

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: STREETWORKS

Report Number: P231048

Luminaire Tested: **ARCH-M-AF48-160-D-U-T2R-7050**

Issue Date: 3/3/2020

### Test Information

Test Method: LM-79-08  
Report Number: P231048  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29635)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: ARCH-M-AF48-160-D-U-T2R-7050  
Description: ARCHEON-M ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 5000K, 1030mA LIGHT ENGINES WITH 24 LEDS AND TYPE II ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

### Summary

Lumens per Lamp: N/A  
Luminaire Lumens: 18673 lumens  
Efficiency: N/A  
Efficacy: 116.0 lumens/watt  
Luminous Opening: Rectangular (W 0.75' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B2 - U0 - G3

Input Watts (W): 161  
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: 28.75 FT



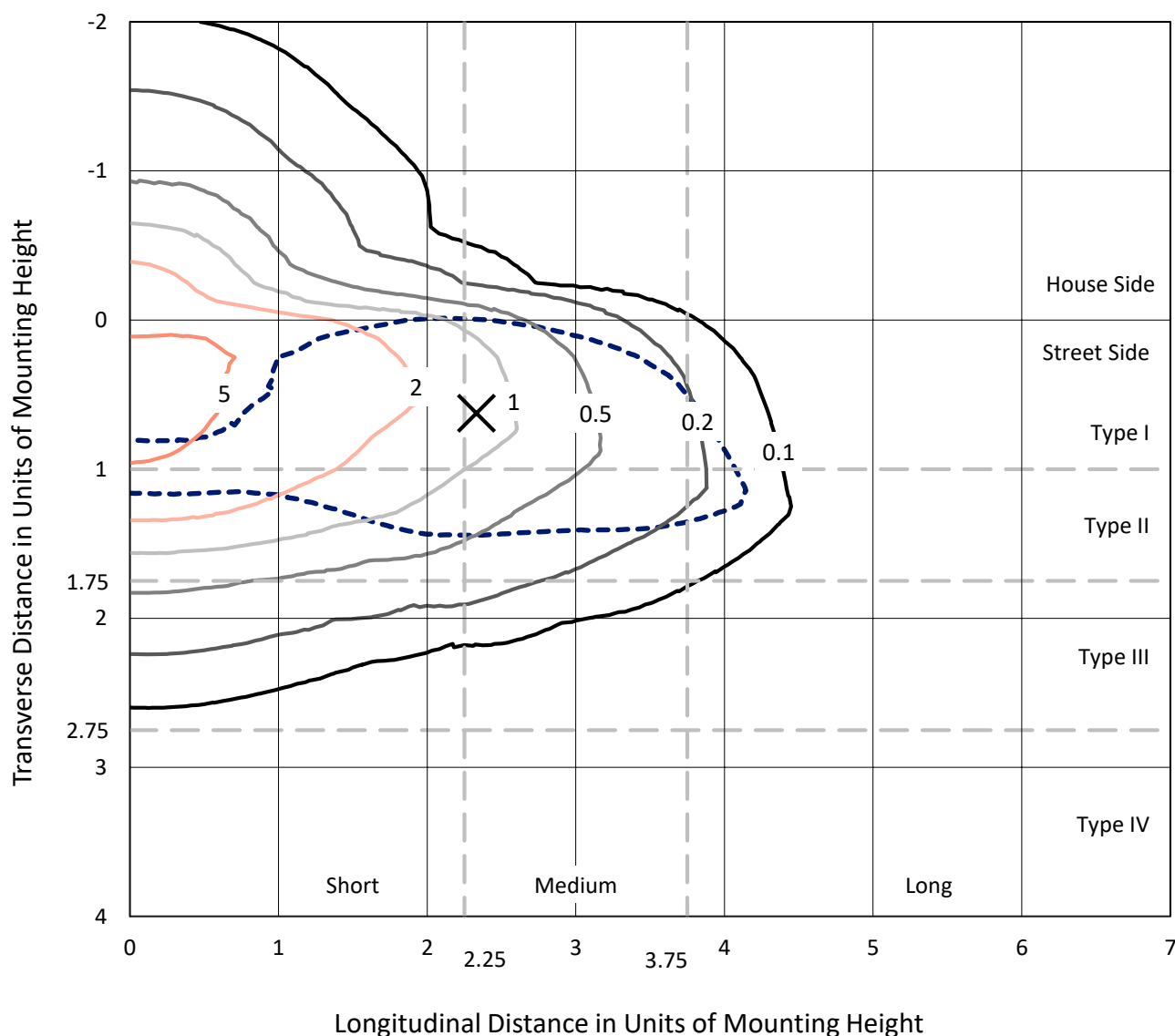
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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

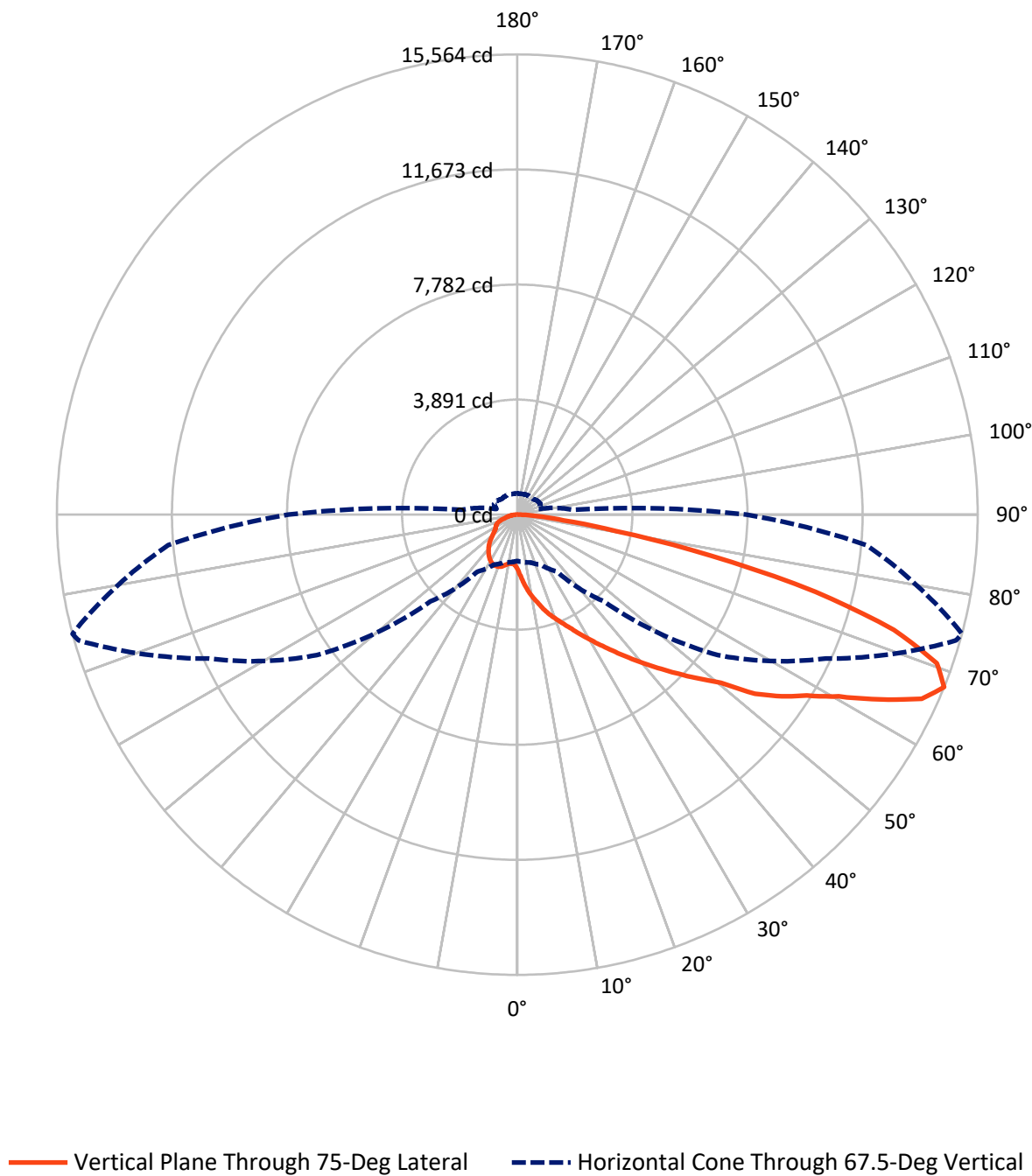


Based on 25 foot mounting height. Maximum calculated value = 6.2 fc  
 Type II - Medium - Semi-Cutoff

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## Luminous Intensity Polar Plot



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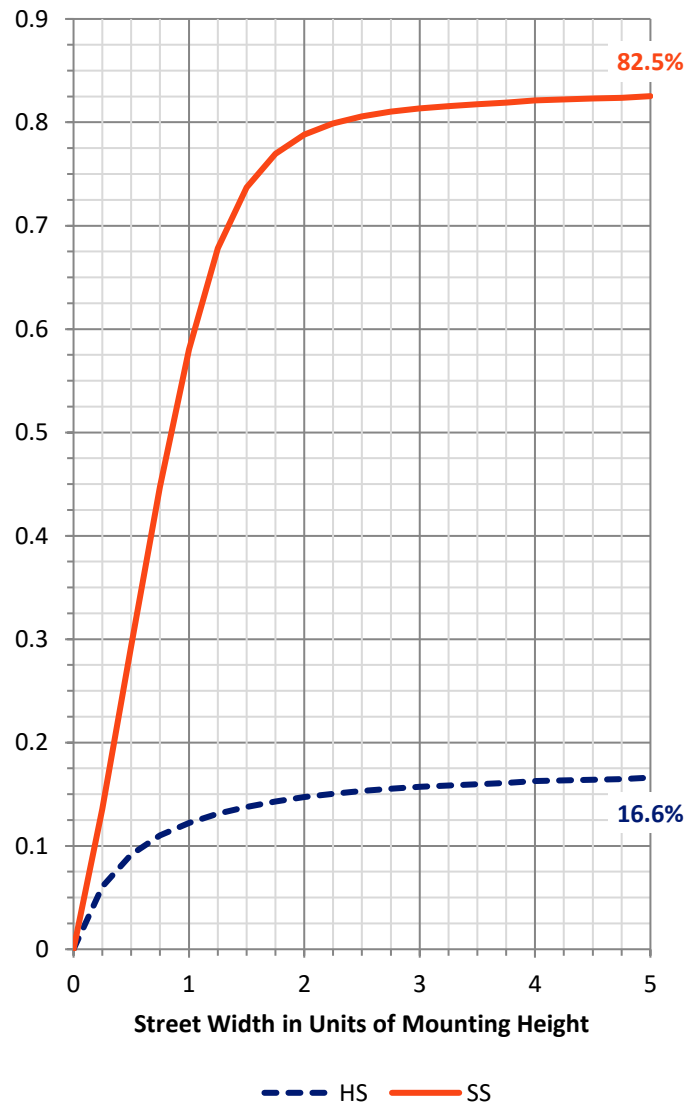
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3188.7   | 0.0    | 3188.7  |
|                    | % Fixture | 17.1     | 0.0    | 17.1    |
| <b>Street Side</b> | Lumens    | 15484.3  | 0.0    | 15484.3 |
|                    | % Fixture | 82.9     | 0.0    | 82.9    |
| <b>Total</b>       | Lumens    | 18673.0  | 0.0    | 18673.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 217.4   | 1.2       |
| 10°-20°   | 785.6   | 4.2       |
| 20°-30°   | 1432.8  | 7.7       |
| 30°-40°   | 2351.8  | 12.6      |
| 40°-50°   | 3401.0  | 18.2      |
| 50°-60°   | 4008.1  | 21.5      |
| 60°-70°   | 3894.9  | 20.9      |
| 70°-80°   | 2165.0  | 11.6      |
| 80°-90°   | 416.3   | 2.2       |
| 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°    | 18673.0 | 100.0     |
| 0°-180°   | 18673.0 | 100.0     |

**Coefficient of Utilization**



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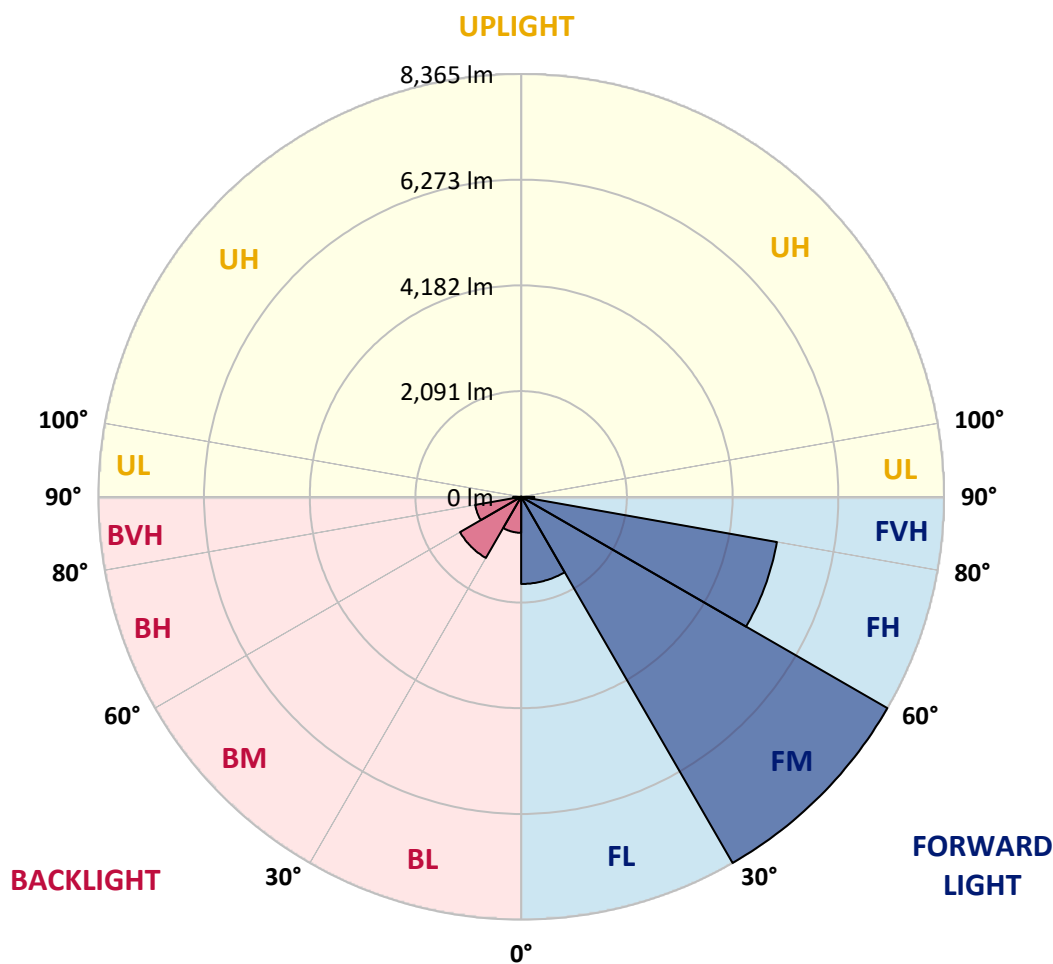
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1724.0 | 9.2       |                         |      |         |
| FM   | (30°-60°)   | 8364.5 | 44.8      |                         |      |         |
| FH   | (60°-80°)   | 5136.7 | 27.5      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 259.1  | 1.4       |                         |      | G3/500  |
| BL   | (0°-30°)    | 711.7  | 3.8       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1396.5 | 7.5       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 923.3  | 4.9       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 157.2  | 0.8       |                         |      | G2/225  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°     | 74°     | 75°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0°    | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3  | 1850.3  | 1850.3  | 1850.3  |
| 2.5°  | 2623.2 | 2631.0 | 2615.4 | 2580.3 | 2529.5 | 2435.9 | 2353.9 | 2209.4  | 2080.6  | 2065.0  | 1928.4  |
| 5°    | 3083.9 | 3091.7 | 3072.1 | 3029.2 | 2974.6 | 2873.1 | 2759.9 | 2572.5  | 2365.6  | 2326.6  | 2037.7  |
| 7.5°  | 3400.0 | 3403.9 | 3380.5 | 3337.6 | 3294.6 | 3193.2 | 3079.9 | 2869.2  | 2615.4  | 2584.2  | 2178.2  |
| 10°   | 3669.4 | 3677.2 | 3646.0 | 3618.6 | 3571.8 | 3470.3 | 3353.2 | 3130.7  | 2869.2  | 2826.2  | 2322.6  |
| 12.5° | 3919.2 | 3927.0 | 3907.5 | 3884.1 | 3868.5 | 3774.8 | 3646.0 | 3380.5  | 3099.5  | 3052.6  | 2494.4  |
| 15°   | 4087.1 | 4094.9 | 4098.8 | 4130.0 | 4149.5 | 4083.2 | 3954.4 | 3665.5  | 3349.3  | 3306.4  | 2697.4  |
| 17.5° | 4040.2 | 4059.8 | 4118.3 | 4231.5 | 4352.5 | 4356.4 | 4251.0 | 3946.5  | 3595.2  | 3548.4  | 2904.3  |
| 20°   | 3903.6 | 3919.2 | 3989.5 | 4161.2 | 4399.4 | 4536.0 | 4528.2 | 4231.5  | 3825.5  | 3774.8  | 3095.6  |
| 22.5° | 4016.8 | 4036.3 | 4036.3 | 4141.7 | 4375.9 | 4629.7 | 4731.2 | 4512.6  | 4055.9  | 4009.0  | 3286.8  |
| 25°   | 4500.9 | 4512.6 | 4430.6 | 4387.7 | 4473.5 | 4707.8 | 4899.0 | 4817.1  | 4336.9  | 4282.3  | 3493.7  |
| 27.5° | 5176.2 | 5156.7 | 5055.2 | 4883.4 | 4789.7 | 4852.2 | 5047.4 | 5105.9  | 4660.9  | 4594.5  | 3708.4  |
| 30°   | 5847.6 | 5835.9 | 5718.8 | 5488.5 | 5277.7 | 5145.0 | 5211.3 | 5363.6  | 5012.2  | 4934.2  | 3915.3  |
| 32.5° | 6476.1 | 6456.6 | 6327.8 | 6058.4 | 5820.3 | 5574.4 | 5445.5 | 5597.8  | 5387.0  | 5297.2  | 4145.6  |
| 35°   | 7053.8 | 7003.1 | 6874.3 | 6593.2 | 6347.3 | 6113.1 | 5796.9 | 5820.3  | 5793.0  | 5699.3  | 4399.4  |
| 37.5° | 7522.3 | 7483.2 | 7342.7 | 7081.1 | 6819.6 | 6597.1 | 6265.3 | 6074.0  | 6230.2  | 6140.4  | 4692.1  |
| 40°   | 7936.0 | 7893.1 | 7748.7 | 7487.1 | 7245.1 | 7034.3 | 6772.8 | 6382.4  | 6722.0  | 6620.5  | 5020.0  |
| 42.5° | 8248.3 | 8217.1 | 8100.0 | 7842.4 | 7608.1 | 7416.9 | 7288.0 | 6772.8  | 7233.4  | 7135.8  | 5379.2  |
| 45°   | 8416.2 | 8385.0 | 8322.5 | 8115.6 | 7900.9 | 7752.6 | 7764.3 | 7237.3  | 7768.2  | 7686.2  | 5804.7  |
| 47.5° | 8209.3 | 8232.7 | 8287.4 | 8248.3 | 8115.6 | 8045.3 | 8189.8 | 7717.4  | 8365.4  | 8287.4  | 6265.3  |
| 50°   | 7655.0 | 7678.4 | 7897.0 | 8166.4 | 8213.2 | 8299.1 | 8572.3 | 8271.8  | 8997.8  | 8935.4  | 6835.2  |
| 52.5° | 6292.6 | 6421.4 | 7026.5 | 7670.6 | 8111.7 | 8466.9 | 8997.8 | 9095.4  | 10063.5 | 10063.5 | 7842.4  |
| 55°   | 4754.6 | 4867.8 | 5558.7 | 6683.0 | 7717.4 | 8482.5 | 9310.1 | 9653.6  | 10832.5 | 10848.1 | 8369.3  |
| 57.5° | 3852.9 | 3923.1 | 4262.7 | 5414.3 | 6889.9 | 8287.4 | 9681.0 | 10133.8 | 11472.7 | 11543.0 | 9048.6  |
| 60°   | 3126.8 | 3165.8 | 3388.3 | 4188.6 | 5746.1 | 7760.4 | 9946.4 | 10820.8 | 12386.2 | 12483.7 | 9915.2  |
| 62.5° | 2513.9 | 2553.0 | 2701.3 | 3181.4 | 4508.7 | 6772.8 | 9899.6 | 11535.2 | 13604.1 | 13764.1 | 11051.1 |
| 65°   | 2006.5 | 2049.4 | 2147.0 | 2443.7 | 3341.5 | 5547.0 | 9419.4 | 11902.1 | 14864.9 | 15021.1 | 11804.5 |
| 67.5° | 1565.3 | 1604.4 | 1670.7 | 1865.9 | 2353.9 | 4149.5 | 8283.5 | 11515.7 | 15431.0 | 15563.7 | 11843.6 |
| 70°   | 1182.8 | 1202.3 | 1257.0 | 1381.9 | 1682.5 | 2755.9 | 6483.9 | 10219.7 | 14923.5 | 15044.5 | 11062.8 |
| 72.5° | 917.3  | 913.4  | 944.7  | 1007.1 | 1175.0 | 1897.2 | 4297.9 | 8310.8  | 13194.2 | 13319.1 | 9438.9  |
| 75°   | 749.5  | 745.6  | 765.1  | 784.6  | 851.0  | 1272.6 | 2537.3 | 6257.5  | 10649.0 | 10410.9 | 7081.1  |
| 77.5° | 632.4  | 628.5  | 648.0  | 651.9  | 679.2  | 878.3  | 1444.3 | 4118.3  | 7104.6  | 6694.7  | 3989.5  |
| 80°   | 534.8  | 530.9  | 554.3  | 562.1  | 581.6  | 644.1  | 831.5  | 2229.0  | 3567.9  | 3380.5  | 1905.0  |
| 82.5° | 402.1  | 417.7  | 460.6  | 480.1  | 503.6  | 476.2  | 515.3  | 983.7   | 1655.1  | 1581.0  | 827.6   |
| 85°   | 195.2  | 230.3  | 347.4  | 386.5  | 413.8  | 300.6  | 351.3  | 464.5   | 745.6   | 710.5   | 335.7   |
| 87.5° | 66.4   | 58.6   | 206.9  | 245.9  | 269.3  | 136.6  | 195.2  | 257.6   | 308.4   | 281.1   | 105.4   |
| 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 | 1850.3 |
| 2.5°  | 1869.8 | 1811.3 | 1725.4 | 1659.0 | 1616.1 | 1581.0 | 1565.3 | 1561.4 | 1553.6 | 1549.7 | 1549.7 |
| 5°    | 1908.9 | 1803.5 | 1670.7 | 1600.5 | 1581.0 | 1565.3 | 1573.2 | 1577.1 | 1577.1 | 1577.1 | 1577.1 |
| 7.5°  | 1967.4 | 1819.1 | 1659.0 | 1612.2 | 1608.3 | 1608.3 | 1631.7 | 1643.4 | 1651.2 | 1651.2 | 1651.2 |
| 10°   | 2045.5 | 1846.4 | 1678.6 | 1639.5 | 1651.2 | 1659.0 | 1686.4 | 1702.0 | 1709.8 | 1713.7 | 1717.6 |
| 12.5° | 2150.9 | 1905.0 | 1717.6 | 1686.4 | 1702.0 | 1705.9 | 1725.4 | 1733.2 | 1741.0 | 1744.9 | 1744.9 |
| 15°   | 2291.4 | 1990.8 | 1780.0 | 1741.0 | 1744.9 | 1741.0 | 1741.0 | 1733.2 | 1729.3 | 1729.3 | 1737.1 |
| 17.5° | 2435.9 | 2072.8 | 1834.7 | 1780.0 | 1764.4 | 1733.2 | 1709.8 | 1690.3 | 1678.6 | 1670.7 | 1674.6 |
| 20°   | 2580.3 | 2147.0 | 1865.9 | 1787.9 | 1744.9 | 1694.2 | 1651.2 | 1623.9 | 1608.3 | 1592.7 | 1600.5 |
| 22.5° | 2724.7 | 2217.3 | 1877.6 | 1764.4 | 1702.0 | 1627.8 | 1581.0 | 1538.0 | 1502.9 | 1479.5 | 1483.4 |
| 25°   | 2884.8 | 2295.3 | 1877.6 | 1737.1 | 1643.4 | 1565.3 | 1506.8 | 1436.5 | 1385.8 | 1366.3 | 1374.1 |
| 27.5° | 3044.8 | 2361.7 | 1858.1 | 1686.4 | 1577.1 | 1499.0 | 1413.1 | 1331.1 | 1299.9 | 1288.2 | 1292.1 |
| 30°   | 3204.9 | 2412.4 | 1815.2 | 1623.9 | 1506.8 | 1420.9 | 1307.7 | 1253.1 | 1214.0 | 1182.8 | 1186.7 |
| 32.5° | 3364.9 | 2447.6 | 1756.6 | 1545.8 | 1432.6 | 1323.3 | 1229.6 | 1167.2 | 1096.9 | 1057.9 | 1061.8 |
| 35°   | 3548.4 | 2474.9 | 1686.4 | 1467.8 | 1350.6 | 1237.4 | 1167.2 | 1065.7 | 991.5  | 960.3  | 952.5  |
| 37.5° | 3739.7 | 2494.4 | 1612.2 | 1381.9 | 1268.7 | 1175.0 | 1104.7 | 979.8  | 909.5  | 866.6  | 862.7  |
| 40°   | 3946.5 | 2502.2 | 1522.4 | 1292.1 | 1190.6 | 1136.0 | 1022.7 | 929.1  | 808.0  | 780.7  | 780.7  |
| 42.5° | 4192.5 | 2498.3 | 1432.6 | 1202.3 | 1104.7 | 1046.2 | 964.2  | 921.3  | 815.9  | 788.5  | 772.9  |
| 45°   | 4473.5 | 2498.3 | 1335.0 | 1096.9 | 1018.8 | 933.0  | 897.8  | 870.5  | 800.2  | 812.0  | 819.8  |
| 47.5° | 4793.6 | 2490.5 | 1217.9 | 1011.0 | 948.6  | 874.4  | 854.9  | 796.3  | 769.0  | 776.8  | 784.6  |
| 50°   | 5234.7 | 2502.2 | 1112.5 | 940.8  | 897.8  | 835.4  | 812.0  | 780.7  | 769.0  | 772.9  | 769.0  |
| 52.5° | 5847.6 | 2463.2 | 1011.0 | 897.8  | 858.8  | 776.8  | 776.8  | 772.9  | 776.8  | 772.9  | 772.9  |
| 55°   | 6183.3 | 2377.3 | 936.9  | 874.4  | 831.5  | 749.5  | 765.1  | 772.9  | 780.7  | 776.8  | 776.8  |
| 57.5° | 6659.6 | 2318.7 | 878.3  | 858.8  | 815.9  | 741.7  | 757.3  | 772.9  | 776.8  | 772.9  | 772.9  |
| 60°   | 7221.7 | 2279.7 | 839.3  | 862.7  | 804.1  | 741.7  | 761.2  | 772.9  | 769.0  | 765.1  | 765.1  |
| 62.5° | 7873.6 | 2264.1 | 812.0  | 874.4  | 792.4  | 745.6  | 761.2  | 772.9  | 757.3  | 753.4  | 753.4  |
| 65°   | 8119.5 | 2123.6 | 776.8  | 882.2  | 800.2  | 745.6  | 757.3  | 761.2  | 741.7  | 737.8  | 733.9  |
| 67.5° | 7740.9 | 1881.5 | 726.1  | 866.6  | 823.7  | 745.6  | 745.6  | 741.7  | 718.3  | 714.4  | 706.6  |
| 70°   | 6893.8 | 1561.4 | 648.0  | 815.9  | 839.3  | 749.5  | 730.0  | 710.5  | 687.0  | 687.0  | 671.4  |
| 72.5° | 5644.6 | 1229.6 | 546.5  | 726.1  | 827.6  | 761.2  | 698.7  | 671.4  | 644.1  | 644.1  | 628.5  |
| 75°   | 4067.6 | 917.3  | 437.2  | 605.1  | 776.8  | 757.3  | 659.7  | 624.6  | 593.3  | 589.4  | 569.9  |
| 77.5° | 2318.7 | 644.1  | 355.2  | 472.3  | 690.9  | 737.8  | 624.6  | 569.9  | 534.8  | 523.1  | 511.4  |
| 80°   | 1190.6 | 433.3  | 288.9  | 370.8  | 573.8  | 683.1  | 597.3  | 507.5  | 468.4  | 448.9  | 429.4  |
| 82.5° | 566.0  | 288.9  | 222.5  | 273.3  | 433.3  | 597.3  | 562.1  | 437.2  | 394.3  | 370.8  | 347.4  |
| 85°   | 253.7  | 171.8  | 148.3  | 175.7  | 308.4  | 464.5  | 495.8  | 359.1  | 308.4  | 386.5  | 285.0  |
| 87.5° | 82.0   | 78.1   | 78.1   | 82.0   | 148.3  | 203.0  | 363.0  | 265.4  | 245.9  | 203.0  | 171.8  |
| 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)