

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: P195235

Luminaire Tested: **NAV-AF-01-D-UNV-SL4-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195235
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-01-D-UNV-SL4-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 5700K, 1200mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6393 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

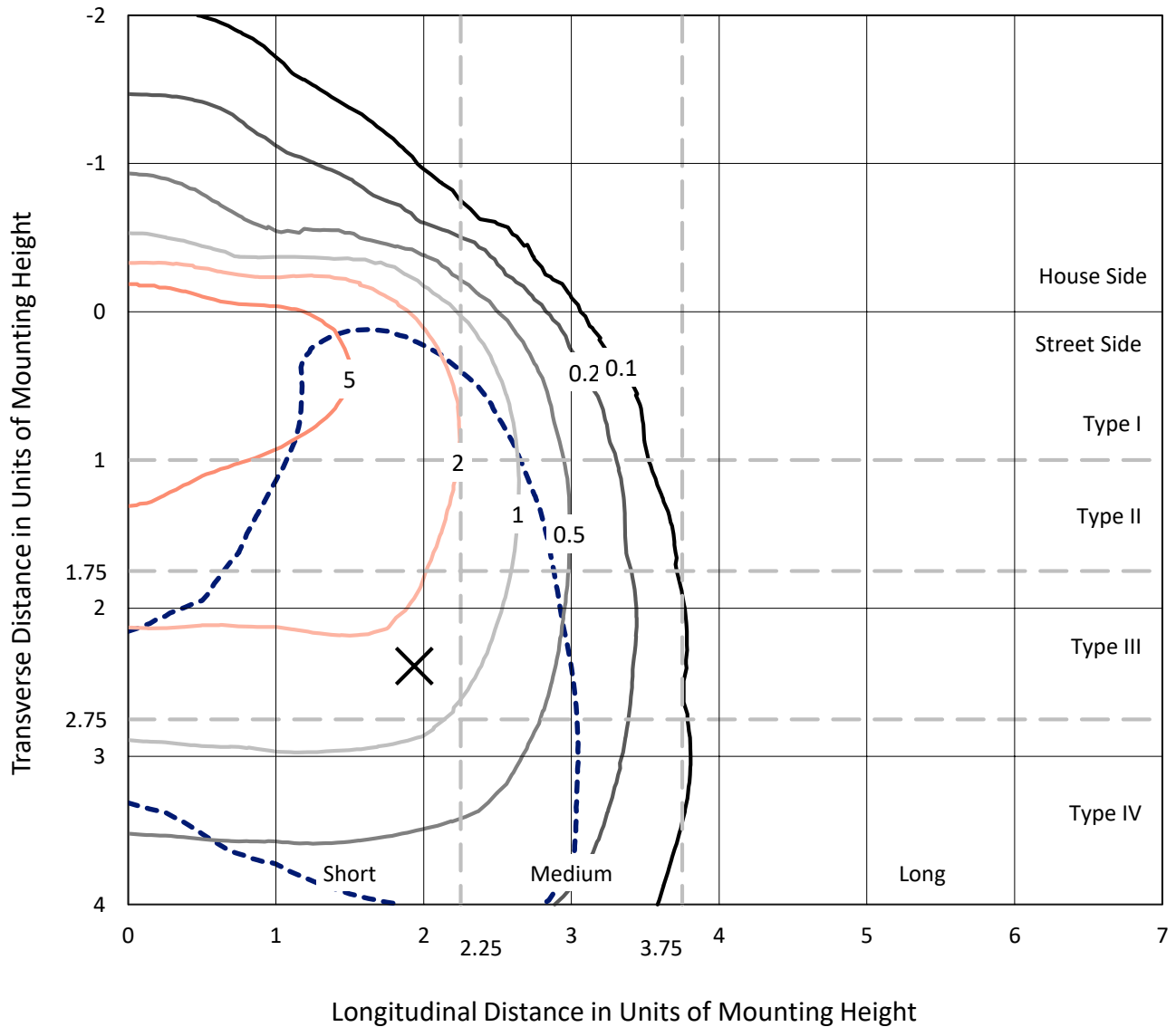
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

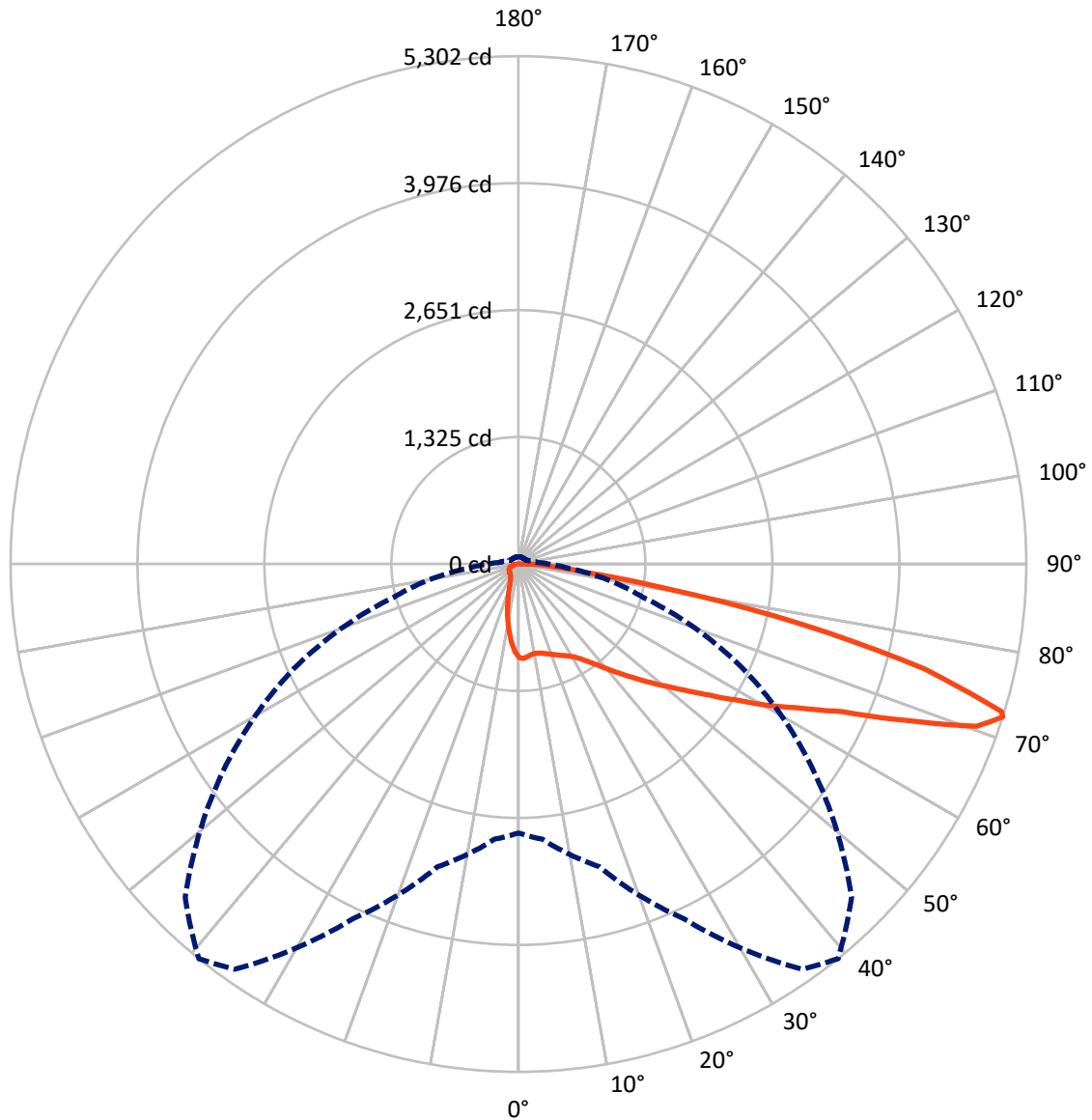
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.8 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 733.0 | 0.0 | 733.0 |
| | % Fixture | 11.5 | 0.0 | 11.5 |
| Street Side | Lumens | 5660.0 | 0.0 | 5660.0 |
| | % Fixture | 88.5 | 0.0 | 88.5 |
| Total | Lumens | 6393.0 | 0.0 | 6393.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 83.9 | 1.3 |
| 10°-20° | 210.8 | 3.3 |
| 20°-30° | 328.5 | 5.1 |
| 30°-40° | 505.9 | 7.9 |
| 40°-50° | 824.7 | 12.9 |
| 50°-60° | 1281.5 | 20.0 |
| 60°-70° | 1715.2 | 26.8 |
| 70°-80° | 1233.5 | 19.3 |
| 80°-90° | 209.1 | 3.3 |
| 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° | 6393.0 | 100.0 |
| 0°-180° | 6393.0 | 100.0 |

Coefficient of Utilization



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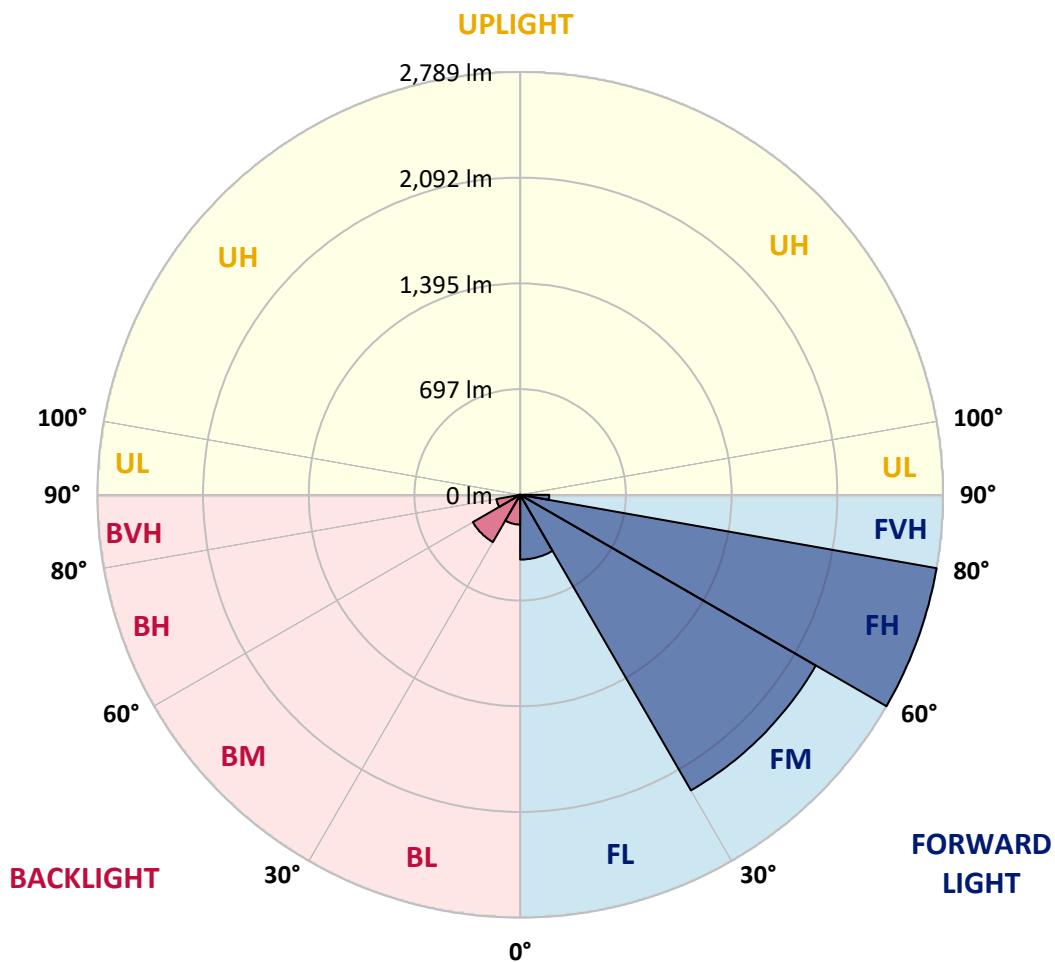
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 427.0 | 6.7 | | | |
| FM | (30°-60°) | 2251.7 | 35.2 | | | |
| FH | (60°-80°) | 2789.4 | 43.6 | | | G2/5000 |
| FVH | (80°-90°) | 191.8 | 3.0 | | | G2/225 |
| BL | (0°-30°) | 196.2 | 3.1 | B1/500 | | |
| BM | (30°-60°) | 360.3 | 5.6 | B1/1000 | | |
| BH | (60°-80°) | 159.3 | 2.5 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 17.3 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 |
| 2.5° | 997.4 | 997.8 | 996.5 | 992.6 | 989.2 | 987.5 | 984.5 | 979.3 | 972.5 | 967.7 | 963.9 |
| 5° | 987.9 | 989.2 | 988.3 | 981.9 | 975.9 | 972.5 | 967.7 | 960.4 | 951.4 | 947.6 | 938.6 |
| 7.5° | 980.6 | 981.5 | 978.9 | 971.6 | 960.0 | 955.7 | 947.1 | 937.7 | 929.5 | 924.0 | 913.2 |
| 10° | 975.5 | 976.3 | 974.2 | 966.9 | 954.0 | 948.9 | 938.6 | 928.3 | 917.5 | 910.7 | 898.6 |
| 12.5° | 968.2 | 969.9 | 969.9 | 966.5 | 957.9 | 954.4 | 944.1 | 933.0 | 923.1 | 915.8 | 900.8 |
| 15° | 966.9 | 969.0 | 972.9 | 972.5 | 969.9 | 967.3 | 959.2 | 948.0 | 939.4 | 930.8 | 912.4 |
| 17.5° | 977.6 | 982.3 | 990.1 | 992.6 | 990.9 | 985.3 | 975.9 | 965.6 | 956.2 | 948.0 | 925.3 |
| 20° | 1004.7 | 1007.2 | 1018.8 | 1024.0 | 1015.4 | 1007.2 | 994.8 | 981.5 | 972.9 | 966.5 | 937.3 |
| 22.5° | 1045.4 | 1048.9 | 1058.3 | 1058.7 | 1040.7 | 1030.8 | 1014.9 | 998.6 | 990.5 | 987.9 | 953.6 |
| 25° | 1110.7 | 1109.8 | 1112.4 | 1101.6 | 1069.0 | 1057.4 | 1038.1 | 1019.2 | 1013.7 | 1018.8 | 977.6 |
| 27.5° | 1188.8 | 1186.6 | 1178.5 | 1150.6 | 1101.2 | 1086.2 | 1063.0 | 1046.3 | 1046.3 | 1058.3 | 1010.2 |
| 30° | 1278.9 | 1276.7 | 1250.1 | 1203.3 | 1139.4 | 1122.2 | 1097.8 | 1080.2 | 1089.2 | 1112.4 | 1054.4 |
| 32.5° | 1374.2 | 1366.4 | 1329.1 | 1266.4 | 1193.9 | 1175.0 | 1151.4 | 1133.4 | 1150.6 | 1190.0 | 1117.9 |
| 35° | 1463.8 | 1459.6 | 1413.6 | 1339.4 | 1264.3 | 1248.4 | 1232.1 | 1209.8 | 1237.3 | 1298.6 | 1207.6 |
| 37.5° | 1556.5 | 1553.1 | 1496.9 | 1417.9 | 1350.1 | 1339.4 | 1325.7 | 1310.2 | 1354.4 | 1435.1 | 1329.1 |
| 40° | 1660.0 | 1653.1 | 1582.3 | 1503.3 | 1450.1 | 1445.0 | 1437.7 | 1433.4 | 1504.6 | 1624.8 | 1482.7 |
| 42.5° | 1777.1 | 1763.8 | 1672.4 | 1597.3 | 1559.1 | 1563.4 | 1559.5 | 1576.7 | 1685.7 | 1843.6 | 1665.5 |
| 45° | 1911.0 | 1884.4 | 1762.1 | 1697.3 | 1679.7 | 1696.9 | 1705.0 | 1748.8 | 1899.9 | 2096.4 | 1869.8 |
| 47.5° | 2036.3 | 2002.0 | 1860.4 | 1805.9 | 1815.8 | 1845.4 | 1868.5 | 1945.8 | 2134.6 | 2346.2 | 2078.4 |
| 50° | 2151.8 | 2113.2 | 1965.5 | 1918.3 | 1966.4 | 2008.4 | 2056.5 | 2165.5 | 2384.4 | 2603.2 | 2269.8 |
| 52.5° | 2237.2 | 2209.3 | 2070.7 | 2041.1 | 2139.3 | 2195.1 | 2271.9 | 2409.7 | 2636.7 | 2848.3 | 2440.6 |
| 55° | 2303.3 | 2288.3 | 2173.2 | 2181.8 | 2335.0 | 2414.9 | 2508.0 | 2666.3 | 2903.7 | 3068.0 | 2577.9 |
| 57.5° | 2379.7 | 2368.5 | 2290.4 | 2351.8 | 2577.9 | 2678.4 | 2788.2 | 2964.2 | 3157.7 | 3261.6 | 2685.6 |
| 60° | 2460.3 | 2460.3 | 2420.9 | 2556.5 | 2881.8 | 2996.8 | 3106.2 | 3243.1 | 3410.9 | 3435.8 | 2729.4 |
| 62.5° | 2521.3 | 2537.2 | 2551.3 | 2774.5 | 3170.2 | 3313.1 | 3433.2 | 3564.6 | 3673.1 | 3521.6 | 2626.4 |
| 65° | 2609.7 | 2643.6 | 2723.4 | 3026.4 | 3527.2 | 3714.3 | 3876.6 | 3986.8 | 3885.6 | 3453.4 | 2290.4 |
| 67.5° | 2761.6 | 2811.8 | 2981.8 | 3401.5 | 4074.0 | 4354.2 | 4511.7 | 4321.2 | 3843.9 | 3023.8 | 1754.4 |
| 70° | 2898.5 | 2969.3 | 3259.9 | 3877.4 | 4784.6 | 5075.6 | 5003.1 | 4243.5 | 3347.8 | 2216.6 | 1079.3 |
| 72° | 2807.5 | 2884.8 | 3272.7 | 4084.7 | 5164.4 | 5301.8 | 4919.4 | 3760.7 | 2586.9 | 1352.7 | 532.2 |
| 72.5° | 2747.9 | 2828.1 | 3231.1 | 4079.5 | 5174.7 | 5273.0 | 4803.1 | 3568.8 | 2348.3 | 1183.6 | 430.4 |
| 75° | 2295.5 | 2364.2 | 2778.3 | 3615.6 | 4560.2 | 4379.9 | 3748.2 | 2309.7 | 1079.3 | 382.4 | 221.4 |
| 77.5° | 1499.0 | 1551.4 | 1915.7 | 2505.0 | 3194.2 | 3020.8 | 2281.4 | 1081.5 | 404.7 | 232.2 | 166.5 |
| 80° | 753.2 | 790.5 | 1025.2 | 1317.1 | 1723.9 | 1586.2 | 1053.1 | 523.1 | 270.8 | 167.8 | 130.9 |
| 82.5° | 524.0 | 558.3 | 706.0 | 672.5 | 720.5 | 697.4 | 495.2 | 436.4 | 202.6 | 106.0 | 68.7 |
| 85° | 439.5 | 475.1 | 584.1 | 479.4 | 392.2 | 357.5 | 354.9 | 412.4 | 133.9 | 52.4 | 57.9 |
| 87.5° | 383.2 | 437.3 | 481.9 | 350.2 | 269.1 | 237.3 | 261.4 | 378.1 | 42.5 | 28.8 | 17.6 |
| 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° | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 | 976.3 |
| 2.5° | 957.4 | 956.2 | 949.7 | 939.8 | 932.6 | 927.8 | 918.8 | 918.4 | 919.2 | 911.5 | 914.5 |
| 5° | 930.4 | 925.3 | 908.5 | 885.8 | 867.3 | 849.7 | 830.4 | 824.0 | 818.4 | 806.8 | 808.1 |
| 7.5° | 902.1 | 893.1 | 863.9 | 826.6 | 790.9 | 758.3 | 726.1 | 710.3 | 698.2 | 683.2 | 683.2 |
| 10° | 885.3 | 871.2 | 826.6 | 772.0 | 715.4 | 667.8 | 619.7 | 590.9 | 569.9 | 550.6 | 549.3 |
| 12.5° | 884.5 | 863.0 | 800.8 | 725.7 | 648.0 | 581.1 | 515.4 | 471.2 | 439.9 | 417.1 | 415.0 |
| 15° | 891.4 | 861.3 | 779.3 | 682.4 | 584.5 | 497.4 | 416.3 | 360.1 | 320.1 | 294.8 | 292.3 |
| 17.5° | 897.4 | 859.2 | 756.2 | 636.9 | 522.7 | 416.7 | 326.6 | 268.2 | 230.5 | 209.9 | 207.7 |
| 20° | 902.9 | 854.4 | 726.6 | 588.8 | 454.5 | 341.2 | 255.3 | 208.1 | 183.2 | 171.7 | 170.4 |
| 22.5° | 911.1 | 850.2 | 695.7 | 534.7 | 387.5 | 277.7 | 210.7 | 176.8 | 163.5 | 157.9 | 157.1 |
| 25° | 924.4 | 850.6 | 665.6 | 479.4 | 326.2 | 231.3 | 182.4 | 161.4 | 154.1 | 150.2 | 150.2 |
| 27.5° | 943.7 | 855.7 | 636.0 | 423.1 | 274.2 | 199.6 | 165.7 | 153.2 | 148.5 | 145.5 | 144.6 |
| 30° | 972.0 | 865.2 | 604.7 | 369.9 | 233.0 | 177.7 | 155.8 | 148.1 | 144.2 | 141.6 | 141.2 |
| 32.5° | 1013.2 | 881.9 | 571.6 | 321.4 | 201.7 | 162.2 | 148.5 | 143.8 | 140.8 | 138.6 | 138.2 |
| 35° | 1074.6 | 911.5 | 539.4 | 280.2 | 179.4 | 151.1 | 142.5 | 138.6 | 136.9 | 136.0 | 135.6 |
| 37.5° | 1164.7 | 959.2 | 509.0 | 248.1 | 164.8 | 143.8 | 136.5 | 134.3 | 133.5 | 133.5 | 133.5 |
| 40° | 1278.0 | 1021.8 | 481.5 | 225.3 | 156.6 | 138.2 | 132.2 | 130.5 | 130.5 | 130.9 | 130.9 |
| 42.5° | 1415.8 | 1100.4 | 457.9 | 209.9 | 151.9 | 134.3 | 129.2 | 128.3 | 127.9 | 127.9 | 128.3 |
| 45° | 1575.9 | 1193.0 | 443.3 | 197.8 | 148.5 | 132.2 | 127.0 | 126.6 | 124.9 | 124.0 | 124.0 |
| 47.5° | 1736.8 | 1292.2 | 442.5 | 191.0 | 144.2 | 129.6 | 124.9 | 124.9 | 121.5 | 119.7 | 120.2 |
| 50° | 1887.0 | 1381.0 | 451.9 | 189.3 | 141.6 | 125.7 | 122.7 | 123.2 | 118.4 | 116.3 | 115.9 |
| 52.5° | 2008.0 | 1448.8 | 463.5 | 191.4 | 141.6 | 122.3 | 118.9 | 121.0 | 115.9 | 113.3 | 112.9 |
| 55° | 2101.6 | 1496.0 | 467.8 | 196.1 | 143.3 | 119.3 | 115.4 | 118.9 | 115.0 | 111.6 | 111.6 |
| 57.5° | 2168.5 | 1511.1 | 449.3 | 198.3 | 145.9 | 118.9 | 112.0 | 118.4 | 116.3 | 112.0 | 112.0 |
| 60° | 2144.1 | 1423.9 | 380.7 | 190.1 | 145.5 | 118.0 | 109.4 | 119.3 | 120.6 | 115.9 | 115.9 |
| 62.5° | 1953.1 | 1191.3 | 305.6 | 171.7 | 138.2 | 115.0 | 106.4 | 118.4 | 123.6 | 121.9 | 121.0 |
| 65° | 1590.0 | 873.8 | 236.9 | 149.8 | 125.7 | 108.6 | 100.0 | 110.7 | 116.7 | 118.4 | 118.9 |
| 67.5° | 1120.5 | 553.2 | 184.1 | 127.5 | 110.3 | 99.1 | 92.7 | 97.8 | 100.0 | 100.9 | 102.6 |
| 70° | 612.8 | 299.5 | 146.3 | 107.3 | 94.4 | 89.7 | 85.0 | 85.4 | 84.5 | 83.7 | 84.5 |
| 72° | 307.7 | 195.7 | 123.6 | 93.1 | 83.7 | 80.7 | 78.5 | 77.2 | 77.2 | 76.0 | 76.4 |
| 72.5° | 264.8 | 182.0 | 119.3 | 89.7 | 81.1 | 78.5 | 76.8 | 75.5 | 75.1 | 74.2 | 74.7 |
| 75° | 176.4 | 144.2 | 99.6 | 75.1 | 69.1 | 67.4 | 68.2 | 66.9 | 67.4 | 66.5 | 66.9 |
| 77.5° | 142.5 | 124.0 | 84.5 | 63.5 | 59.2 | 56.6 | 58.4 | 58.8 | 59.7 | 58.8 | 58.4 |
| 80° | 119.3 | 105.6 | 70.8 | 52.4 | 49.4 | 47.2 | 48.1 | 51.1 | 51.5 | 48.9 | 48.5 |
| 82.5° | 77.2 | 85.0 | 55.8 | 40.8 | 37.8 | 36.9 | 39.1 | 42.1 | 42.9 | 39.5 | 38.6 |
| 85° | 64.8 | 68.2 | 40.3 | 27.9 | 24.9 | 24.0 | 28.3 | 31.3 | 33.5 | 30.0 | 29.2 |
| 87.5° | 18.0 | 33.5 | 19.7 | 13.3 | 11.2 | 11.2 | 13.7 | 16.3 | 19.3 | 19.7 | 19.7 |
| 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)