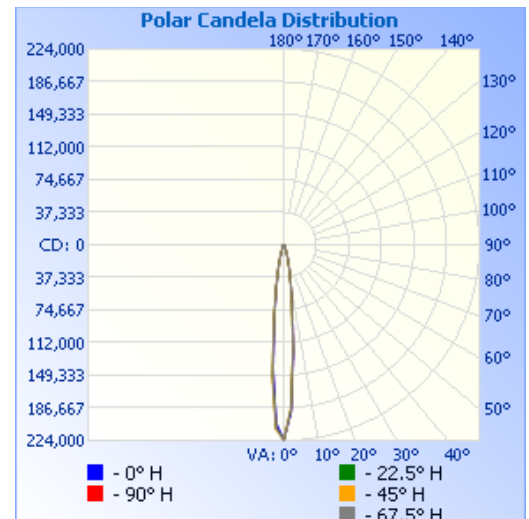
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = **223,428.3** at Horizontal: 0.0°, Vertical: 0.0°

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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	ATLE0073	5/15/2016
Power Source	Chroma 61603	AC007	N/A

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