

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: P270500

Luminaire Tested: **NAV-AF-04-D-UNV-AFL-7027-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270500  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24283)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-AFL-7027-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17790.3 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B2 - U0 - G2

Input Watts (W): 225  
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

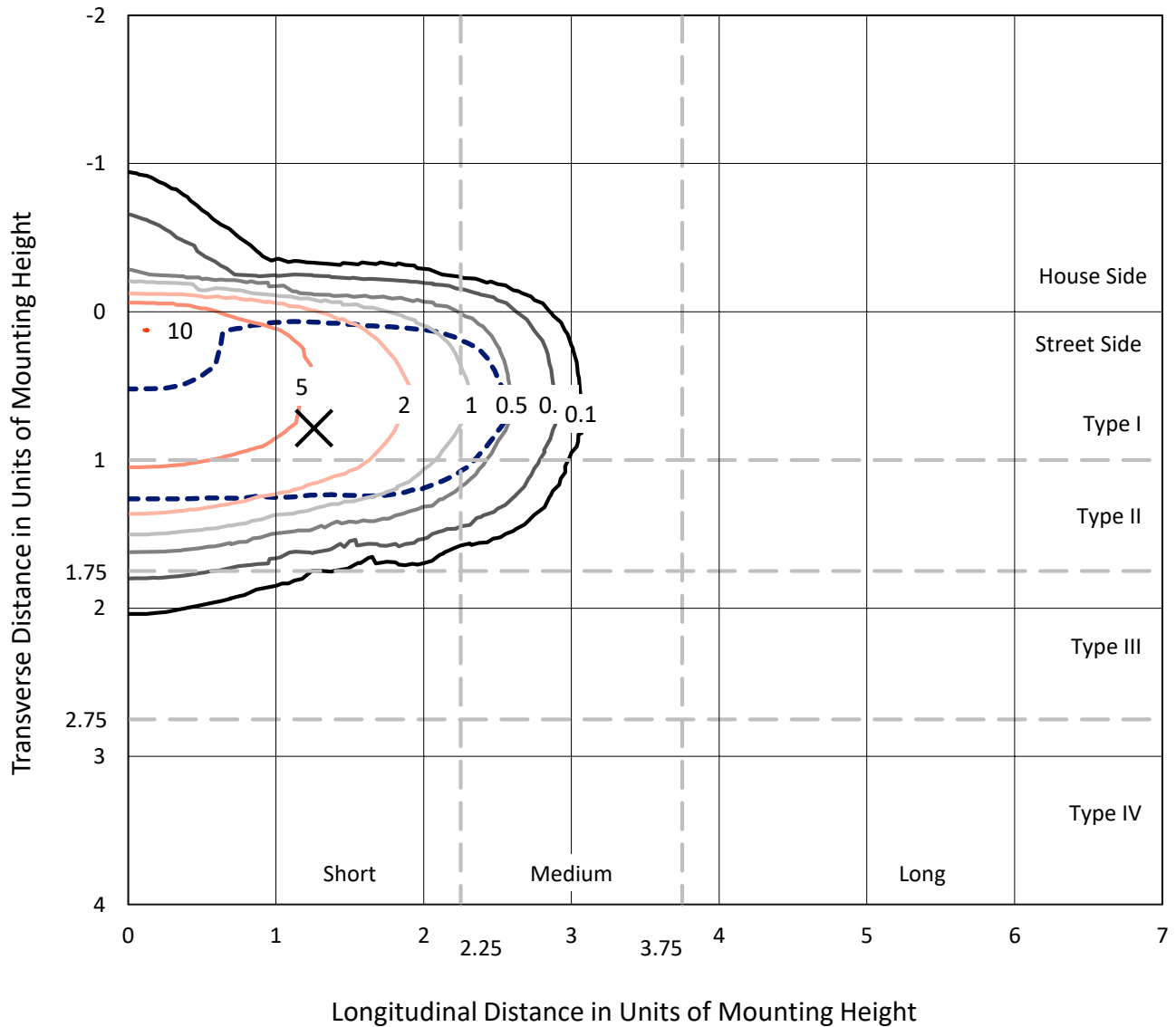


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### Iso-Footcandle Lines of Horizontal Illumination

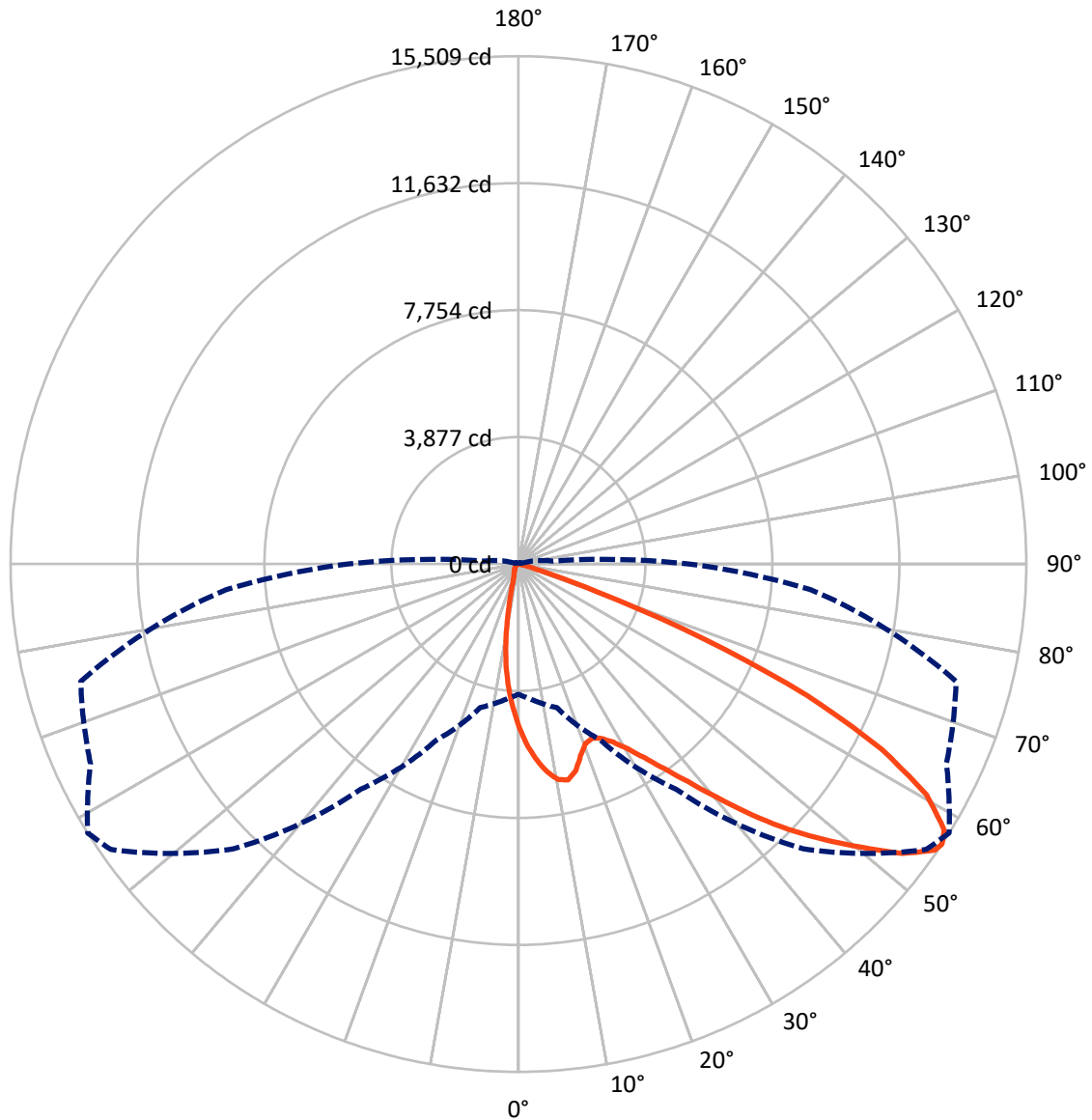
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10 fc  
 Type II - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral    - - - Horizontal Cone Through 56-Deg Vertical

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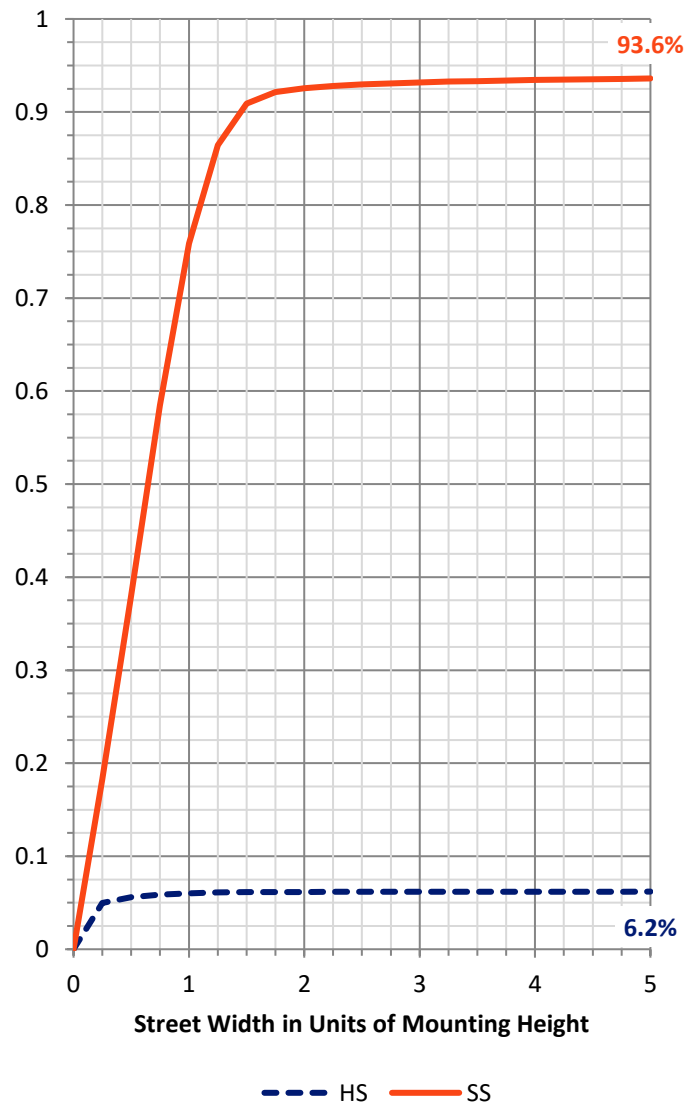
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1110.5   | 0.0    | 1110.5  |
|                    | % Fixture | 6.2      | 0.0    | 6.2     |
| <b>Street Side</b> | Lumens    | 16679.8  | 0.0    | 16679.8 |
|                    | % Fixture | 93.8     | 0.0    | 93.8    |
| <b>Total</b>       | Lumens    | 17790.3  | 0.0    | 17790.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 429.7   | 2.4       |
| 10°-20°   | 999.8   | 5.6       |
| 20°-30°   | 1682.3  | 9.5       |
| 30°-40°   | 2880.8  | 16.2      |
| 40°-50°   | 4347.2  | 24.4      |
| 50°-60°   | 4518.8  | 25.4      |
| 60°-70°   | 2536.8  | 14.3      |
| 70°-80°   | 347.7   | 2.0       |
| 80°-90°   | 47.1    | 0.3       |
| 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°    | 17790.3 | 100.0     |
| 0°-180°   | 17790.3 | 100.0     |



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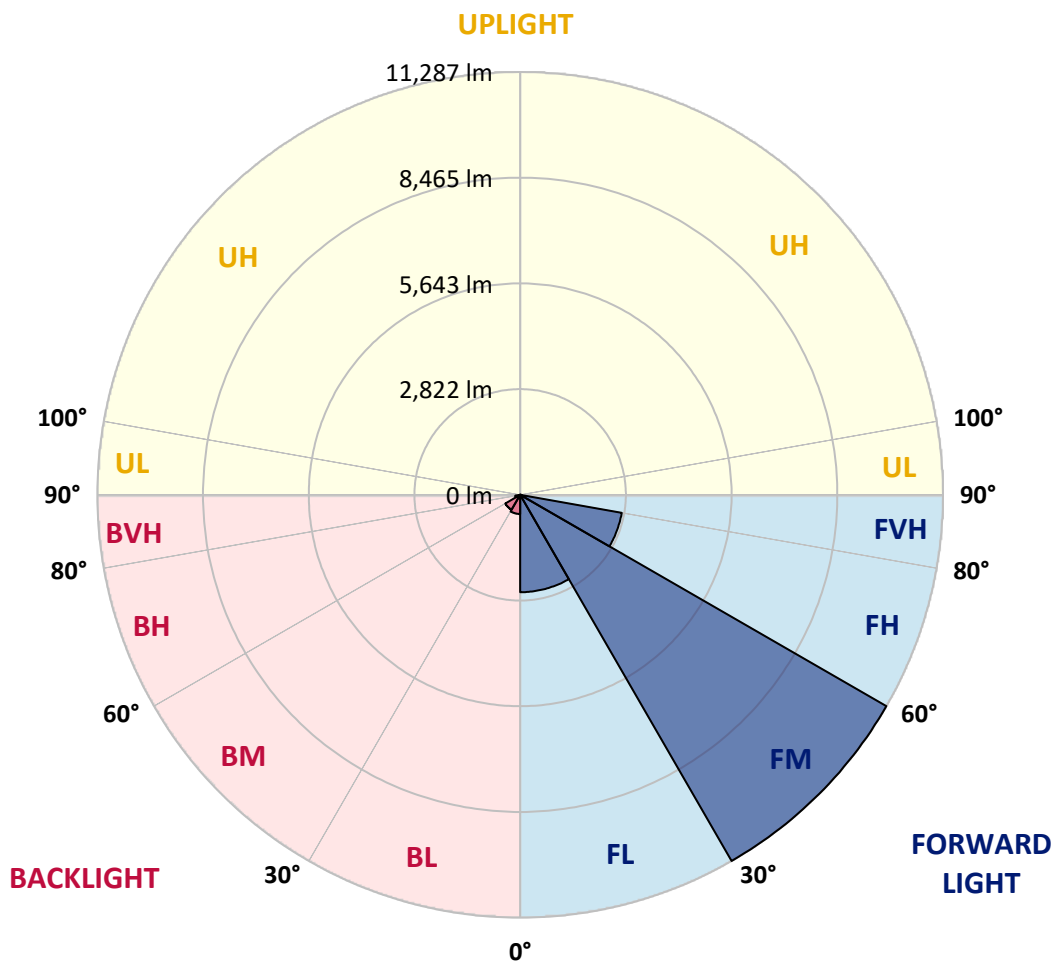
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 2599.6  | 14.6      |                         |      |         |
| FM   | (30°-60°)   | 11286.9 | 63.4      |                         |      |         |
| FH   | (60°-80°)   | 2752.8  | 15.5      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 40.6    | 0.2       |                         |      | G1/100  |
| BL   | (0°-30°)    | 512.3   | 2.9       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 460.0   | 2.6       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 131.7   | 0.7       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 6.5     | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 58°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9  | 5036.9 |
| 2.5°  | 6060.3  | 6023.8  | 5985.8  | 5915.2  | 5850.0  | 5749.6  | 5611.2  | 5577.1  | 5468.6  | 5289.4  | 5122.4 |
| 5°    | 6583.0  | 6576.2  | 6550.4  | 6493.4  | 6422.8  | 6300.6  | 6144.5  | 6040.1  | 5871.7  | 5589.4  | 5267.8 |
| 7.5°  | 6273.6  | 6330.4  | 6424.1  | 6557.2  | 6646.7  | 6634.5  | 6515.0  | 6424.1  | 6257.2  | 5871.7  | 5410.2 |
| 10°   | 5288.1  | 5298.9  | 5427.9  | 5707.6  | 6149.9  | 6562.6  | 6718.8  | 6694.3  | 6540.9  | 6118.7  | 5535.1 |
| 12.5° | 4940.6  | 4947.3  | 4977.2  | 5066.8  | 5354.5  | 5930.2  | 6637.2  | 6764.9  | 6752.6  | 6354.9  | 5668.1 |
| 15°   | 4967.7  | 4971.8  | 4979.9  | 5008.5  | 5089.9  | 5379.1  | 6224.6  | 6549.1  | 6888.4  | 6578.8  | 5798.4 |
| 17.5° | 5182.2  | 5179.4  | 5153.8  | 5126.5  | 5152.4  | 5247.4  | 5803.9  | 6145.9  | 6859.8  | 6767.6  | 5905.6 |
| 20°   | 5600.3  | 5613.9  | 5527.0  | 5406.2  | 5343.7  | 5347.8  | 5596.3  | 5852.7  | 6699.6  | 6914.2  | 5985.8 |
| 22.5° | 6188.0  | 6197.4  | 6054.9  | 5845.9  | 5662.6  | 5570.4  | 5639.6  | 5775.4  | 6515.0  | 7049.9  | 6051.0 |
| 25°   | 6889.7  | 6889.7  | 6690.1  | 6393.0  | 6109.3  | 5907.1  | 5847.2  | 5898.9  | 6444.5  | 7203.2  | 6116.0 |
| 27.5° | 7647.1  | 7674.2  | 7413.6  | 7024.0  | 6649.4  | 6353.6  | 6166.2  | 6156.8  | 6498.8  | 7395.9  | 6189.3 |
| 30°   | 8470.9  | 8495.5  | 8186.0  | 7709.6  | 7265.8  | 6886.9  | 6599.3  | 6536.7  | 6706.4  | 7655.3  | 6296.6 |
| 32.5° | 9290.8  | 9311.1  | 8969.0  | 8483.2  | 7966.1  | 7520.9  | 7142.2  | 7043.2  | 7079.7  | 8033.9  | 6454.1 |
| 35°   | 10333.3 | 10337.2 | 9904.4  | 9326.1  | 8773.7  | 8251.1  | 7772.0  | 7674.2  | 7633.4  | 8511.7  | 6680.6 |
| 37.5° | 11162.5 | 11130.0 | 10855.7 | 10308.8 | 9674.9  | 9129.3  | 8566.0  | 8438.4  | 8340.7  | 9183.6  | 7032.2 |
| 40°   | 11358.0 | 11358.0 | 11317.2 | 11153.0 | 10649.4 | 10124.2 | 9578.5  | 9388.5  | 9172.8  | 9974.9  | 7504.6 |
| 42.5° | 10849.0 | 10881.6 | 11150.3 | 11507.3 | 11511.4 | 11174.7 | 10641.3 | 10481.2 | 10101.1 | 10876.0 | 8020.3 |
| 45°   | 9710.1  | 9719.8  | 10364.5 | 11328.2 | 11982.3 | 12175.1 | 11781.5 | 11560.2 | 11033.6 | 11812.7 | 8492.7 |
| 47.5° | 9300.3  | 9330.2  | 9604.3  | 10782.4 | 12017.6 | 12985.4 | 12875.4 | 12571.4 | 11896.9 | 12667.8 | 8933.9 |
| 50°   | 8670.5  | 8707.1  | 9042.3  | 9978.9  | 11700.1 | 13505.3 | 13921.9 | 13596.1 | 12682.7 | 13380.3 | 9152.3 |
| 52.5° | 7164.0  | 7220.8  | 7694.6  | 8916.1  | 10906.1 | 13526.9 | 14880.2 | 14684.8 | 13487.6 | 13761.8 | 9126.6 |
| 55°   | 4929.8  | 4971.8  | 5524.2  | 6960.2  | 9304.4  | 12863.2 | 15292.8 | 15427.2 | 14205.5 | 13847.4 | 9001.6 |
| 56°   | 3976.9  | 4134.4  | 4538.9  | 5930.2  | 8392.2  | 12298.5 | 15197.9 | 15508.7 | 14418.8 | 13833.7 | 8947.4 |
| 57.5° | 2629.1  | 2659.0  | 3100.1  | 4297.2  | 6739.1  | 11073.0 | 14768.9 | 15334.8 | 14692.9 | 13764.5 | 8908.0 |
| 60°   | 1236.4  | 1250.1  | 1408.9  | 1983.0  | 3647.1  | 8069.3  | 13375.0 | 14314.2 | 14793.4 | 13619.3 | 8906.6 |
| 62.5° | 806.3   | 809.0   | 828.0   | 946.0   | 1491.6  | 4395.0  | 11087.9 | 12439.8 | 13961.3 | 13602.9 | 8881.0 |
| 65°   | 663.7   | 670.6   | 647.5   | 662.4   | 780.4   | 1657.3  | 7820.9  | 9698.0  | 12008.2 | 13220.1 | 8590.4 |
| 67.5° | 584.9   | 586.4   | 555.2   | 537.5   | 571.4   | 727.4   | 3940.2  | 6117.4  | 8981.3  | 11233.1 | 7075.7 |
| 70°   | 533.5   | 532.1   | 496.8   | 456.1   | 457.3   | 483.2   | 1283.9  | 2540.9  | 4969.2  | 6669.8  | 4062.4 |
| 72.5° | 473.6   | 476.5   | 456.1   | 399.0   | 380.1   | 342.1   | 483.2   | 685.4   | 1691.1  | 2141.7  | 1070.9 |
| 75°   | 415.3   | 409.8   | 389.5   | 352.9   | 317.6   | 229.3   | 242.9   | 291.8   | 441.1   | 437.0   | 230.8  |
| 77.5° | 314.9   | 309.5   | 319.0   | 301.3   | 248.4   | 160.2   | 132.9   | 152.1   | 199.6   | 185.9   | 93.7   |
| 80°   | 240.2   | 237.5   | 217.2   | 258.0   | 226.6   | 120.8   | 91.0    | 93.7    | 108.5   | 99.2    | 46.2   |
| 82.5° | 173.7   | 172.4   | 164.2   | 158.8   | 143.9   | 88.3    | 69.2    | 73.3    | 81.4    | 69.2    | 34.0   |
| 85°   | 66.6    | 66.6    | 128.9   | 108.5   | 99.2    | 59.6    | 48.9    | 52.9    | 62.4    | 50.2    | 23.0   |
| 87.5° | 10.9    | 10.9    | 86.9    | 72.0    | 44.7    | 29.9    | 31.3    | 34.0    | 36.7    | 29.9    | 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°    | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 | 5036.9 |
| 2.5°  | 5023.4 | 4932.5 | 4732.9 | 4540.3 | 4372.0 | 4187.3 | 4093.7 | 3985.2 | 3944.4 | 3862.9 | 3871.1 |
| 5°    | 5075.0 | 4885.0 | 4484.6 | 4062.4 | 3675.5 | 3282.0 | 3002.3 | 2739.0 | 2592.5 | 2447.3 | 2447.3 |
| 7.5°  | 5128.0 | 4837.5 | 4218.5 | 3544.0 | 2892.5 | 2217.8 | 1740.0 | 1357.2 | 1144.3 | 1001.7 | 997.6  |
| 10°   | 5164.5 | 4776.4 | 3915.8 | 2942.7 | 1981.8 | 1142.9 | 689.4  | 542.9  | 489.9  | 466.8  | 465.5  |
| 12.5° | 5212.1 | 4715.4 | 3571.1 | 2234.2 | 1100.8 | 542.9  | 430.3  | 407.2  | 397.7  | 392.3  | 392.3  |
| 15°   | 5252.7 | 4628.4 | 3153.1 | 1502.5 | 578.1  | 407.2  | 370.6  | 362.3  | 361.1  | 359.7  | 361.1  |
| 17.5° | 5262.4 | 4504.9 | 2652.2 | 879.5  | 419.4  | 355.5  | 339.3  | 332.6  | 332.6  | 331.1  | 331.1  |
| 20°   | 5240.6 | 4342.0 | 2098.4 | 542.9  | 362.3  | 327.2  | 309.5  | 301.3  | 299.9  | 299.9  | 299.9  |
| 22.5° | 5195.7 | 4134.4 | 1551.5 | 411.2  | 329.8  | 301.3  | 278.3  | 270.1  | 270.1  | 271.5  | 272.8  |
| 25°   | 5140.1 | 3888.8 | 1065.5 | 354.2  | 305.5  | 274.2  | 251.0  | 242.9  | 245.6  | 248.4  | 249.8  |
| 27.5° | 5069.6 | 3595.6 | 697.7  | 306.7  | 272.8  | 247.0  | 226.6  | 221.3  | 226.6  | 232.1  | 234.7  |
| 30°   | 4999.0 | 3273.9 | 472.4  | 266.1  | 236.2  | 217.2  | 205.0  | 203.6  | 211.7  | 223.9  | 225.4  |
| 32.5° | 4952.9 | 2944.0 | 356.9  | 238.9  | 207.7  | 191.3  | 185.9  | 188.6  | 201.0  | 214.4  | 217.2  |
| 35°   | 4948.8 | 2622.3 | 304.0  | 217.2  | 188.6  | 173.7  | 170.9  | 179.1  | 192.7  | 203.6  | 206.3  |
| 37.5° | 5012.5 | 2321.0 | 275.5  | 201.0  | 173.7  | 158.8  | 154.8  | 169.7  | 181.8  | 192.7  | 195.4  |
| 40°   | 5141.4 | 2050.9 | 256.6  | 185.9  | 161.5  | 143.9  | 141.2  | 153.4  | 165.6  | 177.9  | 181.8  |
| 42.5° | 5303.1 | 1798.4 | 234.7  | 170.9  | 148.0  | 127.6  | 124.9  | 134.3  | 146.7  | 164.2  | 166.9  |
| 45°   | 5442.8 | 1563.6 | 211.7  | 154.8  | 132.9  | 110.0  | 108.5  | 119.5  | 128.9  | 145.3  | 148.0  |
| 47.5° | 5560.9 | 1368.2 | 190.0  | 137.1  | 114.1  | 97.7   | 96.4   | 101.8  | 107.3  | 122.2  | 124.9  |
| 50°   | 5498.4 | 1202.7 | 168.3  | 112.6  | 92.3   | 84.1   | 82.9   | 82.9   | 89.7   | 104.6  | 107.3  |
| 52.5° | 5345.1 | 1099.4 | 148.0  | 93.7   | 75.9   | 72.0   | 67.8   | 69.2   | 75.9   | 82.9   | 84.1   |
| 55°   | 5221.6 | 1050.6 | 130.3  | 82.9   | 63.8   | 59.6   | 55.7   | 54.3   | 55.7   | 52.9   | 50.2   |
| 56°   | 5191.8 | 1045.1 | 126.2  | 80.0   | 61.1   | 55.7   | 50.2   | 47.5   | 46.2   | 40.8   | 39.3   |
| 57.5° | 5178.1 | 1045.1 | 119.5  | 74.6   | 57.0   | 50.2   | 43.5   | 38.0   | 32.6   | 28.4   | 28.4   |
| 60°   | 5167.3 | 1051.9 | 111.3  | 65.1   | 48.9   | 40.8   | 31.3   | 23.0   | 19.0   | 19.0   | 19.0   |
| 62.5° | 5144.2 | 1049.2 | 101.8  | 54.3   | 42.1   | 31.3   | 19.0   | 14.9   | 13.6   | 14.9   | 16.3   |
| 65°   | 4885.0 | 974.5  | 89.7   | 43.5   | 32.6   | 21.6   | 10.9   | 10.9   | 12.1   | 14.9   | 16.3   |
| 67.5° | 3936.3 | 738.3  | 73.3   | 34.0   | 23.0   | 16.3   | 9.5    | 9.5    | 12.1   | 14.9   | 16.3   |
| 70°   | 2162.2 | 389.5  | 62.4   | 24.4   | 17.6   | 13.6   | 9.5    | 8.2    | 12.1   | 14.9   | 16.3   |
| 72.5° | 528.1  | 163.0  | 57.0   | 19.0   | 16.3   | 12.1   | 8.2    | 8.2    | 12.1   | 14.9   | 16.3   |
| 75°   | 130.3  | 122.2  | 46.2   | 14.9   | 13.6   | 10.9   | 8.2    | 8.2    | 12.1   | 14.9   | 16.3   |
| 77.5° | 61.1   | 161.5  | 31.3   | 13.6   | 12.1   | 9.5    | 8.2    | 8.2    | 12.1   | 14.9   | 14.9   |
| 80°   | 36.7   | 122.2  | 19.0   | 12.1   | 10.9   | 9.5    | 8.2    | 8.2    | 12.1   | 14.9   | 16.3   |
| 82.5° | 21.6   | 35.4   | 13.6   | 12.1   | 10.9   | 8.2    | 8.2    | 8.2    | 12.1   | 14.9   | 16.3   |
| 85°   | 19.0   | 17.6   | 13.6   | 12.1   | 10.9   | 9.5    | 8.2    | 8.2    | 13.6   | 16.3   | 16.3   |
| 87.5° | 14.9   | 13.6   | 12.1   | 10.9   | 10.9   | 9.5    | 8.2    | 8.2    | 12.1   | 14.9   | 16.3   |
| 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)