



REPORT

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

Project No. G101518786

Date: June 12, 2015

REPORT NO. 101518786CHI-117

TEST OF ONE LED BATH FIXTURE

MODEL NO. 700BCJXN25CC-LED830
LED MODEL NO. EDISON 2T01X1CW14000002
DRIVER MODEL NO. LTF DA30W750C1038BF

RENDERED TO

GENERATION BRANDS
7400 LINDER AVE.
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 500506211.

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 700BCJXN25CC-LED830. The sample was received by Intertek on June 8, 2015, in undamaged condition and one sample was tested as received. The sample designation was 06082015045146-117.

DATES OF TESTS: June 10, 2015 through June 12, 2015.

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SUMMARY

Model No.:	700BCJXN25CC-LED830
Description:	LED Bath Fixture

Criteria	Result	
	Sphere	Goniometer
Total Lumen Output (Lumens)	1800	1808
Total Power (W)	26.31	26.34
Luminaire Efficacy (LPW)	68.42	68.64

Criteria	Result
Power Factor	0.987
Current ATHD %	10.35
Correlated Color Temperature (CCT - K)	3013
Color Rendering Index (CRI - Ra)	81.6
Color Rendering Index (CRI - R9)	2.3
DUV	0.001
Chromaticity Coordinate (x)	0.435
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.520

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/16/14	07/16/15	06/12/15
Omega Thermometer	DPI8-C24	146920	10/09/14	10/09/15	06/12/15
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	06/12/15
Newport Hygrometer	iServer	146956	01/06/15	01/06/16	06/12/15
Elgar, AC Power Supply	CW1251P	146918	VBU	VBU	06/12/15
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	06/10/15
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	06/10/15
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	06/10/15
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	06/10/15
Newport Humidity Recorder	iTHX-SD	146382	07/02/14	07/02/15	06/10/15
Yokogawa Power Meter	WT1600	146768	01/15/15	01/15/16	06/10/15
Omega Temperature Meter	MDSi8	146139	04/03/15	04/03/16	06/10/15

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 Two Meter or Ten Foot 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

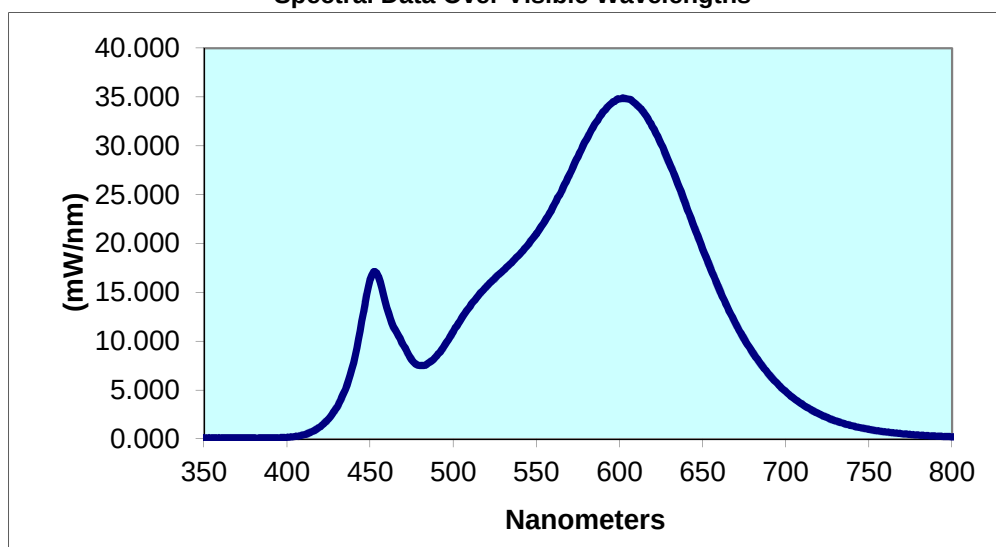
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
06082015045146-117	Horizontal	120.0	222.0	26.31	0.987	10.35	1800	68.42

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')
3013	81.6	2.3	0.001	0.435	0.402	0.250	0.520

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.130	440	7.817	530	17.24	620	31.90	710	3.534
355	0.109	445	12.05	535	18.04	625	30.22	715	3.017
360	0.115	450	16.30	540	18.90	630	28.26	720	2.556
365	0.107	455	16.63	545	19.90	635	26.16	725	2.186
370	0.096	460	13.48	550	20.99	640	23.92	730	1.854
375	0.090	465	11.20	555	22.28	645	21.67	735	1.583
380	0.089	470	9.621	560	23.76	650	19.45	740	1.345
385	0.093	475	8.101	565	25.34	655	17.34	745	1.145
390	0.097	480	7.500	570	27.10	660	15.35	750	0.980
395	0.114	485	7.755	575	28.89	665	13.46	755	0.839
400	0.161	490	8.485	580	30.64	670	11.76	760	0.722
405	0.251	495	9.651	585	32.21	675	10.24	765	0.614
410	0.427	500	11.00	590	33.48	680	8.879	770	0.527
415	0.747	505	12.36	595	34.33	685	7.668	775	0.452
420	1.252	510	13.55	600	34.81	690	6.595	780	0.390
425	2.076	515	14.66	605	34.81	695	5.664		
430	3.261	520	15.61	610	34.27	700	4.852		
435	5.061	525	16.45	615	33.31	705	4.145		

Spectral Data Over Visible Wavelengths



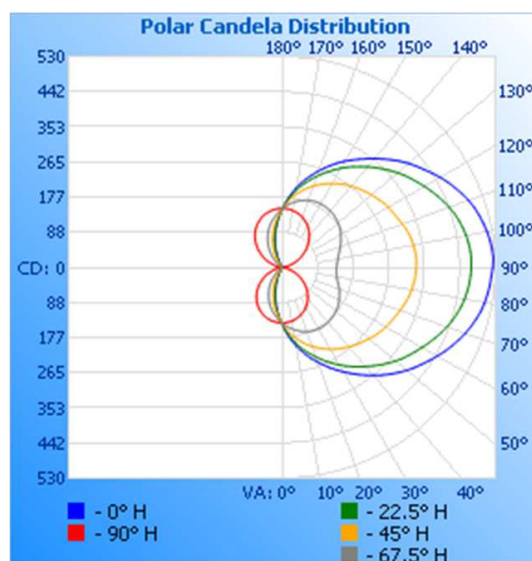
RESULTS OF TEST (cont'd)

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 (LPW)
06082015045146-117	Horizontal	119.9	222.4	26.34	0.987	1808	68.64

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	141	141	141	141	141
5	172	168	159	149	139
10	200	193	178	158	137
15	226	216	195	165	134
20	252	238	210	171	129
25	278	261	224	176	124
30	303	283	237	179	117
35	329	304	249	180	109
40	354	325	260	179	99
45	379	346	270	177	89
50	403	367	280	174	78
55	424	385	290	169	66
60	446	402	298	164	54
65	466	420	305	157	41
70	484	436	313	151	29
75	500	450	320	143	17
80	511	460	327	138	8
85	518	467	331	136	2
90	524	470	333	135	0
95	524	470	334	138	2
100	517	464	331	141	8
105	507	455	326	147	17
110	493	442	319	154	29
115	474	426	310	161	42
120	453	408	304	169	56
125	430	390	296	175	69
130	408	372	286	180	82
135	383	351	277	183	94
140	357	330	268	186	105
145	332	309	256	187	115
150	308	288	244	186	124
155	283	265	231	184	132
160	256	243	217	180	138
165	230	220	202	174	142
170	204	197	184	166	146
175	175	171	166	157	148
180	147	147	147	147	147



RESULTS OF TEST (cont'd)

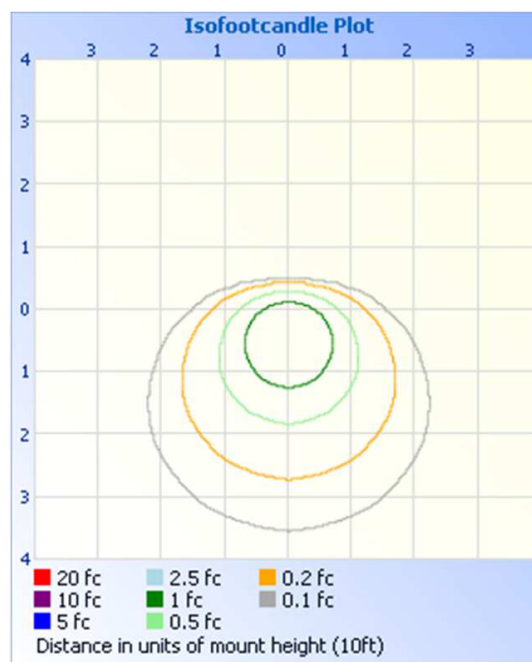
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



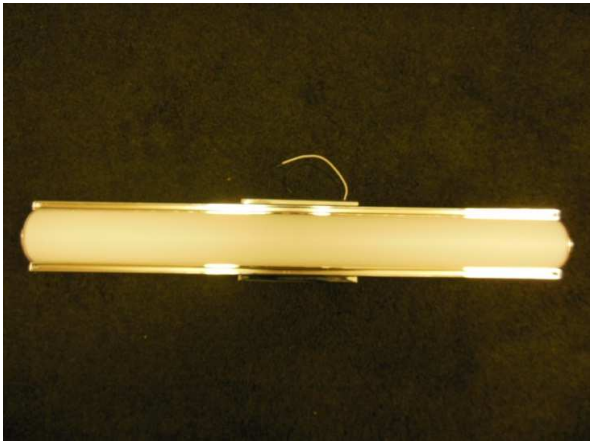
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	115.7	6.4
0-40	199.8	11.0
0-60	432.3	23.9
60-90	462.5	25.6
0-90	894.8	49.5
90-180	913.4	50.5
0-180	1808	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	13.4	0.7
10-20	39.5	2.2
20-30	62.8	3.5
30-40	84.1	4.7
40-50	106.2	5.9
50-60	126.3	7.0
60-70	143.4	7.9
70-80	156.2	8.6
80-90	162.9	9.0
90-100	164.3	9.1
100-110	158.5	8.8
110-120	146.1	8.1
120-130	128.9	7.1
130-140	108.9	6.0
140-150	86.7	4.8
150-160	65.1	3.6
160-170	41.0	2.3
170-180	14.0	0.8

PICTURES (not to scale)



Note: sample was tested with clear outer glass not shown in the photograph above.

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:



Vladimir Kozak
Senior Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley
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