

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P270670

Luminaire Tested: **NAV-AF-06-D-UNV-SL2-7027-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270670
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-SL2-7027-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 2700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 33657.9 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G5

Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

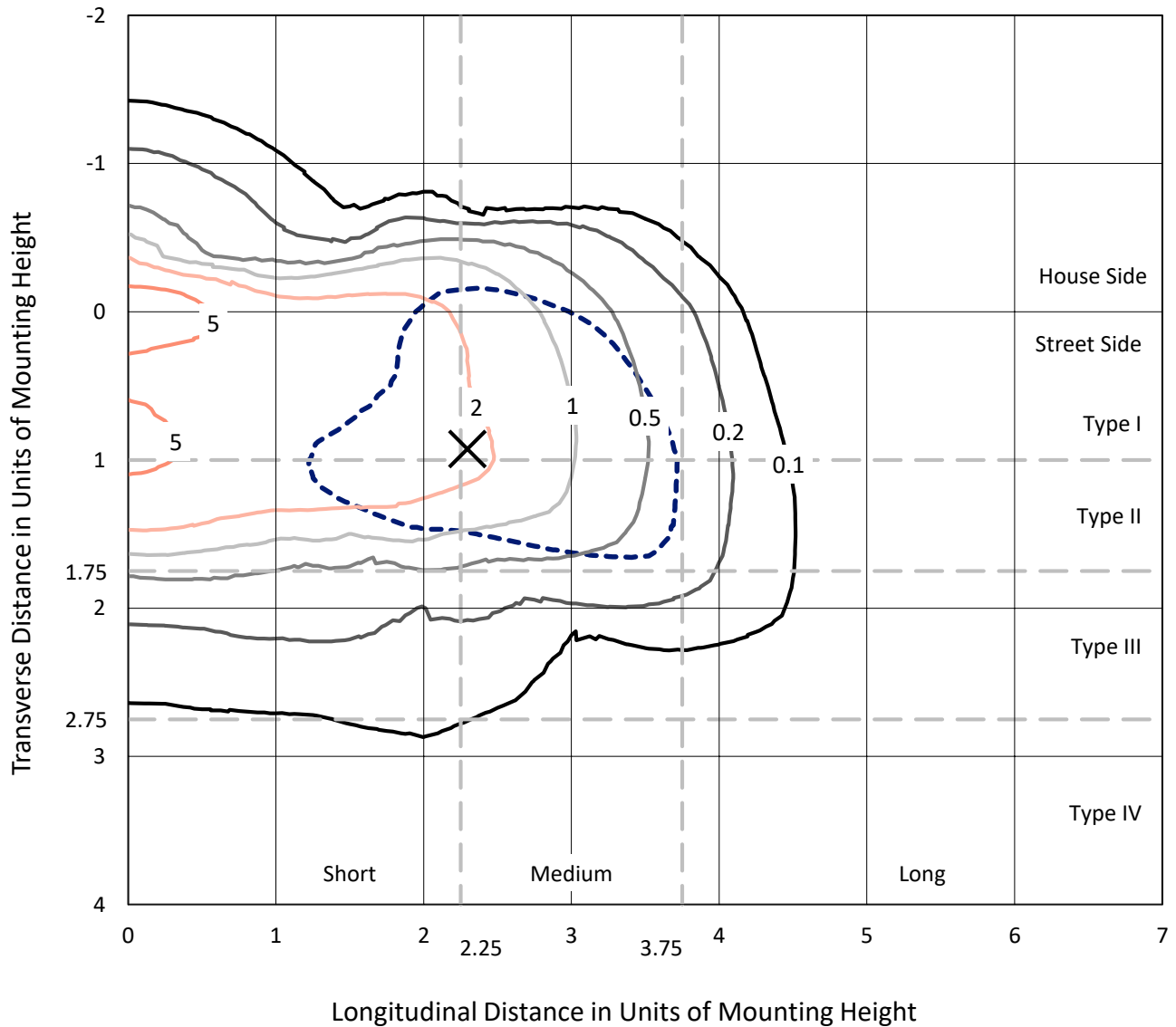


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Iso-Footcandle Lines of Horizontal Illumination

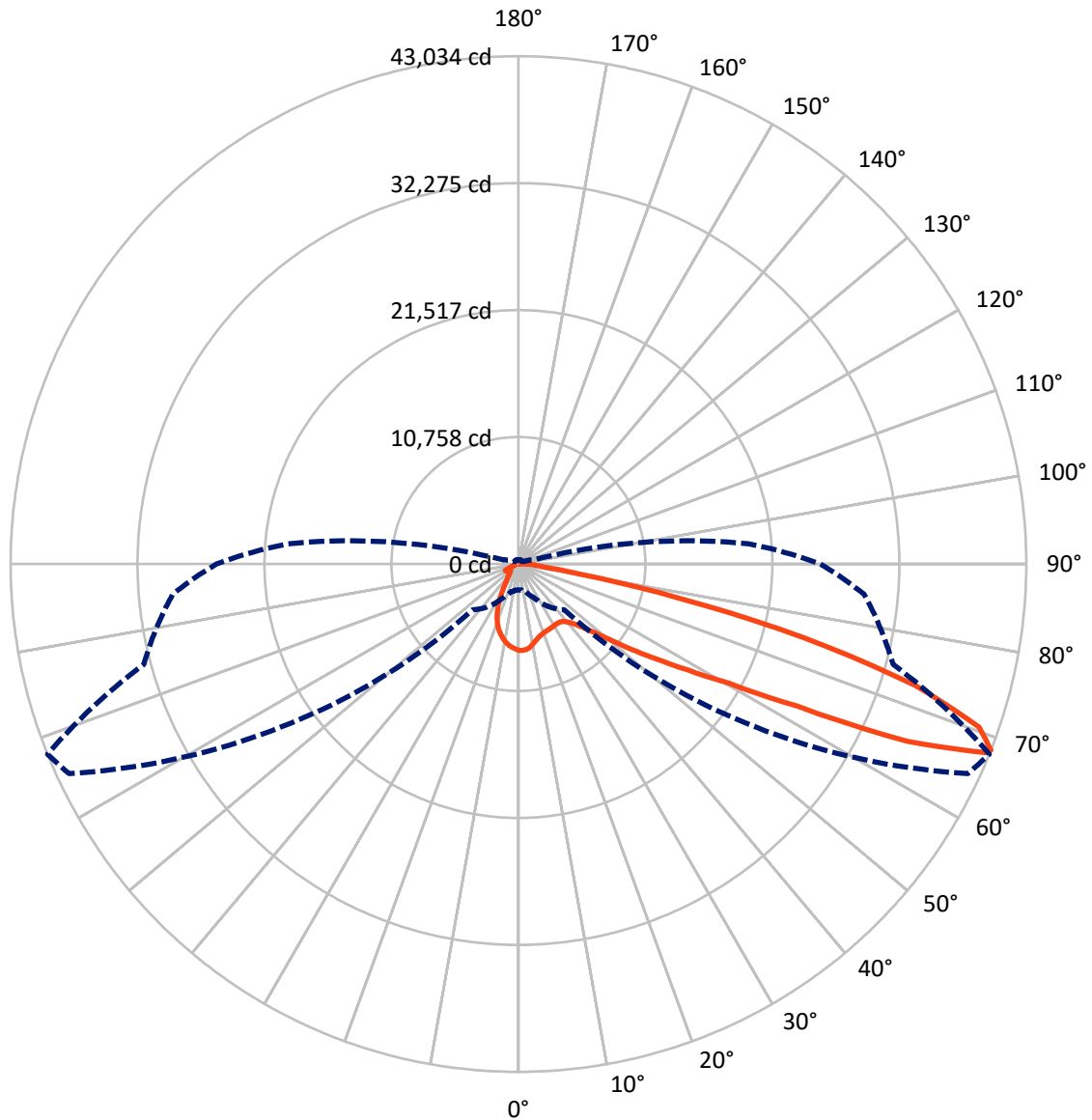
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8.1 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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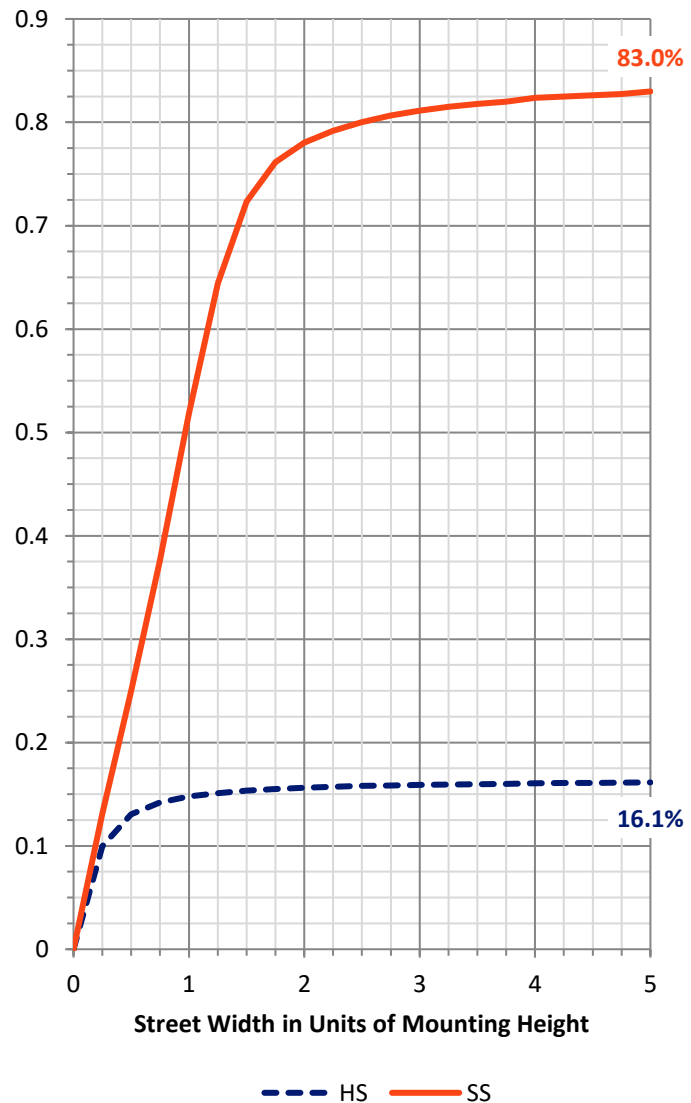
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5506.5 | 0.0 | 5506.5 |
| | % Fixture | 16.4 | 0.0 | 16.4 |
| Street Side | Lumens | 28151.4 | 0.0 | 28151.4 |
| | % Fixture | 83.6 | 0.0 | 83.6 |
| Total | Lumens | 33657.9 | 0.0 | 33657.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 627.5 | 1.9 |
| 10°-20° | 1455.4 | 4.3 |
| 20°-30° | 1968.4 | 5.8 |
| 30°-40° | 2775.4 | 8.2 |
| 40°-50° | 4563.8 | 13.6 |
| 50°-60° | 7074.3 | 21.0 |
| 60°-70° | 9172.3 | 27.3 |
| 70°-80° | 5263.6 | 15.6 |
| 80°-90° | 757.3 | 2.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 33657.9 | 100.0 |
| 0°-180° | 33657.9 | 100.0 |

Coefficient of Utilization



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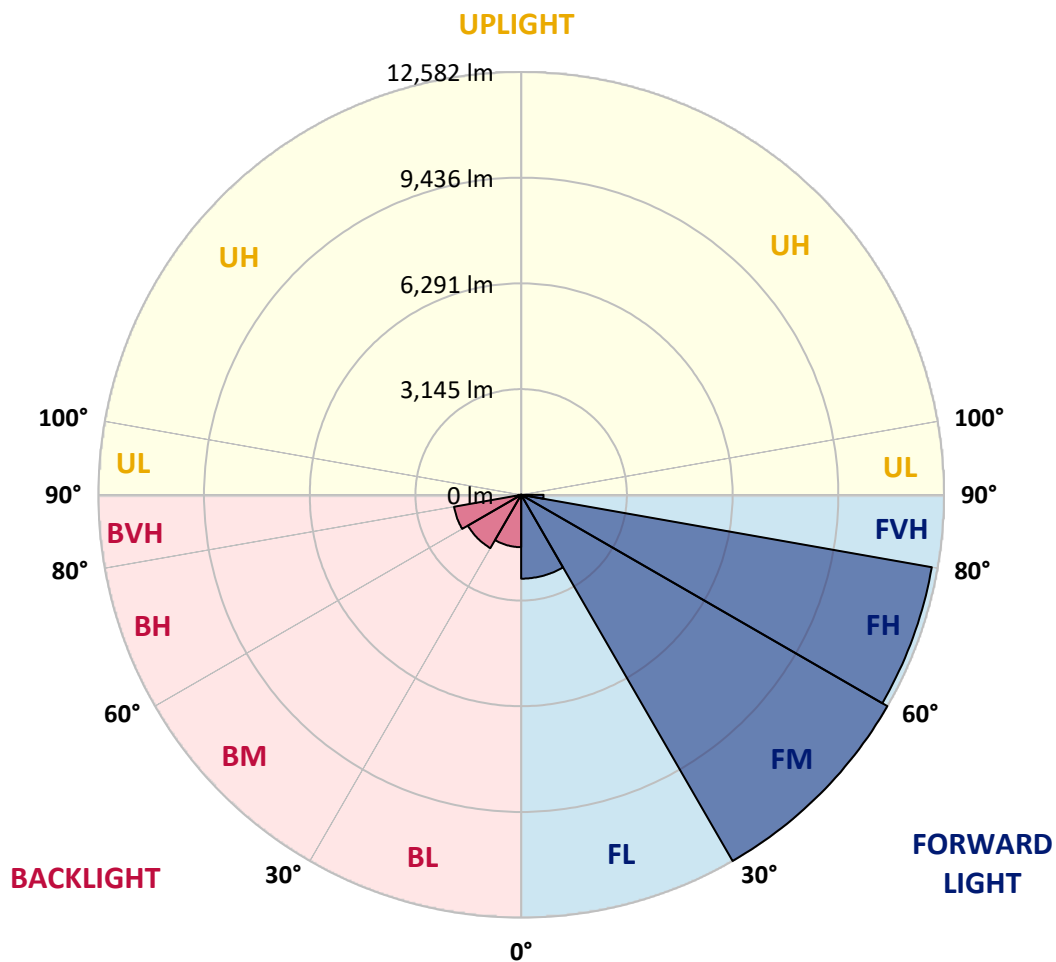
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2494.6 | 7.4 | | | |
| FM (30°-60°) | 12581.9 | 37.4 | | | |
| FH (60°-80°) | 12407.9 | 36.9 | | | G5 |
| FVH (80°-90°) | 667.0 | 2.0 | | | G4/750 |
| BL (0°-30°) | 1556.7 | 4.6 | B3/2500 | | |
| BM (30°-60°) | 1831.5 | 5.4 | B2/2500 | | |
| BH (60°-80°) | 2028.0 | 6.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 90.3 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 |
| 2.5° | 7128.1 | 7185.2 | 7185.2 | 7227.0 | 7264.4 | 7295.0 | 7321.5 | 7321.5 | 7321.5 | 7303.8 | 7288.5 |
| 5° | 6378.2 | 6455.2 | 6466.2 | 6571.7 | 6710.2 | 6879.5 | 7068.7 | 7235.7 | 7268.6 | 7330.3 | 7354.5 |
| 7.5° | 5857.2 | 5881.4 | 5923.2 | 5995.6 | 6136.4 | 6345.3 | 6642.1 | 7015.9 | 7106.0 | 7299.4 | 7400.6 |
| 10° | 5487.7 | 5507.6 | 5542.8 | 5615.3 | 5742.9 | 5932.0 | 6224.4 | 6710.2 | 6859.7 | 7202.7 | 7402.8 |
| 12.5° | 5217.4 | 5232.7 | 5265.8 | 5331.7 | 5461.4 | 5630.8 | 5929.7 | 6435.4 | 6620.1 | 7106.0 | 7433.7 |
| 15° | 5006.3 | 5032.7 | 5059.1 | 5122.9 | 5254.7 | 5417.5 | 5720.9 | 6235.3 | 6435.4 | 7029.1 | 7490.7 |
| 17.5° | 4922.7 | 4935.9 | 4940.4 | 4973.3 | 5092.0 | 5256.9 | 5560.4 | 6094.6 | 6301.3 | 6967.6 | 7534.8 |
| 20° | 4975.5 | 4977.7 | 4933.8 | 4911.8 | 4979.9 | 5131.6 | 5426.2 | 5989.1 | 6200.1 | 6912.5 | 7552.3 |
| 22.5° | 5206.3 | 5206.3 | 5092.0 | 4995.4 | 4949.1 | 5043.7 | 5336.1 | 5916.5 | 6145.1 | 6870.7 | 7552.3 |
| 25° | 5646.0 | 5626.4 | 5448.2 | 5256.9 | 5052.4 | 5012.9 | 5278.9 | 5870.3 | 6103.4 | 6848.8 | 7523.8 |
| 27.5° | 6224.4 | 6206.7 | 5980.2 | 5696.7 | 5327.3 | 5078.8 | 5259.1 | 5833.0 | 6061.7 | 6815.8 | 7462.2 |
| 30° | 6927.9 | 6912.5 | 6655.4 | 6283.7 | 5738.5 | 5287.8 | 5305.3 | 5806.6 | 6028.6 | 6760.9 | 7358.8 |
| 32.5° | 7629.2 | 7620.5 | 7416.0 | 7035.6 | 6305.7 | 5641.7 | 5426.2 | 5802.2 | 6011.1 | 6694.9 | 7233.5 |
| 35° | 8335.1 | 8335.1 | 8209.7 | 7888.7 | 7068.7 | 6173.8 | 5679.1 | 5883.5 | 6044.1 | 6659.7 | 7125.7 |
| 37.5° | 9377.1 | 9335.5 | 9102.3 | 8770.4 | 8029.4 | 6864.2 | 6088.1 | 6055.0 | 6171.5 | 6719.1 | 7090.6 |
| 40° | 10991.0 | 10870.1 | 10287.4 | 9729.0 | 9078.2 | 7748.1 | 6686.1 | 6387.0 | 6457.3 | 6921.4 | 7174.1 |
| 42.5° | 12679.5 | 12488.2 | 11716.6 | 10823.9 | 10162.2 | 8838.6 | 7470.9 | 6925.8 | 6923.4 | 7312.7 | 7440.2 |
| 45° | 14128.5 | 14029.5 | 13194.0 | 12061.7 | 11399.9 | 10065.4 | 8462.6 | 7726.1 | 7646.8 | 7919.5 | 7952.4 |
| 47.5° | 14970.6 | 14904.6 | 14401.1 | 13372.1 | 12868.6 | 11514.2 | 9720.2 | 8836.4 | 8686.8 | 8849.6 | 8799.0 |
| 50° | 14737.5 | 14801.3 | 14656.1 | 14130.7 | 14447.4 | 13550.3 | 11323.0 | 10357.7 | 10074.1 | 10236.8 | 10113.7 |
| 52.5° | 13510.7 | 13682.2 | 13811.9 | 13912.9 | 15355.3 | 16274.4 | 13337.0 | 12257.5 | 12022.1 | 11993.6 | 11874.9 |
| 55° | 11300.9 | 11573.7 | 11982.6 | 12725.7 | 15111.3 | 18462.0 | 16854.8 | 14555.0 | 14212.1 | 14031.7 | 14077.9 |
| 57.5° | 7690.8 | 8104.1 | 8985.8 | 10399.6 | 13842.6 | 19394.1 | 22056.8 | 17523.1 | 16942.8 | 16300.7 | 16450.2 |
| 60° | 4236.8 | 4582.0 | 5630.8 | 7055.5 | 10947.0 | 19255.7 | 26667.4 | 22347.0 | 20520.0 | 18818.1 | 19126.0 |
| 62.5° | 2741.6 | 2816.5 | 3597.0 | 4819.4 | 6719.1 | 16999.9 | 29228.7 | 30409.3 | 26537.5 | 22138.1 | 22571.3 |
| 65° | 2203.1 | 2255.9 | 2638.3 | 3887.1 | 4680.9 | 10936.1 | 29343.0 | 38773.1 | 36220.4 | 26649.7 | 26663.0 |
| 67.5° | 2152.5 | 2176.7 | 2398.7 | 3269.4 | 4390.6 | 5954.0 | 25363.6 | 42071.0 | 42662.5 | 31974.8 | 29400.2 |
| 68° | 2183.2 | 2211.8 | 2436.2 | 3168.2 | 4388.5 | 5487.7 | 23441.9 | 42020.3 | 43033.9 | 32865.3 | 29400.2 |
| 70° | 1926.0 | 1961.2 | 2484.4 | 3278.2 | 4201.6 | 4718.3 | 16052.3 | 39788.7 | 41420.2 | 34912.2 | 27896.3 |
| 72.5° | 1007.0 | 978.4 | 1229.1 | 2587.7 | 4729.2 | 4916.2 | 8480.2 | 33241.2 | 35145.3 | 32333.2 | 24101.4 |
| 75° | 784.8 | 714.5 | 688.2 | 1022.5 | 4159.8 | 5098.6 | 4925.0 | 23626.6 | 25064.5 | 23307.8 | 16109.5 |
| 77.5° | 738.8 | 653.0 | 602.5 | 604.6 | 1831.5 | 5305.3 | 3984.0 | 13904.1 | 13904.1 | 11118.5 | 5140.5 |
| 80° | 593.6 | 514.5 | 481.5 | 549.7 | 883.8 | 4889.7 | 4157.6 | 6336.5 | 5404.3 | 2873.6 | 1415.9 |
| 82.5° | 391.3 | 349.6 | 351.7 | 446.3 | 670.6 | 3265.0 | 4815.1 | 3128.6 | 2350.3 | 1273.0 | 833.3 |
| 85° | 248.4 | 213.3 | 237.4 | 312.3 | 501.3 | 1455.6 | 4766.6 | 2174.4 | 1556.7 | 714.5 | 415.6 |
| 87.5° | 125.4 | 96.7 | 118.8 | 162.8 | 305.7 | 417.7 | 3924.5 | 1941.3 | 1154.3 | 296.8 | 226.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 | 7323.7 |
| 2.5° | 7288.5 | 7240.1 | 7215.9 | 7176.4 | 7128.1 | 7079.6 | 7046.7 | 7031.3 | 7022.5 | 7026.8 | 7024.7 |
| 5° | 7341.3 | 7277.4 | 7174.1 | 7026.8 | 6875.2 | 6714.7 | 6591.6 | 6497.0 | 6437.7 | 6420.0 | 6415.6 |
| 7.5° | 7380.8 | 7288.5 | 7095.1 | 6826.8 | 6567.2 | 6285.9 | 6046.2 | 5855.0 | 5725.3 | 5665.9 | 5663.8 |
| 10° | 7374.2 | 7255.5 | 6949.8 | 6554.2 | 6173.8 | 5760.4 | 5384.5 | 5063.4 | 4830.5 | 4718.3 | 4713.9 |
| 12.5° | 7380.8 | 7218.2 | 6771.9 | 6235.3 | 5690.0 | 5098.6 | 4540.3 | 4041.0 | 3693.7 | 3528.8 | 3522.3 |
| 15° | 7407.2 | 7178.5 | 6589.2 | 5879.1 | 5125.0 | 4289.5 | 3491.4 | 2864.9 | 2548.2 | 2440.4 | 2440.4 |
| 17.5° | 7405.0 | 7112.6 | 6378.2 | 5465.7 | 4454.4 | 3335.3 | 2383.4 | 1996.4 | 1965.6 | 2064.6 | 2079.9 |
| 20° | 7361.0 | 7007.0 | 6105.6 | 4975.5 | 3667.3 | 2308.6 | 1616.1 | 1561.1 | 1807.3 | 2079.9 | 2110.7 |
| 22.5° | 7292.9 | 6870.7 | 5791.3 | 4406.0 | 2750.5 | 1503.9 | 1246.6 | 1330.2 | 1664.4 | 2003.0 | 2051.3 |
| 25° | 7198.4 | 6705.8 | 5430.7 | 3744.2 | 1829.3 | 1081.6 | 1040.0 | 1143.4 | 1378.5 | 1605.0 | 1640.1 |
| 27.5° | 7059.8 | 6497.0 | 5037.1 | 3027.5 | 1167.4 | 890.4 | 905.9 | 978.4 | 1079.6 | 1176.3 | 1196.1 |
| 30° | 6886.1 | 6252.9 | 4608.3 | 2233.8 | 886.1 | 795.9 | 822.3 | 866.2 | 910.3 | 971.7 | 985.0 |
| 32.5° | 6710.2 | 6004.5 | 4162.0 | 1534.7 | 773.9 | 745.4 | 771.7 | 795.9 | 833.3 | 875.0 | 883.8 |
| 35° | 6552.0 | 5773.6 | 3702.5 | 1070.7 | 725.6 | 712.4 | 725.6 | 740.9 | 778.3 | 820.2 | 824.5 |
| 37.5° | 6437.7 | 5584.6 | 3223.2 | 846.5 | 696.9 | 683.8 | 690.3 | 696.9 | 740.9 | 802.5 | 809.2 |
| 40° | 6422.3 | 5459.2 | 2737.3 | 760.8 | 674.9 | 657.4 | 653.0 | 657.4 | 714.5 | 784.8 | 791.4 |
| 42.5° | 6571.7 | 5465.7 | 2262.4 | 725.6 | 657.4 | 637.5 | 620.0 | 628.9 | 679.4 | 734.4 | 738.8 |
| 45° | 6925.8 | 5619.7 | 1851.2 | 710.2 | 642.0 | 626.6 | 600.2 | 604.6 | 628.9 | 657.4 | 661.8 |
| 47.5° | 7550.2 | 5956.1 | 1536.8 | 701.3 | 628.9 | 615.6 | 582.6 | 569.4 | 571.6 | 587.0 | 587.0 |
| 50° | 8548.4 | 6519.0 | 1345.7 | 692.6 | 617.9 | 593.6 | 556.3 | 529.9 | 523.3 | 532.1 | 534.2 |
| 52.5° | 10036.9 | 7484.1 | 1253.2 | 674.9 | 598.0 | 565.0 | 523.3 | 496.9 | 486.0 | 494.6 | 494.6 |
| 55° | 12048.5 | 9025.5 | 1209.3 | 650.8 | 573.8 | 529.9 | 492.5 | 470.5 | 461.6 | 468.2 | 468.2 |
| 57.5° | 14341.7 | 11028.4 | 1283.9 | 617.9 | 543.0 | 492.5 | 466.1 | 450.7 | 444.1 | 450.7 | 452.9 |
| 60° | 17065.8 | 13649.1 | 1798.4 | 576.1 | 510.1 | 459.6 | 444.1 | 435.3 | 430.9 | 437.6 | 437.6 |
| 62.5° | 20687.0 | 17136.2 | 2783.5 | 543.0 | 474.9 | 428.8 | 424.3 | 420.0 | 415.6 | 422.2 | 422.2 |
| 65° | 24596.2 | 20308.8 | 2864.9 | 523.3 | 444.1 | 402.4 | 404.5 | 404.5 | 400.1 | 406.8 | 406.8 |
| 67.5° | 25840.6 | 20034.0 | 1600.6 | 499.1 | 406.8 | 376.0 | 384.7 | 384.7 | 382.6 | 389.1 | 387.0 |
| 68° | 25576.8 | 19598.7 | 1393.9 | 492.5 | 400.1 | 369.4 | 378.1 | 380.3 | 378.1 | 384.7 | 382.6 |
| 70° | 23611.2 | 17206.6 | 916.8 | 455.1 | 371.5 | 347.4 | 360.6 | 362.7 | 360.6 | 369.4 | 367.1 |
| 72.5° | 19491.0 | 12905.9 | 677.2 | 397.9 | 336.3 | 318.8 | 332.1 | 334.2 | 336.3 | 345.2 | 343.1 |
| 75° | 12378.4 | 7128.1 | 534.2 | 338.7 | 301.2 | 285.8 | 299.0 | 305.7 | 310.1 | 323.2 | 316.7 |
| 77.5° | 3390.4 | 2163.5 | 433.2 | 288.0 | 259.4 | 252.9 | 261.6 | 270.4 | 274.8 | 290.2 | 279.3 |
| 80° | 1187.3 | 956.4 | 360.6 | 244.1 | 215.5 | 213.3 | 222.2 | 230.9 | 235.3 | 248.4 | 235.3 |
| 82.5° | 721.2 | 624.4 | 288.0 | 191.2 | 169.3 | 167.1 | 178.0 | 186.8 | 191.2 | 191.2 | 182.4 |
| 85° | 376.0 | 329.8 | 211.1 | 134.0 | 116.5 | 110.0 | 129.7 | 140.8 | 142.9 | 140.8 | 134.0 |
| 87.5° | 211.1 | 186.8 | 112.1 | 63.8 | 52.8 | 54.9 | 68.1 | 83.5 | 90.1 | 87.9 | 83.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)