

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

SUN3-HDL4-SQ-WW-SA

PROJECT NUMBER

G104373788

REPORT NUMBER

104373788CHI-032

ISSUE DATE

9/14/2020

REVISED DATE

None

TEST DATES

09/04/2020 through 09/11/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104373788CHI-032

MODEL NUMBER(s)

SUN3-HDL4-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:



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Reviewer:



Jeff Davis
NA Technical Lead
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SAMPLE INFORMATION

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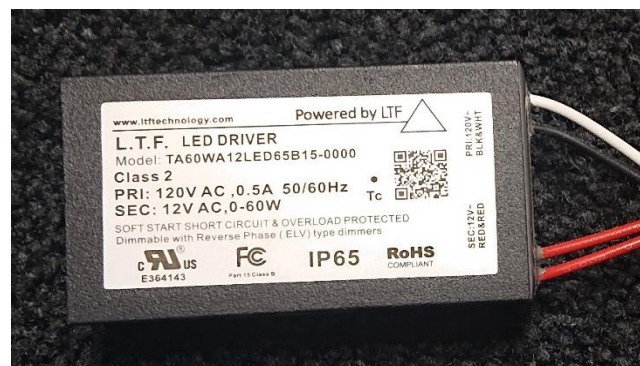
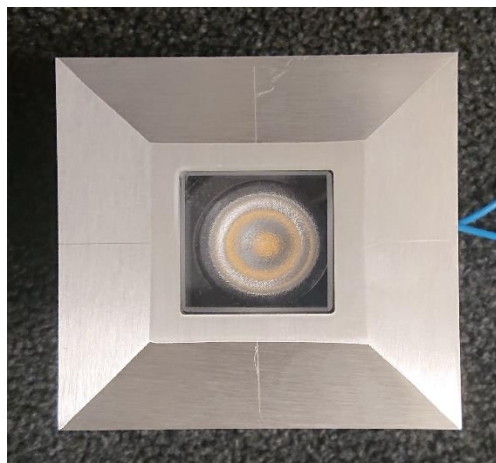
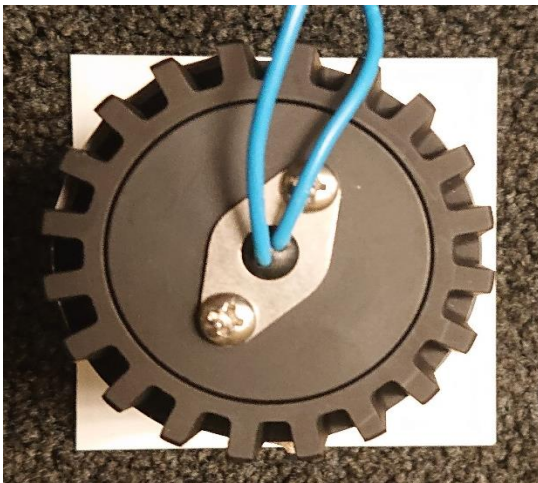
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH09022020034516	SUN3-HDL4-SQ-WW-SA	Led fixture	Production	9/2/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	SUN3-HDL4-SQ-WW-SA	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	SUN3-HDL4-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)	413.8	412.2
Input Power (W) @ 120VAC (Vac)	8.92	8.92
Lumen Efficacy (lm/W)	46.4	46.2
Input Power Factor (I) @ 120VAC (Vac)	0.662	0.687

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	90.36
Correlated Color Temperature (K)	3065
Color Rendering Index - Ra (I)	94.4
Color Rendering Index - R9 (I)	74.6
Duv (I)	0.0011
Chromaticity Coordinate (x)	0.434
Chromaticity Coordinate (y)	0.406
Chromaticity Coordinate (u')	0.248
Chromaticity Coordinate (v')	0.522

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-HDL4-SQ-WW-SA	NA

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

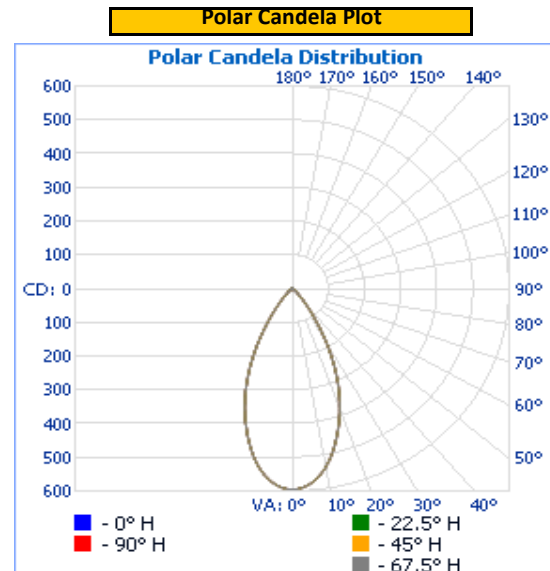
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.0	112.3	8.92	0.662

Light Output (lm)	Lumen Efficacy (lm/W)
413.8	46.4

INTENSITY SUMMARY - CANDELA

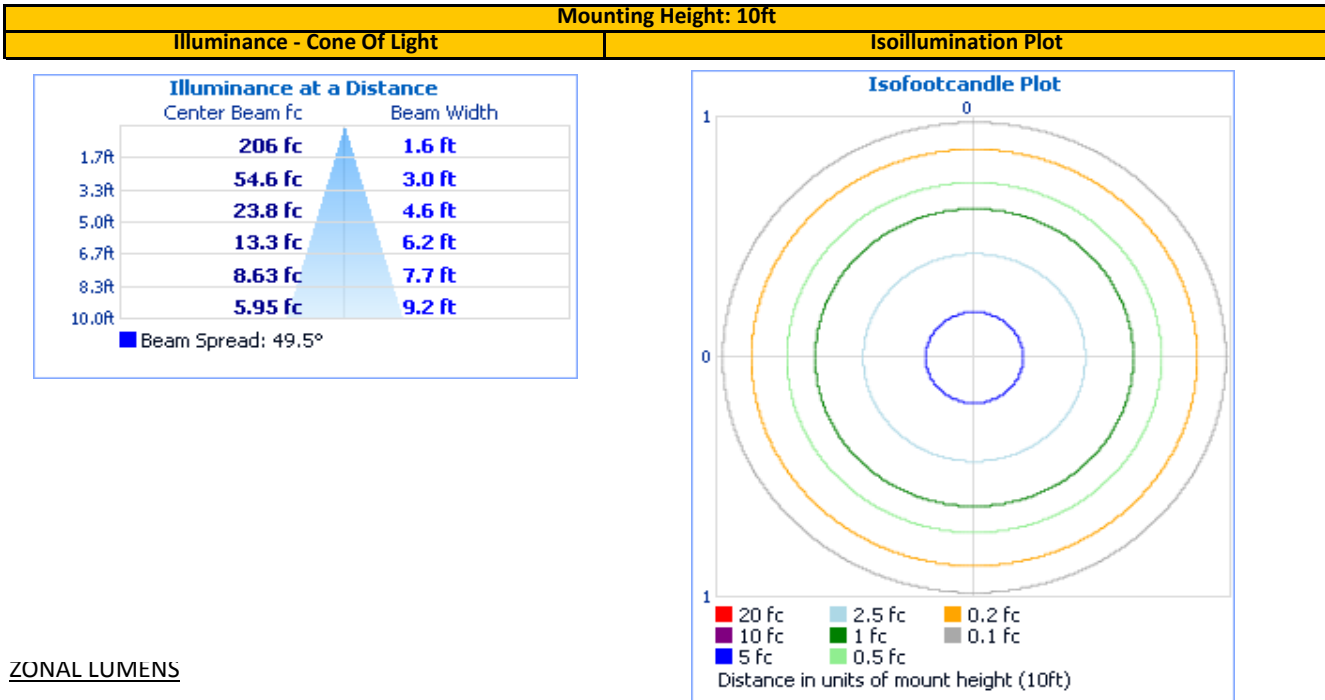
Angle	0	22.5	45	67.5	90
0	595	595	595	595	595
5	580	580	580	580	580
10	536	536	536	536	536
15	466	466	466	466	466
20	384	384	384	384	384
25	293	293	293	293	293
30	196	196	196	196	196
35	110	110	110	110	110
40	54	54	54	54	54
45	25	25	25	25	25
50	12	12	12	12	12
55	5	5	5	5	5
60	2	2	2	2	2
65	1	1	1	1	1
70	1	1	1	1	1
75	1	1	1	1	1
80	0	0	0	0	0
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	315.4	76.2%	90-100	0.0	0.0%
0-40	385.6	93.2%	100-110	0.0	0.0%
0-60	411.7	99.5%	110-120	0.0	0.0%
60-90	2.1	0.5%	120-130	0.0	0.0%
70-100	0.9	0.2%	130-140	0.0	0.0%
90-120	0.0	0.0%	140-150	0.0	0.0%
0-90	413.8	100.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	160-170	0.0	0.0%
0-180	413.8	100.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

REPORT NO. 104373788CHI-032

Test Configuration	Tested Model No.	Pass/Fail/NA
1	SUN3-HDL4-SQ-WW-SA	NA

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

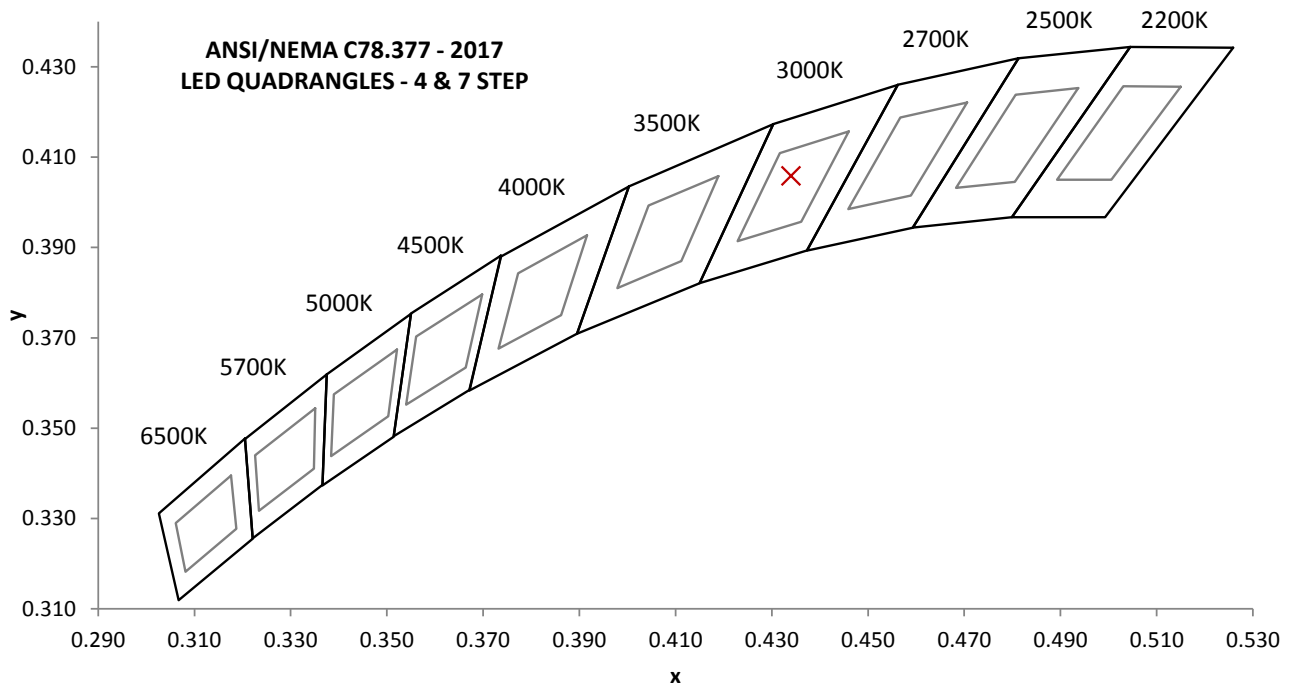
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.03	108.3	8.92	0.687	90.36

Measured at 120.03(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
412.2	46.2	3065	94.4	74.6

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0011	0.434	0.406	0.248	0.522

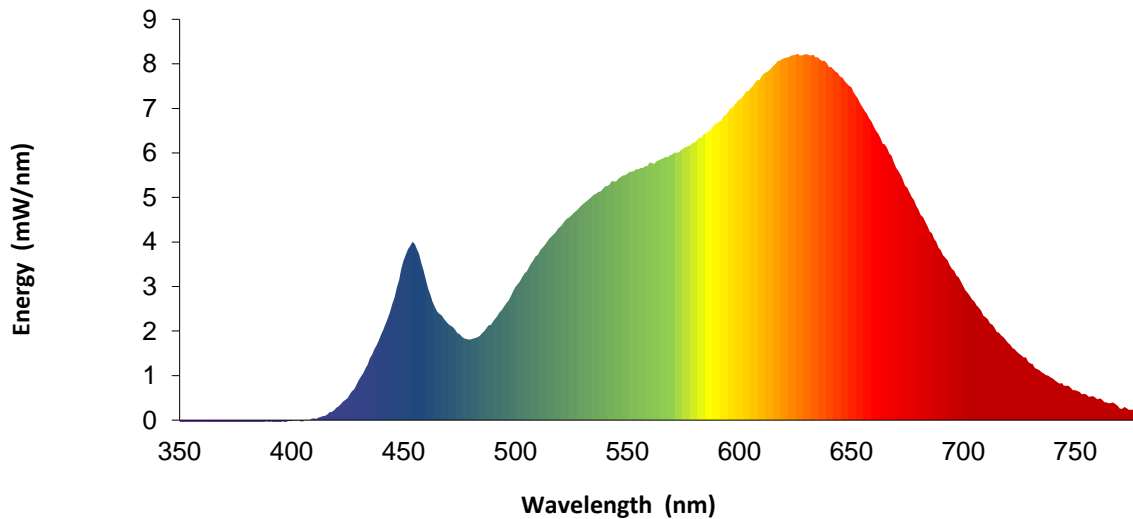


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	-0.2		460	3.1		570	6.0		680	4.7
355	-0.2		465	2.4		575	6.1		685	4.2
360	-0.1		470	2.2		580	6.2		690	3.8
365	-0.1		475	1.9		585	6.4		695	3.4
370	-0.1		480	1.8		590	6.7		700	3.0
375	-0.1		485	1.9		595	6.9		705	2.7
380	-0.1		490	2.2		600	7.2		710	2.3
385	-0.1		495	2.6		605	7.5		715	2.0
390	0.0		500	3.0		610	7.7		720	1.7
395	-0.1		505	3.3		615	7.9		725	1.5
400	0.0		510	3.7		620	8.1		730	1.3
405	0.0		515	4.1		625	8.2		735	1.1
410	0.0		520	4.3		630	8.2		740	0.9
415	0.1		525	4.6		635	8.1		745	0.8
420	0.3		530	4.8		640	7.9		750	0.7
425	0.5		535	5.1		645	7.7		755	0.6
430	0.9		540	5.3		650	7.5		760	0.5
435	1.4		545	5.4		655	7.0		765	0.4
440	1.9		550	5.5		660	6.6		770	0.3
445	2.6		555	5.6		665	6.2		775	0.2
450	3.6		560	5.8		670	5.7		780	0.2
455	4.0		565	5.9		675	5.2		---	---

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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