

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700BCSPANAS-LED930

REPORT NUMBER

103982892CHI-014

ISSUE DATE

July 10, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: July 10, 2019

TEST REPORT

TEST OF ONE LED BATH LUMINAIRE

MODEL NO. 700BCSPANA3S-LED930
LED MODEL NO. EVERLIGHT 62-217D/HK4C-H3030QA1R32835Z15/2T
DRIVER MODEL NO. LTF DA30W1050C1528LPD010-0000

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE, IL 60077

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00981438-0.

STANDARDS USED

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
ANSI NEMA ANSLG C78.377: 2015: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE

The client submitted one production sample of model number 700BCSPANA3S-LED930. The sample was received by Intertek on June 14, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH06142019092403-14.

DATE OF TESTS

June 24, 2019 through July 9, 2019.

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SUMMARY

MODEL NO:	700BCSPANAS-LED930
DESCRIPTION:	LED bath luminaire

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1274.7	1260.7
Input Power (W) @ 120 (VAC)	34.29	34.21
Lumen Efficacy (lm/W)	37.2	36.9
Input Power Factor @ 120 (VAC)	0.986	0.987

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	8.03
Correlated Color Temperature (K)	3017
Color Rendering Index - Ra	92.4
Color Rendering - R9	52.0
DUV	0.0011
Chromaticity Coordinate (x)	0.437
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.523

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2019	7/1/2020
Omega Newport Thermometer	DPI8-C24	146920	10/4/2018	10/4/2019
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/11/2018	12/11/2019
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV
Labsphere Spectroradiometer	CDS1100	CHI0091	VBV	VBV
3 Meter Sphere	SPR600	CHI0088	VBV	VBV
Elgar AC Power Supply	CW1251	146112	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iTHX-SD	146961	7/23/2018	7/23/2019
Yokogawa Power Meter	WT1600	146769	4/3/2019	4/3/2020
Extech K Temperature Meter	SD200	CHI0207	4/3/2019	4/3/2020

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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 Spectroradiometer and integrating 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. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a 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 Type C Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the SSL sample.

Ambient temperature was measured equal to the height of the sample mounted on the goniometer equipment. The SSL sample was operated on the client provided driver at rated input volts in its designated orientation. The SSL sample was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

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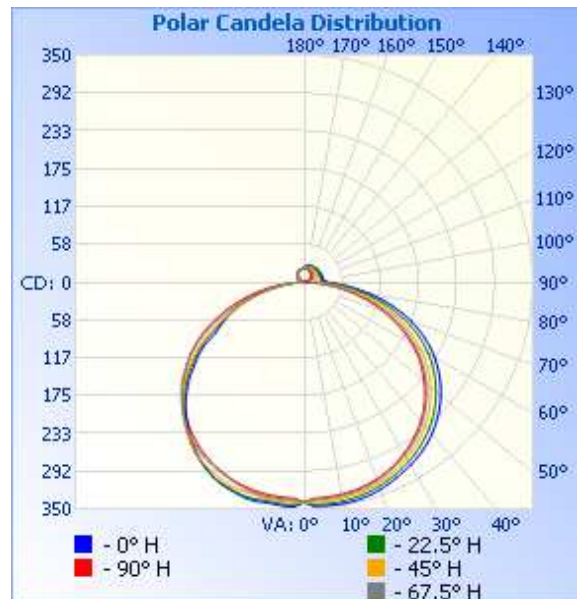
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR ()	LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)
AH06142019092403-14	Base Up	120.0	288.6	34.21	0.987	1260.7	36.9

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	340	340	340	340	340
5	346	344	339	336	334
10	347	343	338	335	332
15	345	340	336	332	329
20	341	335	331	327	324
25	334	328	323	318	316
30	326	320	314	309	306
35	317	310	302	296	293
40	305	297	288	282	279
45	290	282	272	264	261
50	273	264	253	245	240
55	253	243	232	222	218
60	231	220	206	197	192
65	204	192	178	168	161
70	174	161	148	136	128
75	139	125	114	101	94
80	101	88	77	65	59
85	65	55	43	32	25
90	36	32	22	12	3
95	30	26	18	9	2
100	29	26	18	10	3
105	29	26	19	11	5
110	29	26	19	13	7
115	29	26	20	14	9
120	28	27	21	16	10
125	28	27	22	17	12
130	28	27	23	18	14
135	29	27	24	19	15
140	28	27	24	20	16
145	28	27	24	21	17
150	28	27	25	22	18
155	27	26	25	22	19
160	27	26	25	22	20
165	26	26	24	22	20
170	26	25	24	22	21
175	24	24	23	22	21
180	21	21	21	21	21



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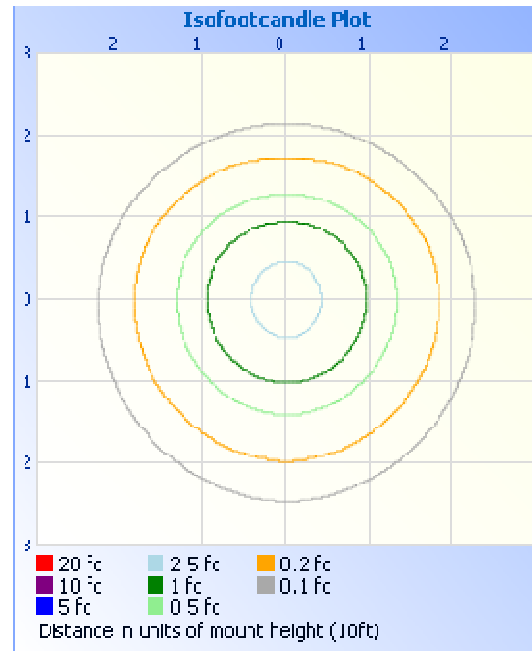
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	277.0	22.0
0-40	465.9	37.0
0-60	869.8	69.0
60-90	296.9	23.6
70-100	147.6	11.7
90-120	35.1	2.8
0-90	1166.8	92.6
90-180	93.9	7.4
0-180	1260.7	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	32.4	2.6
10-20	95.1	7.5
20-30	149.5	11.9
30-40	188.8	15.0
40-50	206.4	16.4
50-60	197.6	15.7
60-70	160.0	12.7
70-80	101.1	8.0
80-90	35.8	2.8
90-100	10.7	0.9
100-110	11.4	0.9
110-120	13.0	1.0
120-130	14.1	1.1
130-140	13.9	1.1
140-150	12.5	1.0
150-160	9.9	0.8
160-170	6.3	0.5
170-180	2.1	0.2

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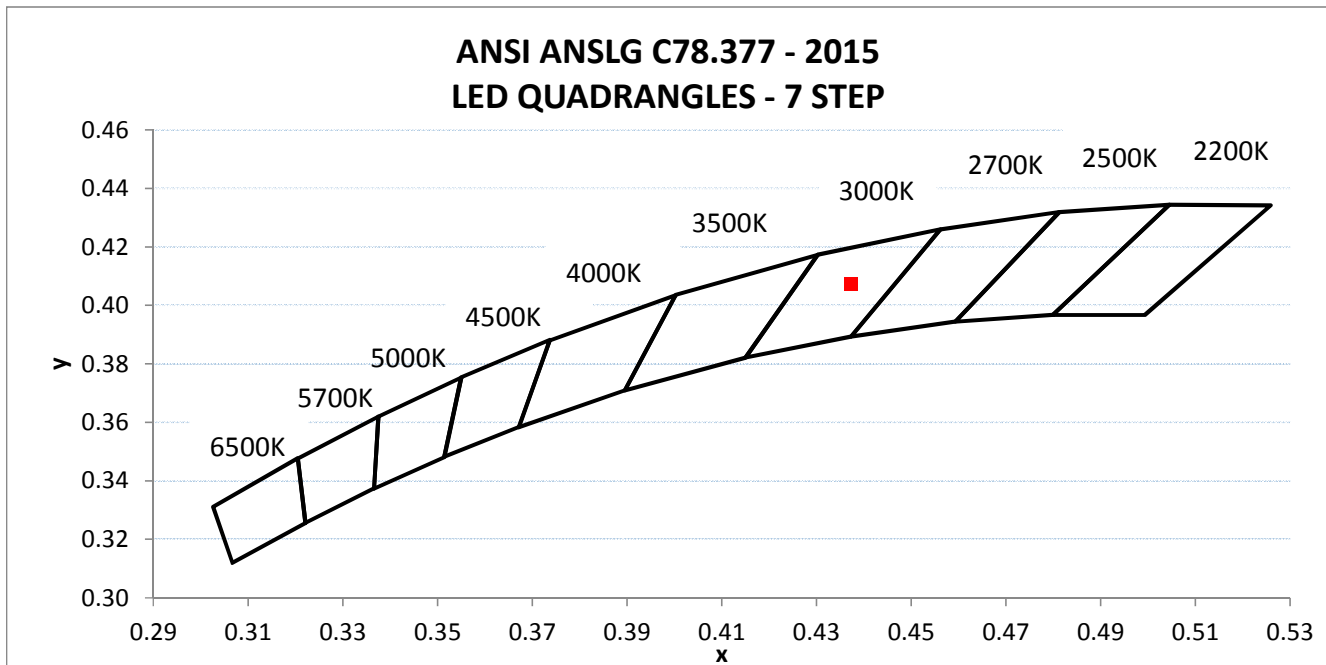
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR	INPUT CURRENT ATHD (%)
AH06142019092403-14	Base Up	120.00	289.77	34.29	0.986	8.03

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1274.7	37.2	3017	92.4	52.0	0.0011

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.437	0.407	0.250	0.523



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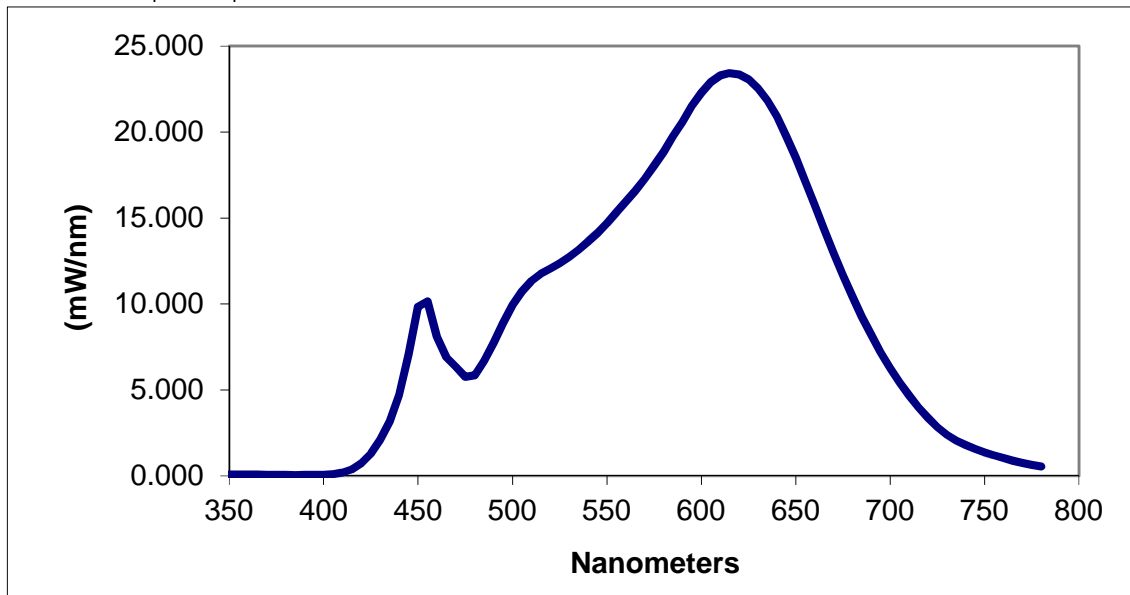
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.097	460	8.110	570	17.286	680	10.433
355	0.089	465	6.902	575	18.049	685	9.265
360	0.087	470	6.359	580	18.840	690	8.195
365	0.082	475	5.770	585	19.748	695	7.194
370	0.080	480	5.866	590	20.588	700	6.267
375	0.074	485	6.697	595	21.518	705	5.450
380	0.069	490	7.762	600	22.278	710	4.693
385	0.061	495	8.883	605	22.893	715	4.003
390	0.063	500	9.952	610	23.298	720	3.376
395	0.063	505	10.741	615	23.423	725	2.836
400	0.075	510	11.338	620	23.344	730	2.405
405	0.110	515	11.751	625	23.063	735	2.067
410	0.197	520	12.047	630	22.524	740	1.799
415	0.387	525	12.372	635	21.838	745	1.578
420	0.743	530	12.733	640	20.901	750	1.381
425	1.297	535	13.145	645	19.760	755	1.202
430	2.096	540	13.630	650	18.512	760	1.039
435	3.182	545	14.111	655	17.153	765	0.891
440	4.695	550	14.687	660	15.754	770	0.762
445	7.081	555	15.319	665	14.357	775	0.649
450	9.839	560	15.960	670	12.973	780	0.553
455	10.154	565	16.573	675	11.675		

*Without correction of sample absorption.



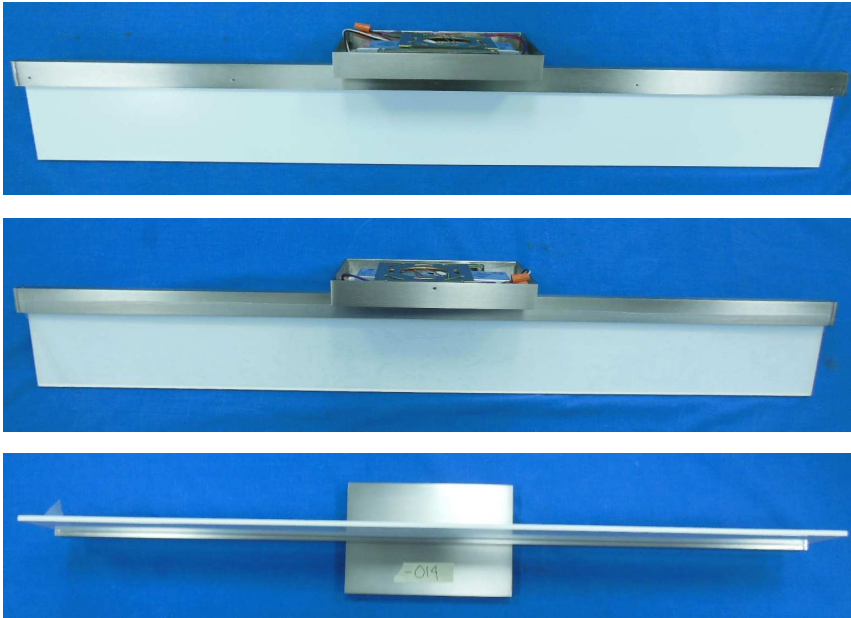
End Of Test Results

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PICTURES



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:

Tim Quigley

Timothy Quigley
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Report Reviewed By:

Hector Huitron

Hector Huitron
Associate Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				