

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA LM-79 test standard.

MODEL NUMBER

FN-LRF7-7W-36-30K

REPORT NUMBER

104373788CHI-007

ISSUE DATE

August 25, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: August 25, 2020

TEST REPORT

TEST OF ONE LINEAR LED

MODEL NO. FN-LRF7-7W-36-30K
LED MODEL NO. LIANGAN/ LA-D2835P927M-3E2-00303
DRIVER MODEL NO. HUARUI/DR-24V-2000-60D

RENDERED TO:

PURE EDGE LIGHTING
1718 W. FULLERTON AVE.
CHICAGO, IL 60614

STATEMENT OF LIMITATIONS

NVLAP Lab Code 600186-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01087644-1.

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 FN-LRF7-7W-36-30K. The sample was received by Intertek on August 4, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH08042020023951-007.

DATE OF TESTS

August 17, 2020 through August 25, 2020.

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SUMMARY

MODEL NO:	FN-LRF7-7W-36-30K
DESCRIPTION:	LINEAR LED

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1317.0	1275.4
Input Power (W) @ 120 (VAC)	27.42	27.43
Lumen Efficacy (lm/W)	48.0	46.5
Input Power Factor () @ 120 (VAC)	0.990	0.989

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	12.64
Correlated Color Temperature (K)	2714
Color Rendering Index - Ra	92.5
Color Rendering - R9	63.7
DUV	-0.0016
Chromaticity Coordinate (x)	0.456
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.262
Chromaticity Coordinate (v')	0.525

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2020	7/1/2021
Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
Pacific, AC Power Supply	118-ACX	CHI0153	VBU	VBU
Labsphere Spectroradiometer	CDS2600	CHI0539	VBU	VBU
3 Meter Sphere	SPR600	CHI0088	VBU	VBU
Elgar AC Power Supply	CW1251	146112	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
Newport Humidity Recorder	iTHX-SD	CHI0452	10/11/2019	10/11/2020
Yokogawa Power Meter	WT1600	146769	4/6/2020	4/6/2021
Extech K Temperature Meter	421502	CHI0476	10/1/2019	10/1/2020

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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.

TEST REPORT

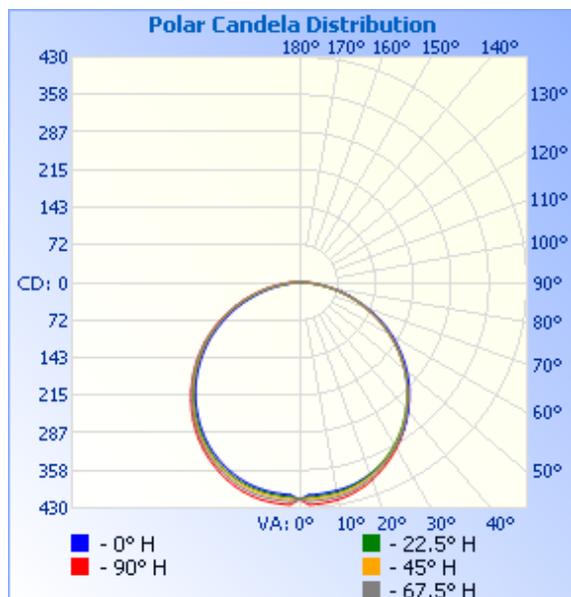
RESULTS OF TESTS

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)
AH08042020023951-007	Base Up	120.1	230.9	27.43	0.989	1275.4	46.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	414	414	414	414	414
5	405	408	412	417	423
10	403	406	410	414	420
15	398	400	404	408	412
20	389	389	392	396	400
25	377	375	378	381	384
30	362	358	361	363	365
35	343	338	340	341	343
40	319	314	316	316	318
45	293	288	289	289	290
50	265	260	260	260	260
55	234	229	229	230	229
60	203	197	197	197	196
65	169	162	162	163	162
70	132	127	128	128	128
75	98	92	93	94	94
80	63	58	60	62	62
85	31	29	32	35	36
90	9	10	15	18	18
95	2	6	9	10	10
100	0	5	7	8	8
105	0	5	6	6	7
110	0	4	5	5	5
115	0	3	5	5	4
120	0	2	4	4	4
125	0	2	4	4	4
130	0	1	3	4	3
135	1	1	3	3	3
140	1	1	2	3	3
145	1	1	2	2	2
150	1	1	1	2	1
155	1	1	1	1	1



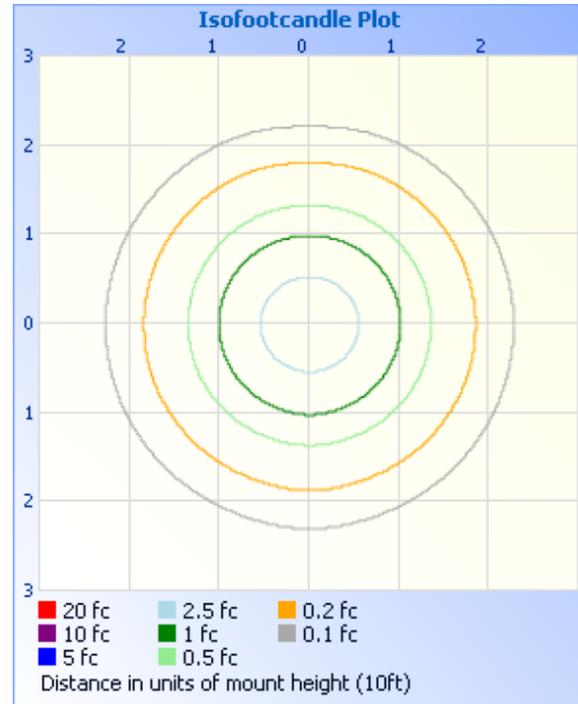
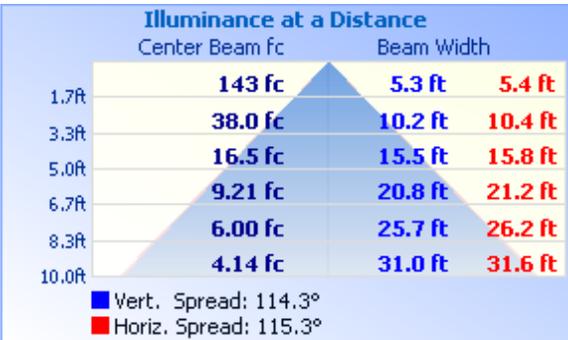
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RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT
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ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	327.0	25.6
0-40	538.6	42.2
0-60	963.3	75.5
60-90	290.5	22.8
70-100	140.3	11.0
90-120	16.7	1.3
0-90	1253.8	98.3
90-180	21.6	1.7
0-180	1275.4	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	39.3	3.1
10-20	113.8	8.9
20-30	173.9	13.6
30-40	211.6	16.6
40-50	221.4	17.4
50-60	203.2	15.9
60-70	158.8	12.5
70-80	96.4	7.6
80-90	35.2	2.8
90-100	8.7	0.7
100-110	4.8	0.4
110-120	3.2	0.3
120-130	2.2	0.2
130-140	1.5	0.1
140-150	0.9	0.1
150-160	0.4	0.0

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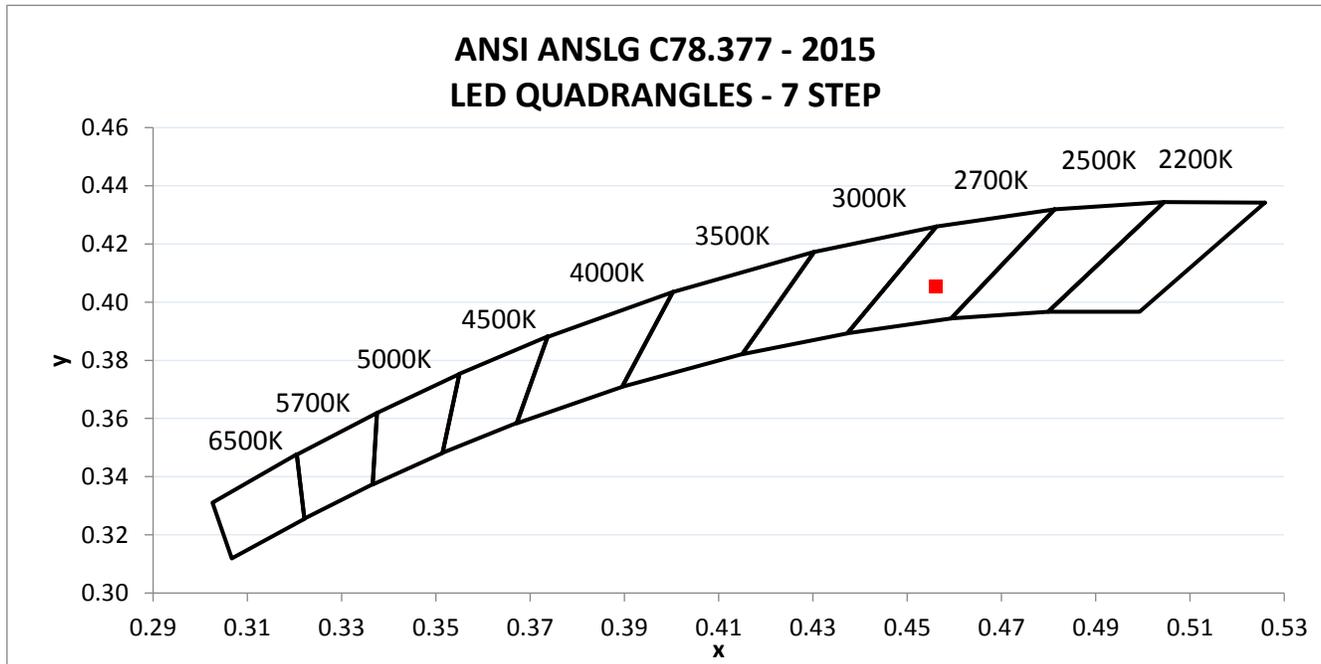
RESULTS OF TESTS

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 (%)
AH08042020023951-007	Base Up	120.01	230.87	27.42	0.990	12.64

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1317.0	48.0	2714	92.5	63.7	-0.0016

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.456	0.406	0.262	0.525



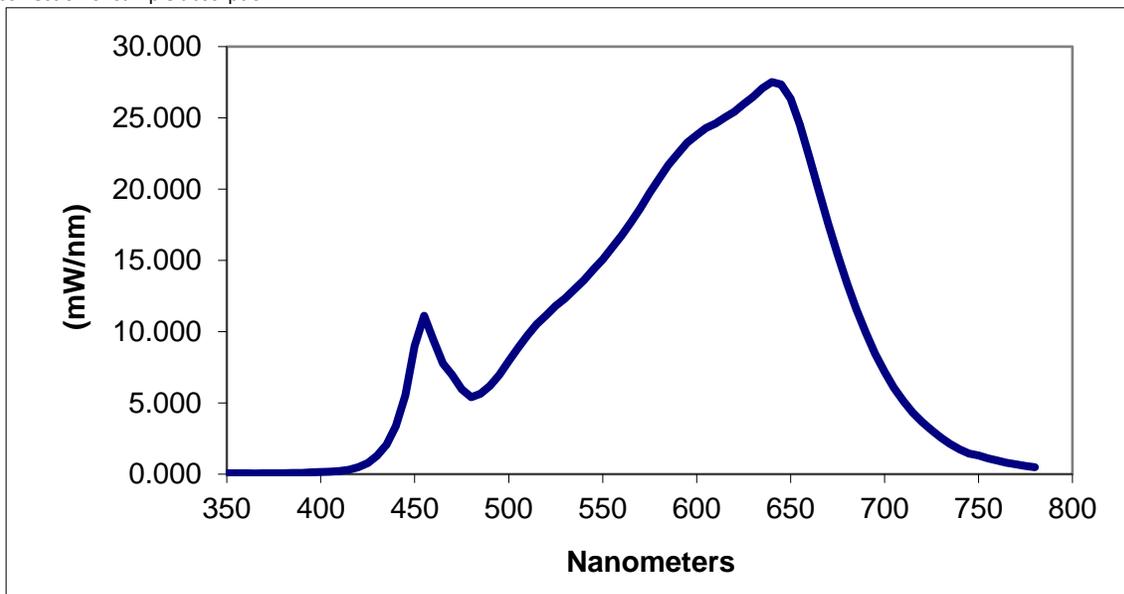
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RESULTS OF TESTS

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	0.073	460	9.423	570	18.658	680	13.402
355	0.062	465	7.776	575	19.739	685	11.586
360	0.063	470	6.973	580	20.736	690	9.939
365	0.049	475	5.968	585	21.686	695	8.462
370	0.065	480	5.408	590	22.493	700	7.194
375	0.057	485	5.646	595	23.264	705	6.075
380	0.075	490	6.213	600	23.790	710	5.140
385	0.082	495	6.957	605	24.285	715	4.339
390	0.087	500	7.944	610	24.605	720	3.663
395	0.120	505	8.870	615	25.016	725	3.093
400	0.146	510	9.755	620	25.426	730	2.575
405	0.178	515	10.539	625	25.967	735	2.127
410	0.220	520	11.162	630	26.480	740	1.740
415	0.318	525	11.800	635	27.068	745	1.444
420	0.488	530	12.343	640	27.513	750	1.309
425	0.788	535	12.975	645	27.348	755	1.115
430	1.296	540	13.613	650	26.343	760	0.952
435	2.070	545	14.354	655	24.514	765	0.801
440	3.359	550	15.065	660	22.204	770	0.682
445	5.524	555	15.893	665	19.912	775	0.578
450	8.993	560	16.749	670	17.564	780	0.494
455	11.126	565	17.646	675	15.435		

*Without correction of sample absorption.



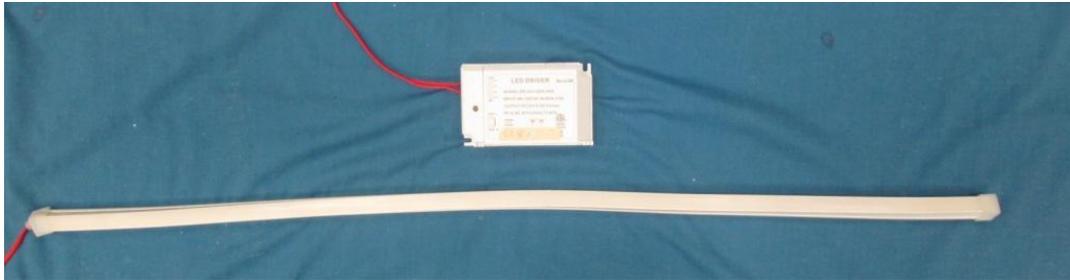
End Of Test Results

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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:

Timothy Quigley
Project Engineer
Lighting Division

Report Reviewed By:

Jeff Davis
N.A. Technical Lead
Lighting Division

Attachments: IES File

REVISION HISTORY

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