

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

NSUDCW-12W-4S-36-30K-SN_UP

REPORT NUMBER

103597691CHI-019

ISSUE DATE

August 20, 2018

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST REPORT

REPORT NO.: 103597691CHI-019

REPORT DATE: August 20, 2018

TEST OF ONE LINEAR LED SUSPENSION

MODEL NO. NSUDCW-12W-4S-36-30K-SN_UP
LED MODEL NO. SS5CL-12MM-24VDC-36-30K
DRIVER MODEL NO. HUARI /DR24V-2300-70D

RENDERED TO:

PURE EDGE LIGHTING
1718 WEST FULLERTON
CHICAGO, IL 60614

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00901421-1.

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 NSUDCW-12W-4S-36-30K-SN_UP. The sample was received by Intertek on August 1, 2018 in undamaged condition and one sample was tested as received. The sample designation was AH08012018090709-19.

DATE OF TESTS

August 10, 2018

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SUMMARY

MODEL NO:	NSUDCW-12W-4S-36-30K-SN_UP
DESCRIPTION:	LINEAR LED SUSPENSION

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	911.3	933.2
Input Power (W) @ 120 (VAC)	17.25	17.25
Lumen Efficacy (lm/W)	52.8	54.1
Input Power Factor () @ 120 (VAC)	0.977	0.976

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	14.86
Correlated Color Temperature (K)	3028
Color Rendering Index - Ra ()	97.1
Color Rendering - R9 ()	88.1
DUV ()	0.0030
Chromaticity Coordinate (x)	0.431
Chromaticity Coordinate (y)	0.395
Chromaticity Coordinate (u')	0.251
Chromaticity Coordinate (v')	0.517

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/9/2018	7/9/2019
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 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	146379	4/16/2018	4/16/2019
Yokogawa Power Meter	WT1600	146769	4/6/2018	4/6/2019
Extech K Temperature Meter	SD200	CHI0207	4/12/2018	4/12/2019

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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

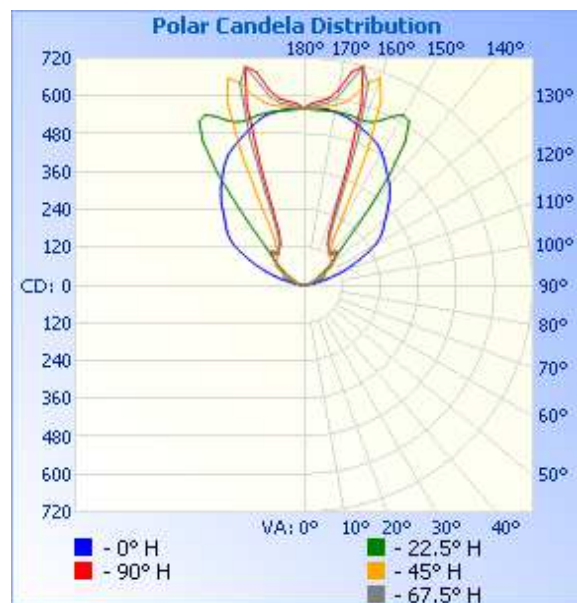
RESULTS OF TESTS

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)
AH08012018090709-19	Base Up	120.1	147.2	17.25	0.976	933.2	54.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	0	0	0	0	0
5	0	0	0	0	0
10	0	0	0	0	0
15	0	0	0	0	0
20	0	0	0	0	0
25	0	0	0	0	0
30	0	0	0	0	0
35	0	0	0	0	0
40	0	0	0	0	0
45	0	0	0	0	0
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0
95	10	3	2	2	2
100	32	13	9	7	6
105	75	33	19	16	15
110	134	56	30	28	27
115	193	68	52	37	36
120	261	77	83	56	49
125	303	90	109	92	81
130	337	118	113	122	118
135	380	168	121	140	148
140	418	322	126	126	134
145	450	554	152	138	142
150	487	624	219	155	149
155	512	578	475	214	190
160	529	554	699	497	396
165	548	558	626	716	719
170	559	560	581	606	629
175	564	558	568	576	586
180	563	563	563	563	563



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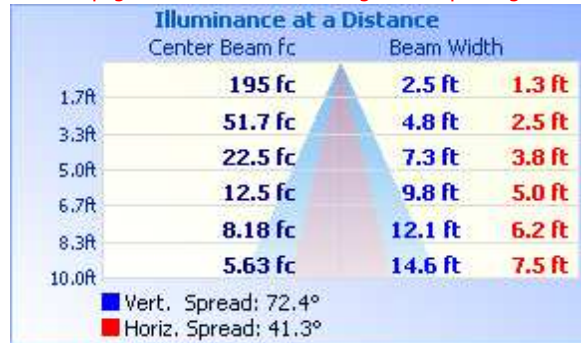
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RESULTS OF TESTS

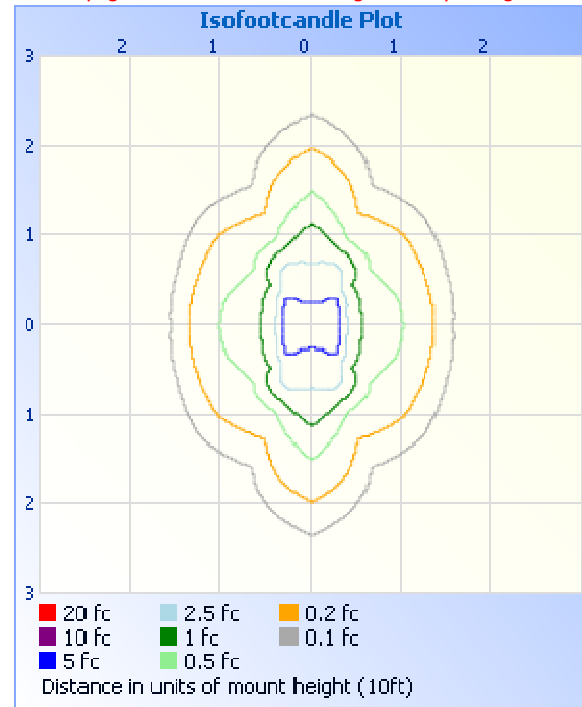
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

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

Uplight results rotated 180 degrees for plotting



Uplight results rotated 180 degrees for plotting



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	0.0	0.0
0-40	0.0	0.0
0-60	0.0	0.0
60-90	0.0	0.0
70-100	4.6	0.5
90-120	102.8	11.0
0-90	0.0	0.0
90-180	933.2	100.0
0-180	933.2	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	0.0	0.0
10-20	0.0	0.0
20-30	0.0	0.0
30-40	0.0	0.0
40-50	0.0	0.0
50-60	0.0	0.0
60-70	0.0	0.0
70-80	0.0	0.0
80-90	0.0	0.0
90-100	4.6	0.5
100-110	30.3	3.2
110-120	68.0	7.3
120-130	106.7	11.4
130-140	133.8	14.3
140-150	173.2	18.6
150-160	190.1	20.4
160-170	171.8	18.4
170-180	54.8	5.9

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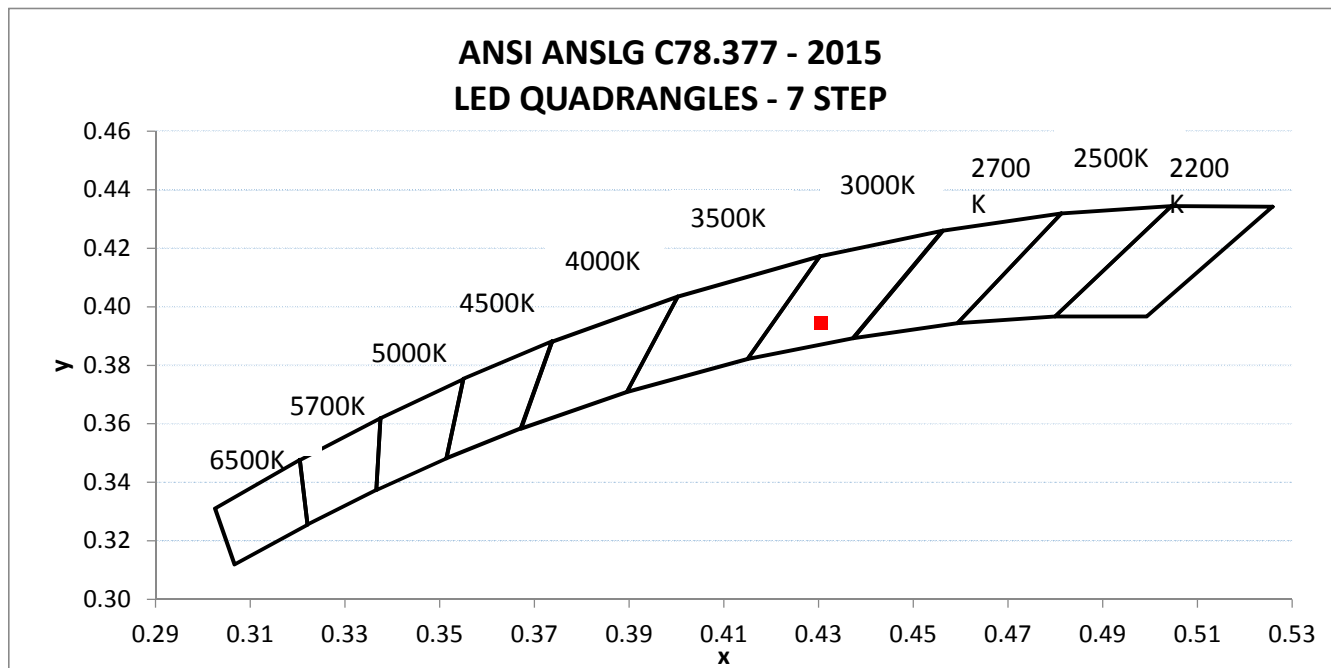
RESULTS OF TESTS

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 (%)
AH08012018090709-19	Base Up	120.02	147.17	17.25	0.977	14.86

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
911.3	52.8	3028	97.1	88.1	0.0030

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.431	0.395	0.251	0.517



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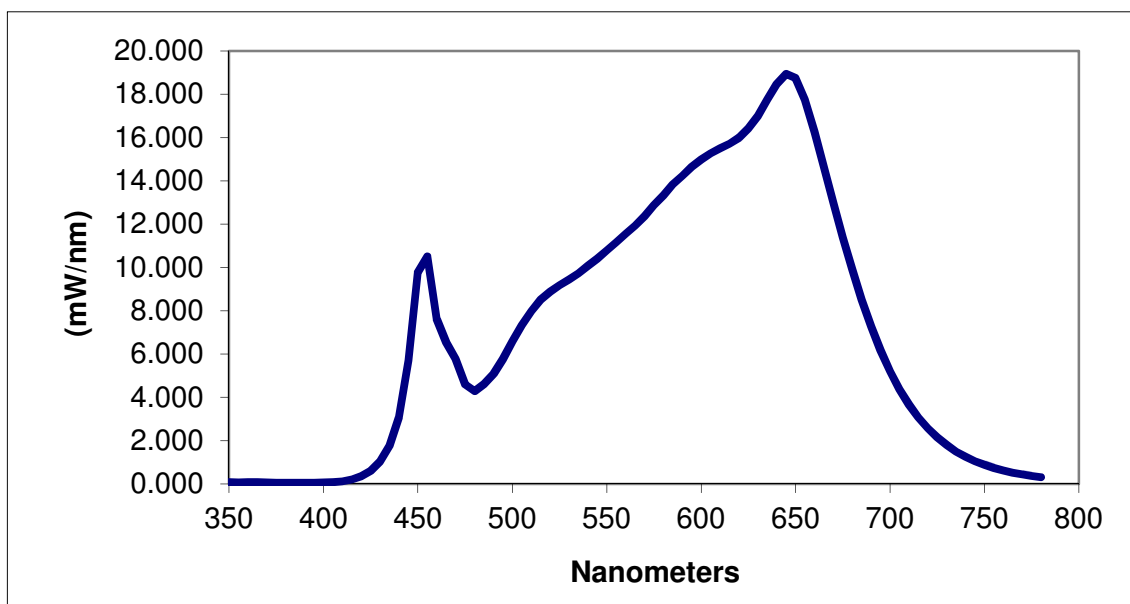
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RESULTS OF TESTS

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	0.070	460	7.629	570	12.380	680	9.898
355	0.062	465	6.527	575	12.872	685	8.519
360	0.071	470	5.786	580	13.339	690	7.281
365	0.071	475	4.604	585	13.833	695	6.178
370	0.056	480	4.288	590	14.228	700	5.204
375	0.051	485	4.611	595	14.655	705	4.380
380	0.050	490	5.093	600	14.993	710	3.666
385	0.047	495	5.764	605	15.268	715	3.074
390	0.048	500	6.592	610	15.510	720	2.579
395	0.050	505	7.330	615	15.715	725	2.158
400	0.058	510	7.980	620	15.993	730	1.804
405	0.078	515	8.518	625	16.419	735	1.501
410	0.123	520	8.882	630	16.998	740	1.257
415	0.210	525	9.178	635	17.757	745	1.051
420	0.358	530	9.441	640	18.477	750	0.882
425	0.606	535	9.722	645	18.935	755	0.741
430	1.031	540	10.075	650	18.749	760	0.620
435	1.778	545	10.402	655	17.748	765	0.522
440	3.070	550	10.791	660	16.258	770	0.440
445	5.714	555	11.166	665	14.649	775	0.370
450	9.770	560	11.558	670	12.980	780	0.314
455	10.516	565	11.926	675	11.399		

*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:

Hector Huitron
Associate Engineer
Lighting Division

Report Reviewed By:

Timothy Quigley
Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

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