

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: P143946

Luminaire Tested: **LDRL-5WQ-F03-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P143946  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33698)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-5WQ-F03-E-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 5 SQUARE WIDE  
Light Source: (21) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7790.3 lumens  
Efficiency: N/A  
Efficacy: 99.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type V - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G2

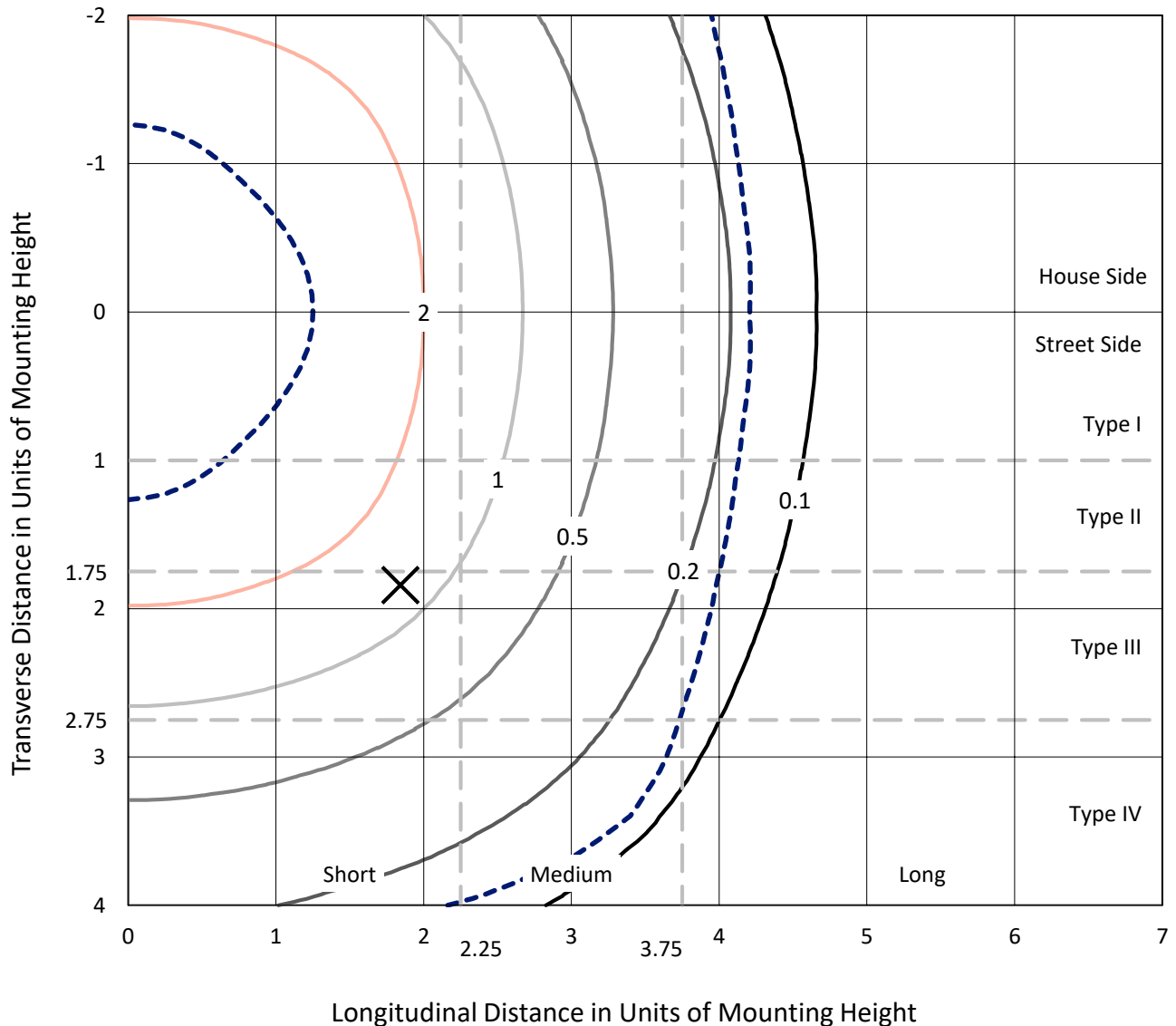
Input Watts (W): 78.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

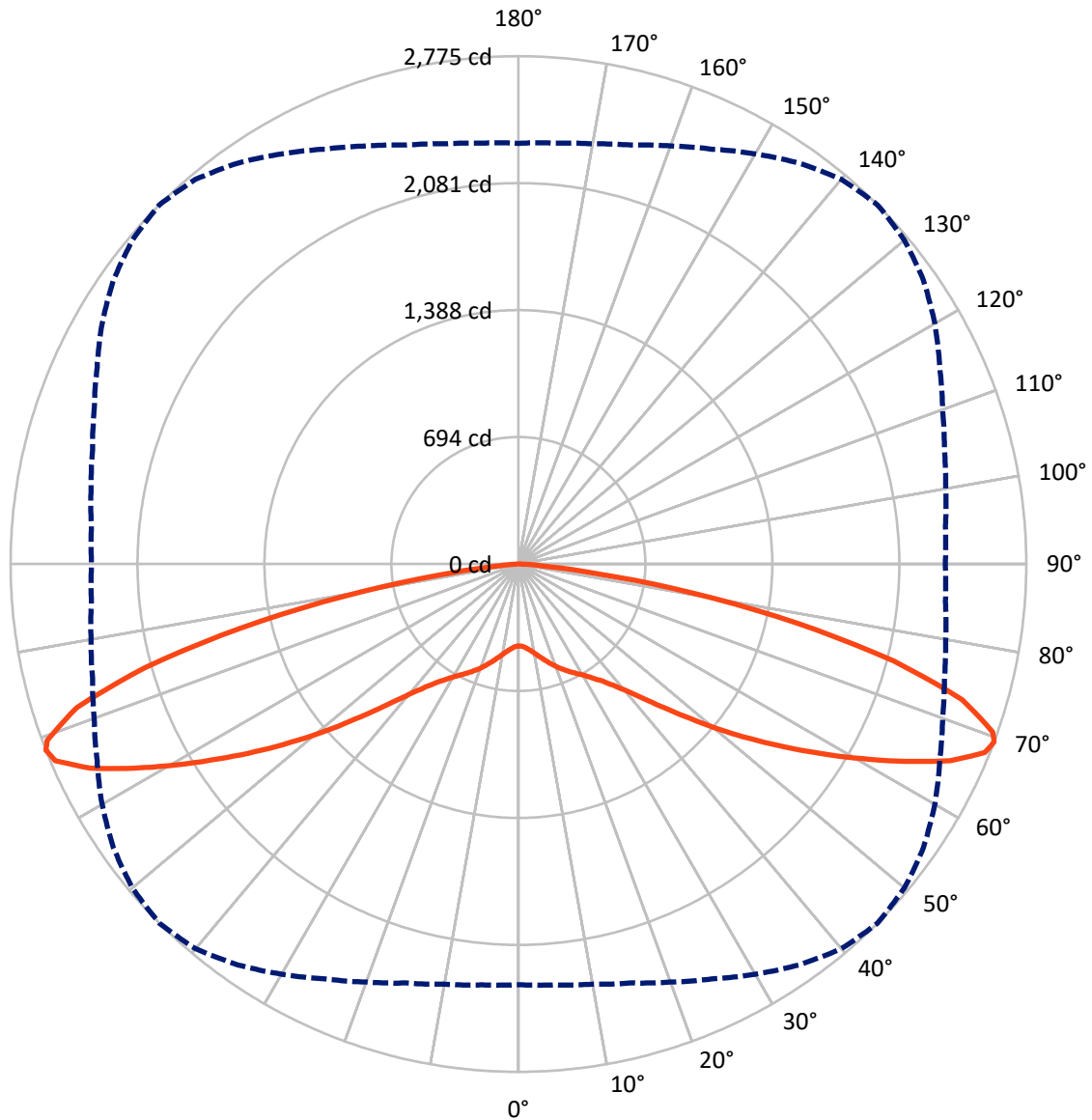
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5 fc  
 Type V - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 3895.1   | 0.0    | 3895.1 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 3895.1   | 0.0    | 3895.1 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 7790.3   | 0.0    | 7790.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 45.2   | 0.6       |
| 10°-20°   | 155.7  | 2.0       |
| 20°-30°   | 300.1  | 3.9       |
| 30°-40°   | 491.7  | 6.3       |
| 40°-50°   | 855.0  | 11.0      |
| 50°-60°   | 1518.9 | 19.5      |
| 60°-70°   | 2358.1 | 30.3      |
| 70°-80°   | 1878.8 | 24.1      |
| 80°-90°   | 186.8  | 2.4       |
| 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°    | 7790.3 | 100.0     |
| 0°-180°   | 7790.3 | 100.0     |



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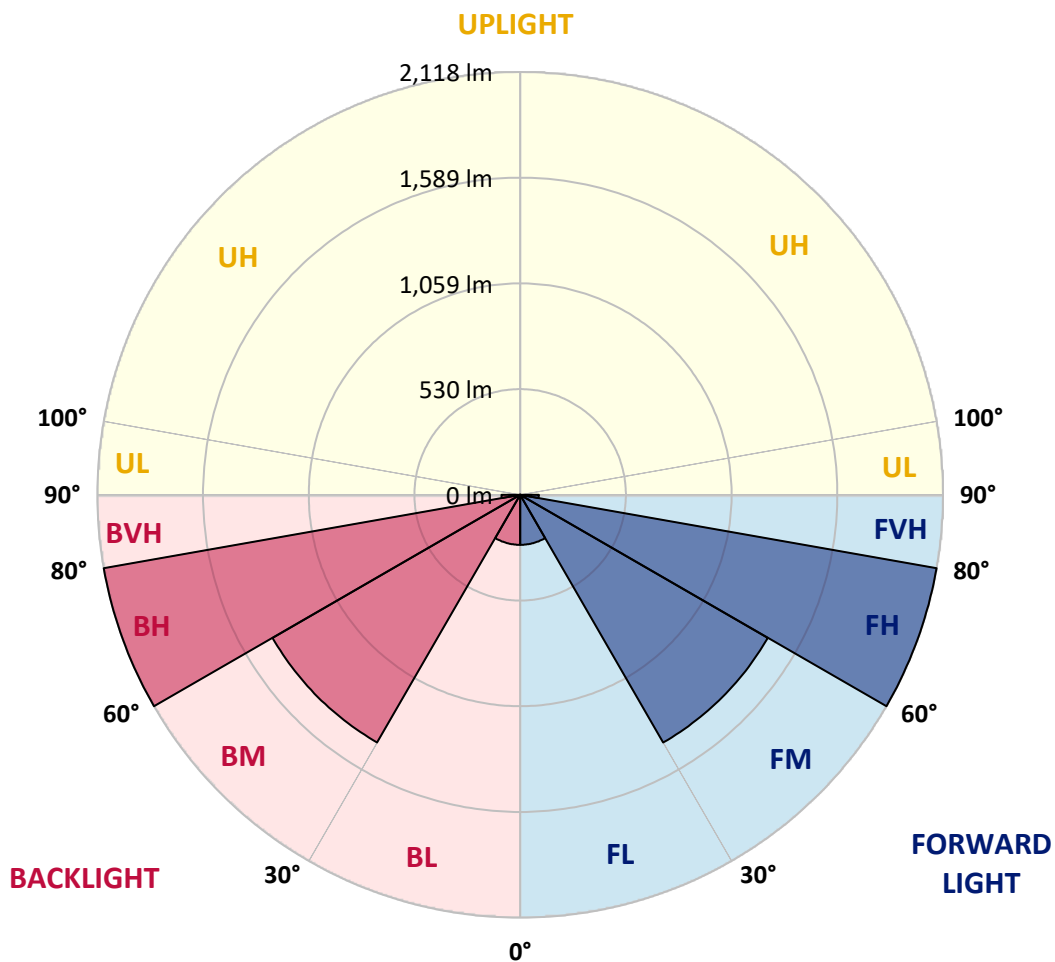
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 250.5  | 3.2       |                         |      |         |
| FM   | (30°-60°)   | 1432.8 | 18.4      |                         |      |         |
| FH   | (60°-80°)   | 2118.5 | 27.2      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 93.4   | 1.2       |                         |      | G1/100  |
| BL   | (0°-30°)    | 250.5  | 3.2       | B1/500                  |      |         |
| BM   | (30°-60°)   | 1432.8 | 18.4      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 2118.5 | 27.2      | B3/2500                 |      | G2/5000 |
| BVH  | (80°-90°)   | 93.4   | 1.2       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  |
| 2.5°  | 451.3  | 451.3  | 451.3  | 450.8  | 450.8  | 450.3  | 450.8  | 450.3  | 450.3  | 450.3  | 450.3  |
| 5°    | 463.0  | 462.0  | 462.0  | 461.5  | 462.5  | 462.5  | 461.5  | 462.0  | 461.5  | 462.0  | 462.0  |
| 7.5°  | 477.8  | 477.8  | 477.8  | 477.2  | 478.3  | 477.8  | 477.2  | 477.8  | 477.8  | 477.2  | 477.2  |
| 10°   | 496.0  | 496.6  | 496.0  | 496.0  | 497.6  | 497.1  | 497.6  | 497.6  | 498.1  | 497.6  | 497.6  |
| 12.5° | 517.4  | 517.4  | 517.9  | 518.4  | 518.9  | 519.4  | 521.0  | 520.4  | 521.5  | 520.4  | 520.4  |
| 15°   | 542.3  | 543.3  | 542.3  | 542.3  | 543.8  | 544.8  | 545.3  | 545.3  | 546.4  | 545.9  | 544.8  |
| 17.5° | 568.7  | 569.2  | 568.7  | 568.2  | 569.7  | 571.3  | 571.8  | 571.8  | 573.3  | 572.3  | 572.3  |
| 20°   | 595.7  | 596.2  | 595.2  | 594.6  | 596.7  | 596.7  | 597.7  | 598.2  | 599.7  | 600.2  | 598.7  |
| 22.5° | 620.6  | 621.1  | 620.6  | 620.1  | 622.1  | 622.1  | 623.6  | 624.1  | 626.2  | 625.7  | 625.7  |
| 25°   | 645.0  | 645.0  | 644.5  | 644.5  | 646.5  | 647.0  | 648.5  | 649.5  | 651.6  | 651.6  | 651.6  |
| 27.5° | 667.3  | 667.8  | 666.8  | 666.3  | 670.4  | 671.9  | 672.9  | 674.9  | 676.5  | 677.5  | 677.0  |
| 30°   | 692.7  | 692.7  | 692.2  | 693.8  | 696.3  | 698.3  | 700.4  | 703.4  | 706.5  | 705.4  | 705.4  |
| 32.5° | 722.7  | 723.7  | 723.2  | 725.3  | 728.3  | 731.4  | 733.9  | 737.5  | 739.0  | 741.5  | 739.5  |
| 35°   | 762.9  | 764.9  | 763.9  | 765.9  | 768.5  | 770.5  | 776.1  | 779.6  | 782.2  | 783.7  | 782.7  |
| 37.5° | 813.2  | 812.2  | 814.2  | 814.7  | 819.8  | 822.3  | 828.9  | 834.0  | 838.1  | 839.6  | 838.6  |
| 40°   | 875.7  | 874.2  | 876.7  | 879.3  | 885.9  | 888.4  | 896.0  | 903.7  | 909.3  | 911.3  | 910.3  |
| 42.5° | 950.4  | 952.5  | 956.5  | 960.1  | 969.2  | 976.3  | 985.0  | 996.2  | 1002.3 | 1004.8 | 1001.2 |
| 45°   | 1048.5 | 1045.0 | 1052.6 | 1061.7 | 1066.8 | 1082.6 | 1096.8 | 1108.5 | 1118.6 | 1122.7 | 1118.6 |
| 47.5° | 1160.3 | 1159.8 | 1169.0 | 1180.1 | 1193.4 | 1208.1 | 1224.9 | 1240.1 | 1257.9 | 1258.9 | 1253.8 |
| 50°   | 1283.8 | 1294.0 | 1299.1 | 1310.3 | 1334.7 | 1352.9 | 1374.3 | 1397.2 | 1413.4 | 1418.5 | 1409.4 |
| 52.5° | 1432.7 | 1440.4 | 1443.4 | 1462.2 | 1484.6 | 1506.9 | 1536.9 | 1564.4 | 1583.2 | 1585.2 | 1580.6 |
| 55°   | 1594.4 | 1600.5 | 1606.1 | 1628.9 | 1653.3 | 1673.1 | 1711.3 | 1738.2 | 1757.0 | 1764.1 | 1761.1 |
| 57.5° | 1761.6 | 1767.2 | 1774.3 | 1799.2 | 1824.1 | 1852.0 | 1888.1 | 1919.6 | 1941.5 | 1954.7 | 1951.2 |
| 60°   | 1947.1 | 1947.1 | 1963.4 | 1988.3 | 2008.6 | 2041.6 | 2079.2 | 2115.8 | 2139.7 | 2160.6 | 2155.0 |
| 62.5° | 2142.3 | 2147.8 | 2163.6 | 2183.9 | 2205.3 | 2235.8 | 2278.5 | 2322.2 | 2358.8 | 2374.5 | 2374.0 |
| 65°   | 2290.2 | 2300.3 | 2321.2 | 2344.5 | 2380.1 | 2416.2 | 2470.1 | 2524.5 | 2568.7 | 2591.5 | 2591.5 |
| 67.5° | 2333.4 | 2340.0 | 2365.9 | 2401.5 | 2452.8 | 2510.2 | 2583.4 | 2659.1 | 2719.6 | 2749.6 | 2730.8 |
| 69°   | 2298.8 | 2308.5 | 2331.3 | 2369.9 | 2430.9 | 2501.1 | 2588.0 | 2673.9 | 2744.0 | 2775.0 | 2753.2 |
| 70°   | 2258.6 | 2269.3 | 2292.2 | 2330.3 | 2393.3 | 2468.0 | 2554.9 | 2647.5 | 2722.7 | 2749.1 | 2724.2 |
| 72.5° | 2095.0 | 2108.2 | 2124.5 | 2157.5 | 2214.4 | 2284.6 | 2362.8 | 2444.2 | 2516.3 | 2537.2 | 2506.2 |
| 75°   | 1816.0 | 1818.5 | 1826.6 | 1851.0 | 1871.4 | 1921.2 | 1987.7 | 2052.3 | 2106.7 | 2118.9 | 2085.8 |
| 77.5° | 1285.4 | 1271.6 | 1257.9 | 1278.7 | 1295.0 | 1359.0 | 1431.2 | 1484.1 | 1541.0 | 1558.3 | 1524.7 |
| 80°   | 563.6  | 558.6  | 577.9  | 605.3  | 677.0  | 719.7  | 790.3  | 866.1  | 914.3  | 970.7  | 910.3  |
| 82.5° | 111.3  | 117.4  | 135.7  | 167.7  | 206.9  | 260.2  | 306.5  | 358.8  | 406.1  | 427.4  | 405.6  |
| 85°   | 45.2   | 49.3   | 55.9   | 62.5   | 67.1   | 75.2   | 88.4   | 109.8  | 121.0  | 122.5  | 116.4  |
| 87.5° | 18.8   | 21.9   | 29.5   | 35.1   | 35.6   | 34.1   | 35.1   | 36.1   | 29.5   | 23.9   | 30.0   |
| 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):**

|       | 55°    | 60°    | 65°    | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  | 447.8  |
| 2.5°  | 450.3  | 450.8  | 450.3  | 450.8  | 450.3  | 450.3  | 450.8  | 450.3  |
| 5°    | 461.5  | 462.0  | 461.5  | 461.0  | 460.5  | 461.0  | 461.0  | 461.0  |
| 7.5°  | 477.2  | 476.7  | 476.2  | 476.2  | 475.7  | 475.2  | 476.2  | 476.2  |
| 10°   | 496.6  | 496.0  | 495.0  | 495.0  | 494.5  | 494.5  | 494.5  | 494.5  |
| 12.5° | 519.9  | 518.4  | 517.9  | 516.4  | 515.9  | 515.4  | 515.4  | 515.9  |
| 15°   | 544.3  | 542.8  | 542.3  | 539.8  | 539.8  | 539.2  | 539.2  | 539.2  |
| 17.5° | 570.3  | 568.7  | 566.7  | 566.7  | 565.2  | 564.2  | 564.7  | 563.6  |
| 20°   | 596.7  | 594.6  | 593.6  | 593.1  | 591.1  | 591.1  | 591.1  | 590.6  |
| 22.5° | 622.6  | 621.1  | 619.6  | 617.5  | 615.5  | 615.0  | 615.0  | 614.5  |
| 25°   | 649.0  | 646.5  | 643.4  | 641.4  | 639.4  | 637.8  | 637.8  | 637.8  |
| 27.5° | 675.5  | 672.4  | 667.8  | 665.3  | 662.2  | 660.7  | 660.7  | 660.2  |
| 30°   | 703.4  | 699.9  | 695.8  | 692.2  | 688.2  | 686.6  | 686.1  | 685.1  |
| 32.5° | 737.0  | 733.4  | 729.3  | 724.2  | 720.2  | 717.6  | 717.6  | 716.1  |
| 35°   | 779.6  | 775.6  | 772.5  | 765.9  | 760.8  | 756.8  | 757.3  | 758.3  |
| 37.5° | 835.6  | 830.5  | 827.9  | 819.8  | 813.2  | 809.1  | 809.1  | 808.6  |
| 40°   | 906.7  | 901.6  | 896.0  | 888.4  | 880.3  | 874.7  | 873.2  | 873.2  |
| 42.5° | 997.2  | 992.6  | 985.0  | 974.3  | 964.6  | 958.6  | 953.5  | 954.0  |
| 45°   | 1110.5 | 1104.9 | 1094.3 | 1081.0 | 1069.3 | 1060.7 | 1053.6 | 1053.6 |
| 47.5° | 1248.3 | 1236.6 | 1221.8 | 1210.1 | 1190.3 | 1177.1 | 1172.0 | 1171.0 |
| 50°   | 1405.3 | 1383.4 | 1365.1 | 1348.4 | 1327.5 | 1313.8 | 1306.2 | 1304.2 |
| 52.5° | 1570.0 | 1547.1 | 1524.2 | 1502.4 | 1477.0 | 1462.7 | 1450.5 | 1449.5 |
| 55°   | 1748.9 | 1719.9 | 1690.9 | 1669.6 | 1639.6 | 1624.9 | 1612.7 | 1605.5 |
| 57.5° | 1931.3 | 1898.8 | 1878.0 | 1847.5 | 1816.0 | 1805.3 | 1793.6 | 1785.0 |
| 60°   | 2136.7 | 2101.1 | 2073.6 | 2041.6 | 2021.3 | 1998.4 | 1987.2 | 1980.6 |
| 62.5° | 2346.6 | 2313.5 | 2278.5 | 2248.0 | 2219.5 | 2203.8 | 2188.5 | 2180.9 |
| 65°   | 2560.0 | 2505.6 | 2464.0 | 2421.8 | 2388.2 | 2359.8 | 2335.9 | 2332.8 |
| 67.5° | 2691.2 | 2622.5 | 2552.9 | 2491.4 | 2442.1 | 2402.0 | 2377.6 | 2368.9 |
| 69°   | 2701.8 | 2627.1 | 2540.2 | 2466.5 | 2409.6 | 2371.0 | 2342.0 | 2332.8 |
| 70°   | 2672.4 | 2597.1 | 2505.6 | 2426.4 | 2367.4 | 2325.2 | 2301.3 | 2286.1 |
| 72.5° | 2456.9 | 2390.8 | 2302.9 | 2224.6 | 2171.2 | 2121.9 | 2098.0 | 2091.9 |
| 75°   | 2026.9 | 1956.7 | 1875.9 | 1838.3 | 1801.2 | 1770.2 | 1754.0 | 1752.4 |
| 77.5° | 1439.4 | 1367.7 | 1306.2 | 1256.9 | 1216.7 | 1196.9 | 1201.5 | 1184.7 |
| 80°   | 823.9  | 730.3  | 656.1  | 612.4  | 553.0  | 517.4  | 477.2  | 506.2  |
| 82.5° | 354.2  | 286.1  | 218.0  | 177.4  | 135.2  | 107.2  | 88.4   | 82.3   |
| 85°   | 99.1   | 80.8   | 67.6   | 62.0   | 55.9   | 49.8   | 42.2   | 39.1   |
| 87.5° | 33.5   | 32.0   | 28.5   | 28.5   | 25.9   | 21.9   | 15.2   | 13.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)