

# PURE EDGE LIGHTING

## TEST REPORT

### SCOPE OF WORK

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

### MODEL NUMBER

CSDH-10W-4S-36-30K-SN

### REPORT NUMBER

102602453CHI-026

### ISSUE DATE

June 4, 2018

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**REPORT DATE: June 4, 2018**

**TEST REPORT**

**TEST OF ONE LINEAR LED FIXTURE**

MODEL NO. CSDH-10W-4S-36-30K-SN  
LED MODEL NO. LUMILED/SSCL-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 CSDH-10W-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 AH05172018024639-026.

**DATE OF TESTS**

May 29, 2018 through May 30, 2018.

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**SUMMARY**

<b>MODEL NO:</b>	CSDH-10W-4S-36-30K-SN
<b>DESCRIPTION:</b>	Linear LED fixture

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1944.7	1898.6
Input Power (W) @ 120 (VAC)	30.54	30.479
Lumen Efficacy (lm/W)	63.7	62.3
Input Power Factor ( ) @ 120 (VAC)	0.991	0.990

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	11.93
Correlated Color Temperature (K)	2905
Color Rendering Index - Ra ( )	96.5
Color Rendering - R9 ( )	84.9
DUV ( )	0.0038
Chromaticity Coordinate (x)	0.439
Chromaticity Coordinate (y)	0.396
Chromaticity Coordinate (u')	0.255
Chromaticity Coordinate (v')	0.518

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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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TEST REPORT

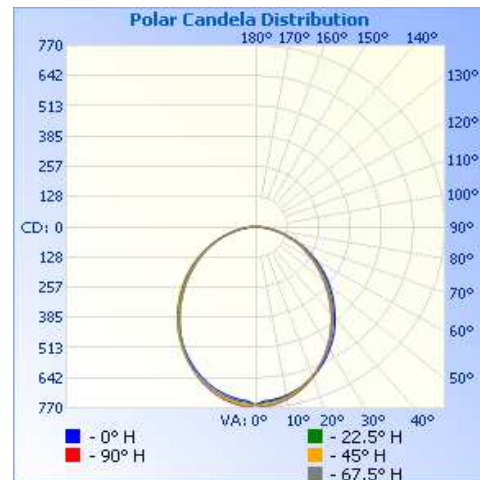
RESULTS OF TESTS

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)
AH05172018024639-026	Base Up	119.9	256.8	30.479	0.990	1898.6	62.3

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	756	756	756	756	756
5	739	745	751	759	760
10	727	730	735	741	743
15	707	707	710	714	716
20	678	674	676	678	680
25	644	636	636	635	637
30	601	591	589	586	588
35	555	542	539	534	536
40	502	490	485	479	481
45	448	436	430	423	425
50	395	382	375	368	369
55	341	328	320	314	314
60	285	274	267	260	260
65	230	220	215	210	209
70	175	168	164	161	161
75	122	117	116	115	115
80	74	70	72	75	75
85	32	30	35	40	41
90	0	0	0	0	0



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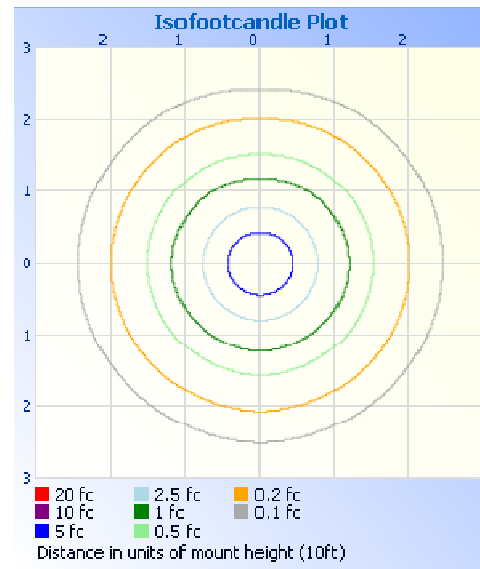
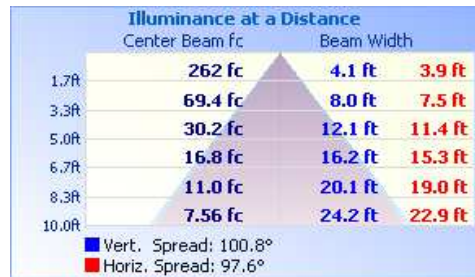
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**RESULTS OF TESTS**

**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	564.1	29.7
0-40	901.6	47.5
0-60	1522.4	80.2
60-90	376.2	19.8
70-100	162.7	8.6
90-120	0.0	0.0
0-90	1898.6	100.0
90-180	0.0	0.0
0-180	1898.6	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	71.2	3.7
10-20	200.0	10.5
20-30	292.9	15.4
30-40	337.5	17.8
40-50	332.8	17.5
50-60	288.1	15.2
60-70	213.5	11.2
70-80	123.5	6.5
80-90	39.2	2.1

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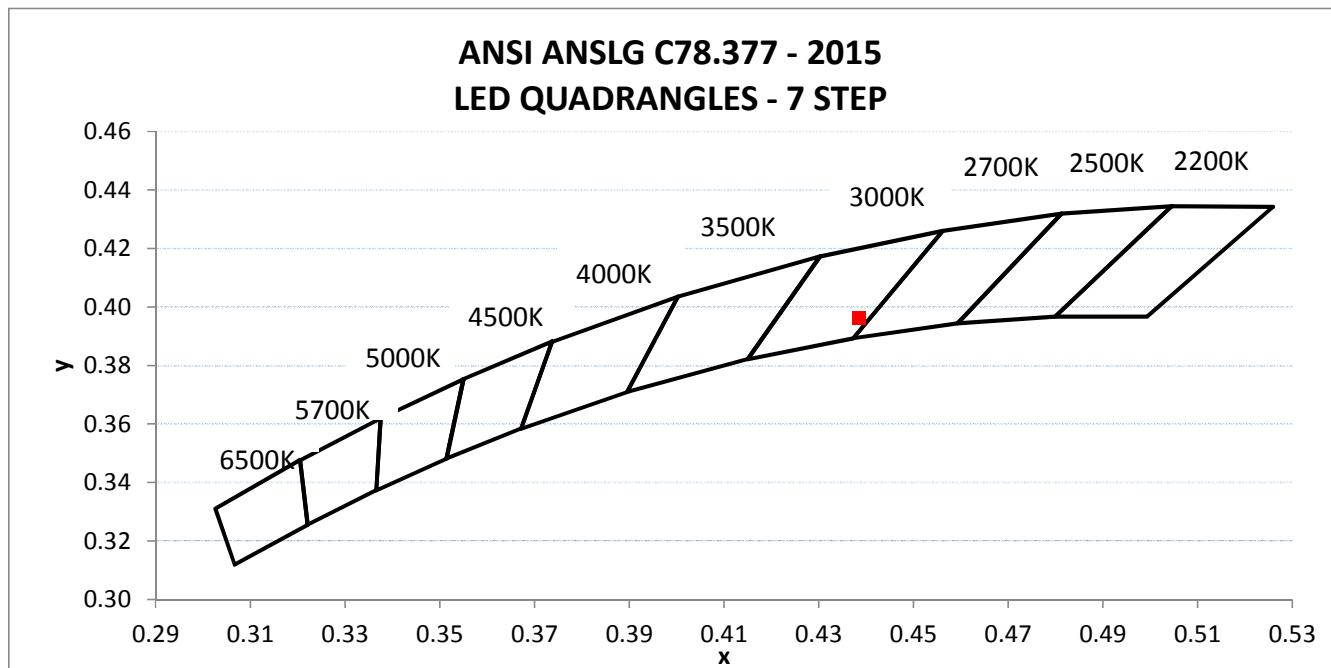
RESULTS OF TESTS

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 (%)
AH05172018024639-026	Base Up	120.02	256.98	30.54	0.991	11.93

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1944.7	63.7	2905	96.5	84.9	0.0038

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.439	0.396	0.255	0.518





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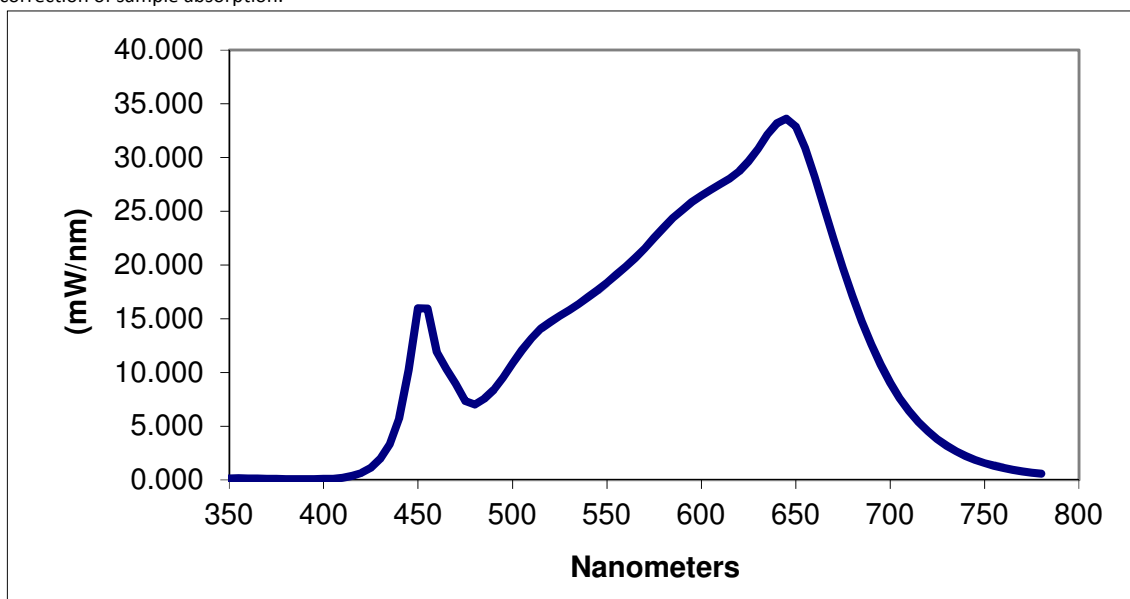
TEST REPORT

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	0.155	460	11.915	570	21.551	680	17.121
355	0.161	465	10.334	575	22.531	685	14.756
360	0.149	470	8.964	580	23.474	690	12.630
365	0.150	475	7.338	585	24.362	695	10.733
370	0.128	480	7.010	590	25.113	700	9.054
375	0.113	485	7.555	595	25.862	705	7.631
380	0.095	490	8.376	600	26.463	710	6.416
385	0.096	495	9.521	605	26.995	715	5.389
390	0.085	500	10.870	610	27.515	720	4.529
395	0.093	505	12.076	615	28.039	725	3.793
400	0.101	510	13.172	620	28.715	730	3.175
405	0.127	515	14.072	625	29.656	735	2.669
410	0.208	520	14.699	630	30.802	740	2.238
415	0.372	525	15.268	635	32.151	745	1.882
420	0.653	530	15.804	640	33.181	750	1.588
425	1.139	535	16.364	645	33.617	755	1.339
430	1.954	540	17.036	650	32.889	760	1.138
435	3.318	545	17.661	655	30.895	765	0.954
440	5.702	550	18.372	660	28.205	770	0.805
445	10.244	555	19.102	665	25.342	775	0.682
450	15.969	560	19.849	670	22.426	780	0.577
455	15.950	565	20.639	675	19.717		

\*Without correction of sample absorption.



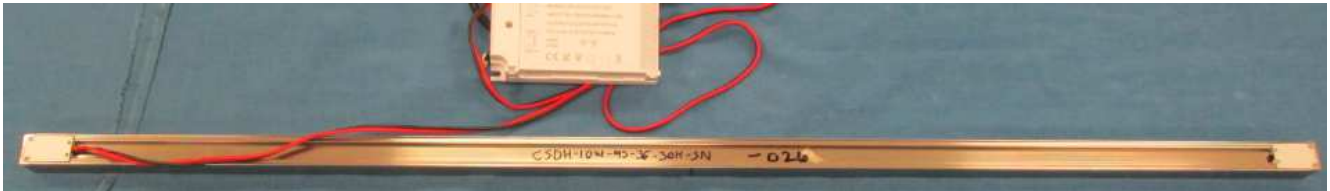
End Of Test Results

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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*

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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				