

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: P596995

Luminaire Tested: **MSA-SA2D-835-U-T2-HSS**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596995
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-9)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2D-835-U-T2-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8386 lumens
Efficiency: N/A
Efficacy: 65.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B1 - U0 - G2

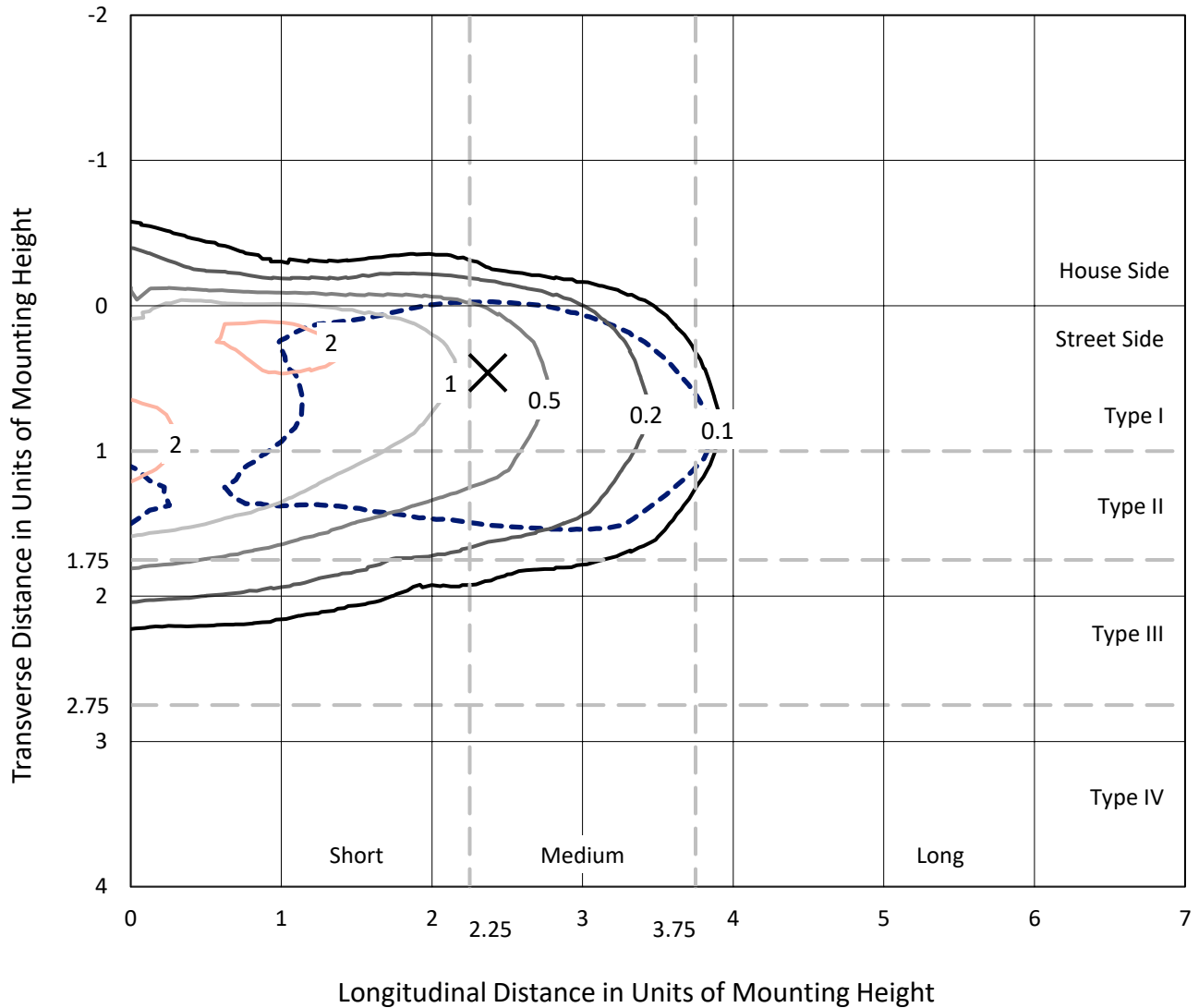
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P596995
 CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

Iso-Footcandle Lines of Horizontal Illumination

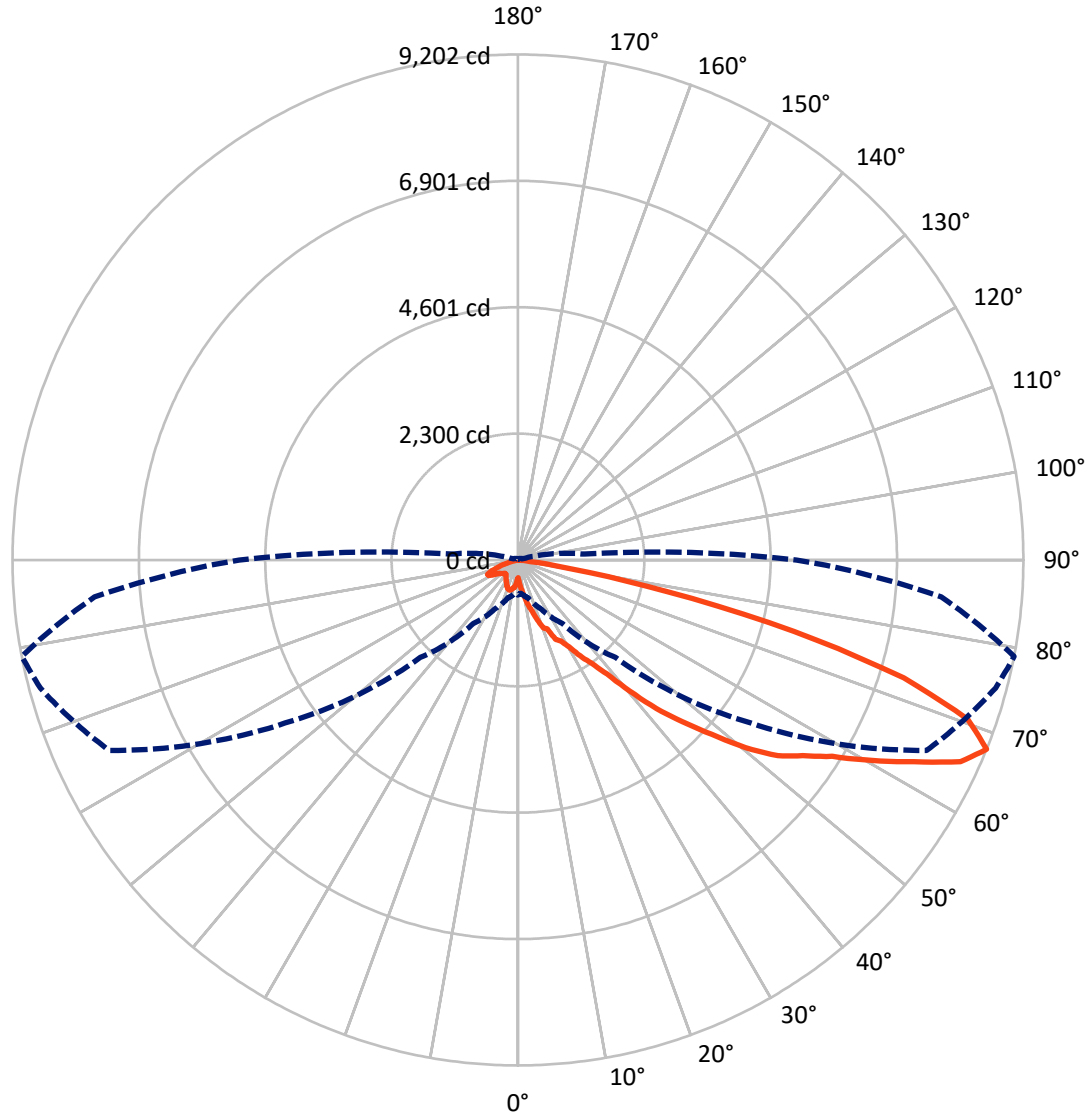
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.5 fc
 Type II - Medium - N/A

REPORT NUMBER: P596995
CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

REPORT NUMBER: P596995

CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

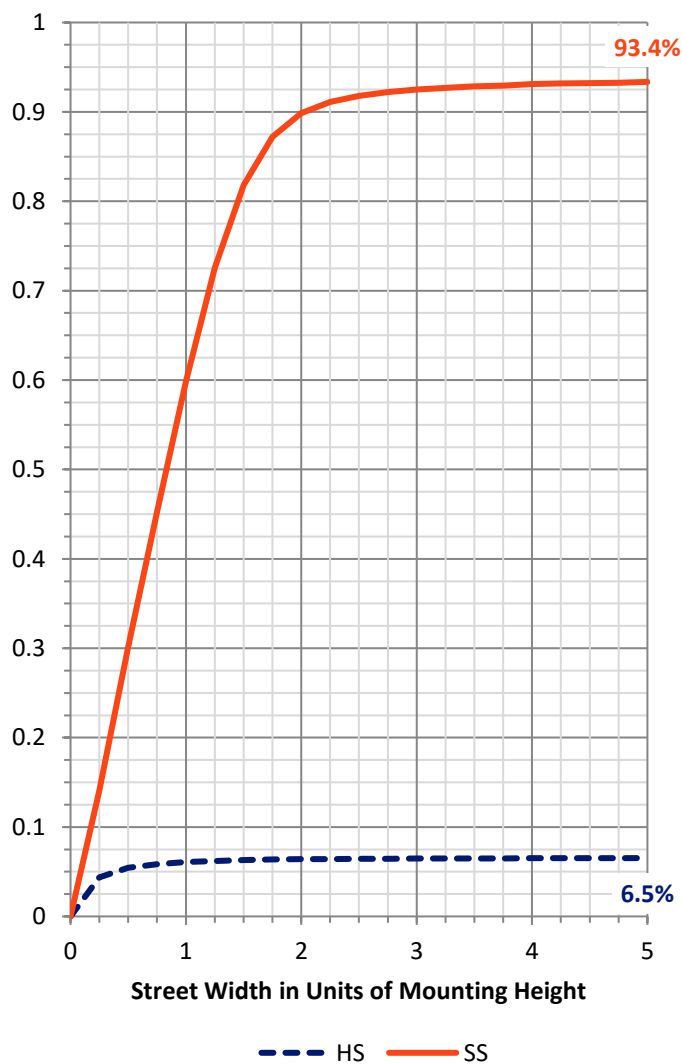
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 551.0 | 0.0 | 551.0 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 7835.0 | 0.0 | 7835.0 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 8386.0 | 0.0 | 8386.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 47.0 | 0.6 |
| 10°-20° | 187.4 | 2.2 |
| 20°-30° | 361.5 | 4.3 |
| 30°-40° | 710.1 | 8.5 |
| 40°-50° | 1422.5 | 17.0 |
| 50°-60° | 2273.7 | 27.1 |
| 60°-70° | 2287.8 | 27.3 |
| 70°-80° | 1032.1 | 12.3 |
| 80°-90° | 63.9 | 0.8 |
| 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° | 8386.0 | 100.0 |
| 0°-180° | 8386.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P596995

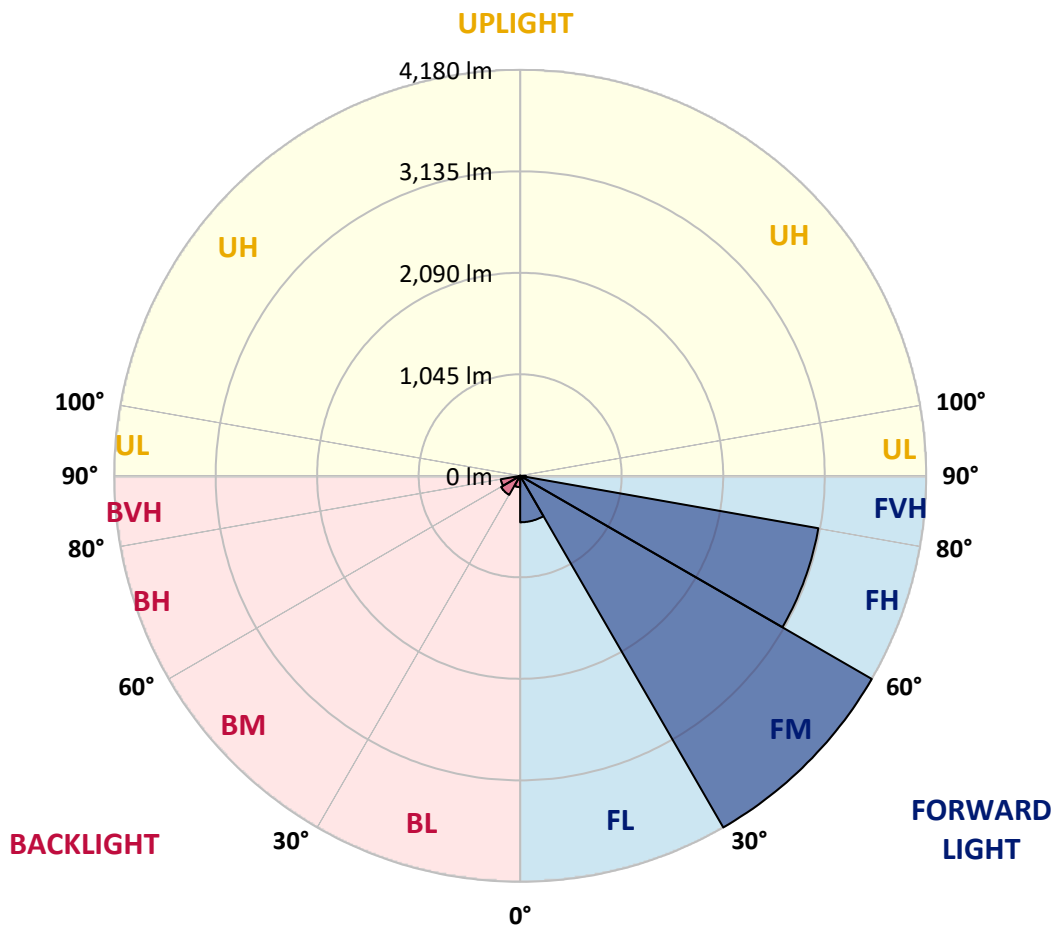
CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 478.8 | 5.7 | | | |
| FM (30°-60°) | 4179.7 | 49.8 | | | |
| FH (60°-80°) | 3116.7 | 37.2 | | | G2/5000 |
| FVH (80°-90°) | 59.8 | 0.7 | | | G1/100 |
| BL (0°-30°) | 117.1 | 1.4 | B1/500 | | |
| BM (30°-60°) | 226.7 | 2.7 | B1/1000 | | |
| BH (60°-80°) | 203.1 | 2.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 4.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Medium





REPORT NUMBER: P596995

CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 |
| 2.5° | 436.4 | 420.7 | 395.3 | 409.6 | 408.7 | 416.1 | 402.2 | 386.9 | 362.4 | 386.9 | 388.8 |
| 5° | 628.2 | 599.1 | 580.6 | 576.9 | 556.6 | 537.6 | 533.5 | 517.8 | 505.7 | 484.0 | 503.4 |
| 7.5° | 782.6 | 769.2 | 736.4 | 732.7 | 682.8 | 655.1 | 663.8 | 656.9 | 611.1 | 588.5 | 607.4 |
| 10° | 848.3 | 825.2 | 829.8 | 825.2 | 803.9 | 811.8 | 793.7 | 772.9 | 736.4 | 699.0 | 651.8 |
| 12.5° | 873.7 | 870.0 | 908.4 | 903.8 | 953.7 | 1013.8 | 973.6 | 938.9 | 854.3 | 845.0 | 780.8 |
| 15° | 928.3 | 951.4 | 945.8 | 965.2 | 997.1 | 1099.3 | 1098.4 | 1106.7 | 1017.0 | 968.9 | 876.0 |
| 17.5° | 976.8 | 993.9 | 966.2 | 988.4 | 1075.3 | 1137.2 | 1220.0 | 1187.6 | 1197.8 | 1148.8 | 1005.0 |
| 20° | 956.0 | 975.4 | 947.7 | 934.3 | 1087.3 | 1204.7 | 1315.2 | 1291.6 | 1352.6 | 1322.1 | 1123.8 |
| 22.5° | 1085.9 | 1049.4 | 979.6 | 936.1 | 1050.3 | 1203.3 | 1348.9 | 1447.4 | 1436.8 | 1361.9 | 1234.3 |
| 25° | 1246.3 | 1224.1 | 1140.4 | 1063.7 | 1073.9 | 1195.0 | 1455.3 | 1600.0 | 1631.4 | 1599.5 | 1339.2 |
| 27.5° | 1462.7 | 1457.6 | 1286.5 | 1253.2 | 1154.3 | 1158.5 | 1471.9 | 1792.3 | 1720.6 | 1670.7 | 1461.7 |
| 30° | 1745.1 | 1704.9 | 1502.0 | 1458.5 | 1312.4 | 1240.8 | 1573.6 | 1958.2 | 1905.5 | 1837.6 | 1576.8 |
| 32.5° | 2048.8 | 2054.8 | 1796.0 | 1652.7 | 1535.2 | 1450.2 | 1533.4 | 2035.9 | 2134.4 | 2079.3 | 1720.6 |
| 35° | 2393.7 | 2420.5 | 2103.8 | 1935.6 | 1707.2 | 1581.9 | 1706.3 | 2274.4 | 2451.0 | 2306.3 | 1913.4 |
| 37.5° | 2924.9 | 2923.9 | 2554.1 | 2218.9 | 2053.0 | 1917.1 | 1994.3 | 2491.2 | 2840.3 | 2636.9 | 2259.2 |
| 40° | 3392.2 | 3290.5 | 2946.6 | 2561.5 | 2302.6 | 2265.6 | 2209.7 | 2788.0 | 3255.8 | 3133.3 | 2566.6 |
| 42.5° | 3741.2 | 3669.6 | 3254.0 | 2954.4 | 2633.6 | 2516.2 | 2496.3 | 3223.0 | 3869.3 | 3697.8 | 3005.3 |
| 45° | 4158.7 | 3923.8 | 3617.8 | 3347.8 | 3021.0 | 2986.8 | 2940.1 | 3664.5 | 4583.1 | 4196.6 | 3386.7 |
| 47.5° | 4532.7 | 4311.7 | 4022.3 | 3675.6 | 3300.2 | 3582.2 | 3402.9 | 4052.4 | 5102.2 | 4739.3 | 3807.3 |
| 50° | 4847.5 | 4612.6 | 4288.6 | 4024.6 | 3863.7 | 4055.1 | 3756.0 | 4371.8 | 5662.9 | 5368.9 | 4200.7 |
| 52.5° | 5007.9 | 4742.1 | 4491.5 | 4328.3 | 4426.8 | 4383.8 | 4235.0 | 4758.7 | 6140.9 | 5920.9 | 4549.3 |
| 55° | 4876.1 | 4616.3 | 4511.4 | 4592.3 | 4891.4 | 4767.0 | 4779.1 | 5358.3 | 6592.1 | 6288.9 | 4852.6 |
| 57.5° | 4291.8 | 4054.7 | 4101.4 | 4322.8 | 4896.0 | 5221.5 | 5399.4 | 5940.8 | 6954.1 | 6747.5 | 5320.4 |
| 60° | 3246.6 | 3055.7 | 3228.6 | 3621.5 | 4435.6 | 5130.9 | 5839.5 | 6523.2 | 7471.4 | 7406.7 | 6028.6 |
| 62.5° | 1982.7 | 1879.2 | 2124.2 | 2614.2 | 3534.6 | 4686.6 | 6096.1 | 7299.9 | 8024.7 | 8093.6 | 6779.8 |
| 65° | 1011.5 | 964.8 | 1169.1 | 1600.0 | 2388.1 | 3849.9 | 5910.7 | 7782.5 | 8596.6 | 8850.8 | 7495.9 |
| 67.5° | 637.0 | 607.0 | 716.1 | 975.9 | 1409.0 | 2511.1 | 5175.2 | 8204.6 | 9000.6 | 9201.7 | 7734.9 |
| 70° | 441.5 | 422.5 | 516.8 | 669.8 | 889.0 | 1352.6 | 3842.5 | 7810.7 | 8680.3 | 8689.5 | 7156.6 |
| 72.5° | 280.1 | 265.3 | 357.3 | 496.0 | 656.0 | 698.5 | 2202.8 | 6128.9 | 7430.2 | 7344.7 | 5795.6 |
| 75° | 181.7 | 174.3 | 227.0 | 363.4 | 503.9 | 430.8 | 1088.7 | 4135.6 | 5327.8 | 5193.7 | 3849.4 |
| 77.5° | 130.4 | 125.7 | 152.1 | 242.7 | 358.7 | 301.4 | 488.2 | 2464.9 | 3054.8 | 2761.7 | 1868.5 |
| 80° | 78.6 | 78.1 | 110.0 | 152.1 | 255.2 | 212.6 | 225.6 | 1119.2 | 1184.4 | 965.7 | 570.9 |
| 82.5° | 39.3 | 40.7 | 61.5 | 98.0 | 164.1 | 139.1 | 103.1 | 372.6 | 318.0 | 234.4 | 115.6 |
| 85° | 9.2 | 11.6 | 32.4 | 67.5 | 82.3 | 55.5 | 49.0 | 97.5 | 87.4 | 66.1 | 33.7 |
| 87.5° | 0.0 | 0.0 | 10.2 | 16.2 | 22.2 | 9.2 | 16.6 | 18.5 | 23.6 | 18.5 | 6.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P596995
 CATALOG NUMBER: MSA-SA2D-835-U-T2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 | 323.1 |
| 2.5° | 389.2 | 383.7 | 349.9 | 341.2 | 340.2 | 330.5 | 332.8 | 323.6 | 324.1 | 344.9 | 344.9 |
| 5° | 496.0 | 463.7 | 431.3 | 402.6 | 383.2 | 355.5 | 345.3 | 341.2 | 337.5 | 345.8 | 350.9 |
| 7.5° | 582.5 | 534.9 | 476.6 | 414.2 | 356.4 | 316.7 | 311.1 | 300.9 | 297.2 | 305.6 | 312.0 |
| 10° | 620.8 | 561.7 | 481.7 | 390.6 | 336.5 | 304.2 | 277.4 | 263.0 | 260.3 | 259.8 | 262.1 |
| 12.5° | 702.2 | 628.7 | 487.2 | 381.8 | 323.1 | 287.5 | 257.0 | 233.0 | 210.8 | 213.1 | 210.8 |
| 15° | 767.4 | 680.5 | 487.2 | 360.6 | 290.8 | 255.2 | 201.6 | 189.5 | 186.3 | 191.4 | 187.2 |
| 17.5° | 865.9 | 731.8 | 462.7 | 322.7 | 263.0 | 198.3 | 178.0 | 177.1 | 183.5 | 190.9 | 186.3 |
| 20° | 925.0 | 738.7 | 421.6 | 279.2 | 215.9 | 172.0 | 164.6 | 157.2 | 166.4 | 172.4 | 170.1 |
| 22.5° | 986.5 | 739.2 | 380.5 | 256.1 | 173.8 | 156.7 | 144.7 | 138.7 | 140.1 | 145.6 | 146.5 |
| 25° | 1012.9 | 721.2 | 342.1 | 225.6 | 157.6 | 140.1 | 127.6 | 121.1 | 118.8 | 121.6 | 120.7 |
| 27.5° | 1084.5 | 686.5 | 300.5 | 192.3 | 149.8 | 124.4 | 112.8 | 104.9 | 98.0 | 102.6 | 103.6 |
| 30° | 1094.7 | 675.4 | 277.8 | 171.0 | 139.6 | 110.0 | 99.9 | 91.5 | 86.4 | 92.9 | 92.9 |
| 32.5° | 1127.0 | 614.4 | 266.3 | 162.3 | 129.0 | 101.7 | 87.8 | 81.8 | 80.9 | 85.1 | 85.5 |
| 35° | 1177.0 | 587.6 | 249.2 | 155.3 | 119.3 | 92.0 | 79.1 | 76.3 | 75.4 | 78.6 | 78.6 |
| 37.5° | 1346.2 | 554.3 | 230.2 | 149.3 | 110.9 | 86.9 | 76.7 | 72.1 | 72.6 | 75.4 | 77.2 |
| 40° | 1458.5 | 558.4 | 202.0 | 141.9 | 101.2 | 82.3 | 72.1 | 68.9 | 68.4 | 69.8 | 71.2 |
| 42.5° | 1667.0 | 561.7 | 189.5 | 134.1 | 93.8 | 76.7 | 67.5 | 65.2 | 63.3 | 64.7 | 66.1 |
| 45° | 1900.0 | 578.8 | 183.1 | 127.6 | 89.7 | 73.5 | 63.3 | 61.9 | 57.8 | 58.7 | 60.6 |
| 47.5° | 2124.6 | 641.2 | 175.2 | 118.3 | 86.0 | 71.7 | 59.2 | 55.9 | 53.2 | 52.7 | 54.5 |
| 50° | 2379.8 | 701.7 | 166.4 | 108.2 | 82.3 | 68.9 | 55.0 | 49.9 | 48.1 | 48.1 | 49.5 |
| 52.5° | 2608.2 | 759.5 | 158.1 | 101.2 | 79.5 | 63.8 | 51.3 | 46.2 | 44.8 | 44.8 | 46.7 |
| 55° | 2848.6 | 820.1 | 150.7 | 94.8 | 75.8 | 58.7 | 48.1 | 43.5 | 43.0 | 42.1 | 43.5 |
| 57.5° | 3272.9 | 952.3 | 141.5 | 89.2 | 70.7 | 54.5 | 45.3 | 40.7 | 39.8 | 38.4 | 39.8 |
| 60° | 3891.0 | 1155.2 | 129.4 | 83.7 | 64.7 | 51.8 | 43.0 | 37.4 | 36.1 | 33.7 | 34.2 |
| 62.5° | 4495.2 | 1319.3 | 115.6 | 76.7 | 59.2 | 49.0 | 39.3 | 33.7 | 31.4 | 28.7 | 29.1 |
| 65° | 5013.0 | 1384.1 | 100.8 | 68.4 | 53.6 | 42.5 | 34.2 | 29.6 | 26.4 | 22.7 | 22.2 |
| 67.5° | 5074.0 | 1222.3 | 86.4 | 60.6 | 48.1 | 36.1 | 29.1 | 26.4 | 21.3 | 18.0 | 17.1 |
| 70° | 4566.4 | 910.7 | 72.1 | 53.6 | 41.6 | 30.5 | 25.0 | 23.1 | 19.9 | 17.1 | 15.7 |
| 72.5° | 3636.3 | 672.2 | 60.6 | 47.6 | 36.5 | 25.9 | 21.3 | 21.7 | 19.9 | 16.6 | 14.8 |
| 75° | 2404.8 | 384.6 | 49.5 | 39.8 | 30.5 | 20.8 | 19.4 | 19.4 | 19.0 | 15.7 | 13.9 |
| 77.5° | 1157.1 | 166.0 | 37.9 | 31.4 | 24.5 | 15.7 | 17.6 | 17.6 | 18.0 | 14.3 | 11.6 |
| 80° | 328.2 | 49.9 | 23.6 | 21.3 | 18.0 | 10.6 | 13.9 | 13.4 | 12.0 | 8.3 | 5.1 |
| 82.5° | 58.7 | 19.4 | 10.6 | 11.1 | 10.2 | 4.2 | 7.9 | 7.4 | 6.0 | 3.2 | 0.5 |
| 85° | 16.2 | 7.4 | 6.0 | 6.5 | 5.1 | 1.4 | 3.2 | 4.2 | 3.2 | 1.8 | 0.0 |
| 87.5° | 4.2 | 3.2 | 4.2 | 4.6 | 3.7 | 0.5 | 1.4 | 0.5 | 1.4 | 0.5 | 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 |

(END OF REPORT)