

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: P158439

Luminaire Tested: **VST-E04-LED-E-U-SL3-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P158439  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33713)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VST-E04-LED-E-U-SL3-7030  
Description: VENTUS LED SITE/ROADWAY LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL  
Light Source: (84) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11021.8 lumens  
Efficiency: N/A  
Efficacy: 113.4 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')  
IES Classification: Type III - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

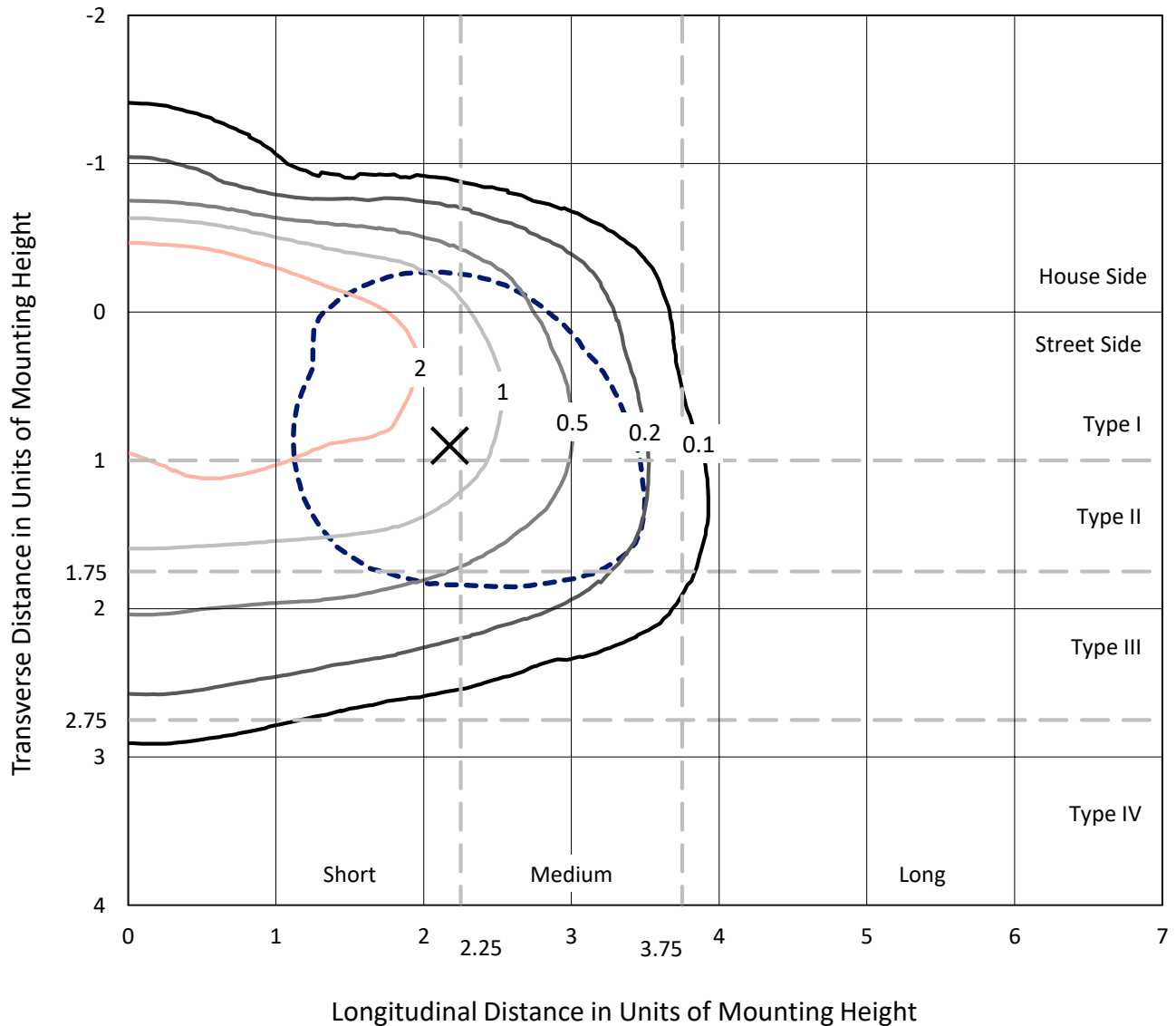
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

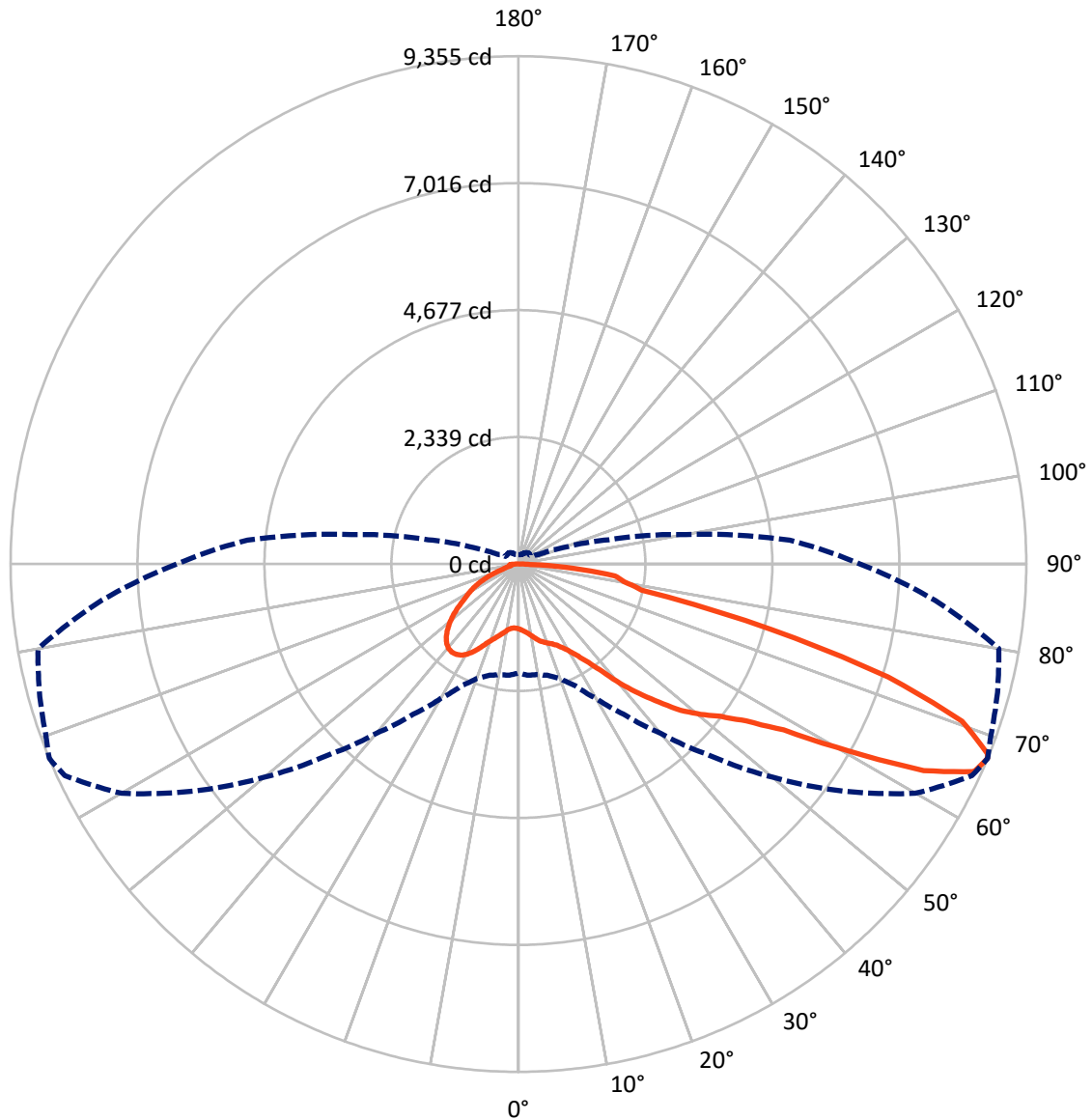
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.8 fc  
 Type III - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral      - - - Horizontal Cone Through 67-Deg Vertical

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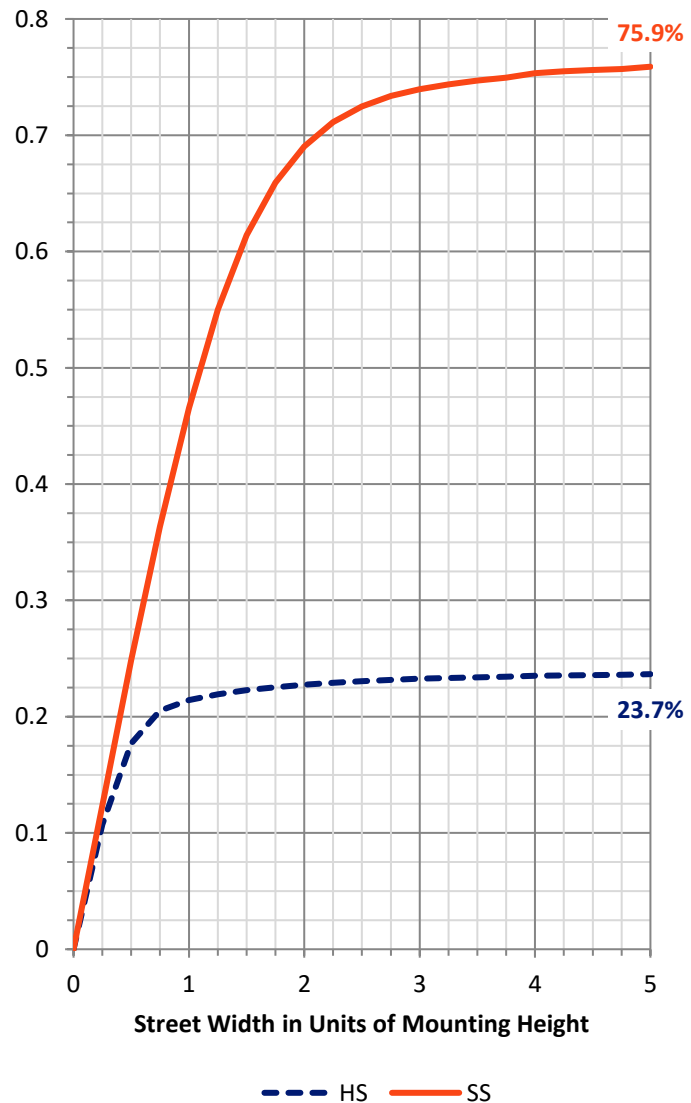
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2644.2   | 0.0    | 2644.2  |
|                    | % Fixture | 24.0     | 0.0    | 24.0    |
| <b>Street Side</b> | Lumens    | 8377.7   | 0.0    | 8377.7  |
|                    | % Fixture | 76.0     | 0.0    | 76.0    |
| <b>Total</b>       | Lumens    | 11021.8  | 0.0    | 11021.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 118.7   | 1.1       |
| 10°-20°   | 404.5   | 3.7       |
| 20°-30°   | 722.2   | 6.6       |
| 30°-40°   | 1058.4  | 9.6       |
| 40°-50°   | 1635.4  | 14.8      |
| 50°-60°   | 2381.5  | 21.6      |
| 60°-70°   | 3102.3  | 28.1      |
| 70°-80°   | 1388.7  | 12.6      |
| 80°-90°   | 210.0   | 1.9       |
| 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°    | 11021.8 | 100.0     |
| 0°-180°   | 11021.8 | 100.0     |



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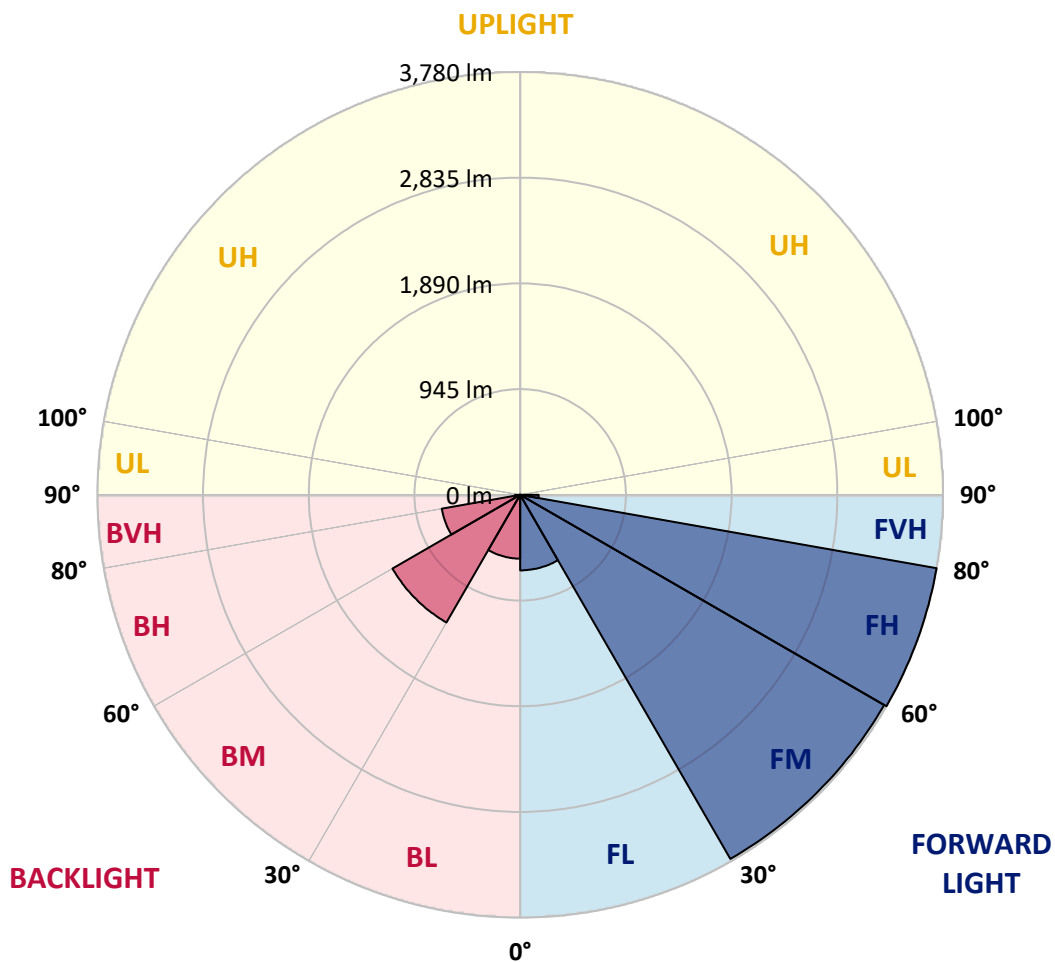
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 675.3  | 6.1       |                         |      |         |
| FM   | (30°-60°)   | 3757.9 | 34.1      |                         |      |         |
| FH   | (60°-80°)   | 3779.6 | 34.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 164.9  | 1.5       |                         |      | G2/225  |
| BL   | (0°-30°)    | 570.2  | 5.2       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1317.5 | 12.0      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 711.4  | 6.5       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 45.1   | 0.4       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

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

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 |
| 2.5°  | 1241.4 | 1244.3 | 1245.1 | 1244.3 | 1245.1 | 1242.2 | 1241.4 | 1237.0 | 1239.2 | 1233.4 | 1231.9 |
| 5°    | 1308.6 | 1310.8 | 1312.3 | 1306.5 | 1307.9 | 1305.0 | 1301.3 | 1297.0 | 1291.1 | 1283.1 | 1278.0 |
| 7.5°  | 1374.4 | 1378.1 | 1377.3 | 1375.1 | 1370.0 | 1367.1 | 1359.8 | 1353.2 | 1343.0 | 1333.5 | 1326.9 |
| 10°   | 1462.8 | 1462.1 | 1462.1 | 1449.7 | 1442.4 | 1435.8 | 1422.6 | 1412.4 | 1402.2 | 1388.3 | 1381.0 |
| 12.5° | 1565.1 | 1560.0 | 1557.8 | 1549.0 | 1533.7 | 1522.0 | 1503.0 | 1483.3 | 1465.0 | 1450.4 | 1438.7 |
| 15°   | 1663.8 | 1663.8 | 1657.9 | 1644.0 | 1629.4 | 1614.1 | 1587.0 | 1558.5 | 1528.6 | 1505.2 | 1493.5 |
| 17.5° | 1753.6 | 1745.6 | 1740.5 | 1722.2 | 1706.9 | 1682.0 | 1652.1 | 1621.4 | 1584.1 | 1551.2 | 1528.6 |
| 20°   | 1819.4 | 1812.8 | 1801.9 | 1779.2 | 1752.9 | 1723.7 | 1688.6 | 1652.8 | 1612.6 | 1576.8 | 1551.2 |
| 22.5° | 1857.4 | 1849.4 | 1832.5 | 1802.6 | 1766.8 | 1725.9 | 1684.9 | 1651.3 | 1614.8 | 1587.8 | 1566.6 |
| 25°   | 1877.1 | 1869.1 | 1846.4 | 1807.0 | 1758.7 | 1704.7 | 1657.9 | 1625.0 | 1603.8 | 1597.3 | 1594.3 |
| 27.5° | 1876.4 | 1869.8 | 1845.7 | 1800.4 | 1738.3 | 1676.2 | 1625.8 | 1598.0 | 1595.8 | 1621.4 | 1640.4 |
| 30°   | 1857.4 | 1853.0 | 1831.1 | 1785.8 | 1720.8 | 1655.7 | 1609.0 | 1594.3 | 1617.0 | 1671.1 | 1717.8 |
| 32.5° | 1838.4 | 1836.2 | 1820.9 | 1779.9 | 1724.4 | 1669.6 | 1637.5 | 1638.9 | 1685.7 | 1769.0 | 1844.2 |
| 35°   | 1840.6 | 1843.5 | 1841.3 | 1819.4 | 1784.3 | 1755.8 | 1740.5 | 1772.6 | 1845.7 | 1946.5 | 2047.4 |
| 37.5° | 1859.6 | 1870.5 | 1884.4 | 1886.6 | 1887.3 | 1883.0 | 1915.1 | 1983.1 | 2089.7 | 2221.3 | 2379.1 |
| 40°   | 1901.2 | 1913.7 | 1953.8 | 1988.9 | 2034.2 | 2088.3 | 2153.3 | 2247.6 | 2379.8 | 2542.0 | 2735.7 |
| 42.5° | 2030.6 | 2048.1 | 2097.8 | 2162.8 | 2246.1 | 2330.9 | 2428.1 | 2556.7 | 2718.9 | 2889.8 | 3093.0 |
| 45°   | 2199.3 | 2235.9 | 2290.7 | 2363.0 | 2488.0 | 2607.1 | 2732.7 | 2876.7 | 3049.1 | 3263.2 | 3467.8 |
| 47.5° | 2409.8 | 2446.3 | 2526.0 | 2603.4 | 2751.0 | 2899.3 | 3036.7 | 3187.2 | 3374.3 | 3593.5 | 3820.0 |
| 50°   | 2593.9 | 2635.6 | 2706.4 | 2810.9 | 2981.9 | 3163.8 | 3315.8 | 3478.8 | 3635.9 | 3866.8 | 4095.5 |
| 52.5° | 2738.6 | 2768.5 | 2836.5 | 2932.2 | 3122.9 | 3322.4 | 3514.6 | 3695.8 | 3882.1 | 4113.0 | 4324.9 |
| 55°   | 2756.9 | 2784.6 | 2851.1 | 2960.7 | 3154.3 | 3375.7 | 3597.1 | 3812.0 | 4075.7 | 4327.8 | 4608.4 |
| 57.5° | 2677.9 | 2700.6 | 2767.8 | 2865.7 | 3054.2 | 3306.3 | 3586.2 | 3861.6 | 4199.2 | 4539.7 | 4882.4 |
| 60°   | 2566.1 | 2588.8 | 2641.4 | 2719.6 | 2889.8 | 3161.7 | 3488.3 | 3865.3 | 4313.9 | 4805.7 | 5309.9 |
| 62.5° | 2443.4 | 2463.1 | 2505.5 | 2561.0 | 2710.8 | 2961.4 | 3335.6 | 3841.2 | 4407.5 | 5070.2 | 5847.6 |
| 65°   | 2236.6 | 2284.1 | 2302.4 | 2359.4 | 2509.2 | 2745.9 | 3126.6 | 3678.2 | 4369.5 | 5187.8 | 6185.2 |
| 67°   | 2007.9 | 2056.1 | 2065.6 | 2123.4 | 2243.2 | 2470.4 | 2857.7 | 3376.5 | 4068.4 | 4984.7 | 6110.7 |
| 67.5° | 1934.8 | 1975.8 | 1990.4 | 2048.1 | 2161.4 | 2375.4 | 2743.0 | 3267.6 | 3976.4 | 4873.6 | 6020.8 |
| 70°   | 1422.6 | 1467.9 | 1484.0 | 1508.1 | 1589.2 | 1767.5 | 2010.8 | 2466.0 | 3170.4 | 3977.1 | 5079.0 |
| 72.5° | 761.4  | 797.9  | 813.2  | 849.1  | 890.7  | 987.9  | 1174.2 | 1500.8 | 1945.8 | 2661.1 | 3613.2 |
| 75°   | 515.1  | 529.7  | 540.7  | 565.5  | 608.7  | 686.1  | 767.9  | 882.7  | 1151.6 | 1501.5 | 2056.1 |
| 77.5° | 293.7  | 300.3  | 301.8  | 306.2  | 340.5  | 414.3  | 548.7  | 743.1  | 952.8  | 1088.0 | 1315.2 |
| 80°   | 127.1  | 140.3  | 150.5  | 143.9  | 141.8  | 157.1  | 196.6  | 293.0  | 574.3  | 911.9  | 1082.1 |
| 82.5° | 68.7   | 74.5   | 83.3   | 84.0   | 88.4   | 93.5   | 101.6  | 120.6  | 169.5  | 342.0  | 746.0  |
| 85°   | 35.8   | 37.3   | 49.7   | 57.0   | 60.6   | 63.6   | 65.0   | 72.3   | 83.3   | 105.9  | 185.6  |
| 87.5° | 5.1    | 7.3    | 8.8    | 11.7   | 13.2   | 13.9   | 16.1   | 20.5   | 24.1   | 29.2   | 49.7   |
| 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):**

|       | 55°    | 60°    | 65°    | 67.5°  | 70°    | 75°    | 80°    | 85°    | 90°    | 95°    | 100°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 |
| 2.5°  | 1225.4 | 1223.9 | 1219.5 | 1216.6 | 1213.7 | 1210.7 | 1207.1 | 1204.2 | 1199.0 | 1195.4 | 1191.0 |
| 5°    | 1270.7 | 1261.9 | 1256.0 | 1248.0 | 1246.5 | 1237.0 | 1227.5 | 1223.2 | 1214.4 | 1207.1 | 1198.3 |
| 7.5°  | 1316.7 | 1306.5 | 1297.0 | 1290.4 | 1286.7 | 1273.6 | 1264.1 | 1253.1 | 1242.9 | 1233.4 | 1223.2 |
| 10°   | 1370.8 | 1360.5 | 1350.3 | 1345.9 | 1339.3 | 1326.9 | 1318.9 | 1305.0 | 1294.8 | 1283.1 | 1269.2 |
| 12.5° | 1427.0 | 1419.7 | 1412.4 | 1406.6 | 1403.6 | 1397.8 | 1386.1 | 1374.4 | 1360.5 | 1348.8 | 1332.8 |
| 15°   | 1476.7 | 1471.6 | 1468.7 | 1467.2 | 1467.2 | 1463.6 | 1452.6 | 1441.6 | 1427.0 | 1413.9 | 1396.3 |
| 17.5° | 1511.8 | 1509.6 | 1511.8 | 1514.0 | 1516.9 | 1514.0 | 1511.8 | 1499.4 | 1489.9 | 1473.8 | 1456.2 |
| 20°   | 1532.2 | 1536.6 | 1547.6 | 1554.9 | 1561.5 | 1566.6 | 1568.8 | 1558.5 | 1546.1 | 1534.4 | 1522.7 |
| 22.5° | 1554.2 | 1566.6 | 1585.6 | 1596.5 | 1607.5 | 1625.8 | 1630.1 | 1622.8 | 1613.3 | 1606.0 | 1593.6 |
| 25°   | 1590.7 | 1609.0 | 1641.8 | 1659.4 | 1674.7 | 1701.8 | 1705.4 | 1706.9 | 1704.7 | 1698.8 | 1683.5 |
| 27.5° | 1647.7 | 1683.5 | 1727.3 | 1750.0 | 1766.8 | 1801.9 | 1815.7 | 1815.7 | 1809.9 | 1816.5 | 1816.5 |
| 30°   | 1747.1 | 1794.6 | 1851.5 | 1864.7 | 1891.0 | 1921.7 | 1944.3 | 1947.3 | 1948.0 | 1961.9 | 1982.3 |
| 32.5° | 1899.8 | 1945.1 | 2008.6 | 2023.3 | 2045.9 | 2075.1 | 2100.7 | 2097.8 | 2104.4 | 2134.3 | 2161.4 |
| 35°   | 2121.9 | 2167.9 | 2209.6 | 2229.3 | 2239.5 | 2265.8 | 2275.3 | 2291.4 | 2311.1 | 2348.4 | 2344.8 |
| 37.5° | 2450.7 | 2491.6 | 2497.5 | 2509.9 | 2497.5 | 2502.6 | 2509.9 | 2528.9 | 2581.5 | 2615.1 | 2561.0 |
| 40°   | 2846.7 | 2914.7 | 2908.1 | 2893.5 | 2865.7 | 2828.5 | 2841.6 | 2870.8 | 2927.8 | 2898.6 | 2753.2 |
| 42.5° | 3220.1 | 3290.3 | 3277.1 | 3260.3 | 3198.9 | 3185.0 | 3183.6 | 3207.7 | 3238.4 | 3155.1 | 2903.7 |
| 45°   | 3587.6 | 3659.2 | 3636.6 | 3627.1 | 3586.2 | 3556.2 | 3581.1 | 3582.5 | 3574.5 | 3396.2 | 3035.2 |
| 47.5° | 3966.9 | 4032.6 | 4018.0 | 4026.0 | 3983.7 | 3963.9 | 3966.1 | 3955.9 | 3880.6 | 3600.8 | 3137.5 |
| 50°   | 4273.0 | 4361.4 | 4370.2 | 4351.9 | 4329.3 | 4299.3 | 4376.0 | 4348.3 | 4181.0 | 3799.5 | 3236.2 |
| 52.5° | 4511.2 | 4630.3 | 4675.6 | 4663.9 | 4645.7 | 4649.3 | 4793.3 | 4824.7 | 4547.8 | 4050.2 | 3345.1 |
| 55°   | 4793.3 | 4981.0 | 5054.8 | 5098.7 | 5079.7 | 5152.8 | 5482.3 | 5498.4 | 5057.8 | 4377.5 | 3486.8 |
| 57.5° | 5200.3 | 5469.1 | 5702.2 | 5764.3 | 5824.3 | 6061.7 | 6596.6 | 6433.6 | 5719.8 | 4872.9 | 3666.6 |
| 60°   | 5819.1 | 6408.1 | 6786.6 | 6985.3 | 7125.6 | 7457.3 | 7965.9 | 7553.0 | 6544.7 | 5462.6 | 3892.3 |
| 62.5° | 6685.7 | 7546.5 | 8179.2 | 8378.7 | 8436.4 | 8627.1 | 8995.4 | 8205.5 | 6994.1 | 5727.1 | 3912.1 |
| 65°   | 7330.9 | 8363.4 | 9121.1 | 9223.4 | 9154.7 | 9158.3 | 9254.8 | 8171.2 | 6826.7 | 5496.2 | 3573.0 |
| 67°   | 7288.5 | 8444.5 | 9220.5 | 9354.9 | 9259.9 | 9135.0 | 8984.4 | 7705.8 | 6289.0 | 5012.5 | 3128.8 |
| 67.5° | 7223.5 | 8366.3 | 9177.3 | 9319.1 | 9232.1 | 9089.7 | 8869.7 | 7525.3 | 6121.6 | 4861.9 | 3038.2 |
| 70°   | 6244.4 | 7379.1 | 8471.5 | 8671.0 | 8707.5 | 8577.5 | 7960.0 | 6345.2 | 4970.1 | 3955.2 | 2359.4 |
| 72.5° | 4860.5 | 5871.0 | 6951.7 | 7124.9 | 7265.2 | 6890.3 | 5793.6 | 4382.6 | 3622.7 | 2850.4 | 1708.3 |
| 75°   | 3209.1 | 4237.2 | 4782.3 | 4807.9 | 4628.9 | 3934.7 | 2830.7 | 2195.0 | 2020.3 | 1675.4 | 1057.3 |
| 77.5° | 1717.1 | 2491.6 | 2507.0 | 2321.4 | 2236.6 | 1667.4 | 676.6  | 373.4  | 415.8  | 472.0  | 420.9  |
| 80°   | 1280.9 | 1587.0 | 1839.1 | 1977.2 | 2018.1 | 1429.9 | 350.0  | 198.0  | 173.2  | 157.8  | 155.6  |
| 82.5° | 1155.2 | 1533.0 | 1718.6 | 1793.8 | 1774.8 | 1176.4 | 196.6  | 133.0  | 110.3  | 119.8  | 136.6  |
| 85°   | 453.0  | 818.4  | 1076.3 | 1042.0 | 875.4  | 438.4  | 107.4  | 71.6   | 71.6   | 103.8  | 134.4  |
| 87.5° | 92.8   | 168.1  | 228.0  | 217.7  | 195.8  | 84.8   | 52.6   | 43.1   | 43.8   | 84.0   | 127.1  |
| 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):**

|       | 105°   | 110°   | 115°   | 120°   | 125°   | 130°   | 135°   | 140°   | 145°   | 150°   | 155°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 |
| 2.5°  | 1186.6 | 1182.2 | 1179.3 | 1176.4 | 1173.5 | 1172.0 | 1169.8 | 1169.8 | 1165.4 | 1164.0 | 1162.5 |
| 5°    | 1191.7 | 1184.4 | 1179.3 | 1172.7 | 1167.6 | 1163.2 | 1157.4 | 1155.9 | 1150.8 | 1147.2 | 1145.7 |
| 7.5°  | 1213.7 | 1202.7 | 1191.7 | 1183.7 | 1176.4 | 1166.9 | 1160.3 | 1154.5 | 1149.4 | 1145.7 | 1141.3 |
| 10°   | 1255.3 | 1243.6 | 1228.3 | 1213.7 | 1204.2 | 1189.5 | 1179.3 | 1169.1 | 1163.2 | 1158.9 | 1153.0 |
| 12.5° | 1316.7 | 1299.9 | 1281.6 | 1264.1 | 1248.0 | 1229.0 | 1218.8 | 1206.4 | 1199.0 | 1195.4 | 1191.0 |
| 15°   | 1379.5 | 1361.3 | 1338.6 | 1321.8 | 1303.5 | 1288.9 | 1279.4 | 1268.5 | 1262.6 | 1258.2 | 1255.3 |
| 17.5° | 1443.8 | 1422.6 | 1406.6 | 1389.8 | 1381.0 | 1370.0 | 1357.6 | 1343.7 | 1326.9 | 1316.7 | 1302.8 |
| 20°   | 1509.6 | 1493.5 | 1484.0 | 1474.5 | 1464.3 | 1448.9 | 1424.1 | 1395.6 | 1364.2 | 1334.2 | 1305.7 |
| 22.5° | 1586.3 | 1576.8 | 1575.3 | 1566.6 | 1545.4 | 1508.9 | 1462.8 | 1409.5 | 1356.1 | 1306.5 | 1267.7 |
| 25°   | 1694.4 | 1694.4 | 1687.1 | 1651.3 | 1601.7 | 1535.9 | 1458.4 | 1381.7 | 1310.8 | 1242.9 | 1191.7 |
| 27.5° | 1830.4 | 1825.2 | 1789.4 | 1715.6 | 1626.5 | 1524.2 | 1420.4 | 1323.3 | 1232.7 | 1158.1 | 1092.4 |
| 30°   | 1980.1 | 1944.3 | 1867.6 | 1751.4 | 1617.7 | 1486.2 | 1359.1 | 1246.5 | 1139.9 | 1048.5 | 971.1  |
| 32.5° | 2135.8 | 2048.8 | 1910.7 | 1751.4 | 1587.0 | 1429.2 | 1282.3 | 1144.2 | 1022.2 | 919.9  | 827.9  |
| 35°   | 2276.8 | 2118.2 | 1921.0 | 1722.9 | 1527.1 | 1345.2 | 1174.9 | 1018.6 | 872.4  | 762.1  | 661.3  |
| 37.5° | 2404.7 | 2164.3 | 1910.0 | 1667.4 | 1440.2 | 1226.8 | 1027.3 | 854.9  | 689.8  | 583.1  | 496.9  |
| 40°   | 2488.0 | 2173.8 | 1864.7 | 1580.5 | 1316.0 | 1066.8 | 846.1  | 653.2  | 522.4  | 425.3  | 367.5  |
| 42.5° | 2539.8 | 2155.5 | 1791.6 | 1461.4 | 1148.6 | 865.9  | 635.0  | 468.4  | 371.2  | 317.1  | 295.2  |
| 45°   | 2569.1 | 2108.0 | 1683.5 | 1298.4 | 946.2  | 658.3  | 450.8  | 338.3  | 285.7  | 266.7  | 259.4  |
| 47.5° | 2567.6 | 2031.3 | 1548.3 | 1109.9 | 722.6  | 458.9  | 319.3  | 263.8  | 249.2  | 243.3  | 241.9  |
| 50°   | 2552.3 | 1937.0 | 1389.8 | 905.3  | 521.7  | 320.0  | 252.8  | 236.7  | 233.1  | 229.4  | 228.0  |
| 52.5° | 2531.1 | 1820.1 | 1214.4 | 705.8  | 370.5  | 255.7  | 229.4  | 225.0  | 222.1  | 218.5  | 217.0  |
| 55°   | 2491.6 | 1676.2 | 1024.4 | 531.2  | 290.1  | 230.9  | 221.4  | 219.9  | 216.3  | 211.2  | 208.2  |
| 57.5° | 2443.4 | 1530.0 | 842.5  | 415.0  | 256.5  | 225.0  | 219.9  | 217.7  | 212.6  | 206.8  | 200.9  |
| 60°   | 2425.9 | 1409.5 | 700.0  | 350.0  | 248.4  | 227.2  | 223.6  | 220.7  | 213.4  | 204.6  | 198.0  |
| 62.5° | 2316.3 | 1273.6 | 597.7  | 324.4  | 252.8  | 236.7  | 235.3  | 230.9  | 219.9  | 209.7  | 199.5  |
| 65°   | 2032.8 | 1077.0 | 506.4  | 306.9  | 261.6  | 252.8  | 254.3  | 247.7  | 236.7  | 222.9  | 204.6  |
| 67°   | 1719.3 | 878.3  | 421.6  | 290.1  | 268.2  | 269.6  | 274.7  | 269.6  | 255.7  | 236.0  | 211.2  |
| 67.5° | 1636.0 | 827.9  | 400.4  | 285.0  | 269.6  | 274.0  | 279.9  | 276.2  | 262.3  | 239.7  | 214.1  |
| 70°   | 1215.9 | 583.1  | 298.8  | 257.9  | 269.6  | 287.2  | 300.3  | 304.0  | 288.6  | 257.2  | 219.9  |
| 72.5° | 856.4  | 376.3  | 229.4  | 223.6  | 244.8  | 268.2  | 293.0  | 305.4  | 287.9  | 253.5  | 211.9  |
| 75°   | 514.4  | 235.3  | 186.3  | 190.0  | 206.1  | 230.2  | 249.9  | 255.0  | 233.1  | 211.2  | 183.4  |
| 77.5° | 238.2  | 156.4  | 146.1  | 151.3  | 166.6  | 177.6  | 177.6  | 167.3  | 150.5  | 137.4  | 131.5  |
| 80°   | 140.3  | 127.9  | 127.1  | 136.6  | 146.9  | 138.8  | 126.4  | 112.5  | 103.8  | 99.4   | 97.2   |
| 82.5° | 131.5  | 136.6  | 145.4  | 147.6  | 139.6  | 119.8  | 104.5  | 90.6   | 86.2   | 84.0   | 81.8   |
| 85°   | 154.9  | 165.9  | 151.3  | 139.6  | 123.5  | 100.8  | 81.8   | 70.1   | 68.0   | 65.8   | 62.8   |
| 87.5° | 143.2  | 136.6  | 119.1  | 102.3  | 84.8   | 61.4   | 44.6   | 40.2   | 43.1   | 42.4   | 40.9   |
| 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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|-------|--------|--------|--------|--------|--------|
| 0°    | 1194.7 | 1194.7 | 1194.7 | 1194.7 | 1194.7 |
| 2.5°  | 1163.2 | 1163.2 | 1160.3 | 1158.9 | 1162.5 |
| 5°    | 1142.8 | 1143.5 | 1141.3 | 1140.6 | 1141.3 |
| 7.5°  | 1138.4 | 1137.7 | 1136.2 | 1134.7 | 1136.2 |
| 10°   | 1151.6 | 1150.8 | 1148.6 | 1150.1 | 1147.9 |
| 12.5° | 1191.0 | 1195.4 | 1194.7 | 1196.1 | 1199.0 |
| 15°   | 1255.3 | 1254.6 | 1252.4 | 1253.8 | 1256.0 |
| 17.5° | 1291.8 | 1286.0 | 1280.9 | 1278.7 | 1278.7 |
| 20°   | 1283.1 | 1266.3 | 1257.5 | 1252.4 | 1250.9 |
| 22.5° | 1231.2 | 1207.1 | 1188.8 | 1184.4 | 1180.8 |
| 25°   | 1146.4 | 1116.5 | 1093.1 | 1088.0 | 1078.5 |
| 27.5° | 1047.8 | 1007.6 | 979.8  | 974.0  | 968.9  |
| 30°   | 918.5  | 872.4  | 840.3  | 819.8  | 826.4  |
| 32.5° | 760.6  | 716.8  | 679.5  | 646.7  | 641.5  |
| 35°   | 587.5  | 539.2  | 506.4  | 491.7  | 482.2  |
| 37.5° | 438.4  | 398.2  | 376.3  | 362.4  | 363.1  |
| 40°   | 335.4  | 314.2  | 302.5  | 293.0  | 293.7  |
| 42.5° | 279.9  | 270.4  | 267.4  | 263.0  | 260.9  |
| 45°   | 253.5  | 250.6  | 251.4  | 247.0  | 245.5  |
| 47.5° | 238.9  | 236.7  | 237.5  | 234.5  | 233.8  |
| 50°   | 227.2  | 225.8  | 226.5  | 224.3  | 223.6  |
| 52.5° | 215.6  | 216.3  | 215.6  | 214.1  | 214.1  |
| 55°   | 205.3  | 204.6  | 206.1  | 203.9  | 203.9  |
| 57.5° | 197.3  | 196.6  | 196.6  | 195.8  | 195.8  |
| 60°   | 192.9  | 190.0  | 189.2  | 189.2  | 190.0  |
| 62.5° | 190.7  | 185.6  | 184.9  | 184.9  | 185.6  |
| 65°   | 191.4  | 183.4  | 180.5  | 179.7  | 179.0  |
| 67°   | 192.2  | 180.5  | 174.6  | 171.7  | 171.0  |
| 67.5° | 192.9  | 179.0  | 172.4  | 169.5  | 168.1  |
| 70°   | 188.5  | 168.8  | 159.3  | 154.2  | 152.7  |
| 72.5° | 177.6  | 156.4  | 144.7  | 138.1  | 136.6  |
| 75°   | 157.8  | 141.8  | 131.5  | 124.2  | 121.3  |
| 77.5° | 122.0  | 114.7  | 111.1  | 106.7  | 105.2  |
| 80°   | 95.0   | 91.3   | 89.9   | 87.0   | 86.2   |
| 82.5° | 78.9   | 75.3   | 73.1   | 69.4   | 67.2   |
| 85°   | 61.4   | 57.0   | 55.5   | 52.6   | 51.1   |
| 87.5° | 40.2   | 38.0   | 37.3   | 33.6   | 32.1   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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