REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G101352868 Date: October 15, 2013

REPORT NO. 101352868CHI-002

TEST OF ONE LED SPOT HEAD - 30°

MODEL NO. 700FJISO8303006S-LED
DRIVER MODEL NO. LTF TA60W12LED-0000

RENDERED TO

GENERATION BRANDS
7400 LINDER AVENUE
SKOKIE, IL 60077

TEST: Electrical and Photometric tests as required to the IESNA test standard.

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number 500481937.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2012: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number 700FJISO8303006S-LED. The sample was received by Intertek on September 19, 2013, in undamaged condition and one sample was tested as received. The sample designation was CHI09192013021949B.

DATES OF TESTS: October 7, 2013 through October 11, 2013.

SUMMARY

Model No.:	700FJISO8303006S-LED
Description:	LED Spot Head - 30°

	Result	
Criteria	Sphere	Goniometer
Total Lumen Output (Lumens)	665.0	685.6
Total Power (W)	16.07	16.54
Luminaire Efficacy (LPW)	41.38	41.45

Criteria	Result
Power Factor	0.807
Current ATHD %	50.67
Correlated Color Temperature (CCT - K)	3035
Color Rendering Index (CRI - Ra)	82.4
Color Rendering Index (CRI - R9)	25.7
DUV	0.002
Chromaticity Coordinate (x)	0.432
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.518

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU
3 Meter Sphere	SPR600	CHI0088	VBU	VBU
Elgar AC Power Supply	CW1251M	146112	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
Newport Humidity Recorder	iTHX-SD	146382	08/26/13	08/24/14
Yokogawa Power Meter	WT1600	146769	05/17/13	05/17/14
Omega Temperature Meter	MDSi8	146139	06/20/13	06/20/14
Yokogawa Power Meter	WT210	146919	12/21/12	12/21/13
Omega Thermometer	DPI8-C24	146920	11/15/12	11/15/13
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
Newport Hygrometer	iServer	146960	02/21/13	02/21/14
Elgar, AC Power Supply	CW1251P	146918	VBU	VBU
Cole-Parmer Triple Timer	94440-00	CHI0041	06/20/13	06/20/14

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model CDS 1100 CCD Array Spectroradiometer and Three Meter Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

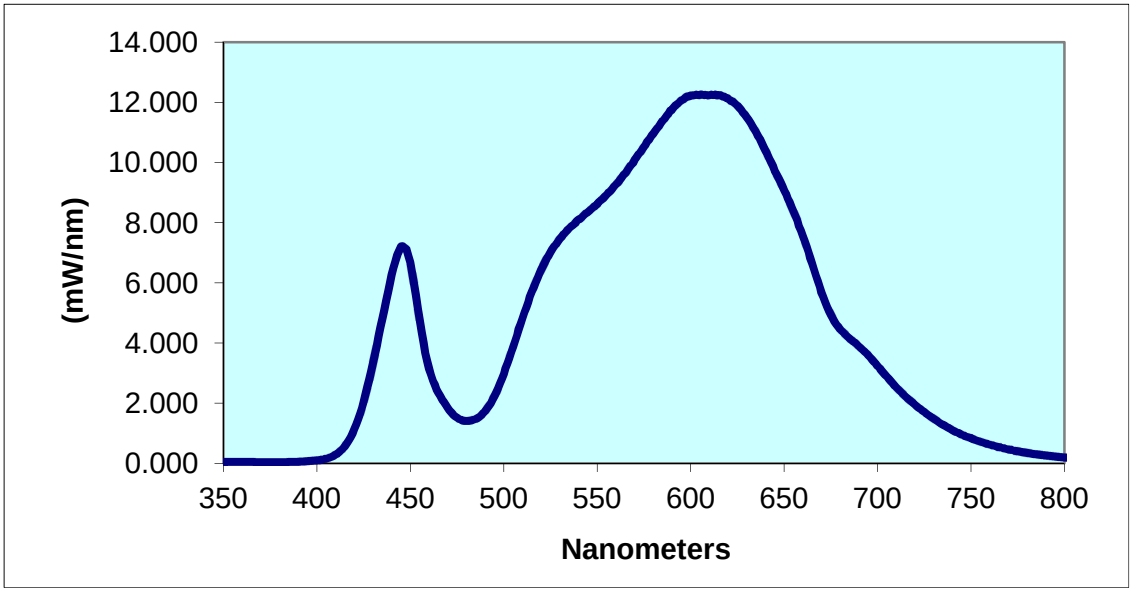
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
CHI09192013021949B	UP	120.0	166.0	16.07	0.807	50.67	665.0	41.38

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
3035	82.4	25.7	0.002	0.432	0.398	0.250	0.518

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.05	440	6.268	530	7.469	620	12.13	710	2.527
355	0.044	445	7.208	535	7.813	625	11.9	715	2.222
360	0.043	450	6.68	540	8.105	630	11.51	720	1.949
365	0.043	455	4.751	545	8.352	635	11.01	725	1.702
370	0.038	460	3.142	550	8.629	640	10.4	730	1.479
375	0.035	465	2.348	555	8.929	645	9.732	735	1.28
380	0.037	470	1.841	560	9.278	650	9.069	740	1.104
385	0.041	475	1.516	565	9.637	655	8.366	745	0.952
390	0.05	480	1.412	570	10.09	660	7.564	750	0.829
395	0.068	485	1.476	575	10.53	665	6.646	755	0.718
400	0.095	490	1.725	580	10.96	670	5.681	760	0.619
405	0.151	495	2.223	585	11.39	675	4.932	765	0.534
410	0.286	500	2.972	590	11.76	680	4.457	770	0.463
415	0.572	505	3.876	595	12.07	685	4.151	775	0.397
420	1.127	510	4.827	600	12.23	690	3.891	780	0.344
425	2.05	515	5.71	605	12.25	695	3.588		
430	3.345	520	6.43	610	12.25	700	3.232		
435	4.804	525	7.012	615	12.24	705	2.875		

Spectral Data Over Visible Wavelengths



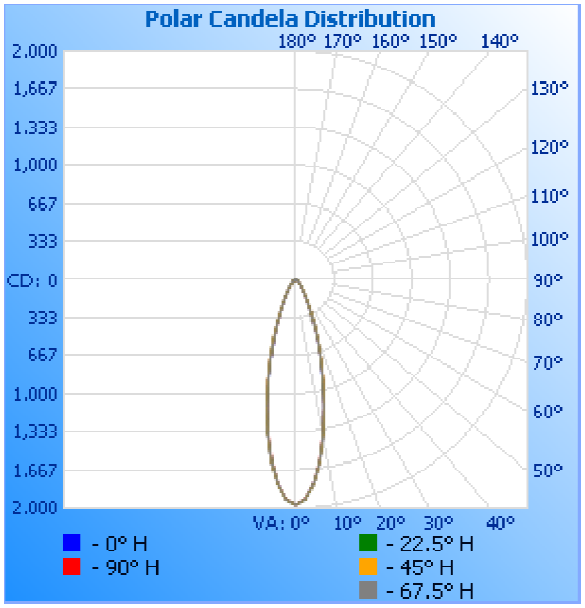
RESULTS OF TEST (cont'd)

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
CHI09192013021949B	UP	120.0	171.4	16.54	0.804	685.6	41.45

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	1970	1970	1970	1970	1970
5	1794	1797	1797	1796	1794
10	1378	1372	1376	1368	1364
15	904	914	921	916	918
20	549	556	562	551	549
25	314	319	324	316	315
30	175	180	183	179	179
35	103	105	106	102	102
40	60	61	62	60	60
45	39	40	40	39	39
50	28	28	28	28	27
55	19	19	19	19	18
60	12	12	12	12	12
65	8	8	8	8	8
70	4	4	4	4	5
75	3	2	2	2	3
80	2	2	2	1	1
85	1	1	1	1	1
90	0	0	0	0	0

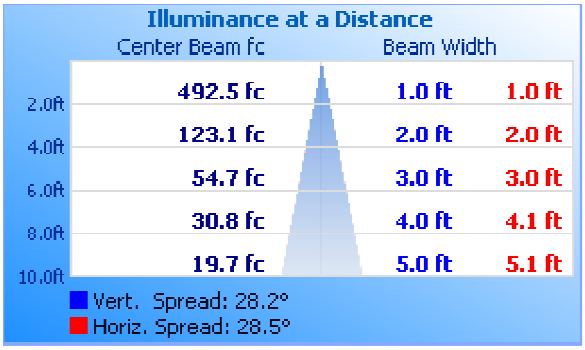


RESULTS OF TEST (cont'd)

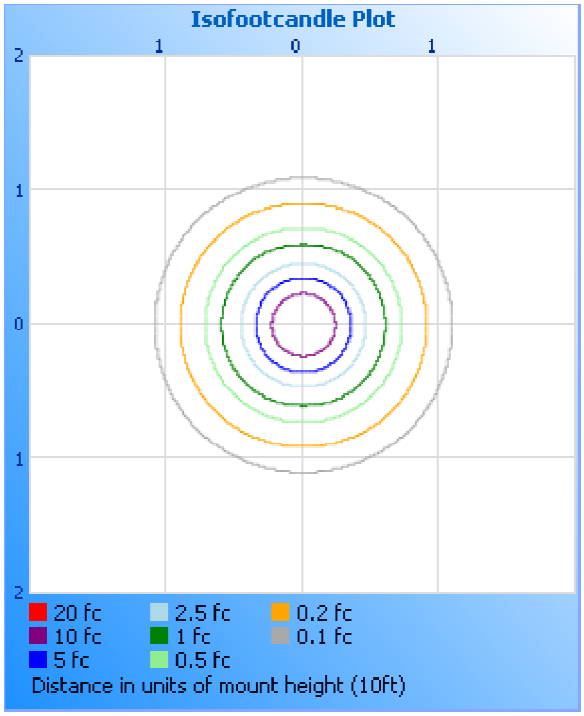
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



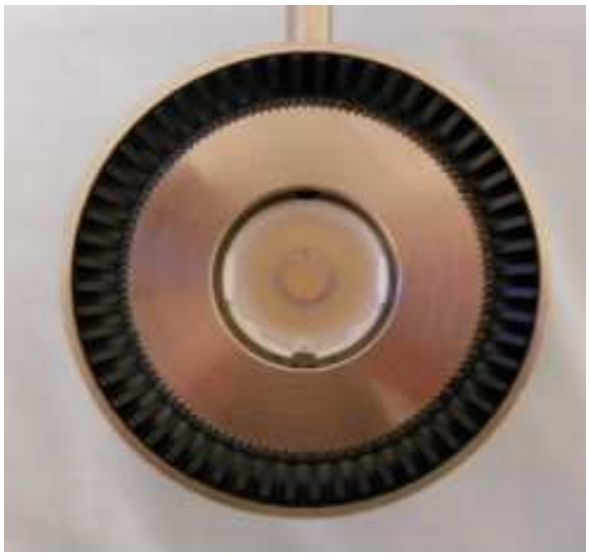
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	558.6	81.5
0-40	625.9	91.3
0-60	674.5	98.4
60-90	11.1	1.6
0-90	685.6	100.0
90-180	0.0	0.0
0-180	685.6	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	156.8	22.9
10-20	251.5	36.7
20-30	150.3	21.9
30-40	67.3	9.8
40-50	31.6	4.6
50-60	17.0	2.5
60-70	7.7	1.1
70-80	2.7	0.4
80-90	0.8	0.1

PICTURE (not to scale)



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

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Report Reviewed By:

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Attachment: None