

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: P270322

Luminaire Tested: **NAV-AF-02-D-UNV-5MQ-7027-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270322  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-02-D-UNV-5MQ-7027-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 2700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7425.9 lumens  
Efficiency: N/A  
Efficacy: 112.5 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

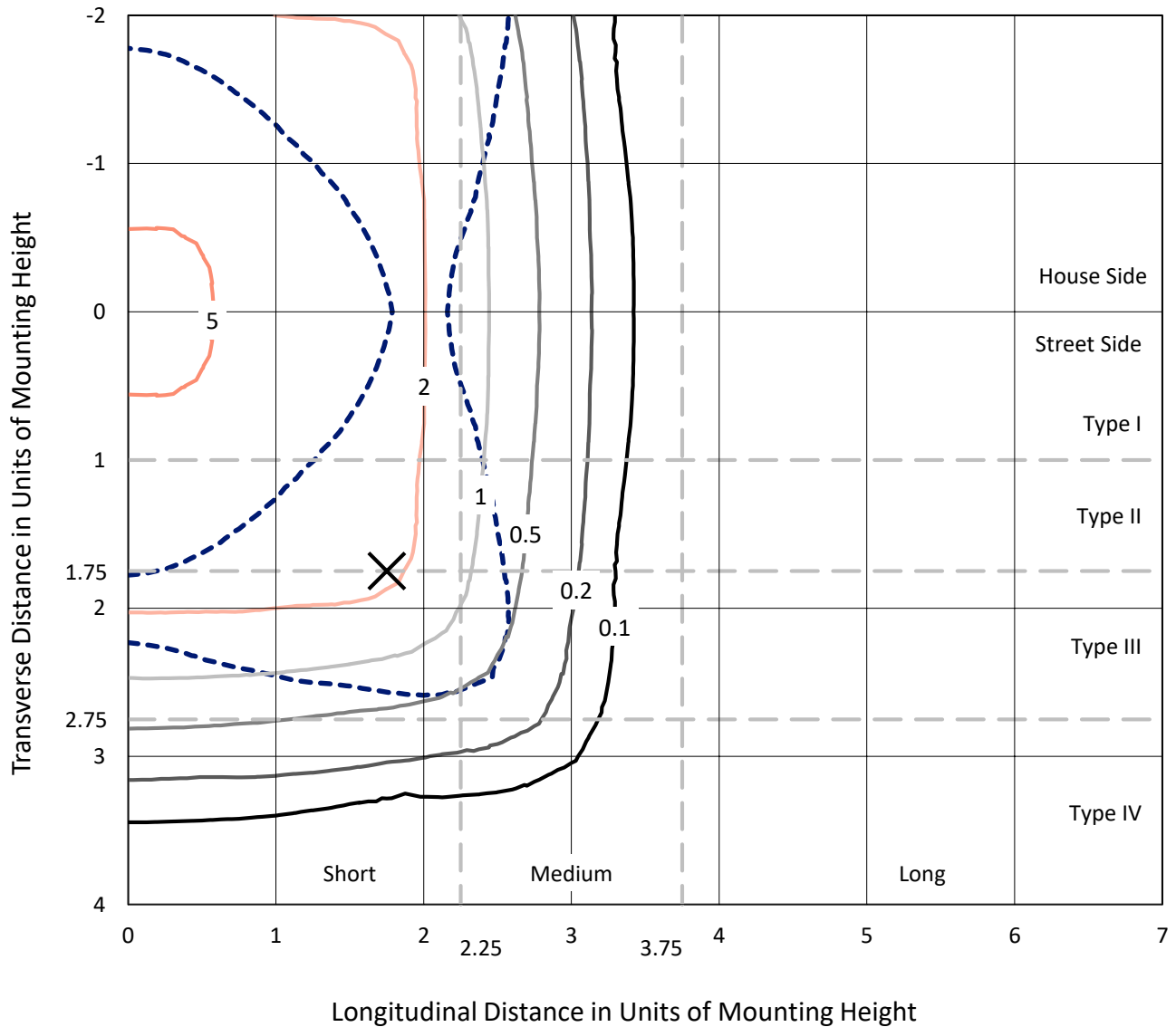
Input Watts (W): 66  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

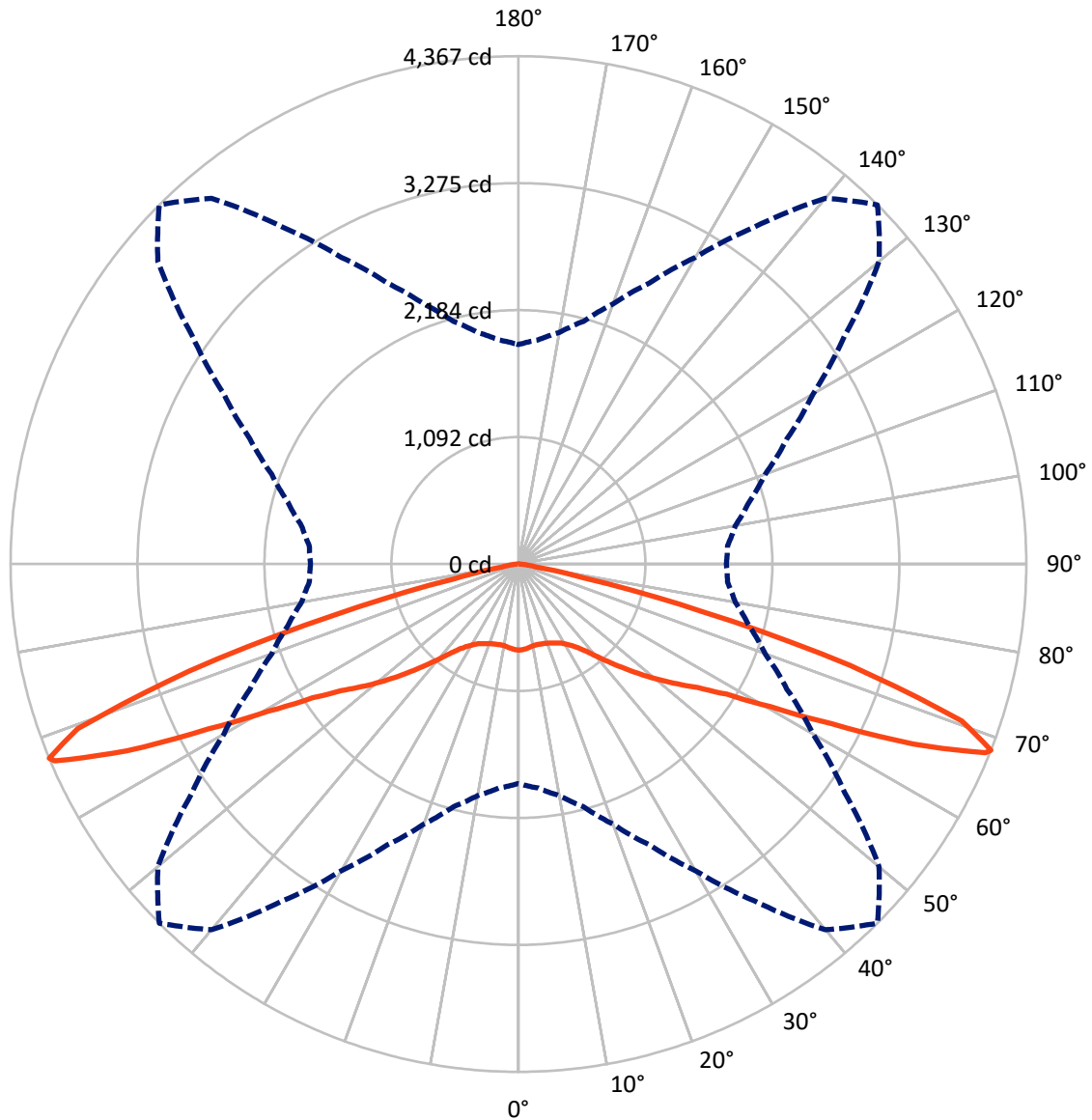
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.4 fc  
 Type V - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 3713.0   | 0.0    | 3713.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 3713.0   | 0.0    | 3713.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 7425.9   | 0.0    | 7425.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 69.3   | 0.9       |
| 10°-20°   | 201.0  | 2.7       |
| 20°-30°   | 341.8  | 4.6       |
| 30°-40°   | 559.3  | 7.5       |
| 40°-50°   | 999.5  | 13.5      |
| 50°-60°   | 1688.0 | 22.7      |
| 60°-70°   | 2617.5 | 35.2      |
| 70°-80°   | 900.0  | 12.1      |
| 80°-90°   | 49.5   | 0.7       |
| 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°    | 7425.9 | 100.0     |
| 0°-180°   | 7425.9 | 100.0     |



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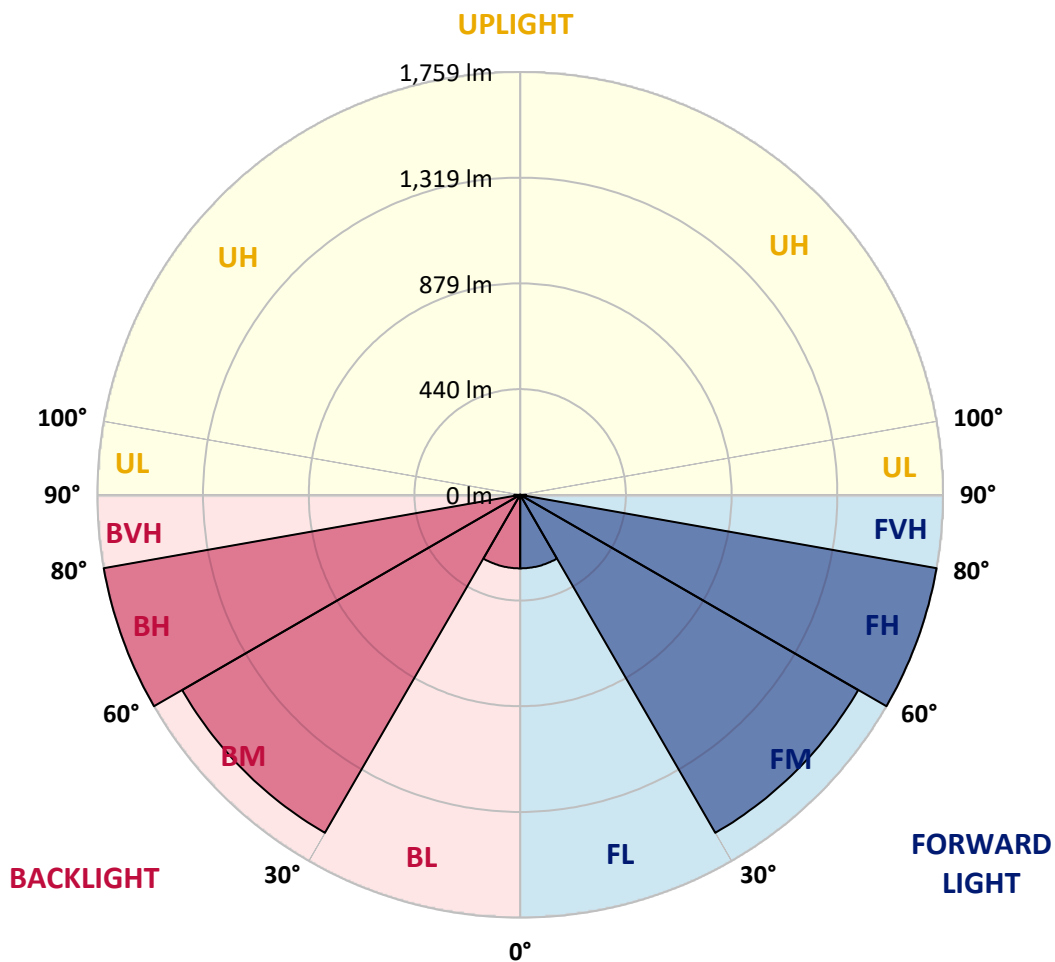
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 306.1  | 4.1       |                         |      |         |
| FM   | (30°-60°)   | 1623.4 | 21.9      |                         |      |         |
| FH   | (60°-80°)   | 1758.7 | 23.7      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 24.7   | 0.3       |                         |      | G1/100  |
| BL   | (0°-30°)    | 306.1  | 4.1       | B1/500                  |      |         |
| BM   | (30°-60°)   | 1623.4 | 21.9      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 1758.7 | 23.7      | B3/2500                 |      | G1/1800 |
| BVH  | (80°-90°)   | 24.7   | 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-G1**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  |
| 2.5°  | 743.9  | 743.9  | 744.9  | 744.3  | 743.0  | 741.7  | 740.4  | 738.9  | 738.0  | 737.1  | 736.3  |
| 5°    | 736.3  | 736.3  | 737.6  | 736.7  | 735.7  | 734.4  | 733.5  | 732.1  | 731.2  | 730.3  | 730.7  |
| 7.5°  | 726.2  | 727.1  | 728.0  | 727.5  | 725.7  | 725.3  | 723.9  | 723.5  | 722.5  | 721.2  | 721.7  |
| 10°   | 717.6  | 718.0  | 719.0  | 718.5  | 718.0  | 716.7  | 716.2  | 715.7  | 715.3  | 713.4  | 713.1  |
| 12.5° | 708.9  | 709.8  | 710.7  | 711.2  | 710.7  | 711.2  | 711.6  | 712.0  | 711.6  | 710.7  | 710.7  |
| 15°   | 702.0  | 703.1  | 704.5  | 705.8  | 706.2  | 708.9  | 710.7  | 712.5  | 714.0  | 714.4  | 713.1  |
| 17.5° | 698.4  | 699.8  | 701.7  | 704.5  | 706.6  | 709.8  | 713.1  | 715.7  | 718.0  | 718.5  | 717.0  |
| 20°   | 698.1  | 699.4  | 702.0  | 705.3  | 709.4  | 713.4  | 718.5  | 722.5  | 724.8  | 726.2  | 724.8  |
| 22.5° | 701.1  | 703.1  | 706.6  | 710.7  | 715.7  | 721.2  | 727.5  | 732.1  | 736.7  | 738.4  | 737.1  |
| 25°   | 710.3  | 712.0  | 716.2  | 721.2  | 726.6  | 733.5  | 739.8  | 745.8  | 750.4  | 752.6  | 750.8  |
| 27.5° | 729.3  | 729.9  | 734.4  | 739.8  | 746.2  | 752.2  | 760.3  | 763.0  | 766.7  | 768.9  | 766.7  |
| 30°   | 756.3  | 757.1  | 761.3  | 769.8  | 775.7  | 783.5  | 788.1  | 790.8  | 794.9  | 797.2  | 794.5  |
| 32.5° | 797.2  | 798.1  | 801.6  | 809.9  | 815.3  | 821.2  | 826.7  | 828.4  | 832.5  | 835.3  | 832.2  |
| 35°   | 854.8  | 856.8  | 859.9  | 865.3  | 869.9  | 874.4  | 878.5  | 877.1  | 879.9  | 883.6  | 880.3  |
| 37.5° | 934.0  | 933.6  | 934.4  | 938.5  | 943.1  | 945.8  | 952.3  | 949.0  | 951.8  | 954.9  | 953.1  |
| 40°   | 1026.4 | 1026.4 | 1025.9 | 1033.1 | 1034.9 | 1037.7 | 1044.5 | 1040.4 | 1044.1 | 1047.8 | 1044.5 |
| 42.5° | 1131.3 | 1133.2 | 1135.5 | 1141.3 | 1146.3 | 1147.2 | 1150.5 | 1148.7 | 1153.2 | 1156.4 | 1153.2 |
| 45°   | 1252.3 | 1255.0 | 1257.7 | 1271.5 | 1273.6 | 1275.6 | 1277.7 | 1271.9 | 1276.9 | 1279.6 | 1278.6 |
| 47.5° | 1377.8 | 1382.9 | 1388.7 | 1402.9 | 1412.0 | 1416.0 | 1417.9 | 1411.0 | 1411.4 | 1415.5 | 1416.0 |
| 50°   | 1519.8 | 1525.1 | 1531.2 | 1547.1 | 1555.7 | 1563.0 | 1565.1 | 1557.4 | 1558.4 | 1561.6 | 1562.4 |
| 52.5° | 1650.6 | 1657.1 | 1669.8 | 1691.1 | 1703.5 | 1716.1 | 1717.1 | 1707.5 | 1711.6 | 1713.8 | 1712.1 |
| 55°   | 1774.0 | 1782.1 | 1798.9 | 1827.5 | 1849.8 | 1874.9 | 1886.3 | 1875.8 | 1875.8 | 1874.0 | 1873.1 |
| 57.5° | 1917.6 | 1926.7 | 1943.9 | 1977.2 | 2008.2 | 2044.1 | 2074.9 | 2085.3 | 2104.5 | 2110.8 | 2100.9 |
| 60°   | 2134.1 | 2143.5 | 2161.3 | 2205.0 | 2244.1 | 2296.3 | 2347.4 | 2388.8 | 2456.0 | 2492.3 | 2459.6 |
| 62.5° | 2331.9 | 2346.5 | 2388.2 | 2464.6 | 2549.2 | 2646.0 | 2758.3 | 2838.5 | 2960.8 | 3021.7 | 2939.3 |
| 65°   | 2286.8 | 2316.4 | 2398.3 | 2518.3 | 2692.8 | 2903.1 | 3131.8 | 3351.3 | 3604.2 | 3733.7 | 3566.5 |
| 67.5° | 1997.7 | 2022.7 | 2110.8 | 2250.4 | 2468.3 | 2757.9 | 3113.5 | 3568.2 | 4089.9 | 4332.6 | 4036.7 |
| 68°   | 1887.1 | 1934.1 | 2021.7 | 2160.5 | 2380.1 | 2664.7 | 3044.4 | 3535.5 | 4104.9 | 4367.2 | 4047.6 |
| 70°   | 1447.0 | 1463.8 | 1547.9 | 1672.6 | 1909.3 | 2188.6 | 2571.9 | 3131.8 | 3775.1 | 4045.2 | 3716.5 |
| 72.5° | 687.6  | 697.5  | 752.2  | 874.9  | 1025.4 | 1252.7 | 1591.1 | 2119.0 | 2698.8 | 2979.9 | 2651.9 |
| 75°   | 252.0  | 254.2  | 266.9  | 296.0  | 352.4  | 438.0  | 600.2  | 928.6  | 1374.6 | 1639.2 | 1380.1 |
| 77.5° | 136.0  | 136.5  | 141.5  | 148.7  | 158.7  | 170.0  | 194.7  | 261.0  | 421.0  | 572.9  | 444.8  |
| 80°   | 85.5   | 85.0   | 90.0   | 95.9   | 102.8  | 108.2  | 110.5  | 118.2  | 133.2  | 155.9  | 143.2  |
| 82.5° | 43.7   | 47.7   | 59.1   | 65.4   | 75.5   | 77.3   | 75.0   | 74.6   | 79.1   | 85.5   | 88.3   |
| 85°   | 24.2   | 21.4   | 31.4   | 41.9   | 45.5   | 46.8   | 47.3   | 44.6   | 43.7   | 42.8   | 45.0   |
| 87.5° | 12.2   | 11.4   | 13.7   | 20.9   | 22.3   | 18.1   | 18.7   | 15.9   | 10.9   | 10.9   | 11.4   |
| 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°    | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  | 740.7  |
| 2.5°  | 735.4  | 735.7  | 734.9  | 734.9  | 734.9  | 735.4  | 734.9  | 734.4  |
| 5°    | 729.3  | 730.3  | 730.3  | 730.7  | 731.2  | 731.2  | 731.2  | 731.2  |
| 7.5°  | 720.7  | 721.2  | 722.1  | 722.1  | 722.1  | 722.1  | 722.1  | 722.1  |
| 10°   | 712.5  | 711.6  | 711.2  | 710.3  | 710.3  | 708.9  | 709.4  | 709.8  |
| 12.5° | 708.5  | 706.6  | 705.8  | 704.5  | 703.5  | 702.0  | 702.0  | 702.6  |
| 15°   | 710.3  | 707.5  | 704.8  | 703.9  | 703.1  | 702.0  | 701.1  | 701.7  |
| 17.5° | 714.0  | 710.7  | 707.5  | 705.8  | 703.9  | 702.6  | 702.0  | 702.6  |
| 20°   | 721.7  | 717.0  | 712.0  | 708.9  | 705.3  | 704.5  | 703.1  | 704.5  |
| 22.5° | 732.1  | 726.6  | 720.4  | 714.4  | 710.3  | 708.5  | 706.6  | 708.0  |
| 25°   | 744.9  | 738.9  | 732.6  | 725.7  | 721.2  | 719.8  | 717.6  | 717.6  |
| 27.5° | 762.7  | 757.6  | 752.2  | 745.8  | 741.2  | 739.8  | 736.3  | 736.3  |
| 30°   | 790.8  | 785.7  | 780.7  | 775.2  | 770.7  | 769.4  | 764.8  | 764.8  |
| 32.5° | 828.1  | 822.6  | 819.4  | 814.9  | 811.2  | 809.0  | 803.5  | 803.1  |
| 35°   | 878.2  | 873.2  | 872.7  | 869.4  | 865.7  | 866.2  | 860.8  | 859.9  |
| 37.5° | 950.0  | 945.8  | 947.3  | 944.5  | 941.3  | 943.9  | 940.9  | 940.9  |
| 40°   | 1041.8 | 1040.4 | 1041.8 | 1040.0 | 1040.4 | 1040.9 | 1038.1 | 1039.1 |
| 42.5° | 1152.7 | 1149.1 | 1157.2 | 1156.4 | 1155.0 | 1158.6 | 1152.3 | 1147.8 |
| 45°   | 1280.5 | 1279.1 | 1287.4 | 1288.7 | 1286.0 | 1288.3 | 1276.9 | 1276.4 |
| 47.5° | 1419.2 | 1419.2 | 1426.5 | 1425.6 | 1422.8 | 1423.4 | 1409.7 | 1401.0 |
| 50°   | 1563.8 | 1563.0 | 1570.1 | 1568.4 | 1564.7 | 1564.3 | 1550.1 | 1541.5 |
| 52.5° | 1714.3 | 1714.3 | 1724.7 | 1719.7 | 1711.1 | 1707.0 | 1689.8 | 1678.5 |
| 55°   | 1880.7 | 1878.4 | 1881.7 | 1865.3 | 1848.5 | 1836.1 | 1814.8 | 1806.2 |
| 57.5° | 2091.3 | 2064.9 | 2042.1 | 2021.2 | 1997.7 | 1983.1 | 1958.0 | 1949.0 |
| 60°   | 2390.1 | 2319.6 | 2289.2 | 2247.3 | 2208.2 | 2188.6 | 2155.5 | 2137.6 |
| 62.5° | 2803.9 | 2687.0 | 2604.2 | 2511.9 | 2422.8 | 2360.0 | 2309.5 | 2287.3 |
| 65°   | 3282.2 | 3027.6 | 2817.1 | 2619.3 | 2451.5 | 2318.3 | 2244.1 | 2220.9 |
| 67.5° | 3464.1 | 2996.7 | 2633.3 | 2349.5 | 2146.0 | 1987.2 | 1898.5 | 1879.9 |
| 68°   | 3425.4 | 2925.7 | 2548.3 | 2257.7 | 2053.0 | 1893.1 | 1804.9 | 1787.9 |
| 70°   | 3021.7 | 2468.3 | 2070.0 | 1780.7 | 1589.7 | 1437.4 | 1375.0 | 1348.3 |
| 72.5° | 2060.0 | 1585.1 | 1215.9 | 972.7  | 829.9  | 733.5  | 676.2  | 656.7  |
| 75°   | 948.2  | 640.8  | 428.0  | 319.6  | 271.5  | 248.3  | 230.5  | 226.1  |
| 77.5° | 276.5  | 201.0  | 172.8  | 160.1  | 150.6  | 142.3  | 136.5  | 136.0  |
| 80°   | 131.4  | 123.2  | 119.7  | 111.4  | 102.8  | 95.0   | 89.7   | 90.5   |
| 82.5° | 88.3   | 86.0   | 86.0   | 77.8   | 64.0   | 55.1   | 45.5   | 41.0   |
| 85°   | 46.8   | 48.7   | 51.5   | 48.7   | 42.3   | 31.4   | 20.4   | 22.3   |
| 87.5° | 15.9   | 18.1   | 19.1   | 18.7   | 16.8   | 12.8   | 9.5    | 9.5    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)