

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: P12446-250

Luminaire Tested: **MPWP-GL-250-XX**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P12446-250
Test Lab: Cooper Lighting Innovation Center
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: MPWP-GL-250-XX
Description: LUMARK WAL-PAK HID WALL FIXTURE WITH BOROSILICATE GLASS LENS
Light Source: MOGUL BASE ED28 250W CLEAR QUARTZ PULSE START METAL HALIDE LAMP
250 WATTS
Ballast/Driver: -

Summary

Lumens per Lamp: 22000 (1 lamp)
Luminaire Lumens: 11569.3 lumens
Efficiency: 52.6%
Efficacy: 46.3 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.48' x L: 1.08' x H: 0.42')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U4 - G5

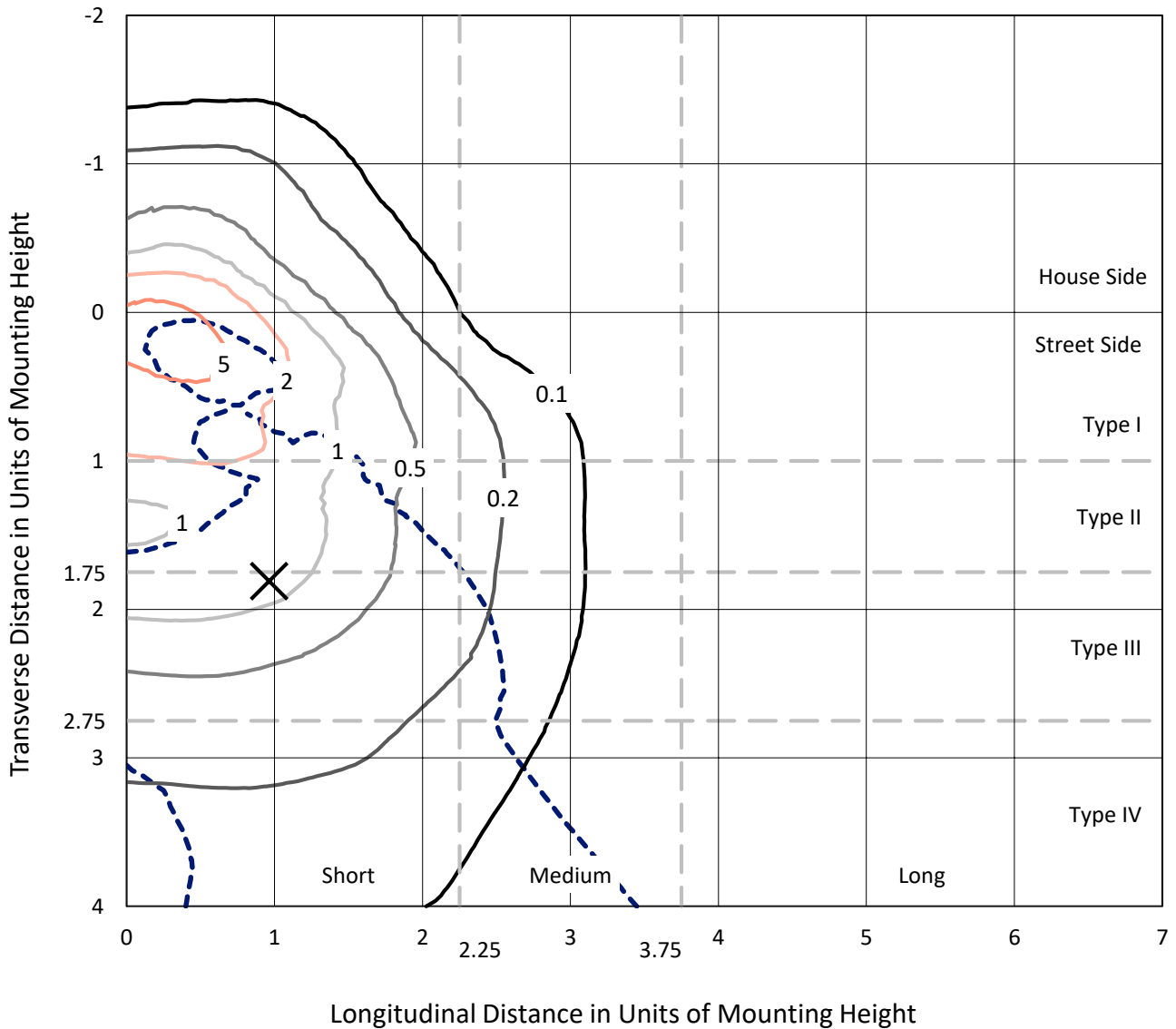
Input Watts (W): 250
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

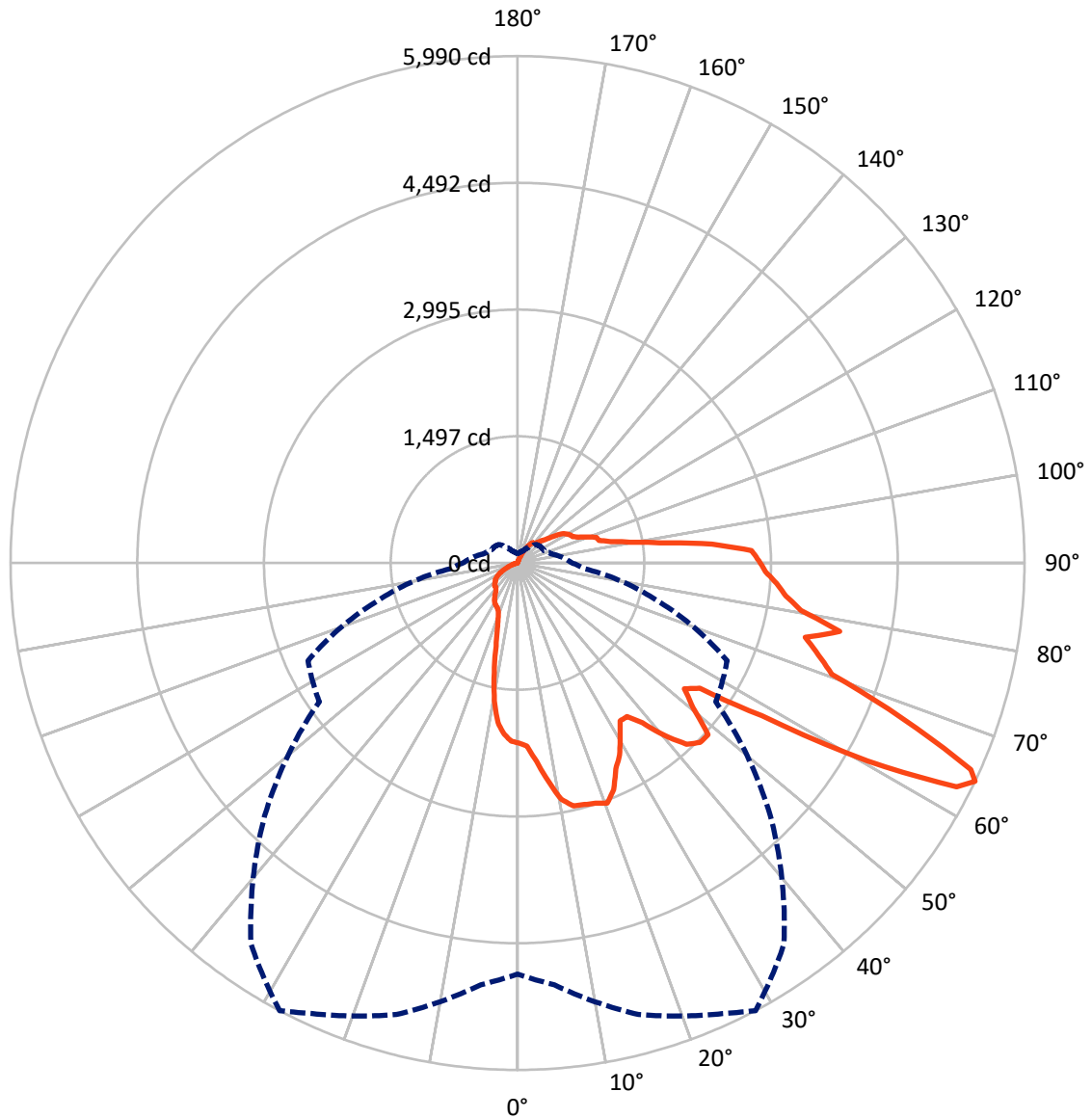
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.2 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P12446-250
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Luminous Intensity Polar Plot



— Vertical Plane Through 28-Deg Lateral - - - Horizontal Cone Through 64-Deg Vertical

REPORT NUMBER: P12446-250

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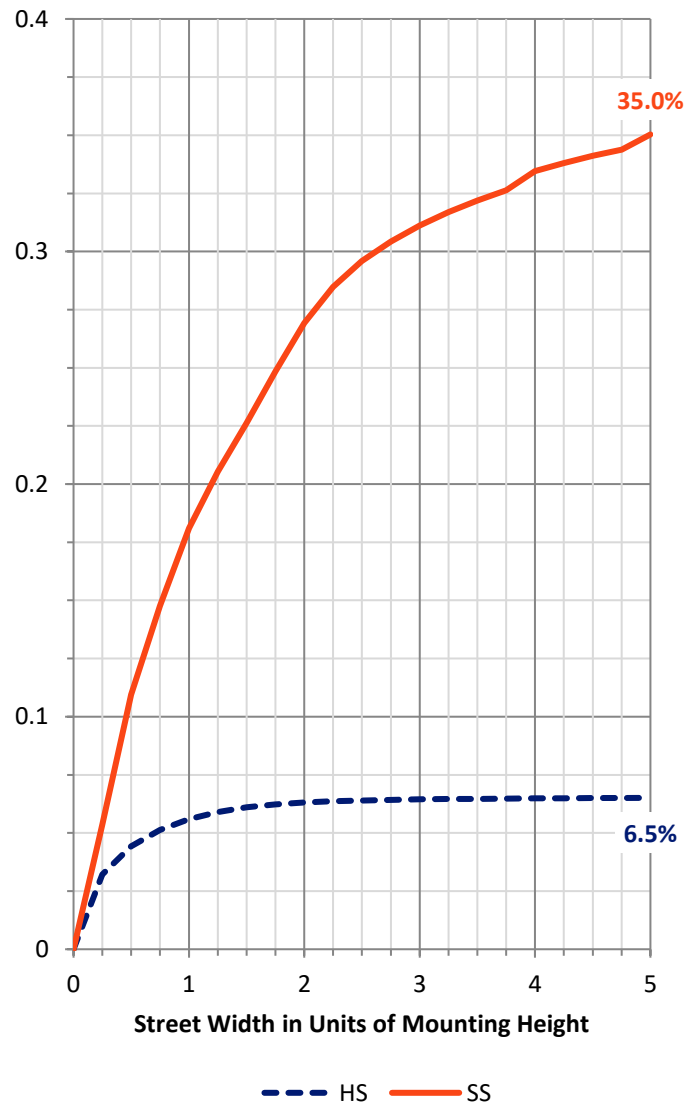
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|--------|----------|--------|---------|
| House Side | Lumens | 1447.4 | 30.6 | 1478.1 |
| | % Lamp | 6.6 | 0.1 | 6.7 |
| Street Side | Lumens | 8418.7 | 1672.6 | 10091.3 |
| | % Lamp | 38.3 | 7.6 | 45.9 |
| Total | Lumens | 9866.1 | 1703.2 | 11569.3 |
| | % Lamp | 44.8 | 7.7 | 52.6 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|---------|-----------|--------|
| 0°-10° | 214.6 | 1.9 | 1.0 |
| 10°-20° | 632.3 | 5.5 | 2.9 |
| 20°-30° | 958.6 | 8.3 | 4.4 |
| 30°-40° | 1154.0 | 10.0 | 5.2 |
| 40°-50° | 1260.7 | 10.9 | 5.7 |
| 50°-60° | 1362.8 | 11.8 | 6.2 |
| 60°-70° | 1853.1 | 16.0 | 8.4 |
| 70°-80° | 1379.7 | 11.9 | 6.3 |
| 80°-90° | 1050.3 | 9.1 | 4.8 |
| 90°-100° | 722.5 | 6.2 | 3.3 |
| 100°-110° | 390.7 | 3.4 | 1.8 |
| 110°-120° | 255.5 | 2.2 | 1.2 |
| 120°-130° | 172.9 | 1.5 | 0.8 |
| 130°-140° | 97.5 | 0.8 | 0.4 |
| 140°-150° | 49.8 | 0.4 | 0.2 |
| 150°-160° | 13.4 | 0.1 | 0.1 |
| 160°-170° | 1.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-90° | 9866.1 | 85.3 | 44.8 |
| 0°-180° | 11569.3 | 100.0 | 52.6 |



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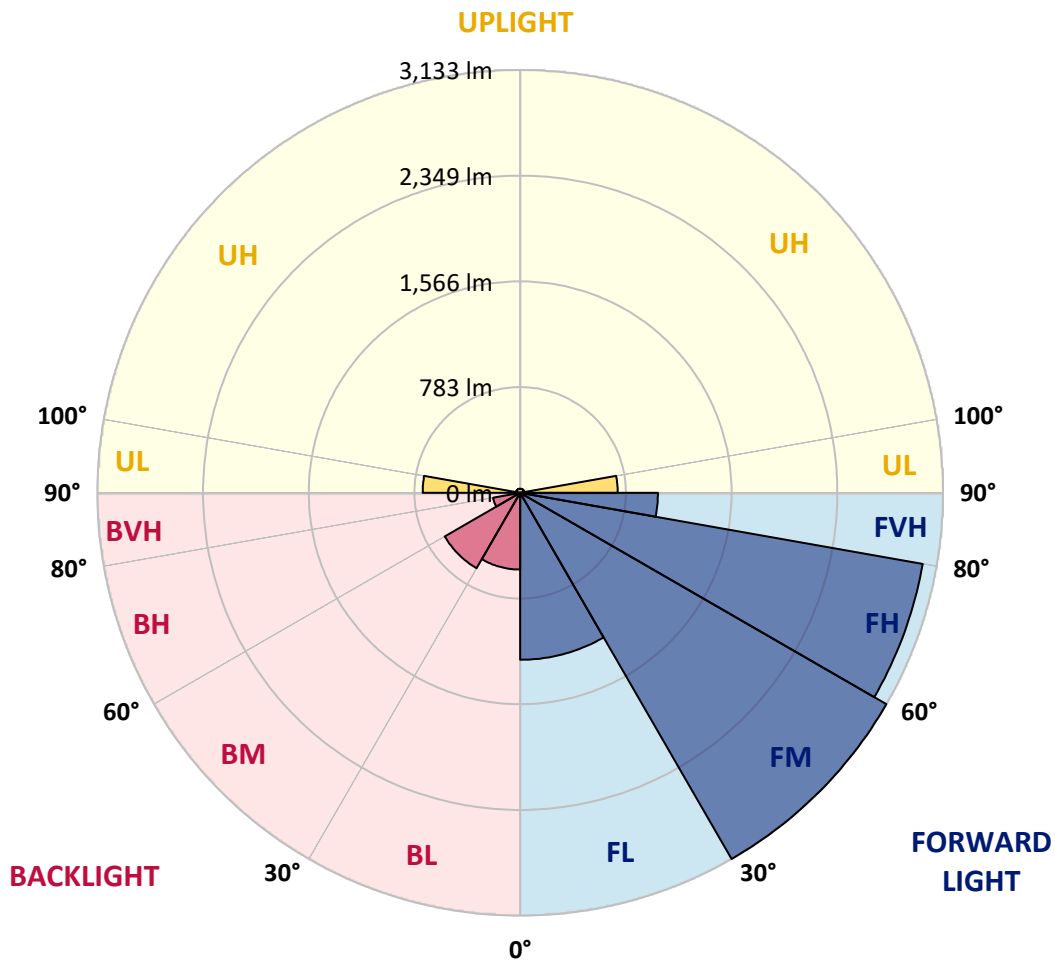
CATALOG NUMBER: MPWP-GL-250-XX

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Lamp | Zone Rating/Lumen Limit | | |
|----------------|---------|--------|-------------------------|---------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1237.0 | 5.6 | | | |
| FM (30°-60°) | 3132.7 | 14.2 | | | |
| FH (60°-80°) | 3028.7 | 13.8 | | | G2/5000 |
| FVH (80°-90°) | 1020.3 | 4.6 | | | G5 |
| BL (0°-30°) | 568.5 | 2.6 | B2/1000 | | |
| BM (30°-60°) | 644.9 | 2.9 | B1/1000 | | |
| BH (60°-80°) | 204.1 | 0.9 | B1/500 | | G1/500 |
| BVH (80°-90°) | 30.0 | 0.1 | | | G1/100 |
| UL (90°-100°) | 722.5 | 3.3 | | U4/1000 | |
| UH (100°-180°) | 30.6 | 0.1 | | U2/50 | |
| Trapped Light | 10430.7 | 47.4 | | | |

BUG Rating: B2-U4-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 28° | 35° | 45° | 55° | 65° | 75° | 85° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 |
| 2.5° | 2164.5 | 2169.5 | 2162.5 | 2162.0 | 2165.5 | 2153.5 | 2152.0 | 2145.5 | 2139.5 | 2140.0 | 2133.0 |
| 5° | 2341.0 | 2343.5 | 2353.5 | 2350.0 | 2354.5 | 2336.0 | 2324.0 | 2313.0 | 2292.0 | 2271.0 | 2243.5 |
| 7.5° | 2529.5 | 2543.0 | 2578.0 | 2587.0 | 2602.0 | 2620.5 | 2592.5 | 2550.5 | 2488.5 | 2433.0 | 2369.0 |
| 10° | 2658.0 | 2674.0 | 2735.0 | 2827.5 | 2839.5 | 2847.5 | 2829.5 | 2784.0 | 2692.5 | 2580.5 | 2462.0 |
| 12.5° | 2678.0 | 2700.5 | 2813.0 | 2921.0 | 2946.0 | 3004.0 | 3044.5 | 3027.5 | 2917.5 | 2742.5 | 2560.5 |
| 15° | 2602.5 | 2638.5 | 2772.0 | 2923.5 | 2961.5 | 3079.0 | 3223.0 | 3267.0 | 3096.0 | 2853.5 | 2612.5 |
| 17.5° | 2555.5 | 2601.0 | 2767.0 | 2945.0 | 2983.0 | 3124.0 | 3356.0 | 3371.5 | 3270.5 | 2998.5 | 2678.0 |
| 20° | 2289.0 | 2340.0 | 2590.5 | 2927.0 | 3028.0 | 3242.5 | 3363.5 | 3522.0 | 3434.5 | 3122.0 | 2755.5 |
| 22.5° | 2092.0 | 2123.5 | 2344.0 | 2730.0 | 2908.0 | 3338.5 | 3525.5 | 3680.0 | 3596.5 | 3270.5 | 2834.0 |
| 25° | 2007.5 | 2043.5 | 2228.0 | 2561.5 | 2694.5 | 3175.0 | 3799.5 | 3858.5 | 3748.5 | 3315.5 | 2826.0 |
| 27.5° | 1890.0 | 1923.0 | 2123.0 | 2436.0 | 2571.5 | 2985.0 | 3893.0 | 4044.5 | 3906.5 | 3391.5 | 2820.0 |
| 30° | 1822.0 | 1847.5 | 1994.0 | 2242.0 | 2387.0 | 2810.5 | 3865.0 | 4140.0 | 4081.5 | 3436.0 | 2743.5 |
| 32.5° | 1806.5 | 1840.5 | 1981.0 | 2132.5 | 2224.5 | 2624.0 | 3668.5 | 4246.0 | 4142.0 | 3409.5 | 2634.0 |
| 35° | 1942.0 | 1951.0 | 2030.5 | 2166.0 | 2227.0 | 2494.5 | 3308.5 | 4203.0 | 4102.5 | 3308.0 | 2519.5 |
| 37.5° | 2024.5 | 2051.5 | 2226.0 | 2352.0 | 2394.0 | 2510.5 | 3017.5 | 3963.0 | 3902.5 | 3165.5 | 2373.0 |
| 40° | 2076.0 | 2092.5 | 2249.0 | 2619.0 | 2684.0 | 2762.5 | 2840.5 | 3607.5 | 3690.0 | 3026.5 | 2264.0 |
| 42.5° | 2238.0 | 2272.5 | 2398.0 | 2772.5 | 2926.0 | 3052.5 | 2822.0 | 3233.0 | 3473.0 | 2934.0 | 2175.5 |
| 45° | 2094.5 | 2138.5 | 2400.5 | 2836.5 | 3025.5 | 3250.5 | 3086.5 | 2878.0 | 3264.0 | 2885.5 | 2040.5 |
| 47.5° | 1836.0 | 1856.0 | 2096.5 | 2765.0 | 3030.5 | 3460.5 | 3256.5 | 2660.5 | 3133.5 | 2830.0 | 1913.0 |
| 50° | 1759.0 | 1772.5 | 1924.5 | 2429.5 | 2684.0 | 3400.5 | 3469.0 | 2527.5 | 2968.0 | 2809.0 | 1746.0 |
| 52.5° | 1616.0 | 1676.0 | 1916.0 | 2313.5 | 2467.5 | 2963.5 | 3787.5 | 2474.5 | 2743.5 | 2767.0 | 1551.0 |
| 55° | 1640.5 | 1678.0 | 2037.0 | 2530.0 | 2610.5 | 2775.5 | 3303.0 | 2801.5 | 2533.5 | 2616.0 | 1374.5 |
| 57.5° | 2506.5 | 2514.0 | 2838.5 | 3332.5 | 3403.0 | 3241.0 | 3042.5 | 3302.5 | 2422.0 | 2388.5 | 1200.5 |
| 60° | 3958.0 | 4067.5 | 4395.5 | 4673.0 | 4752.0 | 4432.5 | 3353.0 | 3199.0 | 2522.0 | 2094.0 | 1039.5 |
| 62.5° | 5090.5 | 5179.5 | 5661.0 | 5756.0 | 5822.5 | 5312.5 | 4021.0 | 2993.0 | 2667.5 | 1816.5 | 894.5 |
| 64° | 4856.0 | 5002.0 | 5523.0 | 5867.5 | 5989.5 | 5490.5 | 4224.0 | 2858.0 | 2731.5 | 1701.5 | 799.5 |
| 65° | 4466.0 | 4670.0 | 5255.5 | 5724.5 | 5884.0 | 5455.5 | 4188.5 | 2833.5 | 2764.5 | 1659.5 | 775.5 |
| 67.5° | 3526.5 | 3698.5 | 4274.0 | 4688.5 | 4906.5 | 4880.0 | 3987.0 | 2807.0 | 2521.0 | 1579.0 | 703.0 |
| 70° | 3067.0 | 3204.5 | 3578.5 | 3841.0 | 3938.0 | 3927.5 | 3893.5 | 2714.5 | 2167.5 | 1598.5 | 703.0 |
| 72.5° | 2908.5 | 2965.0 | 3336.0 | 3628.5 | 3720.0 | 3479.0 | 3367.0 | 2599.5 | 1900.0 | 1469.5 | 696.5 |
| 75° | 2828.5 | 2869.5 | 3270.5 | 3483.0 | 3509.5 | 3173.0 | 2845.5 | 2318.0 | 1655.0 | 1272.0 | 616.5 |
| 77.5° | 2964.5 | 2987.5 | 3520.0 | 3892.5 | 3890.5 | 3333.5 | 2674.5 | 2094.5 | 1437.5 | 1148.5 | 575.5 |
| 80° | 2629.0 | 2722.5 | 3112.5 | 3354.5 | 3395.0 | 3163.0 | 2789.0 | 1881.0 | 1230.0 | 1027.0 | 477.0 |
| 82.5° | 2583.5 | 2671.0 | 3082.0 | 3229.5 | 3192.0 | 2978.5 | 2474.5 | 1620.0 | 1078.5 | 902.0 | 410.5 |
| 85° | 2329.5 | 2429.0 | 2771.0 | 3042.5 | 3071.0 | 2899.5 | 2207.0 | 1319.0 | 958.0 | 793.0 | 329.0 |
| 87.5° | 2161.5 | 2261.5 | 2594.0 | 2898.5 | 2931.0 | 2807.5 | 1878.5 | 1075.0 | 835.5 | 688.0 | 256.0 |
| 90° | 2113.0 | 2220.5 | 2542.5 | 2798.5 | 2853.0 | 2651.5 | 1524.5 | 938.0 | 732.0 | 582.0 | 199.0 |
| 92.5° | 2193.0 | 2302.0 | 2553.0 | 2764.5 | 2769.0 | 2205.0 | 1245.0 | 872.5 | 690.5 | 509.0 | 160.5 |
| 95° | 2227.0 | 2315.0 | 2495.5 | 2466.5 | 2310.0 | 1706.0 | 1087.5 | 834.0 | 670.0 | 462.0 | 125.5 |
| 97.5° | 1809.0 | 1867.0 | 2029.5 | 1827.5 | 1697.5 | 1406.5 | 961.5 | 831.5 | 640.5 | 391.5 | 110.0 |
| 100° | 1358.0 | 1406.5 | 1540.5 | 1427.0 | 1350.5 | 1159.5 | 882.0 | 853.0 | 603.5 | 336.0 | 107.0 |
| 102.5° | 1108.5 | 1133.0 | 1255.5 | 1178.5 | 1128.0 | 992.5 | 815.5 | 787.0 | 565.5 | 286.0 | 95.5 |
| 105° | 949.5 | 976.0 | 1073.5 | 1034.0 | 998.0 | 885.5 | 754.5 | 725.0 | 496.5 | 265.0 | 94.5 |
| 107.5° | 836.5 | 866.0 | 1011.0 | 995.0 | 981.5 | 835.5 | 695.0 | 634.0 | 426.0 | 242.0 | 91.0 |



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CATALOG NUMBER: MPWP-GL-250-XX

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 28° | 35° | 45° | 55° | 65° | 75° | 85° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 110° | 746.0 | 776.5 | 897.0 | 883.5 | 873.0 | 774.5 | 655.0 | 555.5 | 385.5 | 220.5 | 84.0 |
| 112.5° | 654.0 | 675.0 | 763.0 | 789.0 | 780.0 | 725.5 | 636.5 | 516.5 | 353.0 | 200.5 | 80.5 |
| 115° | 591.5 | 606.5 | 687.5 | 722.0 | 723.5 | 706.0 | 629.5 | 526.0 | 313.5 | 180.0 | 73.5 |
| 117.5° | 572.0 | 581.0 | 661.0 | 700.0 | 706.0 | 698.0 | 652.5 | 489.5 | 293.5 | 172.5 | 74.0 |
| 120° | 558.0 | 562.5 | 622.0 | 666.0 | 676.5 | 671.5 | 580.0 | 451.5 | 279.0 | 158.0 | 68.0 |
| 122.5° | 533.5 | 549.0 | 596.5 | 627.5 | 635.0 | 615.0 | 511.5 | 398.0 | 276.5 | 144.5 | 59.0 |
| 125° | 490.0 | 498.5 | 546.5 | 562.5 | 563.0 | 538.0 | 477.5 | 371.5 | 261.0 | 129.5 | 48.0 |
| 127.5° | 437.0 | 441.5 | 469.5 | 474.5 | 480.5 | 490.0 | 431.5 | 352.0 | 237.0 | 109.5 | 42.5 |
| 130° | 379.0 | 380.0 | 393.5 | 417.5 | 422.5 | 438.5 | 399.5 | 331.0 | 219.0 | 89.5 | 34.0 |
| 132.5° | 332.5 | 337.0 | 355.0 | 378.0 | 385.0 | 403.0 | 372.5 | 310.5 | 195.5 | 68.5 | 29.0 |
| 135° | 295.5 | 300.5 | 318.0 | 339.0 | 343.5 | 368.0 | 359.0 | 295.0 | 166.5 | 53.0 | 25.5 |
| 137.5° | 267.5 | 269.5 | 281.0 | 302.5 | 313.5 | 345.0 | 360.0 | 273.5 | 123.5 | 39.0 | 18.0 |
| 140° | 246.0 | 248.5 | 256.5 | 288.5 | 300.5 | 343.5 | 337.5 | 223.0 | 84.5 | 24.5 | 9.5 |
| 142.5° | 241.0 | 238.5 | 249.0 | 287.0 | 300.5 | 328.0 | 288.5 | 161.0 | 61.0 | 20.5 | 12.0 |
| 145° | 222.0 | 223.0 | 235.0 | 267.5 | 276.5 | 275.0 | 227.0 | 121.0 | 40.0 | 8.0 | 4.0 |
| 147.5° | 208.5 | 211.0 | 224.5 | 242.5 | 241.0 | 223.5 | 172.5 | 80.5 | 26.0 | 9.5 | 4.0 |
| 150° | 187.5 | 188.0 | 191.5 | 188.0 | 186.0 | 172.0 | 115.5 | 50.5 | 14.5 | 5.5 | 3.5 |
| 152.5° | 156.0 | 155.0 | 154.5 | 148.5 | 144.0 | 112.5 | 69.0 | 31.0 | 7.5 | 5.0 | 2.5 |
| 155° | 119.0 | 121.0 | 117.0 | 95.0 | 89.0 | 72.0 | 40.0 | 13.5 | 3.0 | 2.0 | 0.0 |
| 157.5° | 82.0 | 82.5 | 77.5 | 66.5 | 61.0 | 44.5 | 19.5 | 2.5 | 3.0 | 1.0 | 0.0 |
| 160° | 51.0 | 52.5 | 45.5 | 35.5 | 30.5 | 22.5 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 33.0 | 31.5 | 29.0 | 22.5 | 19.5 | 11.5 | 0.0 | 1.0 | 3.0 | 2.0 | 2.0 |
| 165° | 11.5 | 12.5 | 8.0 | 3.0 | 4.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.5 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 3.0 | 0.5 | 0.0 | 0.5 | 2.0 | 0.5 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.5 | 1.5 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 1.0 | 0.5 | 0.0 | 0.0 | 0.0 | 1.5 | 0.5 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 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: MPWP-GL-250-XX

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 | 2128.0 |
| 2.5° | 2133.5 | 2127.5 | 2124.0 | 2122.5 | 2118.5 | 2115.5 | 2110.5 | 2103.0 | 2103.0 | 2104.5 | 2105.0 |
| 5° | 2237.5 | 2219.5 | 2190.0 | 2159.0 | 2118.0 | 2083.5 | 2047.5 | 2017.0 | 2003.0 | 1994.5 | 1992.5 |
| 7.5° | 2350.0 | 2327.0 | 2269.5 | 2205.0 | 2129.0 | 2031.0 | 1955.5 | 1874.0 | 1821.5 | 1794.5 | 1789.5 |
| 10° | 2423.5 | 2385.5 | 2304.0 | 2210.0 | 2103.5 | 1947.0 | 1765.0 | 1604.0 | 1488.5 | 1439.0 | 1436.0 |
| 12.5° | 2496.0 | 2439.0 | 2322.0 | 2174.0 | 1973.5 | 1722.5 | 1480.5 | 1260.0 | 1115.0 | 1059.0 | 1051.5 |
| 15° | 2529.5 | 2461.0 | 2310.5 | 2097.0 | 1779.0 | 1436.5 | 1153.0 | 954.0 | 830.5 | 774.0 | 766.5 |
| 17.5° | 2573.0 | 2491.5 | 2303.0 | 1994.0 | 1544.5 | 1175.0 | 920.0 | 760.0 | 664.0 | 620.5 | 617.0 |
| 20° | 2632.0 | 2524.0 | 2275.5 | 1822.5 | 1318.0 | 976.5 | 768.0 | 635.0 | 555.5 | 528.5 | 532.0 |
| 22.5° | 2696.0 | 2565.0 | 2244.0 | 1641.0 | 1137.0 | 858.5 | 679.0 | 578.0 | 517.5 | 482.0 | 470.5 |
| 25° | 2677.0 | 2528.0 | 2099.0 | 1439.5 | 1008.0 | 761.0 | 628.5 | 551.5 | 483.5 | 427.0 | 419.5 |
| 27.5° | 2652.0 | 2482.5 | 1911.0 | 1246.0 | 897.5 | 698.0 | 599.5 | 550.0 | 457.0 | 391.5 | 384.0 |
| 30° | 2542.0 | 2364.0 | 1681.0 | 1087.5 | 807.0 | 658.0 | 580.0 | 527.5 | 415.0 | 352.5 | 349.0 |
| 32.5° | 2428.0 | 2204.0 | 1453.0 | 964.0 | 749.5 | 618.5 | 569.5 | 490.0 | 388.0 | 333.5 | 328.0 |
| 35° | 2293.5 | 1974.5 | 1241.5 | 860.5 | 700.0 | 592.0 | 533.5 | 444.0 | 369.5 | 332.5 | 319.5 |
| 37.5° | 2114.5 | 1715.0 | 1035.0 | 768.5 | 637.0 | 554.5 | 483.5 | 403.5 | 349.0 | 330.5 | 324.0 |
| 40° | 1962.0 | 1512.0 | 881.5 | 689.0 | 591.5 | 519.0 | 448.5 | 381.5 | 337.0 | 321.5 | 321.0 |
| 42.5° | 1801.5 | 1316.5 | 776.5 | 617.0 | 552.5 | 486.5 | 420.0 | 363.0 | 337.5 | 315.0 | 318.0 |
| 45° | 1619.0 | 1159.0 | 713.5 | 556.5 | 525.0 | 464.5 | 415.0 | 369.5 | 312.5 | 289.0 | 281.0 |
| 47.5° | 1443.0 | 1008.5 | 660.0 | 519.0 | 497.5 | 451.0 | 400.5 | 354.5 | 284.0 | 262.5 | 255.5 |
| 50° | 1270.5 | 914.5 | 611.0 | 482.0 | 484.5 | 432.0 | 396.5 | 319.5 | 274.0 | 233.5 | 228.5 |
| 52.5° | 1127.0 | 852.0 | 584.5 | 463.0 | 454.5 | 417.5 | 382.0 | 313.5 | 251.5 | 211.5 | 204.5 |
| 55° | 1000.5 | 784.0 | 561.5 | 439.0 | 428.5 | 421.0 | 368.5 | 293.5 | 222.0 | 195.5 | 193.5 |
| 57.5° | 894.0 | 716.0 | 534.5 | 421.0 | 408.5 | 393.5 | 359.0 | 248.5 | 206.0 | 191.0 | 187.0 |
| 60° | 779.0 | 652.0 | 491.5 | 397.0 | 386.5 | 362.0 | 315.5 | 220.5 | 185.0 | 161.0 | 155.5 |
| 62.5° | 694.0 | 594.0 | 448.0 | 363.5 | 349.0 | 332.0 | 257.5 | 186.0 | 145.5 | 128.0 | 123.5 |
| 64° | 644.5 | 564.5 | 415.0 | 346.0 | 335.0 | 309.0 | 226.5 | 159.5 | 133.0 | 117.0 | 113.0 |
| 65° | 625.5 | 545.0 | 404.5 | 333.5 | 313.5 | 290.5 | 201.5 | 143.5 | 118.5 | 104.5 | 103.0 |
| 67.5° | 564.5 | 482.0 | 355.5 | 297.0 | 275.0 | 229.0 | 156.5 | 108.0 | 88.0 | 80.5 | 78.5 |
| 70° | 521.0 | 420.0 | 306.0 | 263.5 | 233.0 | 172.0 | 114.0 | 84.5 | 66.0 | 61.5 | 66.5 |
| 72.5° | 497.5 | 363.0 | 259.0 | 226.0 | 181.5 | 124.5 | 75.0 | 56.5 | 46.0 | 38.5 | 38.5 |
| 75° | 434.0 | 307.5 | 217.0 | 196.5 | 137.0 | 87.5 | 48.0 | 34.0 | 19.5 | 14.0 | 18.0 |
| 77.5° | 394.5 | 271.5 | 196.5 | 183.0 | 118.5 | 68.0 | 38.0 | 18.0 | 7.0 | 6.5 | 6.0 |
| 80° | 310.0 | 213.0 | 176.5 | 153.5 | 95.0 | 47.5 | 20.5 | 0.0 | 2.0 | 0.0 | 0.0 |
| 82.5° | 248.5 | 164.5 | 145.0 | 131.5 | 87.5 | 35.5 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 186.0 | 127.0 | 114.0 | 102.5 | 68.0 | 33.5 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 135.5 | 101.5 | 95.0 | 89.5 | 57.5 | 28.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 117.0 | 81.5 | 79.5 | 73.0 | 44.5 | 23.0 | 6.5 | 0.0 | 2.0 | 0.0 | 0.0 |
| 92.5° | 82.0 | 72.5 | 60.0 | 62.0 | 37.0 | 20.5 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 69.5 | 61.5 | 52.5 | 44.0 | 24.5 | 13.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97.5° | 57.5 | 54.0 | 43.0 | 35.5 | 18.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 70.5 | 58.0 | 50.0 | 37.0 | 21.0 | 12.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102.5° | 61.0 | 49.0 | 48.0 | 30.0 | 17.5 | 7.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 60.0 | 50.5 | 45.0 | 28.0 | 15.0 | 8.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107.5° | 58.5 | 49.5 | 38.5 | 29.0 | 16.5 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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| 130° | 26.5 | 19.5 | 11.0 | 2.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 22.5 | 17.5 | 7.5 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135° | 19.0 | 15.0 | 6.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 16.0 | 10.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 8.0 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 10.0 | 6.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 4.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 5.5 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 3.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 3.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 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)