

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

MR16-12V-8W-NF-27KWD-SL

REPORT NUMBER

104373788CHI-013

ISSUE DATE

August 27, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: August 27, 2020

TEST REPORT

TEST OF ONE LED MR16-GU5.4

MODEL NO. MR16-12V-8W-NF-27KWD-SL

LED MODEL NO. PURE EDGE

DRIVER MODEL NO. LTF/ TA15WA12LED65B15-0000

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 MR16-12V-8W-NF-27KWD-SL. The sample was received by Intertek on August 4, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH08042020023951-013.

DATE OF TESTS

August 20, 2020 through August 21, 2020.

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SUMMARY

MODEL NO:	MR16-12V-8W-NF-27KWD-SL
DESCRIPTION:	LED MR16-GU5.4

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	457.4	471.9
Input Power (W) @ 120 (VAC)	8.80	8.92
Lumen Efficacy (lm/W)	52.0	52.9
Input Power Factor () @ 120 (VAC)	0.953	0.955

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	25.07
Correlated Color Temperature (K)	2587
Color Rendering Index - Ra	95.9
Color Rendering - R9	71.4
DUV	0.0002
Chromaticity Coordinate (x)	0.470
Chromaticity Coordinate (y)	0.413
Chromaticity Coordinate (u')	0.268
Chromaticity Coordinate (v')	0.530

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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 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

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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

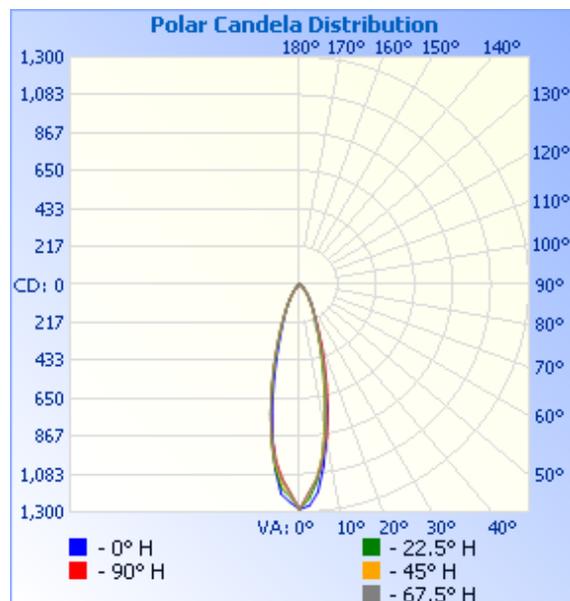
RESULTS OF TESTS

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)
AH08042020023951-013	Base Up	120.0	77.9	8.92	0.955	471.9	52.9

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	1284	1284	1284	1284	1284
5	1191	1130	1108	1112	1114
10	870	820	834	866	891
15	552	517	537	568	594
20	326	309	324	344	366
25	207	195	201	209	218
30	141	130	130	132	136
35	96	87	85	85	86
40	62	56	55	54	53
45	39	36	34	34	33
50	26	24	22	22	22
55	17	16	15	14	15
60	12	11	10	10	10
65	8	8	8	8	8
70	6	6	6	6	6
75	5	4	4	5	5
80	3	2	3	3	3
85	1	1	1	1	1
90	0	0	0	0	0



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RESULTS OF TESTS

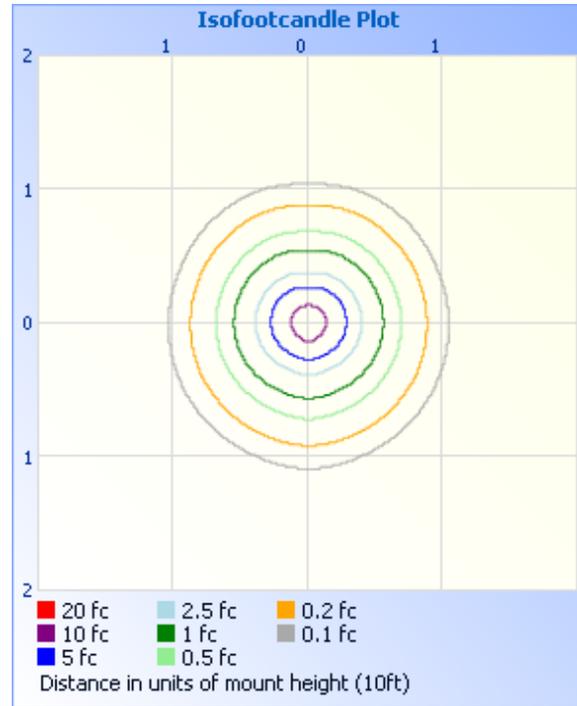
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT
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Illuminance at a Distance			
	Center Beam fc	Beam Width	
1.7ft	444 fc	0.8 ft	0.9 ft
3.3ft	118 fc	1.6 ft	1.7 ft
5.0ft	51.4 fc	2.4 ft	2.5 ft
6.7ft	28.6 fc	3.3 ft	3.4 ft
8.3ft	18.6 fc	4.0 ft	4.2 ft
10.0ft	12.8 fc	4.9 ft	5.0 ft

■ Vert. Spread: 27.3°
■ Horiz. Spread: 28.3°



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	359.0	76.1
0-40	415.1	88.0
0-60	457.2	96.9
60-90	14.7	3.1
70-100	6.5	1.4
90-120	0.0	0.0
0-90	471.9	100.0
90-180	0.0	0.0
0-180	471.9	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	99.8	21.1
10-20	158.8	33.7
20-30	100.3	21.3
30-40	56.1	11.9
40-50	27.9	5.9
50-60	14.2	3.0
60-70	8.2	1.7
70-80	4.9	1.0
80-90	1.6	0.3

TEST REPORT

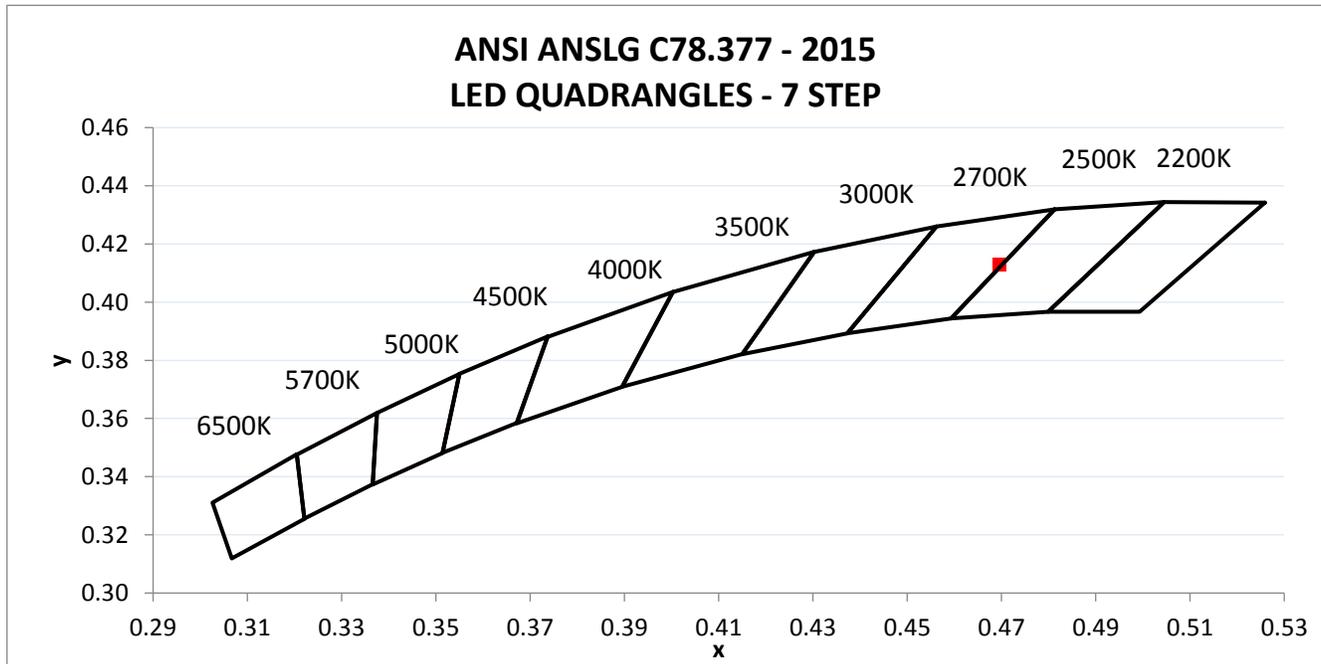
RESULTS OF TESTS

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 (%)
AH08042020023951-013	Base Up	120.00	77.05	8.80	0.953	25.07

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
457.4	52.0	2587	95.9	71.4	0.0002

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.470	0.413	0.268	0.530



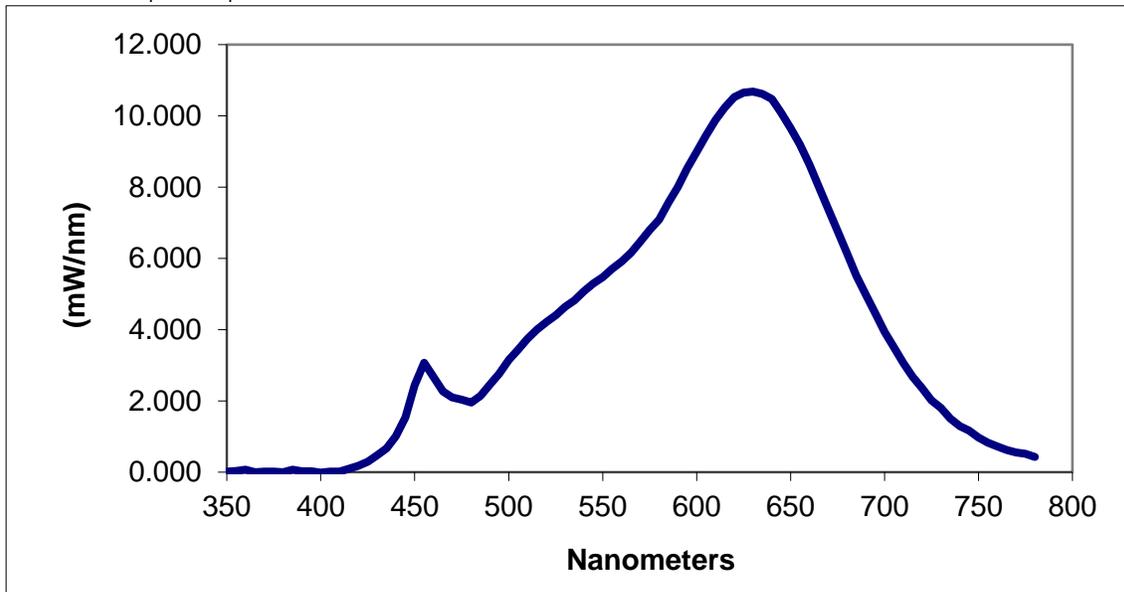
TEST REPORT

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	0.014	460	2.676	570	6.471	680	6.140
355	0.035	465	2.270	575	6.790	685	5.521
360	0.072	470	2.101	580	7.090	690	4.979
365	0.000	475	2.031	585	7.563	695	4.474
370	0.021	480	1.951	590	8.005	700	3.939
375	0.018	485	2.143	595	8.524	705	3.508
380	-0.001	490	2.460	600	8.991	710	3.063
385	0.066	495	2.768	605	9.442	715	2.678
390	0.030	500	3.147	610	9.880	720	2.359
395	0.024	505	3.437	615	10.228	725	2.021
400	-0.012	510	3.753	620	10.526	730	1.800
405	0.020	515	3.999	625	10.650	735	1.507
410	0.020	520	4.211	630	10.681	740	1.292
415	0.096	525	4.399	635	10.618	745	1.170
420	0.176	530	4.644	640	10.476	750	0.973
425	0.292	535	4.825	645	10.088	755	0.833
430	0.469	540	5.077	650	9.656	760	0.727
435	0.671	545	5.294	655	9.193	765	0.623
440	1.004	550	5.470	660	8.630	770	0.549
445	1.533	555	5.708	665	8.021	775	0.517
450	2.434	560	5.908	670	7.386	780	0.430
455	3.073	565	6.154	675	6.780		

*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				