

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: P270368

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7027-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270368  
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-02-D-UNV-SL4-7027-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES 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: 8621.3 lumens  
Efficiency: N/A  
Efficacy: 76.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G2

Input Watts (W): 113  
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

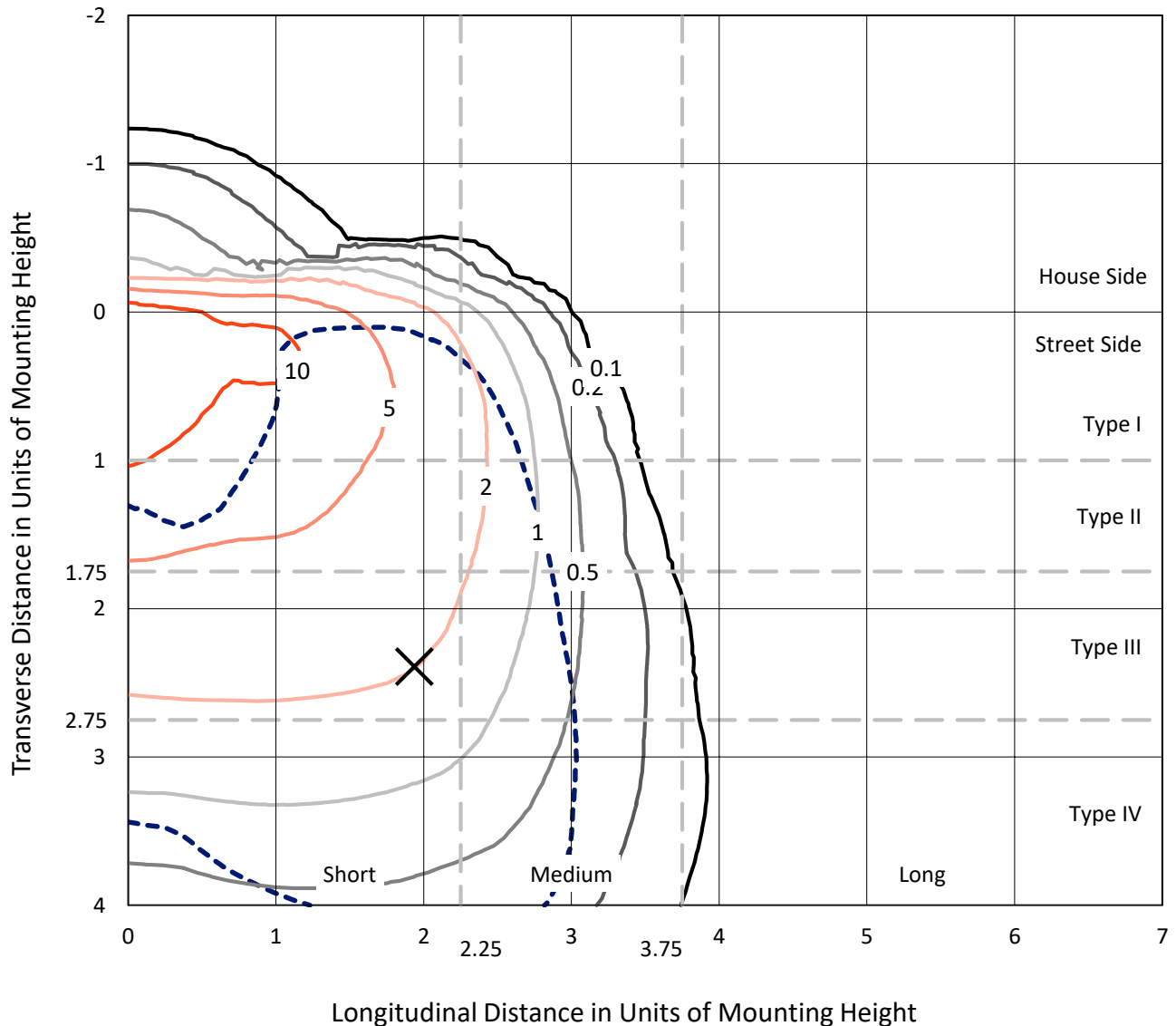


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

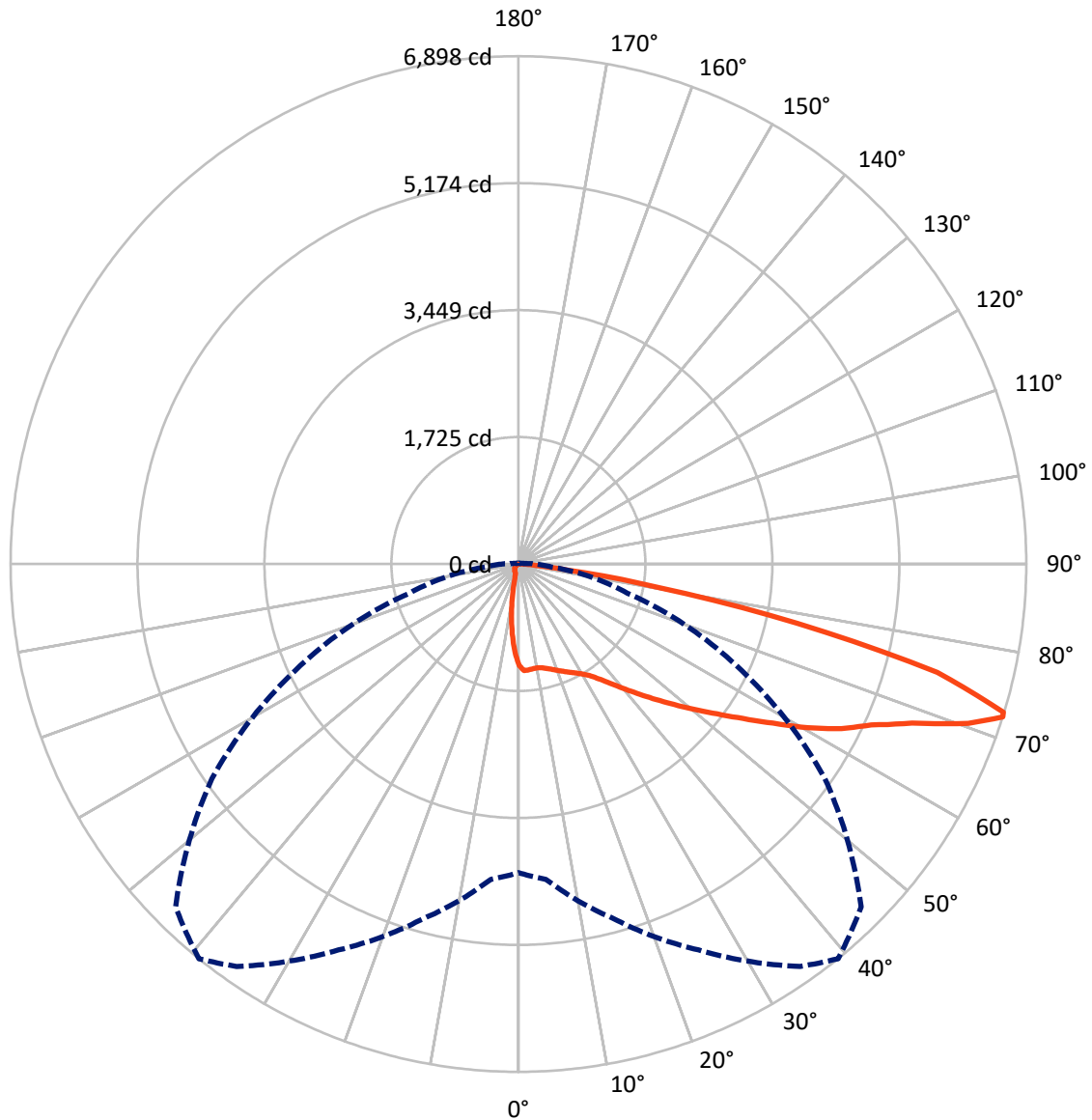


Based on 10 foot mounting height. Maximum calculated value = 14.5 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



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

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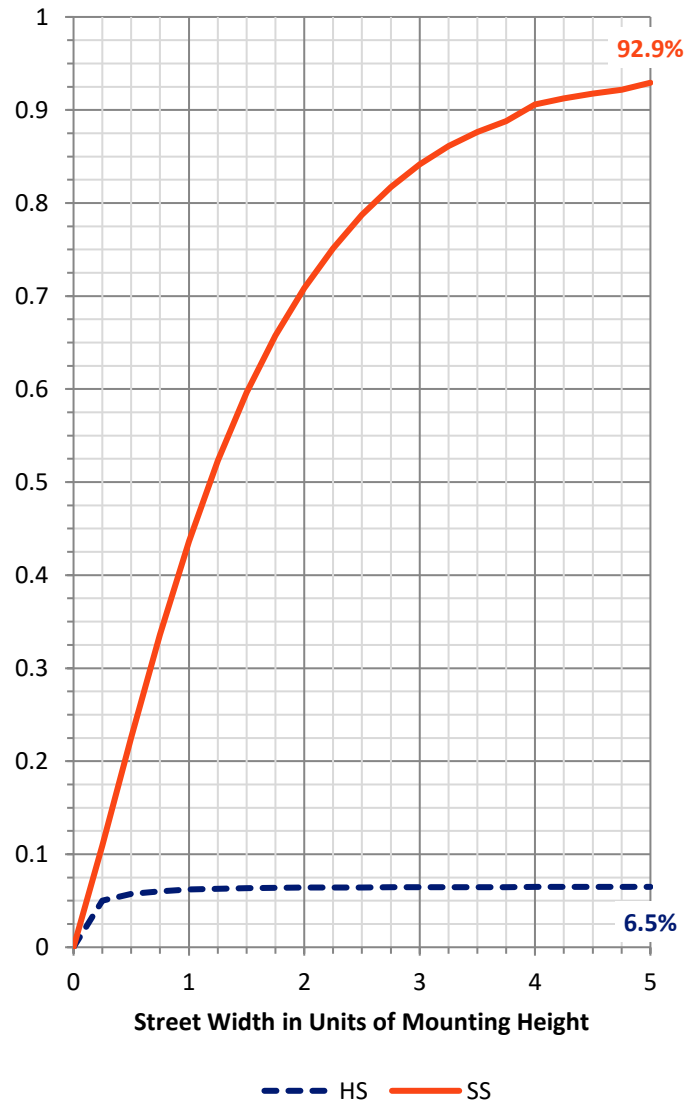
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 565.0    | 0.0    | 565.0  |
|                    | % Fixture | 6.6      | 0.0    | 6.6    |
| <b>Street Side</b> | Lumens    | 8056.3   | 0.0    | 8056.3 |
|                    | % Fixture | 93.4     | 0.0    | 93.4   |
| <b>Total</b>       | Lumens    | 8621.3   | 0.0    | 8621.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 112.2  | 1.3       |
| 10°-20°   | 271.7  | 3.2       |
| 20°-30°   | 451.3  | 5.2       |
| 30°-40°   | 719.3  | 8.3       |
| 40°-50°   | 1187.2 | 13.8      |
| 50°-60°   | 1792.9 | 20.8      |
| 60°-70°   | 2335.6 | 27.1      |
| 70°-80°   | 1578.2 | 18.3      |
| 80°-90°   | 172.8  | 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°    | 8621.3 | 100.0     |
| 0°-180°   | 8621.3 | 100.0     |



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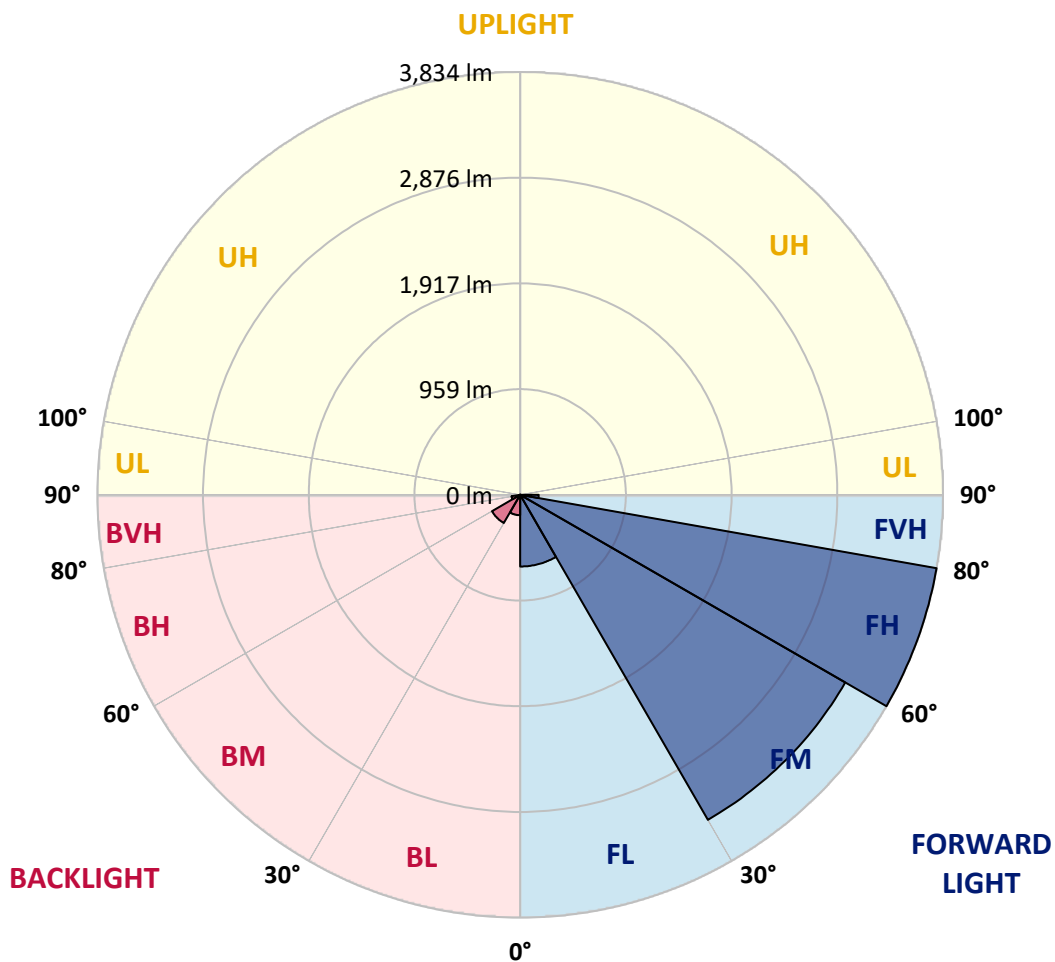
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 650.2  | 7.5       |                         |      |         |
| FM   | (30°-60°)   | 3403.8 | 39.5      |                         |      |         |
| FH   | (60°-80°)   | 3834.4 | 44.5      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 167.9  | 1.9       |                         |      | G2/225  |
| BL   | (0°-30°)    | 185.0  | 2.1       | B1/500                  |      |         |
| BM   | (30°-60°)   | 295.6  | 3.4       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 79.4   | 0.9       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 5.0    | 0.1       |                         |      | G0/10   |
| 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°    | 39°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 |
| 2.5°  | 1469.4 | 1472.1 | 1468.6 | 1462.6 | 1453.7 | 1448.3 | 1440.9 | 1424.6 | 1404.3 | 1386.7 | 1366.3 |
| 5°    | 1480.9 | 1482.3 | 1478.3 | 1466.7 | 1453.1 | 1445.6 | 1436.2 | 1418.6 | 1397.6 | 1373.1 | 1336.5 |
| 7.5°  | 1484.3 | 1483.6 | 1478.9 | 1464.6 | 1443.5 | 1434.1 | 1417.9 | 1396.1 | 1374.4 | 1352.0 | 1310.7 |
| 10°   | 1482.9 | 1482.9 | 1479.5 | 1465.9 | 1442.3 | 1433.4 | 1415.1 | 1392.2 | 1365.0 | 1342.6 | 1298.6 |
| 12.5° | 1478.3 | 1480.9 | 1478.9 | 1471.5 | 1453.7 | 1447.0 | 1430.7 | 1407.6 | 1382.0 | 1358.9 | 1312.2 |
| 15°   | 1484.3 | 1488.3 | 1492.4 | 1489.7 | 1479.5 | 1473.4 | 1458.5 | 1434.9 | 1413.8 | 1389.4 | 1339.3 |
| 17.5° | 1508.7 | 1517.4 | 1526.9 | 1527.7 | 1516.8 | 1506.0 | 1489.0 | 1464.6 | 1444.2 | 1421.8 | 1367.7 |
| 20°   | 1554.7 | 1561.6 | 1579.2 | 1582.5 | 1560.8 | 1545.3 | 1521.5 | 1493.2 | 1472.7 | 1453.7 | 1394.1 |
| 22.5° | 1623.1 | 1630.7 | 1644.8 | 1640.1 | 1603.6 | 1585.2 | 1555.4 | 1522.8 | 1501.8 | 1491.0 | 1424.6 |
| 25°   | 1726.9 | 1729.0 | 1732.3 | 1711.4 | 1651.1 | 1630.7 | 1594.0 | 1557.5 | 1540.6 | 1539.2 | 1468.0 |
| 27.5° | 1848.9 | 1851.6 | 1836.8 | 1790.0 | 1703.8 | 1677.5 | 1636.2 | 1602.8 | 1594.8 | 1604.9 | 1522.8 |
| 30°   | 1988.5 | 1989.1 | 1947.9 | 1872.0 | 1764.9 | 1735.7 | 1693.0 | 1656.5 | 1663.9 | 1689.0 | 1593.5 |
| 32.5° | 2131.5 | 2124.8 | 2067.8 | 1968.8 | 1848.3 | 1813.0 | 1776.4 | 1739.7 | 1761.4 | 1812.3 | 1696.4 |
| 35°   | 2262.3 | 2259.6 | 2192.6 | 2077.3 | 1956.7 | 1925.4 | 1899.0 | 1860.4 | 1895.7 | 1978.3 | 1836.8 |
| 37.5° | 2393.2 | 2391.1 | 2314.6 | 2194.6 | 2090.1 | 2067.8 | 2048.1 | 2018.3 | 2076.0 | 2197.3 | 2024.4 |
| 40°   | 2537.5 | 2534.1 | 2439.8 | 2324.6 | 2245.5 | 2233.1 | 2221.7 | 2208.8 | 2307.0 | 2475.8 | 2258.2 |
| 42.5° | 2715.8 | 2700.8 | 2572.7 | 2466.3 | 2416.3 | 2419.6 | 2420.3 | 2433.1 | 2586.9 | 2807.3 | 2534.1 |
| 45°   | 2920.4 | 2887.2 | 2706.2 | 2618.1 | 2603.8 | 2624.3 | 2644.6 | 2698.1 | 2912.9 | 3188.9 | 2839.2 |
| 47.5° | 3119.1 | 3065.5 | 2860.2 | 2781.5 | 2810.6 | 2852.7 | 2901.4 | 3005.8 | 3279.0 | 3588.0 | 3115.6 |
| 50°   | 3289.9 | 3234.8 | 3012.6 | 2947.6 | 3040.5 | 3102.7 | 3189.5 | 3347.4 | 3665.3 | 3925.6 | 3289.9 |
| 52.5° | 3424.0 | 3380.6 | 3173.9 | 3130.6 | 3295.3 | 3380.6 | 3516.9 | 3724.3 | 4029.8 | 4147.8 | 3411.9 |
| 55°   | 3523.0 | 3501.2 | 3328.4 | 3334.5 | 3578.5 | 3701.8 | 3871.3 | 4105.9 | 4337.6 | 4320.7 | 3503.3 |
| 57.5° | 3634.8 | 3617.8 | 3490.5 | 3575.2 | 3919.5 | 4078.8 | 4274.6 | 4463.0 | 4561.2 | 4459.5 | 3592.7 |
| 60°   | 3749.3 | 3754.7 | 3687.0 | 3866.6 | 4341.0 | 4517.1 | 4688.1 | 4734.7 | 4753.0 | 4600.6 | 3687.0 |
| 62.5° | 3836.0 | 3859.1 | 3865.1 | 4181.0 | 4773.5 | 4923.9 | 4997.7 | 4964.6 | 4960.4 | 4789.7 | 3679.5 |
| 65°   | 3935.7 | 3996.0 | 4096.4 | 4526.0 | 5166.5 | 5265.4 | 5318.3 | 5366.5 | 5264.7 | 4845.8 | 3317.6 |
| 67.5° | 4107.9 | 4202.7 | 4428.5 | 4948.9 | 5620.5 | 5766.9 | 5916.7 | 5865.9 | 5310.2 | 4274.6 | 2527.3 |
| 70°   | 4339.6 | 4455.6 | 4854.0 | 5501.3 | 6236.7 | 6482.0 | 6607.5 | 5826.0 | 4508.5 | 2953.6 | 1333.2 |
| 72°   | 4193.3 | 4298.3 | 4985.6 | 5783.3 | 6673.1 | 6898.2 | 6584.3 | 5081.8 | 3268.2 | 1531.0 | 446.6  |
| 72.5° | 4050.8 | 4159.3 | 4943.6 | 5779.9 | 6716.4 | 6888.7 | 6434.6 | 4788.3 | 2892.0 | 1191.5 | 307.7  |
| 75°   | 2810.6 | 2947.6 | 4237.9 | 5195.6 | 6065.1 | 5876.2 | 4923.3 | 2899.4 | 1047.9 | 204.6  | 101.7  |
| 77.5° | 1453.1 | 1558.7 | 2570.7 | 3671.4 | 4227.2 | 3871.3 | 2909.6 | 1257.8 | 290.2  | 108.4  | 67.2   |
| 80°   | 900.7  | 952.9  | 1202.3 | 1808.8 | 2195.8 | 1920.8 | 1283.7 | 508.4  | 185.7  | 64.4   | 53.5   |
| 82.5° | 466.3  | 506.3  | 757.0  | 730.0  | 811.3  | 674.4  | 473.8  | 425.6  | 114.5  | 40.0   | 54.8   |
| 85°   | 153.3  | 162.7  | 465.0  | 485.3  | 347.0  | 233.1  | 210.2  | 405.9  | 33.1   | 25.7   | 46.7   |
| 87.5° | 20.3   | 23.7   | 163.3  | 277.8  | 170.8  | 105.7  | 126.0  | 143.0  | 11.5   | 14.3   | 12.8   |
| 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°    | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 | 1379.8 |
| 2.5°  | 1352.8 | 1344.0 | 1316.1 | 1288.3 | 1256.5 | 1227.4 | 1204.4 | 1189.4 | 1196.3 | 1173.8 | 1177.3 |
| 5°    | 1314.2 | 1291.9 | 1230.8 | 1165.0 | 1093.9 | 1027.5 | 974.7  | 935.2  | 927.8  | 894.0  | 895.3  |
| 7.5°  | 1276.9 | 1240.3 | 1141.3 | 1033.0 | 915.0  | 819.4  | 732.7  | 656.8  | 629.6  | 601.9  | 585.5  |
| 10°   | 1256.5 | 1206.5 | 1066.1 | 908.1  | 742.1  | 601.9  | 479.9  | 384.2  | 344.3  | 315.1  | 300.9  |
| 12.5° | 1262.7 | 1196.3 | 1009.9 | 795.0  | 576.7  | 398.5  | 271.1  | 201.3  | 176.8  | 163.3  | 158.6  |
| 15°   | 1283.0 | 1198.2 | 959.0  | 684.5  | 419.5  | 241.3  | 159.3  | 136.3  | 134.1  | 133.5  | 132.8  |
| 17.5° | 1302.0 | 1200.2 | 905.5  | 569.3  | 280.6  | 153.9  | 128.1  | 126.0  | 126.0  | 126.0  | 126.0  |
| 20°   | 1321.5 | 1200.9 | 846.6  | 448.7  | 184.3  | 126.0  | 120.6  | 119.3  | 120.6  | 120.6  | 120.6  |
| 22.5° | 1344.7 | 1205.7 | 789.6  | 331.5  | 136.3  | 118.5  | 115.3  | 114.5  | 115.3  | 115.3  | 114.5  |
| 25°   | 1373.1 | 1215.9 | 727.8  | 237.2  | 123.3  | 113.8  | 110.5  | 109.9  | 110.5  | 109.9  | 109.9  |
| 27.5° | 1411.1 | 1229.4 | 656.0  | 170.0  | 117.9  | 109.1  | 105.7  | 105.7  | 105.7  | 105.0  | 105.0  |
| 30°   | 1459.8 | 1245.7 | 559.9  | 134.1  | 112.5  | 104.4  | 101.7  | 101.7  | 101.0  | 100.3  | 100.3  |
| 32.5° | 1529.6 | 1272.1 | 454.8  | 121.4  | 106.4  | 98.3   | 95.6   | 96.3   | 95.6   | 95.0   | 94.2   |
| 35°   | 1628.6 | 1313.5 | 351.1  | 114.5  | 100.3  | 92.2   | 89.6   | 89.6   | 89.6   | 88.2   | 88.2   |
| 37.5° | 1768.9 | 1376.6 | 262.9  | 107.7  | 94.2   | 86.1   | 82.6   | 82.6   | 82.0   | 80.7   | 81.3   |
| 40°   | 1942.4 | 1455.9 | 190.4  | 101.7  | 88.2   | 79.3   | 76.5   | 75.2   | 73.9   | 72.6   | 72.6   |
| 42.5° | 2151.3 | 1533.0 | 143.0  | 95.6   | 82.0   | 73.9   | 70.4   | 69.1   | 66.5   | 65.0   | 64.4   |
| 45°   | 2385.0 | 1615.2 | 118.5  | 88.2   | 75.2   | 67.8   | 65.0   | 62.3   | 59.0   | 57.0   | 56.2   |
| 47.5° | 2582.3 | 1665.3 | 105.7  | 80.7   | 68.5   | 61.7   | 59.0   | 54.8   | 50.8   | 49.4   | 49.4   |
| 50°   | 2700.8 | 1644.2 | 95.0   | 73.2   | 61.7   | 55.5   | 52.2   | 46.7   | 44.0   | 42.7   | 42.0   |
| 52.5° | 2767.3 | 1581.8 | 86.1   | 67.2   | 55.5   | 48.8   | 44.0   | 39.3   | 38.0   | 36.7   | 36.7   |
| 55°   | 2812.7 | 1491.7 | 76.5   | 60.9   | 50.1   | 42.7   | 37.3   | 33.9   | 32.5   | 31.9   | 31.3   |
| 57.5° | 2856.0 | 1382.0 | 67.8   | 55.5   | 44.7   | 38.0   | 31.9   | 30.5   | 27.8   | 27.0   | 27.0   |
| 60°   | 2868.8 | 1230.8 | 59.6   | 49.4   | 40.0   | 33.1   | 27.8   | 25.7   | 23.0   | 22.4   | 22.4   |
| 62.5° | 2704.8 | 979.3  | 52.9   | 42.0   | 35.3   | 28.4   | 24.4   | 21.6   | 19.0   | 19.0   | 19.0   |
| 65°   | 2260.2 | 664.8  | 45.5   | 36.7   | 31.3   | 24.4   | 21.0   | 17.6   | 16.3   | 16.3   | 16.3   |
| 67.5° | 1574.4 | 370.7  | 38.6   | 31.3   | 26.4   | 20.3   | 17.6   | 14.9   | 14.3   | 14.9   | 14.9   |
| 70°   | 709.7  | 147.1  | 32.5   | 25.7   | 21.6   | 17.0   | 14.9   | 12.8   | 14.3   | 14.3   | 14.3   |
| 72°   | 212.8  | 78.6   | 27.0   | 21.0   | 17.6   | 14.9   | 12.8   | 12.1   | 13.6   | 14.3   | 14.3   |
| 72.5° | 157.9  | 70.4   | 25.7   | 20.3   | 17.6   | 14.3   | 12.1   | 12.1   | 13.6   | 14.3   | 14.3   |
| 75°   | 81.3   | 48.1   | 19.7   | 14.9   | 12.8   | 11.5   | 10.2   | 11.5   | 13.6   | 13.6   | 13.6   |
| 77.5° | 63.7   | 39.3   | 16.3   | 11.5   | 10.8   | 10.2   | 9.5    | 10.8   | 12.1   | 12.1   | 12.1   |
| 80°   | 59.6   | 25.7   | 12.8   | 10.8   | 9.5    | 8.9    | 8.9    | 9.5    | 10.8   | 11.5   | 11.5   |
| 82.5° | 60.4   | 21.0   | 11.5   | 10.2   | 8.9    | 8.2    | 8.2    | 8.9    | 10.2   | 10.8   | 10.8   |
| 85°   | 38.6   | 14.3   | 10.2   | 8.9    | 8.2    | 7.5    | 7.5    | 8.2    | 9.5    | 10.2   | 10.2   |
| 87.5° | 12.8   | 10.8   | 8.9    | 8.2    | 6.7    | 6.7    | 6.7    | 6.7    | 8.2    | 8.9    | 9.5    |
| 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)