

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: P195618

Luminaire Tested: **NAV-AF-06-D-UNV-SL2-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195618
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-SL2-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 1050mA 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: 35315 lumens
Efficiency: N/A
Efficacy: 106.1 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

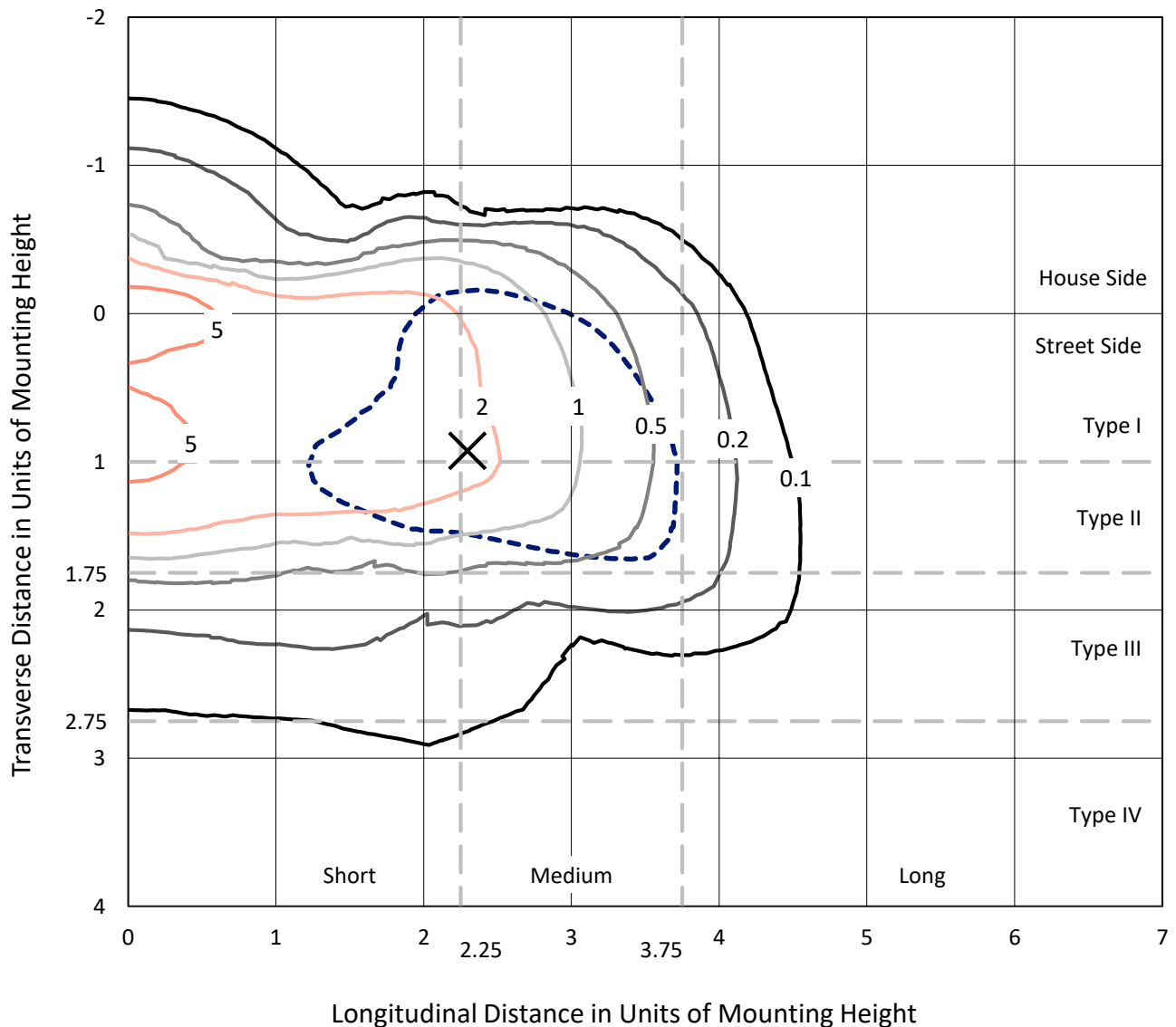
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

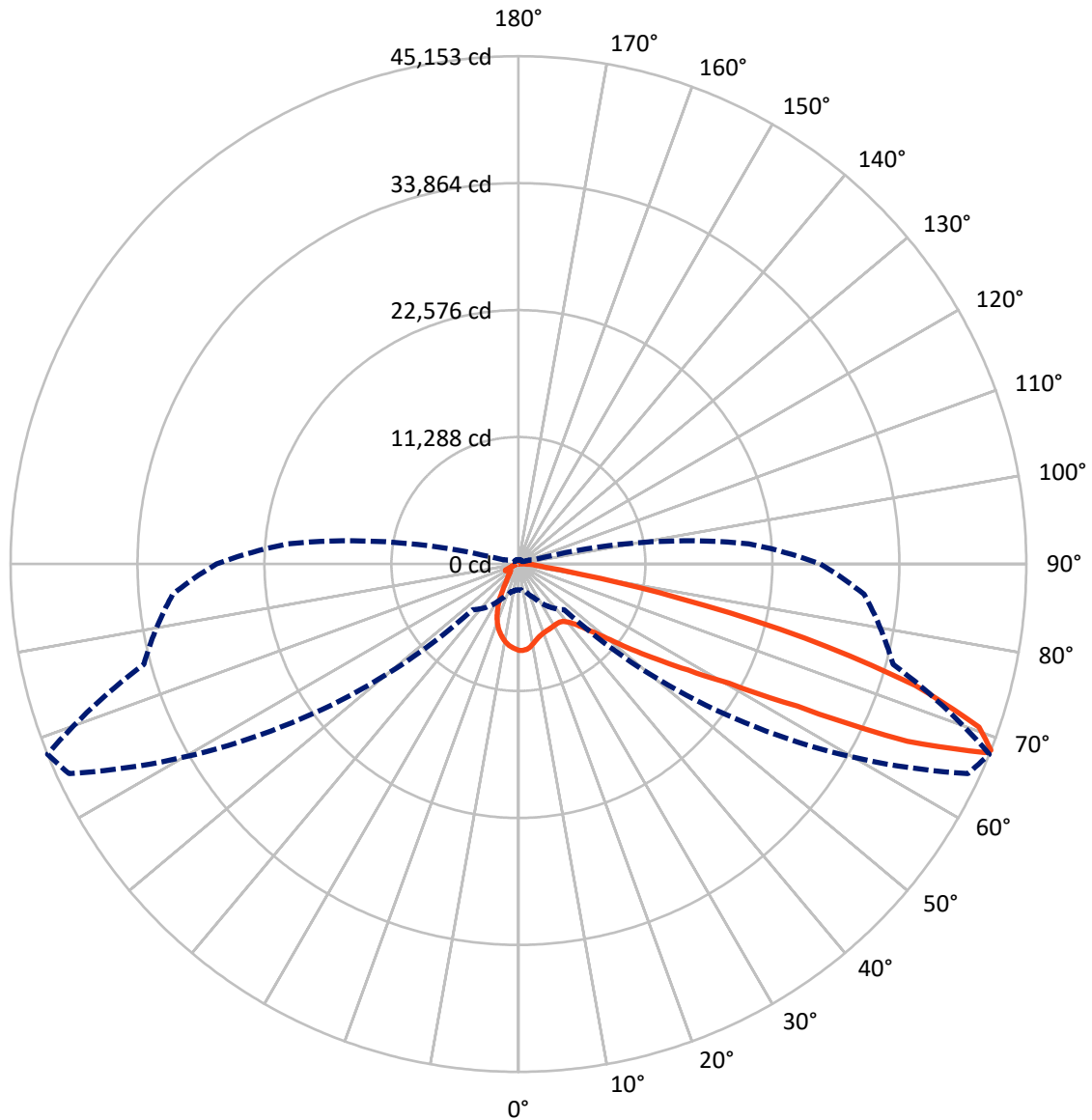
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 8.5 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 | 5777.6 | 0.0 | 5777.6 |
| | % Fixture | 16.4 | 0.0 | 16.4 |
| Street Side | Lumens | 29537.4 | 0.0 | 29537.4 |
| | % Fixture | 83.6 | 0.0 | 83.6 |
| Total | Lumens | 35315.0 | 0.0 | 35315.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 658.4 | 1.9 |
| 10°-20° | 1527.1 | 4.3 |
| 20°-30° | 2065.3 | 5.8 |
| 30°-40° | 2912.0 | 8.2 |
| 40°-50° | 4788.5 | 13.6 |
| 50°-60° | 7422.5 | 21.0 |
| 60°-70° | 9623.9 | 27.3 |
| 70°-80° | 5522.7 | 15.6 |
| 80°-90° | 794.6 | 2.3 |
| 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° | 35315.0 | 100.0 |
| 0°-180° | 35315.0 | 100.0 |



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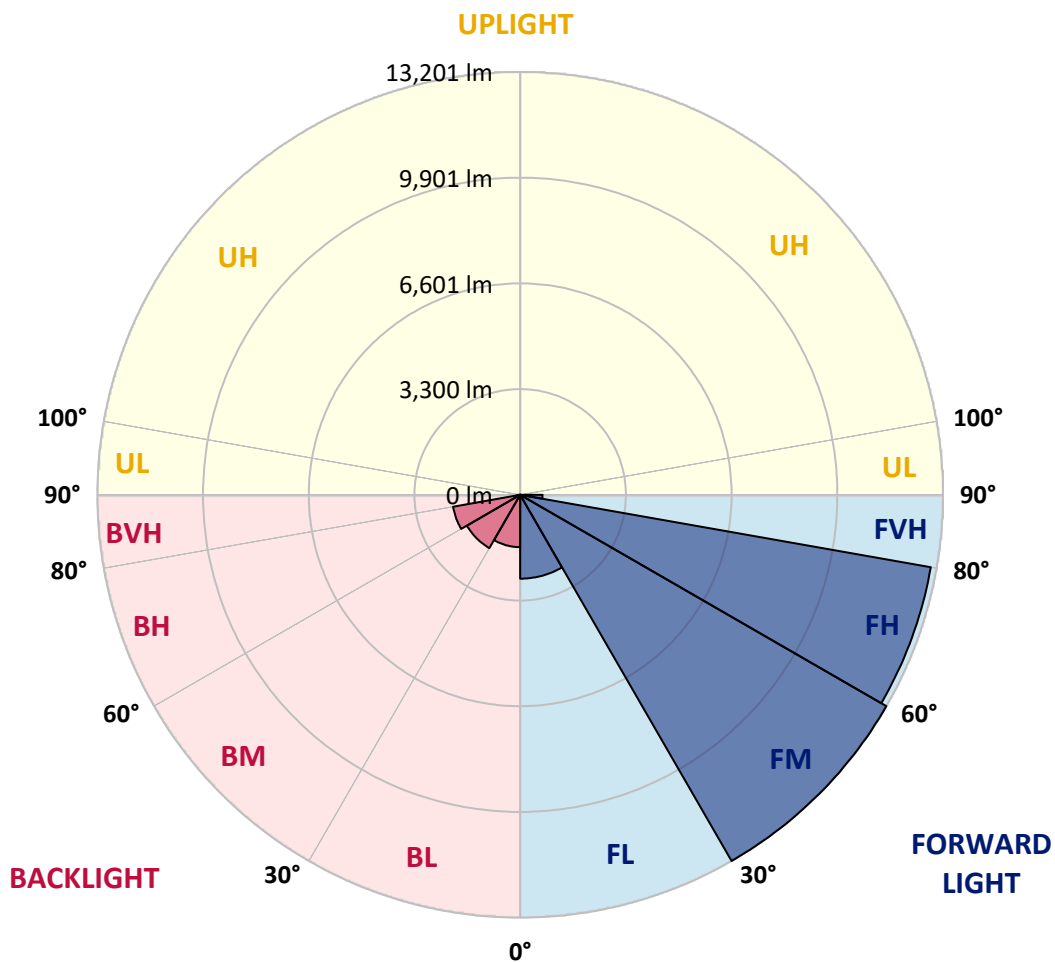
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 2617.4 | 7.4 | | | |
| FM | (30°-60°) | 13201.3 | 37.4 | | | |
| FH | (60°-80°) | 13018.7 | 36.9 | | | G5 |
| FVH | (80°-90°) | 699.9 | 2.0 | | | G4/750 |
| BL | (0°-30°) | 1633.4 | 4.6 | B3/2500 | | |
| BM | (30°-60°) | 1921.7 | 5.4 | B2/2500 | | |
| BH | (60°-80°) | 2127.8 | 6.0 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 94.7 | 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° | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 |
| 2.5° | 7478.9 | 7538.9 | 7538.9 | 7582.7 | 7621.9 | 7654.2 | 7681.9 | 7681.9 | 7681.9 | 7663.5 | 7647.3 |
| 5° | 6692.3 | 6773.0 | 6784.5 | 6895.3 | 7040.6 | 7218.2 | 7416.6 | 7592.0 | 7626.6 | 7691.1 | 7716.5 |
| 7.5° | 6145.5 | 6170.9 | 6214.7 | 6290.9 | 6438.5 | 6657.7 | 6969.1 | 7361.3 | 7455.8 | 7658.9 | 7765.0 |
| 10° | 5758.0 | 5778.7 | 5815.7 | 5891.8 | 6025.6 | 6224.0 | 6530.8 | 7040.6 | 7197.5 | 7557.4 | 7767.3 |
| 12.5° | 5474.2 | 5490.4 | 5525.0 | 5594.2 | 5730.3 | 5907.9 | 6221.7 | 6752.2 | 6946.0 | 7455.8 | 7799.6 |
| 15° | 5252.8 | 5280.5 | 5308.1 | 5375.0 | 5513.5 | 5684.2 | 6002.5 | 6542.3 | 6752.2 | 7375.1 | 7859.6 |
| 17.5° | 5165.1 | 5179.0 | 5183.6 | 5218.2 | 5342.7 | 5515.8 | 5834.1 | 6394.7 | 6611.5 | 7310.5 | 7905.7 |
| 20° | 5220.5 | 5222.8 | 5176.6 | 5153.6 | 5225.1 | 5384.3 | 5693.4 | 6284.0 | 6505.4 | 7252.8 | 7924.1 |
| 22.5° | 5462.7 | 5462.7 | 5342.7 | 5241.2 | 5192.8 | 5292.0 | 5598.8 | 6207.8 | 6447.7 | 7209.0 | 7924.1 |
| 25° | 5924.1 | 5903.3 | 5716.5 | 5515.8 | 5301.2 | 5259.7 | 5538.8 | 6159.4 | 6403.9 | 7185.9 | 7894.2 |
| 27.5° | 6530.8 | 6512.3 | 6274.7 | 5977.1 | 5589.6 | 5328.9 | 5518.1 | 6120.2 | 6360.1 | 7151.3 | 7829.6 |
| 30° | 7269.0 | 7252.8 | 6982.9 | 6593.1 | 6021.0 | 5548.1 | 5566.5 | 6092.5 | 6325.5 | 7093.7 | 7721.1 |
| 32.5° | 8004.9 | 7995.7 | 7781.1 | 7382.0 | 6616.1 | 5919.5 | 5693.4 | 6087.9 | 6307.0 | 7024.5 | 7589.6 |
| 35° | 8745.4 | 8745.4 | 8613.9 | 8277.1 | 7416.6 | 6477.7 | 5958.7 | 6173.2 | 6341.6 | 6987.6 | 7476.6 |
| 37.5° | 9838.9 | 9795.0 | 9550.5 | 9202.2 | 8424.7 | 7202.1 | 6387.8 | 6353.2 | 6475.4 | 7049.8 | 7439.7 |
| 40° | 11532.1 | 11405.2 | 10793.9 | 10208.0 | 9525.1 | 8129.5 | 7015.2 | 6701.5 | 6775.3 | 7262.1 | 7527.4 |
| 42.5° | 13303.8 | 13103.1 | 12293.4 | 11356.8 | 10662.4 | 9273.7 | 7838.8 | 7266.7 | 7264.4 | 7672.7 | 7806.5 |
| 45° | 14824.0 | 14720.2 | 13843.6 | 12655.6 | 11961.2 | 10560.9 | 8879.2 | 8106.4 | 8023.3 | 8309.4 | 8344.0 |
| 47.5° | 15707.6 | 15638.4 | 15110.1 | 14030.5 | 13502.2 | 12081.1 | 10198.7 | 9271.4 | 9114.5 | 9285.2 | 9232.1 |
| 50° | 15463.0 | 15529.9 | 15377.7 | 14826.3 | 15158.5 | 14217.3 | 11880.5 | 10867.7 | 10570.1 | 10740.8 | 10611.7 |
| 52.5° | 14175.8 | 14355.7 | 14491.8 | 14598.0 | 16111.3 | 17075.6 | 13993.6 | 12860.9 | 12614.0 | 12584.0 | 12459.5 |
| 55° | 11857.4 | 12143.4 | 12572.5 | 13352.2 | 15855.2 | 19370.9 | 17684.6 | 15271.6 | 14911.7 | 14722.5 | 14771.0 |
| 57.5° | 8069.5 | 8503.2 | 9428.2 | 10911.6 | 14524.1 | 20349.0 | 23142.7 | 18385.9 | 17776.8 | 17103.2 | 17260.1 |
| 60° | 4445.4 | 4807.5 | 5907.9 | 7402.8 | 11486.0 | 20203.7 | 27980.2 | 23447.2 | 21530.1 | 19744.6 | 20067.6 |
| 62.5° | 2876.7 | 2955.1 | 3774.1 | 5056.7 | 7049.8 | 17836.8 | 30667.7 | 31906.5 | 27844.1 | 23228.0 | 23682.5 |
| 65° | 2311.5 | 2366.9 | 2768.3 | 4078.6 | 4911.4 | 11474.4 | 30787.7 | 40681.9 | 38003.6 | 27961.7 | 27975.6 |
| 67.5° | 2258.4 | 2283.8 | 2516.8 | 3430.3 | 4606.8 | 6247.0 | 26612.2 | 44142.2 | 44762.8 | 33549.0 | 30847.6 |
| 68° | 2290.7 | 2320.7 | 2556.0 | 3324.2 | 4604.5 | 5758.0 | 24596.0 | 44089.2 | 45152.6 | 34483.3 | 30847.6 |
| 70° | 2020.8 | 2057.7 | 2606.8 | 3439.6 | 4408.5 | 4950.6 | 16842.6 | 41747.7 | 43459.4 | 36631.0 | 29269.7 |
| 72.5° | 1056.6 | 1026.6 | 1289.5 | 2715.2 | 4962.1 | 5158.2 | 8897.6 | 34877.8 | 36875.5 | 33925.0 | 25288.1 |
| 75° | 823.6 | 749.7 | 722.1 | 1072.7 | 4364.6 | 5349.7 | 5167.4 | 24789.8 | 26298.5 | 24455.3 | 16902.5 |
| 77.5° | 775.1 | 685.1 | 632.1 | 634.4 | 1921.6 | 5566.5 | 4180.1 | 14588.7 | 14588.7 | 11665.9 | 5393.5 |
| 80° | 622.9 | 539.8 | 505.2 | 576.7 | 927.4 | 5130.5 | 4362.3 | 6648.4 | 5670.3 | 3015.1 | 1485.6 |
| 82.5° | 410.6 | 366.8 | 369.1 | 468.3 | 703.6 | 3425.7 | 5052.1 | 3282.7 | 2466.1 | 1335.7 | 874.3 |
| 85° | 260.7 | 223.8 | 249.1 | 327.6 | 526.0 | 1527.2 | 5001.3 | 2281.5 | 1633.3 | 749.7 | 436.0 |
| 87.5° | 131.5 | 101.5 | 124.6 | 170.7 | 320.7 | 438.3 | 4117.8 | 2037.0 | 1211.1 | 311.4 | 237.6 |
| 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° | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 | 7684.2 |
| 2.5° | 7647.3 | 7596.6 | 7571.2 | 7529.7 | 7478.9 | 7428.2 | 7393.6 | 7377.4 | 7368.2 | 7372.8 | 7370.5 |
| 5° | 7702.7 | 7635.8 | 7527.4 | 7372.8 | 7213.6 | 7045.2 | 6916.0 | 6816.8 | 6754.6 | 6736.1 | 6731.5 |
| 7.5° | 7744.2 | 7647.3 | 7444.3 | 7162.9 | 6890.7 | 6595.4 | 6343.9 | 6143.2 | 6007.1 | 5944.8 | 5942.5 |
| 10° | 7737.3 | 7612.7 | 7292.1 | 6876.8 | 6477.7 | 6044.0 | 5649.6 | 5312.8 | 5068.2 | 4950.6 | 4946.0 |
| 12.5° | 7744.2 | 7573.5 | 7105.2 | 6542.3 | 5970.2 | 5349.7 | 4763.7 | 4240.1 | 3875.6 | 3702.5 | 3695.6 |
| 15° | 7771.9 | 7532.0 | 6913.7 | 6168.6 | 5377.3 | 4500.7 | 3663.3 | 3005.9 | 2673.7 | 2560.6 | 2560.6 |
| 17.5° | 7769.6 | 7462.8 | 6692.3 | 5734.9 | 4673.7 | 3499.5 | 2500.7 | 2094.7 | 2062.4 | 2166.2 | 2182.3 |
| 20° | 7723.4 | 7352.0 | 6406.2 | 5220.5 | 3847.9 | 2422.2 | 1695.6 | 1637.9 | 1896.3 | 2182.3 | 2214.6 |
| 22.5° | 7651.9 | 7209.0 | 6076.3 | 4623.0 | 2885.9 | 1577.9 | 1308.0 | 1395.7 | 1746.3 | 2101.6 | 2152.3 |
| 25° | 7552.7 | 7036.0 | 5698.0 | 3928.6 | 1919.3 | 1135.0 | 1091.2 | 1199.6 | 1446.4 | 1684.0 | 1720.9 |
| 27.5° | 7407.4 | 6816.8 | 5285.1 | 3176.6 | 1225.0 | 934.3 | 950.4 | 1026.6 | 1132.7 | 1234.2 | 1254.9 |
| 30° | 7225.2 | 6560.8 | 4835.2 | 2343.8 | 929.7 | 835.1 | 862.8 | 908.9 | 955.0 | 1019.6 | 1033.5 |
| 32.5° | 7040.6 | 6300.1 | 4366.9 | 1610.2 | 812.0 | 782.0 | 809.7 | 835.1 | 874.3 | 918.1 | 927.4 |
| 35° | 6874.5 | 6057.9 | 3884.8 | 1123.5 | 761.3 | 747.4 | 761.3 | 777.4 | 816.6 | 860.5 | 865.1 |
| 37.5° | 6754.6 | 5859.5 | 3381.9 | 888.2 | 731.3 | 717.4 | 724.4 | 731.3 | 777.4 | 842.0 | 848.9 |
| 40° | 6738.4 | 5728.0 | 2872.1 | 798.2 | 708.2 | 689.8 | 685.1 | 689.8 | 749.7 | 823.6 | 830.5 |
| 42.5° | 6895.3 | 5734.9 | 2373.8 | 761.3 | 689.8 | 669.0 | 650.5 | 659.8 | 712.8 | 770.5 | 775.1 |
| 45° | 7266.7 | 5896.4 | 1942.4 | 745.1 | 673.6 | 657.5 | 629.8 | 634.4 | 659.8 | 689.8 | 694.4 |
| 47.5° | 7921.8 | 6249.3 | 1612.5 | 735.9 | 659.8 | 645.9 | 611.3 | 597.5 | 599.8 | 615.9 | 615.9 |
| 50° | 8969.2 | 6839.9 | 1411.8 | 726.7 | 648.2 | 622.9 | 583.6 | 556.0 | 549.0 | 558.3 | 560.6 |
| 52.5° | 10530.9 | 7852.6 | 1314.9 | 708.2 | 627.5 | 592.9 | 549.0 | 521.4 | 509.8 | 519.0 | 519.0 |
| 55° | 12641.7 | 9469.8 | 1268.8 | 682.8 | 602.1 | 556.0 | 516.7 | 493.7 | 484.4 | 491.4 | 491.4 |
| 57.5° | 15047.8 | 11571.3 | 1347.2 | 648.2 | 569.8 | 516.7 | 489.1 | 472.9 | 466.0 | 472.9 | 475.2 |
| 60° | 17906.0 | 14321.1 | 1887.0 | 604.4 | 535.2 | 482.1 | 466.0 | 456.8 | 452.1 | 459.1 | 459.1 |
| 62.5° | 21705.5 | 17979.9 | 2920.5 | 569.8 | 498.3 | 449.8 | 445.2 | 440.6 | 436.0 | 442.9 | 442.9 |
| 65° | 25807.1 | 21308.7 | 3005.9 | 549.0 | 466.0 | 422.2 | 424.5 | 424.5 | 419.9 | 426.8 | 426.8 |
| 67.5° | 27112.8 | 21020.3 | 1679.4 | 523.7 | 426.8 | 394.5 | 403.7 | 403.7 | 401.4 | 408.3 | 406.0 |
| 68° | 26836.0 | 20563.6 | 1462.6 | 516.7 | 419.9 | 387.6 | 396.8 | 399.1 | 396.8 | 403.7 | 401.4 |
| 70° | 24773.6 | 18053.7 | 962.0 | 477.5 | 389.9 | 364.5 | 378.3 | 380.6 | 378.3 | 387.6 | 385.2 |
| 72.5° | 20450.5 | 13541.4 | 710.5 | 417.5 | 353.0 | 334.5 | 348.3 | 350.6 | 353.0 | 362.2 | 359.9 |
| 75° | 12987.8 | 7478.9 | 560.6 | 355.3 | 316.0 | 299.9 | 313.7 | 320.7 | 325.3 | 339.1 | 332.2 |
| 77.5° | 3557.2 | 2270.0 | 454.5 | 302.2 | 272.2 | 265.3 | 274.5 | 283.7 | 288.4 | 304.5 | 293.0 |
| 80° | 1245.7 | 1003.5 | 378.3 | 256.1 | 226.1 | 223.8 | 233.0 | 242.2 | 246.8 | 260.7 | 246.8 |
| 82.5° | 756.7 | 655.2 | 302.2 | 200.7 | 177.6 | 175.3 | 186.9 | 196.1 | 200.7 | 200.7 | 191.5 |
| 85° | 394.5 | 346.0 | 221.5 | 140.7 | 122.3 | 115.3 | 136.1 | 147.6 | 149.9 | 147.6 | 140.7 |
| 87.5° | 221.5 | 196.1 | 117.7 | 66.9 | 55.4 | 57.7 | 71.5 | 87.7 | 94.6 | 92.3 | 87.7 |
| 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)