

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: INVUE

Report Number: P368318

Luminaire Tested: **MSA-SA4B-727-U-RW**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368318
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4B-727-U-RW
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16687 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B4 - U0 - G4

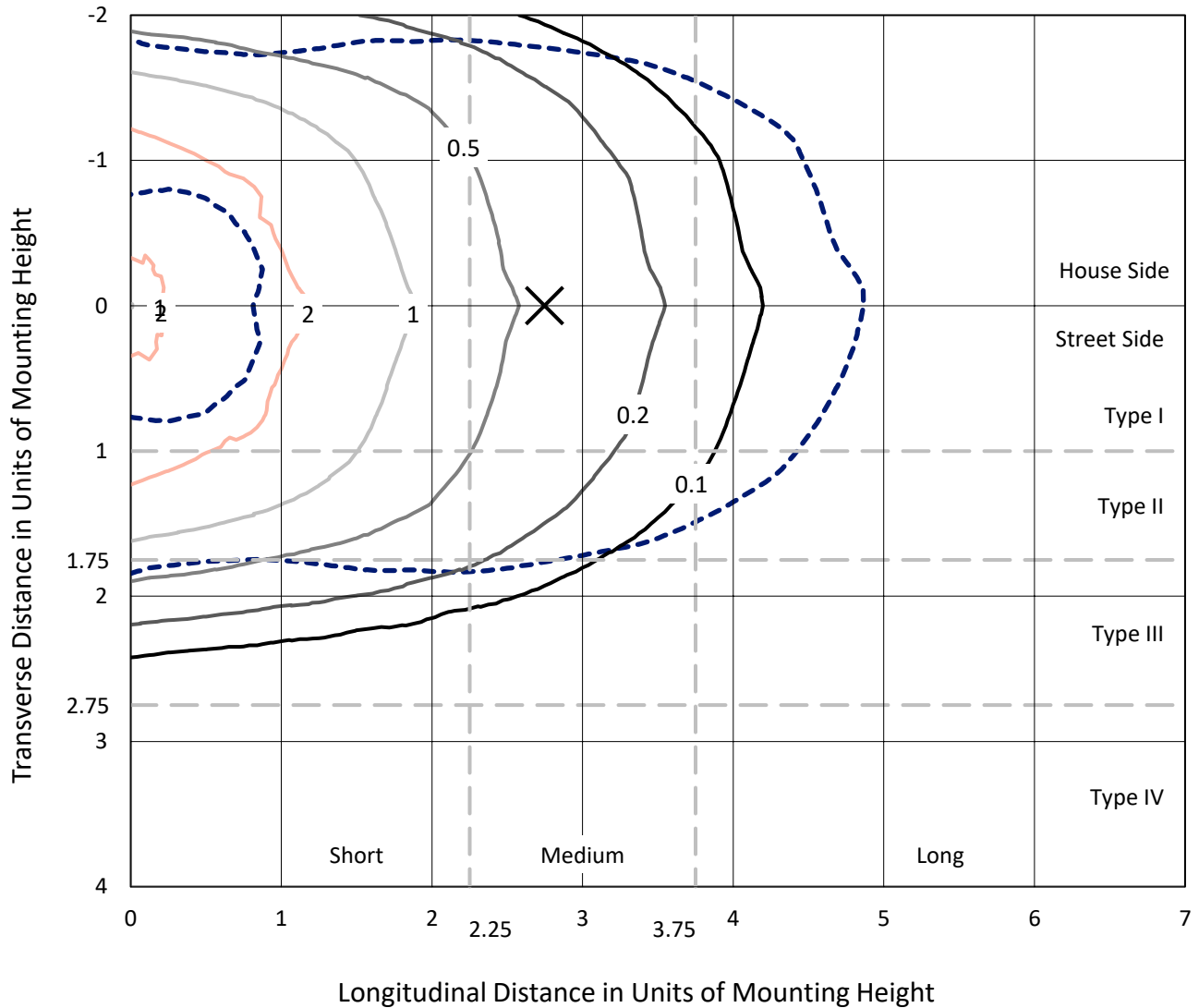
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

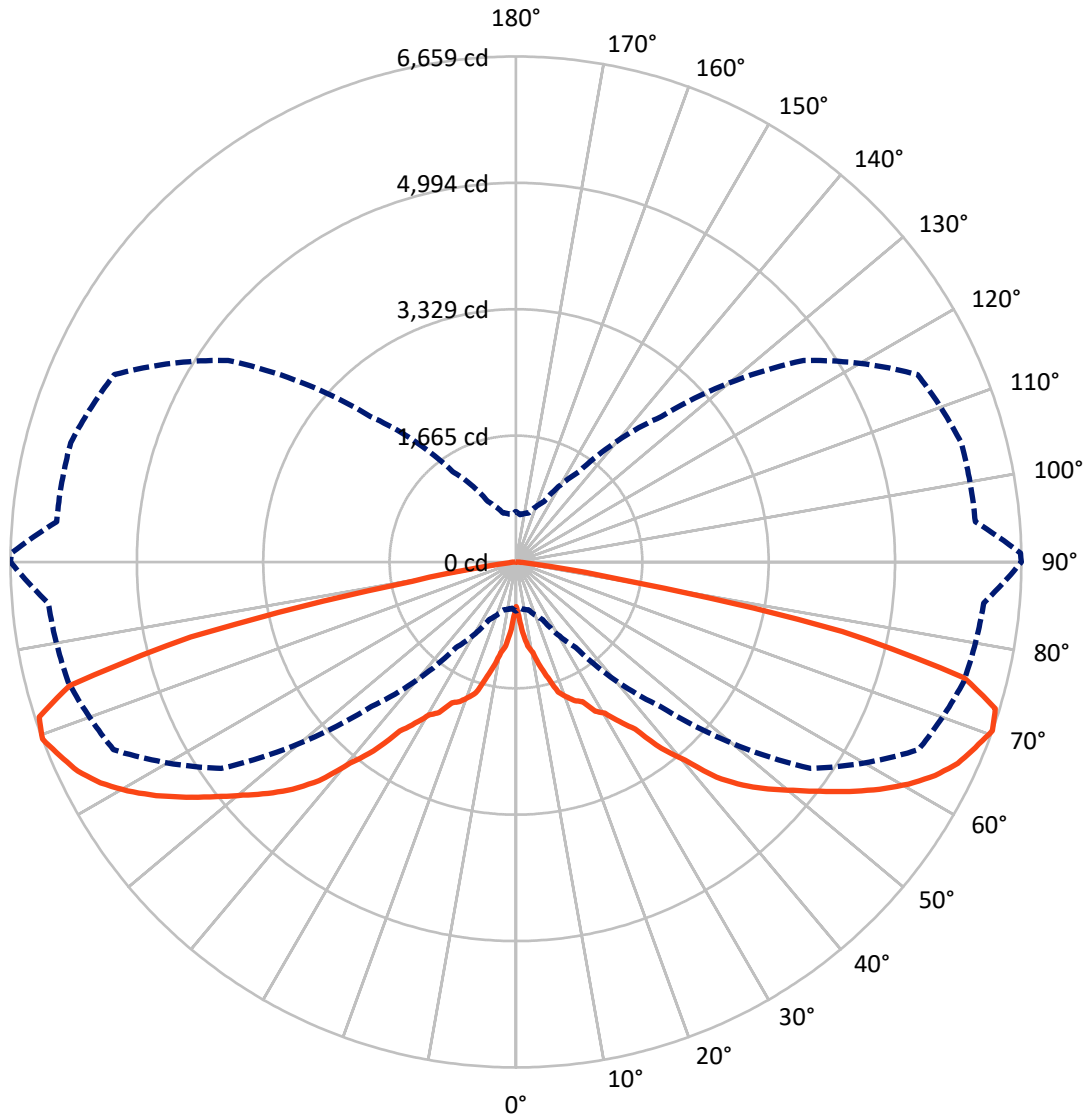
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.7 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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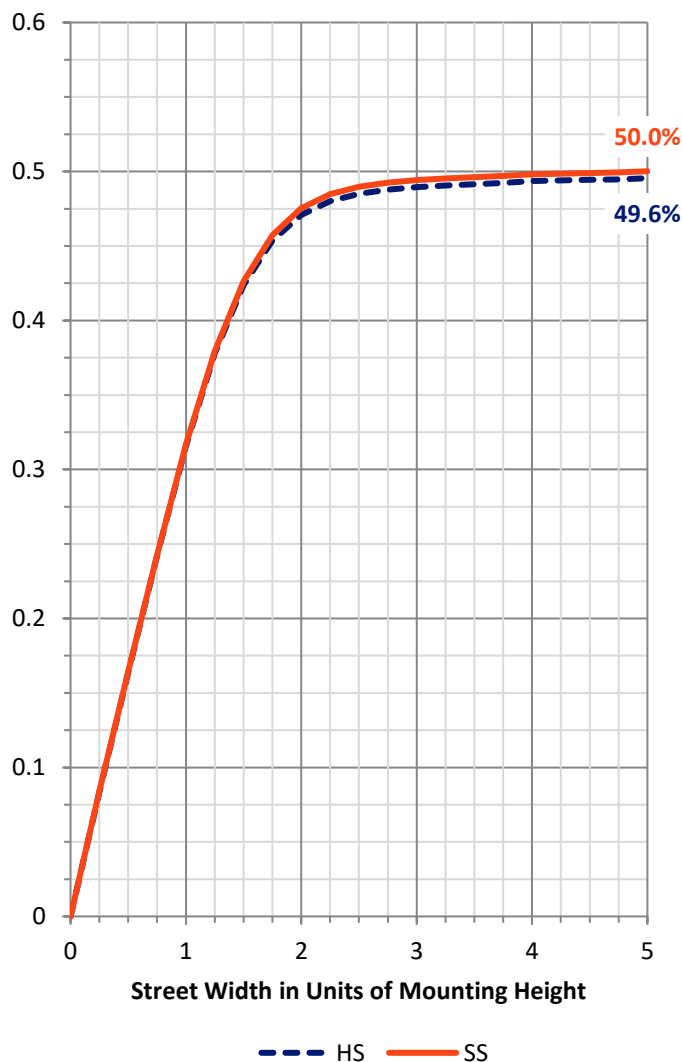
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8312.6 | 0.0 | 8312.6 |
| | % Fixture | 49.8 | 0.0 | 49.8 |
| Street Side | Lumens | 8374.4 | 0.0 | 8374.4 |
| | % Fixture | 50.2 | 0.0 | 50.2 |
| Total | Lumens | 16687.0 | 0.0 | 16687.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 88.3 | 0.5 |
| 10°-20° | 404.9 | 2.4 |
| 20°-30° | 875.5 | 5.2 |
| 30°-40° | 1670.4 | 10.0 |
| 40°-50° | 3034.5 | 18.2 |
| 50°-60° | 4262.8 | 25.5 |
| 60°-70° | 4070.1 | 24.4 |
| 70°-80° | 2088.8 | 12.5 |
| 80°-90° | 191.5 | 1.1 |
| 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° | 16687.0 | 100.0 |
| 0°-180° | 16687.0 | 100.0 |

Coefficient of Utilization

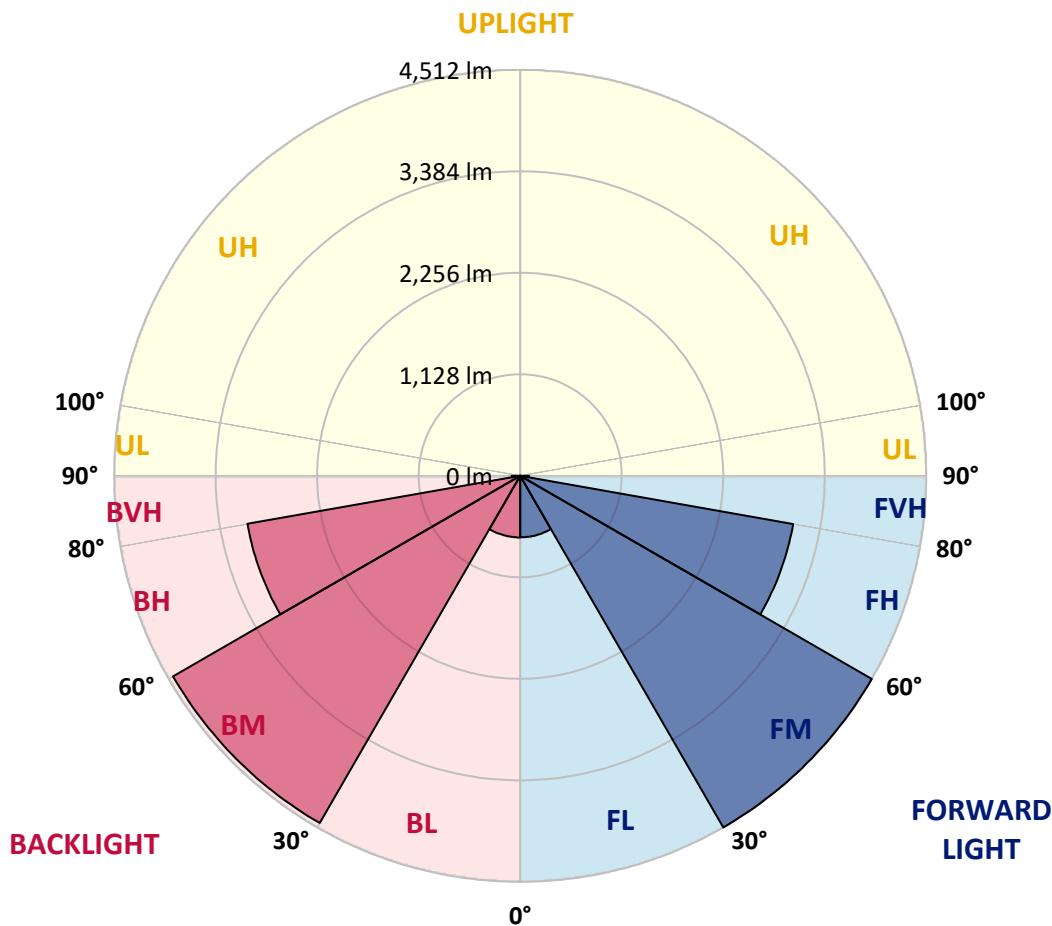


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 683.7 | 4.1 | | | |
| FM (30°-60°) | 4512.3 | 27.0 | | | |
| FH (60°-80°) | 3081.2 | 18.5 | | | G2/5000 |
| FVH (80°-90°) | 97.2 | 0.6 | | | G1/100 |
| BL (0°-30°) | 685.1 | 4.1 | B2/1000 | | |
| BM (30°-60°) | 4455.4 | 26.7 | B3/5000 | | |
| BH (60°-80°) | 3077.8 | 18.4 | B4/5000 | | G4/5000 |
| BVH (80°-90°) | 94.3 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G4
 Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 |
| 2.5° | 709.4 | 683.1 | 649.9 | 669.5 | 677.7 | 691.9 | 689.8 | 683.1 | 654.0 | 702.7 | 708.1 |
| 5° | 888.0 | 846.1 | 830.5 | 827.8 | 831.8 | 818.3 | 862.3 | 849.4 | 873.1 | 917.1 | 927.2 |
| 7.5° | 1011.1 | 980.0 | 946.8 | 957.0 | 915.0 | 908.9 | 965.8 | 1016.5 | 1029.3 | 1109.8 | 1115.2 |
| 10° | 1069.2 | 1038.8 | 1047.6 | 1041.5 | 1036.8 | 1076.0 | 1102.4 | 1139.6 | 1193.0 | 1200.4 | 1211.9 |
| 12.5° | 1118.6 | 1130.8 | 1169.3 | 1168.0 | 1231.5 | 1301.2 | 1291.1 | 1329.6 | 1338.4 | 1431.7 | 1403.3 |
| 15° | 1243.7 | 1268.7 | 1266.0 | 1289.7 | 1317.4 | 1431.7 | 1432.4 | 1498.0 | 1558.2 | 1594.7 | 1585.2 |
| 17.5° | 1427.0 | 1435.8 | 1399.3 | 1400.6 | 1481.1 | 1527.8 | 1579.8 | 1568.3 | 1725.2 | 1796.9 | 1801.7 |
| 20° | 1536.6 | 1558.9 | 1516.9 | 1461.5 | 1604.2 | 1668.4 | 1697.5 | 1630.6 | 1798.3 | 1895.0 | 1895.0 |
| 22.5° | 1727.9 | 1670.5 | 1606.9 | 1569.7 | 1695.5 | 1763.8 | 1760.4 | 1741.5 | 1830.7 | 2001.8 | 1985.6 |
| 25° | 1833.4 | 1801.0 | 1769.2 | 1778.7 | 1842.2 | 1877.4 | 1924.1 | 1880.1 | 1964.0 | 2091.1 | 2037.7 |
| 27.5° | 2033.6 | 1973.4 | 1817.2 | 1941.7 | 1941.7 | 1915.3 | 2014.0 | 2035.0 | 1980.2 | 2187.2 | 2227.1 |
| 30° | 2260.2 | 2239.2 | 2018.1 | 2150.0 | 2109.4 | 2035.0 | 2224.4 | 2210.8 | 2118.8 | 2329.9 | 2311.6 |
| 32.5° | 2474.6 | 2543.6 | 2333.9 | 2261.5 | 2322.4 | 2350.8 | 2251.4 | 2292.0 | 2309.6 | 2513.1 | 2504.3 |
| 35° | 2803.3 | 2861.4 | 2583.5 | 2565.2 | 2463.8 | 2437.4 | 2513.1 | 2526.7 | 2528.0 | 2742.4 | 2703.2 |
| 37.5° | 3372.0 | 3288.2 | 3013.6 | 2884.4 | 2895.9 | 2864.1 | 2879.0 | 2772.2 | 2787.0 | 3098.1 | 3117.7 |
| 40° | 3788.0 | 3693.3 | 3387.6 | 3294.9 | 3067.7 | 3203.6 | 3083.3 | 3072.4 | 3042.7 | 3445.7 | 3434.9 |
| 42.5° | 4247.2 | 4117.3 | 3779.2 | 3655.4 | 3414.0 | 3358.5 | 3303.0 | 3428.2 | 3420.0 | 3793.4 | 3875.9 |
| 45° | 4594.1 | 4331.7 | 4155.2 | 4078.1 | 3933.4 | 3797.4 | 3744.7 | 3800.8 | 3775.1 | 4052.4 | 4196.4 |
| 47.5° | 4813.2 | 4585.3 | 4382.4 | 4220.1 | 4081.5 | 4414.9 | 4147.7 | 4072.7 | 4020.6 | 4331.0 | 4469.7 |
| 50° | 4987.7 | 4724.6 | 4485.2 | 4431.1 | 4540.7 | 4835.5 | 4414.2 | 4248.5 | 4312.1 | 4540.7 | 4729.4 |
| 52.5° | 5035.1 | 4756.4 | 4541.4 | 4506.9 | 4803.1 | 4856.5 | 4788.2 | 4509.6 | 4492.7 | 4792.3 | 5020.2 |
| 55° | 4890.3 | 4623.2 | 4521.1 | 4709.8 | 5037.1 | 4992.4 | 5096.6 | 4918.7 | 4799.0 | 5049.3 | 5336.0 |
| 57.5° | 4517.7 | 4252.6 | 4228.2 | 4500.1 | 4912.6 | 5292.7 | 5344.1 | 5203.5 | 5046.6 | 5311.7 | 5649.8 |
| 60° | 3905.6 | 3663.5 | 3725.1 | 4025.3 | 4647.5 | 5188.6 | 5461.8 | 5333.3 | 5284.6 | 5548.4 | 5940.6 |
| 62.5° | 2952.7 | 2764.0 | 2928.4 | 3347.0 | 4163.3 | 5054.0 | 5624.1 | 5603.8 | 5533.5 | 5799.9 | 6197.6 |
| 65° | 1882.8 | 1783.4 | 1951.1 | 2376.5 | 3411.9 | 4809.2 | 5701.9 | 5728.9 | 5793.9 | 5994.0 | 6396.4 |
| 67.5° | 1094.3 | 1041.5 | 1143.6 | 1491.9 | 2429.9 | 3948.9 | 5557.2 | 5945.4 | 5979.2 | 6094.1 | 6527.0 |
| 70° | 647.2 | 612.7 | 654.7 | 837.9 | 1375.6 | 2690.3 | 4740.2 | 5850.7 | 6106.3 | 6186.1 | 6658.9 |
| 72.5° | 493.7 | 461.2 | 443.0 | 495.7 | 718.2 | 1389.8 | 3205.0 | 4959.3 | 6004.2 | 6125.3 | 6603.4 |
| 75° | 426.7 | 395.6 | 374.0 | 378.7 | 427.4 | 660.1 | 1737.4 | 3547.2 | 5116.2 | 5577.4 | 6099.6 |
| 77.5° | 366.6 | 338.8 | 323.3 | 321.9 | 328.0 | 362.5 | 726.3 | 1923.4 | 3204.3 | 4009.1 | 4397.3 |
| 80° | 293.5 | 271.9 | 268.5 | 268.5 | 259.7 | 257.0 | 361.1 | 731.8 | 1219.4 | 1445.9 | 1386.4 |
| 82.5° | 214.4 | 192.7 | 214.4 | 211.7 | 198.2 | 187.3 | 229.9 | 316.5 | 376.0 | 296.9 | 234.7 |
| 85° | 144.7 | 125.1 | 141.3 | 144.1 | 131.2 | 97.4 | 138.0 | 158.3 | 162.3 | 101.4 | 83.9 |
| 87.5° | 50.7 | 49.4 | 79.8 | 69.7 | 56.8 | 33.1 | 50.7 | 54.8 | 57.5 | 35.8 | 24.3 |
| 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: MSA-SA4B-727-U-RW

CANDELA DISTRIBUTION (continued):

| | 91° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 | 585.7 |
| 2.5° | 710.1 | 702.0 | 661.4 | 667.5 | 683.1 | 690.5 | 697.9 | 667.5 | 652.6 | 700.0 | 695.2 |
| 5° | 929.9 | 900.2 | 867.0 | 862.3 | 864.3 | 835.2 | 852.1 | 844.7 | 848.1 | 878.5 | 884.6 |
| 7.5° | 1113.9 | 1078.0 | 1034.1 | 999.6 | 940.1 | 892.7 | 932.6 | 952.9 | 959.0 | 1013.1 | 1033.4 |
| 10° | 1213.3 | 1182.8 | 1170.0 | 1105.1 | 1085.5 | 1079.4 | 1069.9 | 1037.4 | 1073.3 | 1060.4 | 1070.6 |
| 12.5° | 1408.1 | 1402.0 | 1335.0 | 1292.4 | 1296.5 | 1308.0 | 1248.5 | 1216.0 | 1169.3 | 1242.4 | 1216.0 |
| 15° | 1573.8 | 1600.1 | 1533.2 | 1455.4 | 1416.8 | 1436.5 | 1391.1 | 1343.8 | 1301.9 | 1324.2 | 1295.8 |
| 17.5° | 1785.4 | 1784.8 | 1654.2 | 1571.0 | 1567.7 | 1566.3 | 1499.4 | 1395.2 | 1445.3 | 1429.7 | 1431.1 |
| 20° | 1897.7 | 1879.4 | 1717.1 | 1621.1 | 1702.9 | 1673.8 | 1613.7 | 1479.7 | 1537.9 | 1556.8 | 1569.0 |
| 22.5° | 1991.7 | 1981.6 | 1784.8 | 1714.4 | 1767.2 | 1767.8 | 1707.7 | 1637.3 | 1629.9 | 1688.7 | 1656.9 |
| 25° | 2057.3 | 2097.9 | 1912.6 | 1895.7 | 1918.7 | 1895.7 | 1836.8 | 1790.8 | 1761.1 | 1849.0 | 1761.1 |
| 27.5° | 2212.9 | 2155.4 | 1932.2 | 2028.2 | 2042.4 | 1926.8 | 2000.5 | 1946.4 | 1863.9 | 1972.8 | 2008.6 |
| 30° | 2323.8 | 2357.6 | 2070.2 | 2214.9 | 2198.0 | 2091.1 | 2121.6 | 2119.5 | 2020.8 | 2233.1 | 2208.1 |
| 32.5° | 2514.5 | 2473.9 | 2295.4 | 2283.9 | 2324.4 | 2319.7 | 2268.3 | 2293.3 | 2317.7 | 2471.9 | 2509.1 |
| 35° | 2709.9 | 2753.2 | 2439.4 | 2517.2 | 2505.7 | 2432.7 | 2567.2 | 2551.7 | 2624.0 | 2940.6 | 2835.7 |
| 37.5° | 3150.9 | 2944.6 | 2762.7 | 2752.5 | 2829.6 | 2841.1 | 2797.9 | 2866.2 | 3022.4 | 3265.9 | 3378.1 |
| 40° | 3439.7 | 3345.7 | 3036.6 | 3048.8 | 2941.9 | 3125.9 | 3004.1 | 3223.9 | 3343.0 | 3753.5 | 3713.6 |
| 42.5° | 3876.6 | 3647.3 | 3350.4 | 3391.0 | 3369.3 | 3280.7 | 3441.0 | 3554.0 | 3724.4 | 4037.5 | 4239.7 |
| 45° | 4201.9 | 3887.4 | 3746.7 | 3721.7 | 3719.0 | 3873.2 | 3852.9 | 4033.5 | 4094.3 | 4329.7 | 4497.4 |
| 47.5° | 4448.7 | 4181.6 | 3973.3 | 4001.7 | 3919.2 | 4359.4 | 4124.8 | 4180.9 | 4304.0 | 4525.8 | 4721.3 |
| 50° | 4741.5 | 4444.0 | 4207.3 | 4277.6 | 4478.5 | 4647.5 | 4435.2 | 4339.1 | 4399.3 | 4661.1 | 4878.8 |
| 52.5° | 5012.7 | 4699.6 | 4439.2 | 4498.1 | 4826.1 | 4749.0 | 4726.0 | 4483.2 | 4475.8 | 4686.1 | 4933.6 |
| 55° | 5329.9 | 4976.9 | 4747.0 | 4933.6 | 5049.9 | 4954.6 | 4918.1 | 4622.5 | 4439.9 | 4556.9 | 4790.2 |
| 57.5° | 5641.0 | 5251.5 | 5022.9 | 5061.4 | 5208.9 | 5114.2 | 4840.3 | 4385.1 | 4157.2 | 4180.2 | 4416.2 |
| 60° | 5932.5 | 5503.7 | 5315.0 | 5277.8 | 5395.5 | 5024.2 | 4544.7 | 3950.3 | 3648.0 | 3592.5 | 3796.7 |
| 62.5° | 6182.1 | 5714.7 | 5536.2 | 5434.7 | 5547.0 | 5027.6 | 4084.2 | 3252.3 | 2920.3 | 2732.3 | 2891.2 |
| 65° | 6380.2 | 5889.9 | 5762.8 | 5710.0 | 5750.6 | 4721.9 | 3366.6 | 2388.0 | 1980.9 | 1772.6 | 1865.2 |
| 67.5° | 6512.1 | 5988.0 | 5929.8 | 5998.8 | 5457.7 | 3932.7 | 2494.2 | 1528.4 | 1151.7 | 1038.1 | 1096.3 |
| 70° | 6648.7 | 6074.5 | 6072.5 | 5837.8 | 4627.9 | 2711.3 | 1456.8 | 881.2 | 670.2 | 626.3 | 662.8 |
| 72.5° | 6602.7 | 5971.7 | 6002.2 | 5105.4 | 3207.0 | 1449.3 | 769.0 | 498.4 | 453.8 | 469.4 | 501.8 |
| 75° | 6114.4 | 5429.3 | 5282.6 | 3670.3 | 1819.2 | 673.6 | 443.0 | 377.4 | 374.7 | 398.3 | 430.1 |
| 77.5° | 4435.2 | 3781.2 | 3393.0 | 2080.3 | 779.8 | 364.5 | 326.0 | 315.2 | 315.2 | 334.1 | 362.5 |
| 80° | 1462.2 | 1265.4 | 1318.8 | 804.8 | 368.6 | 251.6 | 254.3 | 259.0 | 257.7 | 262.4 | 286.1 |
| 82.5° | 240.1 | 248.9 | 384.8 | 328.7 | 222.5 | 171.8 | 192.1 | 201.5 | 204.2 | 182.6 | 207.6 |
| 85° | 85.2 | 96.0 | 163.7 | 152.2 | 128.5 | 86.6 | 126.5 | 141.3 | 139.3 | 121.7 | 134.6 |
| 87.5° | 26.4 | 33.8 | 59.5 | 46.0 | 38.5 | 23.7 | 47.3 | 55.5 | 69.7 | 28.4 | 25.7 |
| 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)