

# 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\_DOWN

### REPORT NUMBER

103597691CHI-020

### ISSUE DATE

August 20, 2018

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**TEST REPORT**

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**REPORT DATE: August 20, 2018**

**TEST OF ONE LINEAR LED SUSPENSION**

MODEL NO. NSUDCW-12W-4S-36-30K-SN\_DOWN  
LED MODEL NO. 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\_DOWN. The sample was received by Intertek on August 1, 2018 in undamaged condition and one sample was tested as received. The sample designation was AH08012018090709-20.

**DATE OF TESTS**

August 6, 2018 through August 9, 2018.

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**SUMMARY**

<b>MODEL NO:</b>	NSUDCW-12W-4S-36-30K-SN_DOWN
<b>DESCRIPTION:</b>	LINEAR LED SUSPENSION

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	965.7	961.5
Input Power (W) @ 120 (VAC)	24.94	24.94
Lumen Efficacy (lm/W)	38.7	38.6
Input Power Factor ( ) @ 120 (VAC)	0.988	0.987

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	12.41
Correlated Color Temperature (K)	3002
Color Rendering Index - Ra	97.0
Color Rendering - R9	88.1
DUV	0.0029
Chromaticity Coordinate (x)	0.433
Chromaticity Coordinate (y)	0.396
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**

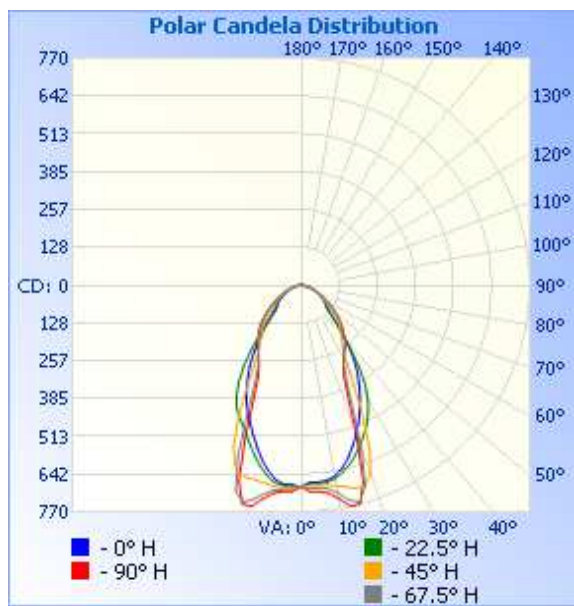
**RESULTS OF TESTS**

**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)
AH08012018090709-20	Base Up	120.1	210.4	24.94	0.987	961.5	38.6

**INTENSITY SUMMARY - CANDELAS**

Angle	0	22.5	45	67.5	90
0	685	685	685	685	685
5	671	676	682	690	703
10	657	667	691	716	736
15	609	630	714	762	768
20	541	580	683	596	548
25	467	522	493	365	343
30	391	450	312	290	286
35	312	343	243	255	259
40	225	217	207	228	221
45	145	148	179	190	195
50	110	115	139	156	158
55	96	101	105	124	124
60	77	85	82	93	95
65	60	66	65	66	69
70	46	48	46	41	43
75	33	33	30	24	12
80	21	20	17	12	2
85	10	8	7	4	0
90	2	1	0	0	0



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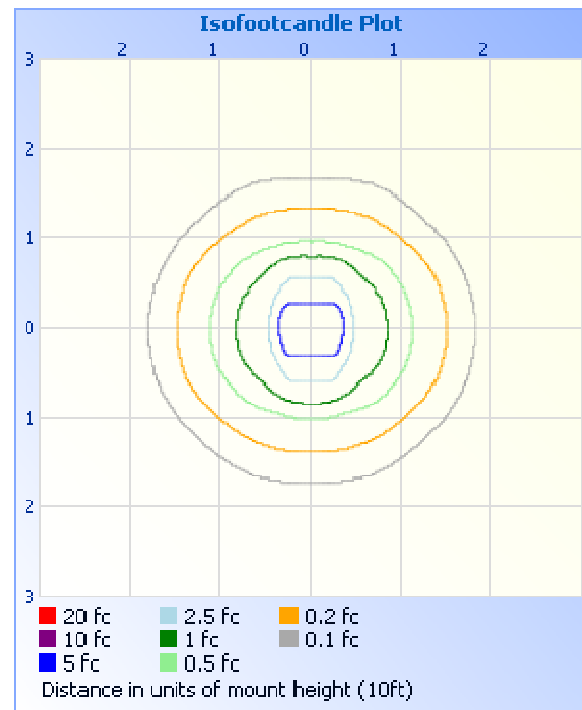
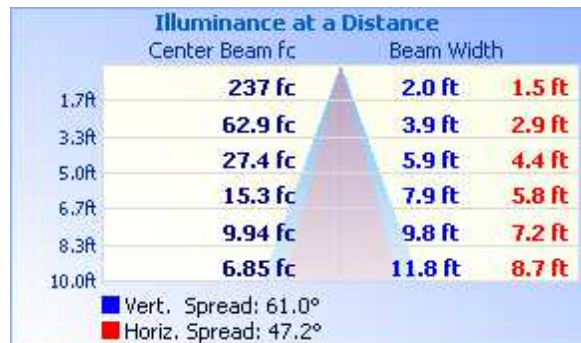
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**RESULTS OF TESTS**

**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	460.0	47.8
0-40	633.1	65.8
0-60	861.5	89.6
60-90	99.9	10.4
70-100	36.3	3.8
90-120	0.1	0.0
0-90	961.5	100.0
90-180	0.1	0.0
0-180	961.5	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	65.7	6.8
10-20	188.6	19.6
20-30	205.8	21.4
30-40	173.0	18.0
40-50	131.2	13.6
50-60	97.3	10.1
60-70	63.7	6.6
70-80	29.4	3.1
80-90	6.8	0.7
90-100	0.1	0.0

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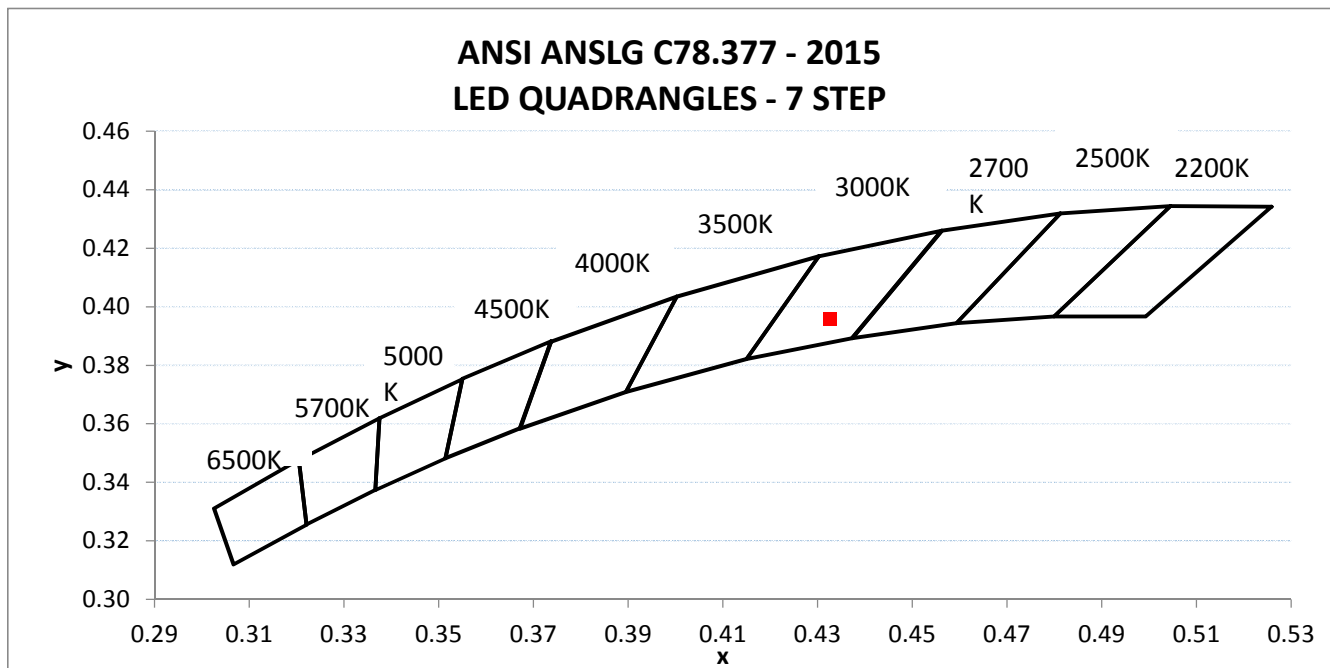
RESULTS OF TESTS

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 (%)
AH08012018090709-20	Base Up	119.99	210.43	24.94	0.988	12.41

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
965.7	38.7	3002	97.0	88.1	0.0029

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.433	0.396	0.251	0.517





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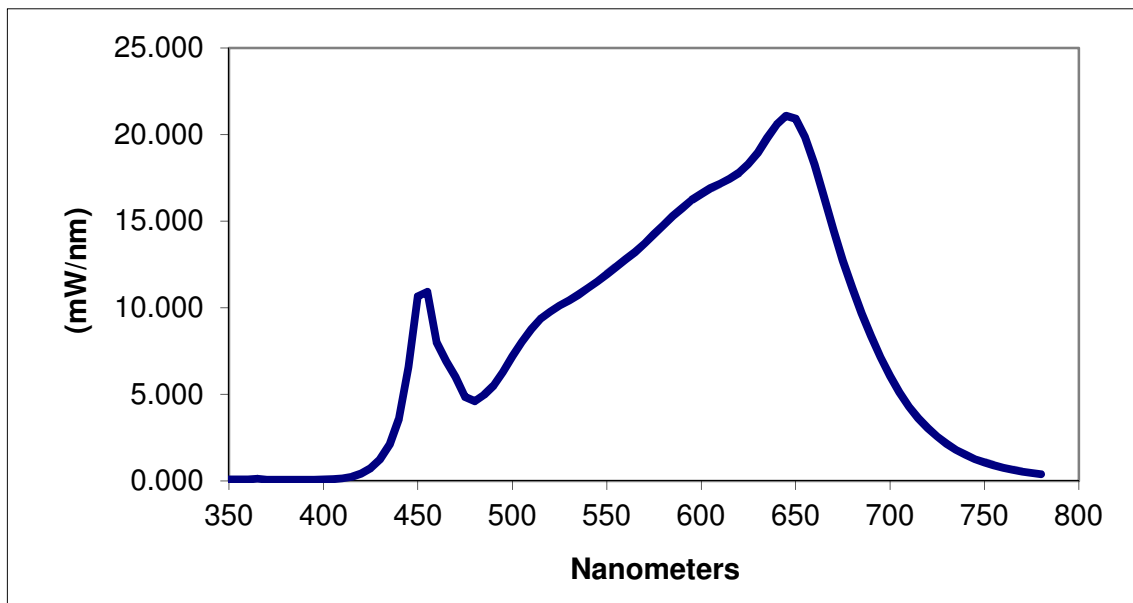
**TEST REPORT**

**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	0.077	460	7.994	570	13.705	680	11.133
355	0.074	465	6.916	575	14.255	685	9.691
360	0.082	470	6.011	580	14.769	690	8.365
365	0.139	475	4.845	585	15.300	695	7.155
370	0.067	480	4.598	590	15.766	700	6.059
375	0.061	485	4.965	595	16.228	705	5.116
380	0.059	490	5.501	600	16.577	710	4.293
385	0.055	495	6.277	605	16.904	715	3.623
390	0.058	500	7.200	610	17.158	720	3.045
395	0.059	505	8.017	615	17.450	725	2.562
400	0.070	510	8.752	620	17.796	730	2.152
405	0.094	515	9.364	625	18.286	735	1.799
410	0.145	520	9.773	630	18.962	740	1.509
415	0.247	525	10.122	635	19.805	745	1.264
420	0.429	530	10.423	640	20.585	750	1.069
425	0.732	535	10.750	645	21.083	755	0.902
430	1.235	540	11.139	650	20.917	760	0.757
435	2.093	545	11.516	655	19.856	765	0.645
440	3.582	550	11.935	660	18.273	770	0.540
445	6.572	555	12.364	665	16.435	775	0.458
450	10.663	560	12.804	670	14.501	780	0.390
455	10.912	565	13.215	675	12.724		

\*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				