

# PURE EDGE LIGHTING

## TEST REPORT

### SCOPE OF WORK

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

### MODEL NUMBER

CST1-7W-4S-36-30K-SN

### REPORT NUMBER

102602453CHI-037

### ISSUE DATE

June 4, 2018

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**REPORT NO.:102602453CHI-037**

**REPORT DATE: June 4, 2018**

**TEST REPORT**

**TEST OF ONE LINEAR LED FIXTURE**

**MODEL NO. CST1-7W-4S-36-30K-SN**  
**LED MODEL NO. LUMILED/SS7CL-12MM-24VDC-C-30K**  
**DRIVER MODEL NO. MEANWELL APV-16-24**

**RENDERED TO:**

**PURE EDGE LIGHTING**  
**1718 WEST FULLERTON**  
**CHICAGO, IL 60614**

**AUTHORIZATION**

The testing performed was authorized by signed quote number Qu-00685500-1.

**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 CST1-7W-4S-36-30K-SN. The sample was received by Intertek on May 17, 2018 in undamaged condition and one sample was tested as received. The sample designation was AH05172018024639-037.

**DATE OF TESTS**

May 30, 2018 through May 31, 2018.

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**REPORT DATE: June 4, 2018**

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**SUMMARY**

<b>MODEL NO:</b>	CST1-7W-4S-36-30K-SN
<b>DESCRIPTION:</b>	Linear LED fixture

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1966.8	1938.2
Input Power (W) @ 120 (VAC)	24.08	24.036
Lumen Efficacy (lm/W)	81.7	80.6
Input Power Factor ( ) @ 120 (VAC)	0.992	0.992

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	10.31
Correlated Color Temperature (K)	2999
Color Rendering Index - Ra ( )	97.0
Color Rendering - R9 ( )	88.0
DUV ( )	0.0038
Chromaticity Coordinate (x)	0.432
Chromaticity Coordinate (y)	0.393
Chromaticity Coordinate (u')	0.252
Chromaticity Coordinate (v')	0.516

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**EQUIPMENT LIST**

<b>EQUIPMENT USED</b>	<b>MODEL NO.</b>	<b>CONTROL NO.</b>	<b>LAST CAL DATE</b>	<b>CAL DUE DATE</b>
Yokogawa Power Meter	WT210	146919	7/10/2017	7/10/2018
Omega Newport Thermometer	DPI8-C24	146920	10/4/2017	10/4/2018
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
Newport Thermohygrometer	iServer	146957	11/17/2017	11/17/2018
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU
Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBU	VBU
Elgar AC Power Supply	CW1251M	146113	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146847	VBU	VBU
Yokogawa Power Analyzer	WT1600	146767	4/5/2018	4/5/2019
Omega Temperature	MDSi8	146873	7/20/2017	7/20/2018
Newport Thermohygrometer	iTHX-M	146382	7/14/2017	7/14/2018

**TEST REPORT**

**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.

**TEST REPORT**

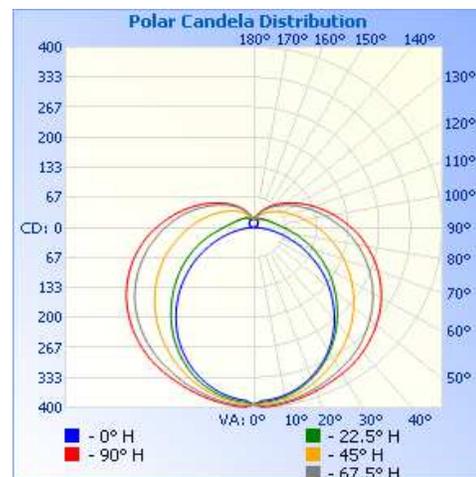
**RESULTS OF TESTS**

**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)
AH05172018024639-037	Base Up	120.1	201.9	24.036	0.992	1938.2	80.6

**INTENSITY SUMMARY - CANDELAS**

Angle	0	22.5	45	67.5	90
0	393	393	393	393	393
5	384	388	391	396	399
10	378	382	387	392	396
15	368	371	379	387	391
20	354	358	368	380	386
25	337	340	356	372	380
30	317	320	342	365	375
35	293	298	327	356	369
40	267	275	312	346	360
45	238	251	295	334	350
50	210	226	277	321	339
55	180	202	259	307	327
60	150	178	240	292	313
65	120	154	221	276	297
70	90	132	203	259	281
75	63	111	185	242	263
80	37	92	168	224	245
85	16	76	152	207	226
90	3	63	136	188	207
95	3	54	121	169	188
100	3	47	108	153	170
105	4	42	97	137	152
110	5	38	86	123	136
115	6	35	77	110	121
120	8	32	69	98	107
125	9	30	62	87	95
130	11	28	55	77	84
135	13	26	49	68	74
140	14	24	43	59	65
145	16	23	38	51	56
150	16	21	33	44	48
155	17	20	29	37	41
160	18	18	26	31	34
165	19	17	22	25	28
170	19	17	19	21	23
175	19	18	17	17	19
180	19	19	19	19	19



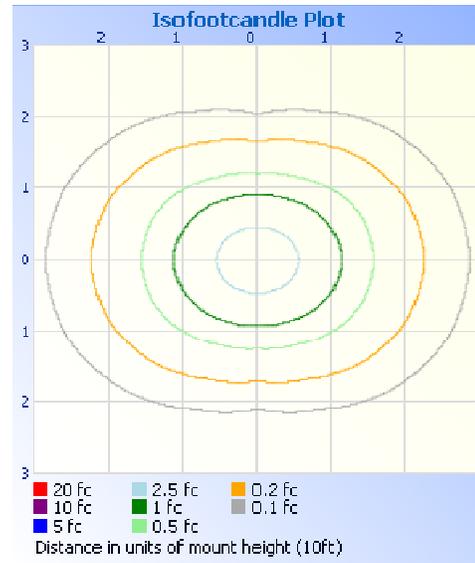
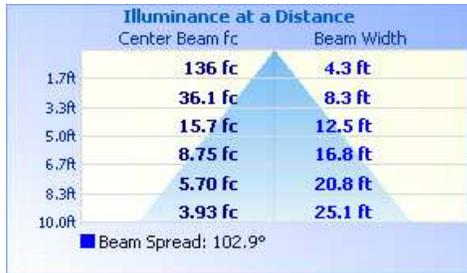
**TEST REPORT**

**RESULTS OF TESTS**

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

**MOUNTING HEIGHT: 10ft**

ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT
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**ZONAL LUMEN SUMMARY AND PERCENTAGES**

ZONE	LUMENS	% LUMINAIRE
0-30	308.4	15.9
0-40	513.2	26.5
0-60	966.6	49.9
60-90	548.4	28.3
70-100	456.9	23.6
90-120	287.5	14.8
0-90	1515.0	78.2
90-180	423.2	21.8
0-180	1938.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	37.2	1.9
10-20	106.9	5.5
20-30	164.3	8.5
30-40	204.8	10.6
40-50	225.8	11.6
50-60	227.6	11.7
60-70	212.5	11.0
70-80	184.7	9.5
80-90	151.2	7.8
90-100	121.0	6.2
100-110	94.8	4.9
110-120	71.8	3.7
120-130	52.5	2.7
130-140	36.7	1.9
140-150	24.0	1.2
150-160	14.0	0.7
160-170	6.6	0.3
170-180	1.8	0.1

**TEST REPORT**

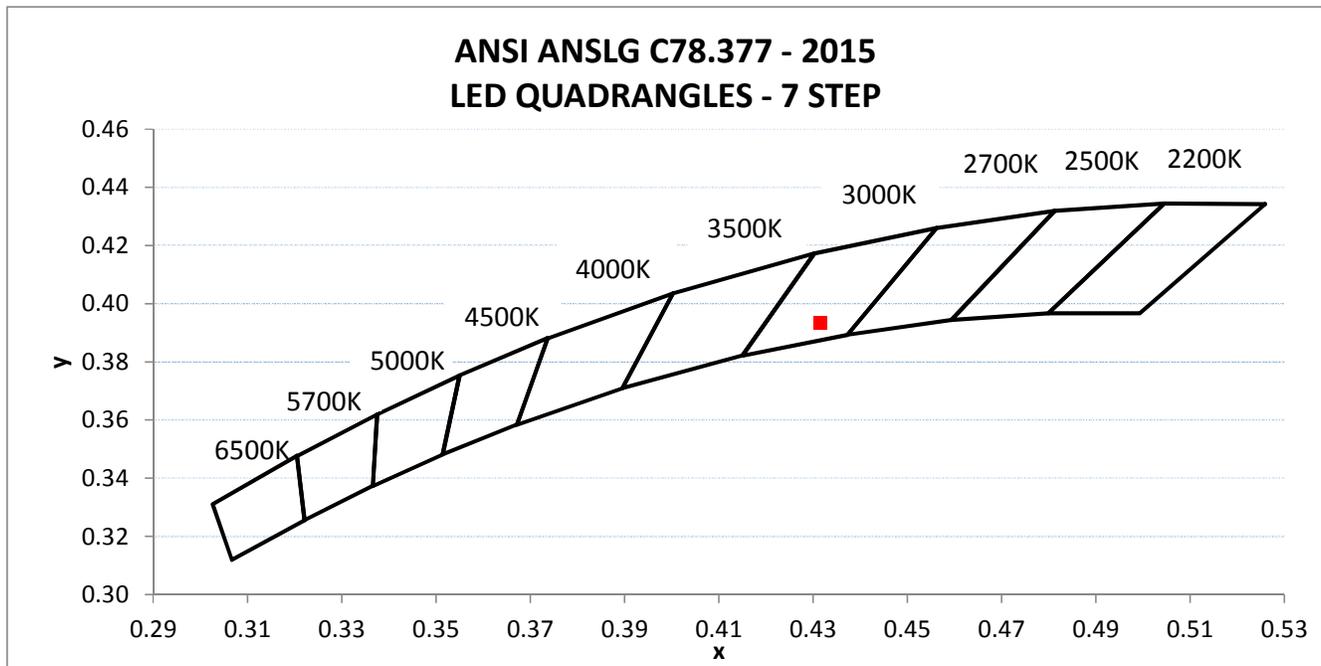
**RESULTS OF TESTS**

**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 (%)
AH05172018024639-037	Base Up	119.98	202.34	24.08	0.992	10.31

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1966.8	81.7	2999	97.0	88.0	0.0038

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.432	0.393	0.252	0.516



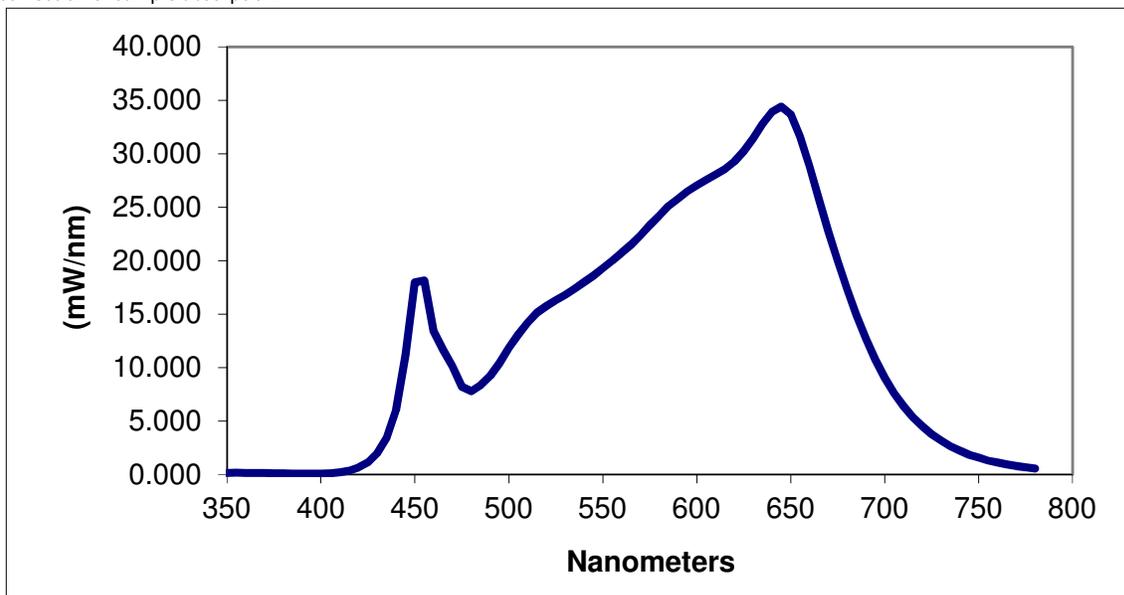
**TEST REPORT**

**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	0.149	460	13.434	570	22.392	680	17.317
355	0.165	465	11.664	575	23.336	685	14.896
360	0.157	470	10.133	580	24.233	690	12.707
365	0.143	475	8.202	585	25.106	695	10.762
370	0.137	480	7.786	590	25.808	700	9.052
375	0.114	485	8.357	595	26.502	705	7.612
380	0.107	490	9.216	600	27.068	710	6.386
385	0.086	495	10.426	605	27.566	715	5.363
390	0.090	500	11.864	610	28.064	720	4.512
395	0.083	505	13.107	615	28.579	725	3.778
400	0.098	510	14.238	620	29.280	730	3.167
405	0.119	515	15.150	625	30.244	735	2.643
410	0.204	520	15.766	630	31.432	740	2.214
415	0.355	525	16.309	635	32.791	745	1.855
420	0.641	530	16.820	640	33.937	750	1.564
425	1.134	535	17.375	645	34.414	755	1.315
430	1.991	540	18.016	650	33.699	760	1.115
435	3.449	545	18.605	655	31.608	765	0.939
440	6.021	550	19.302	660	28.801	770	0.790
445	11.175	555	19.999	665	25.826	775	0.667
450	17.973	560	20.739	670	22.773	780	0.569
455	18.158	565	21.491	675	19.993		

\*Without correction of sample absorption.



**End Of Test Results**

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**TEST REPORT**

**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:

*Tess Gallagher*

Tess Gallagher  
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Report Reviewed By:

*Tim Quigley*

Timothy Quigley  
Engineer  
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Attachments: IES File

**REVISION HISTORY**

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