

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

CSDH-5W-4S-36-30K-SN

REPORT NUMBER

102602453CHI-024

ISSUE DATE

June 4, 2018

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST REPORT

TEST OF ONE LINEAR LED FIXTURE

MODEL NO. CSDH-5W-4S-36-30K-SN
LED MODEL NO. LUMILED/SS5CL-12MM-24VDC-C-30K
DRIVER MODEL NO. MEANWELL APV-16-30

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 CSDH-5W-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 AH05172018024639-024.

DATE OF TESTS

May 29, 2018 through May 30, 2018.

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SUMMARY

MODEL NO:	CSDH-5W-4S-36-30K-SN
DESCRIPTION:	Linear LED fixture

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1121.7	1100.8
Input Power (W) @ 120 (VAC)	18.00	17.969
Lumen Efficacy (lm/W)	62.3	61.3
Input Power Factor () @ 120 (VAC)	0.518	0.501

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	83.52
Correlated Color Temperature (K)	2920
Color Rendering Index - Ra ()	96.8
Color Rendering - R9 ()	86.9
DUV ()	0.0035
Chromaticity Coordinate (x)	0.438
Chromaticity Coordinate (y)	0.397
Chromaticity Coordinate (u')	0.255
Chromaticity Coordinate (v')	0.519

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
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	VBV	VBV
Newport Thermohygrometer	iServer	146957	11/17/2017	11/17/2018
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV
Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBV	VBV
Elgar AC Power Supply	CW1251M	146113	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV
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

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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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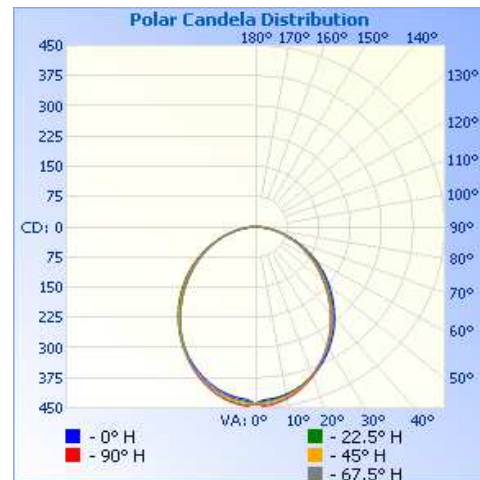
RESULTS OF TESTS

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)
AH05172018024639-024	Base Up	120.1	298.6	17.969	0.501	1100.8	61.3

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	439	439	439	439	439
5	429	432	436	440	443
10	422	424	426	430	433
15	410	410	412	414	417
20	394	392	392	394	396
25	374	369	369	368	370
30	349	343	342	340	342
35	322	315	313	310	311
40	292	285	282	278	279
45	260	254	250	246	246
50	230	222	217	214	213
55	198	191	186	182	181
60	165	159	155	151	150
65	132	128	124	122	121
70	101	97	95	93	93
75	70	68	67	67	67
80	42	40	42	43	43
85	17	17	20	22	23
90	0	0	0	0	0



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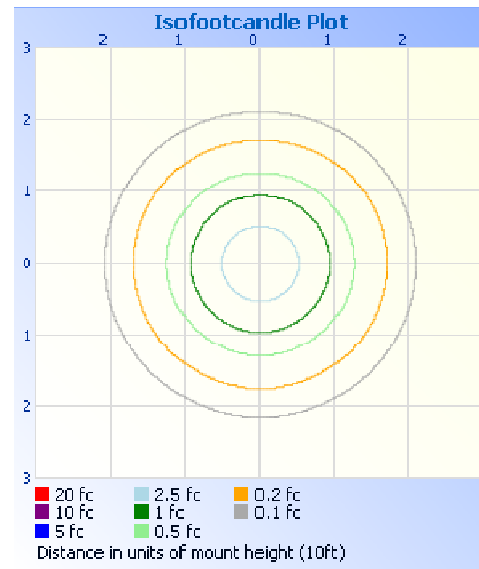
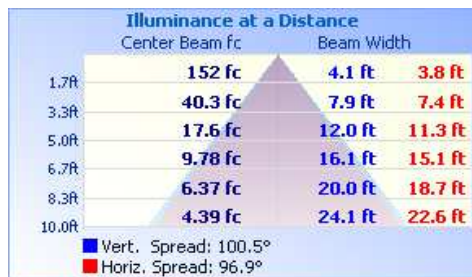
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RESULTS OF TESTS

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	327.3	29.7
0-40	523.1	47.5
0-60	883.1	80.2
60-90	217.7	19.8
70-100	93.9	8.5
90-120	0.0	0.0
0-90	1100.8	100.0
90-180	0.0	0.0
0-180	1100.8	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	41.3	3.8
10-20	116.1	10.5
20-30	169.9	15.4
30-40	195.8	17.8
40-50	193.0	17.5
50-60	167.0	15.2
60-70	123.8	11.2
70-80	71.6	6.5
80-90	22.3	2.0

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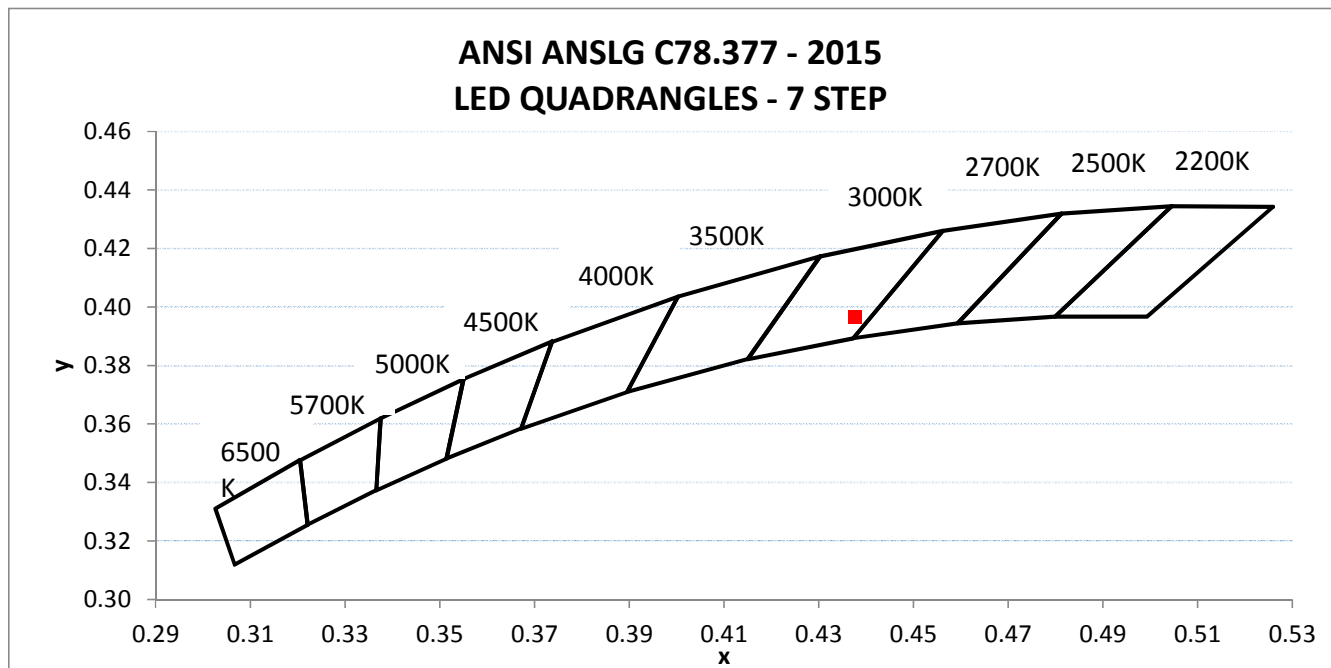
RESULTS OF TESTS

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 (%)
AH05172018024639-024	Base Up	119.98	289.66	18.00	0.518	83.52

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1121.7	62.3	2920	96.8	86.9	0.0035

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.438	0.397	0.255	0.519



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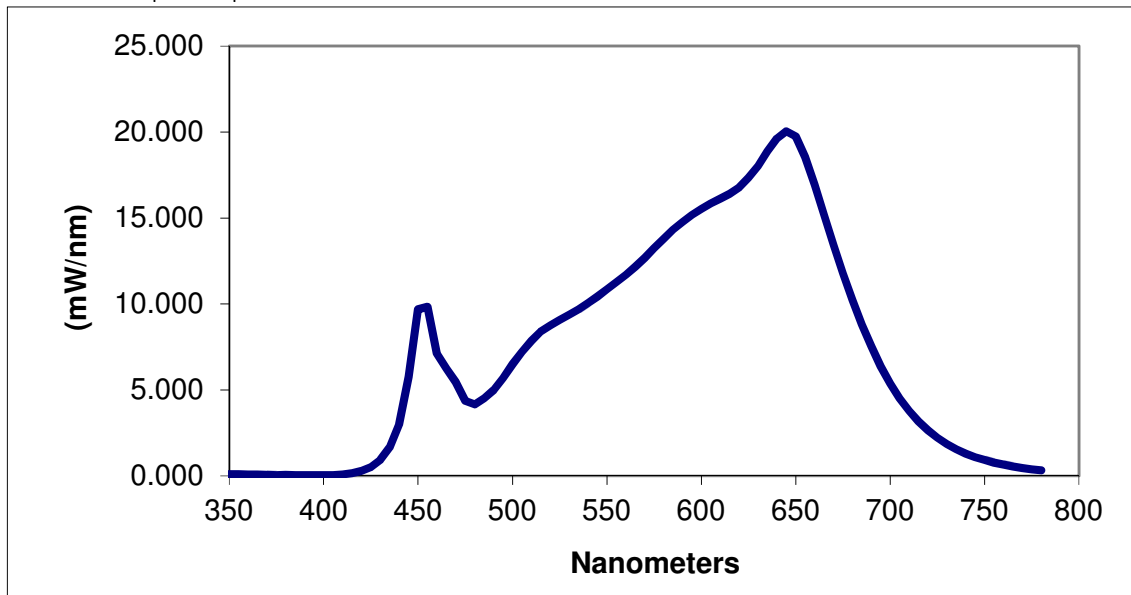
TEST REPORT

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	0.103	460	7.127	570	12.684	680	10.228
355	0.100	465	6.248	575	13.243	685	8.819
360	0.099	470	5.467	580	13.787	690	7.525
365	0.085	475	4.377	585	14.326	695	6.383
370	0.073	480	4.173	590	14.762	700	5.373
375	0.062	485	4.526	595	15.187	705	4.522
380	0.066	490	5.006	600	15.541	710	3.793
385	0.051	495	5.687	605	15.842	715	3.181
390	0.054	500	6.504	610	16.129	720	2.667
395	0.048	505	7.221	615	16.406	725	2.229
400	0.055	510	7.876	620	16.782	730	1.861
405	0.061	515	8.398	625	17.333	735	1.558
410	0.095	520	8.760	630	18.024	740	1.304
415	0.160	525	9.081	635	18.889	745	1.097
420	0.289	530	9.365	640	19.632	750	0.921
425	0.517	535	9.696	645	20.039	755	0.775
430	0.933	540	10.067	650	19.737	760	0.659
435	1.664	545	10.429	655	18.551	765	0.553
440	2.985	550	10.853	660	16.926	770	0.466
445	5.766	555	11.269	665	15.188	775	0.391
450	9.687	560	11.704	670	13.426	780	0.333
455	9.841	565	12.158	675	11.794		

*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:

Tess Gallagher

Tess Gallagher
Engineer
Lighting Division

Report Reviewed By:

Tim Quigley

Timothy Quigley
Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

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