

# PURE EDGE LIGHTING

## TEST REPORT

### SCOPE OF WORK

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

### MODEL NUMBER

NSUDD-10W-4S-36-30K-SN\_UPDOWN

### REPORT NUMBER

103597691CHI-012

### ISSUE DATE

August 16, 2018

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**TEST REPORT**

**REPORT NO.: 103597691CHI-012**

**REPORT DATE: August 16, 2018**

**TEST OF ONE LINEAR LED SUSPENSION**

MODEL NO. NSUDD-10W-4S-36-30K-SN\_UPDOWN  
LED MODEL NO. SS5CL-12MM-24VDC-36-30K (2)  
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 NSUDD-10W-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 AH08012018090709-12.

**DATE OF TESTS**

August 9, 2018 through August 10, 2018.

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**SUMMARY**

<b>MODEL NO:</b>	NSUDD-10W-4S-36-30K-SN_UPDOWN
<b>DESCRIPTION:</b>	LINEAR LED SUSPENSION

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1672.6	1686.1
Input Power (W) @ 120 (VAC)	34.37	34.33
Lumen Efficacy (lm/W)	48.7	49.1
Input Power Factor @ 120 (VAC)	0.976	0.975

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	15.54
Correlated Color Temperature (K)	2987
Color Rendering Index - Ra	97.3
Color Rendering - R9	89.7
DUV	0.0032
Chromaticity Coordinate (x)	0.433
Chromaticity Coordinate (y)	0.395
Chromaticity Coordinate (u')	0.252
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

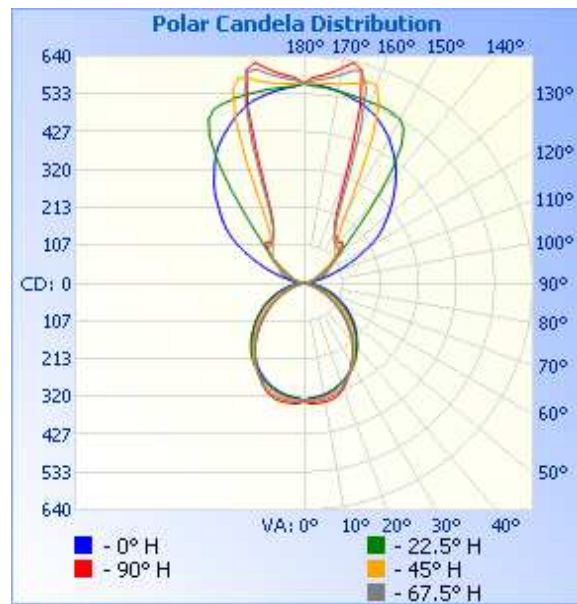
RESULTS OF TESTS

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)
AH08012018090709-12	Base Up	120.0	293.3	34.33	0.975	1686.1	49.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	332	332	332	332	332
5	324	328	331	335	341
10	319	322	326	332	340
15	312	314	320	327	335
20	300	302	310	312	318
25	287	289	293	291	294
30	271	273	270	265	266
35	252	253	245	238	238
40	230	230	217	210	209
45	207	204	190	180	177
50	184	177	162	149	145
55	160	150	133	120	113
60	135	122	103	88	81
65	109	96	73	58	52
70	84	68	44	32	27
75	59	41	20	13	11
80	36	17	6	2	1
85	15	2	2	1	1
90	1	1	1	2	1
95	10	4	3	5	3
100	26	14	10	10	8
105	57	33	20	19	17
110	100	55	30	31	30
115	153	68	52	40	41
120	216	79	82	58	54
125	268	98	106	91	83
130	311	133	115	121	121
135	356	194	124	142	150
140	401	326	138	138	152
145	439	476	170	147	158
150	474	535	252	171	171
155	502	543	449	241	215
160	523	543	594	459	382
165	538	546	584	622	623
170	550	551	570	597	617
175	559	556	565	578	589
180	564	564	564	564	564



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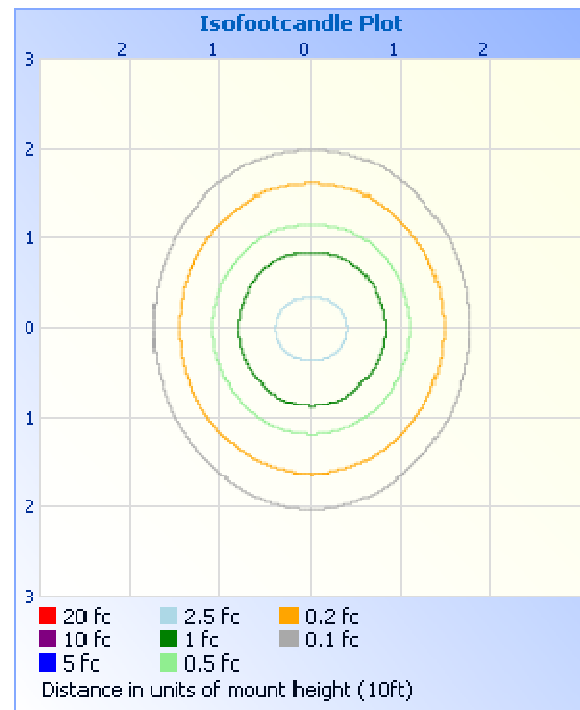
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**RESULTS OF TESTS**

**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	255.5	15.2
0-40	408.8	24.2
0-60	677.3	40.2
60-90	111.0	6.6
70-100	39.8	2.4
90-120	97.8	5.8
0-90	788.3	46.8
90-180	897.8	53.2
0-180	1686.1	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	31.5	1.9
10-20	90.3	5.4
20-30	133.7	7.9
30-40	153.3	9.1
40-50	148.0	8.8
50-60	120.5	7.1
60-70	76.5	4.5
70-80	30.0	1.8
80-90	4.5	0.3
90-100	5.3	0.3
100-110	28.6	1.7
110-120	63.9	3.8
120-130	103.8	6.2
130-140	135.3	8.0
140-150	164.7	9.8
150-160	181.5	10.8
160-170	160.1	9.5
170-180	54.5	3.2

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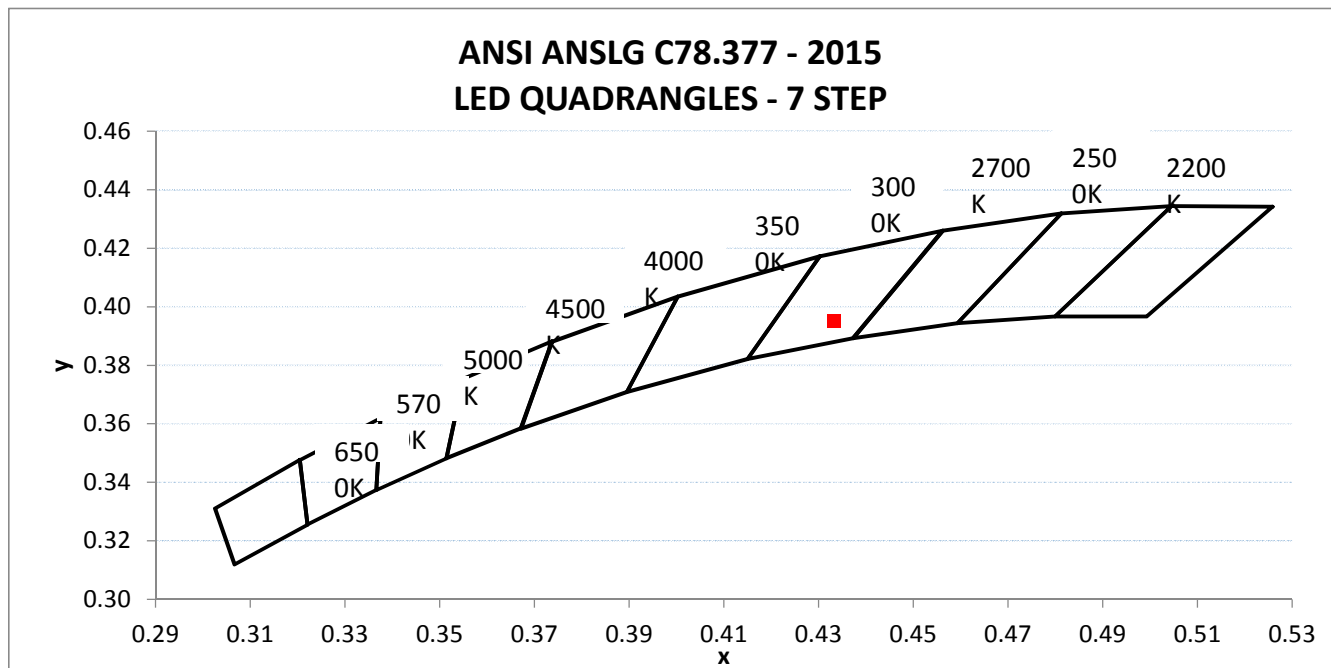
RESULTS OF TESTS

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 (%)
AH08012018090709-12	Base Up	120.00	293.44	34.37	0.976	15.54

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1672.6	48.7	2987	97.3	89.7	0.0032

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.433	0.395	0.252	0.517





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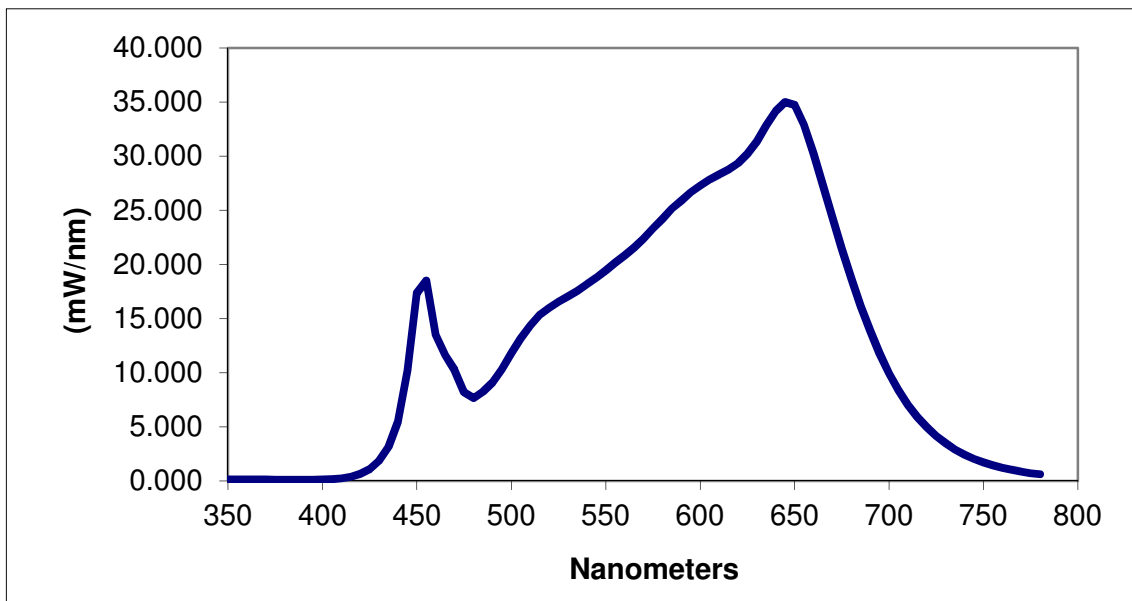
TEST REPORT

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	0.127	460	13.522	570	22.390	680	18.711
355	0.132	465	11.619	575	23.320	685	16.171
360	0.125	470	10.258	580	24.213	690	13.865
365	0.120	475	8.203	585	25.145	695	11.798
370	0.112	480	7.667	590	25.884	700	9.943
375	0.099	485	8.242	595	26.657	705	8.390
380	0.097	490	9.099	600	27.275	710	7.029
385	0.087	495	10.330	605	27.838	715	5.912
390	0.090	500	11.819	610	28.308	720	4.964
395	0.095	505	13.150	615	28.769	725	4.169
400	0.114	510	14.364	620	29.359	730	3.485
405	0.146	515	15.337	625	30.213	735	2.913
410	0.227	520	16.006	630	31.362	740	2.437
415	0.385	525	16.566	635	32.843	745	2.039
420	0.655	530	17.046	640	34.177	750	1.715
425	1.104	535	17.561	645	35.007	755	1.437
430	1.867	540	18.197	650	34.739	760	1.211
435	3.158	545	18.784	655	32.904	765	1.023
440	5.473	550	19.459	660	30.258	770	0.854
445	10.211	555	20.153	665	27.344	775	0.724
450	17.343	560	20.851	670	24.327	780	0.615
455	18.519	565	21.550	675	21.460		

\*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  
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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				