

SONNEMAN - A WAY OF LIGHT TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

1XDXXLC24W-24

PROJECT NUMBER

G106005580

REPORT NUMBER

106005580CRT-008

ISSUE DATE

6/4/2025

REVISION DATE

None

TEST DATES

6/4/2025

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

106005580CRT-008

MODEL NUMBER(s)

1XDXXLC24W-24

REPORT RENDERED TO:

SONNEMAN - A WAY OF LIGHT
103 TOWER DRIVE
MIDDLETOWN, NY 10941
USA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01491297-0.

TEST STANDARDS

ANSI/IES LM-79-19: Optical and Electrical Measurements of Solid State Lighting Products

In Charge of Testing:

Reviewer:



Kristie Ray
Team Lead, Engineering
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Melanie Brittain
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SAMPLE INFORMATION

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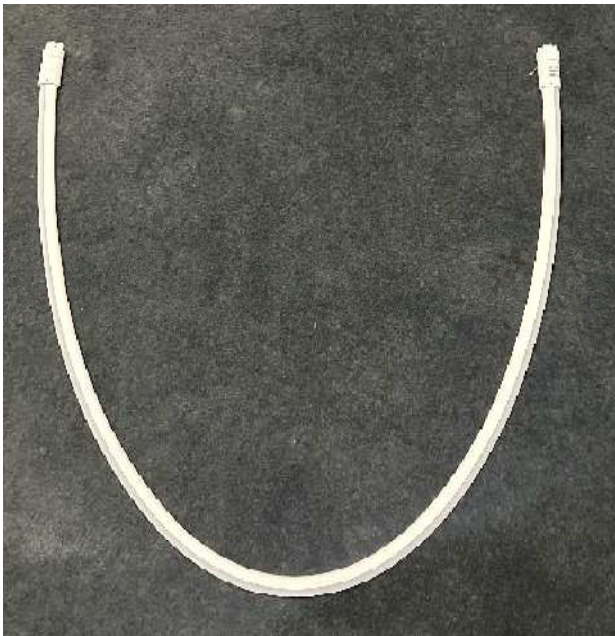
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received Date	Sampling Date
1	CRT2505201423-004	1XDXXLC24W-24	24" Light Curve Luminaire w/24" Height	Production	5/20/2025	N/A
2	CRT2505201423-007-005	LTF TA60WA24LED65B15	Driver	Production	5/20/2025	N/A
3	CRT2505201423-007-006	1XC01XX48K	48" Linear Power Bar	Production	5/20/2025	N/A

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	1XDXXLC24W-24	1,2,3

SAMPLE PHOTOS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Test Configuration 1	
Product Model No.:	1XDXXLC24W-24
Product Description:	24" Light Curve Luminaire w/24" Height
LED Model No.:	Proprietary
Driver Model No.:	LTF TA60WA24LED65B15

Criteria	Results
Light Output (lumens)	327.1
Input Power (W) @ 120 (Vac)	15.02
Luminous Efficacy (lm/W)	21.8
Input Power Factor (I) @ 120 (Vac)	0.959

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with ANSI/IES LM-79-19

DUT SAMPLING METHOD

For testing plans, program requirements, or shipments requiring sampling of DUTs or components, the selections for each test were random. All samples are marked with control numbers regardless of being tested.

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 DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$ and 10-65% respectively at a position within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The test distance was $\geq 5x$ the longest luminous dimension of the DUT.

ANSI/IES Technical Memorandums (TM) reported are not NVLAP accredited

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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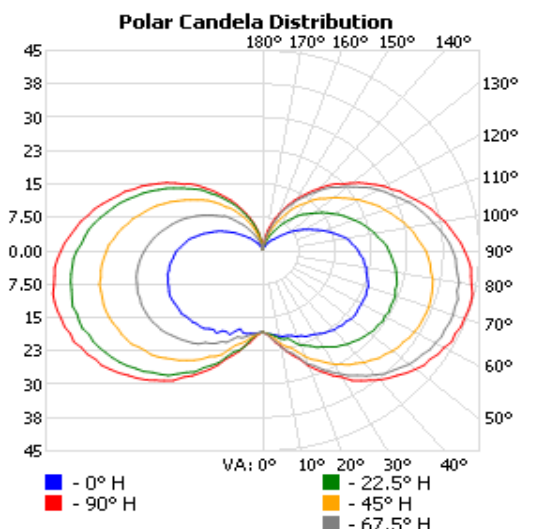
Test Configuration	Tested Model No.	Pass/Fail/NA
1	1XDXXLC24W-24	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.07	130.1	15.02	0.959

Light Output (lm)	Efficacy (lm/W)
327.1	21.8

LUMINOUS INTENSITY SUMMARY (candela)

Vertical	Horizontal					Polar Candela Plot
Angle (°)	0	22.5	45	67.5	90	
0	18	18	18	18	18	
5	19	19	19	20	20	
10	20	20	21	22	22	
15	20	20	23	24	24	
20	21	23	25	27	27	
25	21	24	27	29	30	
30	22	25	29	32	33	
35	23	26	31	34	36	
40	23	27	33	36	38	
45	24	28	34	38	40	
50	24	29	35	40	41	
55	24	29	36	41	42	
60	24	29	36	41	44	
65	24	29	37	42	44	
70	23	29	37	42	45	
75	23	29	36	42	45	
80	22	28	36	42	44	
85	21	27	35	40	43	
90	20	26	34	40	42	
95	19	25	32	38	40	
100	17	24	31	36	38	
105	15	22	29	34	36	
110	13	20	27	32	34	
115	11	19	25	30	32	
120	10	17	23	28	29	
125	8	15	21	25	26	
130	6	13	19	23	24	
135	4	12	17	20	21	
140	3	9	14	17	18	
145	3	8	12	15	16	
150	2	6	10	12	13	
155	2	4	7	10	10	
160	1	3	5	7	8	
165	1	2	3	4	6	
170	0	1	2	2	3	
175	0	1	1	1	1	
180	0	0	0	0	0	

Full luminous intensity matrix found in .IES file

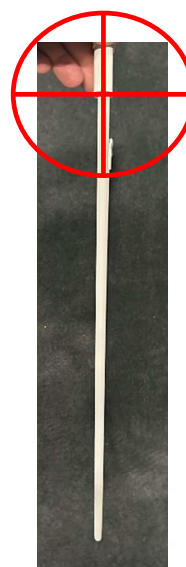
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ORIENTATION AND ALIGNMENT OF DUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
2.07	0.03	2.01
0°-180° H	90°-270° H	0°-180° V

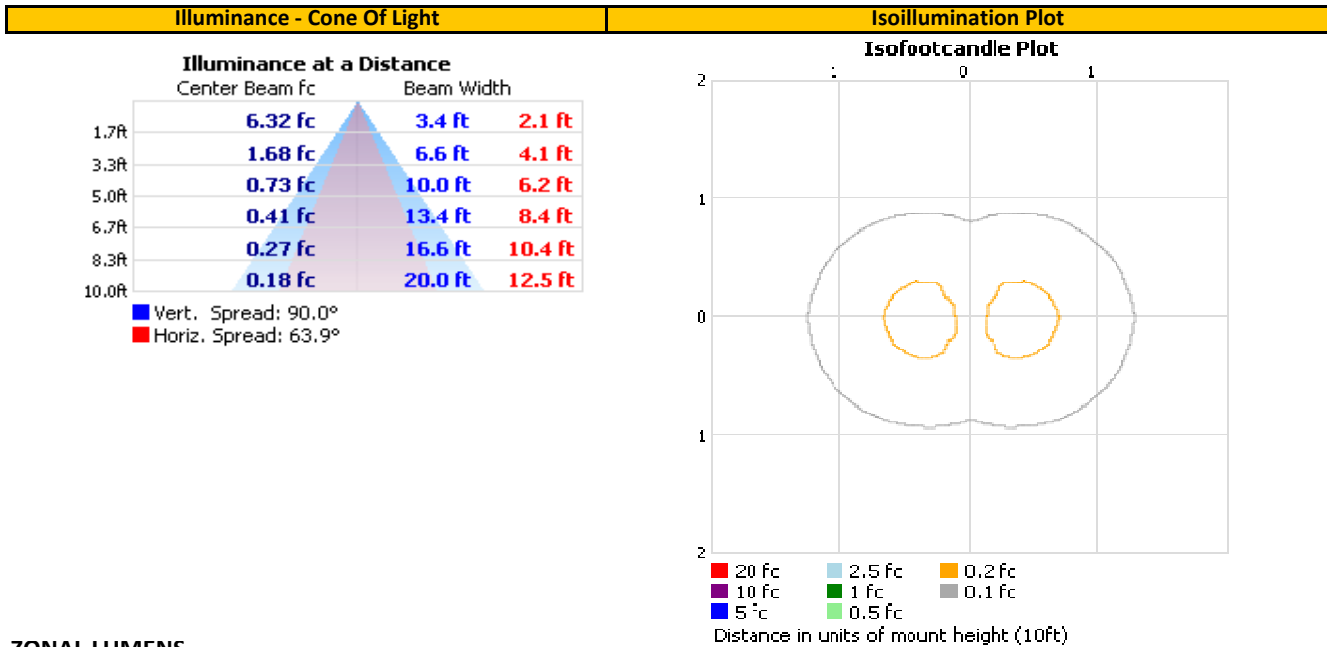
Test Distance (ft)
29.2

PHOTOMETRIC CENTER OF DUT



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone (°)	Lumens	Luminaire	Zone (°)	Lumens	Total
0-30	20.4	6.2%	0-10	1.9	0.6%
0-40	39.1	12.0%	10-20	6.4	1.9%
0-60	94.9	29.0%	20-30	12.2	3.7%
60-90	107.1	32.7%	30-40	18.7	5.7%
70-100	105.8	32.4%	40-50	25.1	7.7%
90-120	85.3	26.1%	50-60	30.6	9.4%
0-90	202.0	61.7%	60-70	34.6	10.6%
90-180	125.2	38.3%	70-80	36.5	11.1%
0-180	327.1	100.0%	80-90	36.0	11.0%
			90-100	33.3	10.2%
			100-110	28.8	8.8%
			110-120	23.1	7.1%
			120-130	17.2	5.3%
			130-140	11.6	3.6%
			140-150	6.8	2.1%
			150-160	3.2	1.0%
			160-170	1.0	0.3%
			170-180	0.1	0.0%

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UNIFIED GLARE RATING (UGR) SUMMARY

Reflectances					
Ceiling Cavity	70	70	50	50	30
Walls	50	30	50	30	30
Floor Cavity	20	20	20	20	20

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Crosswise				
0.3	1.5	1.1	2.3	3.4
2.5	3.6	3.3	4.5	5.6
3.5	4.6	4.4	5.4	6.6
4.5	5.5	5.3	6.3	7.5
4.9	5.9	5.8	6.8	7.9
5.3	6.2	6.2	7.1	8.3

4H	2H
	3H
	4H
	6H
	8H
	12H

2.0	3.1	2.9	3.9	5.0
4.4	5.3	5.2	6.2	7.3
5.5	6.3	6.3	7.2	8.3
6.5	7.2	7.4	8.2	9.3
7.0	7.7	7.9	8.6	9.8
7.4	8.1	8.3	9.0	10.2

8H	4H
	6H
	8H
	12H

6.7	7.4	7.6	8.3	9.5
7.9	8.5	8.8	9.5	10.7
8.5	9.1	9.4	10.0	11.2
9.1	9.6	10.0	10.5	11.7

12H	4H
	6H
	8H

7.1	7.7	8.0	8.7	9.8
8.4	9.0	9.3	9.9	11.1
9.1	9.6	10.0	10.5	11.8

Room Size	
X=2H	Y=2H
	3H
	4H
	6H
	8H
	12H

UGR Viewed Endwise				
6.5	7.7	7.3	8.5	9.6
10.2	11.3	11.0	12.1	13.2
12.1	13.1	12.9	14.0	15.1
14.2	15.1	15.0	16.0	17.1
15.2	16.2	16.1	17.1	18.2
16.4	17.3	17.3	18.2	19.4

4H	2H
	3H
	4H
	6H
	8H
	12H

6.6	7.7	7.5	8.6	9.7
10.4	11.3	11.3	12.3	13.4
12.5	13.3	13.3	14.2	15.4
14.6	15.4	15.5	16.3	17.5
15.8	16.5	16.7	17.4	18.6
17.0	17.7	17.9	18.6	19.8

8H	4H
	6H
	8H
	12H

12.5	13.2	13.4	14.2	15.3
14.8	15.4	15.7	16.4	17.5
16.0	16.6	16.9	17.5	18.7
17.4	17.9	18.3	18.8	20.1

12H	4H
	6H
	8H

12.5	13.2	13.4	14.1	15.3
14.8	15.4	15.7	16.3	17.5
16.1	16.6	17.0	17.5	18.7

Maximum UGR	
20.1	

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI Type C Goniophotometer System	6440	---	4/21/2025	7/20/2025
2	Elgar AC Power Supply	CW1251	---	VBV	VBV
3	Yokogawa Power Analyzer	WT210	E464	6/12/2024	6/12/2025
4	Testo Hygrothermometer	608-H1	L285	5/8/2025	5/8/2026
5	Omega Thermometer	DPI8-C24	M263	3/13/2025	3/13/2026
6	Tape Measure	Crescent	L288	12/9/2024	12/9/2027
The AC power supplies used for testing have a crest factor capable of 0-3.5					

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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