

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

FN-LRT7-7W-36-27K

REPORT NUMBER

104373788CHI-012

ISSUE DATE

August 26, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: August 26, 2020

TEST REPORT

TEST OF ONE LINEAR LED

MODEL NO. FN-LRT7-7W-36-27K
LED MODEL NO. LIANGAN/ LA-D2835P927M-3E2-00308
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-LRT7-7W-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 AH08042020023951-012.

DATE OF TESTS

August 7, 2020 through August 17, 2020.

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SUMMARY

MODEL NO:	FN-LRT7-7W-36-27K
DESCRIPTION:	LINEAR LED

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1538.8	1469.6
Input Power (W) @ 120 (VAC)	29.26	29.13
Lumen Efficacy (lm/W)	52.6	50.5
Input Power Factor @ 120 (VAC)	0.991	0.991

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	12.24
Correlated Color Temperature (K)	2667
Color Rendering Index - Ra	93.1
Color Rendering - R9	66.2
DUV	0.0017
Chromaticity Coordinate (x)	0.459
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.264
Chromaticity Coordinate (v')	0.526

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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	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
Pacific, AC Power Supply	118-ACX	CHI0153	VBV	VBV
Labsphere 2M Sphere & Spectroradiometer	CDS1100	146137	VBV	VBV
Elgar AC Power Supply	CW1251M	146113	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146847	VBV	VBV
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

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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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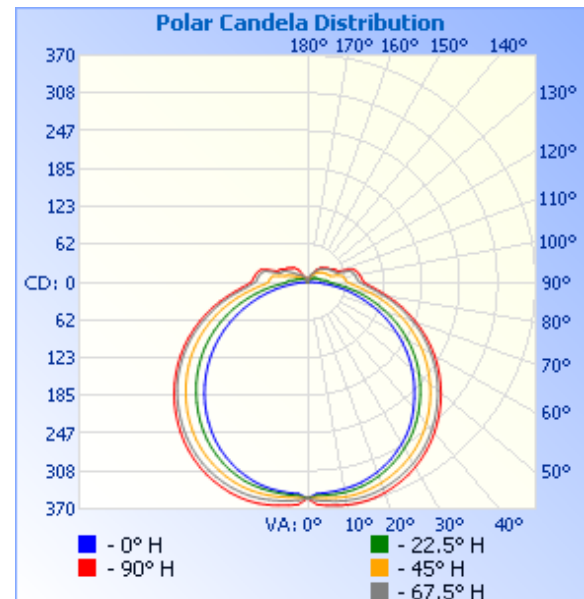
RESULTS OF TESTS

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)
AH08042020023951-012	Base Up	120.0	245.0	29.13	0.991	1469.6	50.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	353	353	353	353	353
5	345	349	353	358	365
10	342	348	355	362	369
15	338	344	354	362	369
20	330	337	349	358	366
25	319	326	340	351	358
30	305	313	330	342	349
35	288	298	316	329	336
40	268	279	300	314	320
45	245	259	280	296	302
50	221	236	260	276	282
55	196	213	237	254	261
60	168	187	213	231	237
65	140	160	187	206	212
70	111	132	160	179	186
75	81	104	133	152	159
80	54	76	105	125	132
85	28	51	81	101	108
90	10	35	65	85	92
95	2	31	61	80	87
100	1	21	58	77	84
105	1	19	38	71	79
110	1	17	36	47	52
115	1	15	33	45	49
120	1	14	30	41	43
125	1	12	28	37	40
130	1	10	24	34	36
135	1	8	21	31	33
140	1	6	18	26	28
145	1	4	15	21	24
150	1	2	12	17	10
155	1	2	8	14	8
160	1	1	4	9	6
165	1	1	2	3	3



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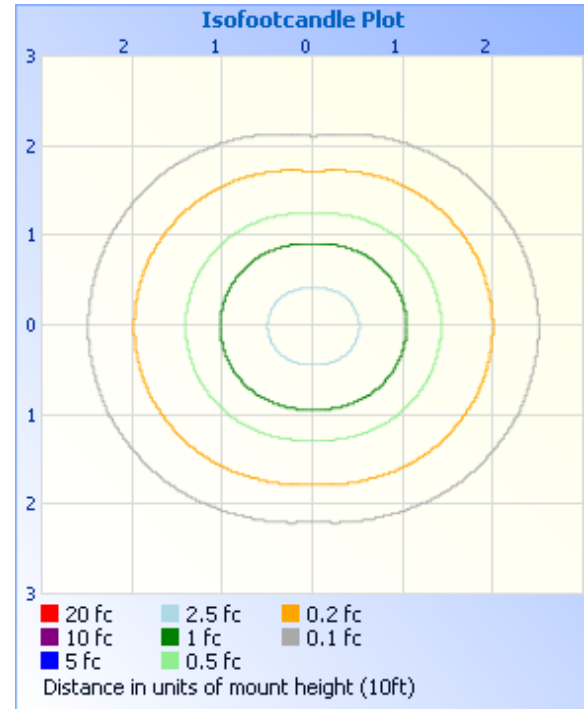
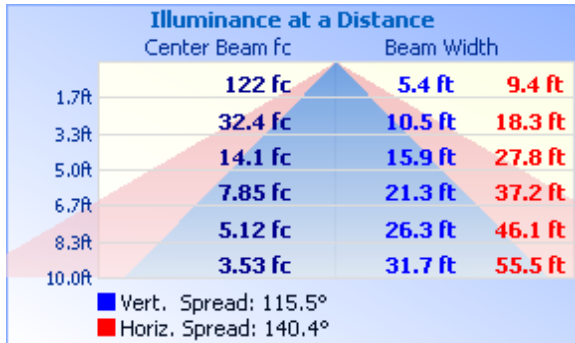
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RESULTS OF TESTS

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	289.6	19.7
0-40	485.2	33.0
0-60	905.2	61.6
60-90	393.3	26.8
70-100	273.2	18.6
90-120	128.9	8.8
0-90	1298.5	88.4
90-180	171.1	11.6
0-180	1469.6	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	33.8	2.3
10-20	99.7	6.8
20-30	156.1	10.6
30-40	195.6	13.3
40-50	212.9	14.5
50-60	207.1	14.1
60-70	178.7	12.2
70-80	132.5	9.0
80-90	82.0	5.6
90-100	58.7	4.0
100-110	43.0	2.9
110-120	27.3	1.9
120-130	18.9	1.3
130-140	12.7	0.9
140-150	7.1	0.5
150-160	2.9	0.2
160-170	0.6	0.0

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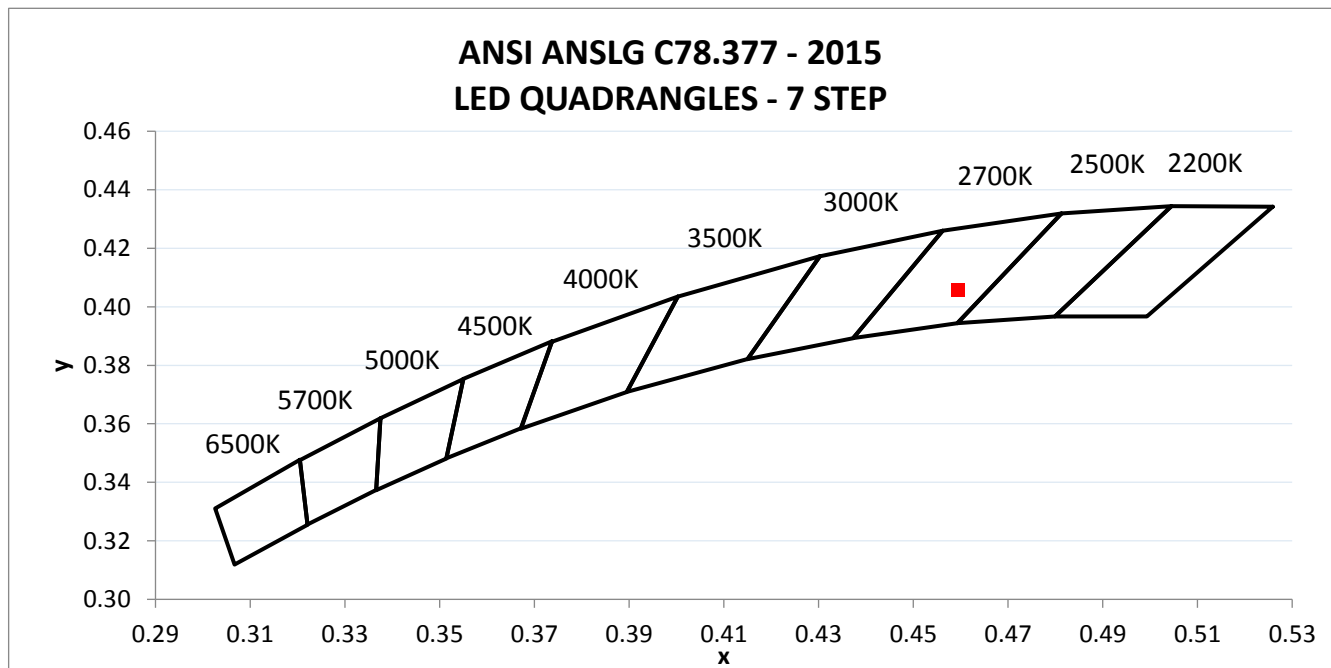
RESULTS OF TESTS

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 (%)
AH08042020023951-012	Base Up	119.99	246.16	29.26	0.991	12.24

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1538.8	52.6	2667	93.1	66.2	0.0017

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.459	0.406	0.264	0.526



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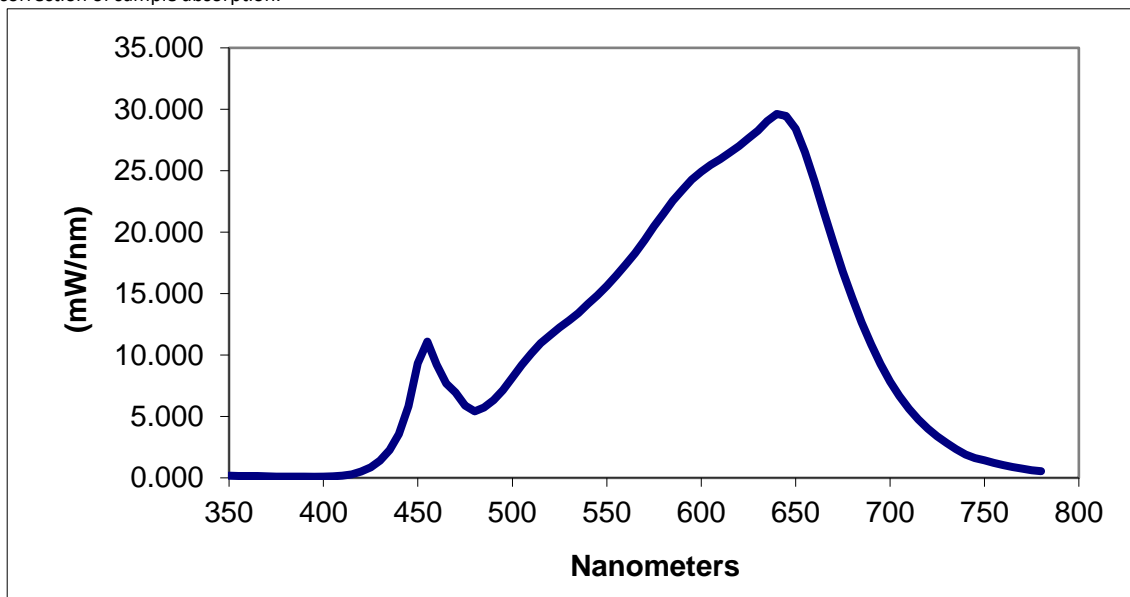
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PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.174	460	9.209	570	19.339	680	14.635
355	0.149	465	7.691	575	20.474	685	12.652
360	0.160	470	6.944	580	21.517	690	10.861
365	0.144	475	5.888	585	22.558	695	9.280
370	0.136	480	5.402	590	23.428	700	7.849
375	0.094	485	5.714	595	24.265	705	6.668
380	0.103	490	6.324	600	24.917	710	5.633
385	0.093	495	7.140	605	25.462	715	4.757
390	0.096	500	8.173	610	25.948	720	4.017
395	0.093	505	9.194	615	26.447	725	3.376
400	0.101	510	10.130	620	26.995	730	2.826
405	0.122	515	10.957	625	27.628	735	2.333
410	0.171	520	11.607	630	28.269	740	1.908
415	0.295	525	12.230	635	29.025	745	1.608
420	0.508	530	12.807	640	29.622	750	1.439
425	0.859	535	13.421	645	29.460	755	1.224
430	1.397	540	14.154	650	28.410	760	1.042
435	2.252	545	14.835	655	26.503	765	0.884
440	3.567	550	15.615	660	24.136	770	0.750
445	5.844	555	16.448	665	21.631	775	0.634
450	9.333	560	17.364	670	19.138	780	0.543
455	11.097	565	18.283	675	16.800		

*Without correction of sample absorption.



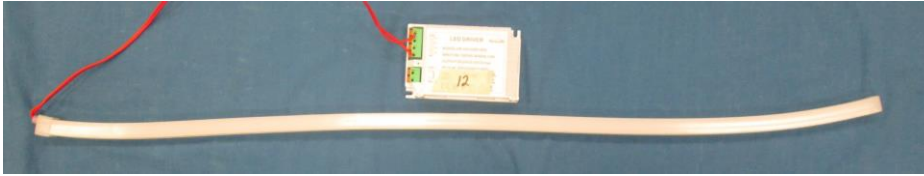
End Of Test Results

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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				