For the Scope of
Accreditation Under
NVLAP Lab Code 600186-0

PURE EDGE LIGHTING

TEST REPORT

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

MODEL NUMBER
FN-UDF7-SW-36-27K

REPORT NUMBER
104373788CHI-009

ISSUE DATE
August 26, 2020

REVISION DATE
None

DOCUMENT CONTROL NUMBER
TBD

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009

TEST REPORT **REPORT DATE: August 26, 2020**

TEST OF ONE LINEAR LED

MODEL NO. FN-UDF7-SW-36-27K
LED MODEL NO. LIANGAN/ LA-D2835P927M-3E2-00305
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-UDF7-SW-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 AH08042020023951-009.

DATE OF TESTS

August 18, 2020 through August 25, 2020.

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009

TEST REPORT

REPORT DATE: August 26, 2020

SUMMARY

MODEL NO:	FN-UDF7-SW-36-27K
DESCRIPTION:	LINEAR LED

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	962.3	928.5
Input Power (W) @ 120 (VAC)	15.37	15.29
Lumen Efficacy (lm/W)	62.6	60.7
Input Power Factor ( ) @ 120 (VAC)	0.973	0.972

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	16.29
Correlated Color Temperature (K)	2573
Color Rendering Index - Ra	92.8
Color Rendering - R9	64.1
DUV	-0.0014
Chromaticity Coordinate (x)	0.468
Chromaticity Coordinate (y)	0.408
Chromaticity Coordinate (u')	0.269
Chromaticity Coordinate (v')	0.528

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

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

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

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.

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009
REPORT DATE: August 26, 2020

TEST REPORT

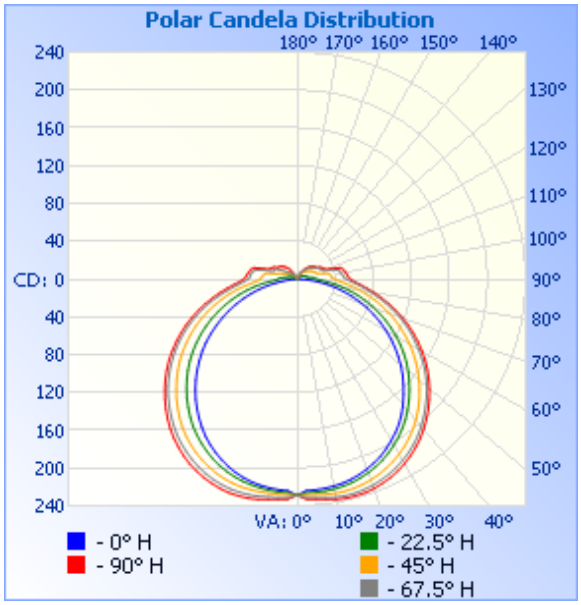
RESULTS OF TESTS

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)
AH08042020023951-009	Base Up	120.1	131.0	15.29	0.972	928.5	60.7

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	229	229	229	229	229
5	224	226	229	232	234
10	222	226	230	234	236
15	219	223	229	234	237
20	214	218	226	232	236
25	207	212	221	228	232
30	197	203	214	221	226
35	187	193	205	213	217
40	173	181	194	203	207
45	158	167	181	191	195
50	142	152	167	178	182
55	125	137	152	163	167
60	108	120	136	147	151
65	89	102	119	131	135
70	70	84	102	114	117
75	51	66	84	96	99
80	33	48	66	79	82
85	16	32	50	64	67
90	4	21	40	52	56
95	1	18	36	48	53
100	1	11	34	46	50
105	1	10	22	39	47
110	1	9	20	28	31
115	1	8	19	26	29
120	1	7	17	24	25
125	1	6	15	22	23
130	1	5	13	19	21
135	1	4	11	17	18
140	1	2	9	14	15
145	1	1	8	11	11
150	1	1	6	8	5
155	1	1	3	6	4
160	1	1	1	3	2
165	1	1	1	1	1



545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009

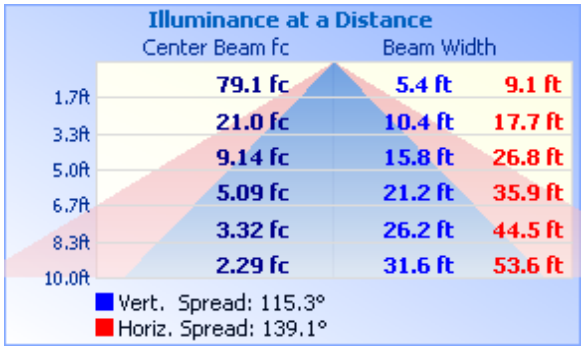
TEST REPORT **REPORT DATE: August 26, 2020**

RESULTS OF TESTS

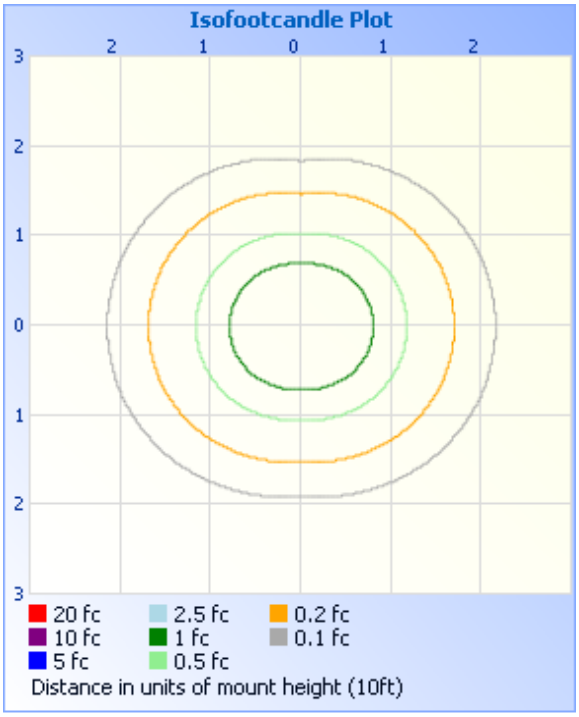
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT



ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	187.3	20.2
0-40	313.7	33.8
0-60	583.4	62.8
60-90	247.2	26.6
70-100	168.9	18.2
90-120	75.5	8.1
0-90	830.6	89.5
90-180	97.9	10.5
0-180	928.5	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	21.9	2.4
10-20	64.4	6.9
20-30	101.0	10.9
30-40	126.4	13.6
40-50	137.1	14.8
50-60	132.6	14.3
60-70	113.4	12.2
70-80	83.2	9.0
80-90	50.6	5.4
90-100	35.1	3.8
100-110	24.7	2.7
110-120	15.7	1.7
120-130	10.6	1.1
130-140	6.8	0.7
140-150	3.5	0.4
150-160	1.3	0.1
160-170	0.2	0.0

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009
REPORT DATE: August 26, 2020

TEST REPORT

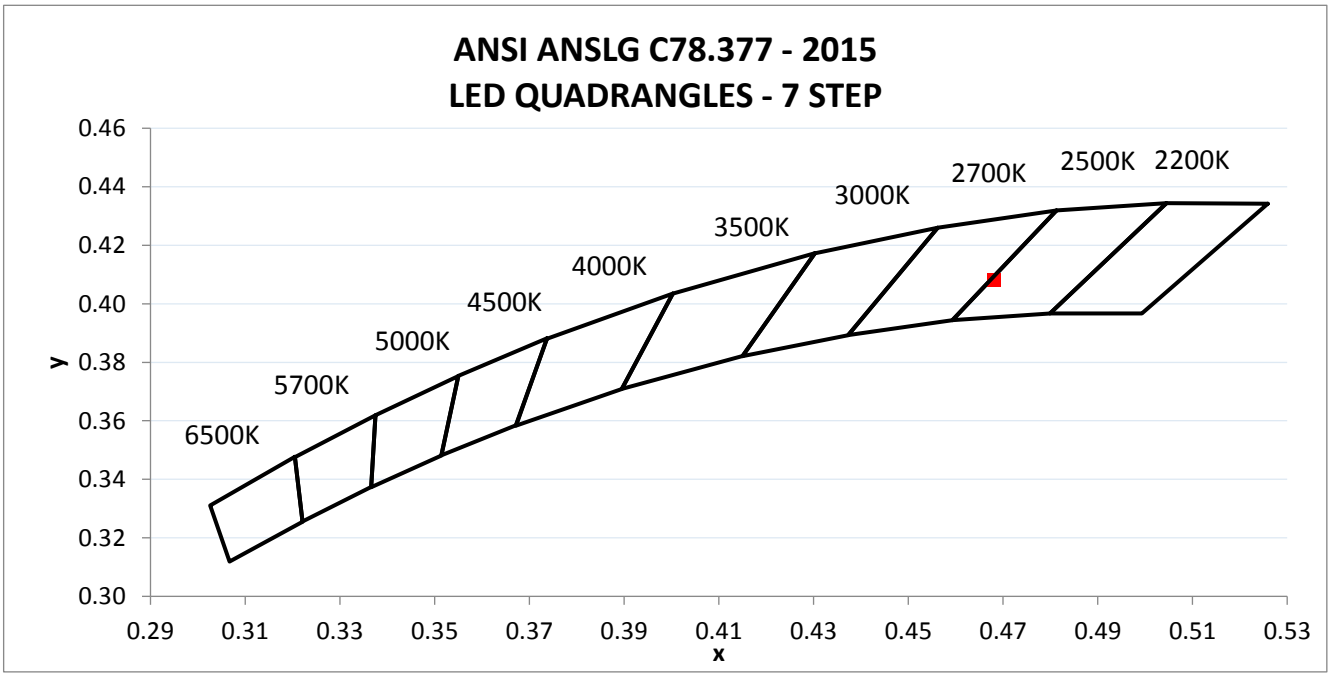
RESULTS OF TESTS

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 (%)
AH08042020023951-009	Base Up	120.00	131.70	15.37	0.973	16.29

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
962.3	62.6	2573	92.8	64.1	-0.0014

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.468	0.408	0.269	0.528



545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009

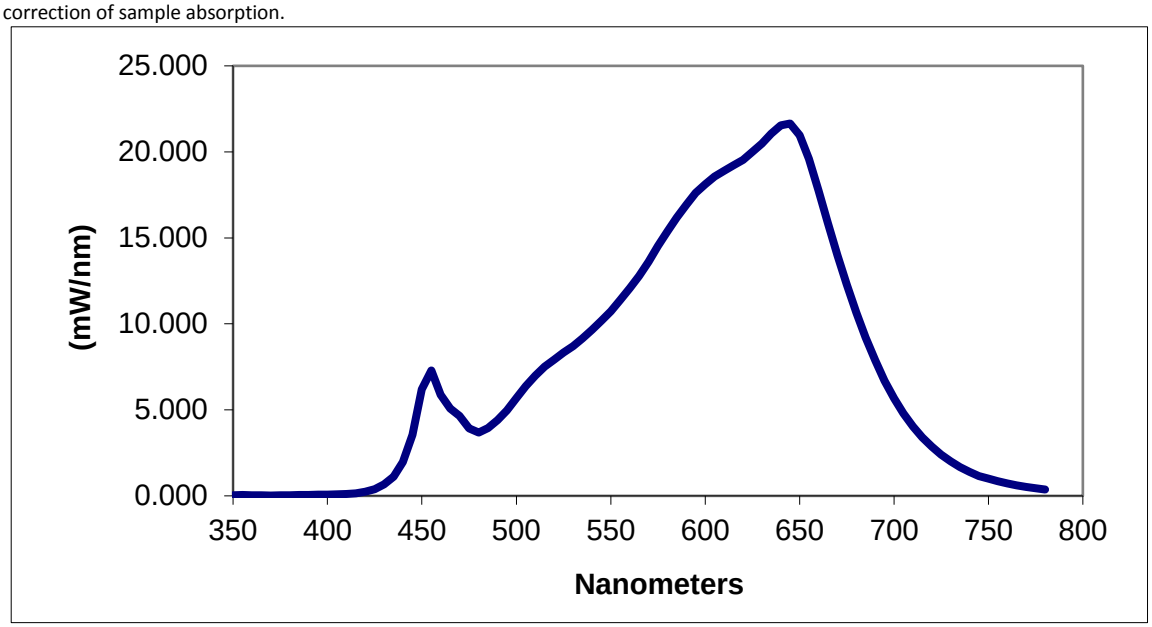
TEST REPORT **REPORT DATE: August 26, 2020**

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	0.040	460	5.884	570	13.621	680	10.649
355	0.051	465	5.076	575	14.524	685	9.200
360	0.035	470	4.644	580	15.382	690	7.886
365	0.041	475	3.925	585	16.192	695	6.693
370	0.019	480	3.679	590	16.921	700	5.681
375	0.040	485	3.948	595	17.610	705	4.801
380	0.039	490	4.399	600	18.110	710	4.027
385	0.051	495	4.973	605	18.568	715	3.403
390	0.058	500	5.696	610	18.894	720	2.856
395	0.074	505	6.377	615	19.219	725	2.403
400	0.081	510	6.992	620	19.540	730	2.008
405	0.100	515	7.505	625	19.989	735	1.668
410	0.113	520	7.921	630	20.480	740	1.384
415	0.155	525	8.341	635	21.054	745	1.150
420	0.243	530	8.705	640	21.541	750	1.000
425	0.389	535	9.149	645	21.649	755	0.847
430	0.662	540	9.651	650	20.972	760	0.718
435	1.119	545	10.171	655	19.584	765	0.606
440	1.964	550	10.740	660	17.738	770	0.517
445	3.547	555	11.382	665	15.871	775	0.435
450	6.185	560	12.069	670	13.985	780	0.371
455	7.286	565	12.785	675	12.297		

*Without correction of sample absorption.



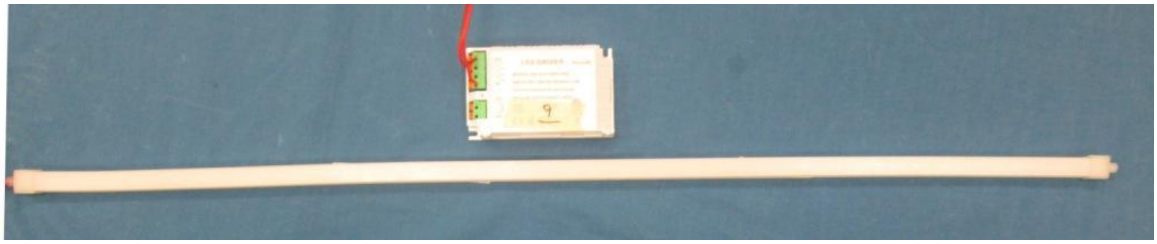
End Of Test Results

545 E. Algonquin Rd
Arlington Heights, IL 60005
Telephone: (847) 439-5667
www.intertek.com

REPORT NO.: 104373788CHI-009
REPORT DATE: August 26, 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				