

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: P270283

Luminaire Tested: **NAV-AF-01-D-UNV-SL4-7027-600-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270283  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
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-SL4-7027-600-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 2700K, 615mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2849.3 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B0 - U0 - G1

Input Watts (W): 34  
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

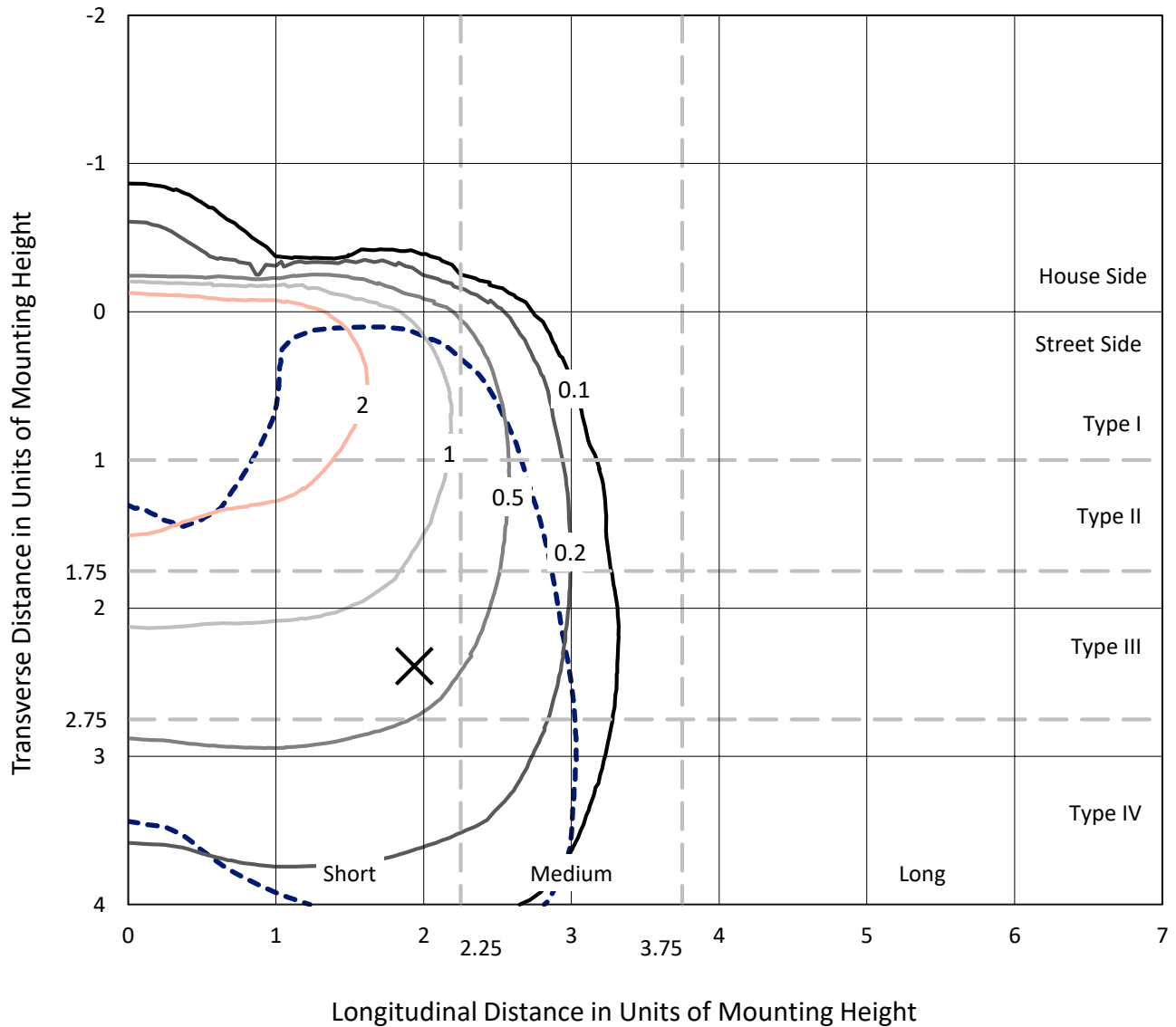


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

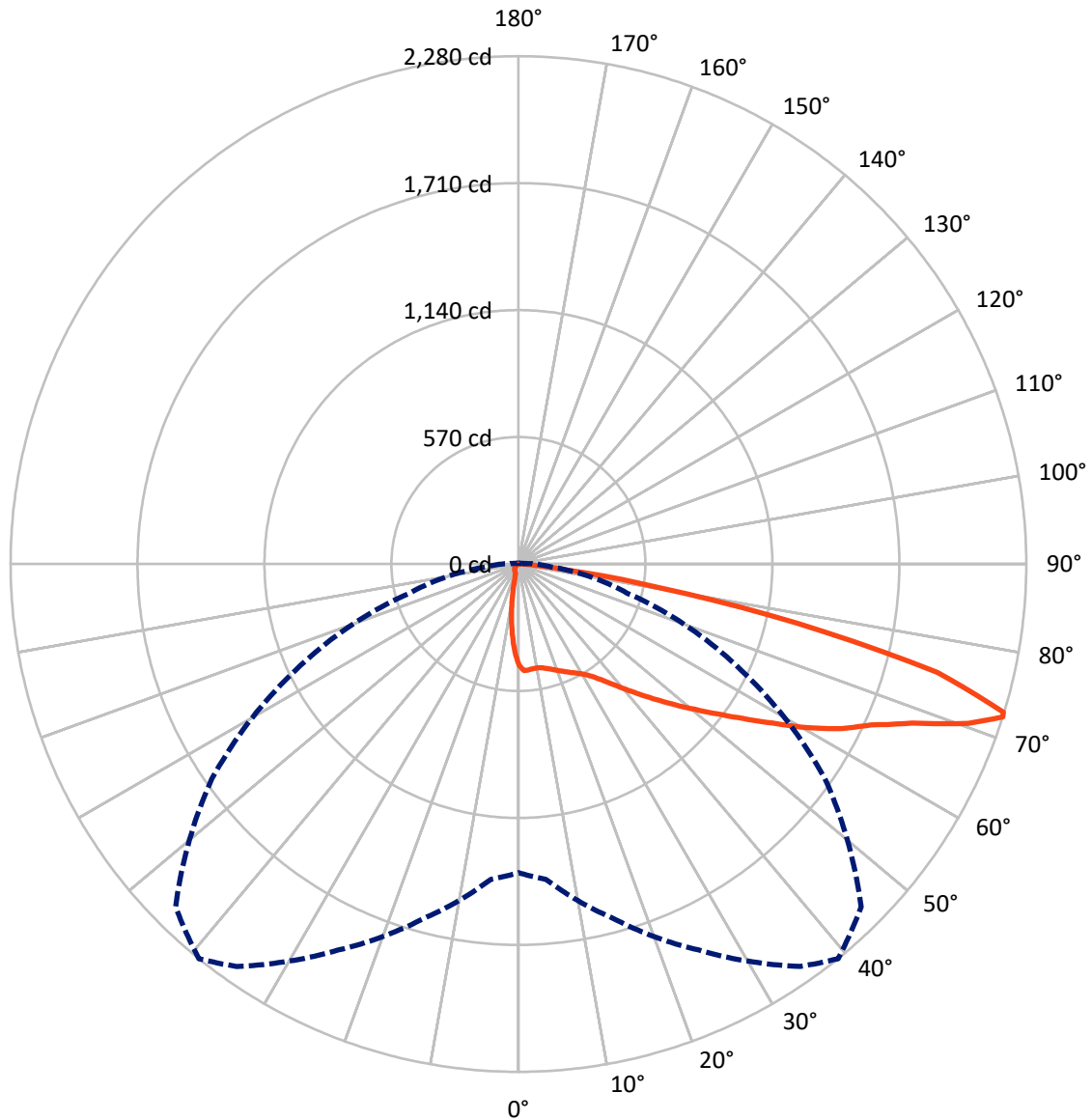


Based on 10 foot mounting height. Maximum calculated value = 4.8 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral      - - - Horizontal Cone Through 72-Deg Vertical

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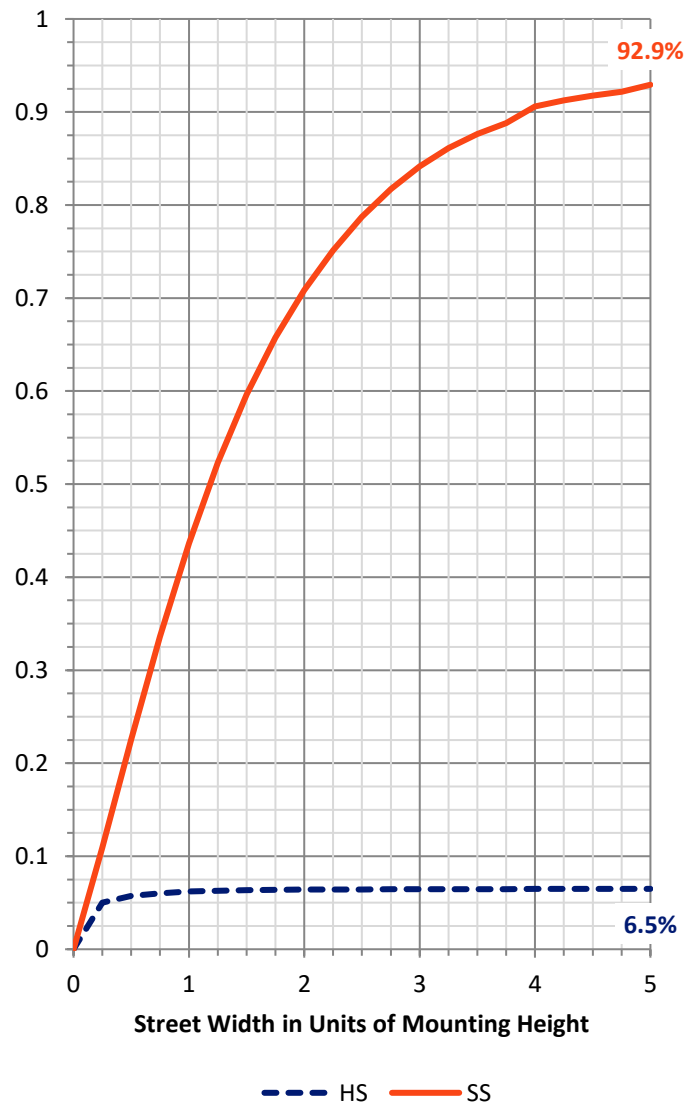
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 186.7    | 0.0    | 186.7  |
|                    | % Fixture | 6.6      | 0.0    | 6.6    |
| <b>Street Side</b> | Lumens    | 2662.5   | 0.0    | 2662.5 |
|                    | % Fixture | 93.4     | 0.0    | 93.4   |
| <b>Total</b>       | Lumens    | 2849.3   | 0.0    | 2849.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 37.1   | 1.3       |
| 10°-20°   | 89.8   | 3.2       |
| 20°-30°   | 149.1  | 5.2       |
| 30°-40°   | 237.7  | 8.3       |
| 40°-50°   | 392.4  | 13.8      |
| 50°-60°   | 592.5  | 20.8      |
| 60°-70°   | 771.9  | 27.1      |
| 70°-80°   | 521.6  | 18.3      |
| 80°-90°   | 57.1   | 2.0       |
| 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°    | 2849.3 | 100.0     |
| 0°-180°   | 2849.3 | 100.0     |



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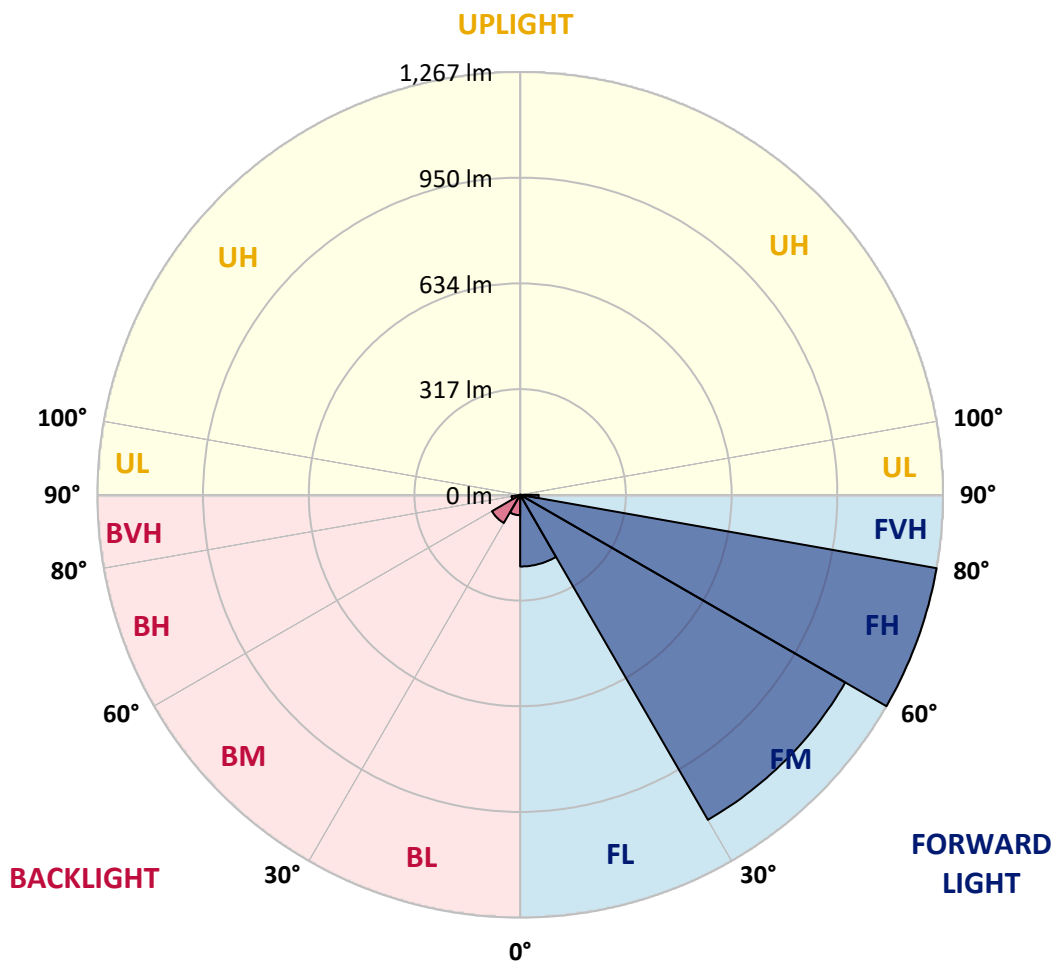
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 214.9  | 7.5       |                         |      |         |
| FM   | (30°-60°)   | 1124.9 | 39.5      |                         |      |         |
| FH   | (60°-80°)   | 1267.2 | 44.5      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 55.5   | 1.9       |                         |      | G1/100  |
| BL   | (0°-30°)    | 61.1   | 2.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 97.7   | 3.4       | B0/220                  |      |         |
| BH   | (60°-80°)   | 26.2   | 0.9       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 1.6    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 39°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  | 456.0  |
| 2.5°  | 485.7  | 486.5  | 485.4  | 483.4  | 480.5  | 478.6  | 476.2  | 470.8  | 464.2  | 458.2  | 451.6  |
| 5°    | 489.3  | 489.8  | 488.5  | 484.7  | 480.2  | 477.8  | 474.7  | 468.8  | 461.9  | 453.9  | 441.6  |
| 7.5°  | 490.6  | 490.4  | 488.8  | 484.0  | 477.1  | 473.9  | 468.6  | 461.4  | 454.3  | 446.8  | 433.3  |
| 10°   | 490.0  | 490.0  | 488.9  | 484.5  | 476.6  | 473.8  | 467.7  | 460.1  | 451.0  | 443.8  | 429.2  |
| 12.5° | 488.5  | 489.3  | 488.8  | 486.3  | 480.5  | 478.2  | 472.9  | 465.2  | 456.7  | 449.2  | 433.6  |
| 15°   | 490.6  | 491.9  | 493.2  | 492.4  | 488.9  | 486.9  | 482.0  | 474.1  | 467.3  | 459.2  | 442.7  |
| 17.5° | 498.6  | 501.6  | 504.7  | 504.8  | 501.3  | 497.8  | 492.1  | 484.0  | 477.3  | 470.0  | 451.9  |
| 20°   | 513.8  | 516.0  | 521.8  | 523.1  | 515.8  | 510.6  | 502.8  | 493.4  | 486.7  | 480.5  | 460.7  |
| 22.5° | 536.5  | 539.0  | 543.7  | 542.0  | 530.0  | 523.9  | 514.1  | 503.3  | 496.4  | 492.8  | 470.8  |
| 25°   | 570.8  | 571.4  | 572.5  | 565.6  | 545.6  | 539.0  | 526.9  | 514.6  | 509.1  | 508.7  | 485.2  |
| 27.5° | 611.0  | 611.9  | 607.1  | 591.5  | 563.1  | 554.3  | 540.7  | 529.7  | 527.0  | 530.4  | 503.3  |
| 30°   | 657.2  | 657.4  | 643.7  | 618.7  | 583.3  | 573.7  | 559.6  | 547.4  | 549.9  | 558.1  | 526.5  |
| 32.5° | 704.5  | 702.2  | 683.4  | 650.7  | 610.8  | 599.2  | 587.0  | 574.9  | 582.1  | 598.9  | 560.6  |
| 35°   | 747.7  | 746.9  | 724.7  | 686.6  | 646.7  | 636.4  | 627.6  | 614.8  | 626.5  | 653.8  | 607.1  |
| 37.5° | 790.9  | 790.1  | 764.9  | 725.3  | 690.7  | 683.4  | 677.0  | 667.0  | 686.0  | 726.2  | 669.1  |
| 40°   | 838.6  | 837.5  | 806.4  | 768.3  | 742.1  | 738.0  | 734.3  | 730.0  | 762.4  | 818.3  | 746.3  |
| 42.5° | 897.5  | 892.6  | 850.2  | 815.1  | 798.6  | 799.6  | 799.9  | 804.2  | 854.9  | 927.8  | 837.5  |
| 45°   | 965.1  | 954.2  | 894.4  | 865.2  | 860.5  | 867.3  | 874.1  | 891.7  | 962.8  | 1053.8 | 938.3  |
| 47.5° | 1030.7 | 1013.1 | 945.2  | 919.2  | 928.8  | 942.9  | 958.9  | 993.3  | 1083.6 | 1185.9 | 1029.6 |
| 50°   | 1087.3 | 1069.2 | 995.6  | 974.1  | 1004.8 | 1025.4 | 1054.2 | 1106.3 | 1211.4 | 1297.3 | 1087.3 |
| 52.5° | 1131.5 | 1117.2 | 1049.0 | 1034.6 | 1089.0 | 1117.2 | 1162.2 | 1230.8 | 1331.8 | 1370.9 | 1127.6 |
| 55°   | 1164.4 | 1157.1 | 1100.1 | 1102.0 | 1182.7 | 1223.4 | 1279.5 | 1356.9 | 1433.5 | 1427.9 | 1157.7 |
| 57.5° | 1201.3 | 1195.6 | 1153.6 | 1181.5 | 1295.4 | 1347.9 | 1412.7 | 1474.9 | 1507.4 | 1473.8 | 1187.4 |
| 60°   | 1239.1 | 1240.9 | 1218.6 | 1277.8 | 1434.7 | 1492.9 | 1549.3 | 1564.8 | 1570.9 | 1520.4 | 1218.6 |
| 62.5° | 1267.8 | 1275.5 | 1277.4 | 1381.9 | 1577.6 | 1627.3 | 1651.8 | 1640.8 | 1639.3 | 1583.0 | 1216.0 |
| 65°   | 1300.7 | 1320.7 | 1353.7 | 1495.8 | 1707.5 | 1740.1 | 1757.7 | 1773.6 | 1739.9 | 1601.5 | 1096.4 |
| 67.5° | 1357.6 | 1389.0 | 1463.6 | 1635.5 | 1857.5 | 1905.9 | 1955.4 | 1938.6 | 1755.0 | 1412.7 | 835.2  |
| 70°   | 1434.2 | 1472.5 | 1604.3 | 1818.1 | 2061.2 | 2142.2 | 2183.7 | 1925.3 | 1490.0 | 976.2  | 440.6  |
| 72°   | 1385.8 | 1420.5 | 1647.6 | 1911.4 | 2205.3 | 2279.8 | 2176.1 | 1679.4 | 1080.0 | 505.9  | 147.6  |
| 72.5° | 1338.7 | 1374.5 | 1633.7 | 1910.2 | 2219.7 | 2276.7 | 2126.6 | 1582.5 | 955.7  | 393.7  | 101.7  |
| 75°   | 928.8  | 974.1  | 1400.5 | 1717.1 | 2004.5 | 1942.0 | 1627.0 | 958.2  | 346.2  | 67.6   | 33.5   |
| 77.5° | 480.2  | 515.2  | 849.5  | 1213.3 | 1397.0 | 1279.5 | 961.5  | 415.7  | 95.8   | 35.8   | 22.2   |
| 80°   | 297.7  | 314.9  | 397.4  | 597.8  | 725.7  | 634.8  | 424.2  | 168.1  | 61.4   | 21.3   | 17.6   |
| 82.5° | 154.1  | 167.4  | 250.2  | 241.3  | 268.1  | 222.9  | 156.6  | 140.7  | 37.9   | 13.2   | 18.1   |
| 85°   | 50.7   | 53.8   | 153.7  | 160.3  | 114.7  | 77.1   | 69.3   | 134.1  | 11.0   | 8.5    | 15.5   |
| 87.5° | 6.6    | 7.8    | 54.0   | 91.8   | 56.5   | 34.9   | 41.6   | 47.3   | 3.9    | 4.8    | 4.2    |
| 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°    | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 | 456.0 |
| 2.5°  | 447.0 | 444.1 | 435.0 | 425.7 | 415.2 | 405.7 | 397.9 | 393.1 | 395.3 | 388.0 | 389.1 |
| 5°    | 434.3 | 427.0 | 406.8 | 385.1 | 361.5 | 339.6 | 322.1 | 309.0 | 306.6 | 295.5 | 295.9 |
| 7.5°  | 422.1 | 409.8 | 377.2 | 341.4 | 302.4 | 270.7 | 242.2 | 217.0 | 208.0 | 199.0 | 193.6 |
| 10°   | 415.2 | 398.7 | 352.3 | 300.2 | 245.2 | 199.0 | 158.6 | 127.0 | 113.7 | 104.2 | 99.4  |
| 12.5° | 417.4 | 395.3 | 333.7 | 262.8 | 190.6 | 131.7 | 89.7  | 66.6  | 58.5  | 54.0  | 52.5  |
| 15°   | 424.0 | 396.1 | 316.9 | 226.3 | 138.7 | 79.7  | 52.6  | 45.0  | 44.3  | 44.1  | 43.8  |
| 17.5° | 430.3 | 396.7 | 299.2 | 188.1 | 92.7  | 50.8  | 42.3  | 41.6  | 41.6  | 41.6  | 41.6  |
| 20°   | 436.8 | 397.0 | 279.7 | 148.3 | 60.9  | 41.6  | 39.9  | 39.4  | 39.9  | 39.9  | 39.9  |
| 22.5° | 444.4 | 398.5 | 261.0 | 109.6 | 45.0  | 39.2  | 38.1  | 37.9  | 38.1  | 38.1  | 37.9  |
| 25°   | 453.9 | 401.8 | 240.6 | 78.4  | 40.8  | 37.5  | 36.6  | 36.3  | 36.6  | 36.3  | 36.3  |
| 27.5° | 466.3 | 406.4 | 216.9 | 56.2  | 38.9  | 36.0  | 34.9  | 34.9  | 34.9  | 34.8  | 34.8  |
| 30°   | 482.5 | 411.8 | 185.1 | 44.3  | 37.2  | 34.5  | 33.5  | 33.5  | 33.3  | 33.1  | 33.1  |
| 32.5° | 505.6 | 420.4 | 150.2 | 40.2  | 35.2  | 32.5  | 31.6  | 31.8  | 31.6  | 31.4  | 31.1  |
| 35°   | 538.3 | 434.2 | 116.1 | 37.9  | 33.1  | 30.5  | 29.6  | 29.6  | 29.6  | 29.1  | 29.1  |
| 37.5° | 584.5 | 454.9 | 86.9  | 35.7  | 31.1  | 28.4  | 27.3  | 27.3  | 27.0  | 26.7  | 26.9  |
| 40°   | 642.0 | 481.1 | 62.9  | 33.5  | 29.1  | 26.2  | 25.3  | 24.9  | 24.4  | 24.0  | 24.0  |
| 42.5° | 711.0 | 506.6 | 47.3  | 31.6  | 27.0  | 24.4  | 23.3  | 22.8  | 22.0  | 21.5  | 21.3  |
| 45°   | 788.3 | 533.8 | 39.2  | 29.1  | 24.9  | 22.4  | 21.5  | 20.7  | 19.6  | 18.9  | 18.5  |
| 47.5° | 853.4 | 550.3 | 34.9  | 26.7  | 22.5  | 20.4  | 19.6  | 18.1  | 16.8  | 16.3  | 16.3  |
| 50°   | 892.6 | 543.4 | 31.4  | 24.2  | 20.4  | 18.3  | 17.2  | 15.5  | 14.6  | 14.2  | 13.8  |
| 52.5° | 914.6 | 522.9 | 28.4  | 22.2  | 18.3  | 16.1  | 14.6  | 12.9  | 12.5  | 12.0  | 12.0  |
| 55°   | 929.6 | 493.0 | 25.3  | 20.1  | 16.6  | 14.2  | 12.3  | 11.1  | 10.8  | 10.5  | 10.3  |
| 57.5° | 943.8 | 456.7 | 22.4  | 18.3  | 14.8  | 12.5  | 10.5  | 10.2  | 9.3   | 9.0   | 9.0   |
| 60°   | 948.2 | 406.8 | 19.8  | 16.3  | 13.2  | 11.0  | 9.3   | 8.5   | 7.6   | 7.4   | 7.4   |
| 62.5° | 894.0 | 323.7 | 17.4  | 13.8  | 11.7  | 9.4   | 8.1   | 7.1   | 6.3   | 6.3   | 6.3   |
| 65°   | 747.0 | 219.7 | 15.0  | 12.0  | 10.3  | 8.1   | 6.9   | 5.7   | 5.4   | 5.4   | 5.4   |
| 67.5° | 520.3 | 122.4 | 12.8  | 10.3  | 8.8   | 6.6   | 5.7   | 4.9   | 4.8   | 4.9   | 4.9   |
| 70°   | 234.5 | 48.6  | 10.8  | 8.5   | 7.1   | 5.6   | 4.9   | 4.2   | 4.8   | 4.8   | 4.8   |
| 72°   | 70.3  | 26.1  | 9.0   | 6.9   | 5.7   | 4.9   | 4.2   | 4.0   | 4.5   | 4.8   | 4.8   |
| 72.5° | 52.2  | 23.3  | 8.5   | 6.6   | 5.7   | 4.8   | 4.0   | 4.0   | 4.5   | 4.8   | 4.8   |
| 75°   | 26.9  | 15.9  | 6.5   | 4.9   | 4.2   | 3.9   | 3.4   | 3.9   | 4.5   | 4.5   | 4.5   |
| 77.5° | 21.1  | 12.9  | 5.4   | 3.9   | 3.7   | 3.4   | 3.1   | 3.7   | 4.0   | 4.0   | 4.0   |
| 80°   | 19.8  | 8.5   | 4.2   | 3.7   | 3.1   | 3.0   | 3.0   | 3.1   | 3.7   | 3.9   | 3.9   |
| 82.5° | 19.9  | 6.9   | 3.9   | 3.4   | 3.0   | 2.6   | 2.6   | 3.0   | 3.4   | 3.7   | 3.7   |
| 85°   | 12.8  | 4.8   | 3.4   | 3.0   | 2.6   | 2.4   | 2.4   | 2.6   | 3.1   | 3.4   | 3.4   |
| 87.5° | 4.2   | 3.7   | 3.0   | 2.6   | 2.2   | 2.2   | 2.2   | 2.2   | 2.6   | 3.0   | 3.1   |
| 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)