

# PURE EDGE LIGHTING

## TEST REPORT

### SCOPE OF WORK

LED Performance Testing

### MODEL NUMBER

SUN3-HDL1-SQ-WW-SA

### PROJECT NUMBER

G104373788

### REPORT NUMBER

104373788CHI-029

### ISSUE DATE

9/14/2020

### REVISED DATE

None

### TEST DATES

09/03/2020 through 09/10/2020.

### DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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**REPORT NUMBER**

104373788CHI-029

**MODEL NUMBER(s)**

SUN3-HDL1-SQ-WW-SA

**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:



Ian Smith  
Engineer  
Lighting Division

Reviewer:



Jeff Davis  
NA Technical Lead  
Lighting Division

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## SAMPLE INFORMATION

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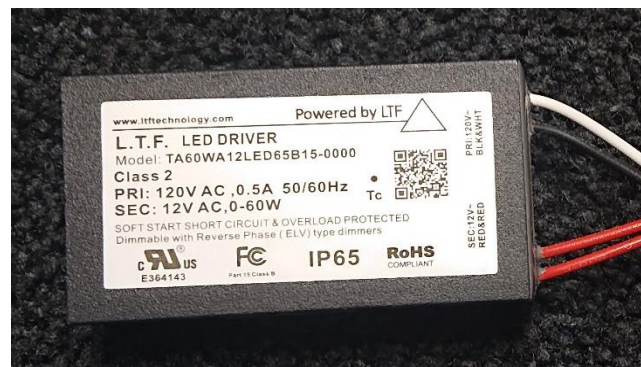
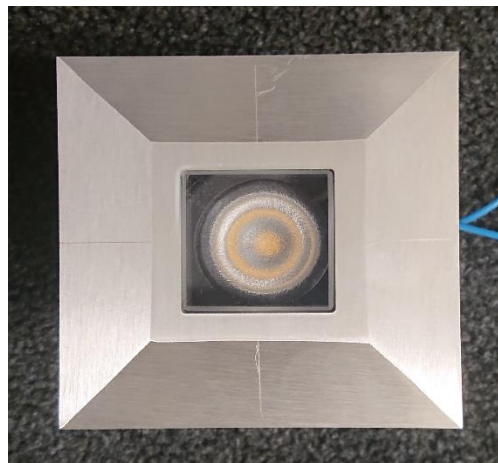
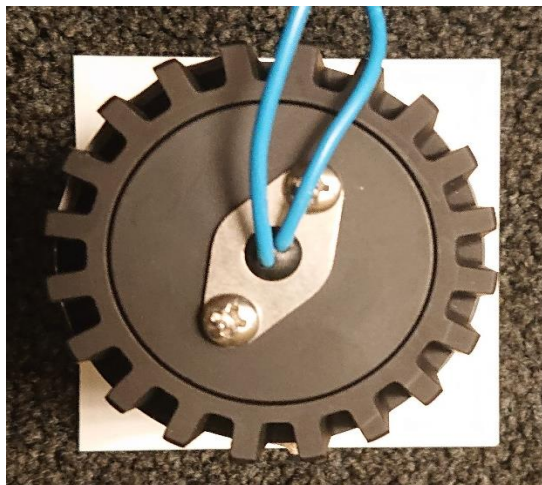
### ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH09022020034516	SUN3-HDL1-SQ-WW-SA	Led fixture	Production	9/2/2020

### TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SUN3-HDL1-SQ-WW-SA	1

### SAMPLE PHOTOS - TESTED CONFIGURATIONS



## SUMMARY

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### PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	SUN3-HDL1-SQ-WW-SA
Product Description:	Led fixture
LED Model No.:	LUXEON-M
Driver Model No.:	L.T.F/TA60WA12LEDS65B15-000
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	427.3	418.1
Input Power (W) @ 120VAC (Vac)	8.87	8.86
Lumen Efficacy (lm/W)	48.2	47.2
Input Power Factor (I) @ 120VAC (Vac)	0.660	0.686

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	90.19
Correlated Color Temperature (K)	3023
Color Rendering Index - Ra (I)	94.5
Color Rendering Index - R9 (I)	74.4
Duv (I)	0.0014
Chromaticity Coordinate (x)	0.437
Chromaticity Coordinate (y)	0.408
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.523

## 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	SUN3-HDL1-SQ-WW-SA	NA

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

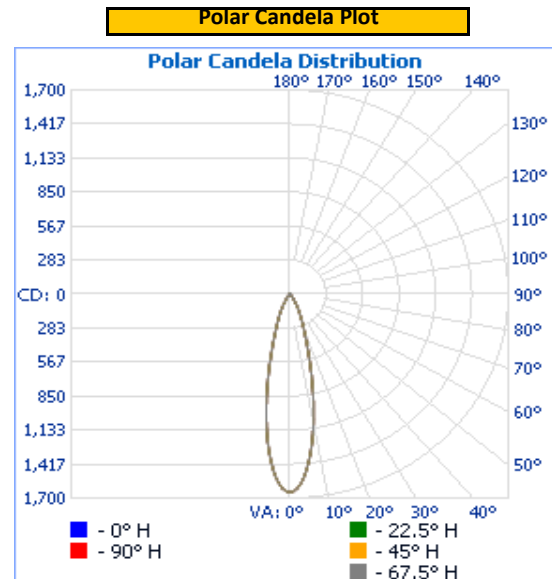
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Up	120.0	111.9	8.87	0.660

Light Output (lm)	Lumen Efficacy (lm/W)
427.3	48.2

**INTENSITY SUMMARY - CANDELA**

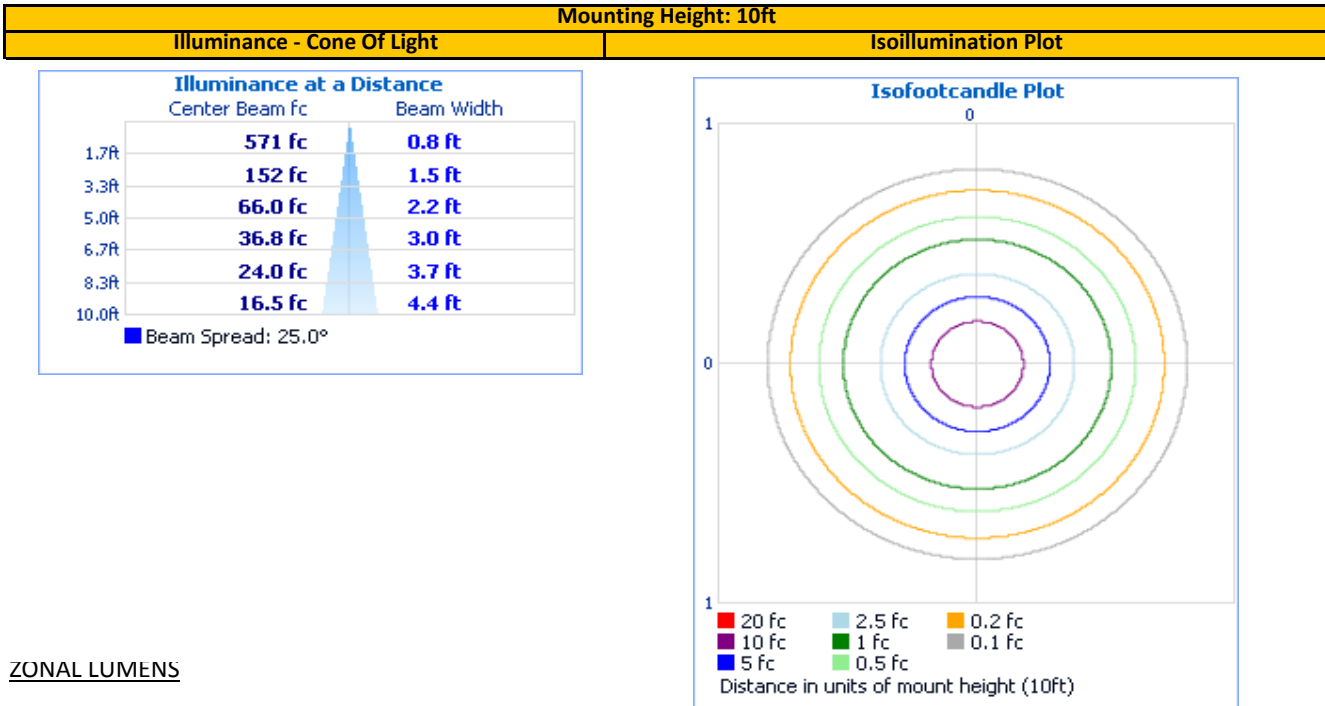
Angle	0	22.5	45	67.5	90
0	1651	1651	1651	1651	1651
5	1474	1474	1474	1474	1474
10	1059	1059	1059	1059	1059
15	610	610	610	610	610
20	328	328	328	328	328
25	188	188	188	188	188
30	103	103	103	103	103
35	44	44	44	44	44
40	18	18	18	18	18
45	8	8	8	8	8
50	4	4	4	4	4
55	2	2	2	2	2
60	2	2	2	2	2
65	1	1	1	1	1
70	1	1	1	1	1
75	1	1	1	1	1
80	1	1	1	1	1
85	0	0	0	0	0
90	0	0	0	0	0
95	0	0	0	0	0
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					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	385.0	90.1%	90-100	0.0	0.0%
0-40	415.4	97.2%	100-110	0.0	0.0%
0-60	424.6	99.4%	110-120	0.0	0.0%
60-90	2.7	0.6%	120-130	0.0	0.0%
70-100	1.4	0.3%	130-140	0.0	0.0%
90-120	0.0	0.0%	140-150	0.0	0.0%
0-90	427.3	100.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	160-170	0.0	0.0%
0-180	427.3	100.0%	170-180	0.0	0.0%

# **INTEGRATING SPHERE TESTING**

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	SUN3-HDL1-SQ-WW-SA	NA

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

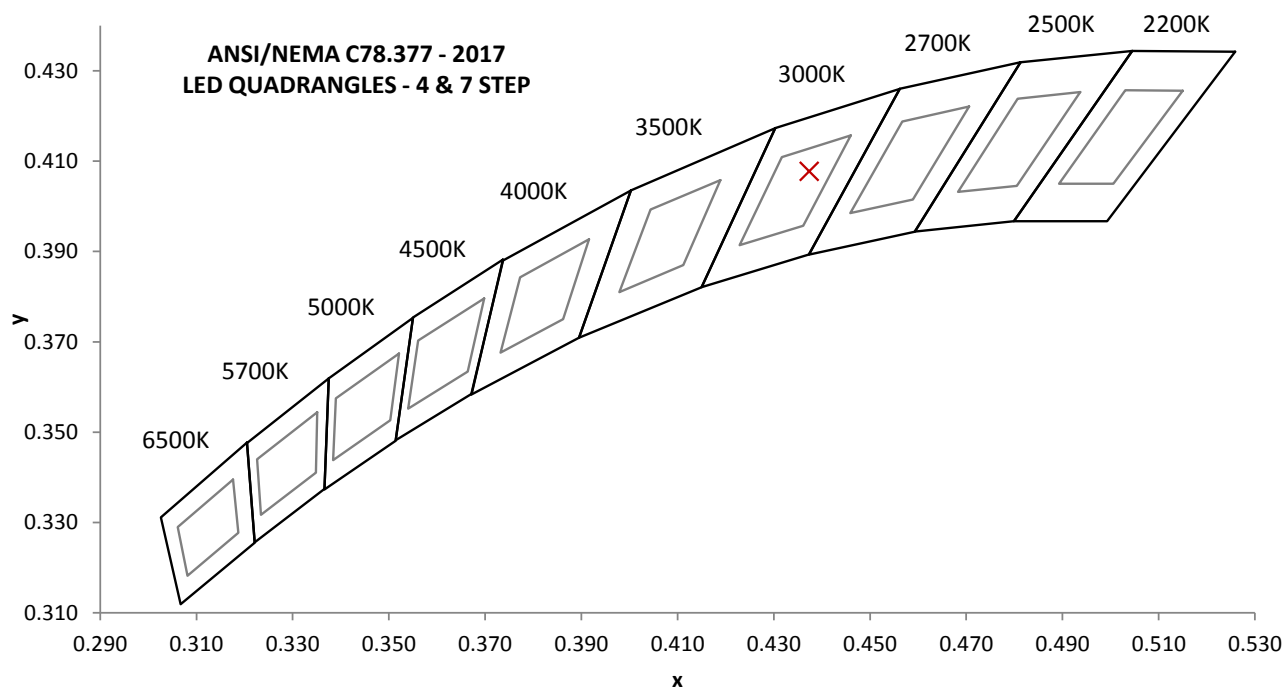
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )	Input ATHD (%)
120.01	107.7	8.86	0.686	90.19

Measured at 120.01(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ( )	CRI - R9 ( )
418.1	47.2	3023	94.5	74.4

Duv ( )	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0014	0.437	0.408	0.249	0.523

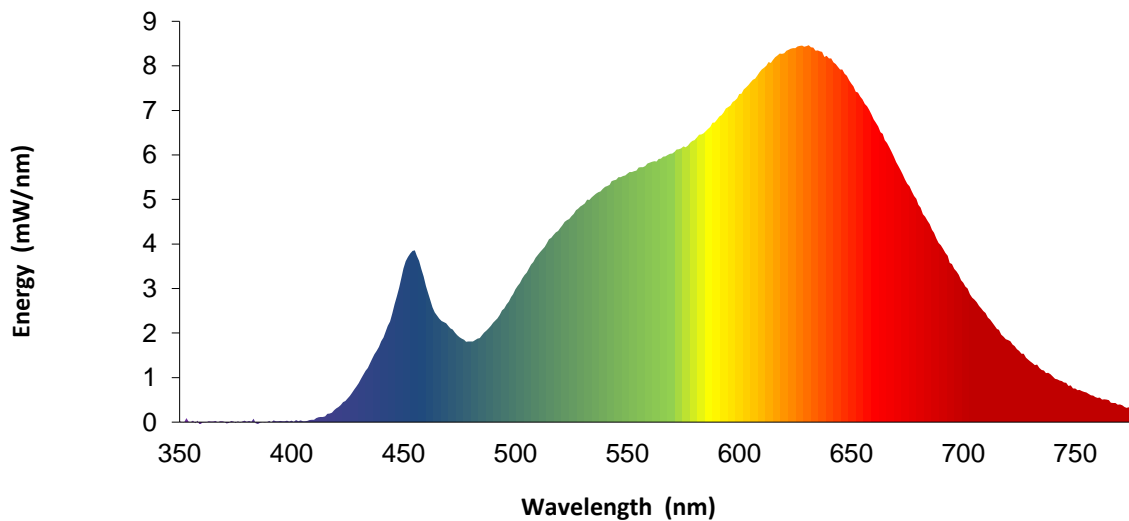


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	3.1		570	6.0		680	4.9
355	0.0		465	2.4		575	6.2		685	4.4
360	0.0		470	2.2		580	6.3		690	4.0
365	0.0		475	1.9		585	6.5		695	3.6
370	0.0		480	1.8		590	6.8		700	3.1
375	0.0		485	1.9		595	7.1		705	2.8
380	0.0		490	2.2		600	7.4		710	2.4
385	0.0		495	2.6		605	7.6		715	2.1
390	0.0		500	3.0		610	7.9		720	1.8
395	0.0		505	3.4		615	8.1		725	1.6
400	0.0		510	3.8		620	8.3		730	1.4
405	0.0		515	4.1		625	8.4		735	1.2
410	0.1		520	4.4		630	8.4		740	1.0
415	0.1		525	4.6		635	8.3		745	0.9
420	0.3		530	4.9		640	8.2		750	0.8
425	0.5		535	5.1		645	7.9		755	0.7
430	0.9		540	5.3		650	7.6		760	0.5
435	1.3		545	5.4		655	7.2		765	0.5
440	1.8		550	5.6		660	6.8		770	0.4
445	2.4		555	5.7		665	6.3		775	0.3
450	3.5		560	5.8		670	5.8		780	0.3
455	3.9		565	5.9		675	5.4		---	---

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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