



# 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:** Girasole 5700K Wide 40W  
**Manufacturer:** Beghelli North America

**Technical Report Number:** JI1302916-22-GONIO  
**Report Issue Date:** June 12, 2013  
**Total Number of Pages:** 7 (including this page)

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# GONIOPHOTOMETRIC TEST REPORT IES LM79-2008

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June 12, 2013

## Summary of Key Test Results

Model# **Girasole 5700K Wide 40W**  
Manufacturer **Beghelli North America**  
TÜV Sample# **712-6**  
Date of Test **June 10, 2013**

### Notes:

Tested in intended orientation (Horizontal)



Parameter	Measured Result
Luminous Flux	<b>2419.6 Lumens</b>
Input Power	<b>35.40 Watts</b>
Efficacy	<b>68.35 Lumens/Watt</b>
Beam Angle	<b>31.9°</b>
Stabilization Time	<b>60 minutes</b>
In-Situ Temp Test (ISTMT)**	<b>65.8°C</b>

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

\*\*ISTMT in accordance with "Energy Star Program Requirements for Luminaires – Version 1.2".

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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	Girasole 5700K Wide 40W
	Goniophotometer
Total Luminous Flux (Lumens)	2419.6
Luminous Efficacy (Lumens/Watt)	68.35

Electrical Results	Girasole 5700K Wide 40W
	Goniophotometer
Input Power (Watts)	35.40
Input Voltage (Volts AC)	120.06
Input Current (Amps)	0.310
Power Factor (120/240V)	0.951/0.893
Input Frequency (Hertz)	60.0
A-THD (Current %) (120/240V)	17.57/18.77

Additional Parameters	Girasole 5700K Wide 40W
	Goniophotometer
Stabilization Time (Light and Power)	57 minutes
Test Geometry Configuration	Type C
Photometer	Gigahertz Optik P9801
Ambient Temperature	25.0°C
ISTMT (In-Situ Temperature Measurement)	65.8°C
Spacing Criteria	0.56 (0° – 180°) / 0.52 (90° – 270°)

## Zonal Lumen Summary

Zone	Lumens	% Lamp / Luminaire
0 - 60	2374.8	98.1 %
60 - 90	44.8	1.9 %
0 - 90	2419.6	100.0 %
90 - 180	0.0	0.0 %
0 - 180	2419.6	100.0 %

## Test Results – Illuminance Plots

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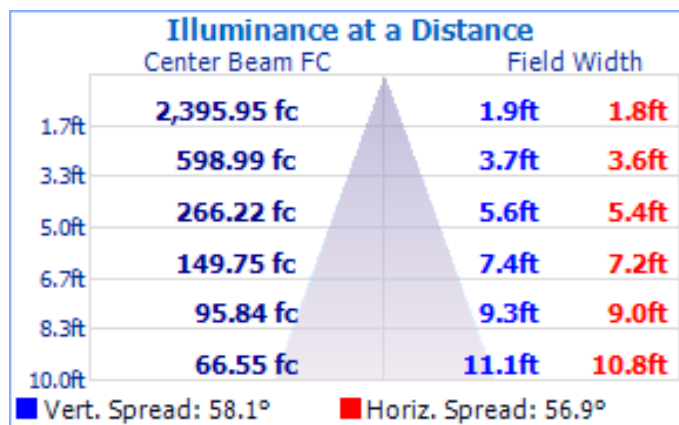
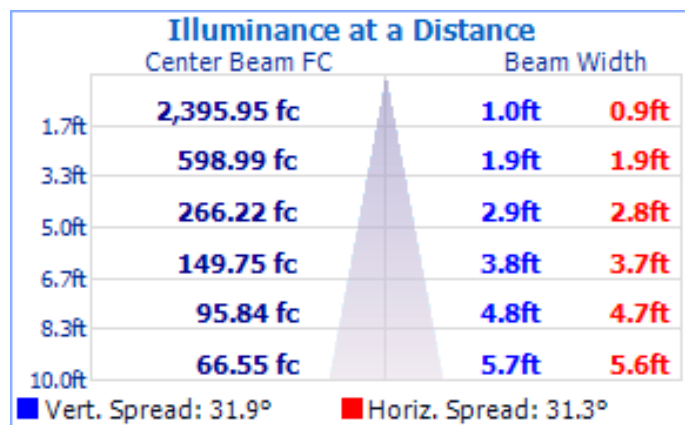


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The following images depict the illuminance characteristics of the luminaire.

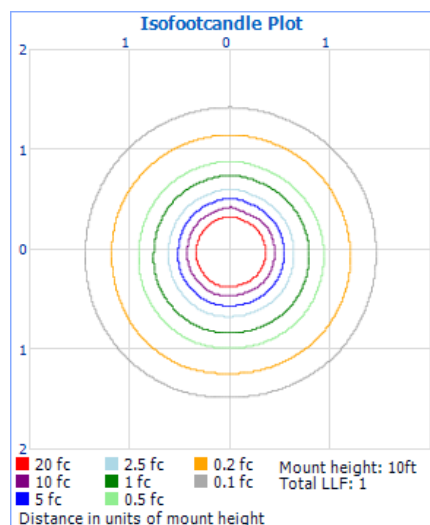


Beam Angle = 31.9°

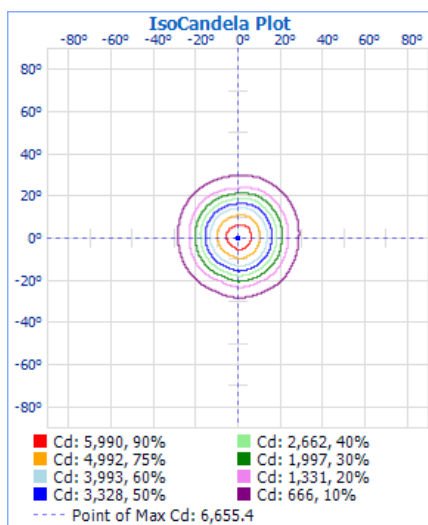
Field Angle = 58.1°

## Test Results – Candela Plots

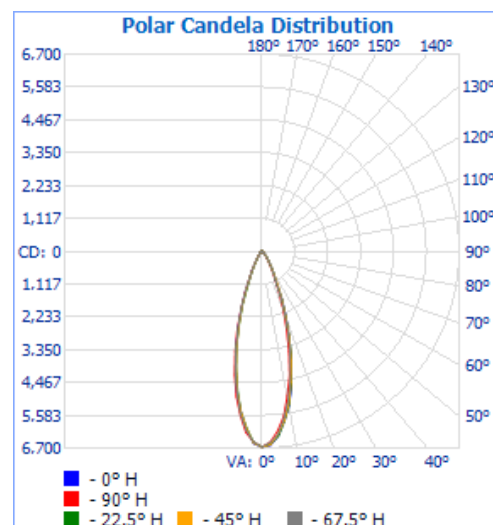
The following images depict the luminous intensity distribution characteristics of the luminaire:



Isofootcandle Plot



Isocandela Plot



Polar Candela

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## Test Results – Candela Tabulation

The table below displays the tabulated Candela measurements from the IES file:

Horizontal (lateral) angles are shown in **red** across the top of the table, in increments of 22.5°.

Vertical (longitudinal) angles are shown in **blue** down the side of the table, in increments of 2.5°.

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	202.5	225.0	247.5	270.0	292.5	315.0	337.5	360.0
0.0	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655	6655
2.5	6606	6574	6589	6498	6501	6457	6377	6360	6545	6510	6533	6493	6497	6593	6559	6640	6606
5.0	6312	6324	6260	6238	6128	6054	5966	5904	6069	6025	6051	6115	6203	6208	6338	6351	6312
7.5	5826	5823	5813	5727	5660	5495	5406	5269	5502	5508	5497	5590	5629	5775	5896	6034	5826
10.0	5309	5298	5258	5133	4982	4897	4701	4628	4872	4794	4850	4880	5018	5155	5287	5419	5309
12.5	4637	4581	4556	4456	4328	4142	4032	3855	4121	4079	4075	4199	4296	4452	4648	4803	4637
15.0	3866	3853	3861	3704	3529	3423	3248	3131	3406	3353	3345	3410	3515	3731	3861	4094	3866
17.5	3062	3086	3061	2992	2784	2678	2531	2407	2658	2574	2603	2681	2785	2948	3113	3278	3062
20.0	2379	2336	2353	2262	2105	2017	1874	1764	2021	1945	1977	2018	2066	2267	2350	2570	2379
22.5	1781	1739	1749	1668	1514	1473	1332	1035	1462	1277	1392	1453	1502	1647	1740	1913	1781
25.0	1131	1129	1253	1113	996	958	903	866	952	913	941	945	962	1123	1211	1367	1131
27.5	900	889	890	847	764	732	656	619	716	658	692	705	733	840	880	938	900
30.0	672	658	653	610	546	505	456	426	489	451	481	495	517	594	645	711	672
32.5	485	479	479	437	387	362	318	303	342	320	343	349	365	424	464	522	485
35.0	355	353	345	319	287	261	236	221	241	233	242	256	271	313	343	381	355
37.5	270	266	264	237	213	196	175	167	180	174	183	189	200	231	256	285	270
40.0	208	205	203	183	166	152	137	130	138	134	141	147	156	179	197	216	208
42.5	163	161	160	141	130	120	109	105	112	110	115	119	125	141	155	171	163
45.0	129	129	128	115	106	100	93	88	92	92	94	98	104	114	127	135	129
47.5	106	105	106	95	88	83	78	77	78	79	81	84	87	95	106	111	106
50.0	86	87	87	82	75	71	70	67	67	68	70	73	75	79	90	91	86
52.5	71	72	73	68	64	61	61	58	60	61	62	63	64	68	75	77	71
55.0	59	60	61	59	56	56	54	52	53	54	55	55	56	60	63	64	59
57.5	50	51	52	50	48	48	48	46	47	49	49	48	48	52	54	54	50
60.0	41	43	43	43	41	42	42	39	41	42	42	43	42	44	45	45	41
62.5	34	36	37	36	35	35	35	33	35	36	36	36	35	37	38	37	34
65.0	28	30	30	30	29	29	29	28	30	30	31	30	30	31	32	31	28
67.5	23	24	25	24	24	24	24	23	25	25	26	25	25	25	26	26	23
70.0	19	19	20	19	19	19	20	19	21	20	21	20	20	20	21	21	19
72.5	15	15	15	15	15	15	15	15	17	16	16	16	16	16	16	16	15
75.0	11	11	11	11	12	11	11	11	14	12	12	12	13	12	12	12	11
77.5	8	8	8	8	8	8	8	8	10	9	9	8	9	9	9	9	8
80.0	5	5	5	5	6	5	5	5	7	6	6	6	6	6	6	6	5
82.5	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3
85.0	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1
87.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maximum Candela = **6655.4** 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	ATLE0031	11/16/2013
Power Source	Chroma 61603	AC007	N/A

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