

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

FN-LRT7-5W-36-27K

REPORT NUMBER

104373788CHI-011

ISSUE DATE

August 27, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT NO.: 104373788CHI-011

REPORT DATE: August 27, 2020

TEST REPORT

TEST OF ONE LINEAR LED

MODEL NO. FN-LRT7-5W-36-27K
LED MODEL NO. LIANGAN/ LA-D2835P927M-3E2-00307
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-LRT7-5W-36-27K. The sample was received by Intertek on August 4, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH08042020023951-011.

DATE OF TESTS

August 6, 2020 through August 27, 2020.

REPORT NO.: 104373788CHI-011

REPORT DATE: August 27, 2020

TEST REPORT

SUMMARY

MODEL NO:	FN-LRT7-5W-36-27K
DESCRIPTION:	LINEAR LED

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1017.2	972.7
Input Power (W) @ 120 (VAC)	16.36	16.35
Lumen Efficacy (lm/W)	62.2	59.5
Input Power Factor () @ 120 (VAC)	0.976	0.976

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	15.35
Correlated Color Temperature (K)	2738
Color Rendering Index - Ra	93.2
Color Rendering - R9	59.9
DUV	0.0007
Chromaticity Coordinate (x)	0.456
Chromaticity Coordinate (y)	0.408
Chromaticity Coordinate (u')	0.261
Chromaticity Coordinate (v')	0.526

REPORT NO.: 104373788CHI-011

TEST REPORT

REPORT DATE: August 27, 2020

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 2M Sphere & Spectroradiometer	CDS1100	146137	VBU	VBU
Elgar AC Power Supply	CW1251M	146113	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146847	VBU	VBU
Yokogawa Power Analyzer	WT1600	146767	4/6/2020	4/6/2021
Omega Temperature	MDSi8	146873	7/2/2020	7/2/2021
Newport Humidity Recorder	iTHX-SD	CHI0452	10/11/2019	10/11/2020

REPORT NO.: 104373788CHI-011

REPORT DATE: August 27, 2020

TEST REPORT

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

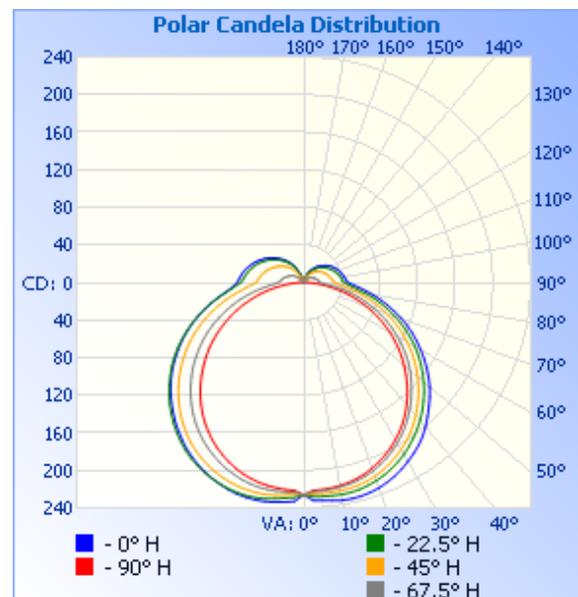
RESULTS OF TESTS

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)
AH08042020023951-011	Base Up	120.1	139.6	16.35	0.976	972.7	59.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	226	226	226	226	226
5	233	228	225	222	221
10	235	229	225	221	219
15	235	228	223	218	216
20	232	224	219	213	210
25	227	219	213	206	203
30	220	211	205	197	193
35	211	202	196	187	182
40	200	191	184	174	169
45	187	179	171	161	154
50	174	166	157	147	139
55	159	151	142	131	122
60	142	135	126	114	105
65	126	119	109	96	86
70	109	101	91	78	68
75	91	84	74	60	49
80	74	66	57	42	30
85	58	51	41	26	15
90	48	43	33	18	5
95	44	40	31	16	1
100	42	39	29	15	1
105	41	37	27	14	1
110	39	35	26	13	1
115	36	32	24	11	1
120	34	30	22	10	1
125	31	28	20	9	1
130	28	25	18	8	1
135	25	22	16	6	1
140	22	19	14	5	1
145	19	16	12	4	1
150	16	13	9	3	1
155	12	10	6	2	1
160	8	6	4	1	1
165	4	3	2	1	1
170	2	1	1	1	1
175	0	0	1	1	1



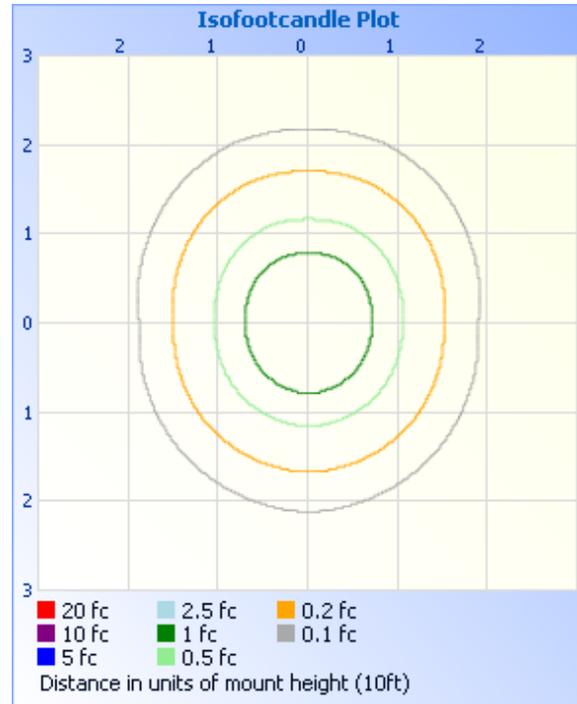
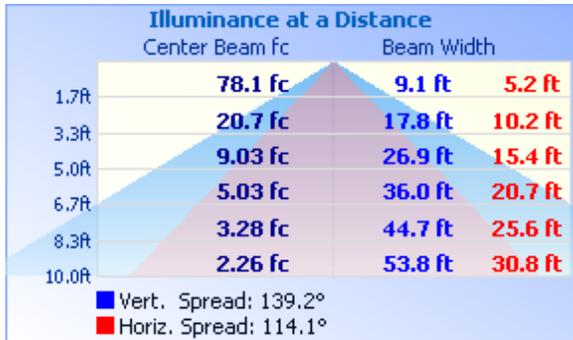
TEST REPORT

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	185.3	19.0
0-40	310.4	31.9
0-60	578.5	59.5
60-90	250.4	25.7
70-100	175.1	18.0
90-120	98.7	10.1
0-90	828.9	85.2
90-180	143.9	14.8
0-180	972.7	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	21.6	2.2
10-20	63.8	6.6
20-30	99.9	10.3
30-40	125.1	12.9
40-50	136.0	14.0
50-60	132.1	13.6
60-70	113.7	11.7
70-80	84.2	8.7
80-90	52.6	5.4
90-100	38.4	3.9
100-110	33.2	3.4
110-120	27.1	2.8
120-130	20.3	2.1
130-140	13.5	1.4
140-150	7.6	0.8
150-160	3.0	0.3
160-170	0.6	0.1
170-180	0.1	0.0

TEST REPORT

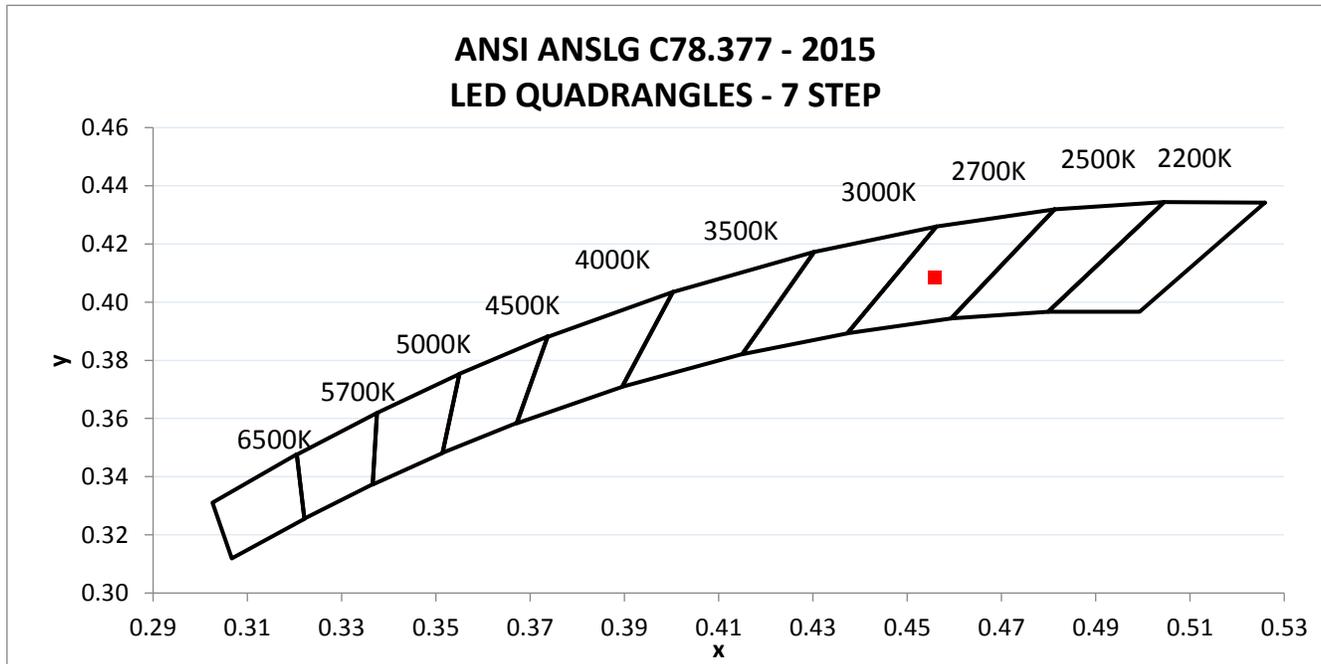
RESULTS OF TESTS

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 (%)
AH08042020023951-011	Base Up	120.00	139.69	16.36	0.976	15.35

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1017.2	62.2	2738	93.2	59.9	0.0007

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.456	0.408	0.261	0.526



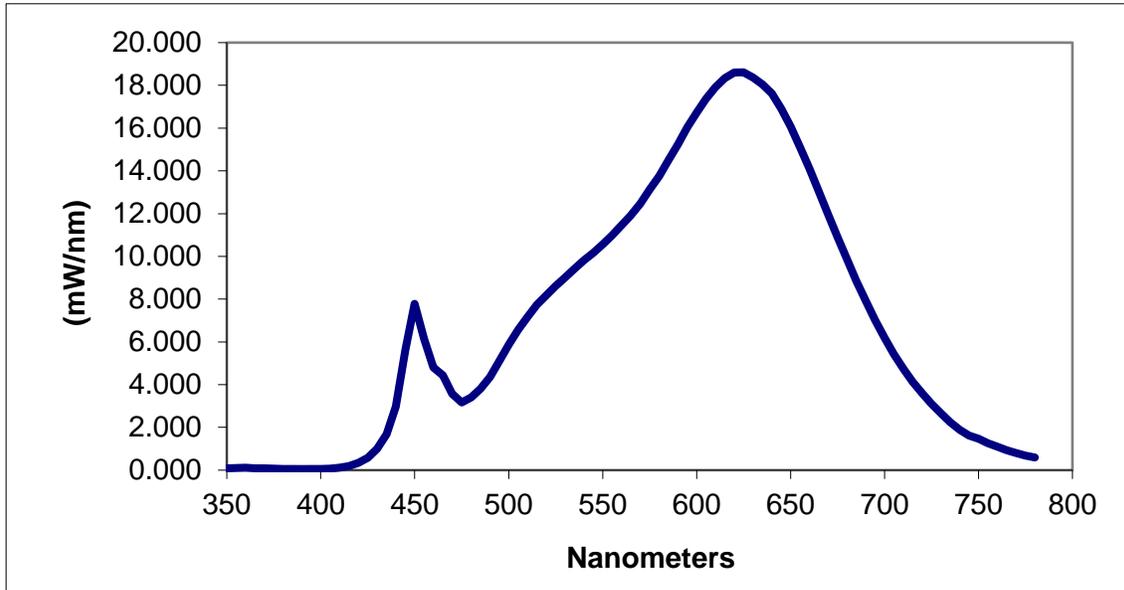
TEST REPORT

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	0.083	460	4.806	570	12.477	680	9.861
355	0.099	465	4.436	575	13.121	685	8.857
360	0.111	470	3.575	580	13.757	690	7.917
365	0.083	475	3.165	585	14.493	695	7.024
370	0.084	480	3.413	590	15.239	700	6.183
375	0.070	485	3.811	595	16.026	705	5.433
380	0.059	490	4.362	600	16.728	710	4.740
385	0.056	495	5.105	605	17.360	715	4.131
390	0.055	500	5.877	610	17.923	720	3.599
395	0.060	505	6.554	615	18.340	725	3.110
400	0.061	510	7.173	620	18.595	730	2.660
405	0.078	515	7.739	625	18.611	735	2.251
410	0.112	520	8.184	630	18.365	740	1.891
415	0.188	525	8.616	635	18.057	745	1.621
420	0.334	530	9.024	640	17.622	750	1.468
425	0.581	535	9.418	645	16.921	755	1.269
430	0.994	540	9.826	650	16.067	760	1.098
435	1.683	545	10.163	655	15.120	765	0.938
440	2.971	550	10.572	660	14.110	770	0.802
445	5.620	555	10.988	665	13.058	775	0.688
450	7.780	560	11.459	670	11.955	780	0.588
455	6.135	565	11.921	675	10.904		

*Without correction of sample absorption.

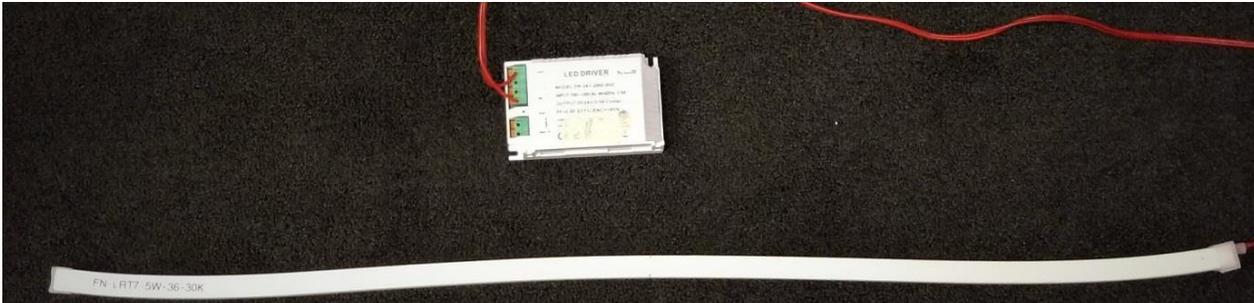


End Of Test Results

REPORT NO.: 104373788CHI-011
REPORT DATE: August 27, 2020

TEST REPORT

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				