

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_UP

REPORT NUMBER

103597691CHI-010

ISSUE DATE

August 16, 2018

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST REPORT

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REPORT DATE: August 16, 2018

TEST OF ONE LINEAR LED SUSPENSION

MODEL NO. NSUDD-10W-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 NSUDD-10W-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 AH08012018090709-10.

DATE OF TESTS

August 9, 2018 through August 10, 2018.

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SUMMARY

MODEL NO:	NSUDD-10W-4S-36-30K-SN_UP
DESCRIPTION:	LINEAR LED SUSPENSION

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	856.0	883.3
Input Power (W) @ 120 (VAC)	17.23	17.212
Lumen Efficacy (lm/W)	49.7	51.3
Input Power Factor () @ 120 (VAC)	0.976	0.975

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	15.61
Correlated Color Temperature (K)	3013
Color Rendering Index - Ra ()	97.3
Color Rendering - R9 ()	89.3
DUV ()	0.0029
Chromaticity Coordinate (x)	0.432
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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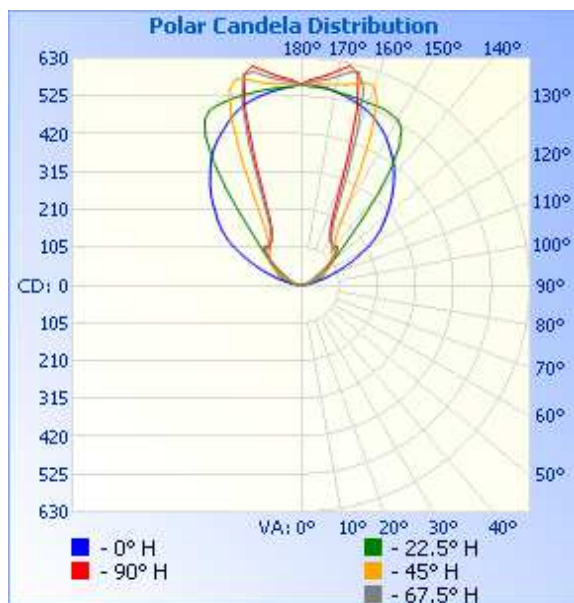
RESULTS OF TESTS

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)
AH08012018090709-10	Base Up	120.1	146.9	17.212	0.975	883.3	51.3

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	9	3	2	2	2
100	26	14	8	6	6
105	56	34	19	15	14
110	100	54	30	27	25
115	152	68	52	36	36
120	214	79	82	54	47
125	266	97	106	87	76
130	310	132	114	117	112
135	355	194	122	138	141
140	400	326	137	136	141
145	437	473	169	144	146
150	471	531	253	168	160
155	498	539	451	240	205
160	519	539	589	456	375
165	534	542	579	613	608
170	546	547	565	590	606
175	555	552	560	570	579
180	558	558	558	558	558



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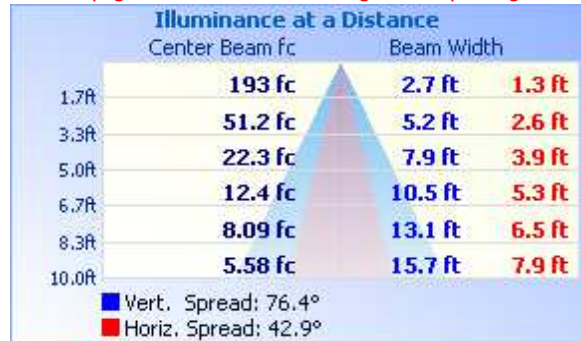
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RESULTS OF TESTS

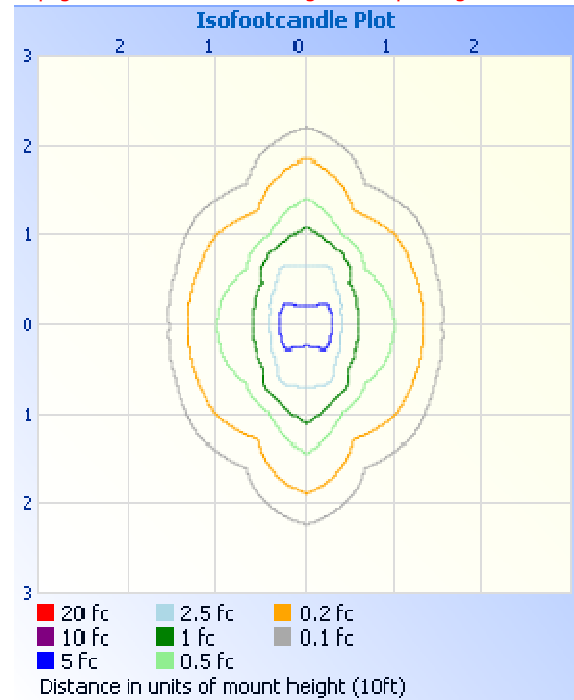
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

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	4.2	0.5
90-120	93.6	10.6
0-90	0.0	0.0
90-180	883.3	100.0
0-180	883.3	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	4.2	0.5
100-110	27.2	3.1
110-120	62.2	7.0
120-130	101.8	11.5
130-140	133.2	15.1
140-150	162.6	18.4
150-160	179.8	20.4
160-170	158.3	17.9
170-180	53.9	6.1

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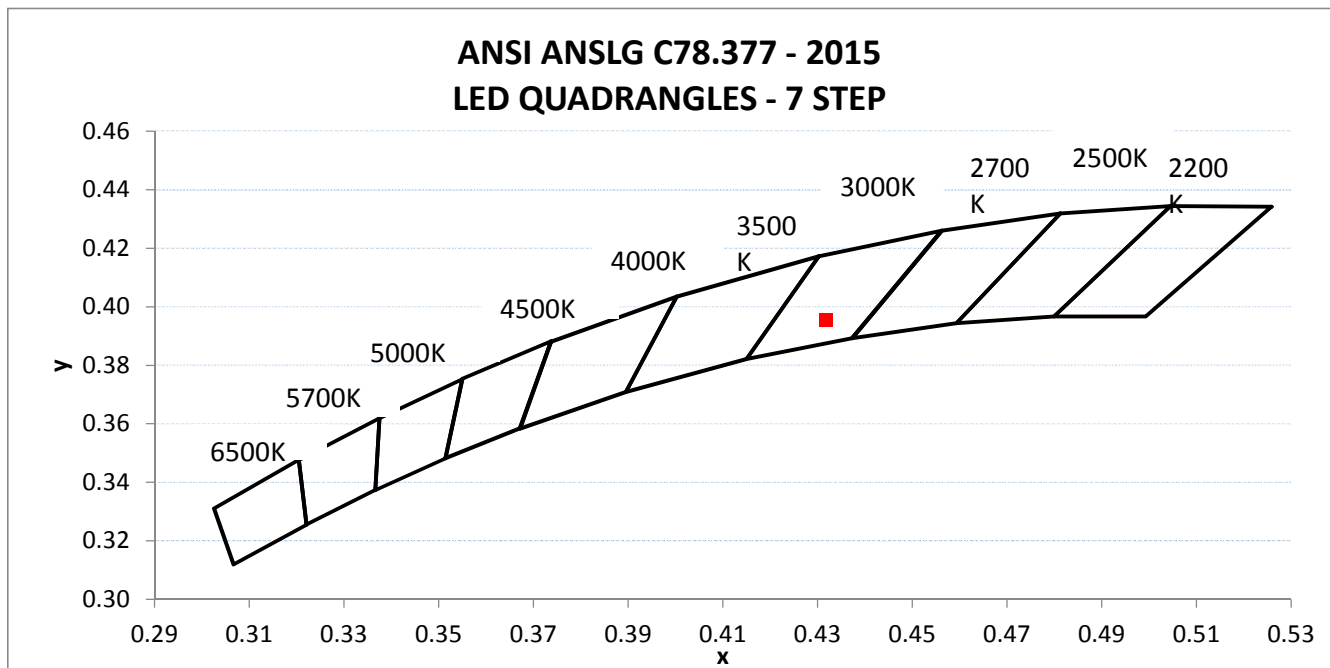
RESULTS OF TESTS

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 (%)
AH08012018090709-10	Base Up	119.90	147.07	17.23	0.976	15.61

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
856.0	49.7	3013	97.3	89.3	0.0029

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.432	0.395	0.251	0.517



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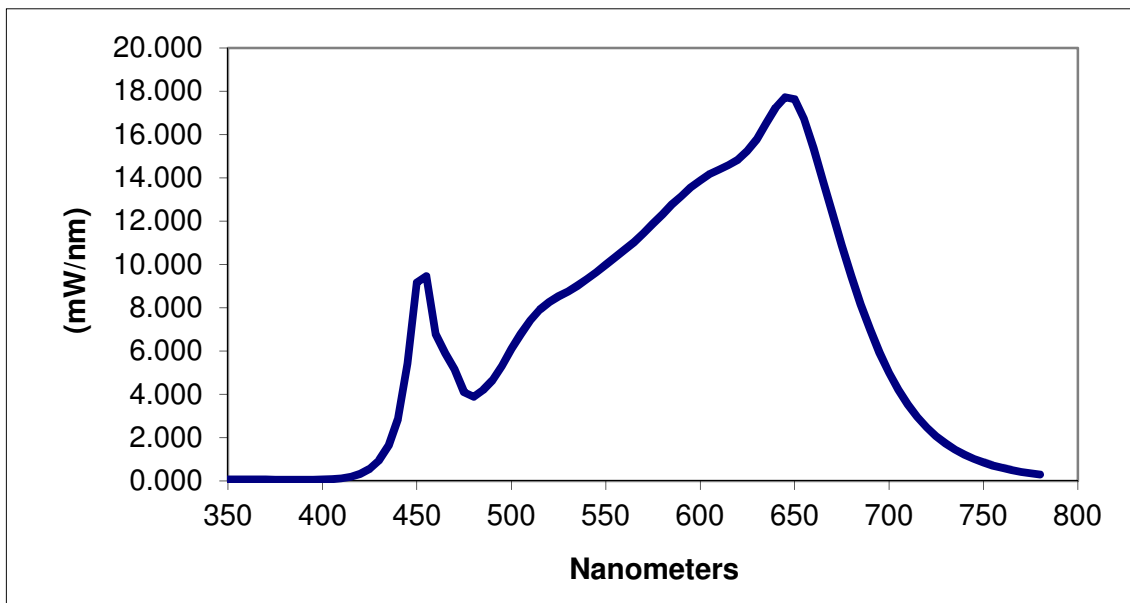
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RESULTS OF TESTS

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	0.062	460	6.789	570	11.434	680	9.468
355	0.059	465	5.893	575	11.889	685	8.159
360	0.058	470	5.162	580	12.318	690	6.988
365	0.057	475	4.100	585	12.774	695	5.935
370	0.059	480	3.884	590	13.152	700	4.998
375	0.042	485	4.198	595	13.552	705	4.217
380	0.049	490	4.656	600	13.884	710	3.532
385	0.041	495	5.313	605	14.179	715	2.965
390	0.044	500	6.101	610	14.384	720	2.477
395	0.046	505	6.790	615	14.593	725	2.077
400	0.054	510	7.415	620	14.847	730	1.737
405	0.075	515	7.912	625	15.242	735	1.451
410	0.114	520	8.260	630	15.781	740	1.212
415	0.195	525	8.523	635	16.522	745	1.014
420	0.331	530	8.754	640	17.243	750	0.852
425	0.559	535	9.018	645	17.726	755	0.714
430	0.948	540	9.326	650	17.641	760	0.601
435	1.630	545	9.638	655	16.734	765	0.506
440	2.856	550	9.991	660	15.377	770	0.423
445	5.428	555	10.335	665	13.886	775	0.358
450	9.162	560	10.686	670	12.351	780	0.303
455	9.456	565	11.023	675	10.878		

*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:

A handwritten signature in black ink, appearing to read 'Hector Huitron'.

Hector Huitron
Associate Engineer
Lighting Division

Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Quigley'.

Timothy Quigley
Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

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