LIGHT LABORATORY INC.
8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com



NVLAP TESTING
NVLAP LAB CODE 200927-0

**Report No:** L122510909 **Issue Date: 1/6/2026**
**Amendment:** N/A **Revision Date: N/A**

**Report Prepared For:** FX Luminaire / Lumascape
1940 Diamond Street, San Marcos, CA 92078

**Model Number:** TN-61-E6-S-FL-GR-FW

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:

*IES LM79: 2008* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

*ANSI/IES LM79: 2019* Approved Methods for Optical and Electrical Measurements of Solid-State Lighting Products

*ANSI/NEMA C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products

*ANSI C82.77-10:2014:* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

**Special Test Condition:** Fixture is tested with no special conditions.

**Date of Tests:** 12/23/25

**Seasoning of Sample:** No seasoning was performed in accordance with IESNA LM-79.

**Equipment List**

| Equipment Used | Model No | Stock No | Calibration Due Date |
|---|---|---|---|
| Chroma Programmable AC Source | 61604 | PS-AC02 | -- |
| Yokogawa Digital Power Meter | WT210 | MT-EL06-S3 | 6/21/26 |
| HP Power Supply | 6032A | PS-DC05-S2 | -- |
| Fluke Digital Thermometer | 52K/J | MT-TP05 | 6/25/26 |
| LLI Type C Goniophotometer System | RMG-C-MKII | CD-LL04-GC | -- |
| LLI 2M Sphere | 2MR97 | CD-SN03-S2 | -- |
| LLI Spectroradiometer | SPR-3000 | MT-SC01-S2 | Before Use |

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| General Information | |
|---|---|
| **Manufacturer:** | FX Luminaire / Lumascape |
| **Model Number:** | TN-61-E6-S-FL-GR-FW |
| **Driver Model Number:** | CUSTOM |

| Test Summary | |
|---|---|
| **Total Lumens:** | 374.00 |
| **Efficacy:** | 95.45 |
| **Color Redering Index:** | 83.7 |
| **Correlated Color Temperature:** | 3046 |
| **Input Voltage (VAC/60Hz):** | 12.00 |
| **Input Current (Amp):** | 0.4902 |
| **Input Power (W):** | 3.92 |
| **Input Power Factor:** | 0.6661 |
| **Current ATHD (%):** | 100.8% |

| Test Condition | |
|---|---|
| **Ambient Temperature (°C):** | 25.0 |
| **Stabilization Time (Hours):** | 0:50 |
| **Total Operating Time (Hours):** | 1:25 |

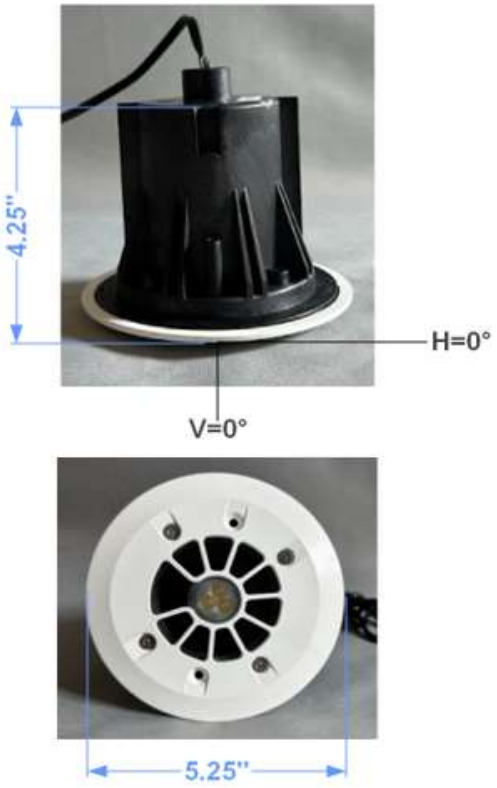


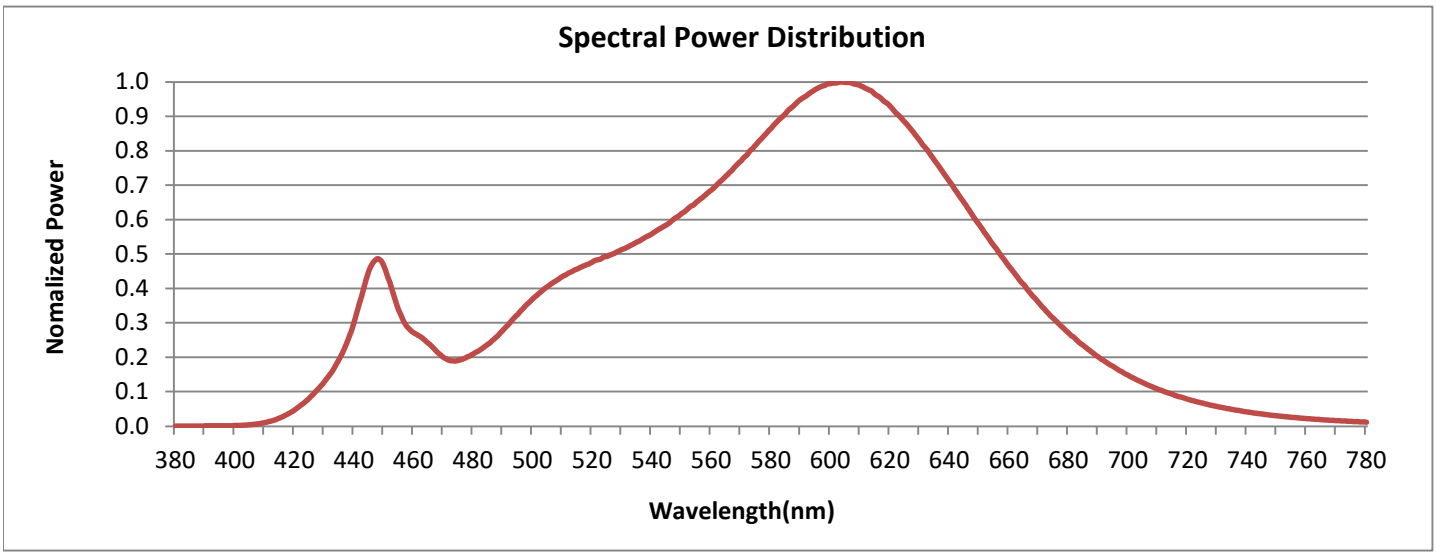

FIG. 1 LUMINAIRE

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## Colorimetry Test Results

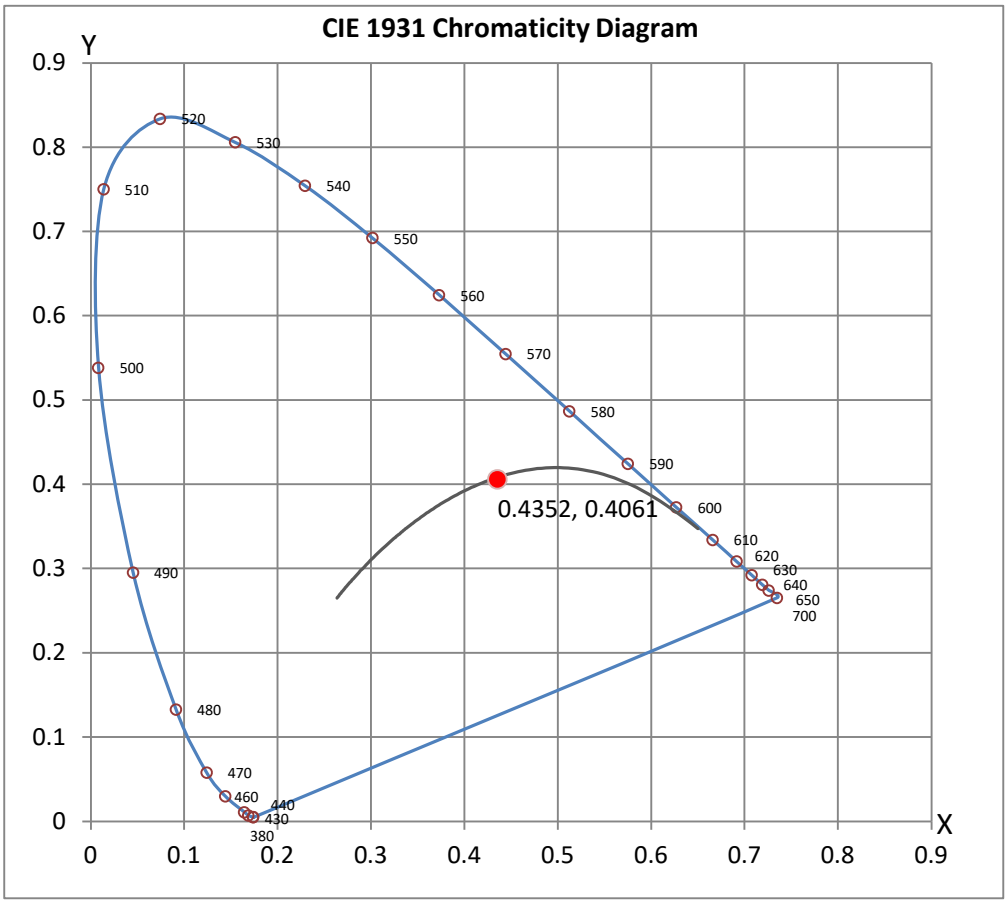



**CRI & CCT**

| | |
|---|---|
| x | 0.4352 |
| y | 0.4061 |
| u' | 0.2486 |
| v' | 0.5219 |
| CRI | 83.70 |
| CCT | 3046 |
| Duv | 0.00105 |

**R Values**

| | |
|---|---|
| R1 | 81.72 |
| R2 | 90.97 |
| R3 | 97.13 |
| R4 | 83.03 |
| R5 | 82.85 |
| R6 | 90.29 |
| R7 | 83.64 |
| R8 | 60.26 |
| R9 | 9.43 |
| R10 | 80.22 |
| R11 | 83.13 |
| R12 | 77.19 |
| R13 | 83.76 |
| R14 | 98.81 |
| R15 | 73.87 |



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## Test Methods

**Photometric Measurements - Goniophotometer**

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

**Spectral Measurements - Integrating Sphere**

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by : JG

Test Report Reviewed by:
Jason Gee

**Attached are photometric data reports.*

# Addendum A

## Report Amendment Log

| Date | Reference No. | Revision Description | Revision By |
|---|---|---|---|
| | | | |
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# Photometric Test Report

**IES ROAD REPORT**
**PHOTOMETRIC FILENAME : L122510909.IES**

**DESCRIPTIVE INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] L122510909
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 12/23/2025
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] TN-61-E6-S-FL-GR-FW
[LUMINAIRE] TN61, MR16ECO 6.0VA, 3000K, Flood, Grill, Flat White
[BALLASTCAT] CUSTOM
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 12VAC
[TEST PROCEDURE] IESNA:LM-79-19

**CHARACTERISTICS**

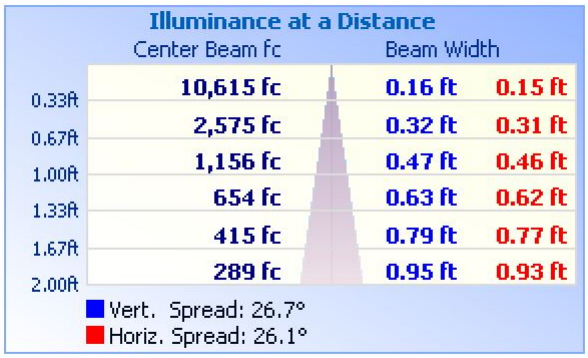
| | |
|---|---|
| IES Classification | Type I |
| Longitudinal Classification | Very Short |
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 374 |
| Downward Total Efficiency | N.A. (absolute) |
| Total Luminaire Efficiency | N.A. (absolute) |
| Luminaire Efficacy Rating (LER) | 95 |
| Total Luminaire Watts | 3.92 |
| Ballast Factor | 1.00 |
| Upward Waste Light Ratio | 0.00 |
| Maximum Candela | 1156 |
| Maximum Candela Angle | 180H 0V |
| Maximum Candela (<90 Degrees Vertical) | 1156 |
| Maximum Candela Angle (<90 Degrees Vertical) | 180H 0V |
| Maximum Candela At 90 Degrees Vertical | 0 (0.0% Luminaire Lumens) |
| Maximum Candela from 80 to <90 Degrees Vertical | 5 (1.3% Luminaire Lumens) |
| Cutoff Classification (deprecated) | N.A. (absolute) |

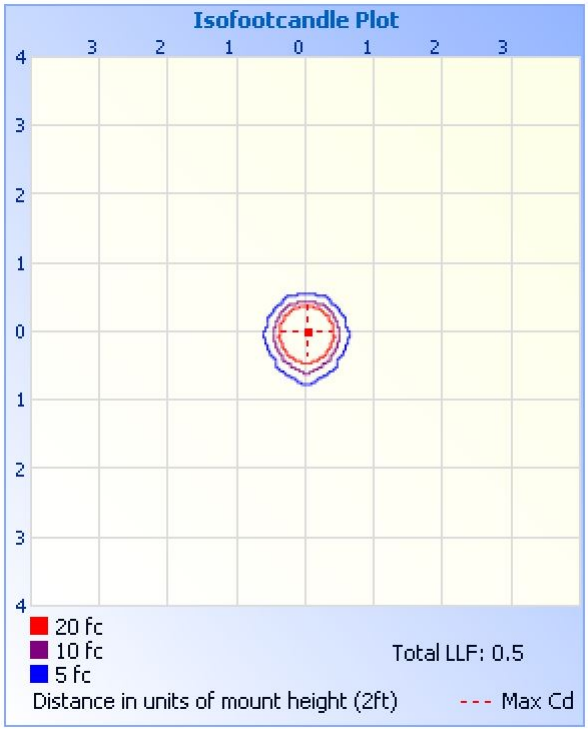
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Results derived from content of manufacturers photometric file.

**IES ROAD REPORT**
**PHOTOMETRIC FILENAME : L122510909.IES**

**LUMINAIRE CLASSIFICATION SYSTEM (LCS)**

| | Lumens | % Lamp | % Luminaire |
|---|---|---|---|
| FL - Front-Low (0-30) | 151.8 | N.A. | 40.6 |
| FM - Front-Medium (30-60) | 39.4 | N.A. | 10.6 |
| FH - Front-High (60-80) | 7.5 | N.A. | 2.0 |
| FVH - Front-Very High (80-90) | 1.4 | N.A. | 0.4 |
| BL - Back-Low (0-30) | 139.0 | N.A. | 37.2 |
| BM - Back-Medium (30-60) | 28.8 | N.A. | 7.7 |
| BH - Back-High (60-80) | 5.0 | N.A. | 1.3 |
| BVH - Back-Very High (80-90) | 0.6 | N.A. | 0.2 |
| UL - Uplight-Low (90-100) | 0.0 | N.A. | 0.0 |
| UH - Uplight-High (100-180) | 0.0 | N.A. | 0.0 |
| Total | 373.5 | N.A. | 100.0 |
| BUG Rating | B1-U0-G0 | | |




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**IES ROAD REPORT**
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**CANDELA TABULATION**

| Vert. Angles | Horizontal Angles | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **0** | **10** | **20** | **30** | **40** | **50** | **60** | **70** | **80** | **90** |
| **0** | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 |
| **5** | 1050 | 1005 | 1052 | 1011 | 1057 | 1023 | 1070 | 1028 | 1078 | 1041 |
| **10** | 806 | 749 | 810 | 754 | 819 | 763 | 828 | 777 | 838 | 791 |
| **15** | 542 | 490 | 540 | 484 | 537 | 424 | 531 | 418 | 530 | 441 |
| **20** | 332 | 293 | 316 | 262 | 289 | 243 | 272 | 226 | 261 | 232 |
| **25** | 204 | 175 | 170 | 140 | 149 | 120 | 125 | 110 | 127 | 117 |
| **30** | 135 | 114 | 105 | 82 | 89 | 69 | 77 | 68 | 75 | 76 |
| **35** | 92 | 78 | 65 | 64 | 66 | 42 | 52 | 38 | 47 | 46 |
| **40** | 67 | 55 | 49 | 47 | 39 | 30 | 34 | 28 | 30 | 32 |
| **45** | 48 | 40 | 36 | 34 | 27 | 25 | 28 | 26 | 23 | 27 |
| **50** | 34 | 30 | 28 | 26 | 22 | 22 | 22 | 22 | 19 | 24 |
| **55** | 24 | 22 | 20 | 19 | 19 | 19 | 18 | 19 | 18 | 18 |
| **60** | 15 | 14 | 13 | 12 | 12 | 12 | 12 | 12 | 12 | 10 |
| **65** | 9 | 8 | 9 | 8 | 9 | 8 | 8 | 8 | 9 | 8 |
| **70** | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 6 |
| **75** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 |
| **80** | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 3 |
| **85** | 4 | 4 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 |
| **90** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **95** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **100** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **105** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **110** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **115** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **120** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **125** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **130** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **135** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **140** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **145** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **150** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **155** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **160** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **165** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **170** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **175** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **180** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Vert. Angles | Horizontal Angles | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **100** | **110** | **120** | **130** | **140** | **150** | **160** | **170** | **180** |
| **0** | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 | 1156 |
| **5** | 1028 | 1071 | 1033 | 1077 | 1038 | 1083 | 1043 | 1085 | 1044 |
| **10** | 748 | 824 | 755 | 825 | 759 | 818 | 759 | 819 | 745 |
| **15** | 407 | 512 | 413 | 504 | 410 | 510 | 372 | 511 | 394 |
| **20** | 216 | 256 | 219 | 255 | 211 | 246 | 204 | 244 | 204 |
| **25** | 106 | 114 | 95 | 110 | 104 | 112 | 96 | 99 | 86 |
| **30** | 63 | 74 | 60 | 64 | 52 | 72 | 56 | 62 | 61 |
| **35** | 38 | 41 | 30 | 41 | 30 | 37 | 40 | 36 | 33 |
| **40** | 29 | 27 | 28 | 35 | 24 | 24 | 30 | 28 | 24 |
| **45** | 26 | 21 | 24 | 29 | 20 | 20 | 26 | 24 | 19 |
| **50** | 23 | 19 | 19 | 24 | 17 | 18 | 21 | 19 | 18 |
| **55** | 18 | 17 | 14 | 18 | 13 | 15 | 14 | 14 | 14 |

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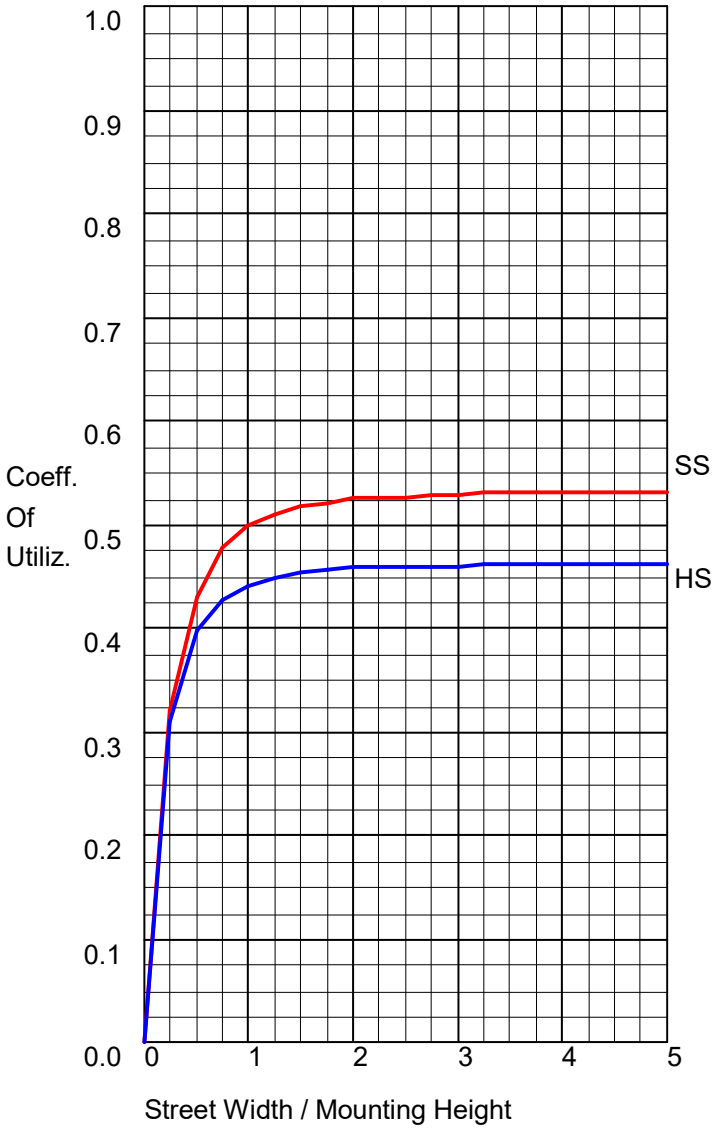
**CANDELA TABULATION - (Cont.)**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **60** | 11 | 11 | 9 | 11 | 8 | 9 | 8 | 8 | 8 |
| **65** | 7 | 7 | 6 | 6 | 5 | 5 | 4 | 5 | 4 |
| **70** | 6 | 6 | 5 | 5 | 4 | 4 | 3 | 3 | 3 |
| **75** | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 2 |
| **80** | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 |
| **85** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **90** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **95** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **100** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **105** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **110** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **115** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **120** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **125** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **130** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **135** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **140** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **145** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **150** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **155** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **160** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **165** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **170** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **175** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **180** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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**COEFFICIENTS OF UTILIZATION**



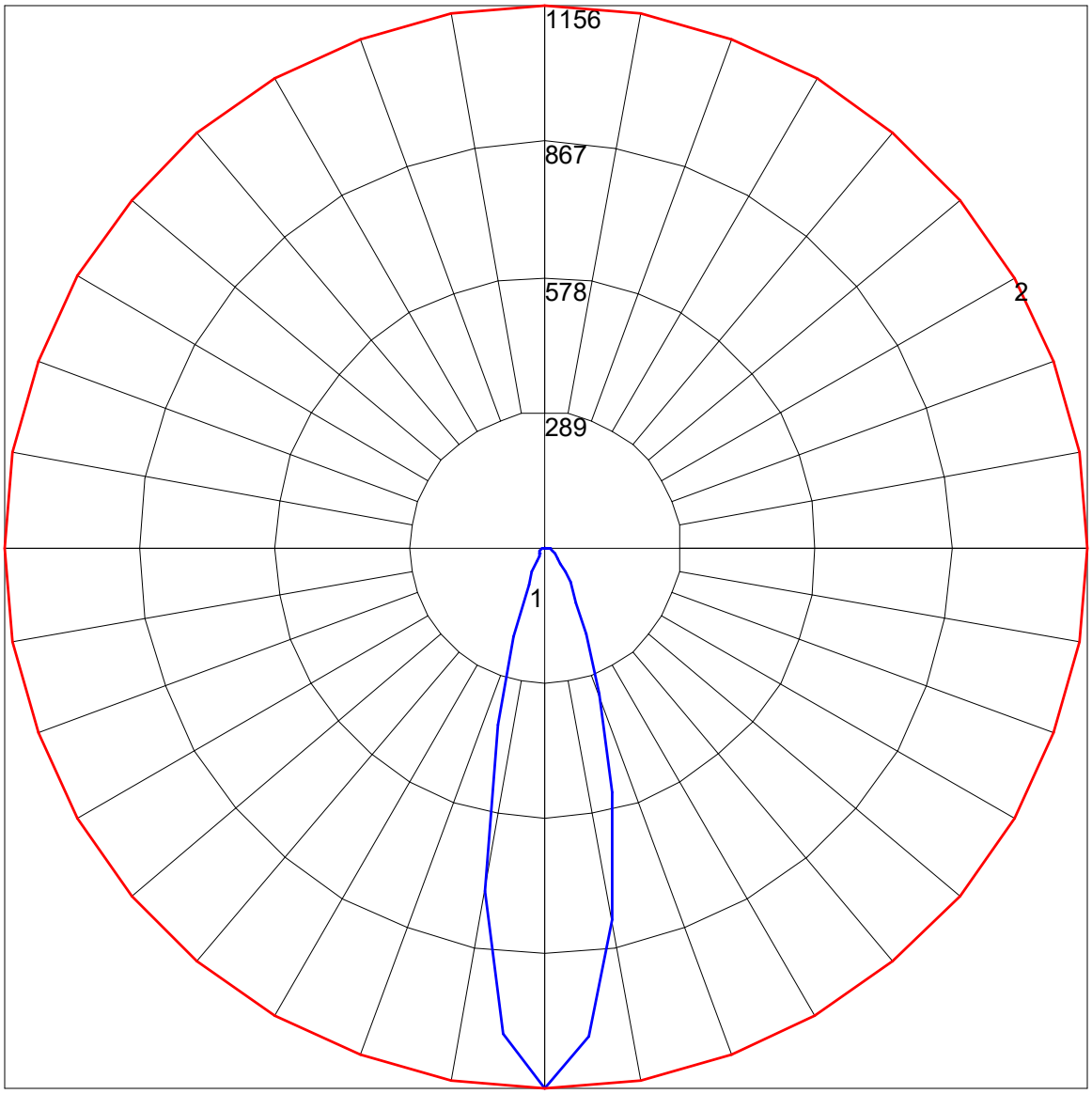

**FLUX DISTRIBUTION**

| | Lumens | Percent Of Luminaire |
|---|---|---|
| Downward Street Side | 200.2 | 53.6 |
| Downward House Side | 173.4 | 46.4 |
| Downward Total | 373.6 | 100.0 |
| Upward Street Side | 0.0 | 0.0 |
| Upward House Side | 0.0 | 0.0 |
| Upward Total | 0.0 | 0.0 |
| Total Flux | 373.6 | 100.0 |

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**POLAR GRAPH**

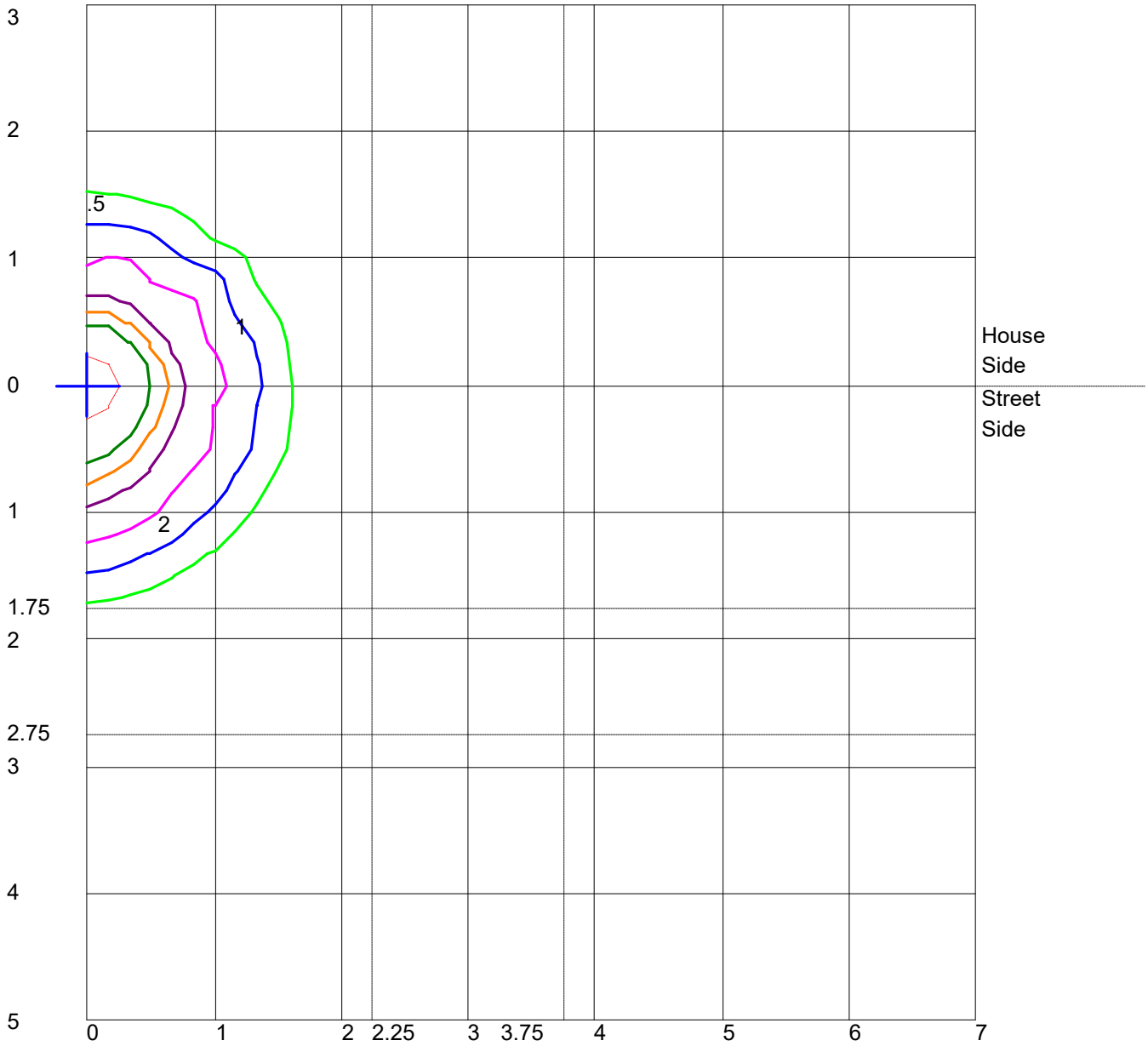



Maximum Candela = 1156  Located At Horizontal Angle = 180, Vertical Angle = 0
# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

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**ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE**




Distance In Units Of Mounting Height
Values Based On 2 Foot Mounting Height
1/2 Maximum Candela Trace Shown As Dashed Curve
(+) = Maximum Candela Point

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