



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-HO-GR-T2
Sample Description: LED Module
Manufacturer: Global Tech LED, LLC

Technical Report Number: 72112305-13-GONI
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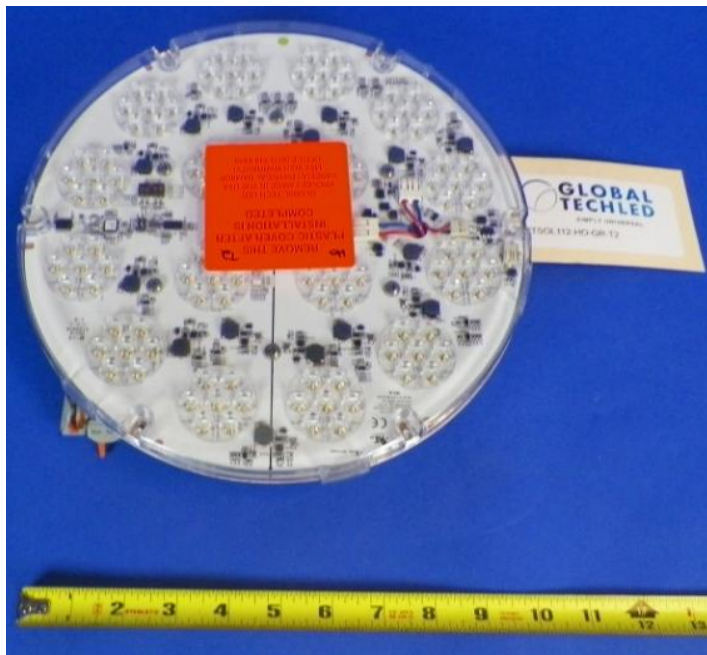
January 18, 2016

Summary of Key Test Results

Model# **GTSOL112-HO-GR-T2**
 Manufacturer Global Tech LED, LLC
 TÜV Sample# 2176-13 (Test Plan#13)
 Date of Test January 18th 2016

Notes: Tested in intended orientation
 “Aperture Down, Cover Removed”.
 (cover shown attached in image)

Driver: **HATCH LV192-24N-UNV-NN (x2)**
 LED Chip: **Lumileds Luxeon Zes**



Parameter	Measured Result
Luminous Flux	29,984 Lumens
Input Power	358.64 Watts
Efficacy	83.61 Lumens/Watt
Beam Angle	72.1° (V) / 17.2° (H)
Stabilization Time	44 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	GTSOL112-HO-GR-T2
	Goniophotometer (120V)
Total Luminous Flux (Lumens)	29,984
Luminous Efficacy (Lumens/Watt)	83.61

Electrical Results	GTSOL112-HO-GR-T2
	Goniophotometer (120V)
Input Power (Watts)	358.64
Input Voltage (Volts AC)	120.15
Input Current (Amps)	2.990
Power Factor	0.998
Input Frequency (Hertz)	60.0
A-THD (Current %)	3.43%

Additional Parameters	GTSOL112-HO-GR-T2
	Goniophotometer (120V)
Stabilization Time (Light and Power)	44 minutes
Test Geometry Configuration	Type C
Ambient Temperature	24.9°C

Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0 - 60	22,019.2	73.4%
60 - 90	7,964.9	26.6%
0 - 90	29,984.1	100.0%
90 - 180	0.0	0.0%
0 - 180	29,984.1	100.0%





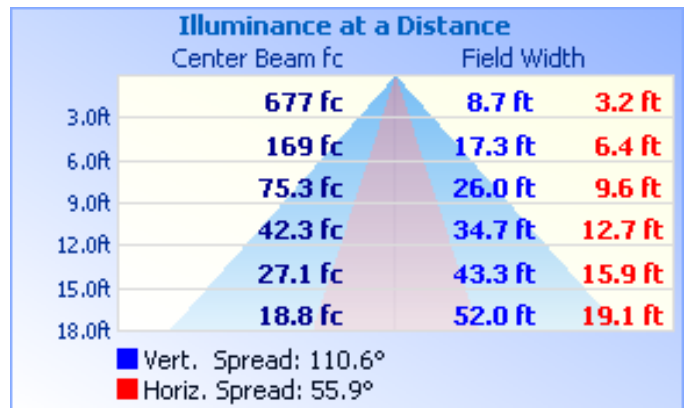
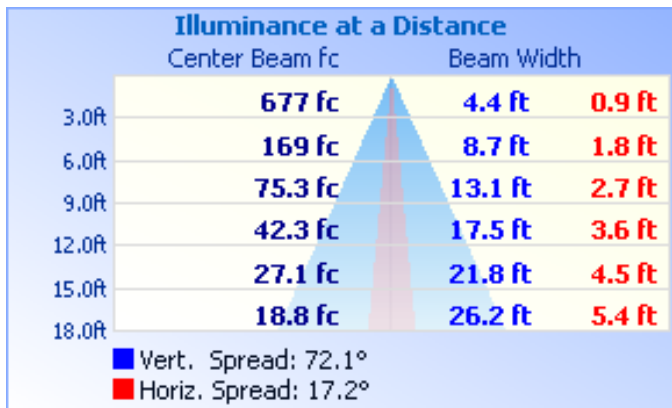
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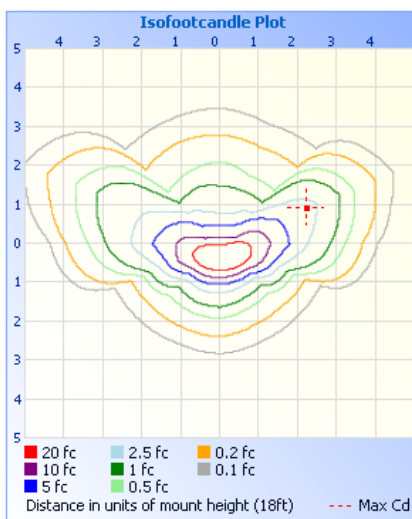
Test Results – Illuminance Plots

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

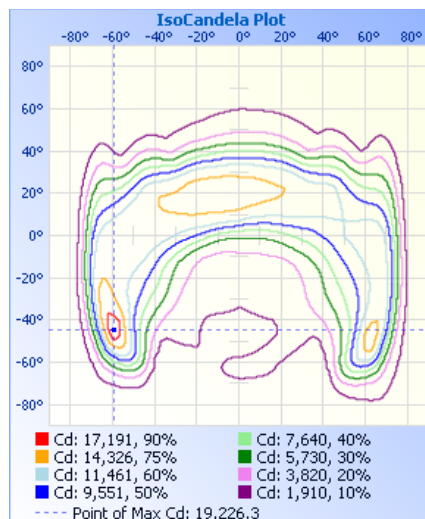


Test Results – Candela Plots

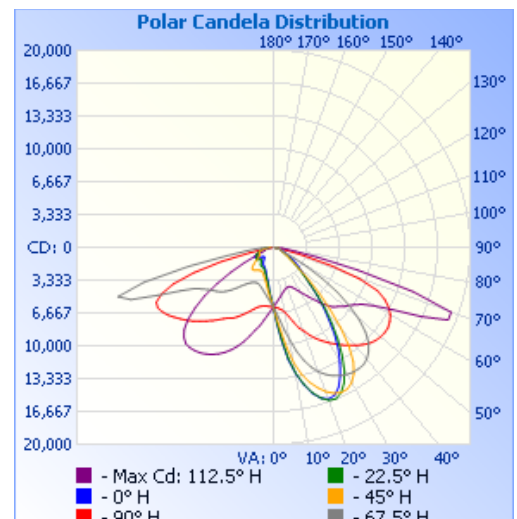
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

Maximum Candela = **19,226.3** at Horizontal: 112.5°, Vertical: 67.5°

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

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