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
MR16-12V-8W-NF-30KWD-SL

REPORT NUMBER
104373788CHI-014

ISSUE DATE
August 27, 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-014

TEST REPORT **REPORT DATE: August 27, 2020**

TEST OF ONE LED MR16-GU5.3

MODEL NO. MR16-12V-8W-NF-30KWD-SL
LED MODEL NO. PURE EDGE
DRIVER MODEL NO. LTF/ TA15WA12LED65B15-0001

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-30KWD-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 AH08042020023951-014.

DATE OF TESTS

August 24, 2020 through August 26, 2020.

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TEST REPORT **REPORT DATE: August 27, 2020**

SUMMARY

MODEL NO:	MR16-12V-8W-NF-30KWD-SL
DESCRIPTION:	LED MR16-GU5.3

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	466.8	474.1
Input Power (W) @ 120 (VAC)	8.83	8.93
Lumen Efficacy (lm/W)	52.9	53.1
Input Power Factor ( ) @ 120 (VAC)	0.885	0.906

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	35.11
Correlated Color Temperature (K)	2945
Color Rendering Index - Ra	96.9
Color Rendering - R9	94.2
DUV	0.0037
Chromaticity Coordinate (x)	0.436
Chromaticity Coordinate (y)	0.395
Chromaticity Coordinate (u')	0.254
Chromaticity Coordinate (v')	0.518

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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
Pacific AC Power Supply	118-ACX	CHI0154	VBU	VBU
Sorenson DC Power Supply	XFR150-8	146847	VBU	VBU
Yokogawa Power Analyzer	WT1600	146770	10/1/2019	10/1/2020
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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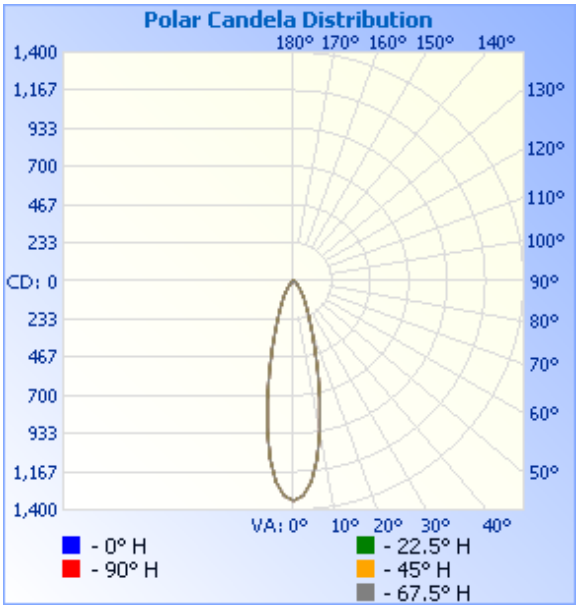
RESULTS OF TESTS

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)
AH08042020023951-014	Base Up	120.0	82.1	8.93	0.906	474.1	53.1

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	1342	1342	1342	1342	1342
5	1233	1233	1233	1233	1233
10	922	922	922	922	922
15	567	567	567	567	567
20	326	326	326	326	326
25	200	200	200	200	200
30	131	131	131	131	131
35	86	86	86	86	86
40	56	56	56	56	56
45	35	35	35	35	35
50	24	24	24	24	24
55	17	17	17	17	17
60	12	12	12	12	12
65	9	9	9	9	9
70	7	7	7	7	7
75	5	5	5	5	5
80	4	4	4	4	4
85	2	2	2	2	2
90	0	0	0	0	0



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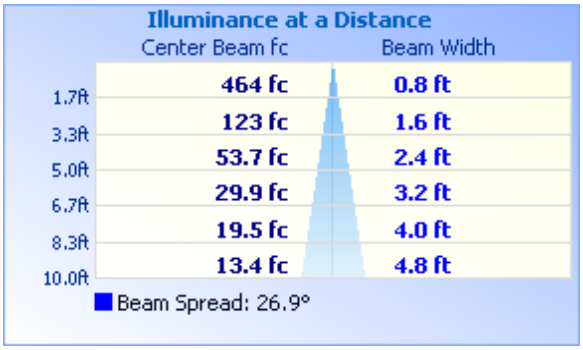
RESULTS OF TESTS

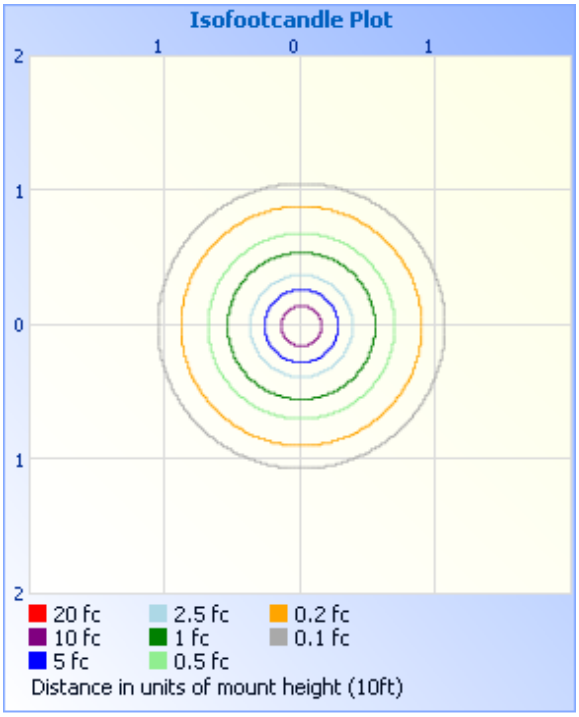
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft

ILLUMINANCE - CONE OF LIGHT



ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	358.9	75.7
0-40	413.7	87.3
0-60	457.5	96.5
60-90	16.5	3.5
70-100	7.5	1.6
90-120	0.0	0.0
0-90	474.1	100.0
90-180	0.0	0.0
0-180	474.1	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	106.9	22.6
10-20	157.5	33.2
20-30	94.4	19.9
30-40	54.8	11.6
40-50	28.3	6.0
50-60	15.6	3.3
60-70	9.0	1.9
70-80	5.7	1.2
80-90	1.8	0.4

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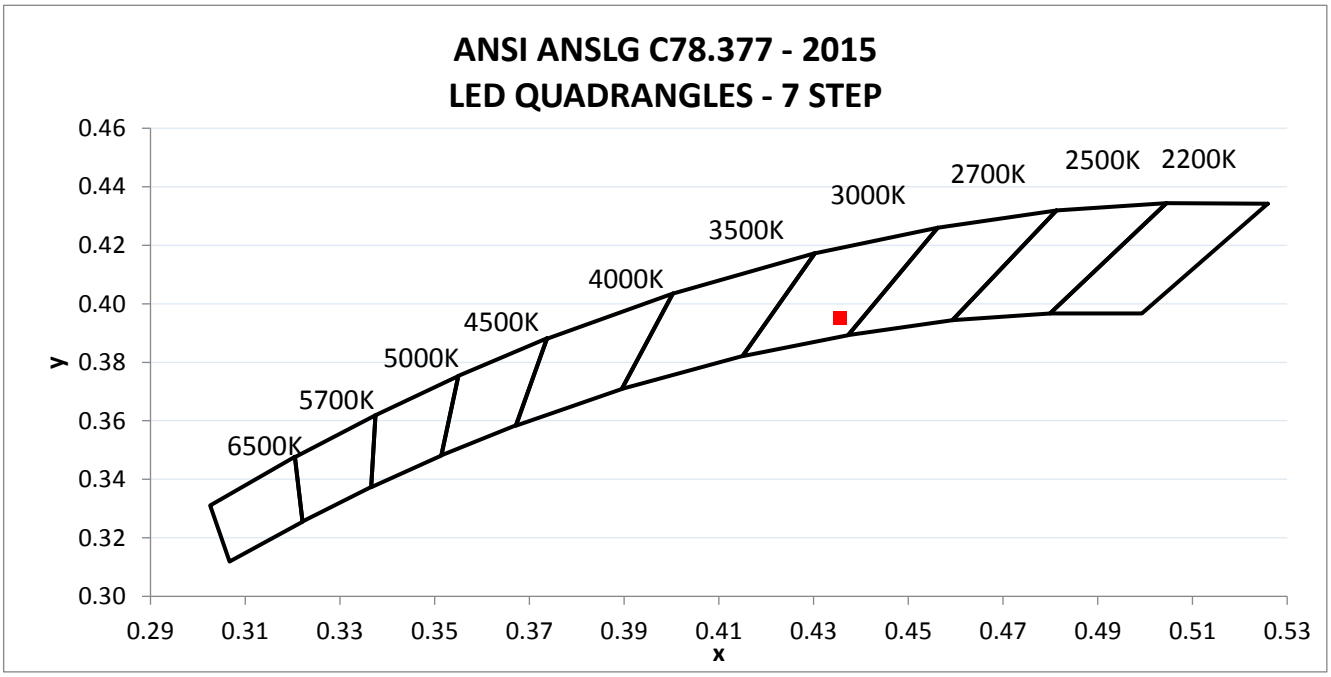
RESULTS OF TESTS

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 (%)
AH08042020023951-014	Base Up	119.98	83.10	8.83	0.885	35.11

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
466.8	52.9	2945	96.9	94.2	0.0037

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.436	0.395	0.254	0.518



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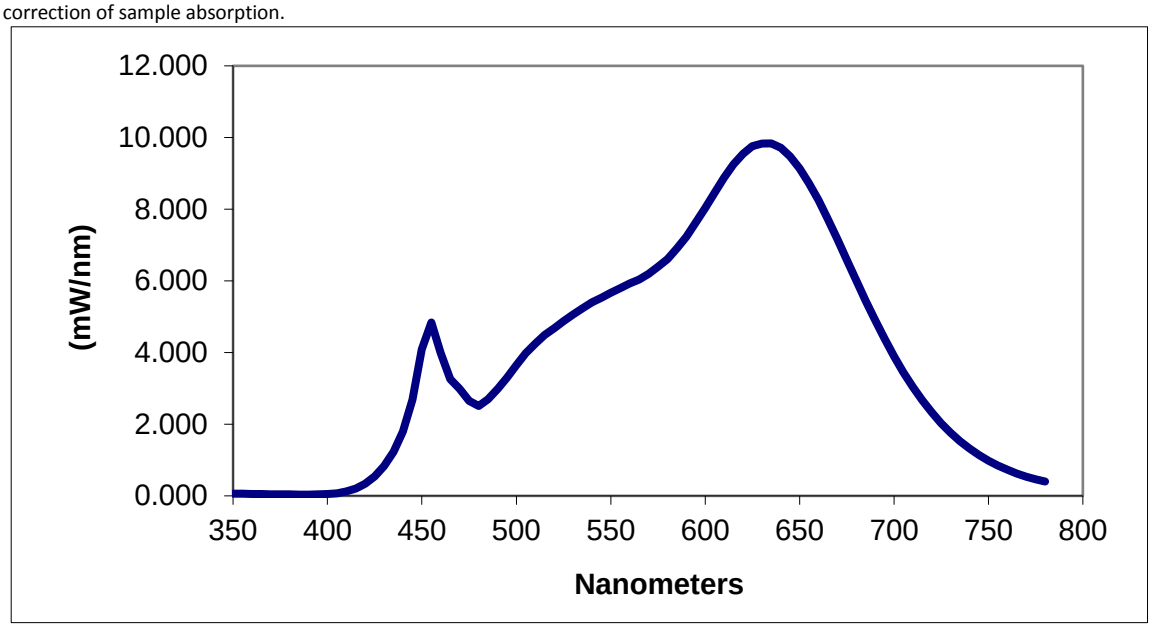
PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.058	460	3.989	570	6.195	680	6.009
355	0.062	465	3.257	575	6.390	685	5.448
360	0.054	470	2.987	580	6.604	690	4.905
365	0.049	475	2.647	585	6.899	695	4.388
370	0.045	480	2.512	590	7.233	700	3.897
375	0.041	485	2.696	595	7.624	705	3.448
380	0.040	490	2.981	600	8.036	710	3.034
385	0.034	495	3.295	605	8.454	715	2.667
390	0.034	500	3.654	610	8.881	720	2.326
395	0.042	505	3.979	615	9.246	725	2.030
400	0.051	510	4.254	620	9.547	730	1.761
405	0.075	515	4.488	625	9.755	735	1.522
410	0.121	520	4.679	630	9.833	740	1.317
415	0.205	525	4.873	635	9.837	745	1.139
420	0.340	530	5.059	640	9.715	750	0.985
425	0.543	535	5.232	645	9.476	755	0.846
430	0.830	540	5.398	650	9.137	760	0.731
435	1.230	545	5.526	655	8.727	765	0.626
440	1.795	550	5.665	660	8.249	770	0.536
445	2.688	555	5.793	665	7.725	775	0.462
450	4.089	560	5.927	670	7.159	780	0.397
455	4.842	565	6.032	675	6.589		

*Without correction of sample absorption.



End Of Test Results

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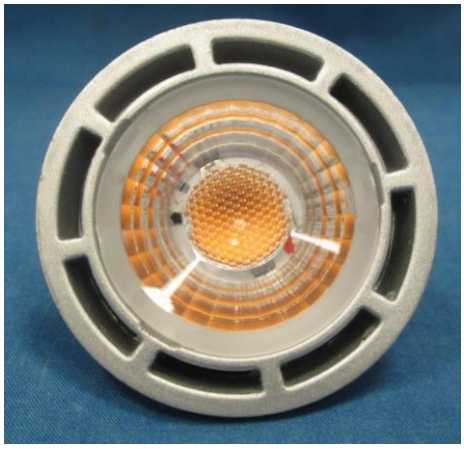
TEST REPORT

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				