

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P641449

Luminaire Tested: GWS-SA5F-830-U-SLL-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P641449  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-38)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA5F-830-U-SLL-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (80) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

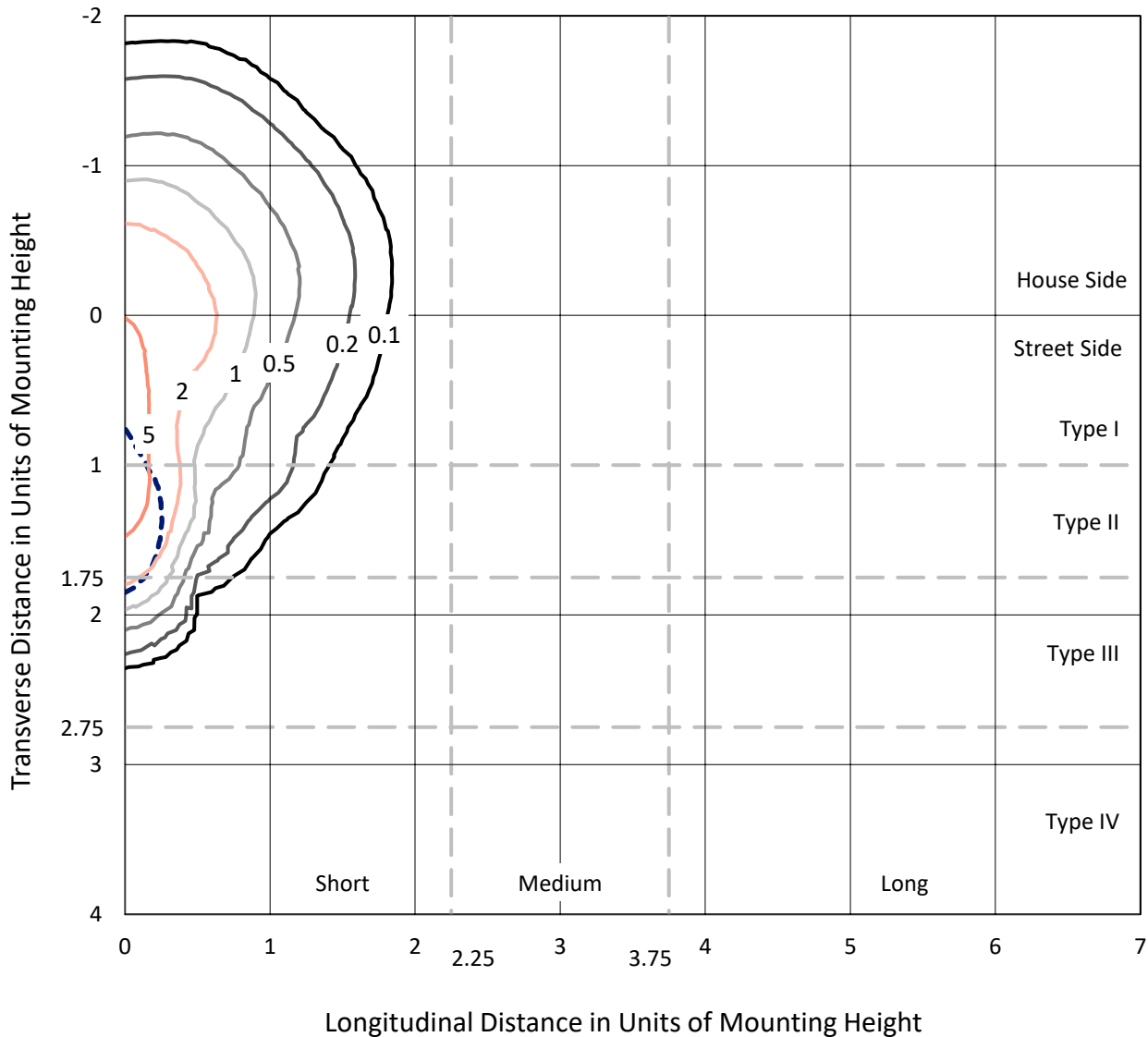
Lumens per Lamp: N/A  
Luminaire Lumens: 17779.2 lumens  
Efficiency: N/A  
Efficacy: 57.3 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 310.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
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

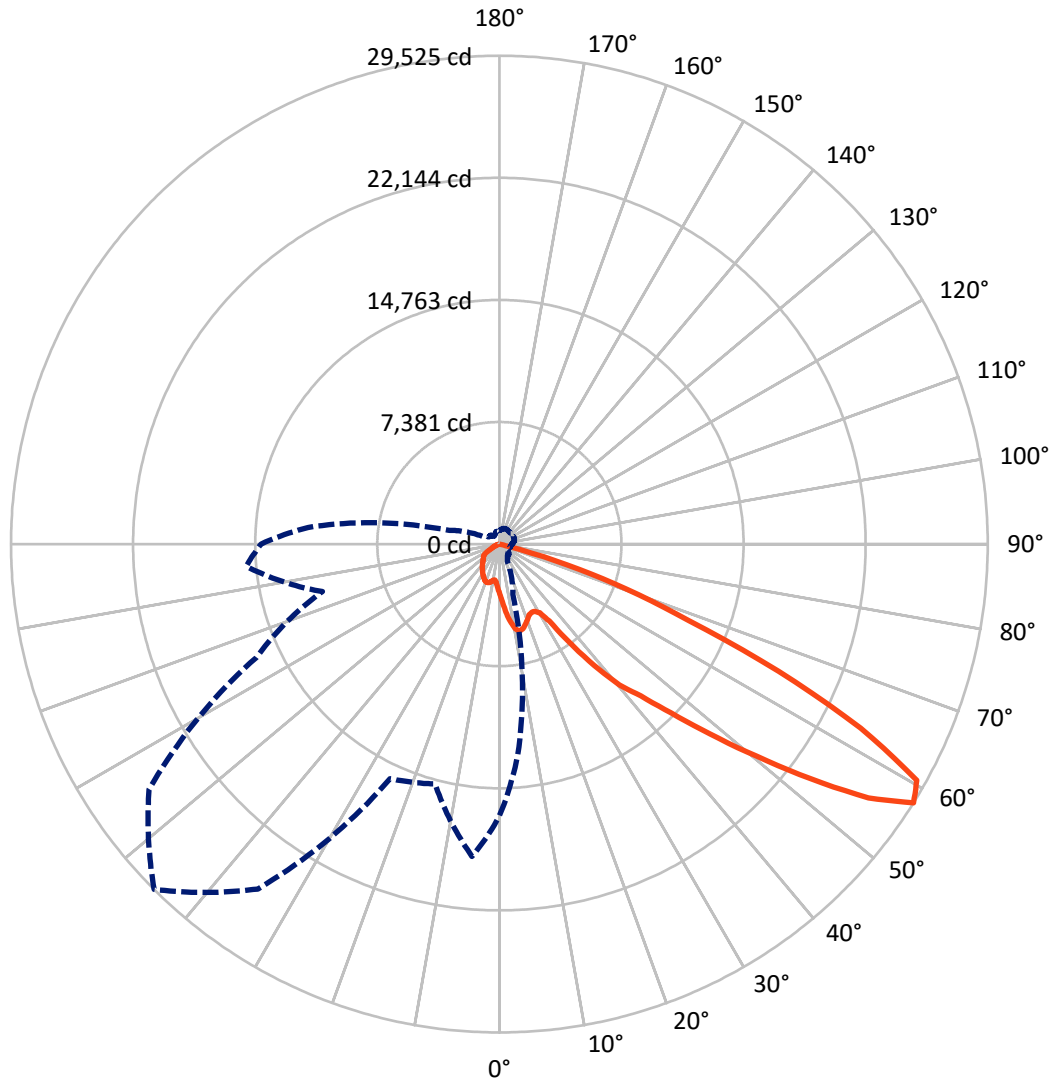
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.6 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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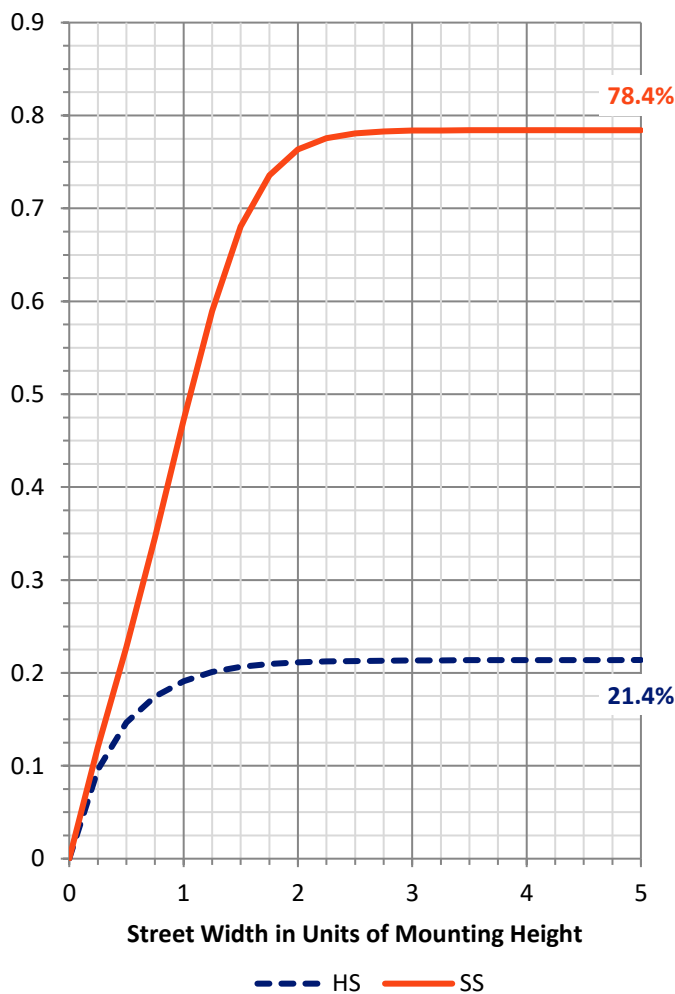
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3830.2   | 0.0    | 3830.2  |
|                    | % Fixture | 21.5     | 0.0    | 21.5    |
| <b>Street Side</b> | Lumens    | 13949.0  | 0.0    | 13949.0 |
|                    | % Fixture | 78.5     | 0.0    | 78.5    |
| <b>Total</b>       | Lumens    | 17779.2  | 0.0    | 17779.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 298.6   | 1.7       |
| 10°-20°   | 982.5   | 5.5       |
| 20°-30°   | 1594.5  | 9.0       |
| 30°-40°   | 2447.2  | 13.8      |
| 40°-50°   | 3908.3  | 22.0      |
| 50°-60°   | 5472.3  | 30.8      |
| 60°-70°   | 2805.8  | 15.8      |
| 70°-80°   | 270.1   | 1.5       |
| 80°-90°   | 0.0     | 0.0       |
| 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°    | 17779.2 | 100.0     |
| 0°-180°   | 17779.2 | 100.0     |

**Coefficient of Utilization**



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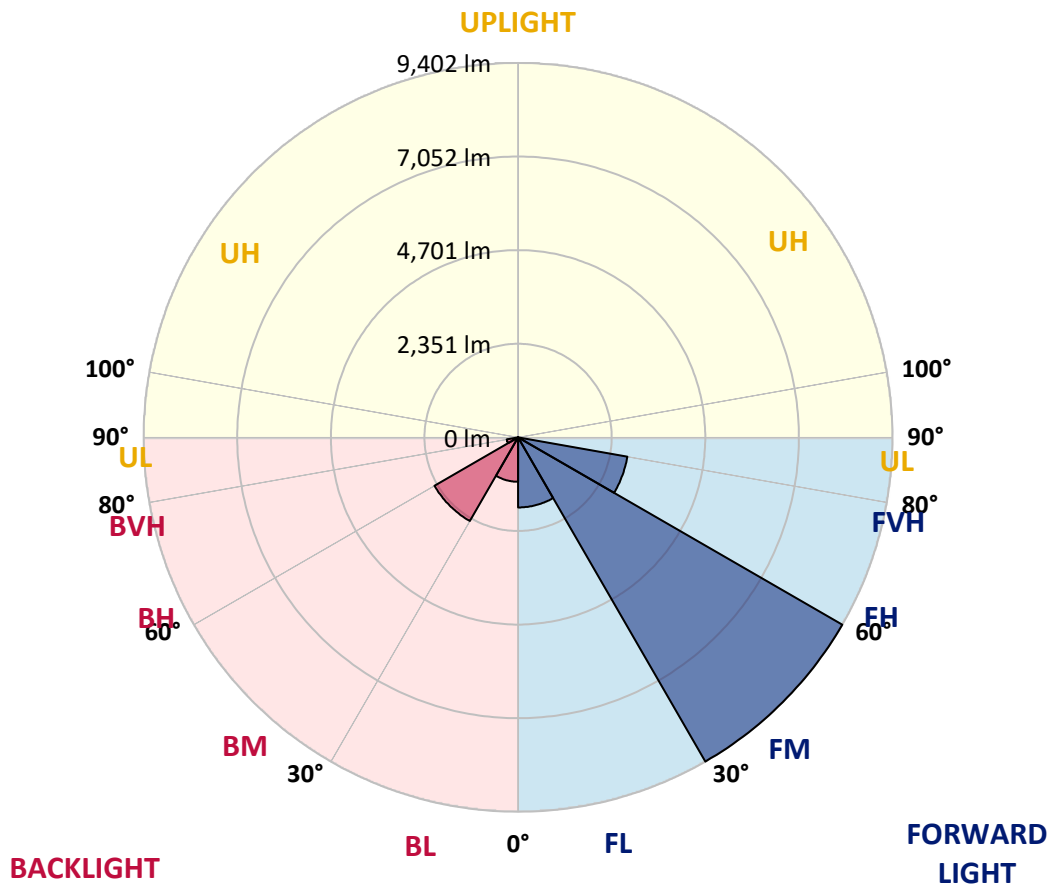
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1760.3 | 9.9       |                         |      |         |
| FM (30°-60°)   | 9402.1 | 52.9      |                         |      |         |
| FH (60°-80°)   | 2786.6 | 15.7      |                         |      | G2/5000 |
| FVH (80°-90°)  | 0.0    | 0.0       |                         |      | G0/10   |
| BL (0°-30°)    | 1115.3 | 6.3       | B3/2500                 |      |         |
| BM (30°-60°)   | 2425.6 | 13.6      | B2/2500                 |      |         |
| BH (60°-80°)   | 289.3  | 1.6       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 0.0    | 0.0       |                         |      | G0/10   |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3020.9  | 3020.9  | 3020.9  | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 |
| 2.5°  | 3356.1  | 3349.0  | 3325.2  | 3244.4 | 3194.5 | 3116.0 | 3059.0 | 2985.3 | 2904.5 | 2854.6 | 2804.7 |
| 5°    | 3712.6  | 3693.6  | 3629.4  | 3444.0 | 3301.4 | 3146.9 | 3023.3 | 2887.8 | 2742.9 | 2647.8 | 2559.8 |
| 7.5°  | 4054.9  | 4026.3  | 3940.8  | 3627.0 | 3410.7 | 3189.7 | 3013.8 | 2816.5 | 2612.1 | 2469.5 | 2360.2 |
| 10°   | 4390.0  | 4325.8  | 4190.3  | 3805.3 | 3513.0 | 3246.7 | 3040.0 | 2814.2 | 2574.1 | 2393.5 | 2272.2 |
| 12.5° | 4665.7  | 4618.2  | 4432.8  | 3974.1 | 3598.5 | 3258.6 | 3004.3 | 2795.2 | 2633.5 | 2512.3 | 2400.6 |
| 15°   | 4903.4  | 4851.1  | 4675.2  | 4126.2 | 3672.2 | 3211.1 | 2854.6 | 2671.6 | 2697.7 | 2745.2 | 2650.2 |
| 17.5° | 5122.1  | 5067.4  | 4877.3  | 4252.1 | 3700.7 | 3094.6 | 2645.4 | 2557.5 | 2702.5 | 2880.7 | 2845.1 |
| 20°   | 5347.9  | 5286.1  | 5053.1  | 4354.4 | 3691.2 | 2911.6 | 2433.9 | 2460.0 | 2664.4 | 2868.8 | 2887.8 |
| 22.5° | 5611.7  | 5547.5  | 5276.6  | 4485.1 | 3684.1 | 2692.9 | 2250.9 | 2374.5 | 2593.1 | 2766.6 | 2799.9 |
| 25°   | 5961.1  | 5885.0  | 5587.9  | 4677.6 | 3703.1 | 2493.3 | 2120.1 | 2291.3 | 2471.9 | 2628.8 | 2647.8 |
| 27.5° | 6422.2  | 6324.7  | 5946.8  | 4915.3 | 3743.5 | 2336.4 | 2063.1 | 2177.2 | 2317.4 | 2457.6 | 2474.3 |
| 30°   | 7023.5  | 6899.9  | 6358.0  | 5122.1 | 3724.5 | 2227.1 | 2025.1 | 2063.1 | 2146.3 | 2260.4 | 2262.7 |
| 32.5° | 7727.1  | 7558.3  | 6819.1  | 5300.3 | 3560.5 | 2146.3 | 1972.8 | 1946.6 | 1965.6 | 2053.6 | 2070.2 |
| 35°   | 8554.2  | 8335.5  | 7327.8  | 5469.1 | 3261.0 | 1989.4 | 1877.7 | 1789.8 | 1782.6 | 1825.4 | 1865.8 |
| 37.5° | 9502.6  | 9241.1  | 7969.5  | 5685.4 | 2906.9 | 1825.4 | 1737.5 | 1649.5 | 1611.5 | 1632.9 | 1694.7 |
| 40°   | 10377.2 | 10087.3 | 8639.8  | 5946.8 | 2545.6 | 1678.0 | 1573.5 | 1483.1 | 1438.0 | 1445.1 | 1521.2 |
| 42.5° | 11404.0 | 11104.5 | 9459.8  | 6289.1 | 2246.1 | 1578.2 | 1402.3 | 1309.6 | 1250.2 | 1283.5 | 1371.4 |
| 45°   | 12963.2 | 12623.3 | 10655.3 | 6586.2 | 2008.4 | 1554.4 | 1252.6 | 1121.9 | 1093.3 | 1150.4 | 1255.0 |
| 47.5° | 15092.9 | 14676.9 | 12297.7 | 6766.8 | 1806.4 | 1575.8 | 1148.0 | 969.7  | 976.9  | 1041.1 | 1145.6 |
| 50°   | 17205.9 | 16756.6 | 14196.8 | 6529.1 | 1640.0 | 1533.1 | 1095.7 | 850.9  | 896.1  | 953.1  | 1048.2 |
| 52.5° | 18658.1 | 18073.4 | 15121.4 | 5842.2 | 1487.9 | 1371.4 | 1091.0 | 739.2  | 824.8  | 843.8  | 924.6  |
| 55°   | 18715.2 | 17995.0 | 14648.4 | 4606.3 | 1281.1 | 1157.5 | 1041.1 | 646.5  | 746.3  | 753.5  | 822.4  |
| 57.5° | 16404.9 | 15753.6 | 12801.6 | 3163.6 | 1138.5 | 848.5  | 829.5  | 565.7  | 613.2  | 672.6  | 715.4  |
| 60°   | 12480.7 | 11926.9 | 9573.9  | 1449.9 | 865.2  | 539.5  | 568.1  | 487.2  | 458.7  | 546.7  | 589.5  |
| 62.5° | 7643.9  | 7289.7  | 5742.4  | 641.7  | 551.4  | 287.6  | 344.6  | 387.4  | 344.6  | 377.9  | 413.6  |
| 65°   | 3035.2  | 2878.3  | 2179.6  | 273.3  | 225.8  | 145.0  | 156.9  | 225.8  | 242.4  | 266.2  | 299.5  |
| 67.5° | 527.7   | 499.1   | 366.0   | 121.2  | 92.7   | 87.9   | 76.1   | 104.6  | 147.4  | 164.0  | 190.1  |
| 70°   | 68.9    | 66.6    | 59.4    | 49.9   | 47.5   | 42.8   | 33.3   | 66.6   | 99.8   | 104.6  | 121.2  |
| 72.5° | 16.6    | 14.3    | 14.3    | 11.9   | 14.3   | 4.8    | 4.8    | 35.7   | 71.3   | 73.7   | 85.6   |
| 75°   | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 11.9   | 45.2   | 49.9   | 59.4   |
| 77.5° | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 2.4    |
| 80°   | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 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°    | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 |
| 2.5°  | 2764.3 | 2716.7 | 2700.1 | 2676.3 | 2645.4 | 2654.9 | 2612.1 | 2597.9 | 2619.3 | 2647.8 | 2640.7 |
| 5°    | 2512.3 | 2460.0 | 2424.4 | 2369.7 | 2360.2 | 2338.8 | 2324.5 | 2305.5 | 2329.3 | 2362.6 | 2369.7 |
| 7.5°  | 2312.7 | 2267.5 | 2231.8 | 2215.2 | 2203.3 | 2193.8 | 2165.3 | 2151.0 | 2151.0 | 2165.3 | 2177.2 |
| 10°   | 2227.1 | 2193.8 | 2186.7 | 2191.4 | 2210.5 | 2208.1 | 2181.9 | 2162.9 | 2139.1 | 2127.3 | 2141.5 |
| 12.5° | 2345.9 | 2291.3 | 2281.8 | 2284.1 | 2307.9 | 2305.5 | 2277.0 | 2253.2 | 2248.5 | 2253.2 | 2298.4 |
| 15°   | 2548.0 | 2464.8 | 2403.0 | 2391.1 | 2403.0 | 2398.2 | 2376.8 | 2362.6 | 2369.7 | 2438.6 | 2514.7 |
| 17.5° | 2728.6 | 2600.3 | 2488.5 | 2445.8 | 2443.4 | 2436.2 | 2414.9 | 2410.1 | 2445.8 | 2574.1 | 2685.8 |
| 20°   | 2780.9 | 2654.9 | 2495.7 | 2441.0 | 2429.1 | 2422.0 | 2398.2 | 2405.4 | 2450.5 | 2605.0 | 2700.1 |
| 22.5° | 2712.0 | 2590.7 | 2424.4 | 2369.7 | 2360.2 | 2357.8 | 2334.0 | 2343.6 | 2381.6 | 2517.1 | 2595.5 |
| 25°   | 2581.2 | 2479.0 | 2305.5 | 2258.0 | 2258.0 | 2253.2 | 2231.8 | 2236.6 | 2260.4 | 2379.2 | 2455.3 |
| 27.5° | 2422.0 | 2324.5 | 2179.6 | 2132.0 | 2139.1 | 2146.3 | 2120.1 | 2113.0 | 2132.0 | 2243.7 | 2288.9 |
| 30°   | 2239.0 | 2170.0 | 2056.0 | 2013.2 | 2010.8 | 2039.3 | 2003.7 | 1994.2 | 2020.3 | 2108.2 | 2117.8 |
| 32.5° | 2060.7 | 2027.4 | 1946.6 | 1913.3 | 1915.7 | 1920.5 | 1901.5 | 1901.5 | 1925.2 | 1972.8 | 1970.4 |
| 35°   | 1887.2 | 1865.8 | 1851.5 | 1827.8 | 1825.4 | 1815.9 | 1815.9 | 1820.7 | 1846.8 | 1863.4 | 1832.5 |
| 37.5° | 1720.8 | 1742.2 | 1758.9 | 1735.1 | 1716.1 | 1716.1 | 1716.1 | 1737.5 | 1761.2 | 1754.1 | 1701.8 |
| 40°   | 1573.5 | 1618.6 | 1670.9 | 1644.8 | 1599.6 | 1597.2 | 1606.7 | 1642.4 | 1678.0 | 1635.3 | 1587.7 |
| 42.5° | 1447.5 | 1504.5 | 1578.2 | 1564.0 | 1514.0 | 1506.9 | 1514.0 | 1559.2 | 1587.7 | 1533.1 | 1480.8 |
| 45°   | 1323.9 | 1395.2 | 1483.1 | 1483.1 | 1428.5 | 1421.3 | 1423.7 | 1483.1 | 1499.8 | 1435.6 | 1369.1 |
| 47.5° | 1219.3 | 1297.7 | 1390.4 | 1390.4 | 1345.3 | 1331.0 | 1342.9 | 1404.7 | 1416.6 | 1326.3 | 1264.5 |
| 50°   | 1119.5 | 1205.1 | 1307.3 | 1300.1 | 1269.2 | 1257.3 | 1278.7 | 1345.3 | 1331.0 | 1231.2 | 1167.0 |
| 52.5° | 993.5  | 1083.8 | 1224.1 | 1231.2 | 1214.6 | 1216.9 | 1243.1 | 1285.9 | 1245.5 | 1124.2 | 1069.6 |
| 55°   | 879.4  | 972.1  | 1112.4 | 1150.4 | 1150.4 | 1148.0 | 1159.9 | 1193.2 | 1159.9 | 1014.9 | 948.4  |
| 57.5° | 755.8  | 834.3  | 950.7  | 960.2  | 967.4  | 941.2  | 957.9  | 1003.0 | 986.4  | 862.8  | 824.8  |
| 60°   | 620.4  | 686.9  | 753.5  | 760.6  | 729.7  | 675.0  | 705.9  | 758.2  | 770.1  | 677.4  | 634.6  |
| 62.5° | 439.7  | 503.9  | 582.3  | 582.3  | 551.4  | 496.8  | 537.2  | 582.3  | 565.7  | 470.6  | 444.5  |
| 65°   | 328.0  | 387.4  | 446.8  | 473.0  | 446.8  | 408.8  | 439.7  | 473.0  | 446.8  | 368.4  | 330.4  |
| 67.5° | 211.5  | 251.9  | 287.6  | 309.0  | 313.7  | 309.0  | 323.2  | 313.7  | 282.8  | 230.6  | 209.2  |
| 70°   | 128.3  | 149.7  | 168.8  | 187.8  | 202.0  | 209.2  | 216.3  | 194.9  | 164.0  | 135.5  | 128.3  |
| 72.5° | 92.7   | 111.7  | 128.3  | 142.6  | 159.2  | 164.0  | 164.0  | 149.7  | 121.2  | 95.1   | 87.9   |
| 75°   | 64.2   | 80.8   | 95.1   | 104.6  | 118.8  | 123.6  | 123.6  | 111.7  | 90.3   | 68.9   | 61.8   |
| 77.5° | 2.4    | 16.6   | 16.6   | 14.3   | 19.0   | 23.8   | 23.8   | 28.5   | 26.1   | 19.0   | 16.6   |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 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):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°    | 270°    | 275°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 0°    | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9 | 3020.9  | 3020.9  | 3020.9  |
| 2.5°  | 2654.9 | 2740.5 | 2764.3 | 2852.2 | 2930.6 | 3009.1 | 3104.1 | 3161.2 | 3246.7  | 3306.2  | 3339.4  |
| 5°    | 2393.5 | 2464.8 | 2550.3 | 2681.1 | 2816.5 | 2966.3 | 3146.9 | 3303.8 | 3501.1  | 3646.1  | 3693.6  |
| 7.5°  | 2203.3 | 2296.0 | 2395.8 | 2559.8 | 2745.2 | 2944.9 | 3199.2 | 3455.9 | 3757.8  | 3955.0  | 4081.0  |
| 10°   | 2167.7 | 2262.7 | 2395.8 | 2557.5 | 2752.4 | 2980.5 | 3291.9 | 3624.7 | 4002.6  | 4242.6  | 4385.2  |
| 12.5° | 2338.8 | 2441.0 | 2498.0 | 2571.7 | 2719.1 | 2973.4 | 3372.7 | 3795.8 | 4240.3  | 4501.7  | 4653.8  |
| 15°   | 2590.7 | 2681.1 | 2588.4 | 2495.7 | 2590.7 | 2897.4 | 3417.9 | 3938.4 | 4449.4  | 4751.3  | 4908.2  |
| 17.5° | 2764.3 | 2771.4 | 2569.4 | 2372.1 | 2398.2 | 2759.5 | 3434.5 | 4081.0 | 4672.8  | 4989.0  | 5153.0  |
| 20°   | 2747.6 | 2690.6 | 2486.2 | 2267.5 | 2186.7 | 2581.2 | 3415.5 | 4207.0 | 4898.6  | 5229.0  | 5390.6  |
| 22.5° | 2619.3 | 2552.7 | 2379.2 | 2165.3 | 2008.4 | 2369.7 | 3382.2 | 4321.1 | 5105.4  | 5481.0  | 5633.1  |
| 25°   | 2464.8 | 2393.5 | 2250.9 | 2063.1 | 1894.3 | 2165.3 | 3356.1 | 4477.9 | 5366.9  | 5809.0  | 5927.8  |
| 27.5° | 2284.1 | 2222.3 | 2101.1 | 1965.6 | 1846.8 | 2010.8 | 3349.0 | 4684.7 | 5683.0  | 6208.3  | 6291.5  |
| 30°   | 2108.2 | 2051.2 | 1956.1 | 1877.7 | 1827.8 | 1920.5 | 3325.2 | 4905.8 | 6060.9  | 6667.0  | 6757.3  |
| 32.5° | 1939.5 | 1882.4 | 1823.0 | 1811.1 | 1813.5 | 1887.2 | 3244.4 | 5124.4 | 6510.1  | 7332.5  | 7399.1  |
| 35°   | 1794.5 | 1728.0 | 1704.2 | 1732.7 | 1785.0 | 1830.2 | 3016.2 | 5305.1 | 6992.6  | 8057.4  | 8112.1  |
| 37.5° | 1656.6 | 1590.1 | 1587.7 | 1656.6 | 1713.7 | 1742.2 | 2747.6 | 5483.3 | 7643.9  | 8794.3  | 8863.2  |
| 40°   | 1530.7 | 1464.1 | 1487.9 | 1571.1 | 1616.2 | 1630.5 | 2422.0 | 5754.3 | 8333.2  | 9571.5  | 9533.5  |
| 42.5° | 1423.7 | 1354.8 | 1369.1 | 1476.0 | 1516.4 | 1554.4 | 2122.5 | 5980.1 | 8996.3  | 10308.3 | 10296.4 |
| 45°   | 1319.1 | 1266.8 | 1257.3 | 1373.8 | 1409.5 | 1561.6 | 1903.8 | 6153.6 | 9849.6  | 11247.2 | 11266.2 |
| 47.5° | 1216.9 | 1176.5 | 1178.9 | 1228.8 | 1316.8 | 1597.2 | 1718.4 | 6267.7 | 11087.9 | 12735.0 | 12404.7 |
| 50°   | 1124.2 | 1093.3 | 1119.5 | 1062.4 | 1257.3 | 1552.1 | 1559.2 | 6243.9 | 12471.2 | 14161.1 | 13498.0 |
| 52.5° | 1022.0 | 1014.9 | 1026.8 | 888.9  | 1162.3 | 1369.1 | 1409.5 | 5927.8 | 13120.1 | 15135.6 | 14757.7 |
| 55°   | 917.5  | 915.1  | 820.0  | 710.7  | 972.1  | 1093.3 | 1207.4 | 4946.2 | 13098.7 | 15653.8 | 16112.5 |
| 57.5° | 793.9  | 774.8  | 622.7  | 579.9  | 755.8  | 760.6  | 1100.5 | 3239.6 | 11608.4 | 14413.1 | 15363.8 |
| 60°   | 601.3  | 587.1  | 456.4  | 470.6  | 527.7  | 487.2  | 877.0  | 1613.9 | 8675.4  | 11228.1 | 12300.1 |
| 62.5° | 415.9  | 396.9  | 339.9  | 363.7  | 339.9  | 278.1  | 537.2  | 798.6  | 5255.2  | 7090.1  | 8062.2  |
| 65°   | 304.2  | 282.8  | 232.9  | 199.7  | 159.2  | 159.2  | 204.4  | 306.6  | 2034.6  | 3013.8  | 3634.2  |
| 67.5° | 187.8  | 178.3  | 137.9  | 99.8   | 97.4   | 104.6  | 107.0  | 152.1  | 328.0   | 522.9   | 639.4   |
| 70°   | 121.2  | 111.7  | 92.7   | 64.2   | 59.4   | 61.8   | 64.2   | 71.3   | 83.2    | 90.3    | 109.3   |
| 72.5° | 83.2   | 78.4   | 66.6   | 35.7   | 28.5   | 30.9   | 33.3   | 33.3   | 40.4    | 38.0    | 45.2    |
| 75°   | 59.4   | 54.7   | 47.5   | 16.6   | 9.5    | 11.9   | 14.3   | 11.9   | 14.3    | 9.5     | 11.9    |
| 77.5° | 16.6   | 16.6   | 11.9   | 2.4    | 0.0    | 2.4    | 4.8    | 4.8    | 2.4     | 0.0     | 0.0     |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 2.4    | 2.4    | 0.0     | 0.0     | 0.0     |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     |
| 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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CATALOG NUMBER: GWS-SA5F-830-U-SLL-W-GRSBK

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|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  | 3020.9  |
| 2.5°  | 3425.0  | 3479.7  | 3501.1  | 3470.2  | 3496.3  | 3453.5  | 3436.9  | 3372.7  | 3368.0  | 3356.1  |
| 5°    | 3886.1  | 4009.7  | 4083.4  | 4128.6  | 4076.3  | 4019.2  | 3933.7  | 3786.3  | 3741.1  | 3712.6  |
| 7.5°  | 4340.1  | 4532.6  | 4658.6  | 4718.0  | 4703.7  | 4587.3  | 4432.8  | 4185.6  | 4097.7  | 4054.9  |
| 10°   | 4734.6  | 4969.9  | 5122.1  | 5195.7  | 5164.8  | 5062.6  | 4841.6  | 4532.6  | 4416.1  | 4390.0  |
| 12.5° | 5010.4  | 5226.6  | 5331.2  | 5395.4  | 5397.8  | 5357.4  | 5148.2  | 4836.8  | 4699.0  | 4665.7  |
| 15°   | 5183.9  | 5276.6  | 5278.9  | 5317.0  | 5383.5  | 5473.8  | 5376.4  | 5100.7  | 4953.3  | 4903.4  |
| 17.5° | 5293.2  | 5191.0  | 5086.4  | 5095.9  | 5205.3  | 5445.3  | 5545.1  | 5333.6  | 5176.7  | 5122.1  |
| 20°   | 5371.6  | 5048.4  | 4853.5  | 4855.9  | 4967.6  | 5331.2  | 5661.6  | 5559.4  | 5397.8  | 5347.9  |
| 22.5° | 5421.5  | 4922.4  | 4644.3  | 4637.2  | 4756.0  | 5195.7  | 5768.6  | 5828.0  | 5668.7  | 5611.7  |
| 25°   | 5523.8  | 4863.0  | 4518.4  | 4558.8  | 4663.3  | 5153.0  | 5913.6  | 6184.5  | 6037.1  | 5961.1  |
| 27.5° | 5706.8  | 4922.4  | 4506.5  | 4599.2  | 4718.0  | 5278.9  | 6165.5  | 6659.9  | 6507.8  | 6422.2  |
| 30°   | 6022.9  | 5145.8  | 4689.5  | 4817.8  | 4960.4  | 5609.3  | 6588.6  | 7323.0  | 7104.3  | 7023.5  |
| 32.5° | 6531.5  | 5609.3  | 5255.2  | 5530.9  | 5668.7  | 6151.2  | 7223.2  | 8067.0  | 7888.7  | 7727.1  |
| 35°   | 7232.7  | 6667.0  | 6626.6  | 7268.3  | 7235.1  | 7178.0  | 8002.8  | 8979.7  | 8711.1  | 8554.2  |
| 37.5° | 8197.7  | 8368.8  | 8668.3  | 9305.3  | 9283.9  | 8848.9  | 9027.2  | 9842.4  | 9704.6  | 9502.6  |
| 40°   | 9402.7  | 9766.4  | 10275.0 | 11187.7 | 10902.5 | 10355.8 | 10284.5 | 10726.6 | 10614.9 | 10377.2 |
| 42.5° | 10113.4 | 10740.9 | 11710.6 | 12530.6 | 12302.5 | 11347.0 | 11266.2 | 11907.9 | 11663.1 | 11404.0 |
| 45°   | 10443.8 | 11534.8 | 13436.2 | 14546.2 | 13854.5 | 12005.4 | 11974.5 | 13448.1 | 13310.2 | 12963.2 |
| 47.5° | 10595.9 | 12335.7 | 15456.5 | 17136.9 | 15843.9 | 12582.9 | 12471.2 | 15682.3 | 15501.7 | 15092.9 |
| 50°   | 10764.7 | 13441.0 | 17890.4 | 20138.9 | 18246.9 | 13236.6 | 13317.4 | 17764.4 | 17688.4 | 17205.9 |
| 52.5° | 11135.4 | 14610.4 | 20887.6 | 23571.0 | 21160.9 | 14261.0 | 14769.6 | 19727.7 | 19214.3 | 18658.1 |
| 55°   | 11691.6 | 15884.3 | 24006.0 | 27076.8 | 24134.3 | 15637.2 | 16340.7 | 20771.1 | 19330.7 | 18715.2 |
| 57.5° | 11076.0 | 16202.8 | 25852.8 | 29525.0 | 25453.5 | 15641.9 | 15012.1 | 18962.3 | 17001.5 | 16404.9 |
| 60°   | 8789.5  | 15073.8 | 25142.1 | 28994.9 | 24329.2 | 13890.2 | 11494.3 | 14805.3 | 12880.0 | 12480.7 |
| 62.5° | 5942.1  | 12642.4 | 22133.0 | 24521.7 | 20823.4 | 10926.3 | 7470.4  | 9628.5  | 7974.3  | 7643.9  |
| 65°   | 3256.3  | 9431.3  | 17883.3 | 18551.1 | 16297.9 | 7632.0  | 3843.3  | 4178.5  | 3182.6  | 3035.2  |
| 67.5° | 898.4   | 6564.8  | 13158.1 | 12307.2 | 11434.9 | 4969.9  | 993.5   | 746.3   | 532.4   | 527.7   |
| 70°   | 225.8   | 4342.5  | 7883.9  | 8126.4  | 7011.6  | 3182.6  | 190.1   | 90.3    | 71.3    | 68.9    |
| 72.5° | 95.1    | 1868.2  | 3741.1  | 4299.7  | 3589.0  | 1473.6  | 68.9    | 26.1    | 21.4    | 16.6    |
| 75°   | 11.9    | 149.7   | 318.5   | 482.5   | 330.4   | 159.2   | 0.0     | 0.0     | 0.0     | 0.0     |
| 77.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 80°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 82.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 85°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 87.5° | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

(END OF REPORT)