

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: P196831

Luminaire Tested: **NAV-AF-01-D-UNV-T4FT-7030-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196831  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)  
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-T4FT-7030-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4811.8 lumens  
Efficiency: N/A  
Efficacy: 109.4 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

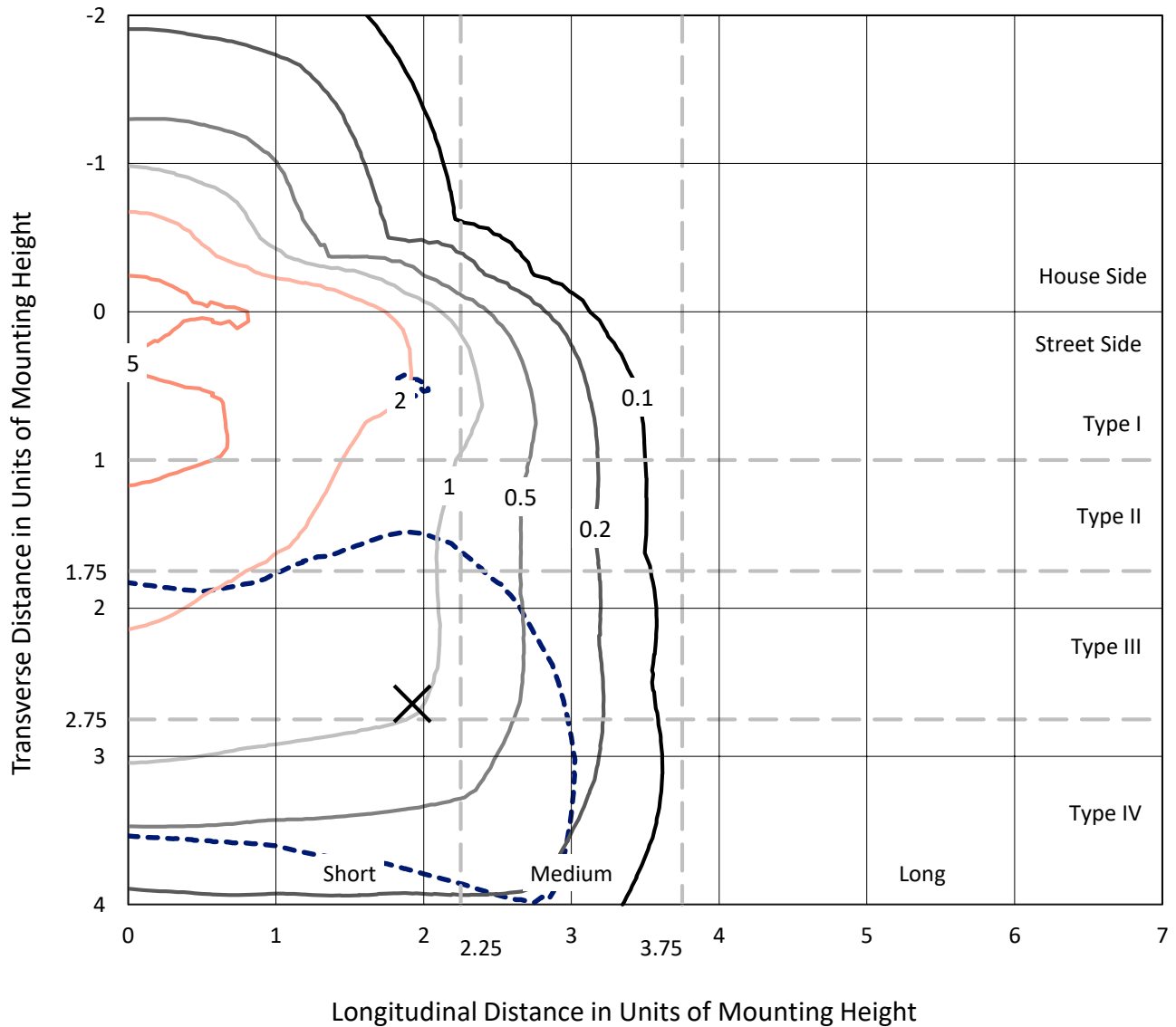
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

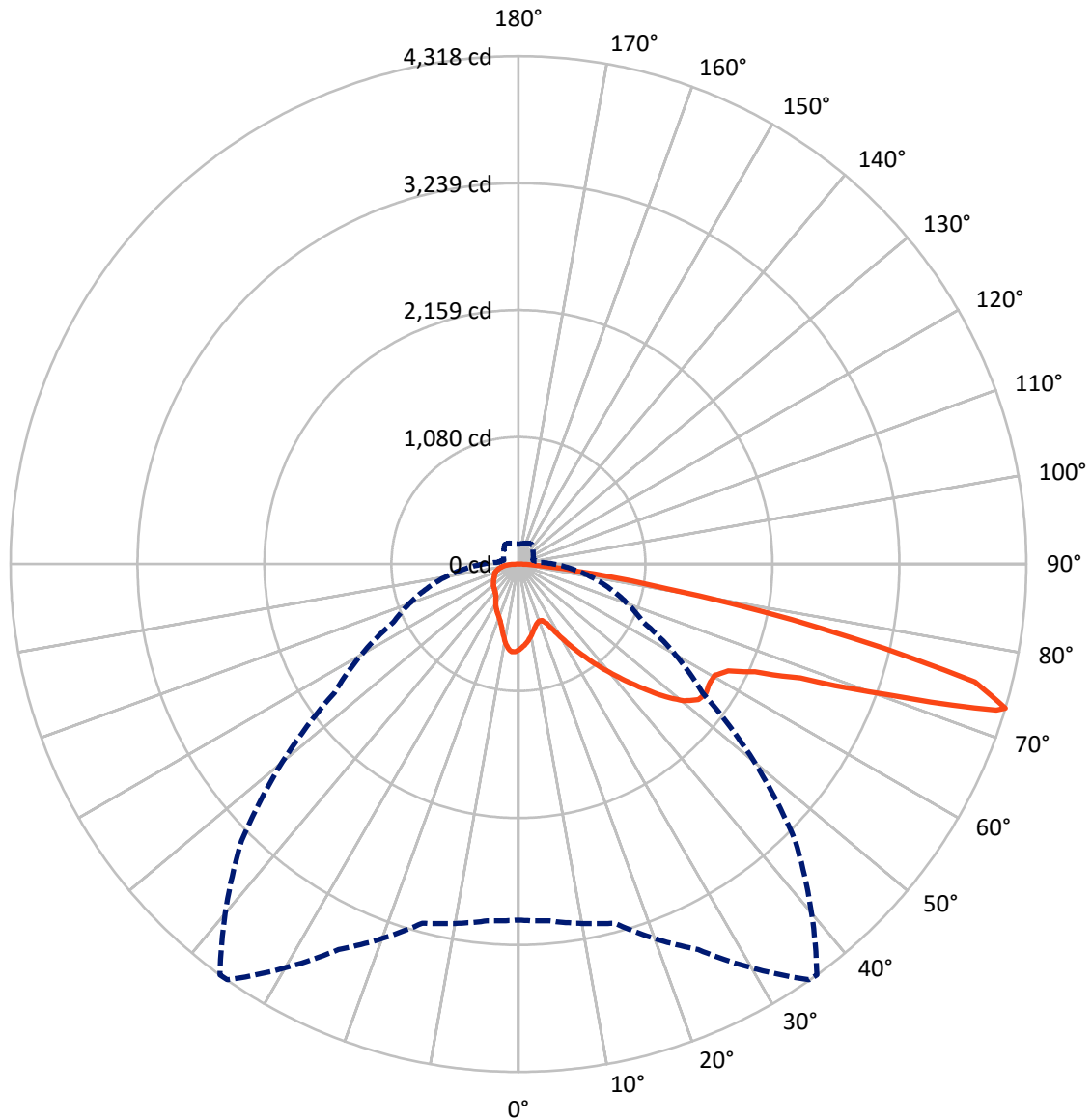
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.3 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral      - - - Horizontal Cone Through 73-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 927.9    | 0.0    | 927.9  |
|                    | % Fixture | 19.3     | 0.0    | 19.3   |
| <b>Street Side</b> | Lumens    | 3883.9   | 0.0    | 3883.9 |
|                    | % Fixture | 80.7     | 0.0    | 80.7   |
| <b>Total</b>       | Lumens    | 4811.8   | 0.0    | 4811.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 66.2   | 1.4       |
| 10°-20°   | 166.3  | 3.5       |
| 20°-30°   | 266.6  | 5.5       |
| 30°-40°   | 440.9  | 9.2       |
| 40°-50°   | 682.3  | 14.2      |
| 50°-60°   | 913.4  | 19.0      |
| 60°-70°   | 1193.1 | 24.8      |
| 70°-80°   | 974.6  | 20.3      |
| 80°-90°   | 108.5  | 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°    | 4811.8 | 100.0     |
| 0°-180°   | 4811.8 | 100.0     |



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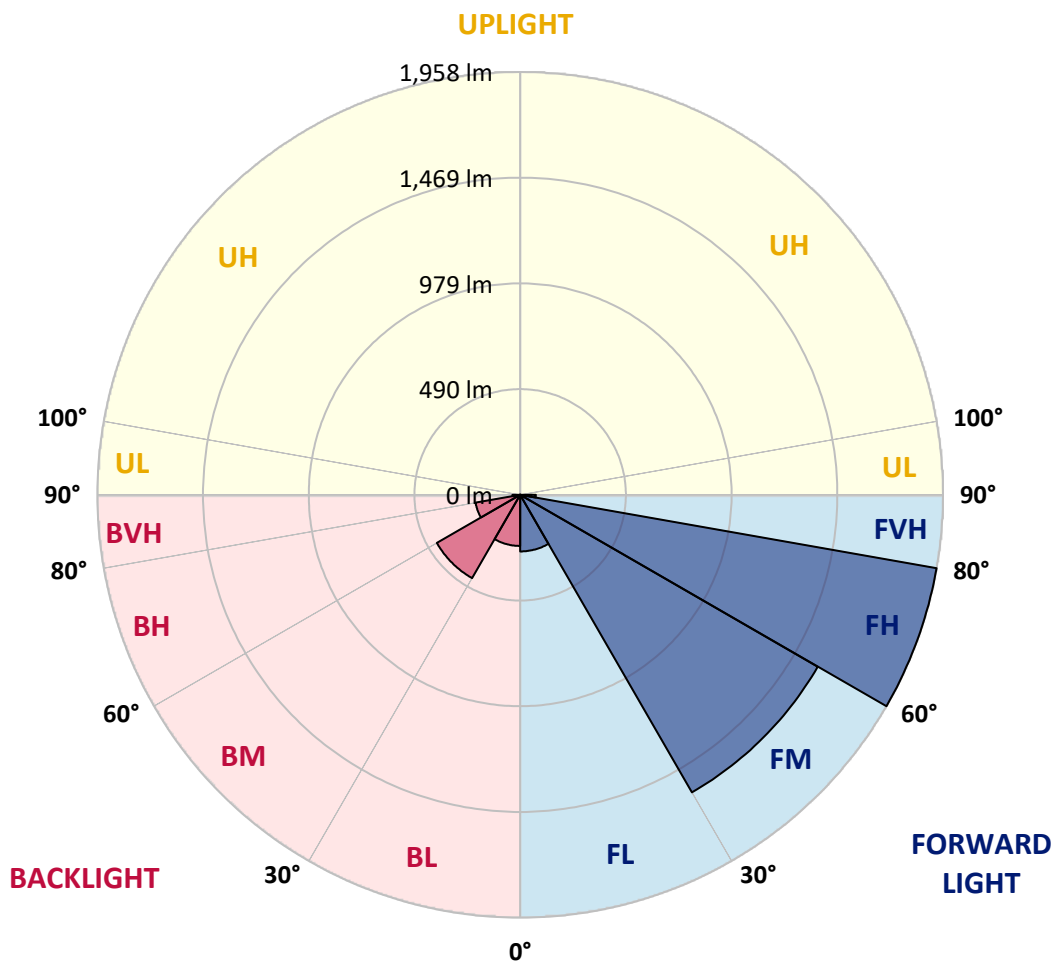
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 262.2  | 5.4       |                         |      |         |
| FM (30°-60°)   | 1591.0 | 33.1      |                         |      |         |
| FH (60°-80°)   | 1958.0 | 40.7      |                         |      | G2/5000 |
| FVH (80°-90°)  | 72.8   | 1.5       |                         |      | G1/100  |
| BL (0°-30°)    | 236.8  | 4.9       | B1/500                  |      |         |
| BM (30°-60°)   | 445.6  | 9.3       | B1/1000                 |      |         |
| BH (60°-80°)   | 209.7  | 4.4       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 35.7   | 0.7       |                         |      | 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°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  | 728.9  |
| 2.5°  | 701.0  | 702.9  | 703.2  | 705.3  | 705.3  | 705.3  | 706.0  | 709.5  | 711.4  | 715.6  | 719.4  |
| 5°    | 666.5  | 668.6  | 669.5  | 673.2  | 677.7  | 677.7  | 681.4  | 688.5  | 695.2  | 704.7  | 712.6  |
| 7.5°  | 627.7  | 630.1  | 632.5  | 640.1  | 647.0  | 647.0  | 653.9  | 665.3  | 674.1  | 685.7  | 700.2  |
| 10°   | 590.0  | 590.6  | 593.1  | 602.9  | 611.8  | 611.8  | 621.8  | 634.7  | 646.6  | 662.7  | 679.0  |
| 12.5° | 559.2  | 561.0  | 560.4  | 567.7  | 575.4  | 575.4  | 588.3  | 604.4  | 621.8  | 640.1  | 659.5  |
| 15°   | 548.5  | 548.2  | 541.7  | 541.5  | 544.7  | 544.7  | 557.3  | 576.4  | 595.9  | 618.5  | 643.2  |
| 17.5° | 555.8  | 553.4  | 536.6  | 526.2  | 524.0  | 524.0  | 533.5  | 554.3  | 575.0  | 601.0  | 630.8  |
| 20°   | 596.1  | 586.7  | 547.3  | 522.1  | 515.1  | 515.1  | 520.3  | 537.1  | 560.1  | 590.3  | 627.7  |
| 22.5° | 691.8  | 677.2  | 593.1  | 548.5  | 523.7  | 523.7  | 517.3  | 530.1  | 555.5  | 591.8  | 640.1  |
| 25°   | 812.4  | 805.2  | 677.2  | 618.5  | 567.4  | 567.4  | 533.1  | 537.8  | 565.0  | 608.3  | 674.4  |
| 27.5° | 923.9  | 911.7  | 787.5  | 720.2  | 648.1  | 648.1  | 580.2  | 561.6  | 587.6  | 638.9  | 724.0  |
| 30°   | 989.1  | 980.7  | 901.0  | 836.8  | 750.8  | 750.8  | 655.4  | 608.7  | 627.9  | 689.4  | 794.4  |
| 32.5° | 1060.0 | 1055.0 | 1014.7 | 956.3  | 862.2  | 862.2  | 752.7  | 685.4  | 689.8  | 756.4  | 879.0  |
| 35°   | 1128.7 | 1135.2 | 1112.3 | 1069.4 | 982.0  | 982.0  | 883.3  | 785.7  | 765.8  | 831.6  | 969.4  |
| 37.5° | 1211.2 | 1212.8 | 1198.5 | 1170.6 | 1107.9 | 1107.9 | 1026.6 | 892.7  | 848.7  | 911.7  | 1056.9 |
| 40°   | 1376.0 | 1351.9 | 1295.7 | 1273.6 | 1236.4 | 1236.4 | 1150.7 | 990.9  | 925.8  | 993.9  | 1139.5 |
| 42.5° | 1554.3 | 1516.7 | 1428.7 | 1392.6 | 1377.5 | 1377.5 | 1254.1 | 1056.3 | 997.9  | 1076.1 | 1220.4 |
| 45°   | 1698.0 | 1667.4 | 1581.2 | 1536.5 | 1538.4 | 1538.4 | 1344.2 | 1114.7 | 1076.1 | 1158.7 | 1310.9 |
| 47.5° | 1839.5 | 1788.5 | 1691.9 | 1685.5 | 1706.8 | 1706.8 | 1430.5 | 1173.0 | 1157.8 | 1248.7 | 1401.5 |
| 50°   | 1848.6 | 1802.2 | 1763.1 | 1814.5 | 1851.2 | 1851.2 | 1508.8 | 1249.5 | 1242.5 | 1357.4 | 1518.2 |
| 52.5° | 1737.1 | 1730.4 | 1790.0 | 1876.5 | 1937.3 | 1937.3 | 1572.7 | 1328.0 | 1329.0 | 1493.5 | 1660.4 |
| 55°   | 1696.5 | 1687.9 | 1759.4 | 1865.8 | 1948.1 | 1948.1 | 1620.4 | 1416.8 | 1425.0 | 1658.5 | 1812.9 |
| 57.5° | 1765.0 | 1743.6 | 1757.7 | 1845.6 | 1923.0 | 1923.0 | 1669.8 | 1515.2 | 1530.1 | 1848.6 | 1953.9 |
| 60°   | 1977.4 | 1933.7 | 1859.1 | 1875.7 | 1923.9 | 1923.9 | 1740.8 | 1624.9 | 1650.1 | 2046.9 | 2043.1 |
| 62.5° | 2295.6 | 2246.2 | 2094.2 | 2020.9 | 2010.2 | 2010.2 | 1857.9 | 1759.7 | 1772.3 | 2189.9 | 1991.1 |
| 65°   | 2644.8 | 2591.6 | 2411.0 | 2290.8 | 2227.8 | 2227.8 | 2046.9 | 1922.4 | 1843.9 | 2189.5 | 1788.8 |
| 67.5° | 3036.8 | 2980.5 | 2800.5 | 2685.8 | 2617.7 | 2617.7 | 2353.5 | 2053.8 | 1820.6 | 2004.4 | 1431.4 |
| 70°   | 3438.2 | 3384.7 | 3302.2 | 3342.1 | 3372.2 | 3372.2 | 2836.5 | 2097.6 | 1653.6 | 1571.3 | 961.2  |
| 72.5° | 3225.2 | 3220.8 | 3283.5 | 3663.1 | 4240.7 | 4240.7 | 3319.0 | 1974.1 | 1277.6 | 933.9  | 512.4  |
| 73°   | 3027.2 | 3045.3 | 3161.5 | 3615.8 | 4314.9 | 4318.0 | 3328.4 | 1910.2 | 1173.0 | 804.7  | 450.0  |
| 75°   | 1568.3 | 1690.7 | 2121.7 | 2931.9 | 3995.5 | 4009.9 | 2934.0 | 1446.0 | 699.1  | 447.0  | 303.3  |
| 77.5° | 420.1  | 414.5  | 683.6  | 1428.3 | 2663.7 | 2644.8 | 1853.9 | 700.2  | 335.1  | 280.4  | 212.8  |
| 80°   | 144.0  | 145.9  | 232.6  | 522.5  | 1243.4 | 1287.7 | 804.7  | 305.4  | 220.3  | 195.3  | 150.7  |
| 82.5° | 73.4   | 75.8   | 121.8  | 222.3  | 520.1  | 509.0  | 259.0  | 179.7  | 147.7  | 118.6  | 84.3   |
| 85°   | 39.2   | 40.3   | 66.9   | 115.3  | 190.7  | 193.0  | 91.1   | 96.0   | 93.9   | 67.3   | 41.6   |
| 87.5° | 19.2   | 19.8   | 32.1   | 50.7   | 70.6   | 68.2   | 31.8   | 41.6   | 46.2   | 37.9   | 23.0   |
| 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):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 728.9  | 728.9  | 728.9 | 728.9 | 728.9 | 728.9 | 728.9 | 728.9 | 728.9 | 728.9 | 728.9 |
| 2.5°  | 724.0  | 724.0  | 727.8 | 734.7 | 739.5 | 744.2 | 747.3 | 752.0 | 754.9 | 754.6 | 754.2 |
| 5°    | 719.0  | 722.1  | 730.1 | 738.4 | 743.8 | 747.5 | 747.5 | 749.6 | 749.6 | 748.8 | 747.5 |
| 7.5°  | 707.8  | 712.9  | 724.6 | 731.9 | 733.4 | 729.5 | 721.5 | 715.4 | 707.8 | 703.7 | 702.2 |
| 10°   | 689.8  | 696.4  | 711.1 | 714.4 | 706.6 | 692.4 | 673.2 | 656.6 | 642.0 | 635.4 | 633.1 |
| 12.5° | 672.0  | 680.8  | 694.6 | 689.4 | 670.5 | 643.0 | 613.3 | 590.6 | 574.1 | 567.7 | 565.6 |
| 15°   | 657.3  | 668.0  | 678.7 | 662.5 | 629.5 | 591.3 | 558.6 | 537.4 | 524.9 | 520.1 | 518.8 |
| 17.5° | 647.5  | 660.0  | 663.8 | 633.4 | 587.6 | 544.7 | 515.7 | 502.0 | 496.5 | 494.4 | 493.8 |
| 20°   | 648.1  | 662.2  | 653.4 | 605.3 | 547.3 | 504.1 | 484.9 | 480.8 | 480.8 | 480.8 | 480.6 |
| 22.5° | 665.0  | 677.2  | 649.0 | 579.1 | 508.4 | 470.0 | 461.6 | 465.0 | 467.4 | 467.4 | 467.2 |
| 25°   | 699.8  | 706.6  | 652.1 | 553.6 | 472.0 | 440.2 | 440.6 | 447.0 | 449.0 | 449.0 | 448.5 |
| 27.5° | 753.1  | 747.5  | 657.6 | 525.5 | 436.3 | 413.3 | 417.6 | 423.4 | 424.9 | 424.0 | 423.7 |
| 30°   | 819.7  | 797.6  | 662.2 | 492.5 | 402.6 | 388.3 | 391.9 | 395.3 | 394.1 | 391.9 | 391.5 |
| 32.5° | 894.3  | 848.7  | 659.5 | 455.5 | 373.0 | 362.3 | 364.4 | 366.2 | 364.4 | 359.3 | 359.3 |
| 35°   | 968.2  | 894.9  | 644.4 | 415.1 | 349.4 | 337.2 | 336.9 | 342.7 | 342.4 | 336.3 | 336.6 |
| 37.5° | 1033.0 | 931.2  | 615.4 | 378.1 | 329.3 | 318.8 | 320.1 | 323.7 | 325.6 | 317.3 | 316.5 |
| 40°   | 1089.7 | 956.3  | 574.4 | 346.7 | 313.0 | 313.7 | 310.3 | 304.5 | 302.3 | 298.8 | 298.1 |
| 42.5° | 1142.8 | 973.7  | 531.0 | 320.3 | 304.9 | 311.8 | 300.6 | 286.8 | 280.9 | 284.3 | 286.5 |
| 45°   | 1195.1 | 993.2  | 489.2 | 298.8 | 294.5 | 306.4 | 290.7 | 275.5 | 268.8 | 270.3 | 272.4 |
| 47.5° | 1259.0 | 1020.5 | 438.6 | 275.5 | 278.5 | 296.2 | 284.6 | 268.1 | 258.1 | 252.0 | 250.1 |
| 50°   | 1343.1 | 1060.0 | 373.3 | 250.4 | 261.6 | 285.2 | 279.4 | 257.5 | 246.4 | 234.2 | 231.1 |
| 52.5° | 1448.2 | 1097.3 | 307.2 | 230.2 | 247.9 | 275.8 | 270.9 | 248.2 | 234.8 | 220.1 | 217.7 |
| 55°   | 1553.1 | 1102.4 | 250.4 | 212.8 | 232.4 | 262.9 | 260.5 | 240.9 | 221.9 | 210.0 | 207.6 |
| 57.5° | 1626.5 | 1053.3 | 212.2 | 198.1 | 217.3 | 247.0 | 251.0 | 232.0 | 211.3 | 202.1 | 200.6 |
| 60°   | 1627.6 | 935.5  | 188.9 | 188.4 | 206.1 | 233.3 | 241.3 | 221.7 | 204.6 | 198.5 | 197.2 |
| 62.5° | 1498.4 | 753.9  | 173.9 | 181.1 | 197.8 | 221.9 | 234.0 | 215.8 | 203.0 | 200.6 | 199.3 |
| 65°   | 1255.9 | 557.0  | 162.0 | 174.3 | 190.1 | 212.5 | 227.8 | 214.0 | 202.3 | 201.5 | 200.6 |
| 67.5° | 927.3  | 381.9  | 152.0 | 165.7 | 181.6 | 202.6 | 221.9 | 211.3 | 198.8 | 202.3 | 201.1 |
| 70°   | 583.3  | 255.0  | 142.5 | 155.9 | 170.3 | 191.4 | 214.3 | 206.4 | 194.2 | 192.0 | 188.0 |
| 72.5° | 329.3  | 184.3  | 131.1 | 143.3 | 155.5 | 176.5 | 203.9 | 198.1 | 183.8 | 175.2 | 171.2 |
| 73°   | 297.5  | 174.6  | 128.4 | 140.3 | 152.2 | 173.4 | 201.5 | 195.7 | 180.8 | 171.2 | 167.5 |
| 75°   | 217.7  | 142.8  | 115.9 | 127.9 | 138.2 | 159.3 | 189.9 | 183.4 | 167.2 | 155.9 | 153.5 |
| 77.5° | 157.8  | 110.1  | 99.7  | 110.4 | 119.5 | 139.8 | 172.4 | 165.1 | 149.1 | 143.1 | 140.6 |
| 80°   | 113.7  | 83.5   | 82.5  | 93.0  | 100.8 | 121.4 | 153.7 | 146.2 | 130.9 | 148.9 | 144.9 |
| 82.5° | 67.8   | 53.5   | 60.5  | 72.1  | 80.5  | 101.8 | 133.7 | 124.8 | 110.1 | 111.3 | 94.7  |
| 85°   | 32.4   | 30.3   | 37.5  | 47.4  | 53.2  | 69.7  | 111.3 | 104.3 | 88.1  | 72.1  | 70.6  |
| 87.5° | 14.4   | 13.7   | 18.0  | 21.1  | 28.4  | 41.8  | 76.2  | 67.5  | 63.9  | 38.2  | 29.9  |
| 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)