

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

LZ.5-5W-3-27KZ-XX

PROJECT NUMBER

G104373788

REPORT NUMBER

104373788CHI-024

ISSUE DATE

9/14/2020

REVISED DATE

None

TEST DATES

08/21/2020 through 08/24/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104373788CHI-024

MODEL NUMBER(s)

LZ.5-5W-3-27KZ-XX

REPORT RENDERED TO:

PURE EDGE LIGHTING
1718 W. FULLERTON AVE.
CHICAGO, IL 60614
USA

STATEMENT OF LIMITATION

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.

TEST STANDARDS

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

In Charge of Testing:



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Reviewer:



Jeff Davis
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SAMPLE INFORMATION

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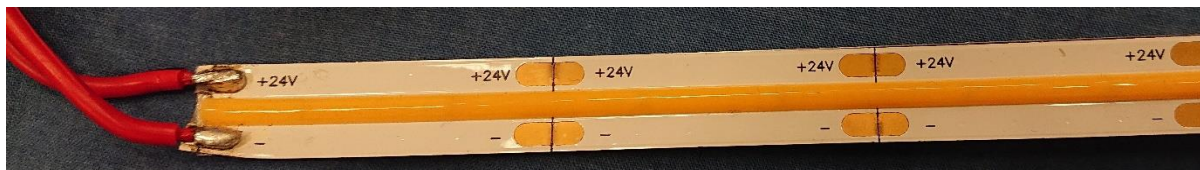
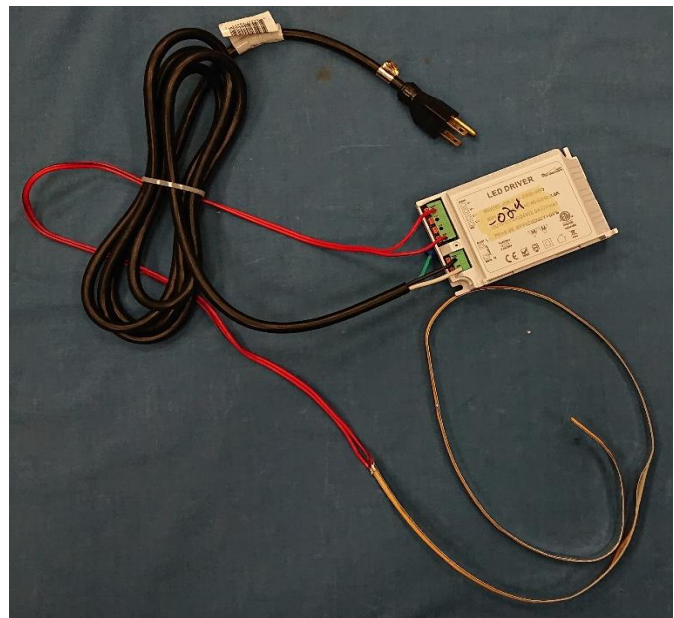
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH08112020115319	LZ.5-5W-3-27KZ-XX	Led strip	Production	8/11/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	LZ.5-5W-3-27KZ-XX	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	LZ.5-5W-3-27KZ-XX
Product Description:	Led strip
LED Model No.:	LEDWISE
Driver Model No.:	HUARUI/DR-24V-2000-60D
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	976.3	1014.5
Input Power (W) @ 120VAC (Vac)	16.50	16.65
Lumen Efficacy (lm/W)	59.2	60.9
Input Power Factor (I) @ 120VAC (Vac)	0.978	0.980

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	13.61
Correlated Color Temperature (K)	2760
Color Rendering Index - Ra (I)	92.8
Color Rendering Index - R9 (I)	59.4
Duv (I)	0.0023
Chromaticity Coordinate (x)	0.459
Chromaticity Coordinate (y)	0.417
Chromaticity Coordinate (u')	0.259
Chromaticity Coordinate (v')	0.529

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral distribution for each EUT resulting in photometric and colorimetric data. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position inside the sphere and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	LZ.5-5W-3-27KZ-XX	NA

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

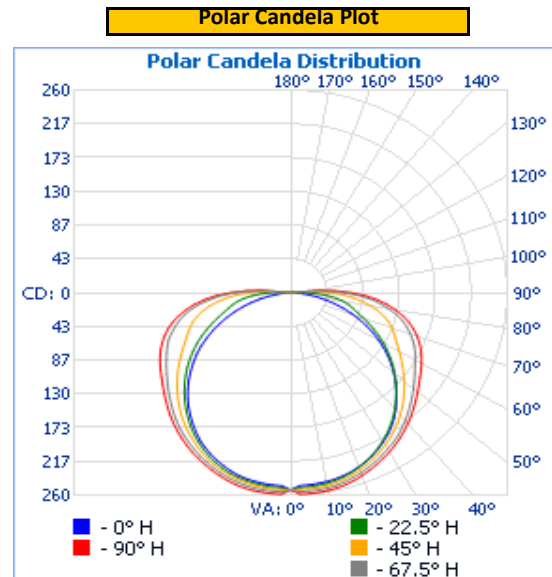
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.1	140.5	16.50	0.978

Light Output (lm)	Lumen Efficacy (lm/W)
976.3	59.2

INTENSITY SUMMARY - CANDELA

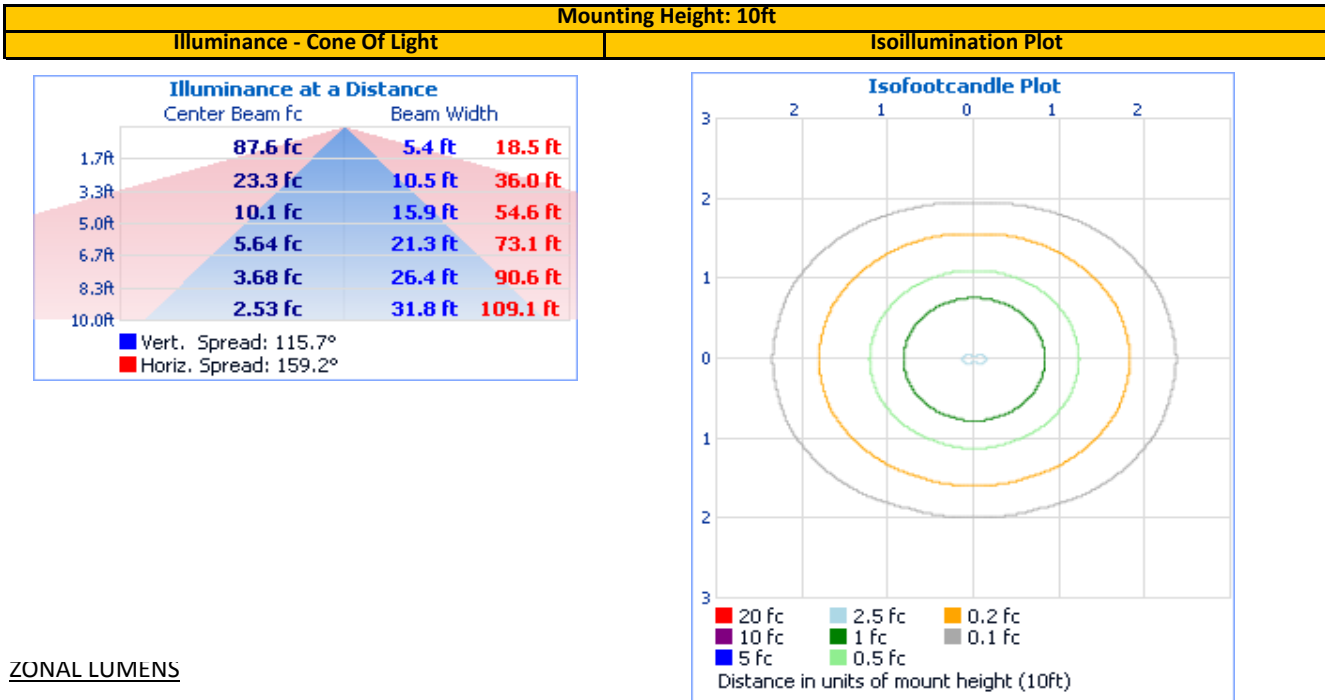
Angle	0	22.5	45	67.5	90
0	253	253	253	253	253
5	248	250	252	256	259
10	246	249	252	255	258
15	243	245	248	252	255
20	238	239	242	246	250
25	231	230	235	240	244
30	222	220	226	232	236
35	210	208	216	224	228
40	196	195	204	214	219
45	179	179	192	203	209
50	162	163	178	192	199
55	143	146	164	182	189
60	122	128	150	172	181
65	100	109	139	164	172
70	77	91	129	152	161
75	54	77	116	139	147
80	33	64	97	120	128
85	14	44	76	97	104
90	3	21	47	64	72
95	1	2	14	30	36
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
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Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	203.0	20.8%	90-100	18.7	1.9%
0-40	338.6	34.7%	100-110	0.0	0.0%
0-60	634.0	64.9%	110-120	0.0	0.0%
60-90	323.6	33.1%	120-130	0.0	0.0%
70-100	206.8	21.2%	130-140	0.0	0.0%
90-120	18.7	1.9%	140-150	0.0	0.0%
0-90	957.6	98.1%	150-160	0.0	0.0%
90-180	18.7	1.9%	160-170	0.0	0.0%
0-180	976.3	100.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	LZ.5-5W-3-27KZ-XX	NA

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

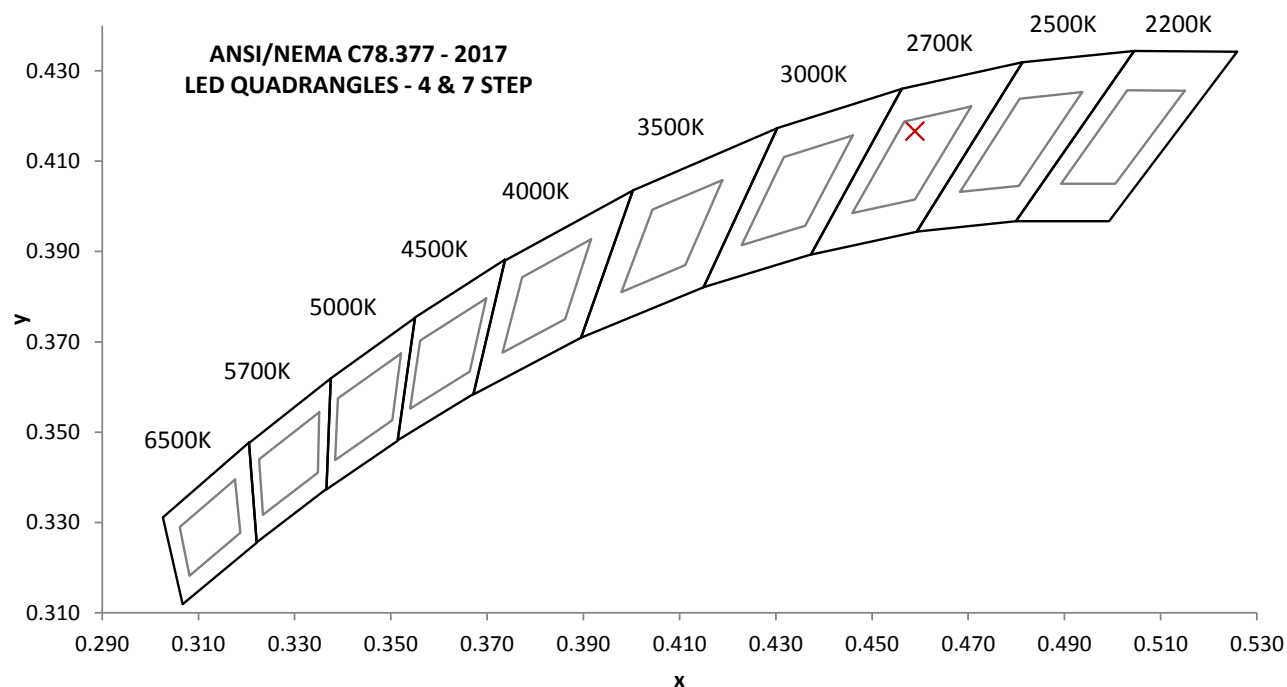
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
119.93	141.7	16.65	0.980	13.61

Measured at 119.93(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
1014.5	60.9	2760	92.8	59.4

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0023	0.459	0.417	0.259	0.529

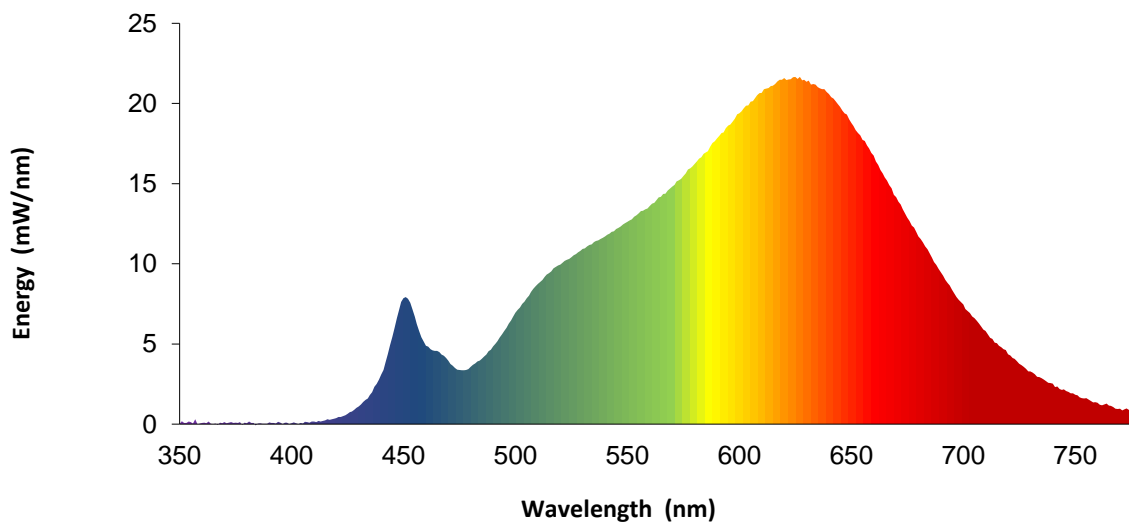


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	4.9		570	14.8		680	11.7
355	0.1		465	4.6		575	15.5		685	10.6
360	0.1		470	3.9		580	16.2		690	9.5
365	0.0		475	3.4		585	16.9		695	8.4
370	0.1		480	3.6		590	17.8		700	7.5
375	0.1		485	4.1		595	18.6		705	6.6
380	0.1		490	4.9		600	19.4		710	5.8
385	0.0		495	5.8		605	20.1		715	5.0
390	0.1		500	6.9		610	20.7		720	4.3
395	0.1		505	7.9		615	21.1		725	3.8
400	0.1		510	8.7		620	21.6		730	3.3
405	0.0		515	9.4		625	21.7		735	2.9
410	0.2		520	10.0		630	21.4		740	2.5
415	0.2		525	10.4		635	21.0		745	2.2
420	0.4		530	10.9		640	20.6		750	1.8
425	0.6		535	11.3		645	19.8		755	1.6
430	1.1		540	11.7		650	18.8		760	1.3
435	1.8		545	12.2		655	17.7		765	1.2
440	3.1		550	12.6		660	16.8		770	1.0
445	5.4		555	13.1		665	15.4		775	0.9
450	7.8		560	13.6		670	14.2		780	0.7
455	6.7		565	14.2		675	12.9		---	---

Without correction of sample absorption.



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Yokogawa Power Meter	WT210	146919	7/1/2020	7/1/2021
2	Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
3	LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
4	Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
5	Pacific AC Power Supply	118-ACX	CHI0153	VBU	VBU
6	Newport Humidity Recorder	iServer	CHI0456	10/11/2019	10/11/2020
7	Labsphere Spectroradiometer	CDS-600	146923	VBU	VBU
8	2M Rotating Sphere	7660-ROT	146923	VBU	VBU
9	Omega thermometer	USB TC08	EQAH002615	4/7/2020	4/7/2021
10	Ametek DC Power Supply	XFR150-8	1468464	VBU	VBU
11	Yokogawa Power Meter	WT210	146880	10/2/2019	10/2/2020
12	Chroma Power Supply	61604	CHI0371	VBU	VBU
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Note: Standard sources listed above are traceable to NIST: National Institute of Standards and Technology

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
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