

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_UPDOWN

REPORT NUMBER

103597691CHI-021

ISSUE DATE

August 20, 2018

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST REPORT

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TEST OF ONE LINEAR LED SUSPENSION

MODEL NO. NSUDCW-12W-4S-36-30K-SN_UPDOWN
LED MODEL NO. SS5CL-12MM-24VDC-36-30K, SS7CL-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_UPDOWN. The sample was received by Intertek on August 1, 2018 in undamaged condition and one sample was tested as received. The sample designation was AH08012018090709-21.

DATE OF TESTS

August 9, 2018 through August 10, 2018.

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SUMMARY

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

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1926.4	1919.3
Input Power (W) @ 120 (VAC)	42.57	42.537
Lumen Efficacy (lm/W)	45.3	45.1
Input Power Factor @ 120 (VAC)	0.984	0.984

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	13.16
Correlated Color Temperature (K)	3016
Color Rendering Index - Ra	97.0
Color Rendering - R9	87.9
DUV	0.0033
Chromaticity Coordinate (x)	0.431
Chromaticity Coordinate (y)	0.394
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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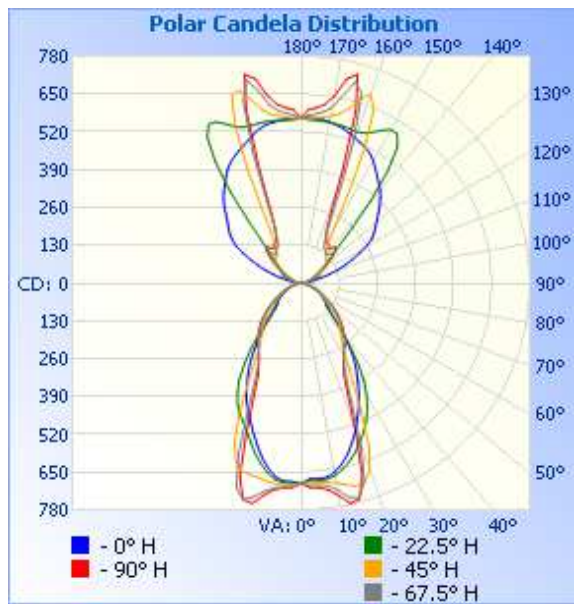
RESULTS OF TESTS

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)
AH08012018090709-21	Base Up	120.1	360.2	42.537	0.984	1919.3	45.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	690	690	690	690	690
5	675	682	688	696	706
10	660	672	698	723	742
15	610	636	721	763	770
20	541	584	686	597	546
25	467	526	489	367	348
30	387	448	313	292	289
35	311	341	244	257	261
40	223	216	207	229	222
45	140	148	180	191	196
50	110	116	139	157	157
55	95	102	105	124	123
60	76	85	83	93	94
65	59	66	65	66	68
70	45	48	46	41	42
75	32	33	30	24	11
80	21	19	17	12	2
85	10	8	7	4	1
90	1	1	1	2	1
95	10	4	4	6	6
100	30	15	10	11	12
105	72	35	21	20	23
110	131	58	31	32	37
115	192	68	55	42	49
120	260	77	87	62	64
125	304	93	112	98	97
130	338	122	112	130	137
135	380	187	122	144	168
140	419	371	130	131	156
145	452	574	158	142	163
150	490	610	243	161	170
155	516	572	515	230	210
160	533	554	692	530	418
165	552	559	621	717	744
170	563	561	584	614	654
175	568	562	571	585	606
180	571	571	571	571	571



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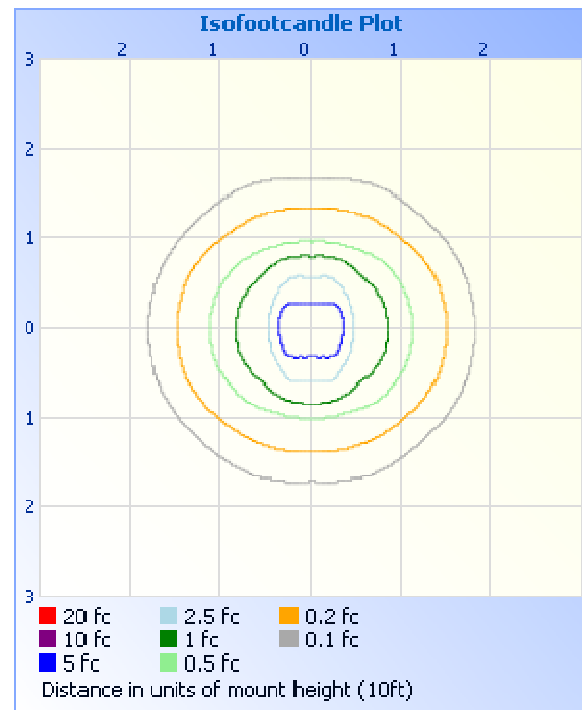
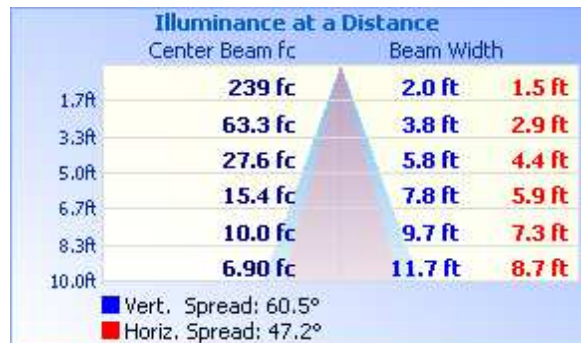
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RESULTS OF TESTS

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	462.3	24.1
0-40	635.8	33.1
0-60	864.6	45.0
60-90	100.2	5.2
70-100	42.5	2.2
90-120	108.9	5.7
0-90	964.8	50.3
90-180	954.5	49.7
0-180	1919.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	66.2	3.4
10-20	189.6	9.9
20-30	206.5	10.8
30-40	173.5	9.0
40-50	131.4	6.8
50-60	97.4	5.1
60-70	63.7	3.3
70-80	29.5	1.5
80-90	7.0	0.4
90-100	6.0	0.3
100-110	32.3	1.7
110-120	70.6	3.7
120-130	110.0	5.7
130-140	137.8	7.2
140-150	175.2	9.1
150-160	193.1	10.1
160-170	174.0	9.1
170-180	55.6	2.9

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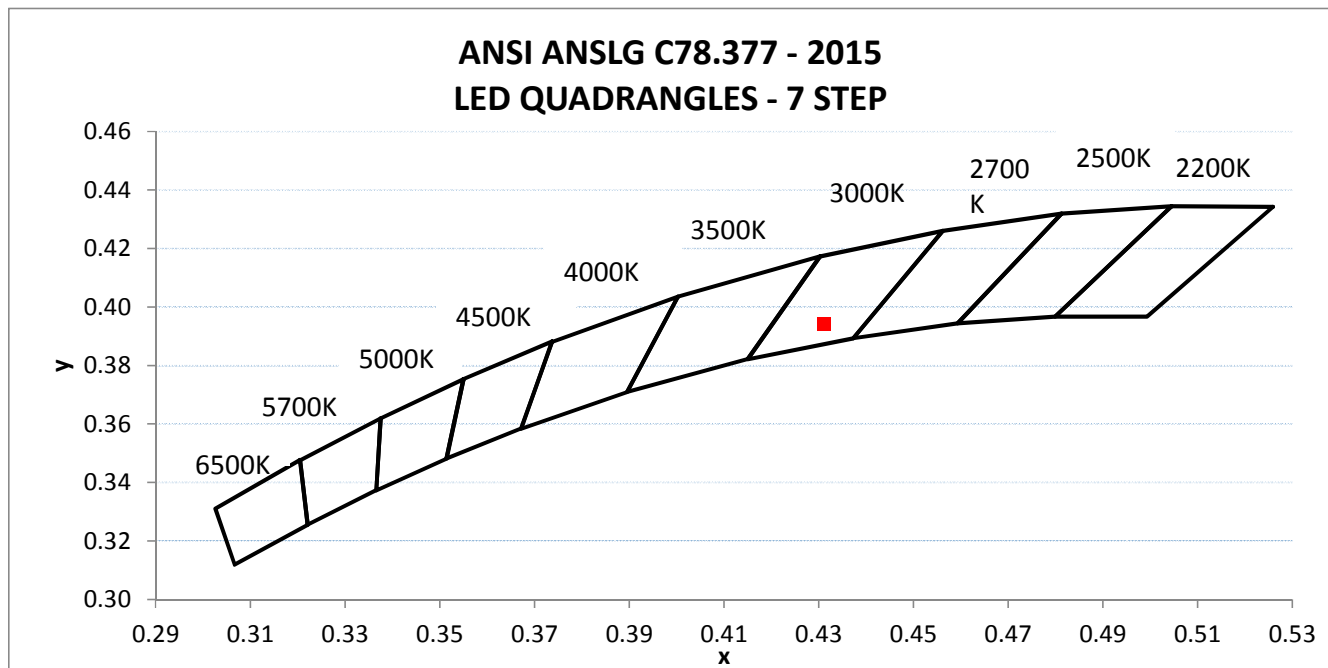
RESULTS OF TESTS

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 (%)
AH08012018090709-21	Base Up	120.09	360.20	42.57	0.984	13.16

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1926.4	45.3	3016	97.0	87.9	0.0033

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.431	0.394	0.251	0.517



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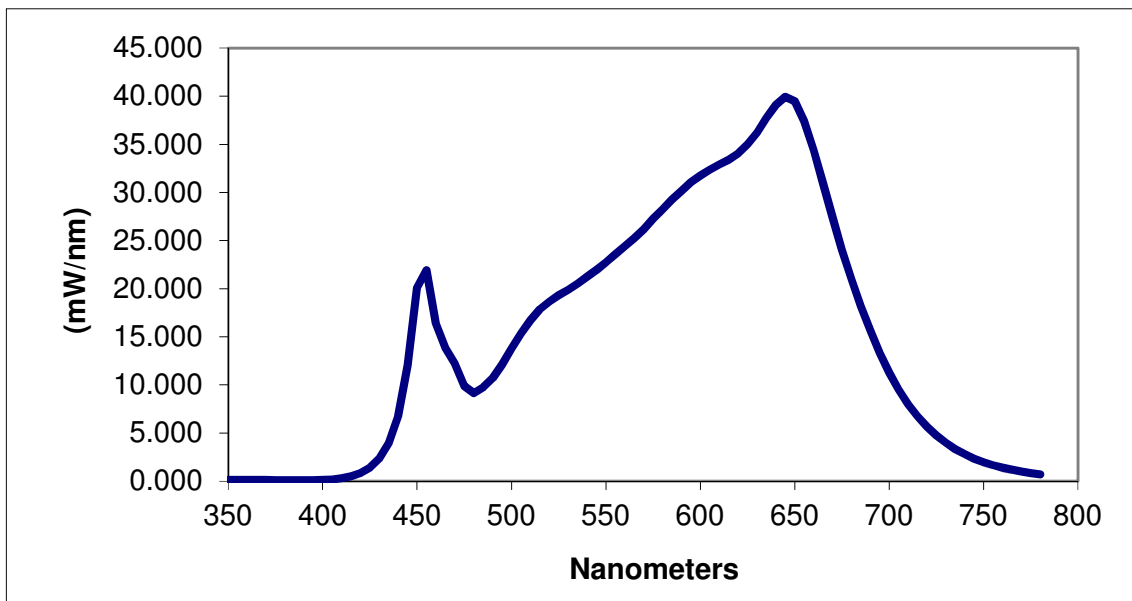
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RESULTS OF TESTS

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	0.143	460	16.384	570	26.182	680	20.995
355	0.144	465	13.852	575	27.256	685	18.197
360	0.152	470	12.244	580	28.239	690	15.651
365	0.136	475	9.889	585	29.283	695	13.350
370	0.125	480	9.137	590	30.151	700	11.282
375	0.118	485	9.747	595	31.056	705	9.516
380	0.108	490	10.703	600	31.749	710	8.001
385	0.115	495	12.092	605	32.359	715	6.741
390	0.102	500	13.798	610	32.879	720	5.657
395	0.116	505	15.341	615	33.403	725	4.753
400	0.139	510	16.730	620	34.052	730	3.986
405	0.184	515	17.878	625	34.973	735	3.337
410	0.289	520	18.657	630	36.222	740	2.788
415	0.490	525	19.328	635	37.749	745	2.339
420	0.830	530	19.884	640	39.124	750	1.975
425	1.404	535	20.524	645	39.930	755	1.666
430	2.340	540	21.257	650	39.490	760	1.405
435	3.953	545	21.958	655	37.426	765	1.184
440	6.706	550	22.766	660	34.390	770	1.004
445	12.028	555	23.583	665	30.969	775	0.846
450	20.062	560	24.416	670	27.391	780	0.716
455	21.921	565	25.232	675	24.065		

*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				