

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: P143644

Luminaire Tested: **LDRL-5MQ-F03-E-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P143644  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33697)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-5MQ-F03-E-7030  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 5 SQUARE MEDIUM  
Light Source: (21) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7029.5 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type V - Short - Full Cutoff  
BUG Rating: B3 - U0 - G1

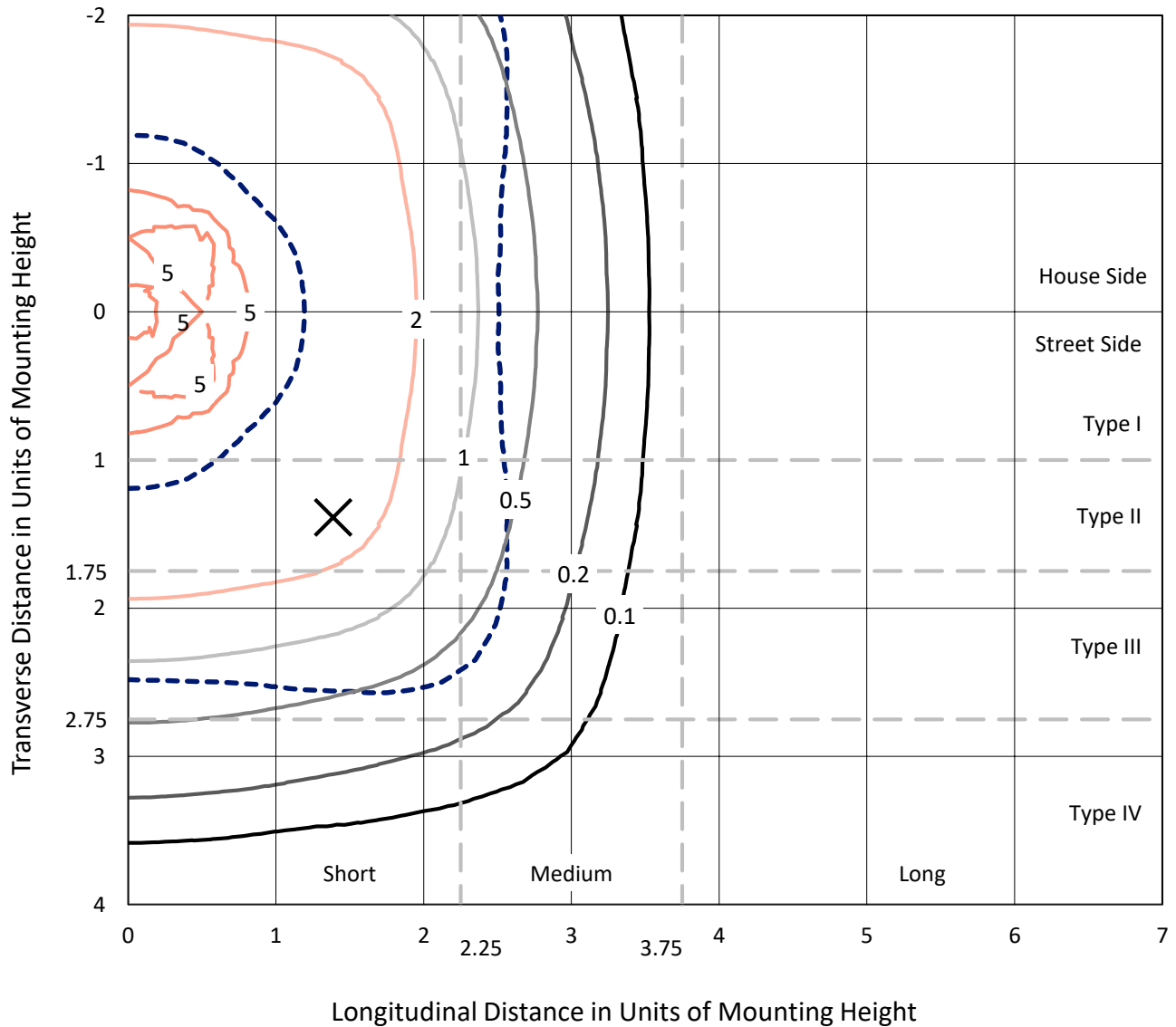
Input Watts (W): 78.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

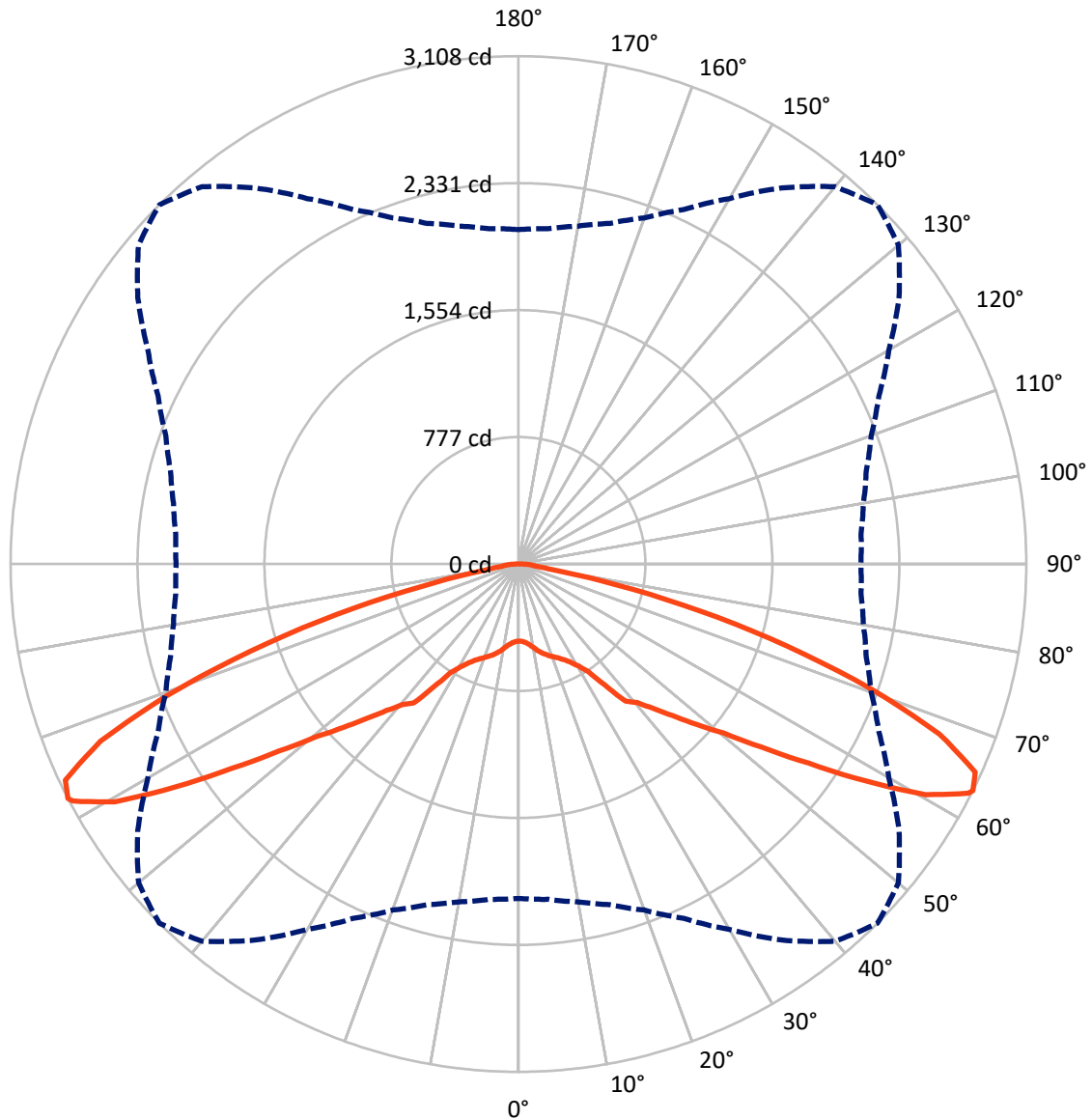
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.2 fc  
 Type V - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 63-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 3514.8   | 0.0    | 3514.8 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 3514.8   | 0.0    | 3514.8 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 7029.5   | 0.0    | 7029.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 47.5   | 0.7       |
| 10°-20°   | 162.3  | 2.3       |
| 20°-30°   | 310.0  | 4.4       |
| 30°-40°   | 590.5  | 8.4       |
| 40°-50°   | 1016.9 | 14.5      |
| 50°-60°   | 1817.1 | 25.8      |
| 60°-70°   | 2213.3 | 31.5      |
| 70°-80°   | 788.4  | 11.2      |
| 80°-90°   | 83.6   | 1.2       |
| 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°    | 7029.5 | 100.0     |
| 0°-180°   | 7029.5 | 100.0     |

**Coefficient of Utilization**



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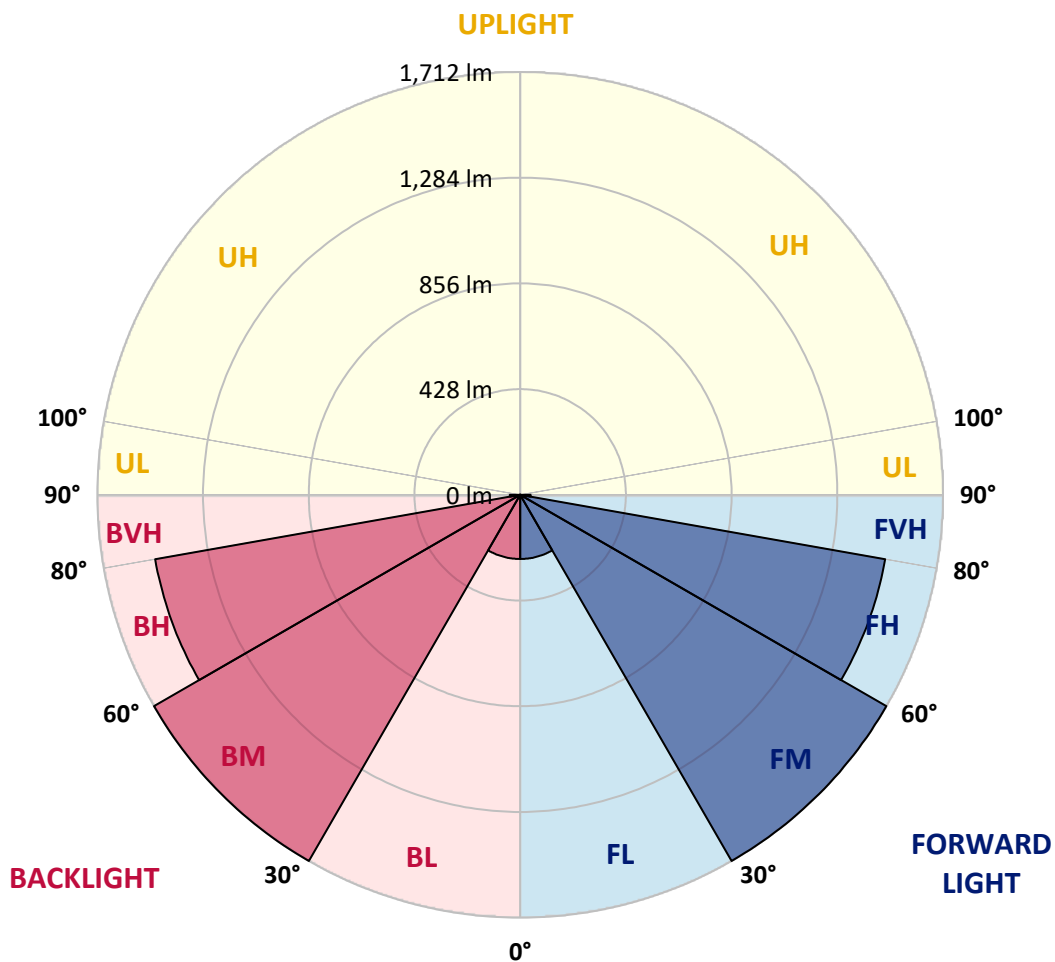
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 259.9  | 3.7       |                         |      |         |
| FM (30°-60°)   | 1712.2 | 24.4      |                         |      |         |
| FH (60°-80°)   | 1500.8 | 21.4      |                         |      | G1/1800 |
| FVH (80°-90°)  | 41.8   | 0.6       |                         |      | G1/100  |
| BL (0°-30°)    | 259.9  | 3.7       | B1/500                  |      |         |
| BM (30°-60°)   | 1712.2 | 24.4      | B2/2500                 |      |         |
| BH (60°-80°)   | 1500.8 | 21.4      | B3/2500                 |      | G1/1800 |
| BVH (80°-90°)  | 41.8   | 0.6       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G1**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  |
| 2.5°  | 475.5  | 475.0  | 475.5  | 474.6  | 474.6  | 474.1  | 474.1  | 474.1  | 473.2  | 474.1  | 473.2  |
| 5°    | 485.4  | 485.0  | 485.4  | 484.5  | 484.5  | 483.6  | 483.6  | 483.6  | 482.7  | 483.6  | 483.2  |
| 7.5°  | 502.6  | 503.5  | 502.6  | 501.7  | 501.7  | 500.8  | 500.4  | 500.4  | 499.9  | 499.4  | 500.4  |
| 10°   | 526.6  | 527.5  | 526.1  | 525.2  | 524.8  | 524.3  | 523.4  | 523.0  | 523.0  | 521.2  | 521.6  |
| 12.5° | 551.9  | 551.9  | 550.6  | 550.1  | 550.1  | 549.2  | 547.4  | 546.9  | 546.9  | 546.0  | 545.1  |
| 15°   | 574.5  | 574.5  | 573.6  | 571.8  | 572.3  | 570.9  | 569.6  | 568.7  | 568.7  | 567.8  | 566.9  |
| 17.5° | 595.4  | 595.4  | 594.0  | 592.2  | 591.3  | 590.8  | 589.0  | 588.1  | 588.1  | 587.2  | 586.3  |
| 20°   | 616.2  | 617.1  | 614.8  | 613.0  | 611.2  | 609.4  | 607.6  | 606.7  | 605.3  | 605.8  | 605.3  |
| 22.5° | 641.0  | 641.5  | 637.9  | 635.6  | 632.0  | 629.7  | 627.0  | 626.1  | 624.3  | 624.3  | 625.2  |
| 25°   | 672.7  | 672.3  | 668.2  | 664.1  | 660.0  | 655.5  | 651.5  | 650.5  | 648.7  | 648.3  | 648.7  |
| 27.5° | 714.3  | 713.9  | 708.9  | 703.5  | 698.0  | 691.3  | 686.3  | 683.6  | 682.2  | 680.4  | 681.3  |
| 30°   | 765.5  | 766.4  | 760.5  | 754.1  | 747.4  | 739.2  | 732.9  | 729.3  | 726.5  | 724.7  | 725.6  |
| 32.5° | 869.5  | 868.6  | 859.6  | 846.0  | 831.5  | 812.5  | 797.1  | 790.8  | 785.8  | 784.0  | 785.4  |
| 35°   | 974.0  | 973.1  | 969.5  | 965.4  | 961.8  | 949.6  | 938.3  | 925.1  | 914.3  | 907.5  | 909.3  |
| 37.5° | 1023.3 | 1023.3 | 1020.6 | 1019.7 | 1019.7 | 1026.9 | 1036.0 | 1052.3 | 1064.9 | 1065.8 | 1061.8 |
| 40°   | 1100.2 | 1100.2 | 1095.7 | 1093.4 | 1092.1 | 1094.3 | 1100.2 | 1106.1 | 1112.4 | 1113.8 | 1109.3 |
| 42.5° | 1190.7 | 1186.6 | 1183.5 | 1178.9 | 1178.5 | 1180.8 | 1187.1 | 1194.3 | 1200.7 | 1206.1 | 1196.6 |
| 45°   | 1288.4 | 1284.8 | 1281.6 | 1278.9 | 1280.7 | 1286.6 | 1295.2 | 1307.9 | 1316.9 | 1325.1 | 1317.4 |
| 47.5° | 1397.5 | 1389.8 | 1392.9 | 1390.2 | 1394.7 | 1406.5 | 1421.9 | 1440.9 | 1450.4 | 1464.9 | 1452.6 |
| 50°   | 1533.2 | 1535.0 | 1533.2 | 1533.2 | 1538.6 | 1554.0 | 1576.6 | 1602.4 | 1618.7 | 1626.8 | 1619.6 |
| 52.5° | 1734.9 | 1729.5 | 1717.3 | 1720.9 | 1728.2 | 1752.6 | 1782.0 | 1818.2 | 1839.0 | 1858.4 | 1835.8 |
| 55°   | 1955.7 | 1956.6 | 1954.8 | 1959.8 | 1973.8 | 1998.7 | 2035.8 | 2090.5 | 2116.8 | 2150.7 | 2123.5 |
| 57.5° | 2138.5 | 2144.8 | 2155.7 | 2170.6 | 2200.9 | 2242.5 | 2315.4 | 2399.1 | 2468.7 | 2505.4 | 2462.8 |
| 60°   | 2197.7 | 2204.1 | 2230.3 | 2271.9 | 2328.9 | 2414.0 | 2532.1 | 2675.5 | 2800.8 | 2865.9 | 2810.3 |
| 62.5° | 2083.7 | 2095.5 | 2134.4 | 2191.9 | 2286.0 | 2419.0 | 2594.5 | 2806.7 | 2999.8 | 3089.0 | 3021.6 |
| 63°   | 2046.6 | 2059.8 | 2099.6 | 2157.9 | 2253.8 | 2392.7 | 2582.3 | 2809.4 | 3013.9 | 3108.0 | 3035.1 |
| 65°   | 1882.0 | 1890.6 | 1932.6 | 1999.1 | 2105.9 | 2250.7 | 2461.5 | 2730.2 | 2963.2 | 3072.2 | 2994.9 |
| 67.5° | 1622.7 | 1634.1 | 1672.5 | 1730.0 | 1833.6 | 1986.9 | 2194.1 | 2461.9 | 2691.3 | 2778.6 | 2712.6 |
| 70°   | 1301.5 | 1314.2 | 1345.9 | 1399.3 | 1480.7 | 1622.7 | 1800.1 | 2050.3 | 2222.6 | 2290.9 | 2220.4 |
| 72.5° | 914.7  | 920.2  | 943.2  | 999.3  | 1060.4 | 1173.5 | 1314.2 | 1508.7 | 1674.3 | 1719.1 | 1651.2 |
| 75°   | 387.3  | 387.7  | 418.0  | 453.8  | 530.2  | 642.9  | 765.5  | 932.8  | 1081.7 | 1151.3 | 1065.4 |
| 77.5° | 124.0  | 125.3  | 133.9  | 147.0  | 172.4  | 222.6  | 313.1  | 404.9  | 541.5  | 607.6  | 527.0  |
| 80°   | 103.6  | 105.4  | 109.0  | 111.7  | 113.6  | 116.3  | 126.7  | 141.1  | 177.8  | 206.7  | 166.9  |
| 82.5° | 89.1   | 92.3   | 100.4  | 103.6  | 105.4  | 106.3  | 107.7  | 107.2  | 105.0  | 104.1  | 104.5  |
| 85°   | 67.9   | 75.6   | 84.6   | 91.8   | 92.7   | 93.2   | 95.9   | 96.8   | 89.6   | 82.3   | 89.6   |
| 87.5° | 29.4   | 38.0   | 58.4   | 64.7   | 63.3   | 58.8   | 62.9   | 66.5   | 60.6   | 44.3   | 59.3   |
| 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°    | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  | 471.8  |
| 2.5°  | 473.7  | 474.6  | 474.6  | 474.6  | 474.6  | 475.0  | 475.5  | 475.0  |
| 5°    | 483.6  | 484.5  | 484.1  | 484.5  | 484.5  | 485.0  | 485.4  | 485.0  |
| 7.5°  | 500.8  | 500.8  | 500.8  | 501.7  | 501.7  | 502.6  | 502.6  | 502.6  |
| 10°   | 522.1  | 521.6  | 521.6  | 522.5  | 523.4  | 523.9  | 524.8  | 524.3  |
| 12.5° | 545.1  | 544.2  | 544.7  | 545.6  | 546.5  | 546.9  | 547.9  | 547.4  |
| 15°   | 565.9  | 565.5  | 565.5  | 566.9  | 567.3  | 567.8  | 569.6  | 569.6  |
| 17.5° | 585.9  | 585.9  | 585.9  | 587.7  | 588.1  | 589.9  | 591.3  | 591.3  |
| 20°   | 605.8  | 605.8  | 605.8  | 607.6  | 608.9  | 611.6  | 614.4  | 613.9  |
| 22.5° | 626.1  | 626.6  | 627.5  | 629.3  | 632.4  | 636.5  | 638.8  | 638.8  |
| 25°   | 651.5  | 653.3  | 655.1  | 657.8  | 662.3  | 667.7  | 671.4  | 672.7  |
| 27.5° | 684.0  | 688.1  | 692.6  | 696.7  | 701.7  | 708.5  | 713.4  | 714.3  |
| 30°   | 728.4  | 734.2  | 741.5  | 746.9  | 753.2  | 760.9  | 766.8  | 770.0  |
| 32.5° | 791.2  | 805.7  | 815.2  | 834.7  | 846.4  | 859.6  | 870.4  | 874.9  |
| 35°   | 920.6  | 935.1  | 947.8  | 960.9  | 963.6  | 968.1  | 974.0  | 975.4  |
| 37.5° | 1048.7 | 1036.9 | 1025.6 | 1025.1 | 1022.0 | 1022.9 | 1024.7 | 1026.9 |
| 40°   | 1104.3 | 1100.7 | 1094.8 | 1097.1 | 1097.5 | 1097.5 | 1101.1 | 1101.6 |
| 42.5° | 1193.9 | 1185.3 | 1178.5 | 1183.9 | 1184.8 | 1185.7 | 1189.3 | 1193.4 |
| 45°   | 1307.9 | 1294.8 | 1286.2 | 1283.0 | 1286.2 | 1285.3 | 1290.2 | 1291.1 |
| 47.5° | 1438.2 | 1421.0 | 1401.5 | 1395.2 | 1393.4 | 1389.3 | 1397.9 | 1397.0 |
| 50°   | 1597.9 | 1570.3 | 1546.7 | 1537.7 | 1533.2 | 1530.9 | 1533.2 | 1533.2 |
| 52.5° | 1800.1 | 1772.5 | 1740.4 | 1730.0 | 1726.3 | 1731.3 | 1724.1 | 1731.8 |
| 55°   | 2078.3 | 2033.5 | 1989.6 | 1975.6 | 1973.4 | 1971.1 | 1972.0 | 1975.2 |
| 57.5° | 2391.4 | 2311.7 | 2252.9 | 2218.6 | 2196.4 | 2185.5 | 2173.8 | 2172.0 |
| 60°   | 2693.6 | 2548.8 | 2437.1 | 2361.1 | 2307.2 | 2266.5 | 2245.7 | 2238.5 |
| 62.5° | 2839.2 | 2627.5 | 2453.8 | 2324.4 | 2244.3 | 2177.8 | 2141.2 | 2131.7 |
| 63°   | 2843.3 | 2617.6 | 2433.4 | 2296.8 | 2203.6 | 2143.9 | 2105.0 | 2095.0 |
| 65°   | 2767.8 | 2510.8 | 2295.0 | 2144.8 | 2046.2 | 1983.8 | 1935.8 | 1925.4 |
| 67.5° | 2492.7 | 2243.4 | 2022.7 | 1870.2 | 1763.4 | 1713.2 | 1660.3 | 1658.9 |
| 70°   | 2045.7 | 1823.2 | 1637.2 | 1497.0 | 1407.9 | 1358.1 | 1304.3 | 1305.6 |
| 72.5° | 1495.6 | 1297.9 | 1169.9 | 1060.4 | 966.3  | 919.3  | 868.6  | 873.6  |
| 75°   | 900.3  | 723.8  | 608.5  | 513.5  | 416.7  | 358.8  | 319.8  | 297.7  |
| 77.5° | 385.0  | 263.3  | 189.1  | 150.2  | 126.7  | 117.2  | 112.6  | 111.3  |
| 80°   | 133.9  | 118.5  | 111.7  | 109.9  | 108.6  | 106.8  | 103.6  | 100.4  |
| 82.5° | 108.6  | 108.6  | 105.0  | 104.5  | 100.4  | 97.3   | 89.1   | 85.1   |
| 85°   | 96.4   | 94.6   | 91.4   | 90.0   | 89.1   | 82.3   | 71.9   | 66.5   |
| 87.5° | 63.8   | 59.3   | 56.5   | 57.9   | 56.1   | 50.2   | 30.8   | 24.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)