

SONNEMAN - A WAY OF LIGHT TEST REPORT

SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA test standard.

MODEL NUMBER

1XDXXCL11K-09

PROJECT NUMBER

G103981353

REPORT NUMBER

103981353CRT-005

ISSUE DATE

June 27, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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TEST REPORT

REPORT NO.:103981353CRT-005

REPORT DATE: June 27, 2019

TEST OF (1) MONOLINE THIN CYLINDER 9"

MODEL NO. 1DXXXCL11K-09

RENDERED TO:

SONNEMAN - A WAY OF LIGHT
151 AIRPORT DRIVE
WAPPINGERS FALLS, NY 12590

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 federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00975978-1.

STANDARDS USED

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

SAMPLE INFORMATION

| CONTROL NO. | MODEL/SERIAL NO. | DESCRIPTION | TYPE | RECEIVED |
|---------------------|------------------|-------------|------------|----------|
| CRT1906130954-001-5 | 1DXXXCL11K-09 | Luminaire | Production | 06/13/19 |
| N/A | 1XB01DR18K | Accessory | Production | 06/13/19 |
| N/A | 1XC01XX24K | Accessory | Production | 06/13/19 |

DATE OF TESTS

June 27, 2019.

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SUMMARY

| | |
|-------------------------|---------------------------|
| MODEL NO: | 1XDXCL11K-09 |
| DESCRIPTION: | Monoline Thin Cylinder 9" |
| LED MODEL NO: | Not Reported |
| DRIVER MODEL NO: | LTF TA60WA24LED |

| CRITERIA | RESULTS |
|------------------------------------|---------|
| Lumen Output (lumens) | 84.1 |
| Input Power (W) @ 120 (VAC) | 3.16 |
| Lumen Efficacy (lm/W) | 26.6 |
| Input Power Factor () @ 120 (VAC) | 0.927 |

EQUIPMENT LIST

| EQUIPMENT USED | MODEL NO. | CONTROL NO. | CAL DUE DATE | DATE USED |
|---|------------|-------------|--------------|-----------|
| LSI High Speed Mirror Goniometer | 6440 | --- | 07/07/19 | 06/27/19 |
| Elgar AC Power Supply | CW1251 | --- | VBU | 06/27/19 |
| Sorenson DC Power Supply | XG 150-10 | --- | VBU | 06/27/19 |
| Yokogawa Power Analyzer | WT210 | E464 | 05/07/20 | 06/27/19 |
| Omega Thermometer | DPi8-C24 | M263 | 05/07/20 | 06/27/19 |
| M-D Building Products Digital Level | Smart Tool | L112 | 05/01/20 | 06/27/19 |
| NIST Luminous Intensity Standard Source | NBS10322 | N1427 | 02/11/21 | 06/27/19 |
| NIST Luminous Intensity Standard Source | NBS10332 | N1435 | 02/11/21 | 06/27/19 |
| NIST Luminous Intensity Standard Source | NBS10265 | N1437 | 02/11/21 | 06/27/19 |
| NIST Luminous Flux Standard Source | NBS10428 | N1424 | 01/03/21 | 06/27/19 |

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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 - DISTRIBUTION METHOD

A Type C Mirror Goniometer was used to measure the intensity (candela) 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.

The calibration of the goniometer-photometer system is traceable to the National Institute of Standards and Technology.

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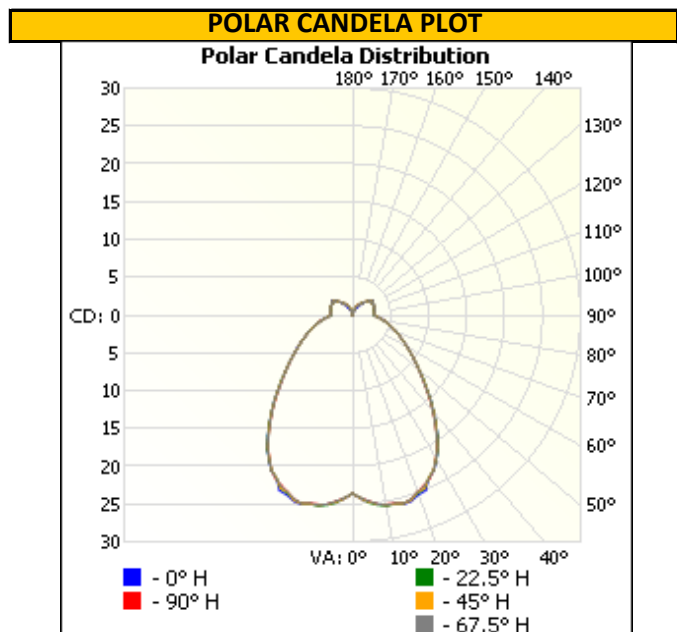
RESULTS OF TESTS

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) |
|----------------------|---------------|---------------------|--------------------|-----------------|------------------------|-------------------|-----------------------|
| CRT1906130954-001-5 | Base Up | 120.07 | 28.4 | 3.16 | 0.927 | 84.1 | 26.6 |

INTENSITY SUMMARY - CANDELA

| Angle | 0 | 22.5 | 45 | 67.5 | 90 |
|-------|----|------|----|------|----|
| 0 | 24 | 24 | 24 | 24 | 24 |
| 5 | 25 | 25 | 25 | 25 | 25 |
| 10 | 26 | 26 | 26 | 26 | 25 |
| 15 | 26 | 26 | 26 | 26 | 26 |
| 20 | 25 | 25 | 25 | 25 | 25 |
| 25 | 24 | 24 | 24 | 24 | 24 |
| 30 | 22 | 22 | 22 | 22 | 22 |
| 35 | 19 | 19 | 19 | 19 | 19 |
| 40 | 16 | 16 | 16 | 16 | 16 |
| 45 | 14 | 14 | 14 | 14 | 14 |
| 50 | 12 | 12 | 12 | 12 | 12 |
| 55 | 10 | 10 | 10 | 10 | 10 |
| 60 | 8 | 8 | 8 | 8 | 8 |
| 65 | 7 | 7 | 7 | 7 | 7 |
| 70 | 6 | 6 | 6 | 6 | 6 |
| 75 | 5 | 5 | 5 | 5 | 5 |
| 80 | 4 | 4 | 4 | 4 | 4 |
| 85 | 3 | 3 | 3 | 3 | 3 |
| 90 | 3 | 3 | 3 | 3 | 3 |
| 95 | 3 | 3 | 3 | 3 | 3 |
| 100 | 3 | 3 | 3 | 3 | 3 |
| 105 | 3 | 3 | 3 | 3 | 3 |
| 110 | 3 | 3 | 3 | 3 | 3 |
| 115 | 3 | 3 | 3 | 3 | 3 |
| 120 | 3 | 3 | 3 | 3 | 3 |
| 125 | 3 | 3 | 3 | 3 | 3 |
| 130 | 3 | 3 | 3 | 3 | 3 |
| 135 | 2 | 2 | 2 | 2 | 2 |
| 140 | 2 | 2 | 2 | 2 | 2 |
| 145 | 2 | 2 | 2 | 2 | 2 |
| 150 | 1 | 2 | 2 | 2 | 2 |
| 155 | 1 | 1 | 1 | 1 | 1 |
| 160 | 1 | 1 | 1 | 1 | 1 |
| 165 | 0 | 1 | 0 | 1 | 0 |



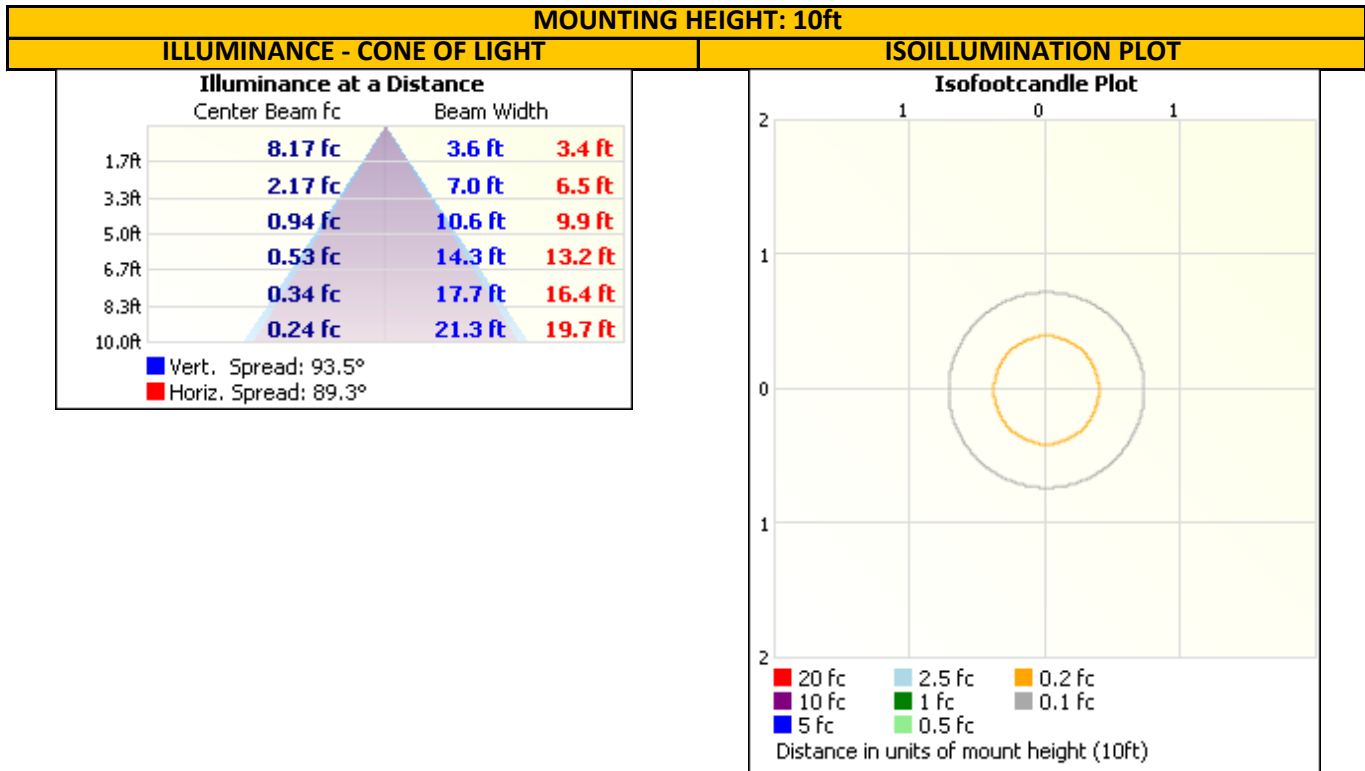
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RESULTS OF TESTS

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



ZONAL LUMEN SUMMARY AND PERCENTAGES

| ZONE | LUMENS | % LUMINAIRE |
|--------|--------|-------------|
| 0-30 | 20.6 | 24.5 |
| 0-40 | 32.6 | 38.8 |
| 0-60 | 52.0 | 61.9 |
| 60-90 | 16.1 | 19.1 |
| 0-90 | 68.1 | 81.0 |
| 90-180 | 15.9 | 19.0 |
| 0-180 | 84.1 | 100.0 |

| ZONE | LUMENS | % LUMINAIRE |
|---------|--------|-------------|
| 0-10 | 2.4 | 2.8 |
| 10-20 | 7.2 | 8.6 |
| 20-30 | 11.0 | 13.0 |
| 30-40 | 12.1 | 14.3 |
| 40-50 | 10.7 | 12.7 |
| 50-60 | 8.7 | 10.4 |
| 60-70 | 7.0 | 8.3 |
| 70-80 | 5.3 | 6.3 |
| 80-90 | 3.8 | 4.5 |
| 90-100 | 3.1 | 3.7 |
| 100-110 | 3.2 | 3.8 |
| 110-120 | 3.1 | 3.6 |
| 120-130 | 2.7 | 3.2 |
| 130-140 | 2.0 | 2.3 |
| 140-150 | 1.2 | 1.4 |
| 150-160 | 0.6 | 0.7 |
| 160-170 | 0.1 | 0.2 |

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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:

Melanie Brittain

Melanie Brittain
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Lighting Division

Report Reviewed By:

Ryan Siddon

Ryan Siddon
Project Engineer
Lighting Division

Attachments: .IES File

REVISION HISTORY

| JOB NUMBER | DATE OF REVISION | PROJECT HANDLER | REVIEWED BY | REVISION NOTE |
|------------|------------------|-----------------|-------------|---------------|
| None | | | | |