

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P822787

Luminaire Tested: **MSA-SA1D-840-U-SLR-HSS**

Issue Date: 04/10/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P822787  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 04/10/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1D-840-U-SLR-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS  
EACH AND SPILL LIGHT ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

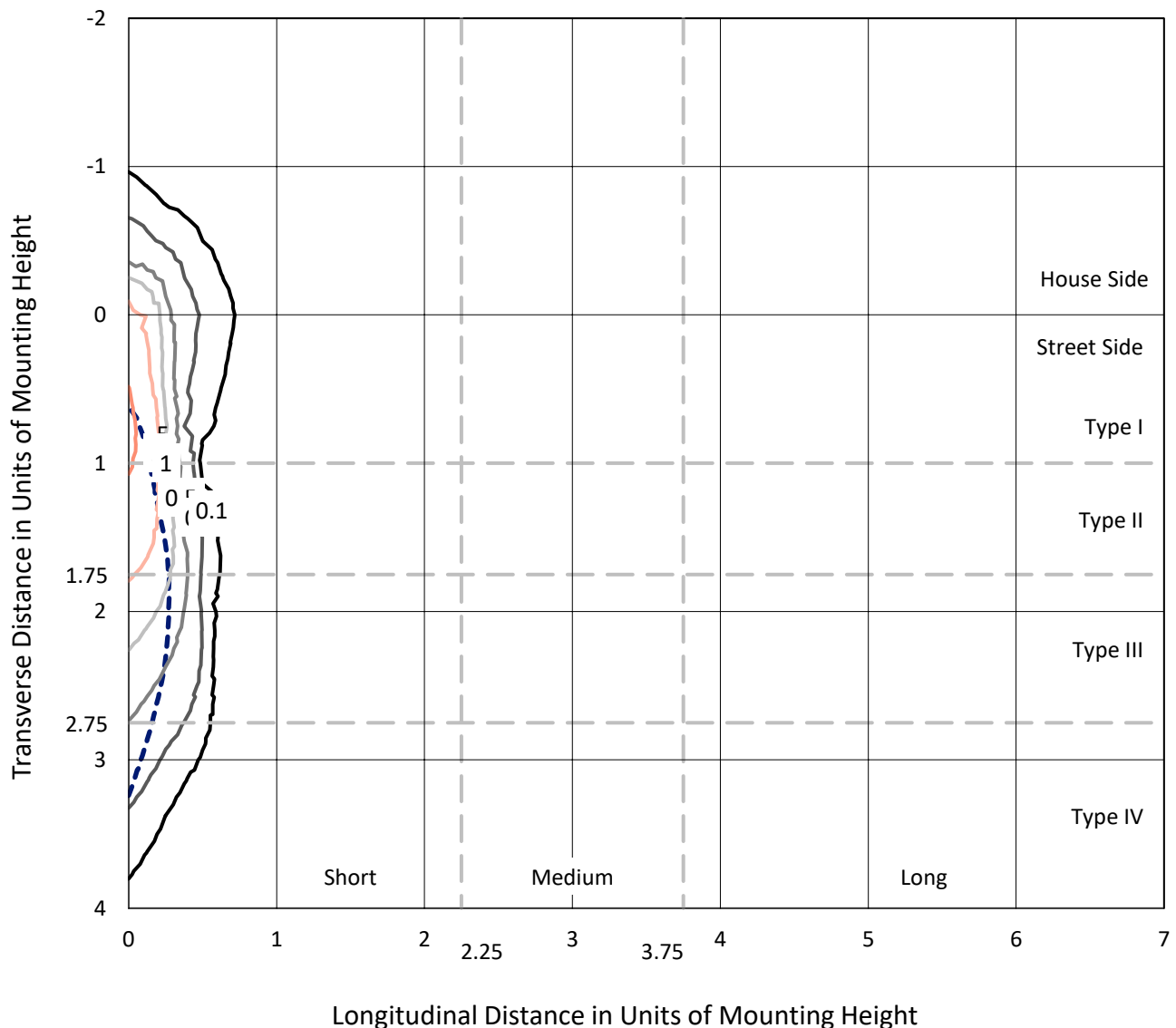
Lumens per Lamp: N/A  
Luminaire Lumens: 4206.2 lumens  
Efficiency: N/A  
Efficacy: 62.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 67  
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

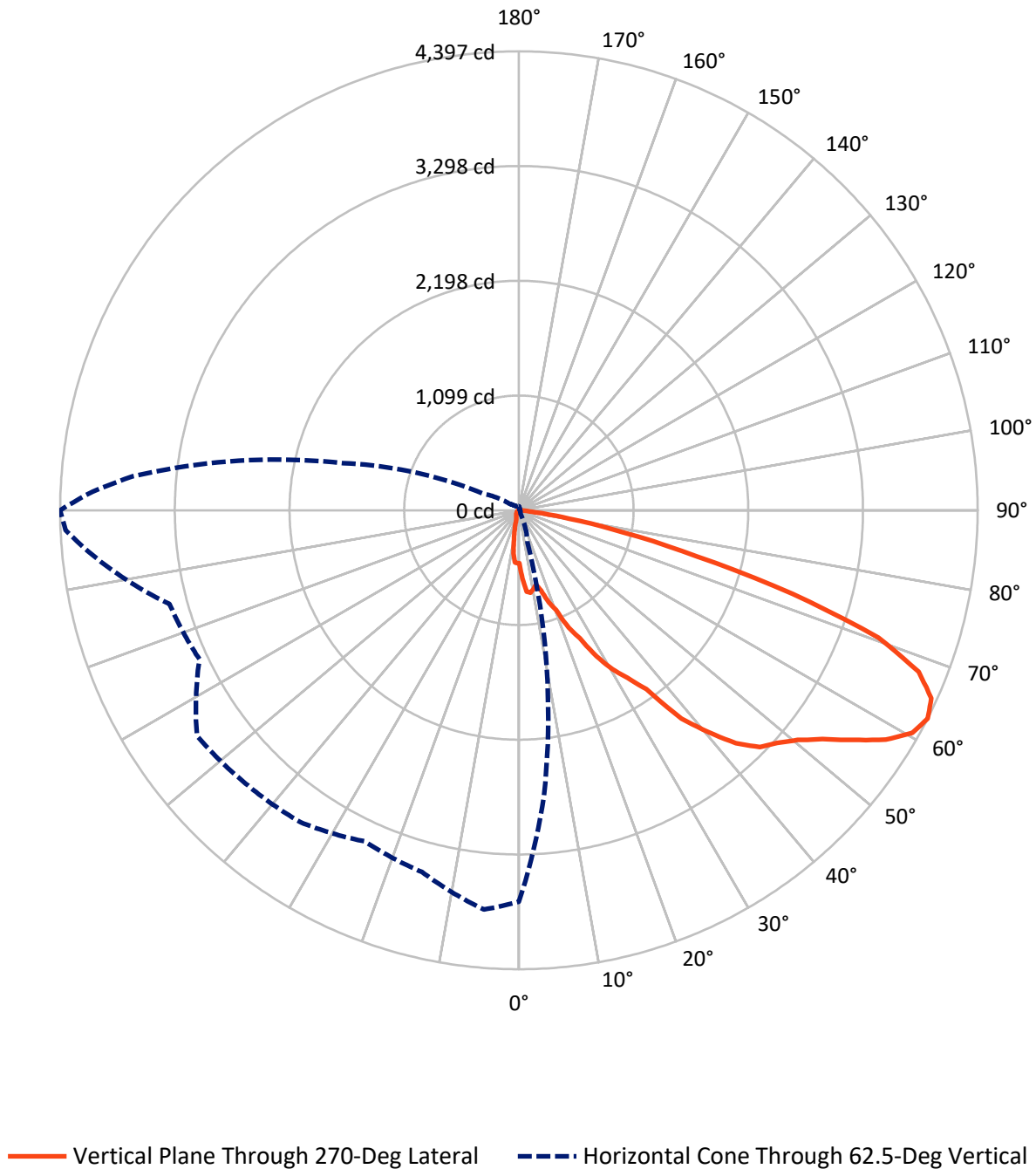
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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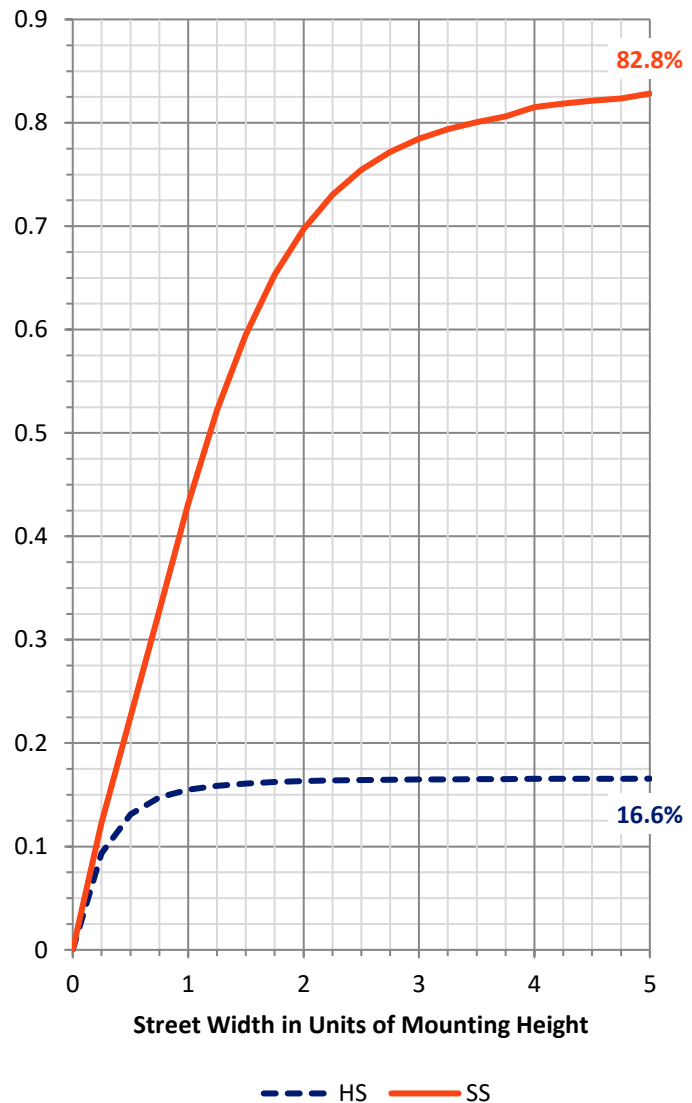
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 702.4    | 0.0    | 702.4  |
|                    | % Fixture | 16.7     | 0.0    | 16.7   |
| <b>Street Side</b> | Lumens    | 3503.8   | 0.0    | 3503.8 |
|                    | % Fixture | 83.3     | 0.0    | 83.3   |
| <b>Total</b>       | Lumens    | 4206.2   | 0.0    | 4206.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 56.6   | 1.3       |
| 10°-20°   | 147.9  | 3.5       |
| 20°-30°   | 239.1  | 5.7       |
| 30°-40°   | 400.5  | 9.5       |
| 40°-50°   | 654.7  | 15.6      |
| 50°-60°   | 969.1  | 23.0      |
| 60°-70°   | 1112.6 | 26.5      |
| 70°-80°   | 550.1  | 13.1      |
| 80°-90°   | 75.6   | 1.8       |
| 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°    | 4206.2 | 100.0     |
| 0°-180°   | 4206.2 | 100.0     |

**Coefficient of Utilization**



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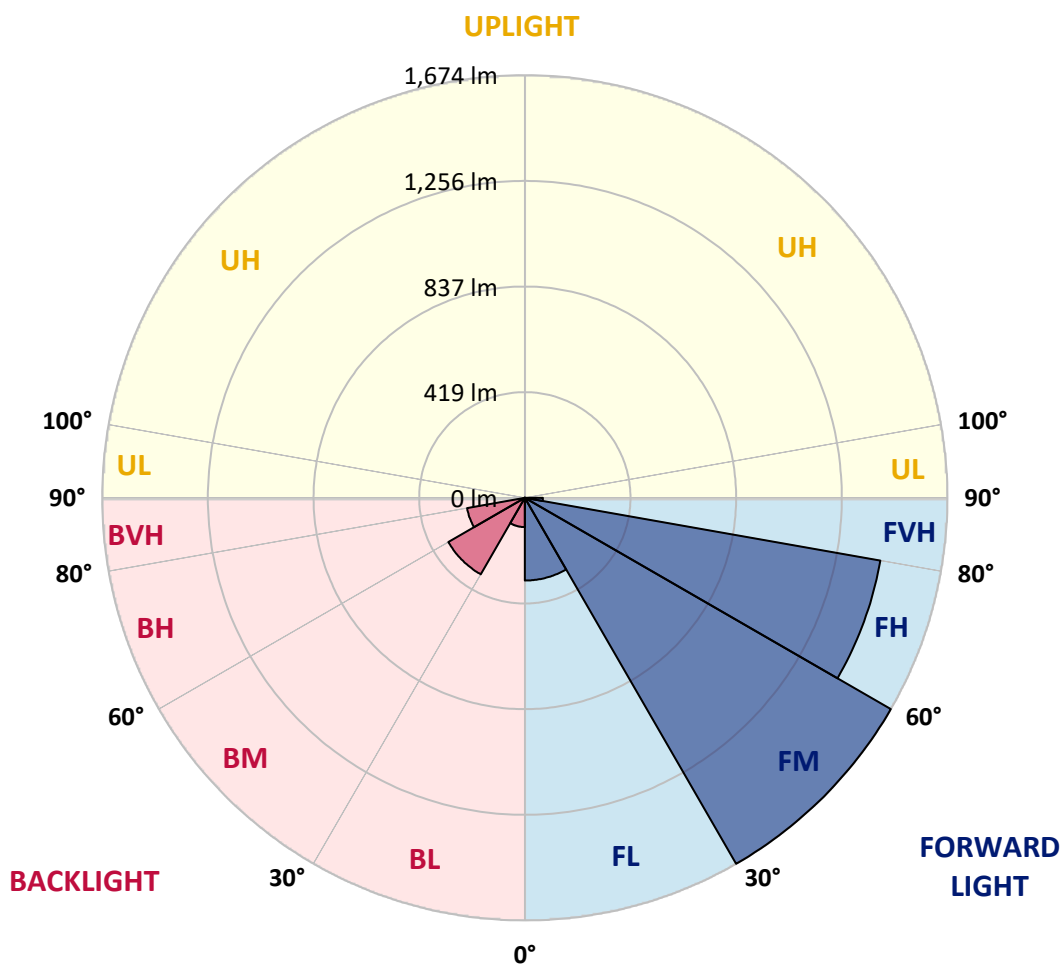
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 327.7  | 7.8       |                         |      |         |
| FM   | (30°-60°)   | 1674.3 | 39.8      |                         |      |         |
| FH   | (60°-80°)   | 1430.3 | 34.0      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 71.5   | 1.7       |                         |      | G1/100  |
| BL   | (0°-30°)    | 116.0  | 2.8       | B1/500                  |      |         |
| BM   | (30°-60°)   | 350.0  | 8.3       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 232.4  | 5.5       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 4.0    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 2.5°   | 5°     | 7.5°   | 10°    | 12.5°  | 15°   | 17.5° | 20°   | 22.5° | 25°   |
|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| 0°     | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 |
| 2.5°   | 672.0  | 680.5  | 688.6  | 673.1  | 657.4  | 641.9  | 626.3 | 612.3 | 598.5 | 584.3 | 570.4 |
| 5°     | 864.9  | 849.5  | 834.2  | 813.1  | 792.0  | 770.9  | 749.7 | 739.9 | 730.1 | 720.2 | 710.4 |
| 7.5°   | 932.0  | 904.6  | 877.1  | 858.4  | 839.9  | 821.2  | 802.5 | 773.0 | 743.3 | 713.8 | 684.1 |
| 10°    | 879.2  | 850.2  | 821.0  | 804.7  | 788.3  | 772.0  | 755.7 | 719.1 | 682.1 | 645.5 | 608.6 |
| 12.5°  | 903.5  | 872.0  | 840.6  | 807.0  | 773.5  | 739.9  | 706.4 | 678.3 | 650.0 | 621.9 | 593.7 |
| 15°    | 920.2  | 884.3  | 848.0  | 809.7  | 771.4  | 732.9  | 694.6 | 661.5 | 628.7 | 595.6 | 562.5 |
| 17.5°  | 1018.8 | 967.2  | 915.7  | 856.7  | 797.7  | 738.7  | 679.7 | 641.4 | 603.3 | 564.9 | 526.5 |
| 20°    | 1145.4 | 1072.2 | 998.9  | 919.0  | 839.2  | 759.3  | 679.5 | 631.8 | 584.1 | 536.3 | 488.6 |
| 22.5°  | 1292.5 | 1201.2 | 1109.7 | 1011.1 | 912.8  | 814.2  | 715.7 | 647.2 | 578.5 | 510.0 | 441.4 |
| 25°    | 1440.7 | 1358.3 | 1275.8 | 1143.2 | 1010.6 | 877.8  | 745.2 | 658.2 | 570.9 | 483.9 | 396.6 |
| 27.5°  | 1708.3 | 1560.9 | 1413.4 | 1244.6 | 1076.1 | 907.2  | 738.5 | 638.7 | 539.0 | 439.0 | 339.3 |
| 30°    | 1883.4 | 1769.9 | 1656.3 | 1433.3 | 1210.6 | 987.6  | 764.6 | 638.2 | 511.9 | 385.3 | 258.9 |
| 32.5°  | 2092.7 | 1926.8 | 1760.6 | 1518.7 | 1276.7 | 1034.8 | 792.9 | 644.5 | 495.8 | 347.5 | 198.8 |
| 35°    | 2327.9 | 2147.3 | 1966.8 | 1660.4 | 1353.9 | 1047.3 | 740.9 | 597.0 | 453.2 | 309.3 | 165.4 |
| 37.5°  | 2743.4 | 2441.3 | 2139.2 | 1782.0 | 1424.5 | 1067.2 | 709.7 | 566.1 | 422.2 | 278.6 | 134.7 |
| 40°    | 2979.3 | 2690.9 | 2402.5 | 1956.0 | 1509.6 | 1063.1 | 616.7 | 489.2 | 361.8 | 234.3 | 106.7 |
| 42.5°  | 3286.2 | 2920.4 | 2554.2 | 2055.2 | 1556.3 | 1057.3 | 558.4 | 440.5 | 322.5 | 204.3 | 86.3  |
| 45°    | 3468.2 | 3053.6 | 2639.1 | 2098.5 | 1557.8 | 1017.1 | 476.5 | 374.3 | 272.1 | 170.0 | 67.9  |
| 47.5°  | 3583.1 | 3167.3 | 2751.5 | 2171.1 | 1590.8 | 1010.3 | 429.9 | 335.9 | 241.9 | 147.9 | 54.0  |
| 50°    | 3641.3 | 3224.3 | 2807.2 | 2210.6 | 1614.1 | 1017.3 | 420.8 | 327.3 | 233.5 | 140.0 | 46.2  |
| 52.5°  | 3702.0 | 3299.9 | 2897.6 | 2279.2 | 1660.9 | 1042.5 | 424.1 | 328.7 | 233.5 | 138.1 | 42.7  |
| 55°    | 3824.5 | 3427.9 | 3031.1 | 2377.5 | 1723.9 | 1070.3 | 416.8 | 322.7 | 228.7 | 134.5 | 40.5  |
| 57.5°  | 3975.1 | 3551.2 | 3127.1 | 2449.5 | 1771.9 | 1094.3 | 416.8 | 322.2 | 227.8 | 133.0 | 38.6  |
| 60°    | 3946.5 | 3486.5 | 3026.1 | 2368.6 | 1711.2 | 1053.6 | 396.1 | 306.2 | 216.5 | 126.6 | 36.7  |
| 62.5°  | 3750.7 | 3251.3 | 2751.5 | 2144.0 | 1536.2 | 928.6  | 320.8 | 249.1 | 177.4 | 105.5 | 33.8  |
| 65°    | 3520.5 | 2990.3 | 2460.0 | 1900.9 | 1341.5 | 782.4  | 223.0 | 175.0 | 126.8 | 78.9  | 30.7  |
| 67.5°  | 3243.4 | 2677.9 | 2112.6 | 1615.3 | 1118.2 | 621.0  | 123.7 | 99.7  | 75.8  | 51.5  | 27.6  |
| 70°    | 2762.4 | 2178.8 | 1594.9 | 1212.7 | 830.8  | 448.6  | 66.4  | 56.1  | 45.8  | 35.5  | 25.1  |
| 72.5°  | 2073.7 | 1539.0 | 1004.4 | 762.9  | 521.7  | 280.3  | 38.8  | 35.0  | 30.9  | 27.1  | 23.0  |
| 75°    | 1411.0 | 1010.3 | 609.7  | 464.2  | 318.9  | 173.3  | 27.8  | 25.9  | 23.7  | 21.8  | 19.7  |
| 77.5°  | 959.3  | 693.9  | 428.4  | 327.0  | 225.6  | 124.2  | 22.8  | 21.6  | 20.3  | 18.9  | 17.7  |
| 80°    | 599.0  | 410.0  | 221.1  | 170.2  | 119.2  | 68.4   | 17.2  | 16.6  | 15.8  | 14.9  | 14.1  |
| 82.5°  | 418.9  | 250.6  | 82.2   | 64.2   | 46.2   | 28.1   | 10.1  | 10.3  | 10.5  | 10.5  | 10.8  |
| 85°    | 175.7  | 94.9   | 14.1   | 12.0   | 9.8    | 7.7    | 5.5   | 6.0   | 6.7   | 7.2   | 7.7   |
| 87.5°  | 3.1    | 1.7    | 0.0    | 0.5    | 1.2    | 1.7    | 2.2   | 2.9   | 3.4   | 4.0   | 4.5   |
| 90°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 110°   | 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):**

|        | 0°  | 2.5° | 5°  | 7.5° | 10° | 12.5° | 15° | 17.5° | 20° | 22.5° | 25° |
|--------|-----|------|-----|------|-----|-------|-----|-------|-----|-------|-----|
| 112.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 115°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 117.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 120°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 122.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 125°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 127.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 130°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 132.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 135°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 137.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 140°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 142.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 145°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 147.5° | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 150°   | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 152.5° | 0.0 | 0.0  | 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° | 0.0 | 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° | 0.0 | 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° | 0.0 | 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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**CANDELA DISTRIBUTION (continued):**

|        | 27.5° | 30°   | 32.5° | 35°   | 37.5° | 40°   | 42.5° | 45°   | 47.5° | 50°   | 52.5° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°     | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 |
| 2.5°   | 574.0 | 577.6 | 581.0 | 584.5 | 581.7 | 579.0 | 576.2 | 573.2 | 569.0 | 564.9 | 560.5 |
| 5°     | 698.5 | 686.4 | 674.5 | 662.5 | 644.2 | 626.1 | 607.6 | 589.3 | 587.2 | 585.0 | 582.7 |
| 7.5°   | 656.0 | 628.0 | 599.6 | 571.6 | 545.2 | 518.8 | 492.5 | 466.1 | 458.0 | 450.0 | 441.9 |
| 10°    | 586.9 | 565.3 | 543.6 | 521.9 | 503.0 | 483.9 | 464.9 | 445.8 | 425.8 | 405.9 | 385.8 |
| 12.5°  | 571.1 | 548.6 | 525.8 | 503.3 | 486.0 | 468.7 | 451.5 | 434.2 | 412.0 | 389.6 | 367.3 |
| 15°    | 538.0 | 513.5 | 489.2 | 464.7 | 441.6 | 418.6 | 395.4 | 372.4 | 345.5 | 318.6 | 291.8 |
| 17.5°  | 497.5 | 468.7 | 439.7 | 410.7 | 380.5 | 350.3 | 320.0 | 289.9 | 258.9 | 228.2 | 197.4 |
| 20°    | 449.3 | 410.0 | 370.4 | 331.1 | 293.7 | 256.3 | 218.6 | 181.3 | 161.9 | 142.7 | 123.3 |
| 22.5°  | 390.6 | 339.5 | 288.7 | 237.6 | 206.9 | 176.0 | 145.3 | 114.4 | 106.0 | 97.5  | 89.2  |
| 25°    | 338.8 | 281.0 | 223.3 | 165.4 | 146.0 | 126.6 | 107.2 | 87.8  | 83.9  | 79.8  | 76.0  |
| 27.5°  | 284.8 | 230.7 | 176.3 | 121.8 | 110.7 | 99.5  | 88.5  | 77.2  | 74.6  | 72.1  | 69.5  |
| 30°    | 218.5 | 177.9 | 137.2 | 96.6  | 89.5  | 82.2  | 74.8  | 67.6  | 66.4  | 65.0  | 63.7  |
| 32.5°  | 169.3 | 139.5 | 110.1 | 80.3  | 76.3  | 72.1  | 68.1  | 64.0  | 62.1  | 60.2  | 58.0  |
| 35°    | 141.4 | 117.7 | 93.8  | 69.8  | 66.9  | 63.7  | 60.9  | 57.8  | 55.8  | 53.7  | 51.8  |
| 37.5°  | 117.2 | 100.0 | 82.5  | 65.0  | 61.9  | 58.8  | 55.4  | 52.3  | 50.8  | 49.4  | 47.9  |
| 40°    | 96.6  | 86.5  | 76.5  | 66.4  | 61.9  | 57.3  | 52.7  | 48.2  | 47.0  | 45.8  | 44.6  |
| 42.5°  | 79.8  | 73.3  | 66.7  | 60.2  | 56.8  | 53.7  | 50.4  | 47.0  | 45.3  | 43.4  | 41.7  |
| 45°    | 64.5  | 60.9  | 57.5  | 54.0  | 54.2  | 54.4  | 54.4  | 54.7  | 50.4  | 45.8  | 41.5  |
| 47.5°  | 52.3  | 50.6  | 48.7  | 47.0  | 48.9  | 50.8  | 52.5  | 54.4  | 49.9  | 45.3  | 40.5  |
| 50°    | 44.8  | 43.6  | 42.2  | 40.8  | 42.7  | 44.8  | 46.8  | 48.7  | 46.8  | 45.1  | 43.1  |
| 52.5°  | 41.0  | 39.4  | 37.7  | 36.0  | 36.7  | 37.7  | 38.3  | 39.1  | 39.1  | 39.1  | 39.1  |
| 55°    | 38.6  | 36.9  | 35.0  | 33.0  | 32.4  | 31.4  | 30.7  | 29.8  | 28.5  | 27.6  | 26.4  |
| 57.5°  | 36.7  | 34.7  | 32.6  | 30.7  | 29.5  | 28.1  | 26.8  | 25.4  | 24.2  | 22.8  | 21.6  |
| 60°    | 34.7  | 32.9  | 30.7  | 28.8  | 27.6  | 26.4  | 25.0  | 23.7  | 22.3  | 21.1  | 19.7  |
| 62.5°  | 32.1  | 30.4  | 28.8  | 27.1  | 25.9  | 25.0  | 23.7  | 22.5  | 21.1  | 19.7  | 18.0  |
| 65°    | 29.3  | 28.1  | 26.6  | 25.1  | 24.0  | 22.8  | 21.6  | 20.3  | 18.9  | 17.7  | 16.3  |
| 67.5°  | 26.6  | 25.4  | 24.5  | 23.3  | 21.8  | 20.6  | 19.2  | 17.7  | 16.8  | 15.8  | 14.6  |
| 70°    | 24.5  | 23.5  | 22.8  | 21.8  | 20.3  | 19.2  | 17.7  | 16.3  | 15.6  | 14.6  | 13.9  |
| 72.5°  | 22.3  | 21.6  | 20.6  | 19.9  | 18.7  | 17.5  | 16.3  | 15.1  | 14.4  | 13.7  | 12.9  |
| 75°    | 19.2  | 18.7  | 18.2  | 17.7  | 16.6  | 15.3  | 13.9  | 12.7  | 12.4  | 12.2  | 12.0  |
| 77.5°  | 17.2  | 17.0  | 16.6  | 16.1  | 14.9  | 13.7  | 12.4  | 11.3  | 11.5  | 11.8  | 11.8  |
| 80°    | 14.1  | 14.1  | 13.9  | 13.9  | 12.9  | 12.0  | 10.8  | 9.8   | 10.3  | 11.0  | 11.5  |
| 82.5°  | 10.8  | 10.8  | 10.8  | 10.8  | 9.8   | 8.8   | 7.9   | 7.0   | 7.7   | 8.2   | 8.8   |
| 85°    | 7.4   | 7.2   | 7.0   | 6.7   | 6.0   | 5.5   | 4.8   | 4.0   | 5.0   | 5.7   | 6.7   |
| 87.5°  | 4.5   | 4.8   | 4.8   | 4.8   | 4.3   | 3.6   | 3.1   | 2.4   | 2.9   | 3.1   | 3.6   |
| 90°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 92.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 95°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 97.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 100°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 102.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 105°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 107.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 110°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 27.5° | 30° | 32.5° | 35° | 37.5° | 40° | 42.5° | 45° | 47.5° | 50° | 52.5° |
|--------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| 112.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 115°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 117.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 120°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 122.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 125°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 127.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 130°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 132.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 135°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 137.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 140°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 142.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 145°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 147.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 150°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   |
| 152.5° | 0.0   | 0.0 | 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° | 0.0   | 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° | 0.0   | 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° | 0.0   | 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: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 55°   | 57.5° | 60°   | 62.5° | 65°   | 67.5° | 70°   | 72.5° | 75°   | 77.5° | 80°   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°     | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 |
| 2.5°   | 556.3 | 549.0 | 541.9 | 534.5 | 527.2 | 510.4 | 493.7 | 476.9 | 460.1 | 472.6 | 484.8 |
| 5°     | 580.5 | 566.6 | 552.4 | 538.5 | 524.4 | 518.2 | 512.1 | 505.9 | 499.7 | 500.7 | 501.8 |
| 7.5°   | 433.7 | 424.7 | 415.5 | 406.2 | 397.1 | 395.1 | 393.5 | 391.5 | 389.6 | 393.7 | 397.5 |
| 10°    | 365.9 | 353.2 | 340.2 | 327.5 | 314.6 | 307.6 | 300.7 | 293.7 | 286.7 | 286.1 | 285.1 |
| 12.5°  | 345.0 | 325.6 | 306.4 | 287.0 | 267.6 | 252.4 | 237.4 | 222.2 | 207.2 | 208.4 | 209.6 |
| 15°    | 265.0 | 245.5 | 226.4 | 206.9 | 187.5 | 175.2 | 162.8 | 150.6 | 138.1 | 134.5 | 130.9 |
| 17.5°  | 166.4 | 152.0 | 137.7 | 123.0 | 108.6 | 104.5 | 100.7 | 96.6  | 92.6  | 91.3  | 90.1  |
| 20°    | 103.9 | 97.5  | 91.3  | 84.8  | 78.6  | 77.7  | 76.7  | 75.8  | 74.8  | 75.5  | 76.3  |
| 22.5°  | 80.8  | 78.2  | 75.3  | 72.7  | 69.8  | 68.8  | 67.9  | 66.9  | 65.9  | 66.7  | 67.1  |
| 25°    | 71.9  | 70.0  | 68.1  | 66.2  | 64.2  | 63.3  | 62.1  | 61.1  | 60.0  | 60.5  | 61.1  |
| 27.5°  | 66.9  | 65.3  | 63.6  | 61.9  | 60.2  | 58.5  | 57.1  | 55.4  | 53.7  | 54.7  | 55.4  |
| 30°    | 62.3  | 60.5  | 58.8  | 56.8  | 54.9  | 53.2  | 51.5  | 49.6  | 47.9  | 48.9  | 49.9  |
| 32.5°  | 56.1  | 54.4  | 52.5  | 50.8  | 48.9  | 47.9  | 47.0  | 45.8  | 44.8  | 45.6  | 46.0  |
| 35°    | 49.6  | 48.2  | 47.0  | 45.6  | 44.1  | 43.1  | 42.5  | 41.5  | 40.5  | 40.8  | 41.2  |
| 37.5°  | 46.5  | 44.8  | 43.1  | 41.5  | 39.8  | 39.4  | 38.8  | 38.1  | 37.7  | 37.7  | 37.7  |
| 40°    | 43.4  | 41.7  | 40.0  | 38.1  | 36.4  | 35.7  | 35.0  | 34.3  | 33.6  | 33.6  | 33.6  |
| 42.5°  | 39.8  | 38.1  | 36.4  | 34.7  | 33.0  | 32.4  | 31.4  | 30.7  | 29.8  | 29.8  | 29.8  |
| 45°    | 36.9  | 35.2  | 33.8  | 32.1  | 30.4  | 29.3  | 28.1  | 26.6  | 25.4  | 25.1  | 25.0  |
| 47.5°  | 36.0  | 33.6  | 31.2  | 28.8  | 26.4  | 25.1  | 24.0  | 22.5  | 21.4  | 21.1  | 20.9  |
| 50°    | 41.2  | 36.4  | 31.6  | 26.8  | 22.0  | 21.1  | 20.2  | 19.2  | 18.2  | 17.7  | 17.5  |
| 52.5°  | 39.1  | 34.1  | 29.0  | 24.0  | 18.9  | 18.2  | 17.5  | 16.8  | 16.1  | 15.6  | 15.1  |
| 55°    | 25.1  | 23.0  | 21.1  | 18.9  | 16.8  | 16.3  | 15.8  | 15.1  | 14.6  | 14.1  | 13.7  |
| 57.5°  | 20.2  | 18.9  | 18.0  | 16.8  | 15.6  | 15.1  | 14.6  | 13.9  | 13.5  | 12.7  | 12.2  |
| 60°    | 18.2  | 17.2  | 16.3  | 15.3  | 14.4  | 13.9  | 13.5  | 12.9  | 12.4  | 11.8  | 11.3  |
| 62.5°  | 16.6  | 15.8  | 15.1  | 14.4  | 13.7  | 13.2  | 12.7  | 12.2  | 11.8  | 11.0  | 10.3  |
| 65°    | 14.9  | 14.4  | 13.9  | 13.5  | 12.9  | 12.4  | 12.0  | 11.3  | 10.8  | 10.1  | 9.3   |
| 67.5°  | 13.7  | 13.5  | 13.2  | 12.9  | 12.7  | 12.2  | 11.5  | 11.0  | 10.3  | 9.6   | 8.7   |
| 70°    | 12.9  | 12.9  | 12.9  | 12.7  | 12.7  | 12.2  | 11.5  | 11.0  | 10.3  | 9.3   | 8.7   |
| 72.5°  | 12.2  | 12.4  | 12.7  | 12.7  | 12.9  | 12.2  | 11.5  | 10.8  | 10.1  | 9.1   | 8.4   |
| 75°    | 11.8  | 12.0  | 12.2  | 12.2  | 12.4  | 12.0  | 11.5  | 10.8  | 10.3  | 9.3   | 8.4   |
| 77.5°  | 12.0  | 12.2  | 12.2  | 12.4  | 12.4  | 12.0  | 11.5  | 10.8  | 10.3  | 9.1   | 7.9   |
| 80°    | 12.0  | 11.8  | 11.5  | 11.0  | 10.8  | 9.8   | 8.8   | 7.7   | 6.7   | 5.3   | 4.0   |
| 82.5°  | 9.3   | 8.8   | 8.7   | 8.2   | 7.7   | 6.7   | 5.7   | 4.8   | 3.9   | 2.9   | 1.9   |
| 85°    | 7.4   | 7.0   | 6.7   | 6.2   | 5.7   | 5.0   | 4.0   | 3.4   | 2.4   | 1.9   | 1.2   |
| 87.5°  | 3.9   | 3.6   | 3.1   | 2.9   | 2.4   | 1.9   | 1.2   | 0.8   | 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   |
| 92.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 95°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 97.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 100°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 102.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 105°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 107.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 110°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 55° | 57.5° | 60° | 62.5° | 65° | 67.5° | 70° | 72.5° | 75° | 77.5° | 80° |
|--------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| 112.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 115°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 117.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 120°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 122.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 125°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 127.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 130°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 132.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 135°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 137.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 140°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 142.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 145°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 147.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 150°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 152.5° | 0.0 | 0.0   | 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° | 0.0 | 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° | 0.0 | 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° | 0.0 | 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 |

REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 82.5° | 85°   | 87.5° | 90°   | 92.5° | 95°   | 97.5° | 100°  | 102.5° | 105°  | 107.5° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|
| 0°     | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9 | 506.9  | 506.9 | 506.9  |
| 2.5°   | 497.3 | 509.5 | 507.8 | 506.1 | 514.0 | 521.9 | 516.2 | 510.7 | 505.0  | 499.2 | 487.2  |
| 5°     | 502.8 | 503.8 | 502.1 | 500.2 | 500.4 | 500.7 | 496.8 | 492.9 | 489.2  | 485.3 | 484.5  |
| 7.5°   | 401.6 | 405.5 | 410.7 | 415.7 | 416.0 | 416.0 | 413.1 | 410.3 | 407.2  | 404.2 | 405.7  |
| 10°    | 284.4 | 283.4 | 284.8 | 286.2 | 286.1 | 285.6 | 293.2 | 300.9 | 308.4  | 316.0 | 310.5  |
| 12.5°  | 210.5 | 211.7 | 205.7 | 199.7 | 201.9 | 203.8 | 205.0 | 206.2 | 207.4  | 208.6 | 212.0  |
| 15°    | 127.3 | 123.7 | 119.4 | 115.1 | 117.2 | 119.2 | 121.3 | 123.3 | 125.4  | 127.3 | 129.5  |
| 17.5°  | 88.7  | 87.5  | 85.6  | 83.4  | 83.7  | 83.9  | 84.2  | 84.4  | 84.4   | 84.7  | 85.1   |
| 20°    | 76.9  | 77.7  | 76.3  | 74.6  | 74.1  | 73.3  | 72.9  | 72.4  | 71.7   | 71.2  | 70.5   |
| 22.5°  | 67.9  | 68.4  | 68.5  | 68.5  | 67.6  | 66.4  | 65.4  | 64.7  | 63.7   | 62.8  | 62.3   |
| 25°    | 61.6  | 62.1  | 61.6  | 60.9  | 60.5  | 60.0  | 59.5  | 58.8  | 58.3   | 57.5  | 57.3   |
| 27.5°  | 56.3  | 57.1  | 57.1  | 56.8  | 56.3  | 55.7  | 54.4  | 53.5  | 52.3   | 51.0  | 51.3   |
| 30°    | 50.8  | 51.8  | 51.8  | 51.5  | 51.3  | 51.0  | 49.9  | 48.7  | 47.5   | 46.2  | 46.8   |
| 32.5°  | 46.8  | 47.3  | 47.0  | 46.8  | 46.8  | 46.5  | 45.6  | 44.8  | 43.9   | 42.9  | 42.9   |
| 35°    | 41.5  | 41.7  | 41.7  | 41.7  | 41.7  | 41.5  | 40.8  | 40.0  | 39.4   | 38.6  | 38.8   |
| 37.5°  | 37.7  | 37.7  | 38.3  | 38.8  | 38.3  | 37.9  | 37.4  | 36.7  | 36.2   | 35.5  | 35.5   |
| 40°    | 33.3  | 33.3  | 34.1  | 34.6  | 34.1  | 33.6  | 33.3  | 32.9  | 32.6   | 32.1  | 32.1   |
| 42.5°  | 29.5  | 29.5  | 30.2  | 30.7  | 30.7  | 30.4  | 29.9  | 29.5  | 29.0   | 28.5  | 28.8   |
| 45°    | 24.7  | 24.5  | 25.6  | 26.6  | 26.2  | 25.6  | 25.6  | 25.4  | 25.4   | 25.1  | 25.4   |
| 47.5°  | 20.3  | 20.2  | 21.1  | 22.0  | 21.8  | 21.4  | 21.4  | 21.4  | 21.4   | 21.4  | 21.6   |
| 50°    | 17.0  | 16.6  | 17.5  | 18.2  | 18.0  | 17.5  | 17.5  | 17.7  | 17.7   | 17.7  | 18.0   |
| 52.5°  | 14.6  | 14.1  | 14.9  | 15.3  | 15.1  | 14.9  | 14.9  | 15.1  | 15.1   | 15.1  | 15.3   |
| 55°    | 12.9  | 12.4  | 13.2  | 13.7  | 13.5  | 12.9  | 13.2  | 13.2  | 13.5   | 13.5  | 13.5   |
| 57.5°  | 11.5  | 10.8  | 11.3  | 11.8  | 11.8  | 11.5  | 11.8  | 11.8  | 12.0   | 12.0  | 12.0   |
| 60°    | 10.5  | 9.8   | 10.3  | 10.5  | 10.5  | 10.3  | 10.5  | 10.5  | 10.8   | 10.8  | 10.8   |
| 62.5°  | 9.3   | 8.7   | 9.1   | 9.3   | 9.3   | 9.1   | 9.3   | 9.3   | 9.6    | 9.6   | 9.6    |
| 65°    | 8.4   | 7.7   | 7.9   | 8.2   | 8.2   | 8.2   | 8.4   | 8.4   | 8.7    | 8.7   | 8.7    |
| 67.5°  | 7.9   | 7.0   | 7.2   | 7.4   | 7.4   | 7.4   | 7.7   | 7.7   | 7.9    | 7.9   | 8.2    |
| 70°    | 7.7   | 6.7   | 7.0   | 7.0   | 7.2   | 7.2   | 7.2   | 7.4   | 7.4    | 7.4   | 7.4    |
| 72.5°  | 7.4   | 6.5   | 6.5   | 6.5   | 6.7   | 6.7   | 6.7   | 7.0   | 7.0    | 7.0   | 7.0    |
| 75°    | 7.4   | 6.5   | 6.2   | 6.0   | 6.2   | 6.2   | 6.2   | 6.5   | 6.5    | 6.5   | 6.5    |
| 77.5°  | 6.5   | 5.3   | 4.8   | 4.0   | 4.8   | 5.3   | 5.5   | 5.5   | 5.7    | 5.7   | 5.7    |
| 80°    | 2.6   | 1.2   | 0.8   | 0.0   | 0.3   | 0.5   | 0.8   | 0.9   | 1.2    | 1.4   | 1.7    |
| 82.5°  | 0.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 85°    | 0.8   | 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    |
| 92.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 95°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 97.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 100°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 102.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 105°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 107.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |
| 110°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 82.5° | 85° | 87.5° | 90° | 92.5° | 95° | 97.5° | 100° | 102.5° | 105° | 107.5° |
|--------|-------|-----|-------|-----|-------|-----|-------|------|--------|------|--------|
| 112.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 115°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 117.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 120°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 122.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 125°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 127.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 130°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 132.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 135°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 137.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 140°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 142.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 145°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 147.5° | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 150°   | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0  | 0.0    | 0.0  | 0.0    |
| 152.5° | 0.0   | 0.0 | 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° | 0.0   | 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° | 0.0   | 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° | 0.0   | 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    |

REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 110°  | 112.5° | 115°  | 117.5° | 120°  | 122.5° | 125°  | 127.5° | 130°  | 132.5° | 135°  |
|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| 0°     | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 |
| 2.5°   | 475.2 | 463.3  | 451.2 | 457.0  | 462.7 | 468.5  | 474.3 | 473.8  | 473.1 | 472.6  | 471.8 |
| 5°     | 484.1 | 483.3  | 482.7 | 479.3  | 476.2 | 472.8  | 469.5 | 468.7  | 467.8 | 467.0  | 466.1 |
| 7.5°   | 407.2 | 408.3  | 409.8 | 405.9  | 402.1 | 398.3  | 394.4 | 384.5  | 374.8 | 364.7  | 354.9 |
| 10°    | 305.0 | 299.2  | 293.7 | 293.2  | 292.7 | 292.3  | 291.8 | 290.9  | 289.9 | 288.7  | 287.8 |
| 12.5°  | 215.5 | 218.9  | 222.2 | 221.1  | 219.9 | 218.5  | 217.2 | 218.9  | 220.8 | 222.5  | 224.2 |
| 15°    | 131.4 | 133.5  | 135.5 | 139.8  | 144.1 | 148.4  | 152.7 | 154.4  | 156.3 | 158.0  | 159.7 |
| 17.5°  | 85.6  | 85.9   | 86.3  | 91.1   | 95.7  | 100.5  | 105.0 | 108.1  | 111.3 | 114.1  | 117.2 |
| 20°    | 69.8  | 69.0   | 68.4  | 71.0   | 73.6  | 76.3   | 78.9  | 81.7   | 84.7  | 87.5   | 90.4  |
| 22.5°  | 62.1  | 61.6   | 61.1  | 62.1   | 63.1  | 63.7   | 64.7  | 66.9   | 69.3  | 71.5   | 73.6  |
| 25°    | 57.1  | 56.6   | 56.3  | 56.8   | 57.3  | 57.8   | 58.3  | 59.5   | 60.6  | 61.9   | 63.1  |
| 27.5°  | 51.3  | 51.5   | 51.5  | 52.1   | 52.3  | 52.7   | 53.0  | 53.5   | 54.2  | 54.7   | 55.2  |
| 30°    | 47.0  | 47.5   | 47.7  | 48.2   | 48.4  | 48.9   | 49.2  | 48.9   | 48.7  | 48.4   | 48.2  |
| 32.5°  | 42.9  | 42.7   | 42.7  | 43.1   | 43.4  | 43.9   | 44.1  | 44.6   | 45.1  | 45.3   | 45.8  |
| 35°    | 38.8  | 39.1   | 39.1  | 39.1   | 39.4  | 39.4   | 39.4  | 39.8   | 40.5  | 41.0   | 41.5  |
| 37.5°  | 35.2  | 35.2   | 35.0  | 35.7   | 36.2  | 36.9   | 37.4  | 37.9   | 38.6  | 39.1   | 39.5  |
| 40°    | 32.1  | 32.1   | 32.1  | 32.6   | 33.0  | 33.3   | 33.8  | 35.0   | 36.2  | 37.4   | 38.6  |
| 42.5°  | 28.8  | 29.0   | 29.0  | 29.5   | 29.9  | 30.2   | 30.7  | 31.6   | 32.4  | 33.3   | 34.1  |
| 45°    | 25.6  | 25.9   | 26.2  | 26.6   | 26.8  | 27.3   | 27.6  | 28.1   | 28.3  | 28.8   | 29.0  |
| 47.5°  | 22.0  | 22.3   | 22.5  | 23.0   | 23.3  | 23.7   | 24.0  | 23.7   | 23.7  | 23.5   | 23.3  |
| 50°    | 18.5  | 18.7   | 18.9  | 19.7   | 20.2  | 20.9   | 21.4  | 20.9   | 20.3  | 19.7   | 19.2  |
| 52.5°  | 15.6  | 15.6   | 15.8  | 16.3   | 16.8  | 17.0   | 17.5  | 17.2   | 17.0  | 16.8   | 16.6  |
| 55°    | 13.5  | 13.5   | 13.5  | 13.7   | 13.9  | 14.1   | 14.4  | 14.6   | 14.6  | 14.9   | 14.9  |
| 57.5°  | 12.0  | 11.8   | 11.8  | 12.0   | 12.2  | 12.2   | 12.4  | 12.7   | 12.7  | 12.9   | 12.9  |
| 60°    | 10.8  | 10.5   | 10.5  | 10.8   | 11.0  | 11.3   | 11.5  | 11.5   | 11.5  | 11.3   | 11.3  |
| 62.5°  | 9.6   | 9.6    | 9.6   | 9.8    | 9.8   | 10.1   | 10.1  | 10.1   | 10.3  | 10.3   | 10.3  |
| 65°    | 8.8   | 8.8    | 8.8   | 8.8    | 8.8   | 8.7    | 8.7   | 8.8    | 8.8   | 9.1    | 9.1   |
| 67.5°  | 8.2   | 8.4    | 8.4   | 8.2    | 7.9   | 7.7    | 7.4   | 7.7    | 7.7   | 7.9    | 7.9   |
| 70°    | 7.4   | 7.4    | 7.4   | 7.2    | 7.0   | 6.7    | 6.5   | 6.5    | 6.5   | 6.2    | 6.2   |
| 72.5°  | 7.0   | 6.7    | 6.7   | 6.5    | 6.0   | 5.7    | 5.3   | 5.0    | 5.0   | 4.8    | 4.5   |
| 75°    | 6.5   | 6.2    | 6.2   | 5.7    | 5.3   | 4.8    | 4.3   | 4.0    | 3.6   | 3.4    | 2.9   |
| 77.5°  | 5.7   | 5.7    | 5.7   | 5.0    | 4.5   | 3.9    | 3.1   | 2.6    | 2.2   | 1.4    | 0.9   |
| 80°    | 1.9   | 2.2    | 2.4   | 2.2    | 2.2   | 1.9    | 1.7   | 1.2    | 0.9   | 0.5    | 0.0   |
| 82.5°  | 0.3   | 0.3    | 0.3   | 0.3    | 0.3   | 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   |
| 92.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 95°    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 97.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 100°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 102.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 105°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 107.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 110°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 110° | 112.5° | 115° | 117.5° | 120° | 122.5° | 125° | 127.5° | 130° | 132.5° | 135° |
|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 112.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 115°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 117.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 120°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 122.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 125°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 127.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 130°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 132.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 135°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 137.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 140°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 142.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 145°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 147.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 150°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 152.5° | 0.0  | 0.0    | 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° | 0.0  | 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° | 0.0  | 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° | 0.0  | 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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**CANDELA DISTRIBUTION (continued):**

|        | 137.5° | 140°  | 142.5° | 145°  | 147.5° | 150°  | 152.5° | 155°  | 157.5° | 160°  | 162.5° |
|--------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| 0°     | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  |
| 2.5°   | 474.5  | 477.1 | 479.7  | 482.4 | 482.7  | 482.9 | 483.1  | 483.3 | 477.4  | 471.2 | 465.2  |
| 5°     | 470.9  | 475.9 | 480.7  | 485.5 | 482.9  | 480.2 | 477.6  | 474.9 | 474.8  | 474.8 | 474.5  |
| 7.5°   | 355.5  | 356.0 | 356.8  | 357.2 | 358.2  | 359.1 | 359.9  | 360.8 | 364.7  | 368.5 | 372.1  |
| 10°    | 284.6  | 281.4 | 278.2  | 275.0 | 272.6  | 270.0 | 267.6  | 265.0 | 266.8  | 269.0 | 270.9  |
| 12.5°  | 221.6  | 218.9 | 216.0  | 213.4 | 212.4  | 211.5 | 210.3  | 209.3 | 215.5  | 221.7 | 227.8  |
| 15°    | 159.2  | 158.8 | 158.0  | 157.5 | 160.6  | 163.7 | 166.9  | 170.0 | 175.2  | 180.3 | 185.6  |
| 17.5°  | 118.5  | 119.7 | 120.8  | 122.0 | 123.9  | 125.9 | 127.6  | 129.5 | 133.3  | 137.4 | 141.2  |
| 20°    | 91.8   | 93.5  | 94.9   | 96.4  | 95.9   | 95.4  | 94.7   | 94.3  | 97.4   | 100.5 | 103.3  |
| 22.5°  | 75.0   | 76.3  | 77.7   | 78.9  | 79.1   | 79.4  | 79.6   | 79.8  | 81.7   | 83.4  | 85.4   |
| 25°    | 64.2   | 65.7  | 66.9   | 68.1  | 68.4   | 68.5  | 68.8   | 69.0  | 71.5   | 73.8  | 76.0   |
| 27.5°  | 56.8   | 58.3  | 60.0   | 61.4  | 61.9   | 62.3  | 62.8   | 63.3  | 64.7   | 65.9  | 67.4   |
| 30°    | 50.1   | 52.1  | 54.0   | 55.8  | 56.6   | 57.3  | 58.0   | 58.8  | 60.2   | 61.9  | 63.3   |
| 32.5°  | 46.8   | 47.9  | 48.9   | 49.9  | 51.5   | 53.0  | 54.7   | 56.1  | 57.8   | 59.7  | 61.4   |
| 35°    | 42.9   | 44.1  | 45.6   | 46.8  | 47.9   | 49.2  | 50.1   | 51.3  | 52.3   | 53.2  | 54.0   |
| 37.5°  | 40.5   | 41.7  | 42.7   | 43.6  | 44.1   | 44.6  | 44.8   | 45.3  | 45.8   | 46.2  | 46.5   |
| 40°    | 38.6   | 38.3  | 38.3   | 38.1  | 38.6   | 39.4  | 39.8   | 40.3  | 41.7   | 42.9  | 44.3   |
| 42.5°  | 33.6   | 32.9  | 32.4   | 31.6  | 32.9   | 33.8  | 35.0   | 36.0  | 37.9   | 39.8  | 41.7   |
| 45°    | 28.5   | 28.1  | 27.3   | 26.8  | 28.5   | 30.2  | 31.9   | 33.6  | 35.7   | 37.7  | 39.8   |
| 47.5°  | 23.5   | 23.7  | 23.7   | 24.0  | 25.6   | 27.3  | 28.8   | 30.4  | 32.6   | 34.7  | 36.9   |
| 50°    | 19.7   | 20.2  | 20.6   | 21.1  | 22.8   | 24.2  | 25.9   | 27.3  | 29.8   | 31.9  | 34.3   |
| 52.5°  | 17.2   | 18.0  | 18.5   | 19.2  | 20.6   | 22.3  | 23.7   | 25.1  | 27.3   | 29.5  | 31.6   |
| 55°    | 15.6   | 16.6  | 17.2   | 18.0  | 19.2   | 20.3  | 21.6   | 22.8  | 25.0   | 27.1  | 29.0   |
| 57.5°  | 13.7   | 14.4  | 15.1   | 15.8  | 17.0   | 18.2  | 19.2   | 20.3  | 22.3   | 24.5  | 26.4   |
| 60°    | 12.0   | 12.4  | 13.2   | 13.7  | 14.6   | 15.8  | 16.8   | 17.7  | 19.7   | 21.6  | 23.3   |
| 62.5°  | 10.5   | 11.0  | 11.3   | 11.5  | 12.4   | 13.5  | 14.4   | 15.3  | 17.0   | 18.9  | 20.6   |
| 65°    | 9.3    | 9.6   | 9.6    | 9.8   | 10.5   | 11.5  | 12.2   | 12.9  | 14.9   | 16.6  | 18.5   |
| 67.5°  | 7.9    | 8.2   | 8.2    | 8.2   | 8.8    | 9.6   | 10.3   | 11.0  | 12.7   | 14.6  | 16.3   |
| 70°    | 6.2    | 6.5   | 6.5    | 6.5   | 7.2    | 8.2   | 8.8    | 9.6   | 11.0   | 12.4  | 13.9   |
| 72.5°  | 4.8    | 4.8   | 5.0    | 5.0   | 5.7    | 6.7   | 7.4    | 8.2   | 9.3    | 10.5  | 11.8   |
| 75°    | 3.1    | 3.4   | 3.4    | 3.6   | 4.3    | 5.3   | 6.0    | 6.7   | 7.9    | 9.1   | 10.1   |
| 77.5°  | 1.2    | 1.7   | 1.9    | 2.2   | 2.9    | 3.6   | 4.3    | 5.0   | 6.0    | 7.2   | 8.2    |
| 80°    | 0.0    | 0.3   | 0.3    | 0.3   | 0.8    | 0.9   | 1.4    | 1.7   | 2.4    | 3.4   | 4.0    |
| 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    |
| 92.5°  | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 95°    | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 97.5°  | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 100°   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 102.5° | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 105°   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 107.5° | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 110°   | 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):**

|        | 137.5° | 140° | 142.5° | 145° | 147.5° | 150° | 152.5° | 155° | 157.5° | 160° | 162.5° |
|--------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 112.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 115°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 117.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 120°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 122.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 125°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 127.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 130°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 132.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 135°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 137.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 140°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 142.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 145°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 147.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 150°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 152.5° | 0.0    | 0.0  | 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° | 0.0    | 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° | 0.0    | 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° | 0.0    | 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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**CANDELA DISTRIBUTION (continued):**

|        | 165°  | 167.5° | 170°  | 172.5° | 175°  | 177.5° | 180°  | 182.5° | 185°  | 187.5° | 190°  |
|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| 0°     | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 |
| 2.5°   | 458.9 | 472.1  | 485.3 | 498.5  | 511.7 | 528.0  | 544.2 | 546.7  | 549.0 | 546.2  | 543.6 |
| 5°     | 474.3 | 480.7  | 487.0 | 493.4  | 499.7 | 518.4  | 536.8 | 537.1  | 537.1 | 537.3  | 537.3 |
| 7.5°   | 376.0 | 381.4  | 387.0 | 392.3  | 397.7 | 410.0  | 422.2 | 426.8  | 431.1 | 430.1  | 429.2 |
| 10°    | 272.9 | 280.0  | 287.0 | 294.2  | 301.1 | 312.4  | 323.7 | 328.0  | 332.1 | 345.3  | 358.7 |
| 12.5°  | 234.0 | 241.0  | 247.9 | 254.6  | 261.6 | 273.1  | 284.6 | 293.0  | 301.1 | 309.3  | 317.4 |
| 15°    | 190.6 | 196.1  | 201.9 | 207.4  | 212.9 | 218.2  | 223.4 | 233.8  | 243.9 | 252.0  | 260.2 |
| 17.5°  | 145.1 | 147.5  | 149.6 | 152.0  | 154.1 | 156.6  | 158.9 | 163.3  | 167.3 | 174.6  | 181.5 |
| 20°    | 106.5 | 108.4  | 110.3 | 112.0  | 113.9 | 116.3  | 118.7 | 121.8  | 124.7 | 126.4  | 127.8 |
| 22.5°  | 87.0  | 89.9   | 92.8  | 95.4   | 98.3  | 100.0  | 101.7 | 102.6  | 103.6 | 104.3  | 105.0 |
| 25°    | 78.4  | 81.1   | 83.4  | 86.1   | 88.5  | 89.2   | 89.9  | 91.8   | 93.8  | 93.8   | 93.8  |
| 27.5°  | 68.5  | 72.1   | 76.0  | 79.6   | 83.2  | 84.2   | 84.8  | 85.6   | 86.1  | 85.1   | 83.9  |
| 30°    | 64.7  | 68.4   | 71.9  | 75.3   | 78.9  | 80.3   | 81.5  | 82.2   | 83.0  | 81.7   | 80.6  |
| 32.5°  | 63.1  | 66.4   | 69.5  | 72.9   | 76.0  | 78.0   | 79.6  | 81.5   | 83.2  | 83.4   | 83.9  |
| 35°    | 54.9  | 57.1   | 59.5  | 61.6   | 63.7  | 64.7   | 65.7  | 66.4   | 66.9  | 66.9   | 66.9  |
| 37.5°  | 47.0  | 49.9   | 53.0  | 55.8   | 58.8  | 60.9   | 63.1  | 63.3   | 63.3  | 63.7   | 64.5  |
| 40°    | 45.6  | 48.4   | 51.3  | 54.0   | 56.8  | 59.2   | 61.4  | 61.6   | 61.9  | 62.3   | 62.8  |
| 42.5°  | 43.6  | 46.8   | 49.9  | 53.0   | 56.1  | 58.5   | 60.6  | 60.6   | 60.5  | 61.1   | 61.6  |
| 45°    | 41.7  | 44.8   | 47.7  | 50.8   | 53.7  | 56.8   | 59.7  | 58.9   | 58.0  | 59.2   | 60.2  |
| 47.5°  | 39.1  | 42.5   | 45.8  | 48.9   | 52.3  | 55.2   | 57.8  | 57.3   | 56.6  | 57.8   | 58.9  |
| 50°    | 36.4  | 39.8   | 43.1  | 46.5   | 49.9  | 53.0   | 55.8  | 55.4   | 54.9  | 56.3   | 57.5  |
| 52.5°  | 33.8  | 37.2   | 40.8  | 44.1   | 47.5  | 50.1   | 52.5  | 52.3   | 52.1  | 53.5   | 55.2  |
| 55°    | 31.2  | 34.3   | 37.7  | 40.8   | 43.9  | 46.8   | 49.4  | 48.9   | 48.4  | 49.6   | 50.8  |
| 57.5°  | 28.3  | 31.4   | 34.3  | 37.4   | 40.3  | 42.7   | 44.8  | 44.1   | 43.4  | 44.8   | 46.2  |
| 60°    | 25.1  | 28.1   | 30.9  | 33.6   | 36.4  | 38.3   | 40.0  | 39.5   | 38.8  | 40.3   | 41.7  |
| 62.5°  | 22.3  | 25.0   | 27.6  | 29.9   | 32.6  | 34.1   | 35.5  | 35.0   | 34.6  | 36.0   | 37.7  |
| 65°    | 20.2  | 22.3   | 24.2  | 26.4   | 28.3  | 29.8   | 31.2  | 30.4   | 29.8  | 31.4   | 32.9  |
| 67.5°  | 18.0  | 19.7   | 21.6  | 23.3   | 25.0  | 26.2   | 27.3  | 26.8   | 26.2  | 27.3   | 28.5  |
| 70°    | 15.3  | 17.0   | 18.7  | 20.2   | 21.8  | 23.0   | 24.2  | 23.5   | 22.5  | 23.7   | 25.0  |
| 72.5°  | 12.9  | 14.4   | 15.8  | 17.0   | 18.5  | 19.4   | 20.3  | 19.7   | 18.9  | 19.9   | 20.9  |
| 75°    | 11.3  | 12.4   | 13.7  | 14.6   | 15.8  | 16.3   | 16.8  | 16.6   | 16.1  | 17.0   | 17.7  |
| 77.5°  | 9.1   | 10.1   | 11.3  | 12.2   | 13.2  | 13.2   | 13.2  | 13.5   | 13.5  | 14.4   | 15.6  |
| 80°    | 4.8   | 5.7    | 6.7   | 7.4    | 8.4   | 8.4    | 8.2   | 8.7    | 8.8   | 10.1   | 11.3  |
| 82.5°  | 0.0   | 0.8    | 1.4   | 2.2    | 2.9   | 2.6    | 2.2   | 2.4    | 2.4   | 2.9    | 3.4   |
| 85°    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.3    | 0.5   |
| 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   |
| 92.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 95°    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 97.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 100°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 102.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 105°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 107.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 110°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |



REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 165° | 167.5° | 170° | 172.5° | 175° | 177.5° | 180° | 182.5° | 185° | 187.5° | 190° |
|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 112.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 115°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 117.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 120°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 122.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 125°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 127.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 130°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 132.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 135°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 137.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 140°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 142.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 145°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 147.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 150°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 152.5° | 0.0  | 0.0    | 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° | 0.0  | 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° | 0.0  | 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° | 0.0  | 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  |



REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 192.5° | 195°  | 197.5° | 200°  | 202.5° | 205°  | 207.5° | 210°  | 212.5° | 215°  | 217.5° |
|--------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| 0°     | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  |
| 2.5°   | 540.7  | 537.8 | 535.9  | 534.2 | 532.3  | 530.4 | 532.8  | 535.1 | 537.3  | 539.7 | 546.9  |
| 5°     | 537.6  | 537.6 | 535.9  | 534.2 | 532.5  | 530.9 | 534.5  | 537.8 | 541.4  | 544.7 | 544.5  |
| 7.5°   | 428.0  | 427.0 | 437.1  | 446.9 | 457.0  | 466.8 | 469.5  | 472.1 | 474.5  | 477.1 | 476.5  |
| 10°    | 371.8  | 385.0 | 389.4  | 393.7 | 398.0  | 402.3 | 407.6  | 412.9 | 418.2  | 423.4 | 425.3  |
| 12.5°  | 325.6  | 333.8 | 347.6  | 361.3 | 375.2  | 388.9 | 395.8  | 403.0 | 410.0  | 416.9 | 430.6  |
| 15°    | 268.3  | 276.5 | 288.4  | 300.5 | 312.4  | 324.4 | 335.4  | 346.7 | 357.7  | 368.7 | 385.3  |
| 17.5°  | 188.7  | 195.7 | 204.8  | 213.8 | 222.8  | 231.8 | 248.9  | 265.9 | 283.0  | 299.9 | 317.4  |
| 20°    | 129.5  | 130.9 | 135.2  | 139.8 | 144.1  | 148.4 | 163.7  | 179.4 | 194.7  | 210.1 | 233.0  |
| 22.5°  | 105.5  | 106.2 | 108.4  | 110.5 | 112.4  | 114.6 | 122.5  | 130.7 | 138.6  | 146.5 | 165.2  |
| 25°    | 93.5   | 93.5  | 94.9   | 96.4  | 97.8   | 99.2  | 103.6  | 107.9 | 112.0  | 116.3 | 128.2  |
| 27.5°  | 83.0   | 81.7  | 83.9   | 86.1  | 88.2   | 90.4  | 93.5   | 96.9  | 100.0  | 103.1 | 111.3  |
| 30°    | 79.4   | 78.2  | 80.8   | 83.4  | 86.1   | 88.7  | 91.8   | 94.9  | 97.8   | 100.9 | 106.5  |
| 32.5°  | 84.2   | 84.4  | 85.4   | 86.3  | 87.0   | 88.0  | 89.5   | 91.1  | 92.6   | 94.0  | 98.8   |
| 35°    | 66.9   | 66.9  | 68.5   | 70.2  | 71.7   | 73.3  | 76.0   | 78.6  | 81.3   | 83.9  | 89.0   |
| 37.5°  | 65.0   | 65.4  | 66.9   | 68.5  | 70.0   | 71.5  | 74.8   | 78.4  | 81.7   | 85.1  | 89.2   |
| 40°    | 63.1   | 63.6  | 65.4   | 67.4  | 69.3   | 71.2  | 74.6   | 77.7  | 81.1   | 84.2  | 88.0   |
| 42.5°  | 62.3   | 62.8  | 65.3   | 67.9  | 70.2   | 72.7  | 75.5   | 78.4  | 81.1   | 83.9  | 89.2   |
| 45°    | 61.4   | 62.3  | 65.3   | 68.4  | 71.2   | 74.1  | 76.7   | 79.4  | 82.0   | 84.7  | 91.1   |
| 47.5°  | 60.0   | 61.1  | 64.5   | 67.6  | 71.0   | 74.1  | 79.1   | 84.4  | 89.5   | 94.4  | 97.5   |
| 50°    | 58.9   | 60.2  | 63.7   | 67.4  | 71.0   | 74.6  | 82.7   | 90.9  | 98.8   | 107.0 | 105.3  |
| 52.5°  | 56.6   | 58.0  | 62.6   | 67.1  | 71.7   | 76.3  | 83.4   | 90.6  | 97.8   | 105.0 | 101.7  |
| 55°    | 52.1   | 53.2  | 58.5   | 63.7  | 68.8   | 74.1  | 79.4   | 84.7  | 89.6   | 94.9  | 91.1   |
| 57.5°  | 47.5   | 48.9  | 54.0   | 58.9  | 63.7   | 68.8  | 71.5   | 74.1  | 76.7   | 79.4  | 78.0   |
| 60°    | 43.1   | 44.6  | 51.3   | 58.0  | 64.7   | 71.5  | 69.0   | 66.7  | 64.0   | 61.6  | 63.3   |
| 62.5°  | 39.1   | 40.5  | 47.0   | 53.2  | 59.7   | 65.9  | 62.6   | 59.2  | 55.8   | 52.5  | 55.2   |
| 65°    | 34.6   | 36.0  | 38.3   | 41.0  | 43.4   | 45.8  | 45.6   | 45.1  | 44.8   | 44.3  | 47.3   |
| 67.5°  | 29.8   | 30.9  | 32.1   | 33.6  | 34.7   | 36.0  | 36.7   | 37.7  | 38.3   | 39.1  | 41.5   |
| 70°    | 25.9   | 27.1  | 28.5   | 29.8  | 31.2   | 32.4  | 32.9   | 33.3  | 33.6   | 34.1  | 36.2   |
| 72.5°  | 21.6   | 22.5  | 24.5   | 26.4  | 28.1   | 29.9  | 30.2   | 30.2  | 30.4   | 30.4  | 32.1   |
| 75°    | 18.7   | 19.4  | 20.9   | 22.3  | 23.5   | 25.0  | 25.6   | 26.4  | 26.8   | 27.6  | 28.5   |
| 77.5°  | 16.6   | 17.5  | 18.0   | 18.2  | 18.7   | 18.9  | 19.4   | 19.9  | 20.3   | 20.9  | 21.1   |
| 80°    | 12.2   | 13.5  | 13.9   | 14.1  | 14.6   | 14.9  | 14.9   | 14.6  | 14.6   | 14.4  | 14.6   |
| 82.5°  | 3.9    | 4.3   | 5.0    | 5.7   | 6.5    | 7.2   | 7.4    | 7.7   | 7.7    | 7.9   | 7.7    |
| 85°    | 0.8    | 0.9   | 1.4    | 1.9   | 2.2    | 2.6   | 2.4    | 1.9   | 1.7    | 1.2   | 0.9    |
| 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    |
| 92.5°  | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 95°    | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 97.5°  | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 100°   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 102.5° | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 105°   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 107.5° | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |
| 110°   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 192.5° | 195° | 197.5° | 200° | 202.5° | 205° | 207.5° | 210° | 212.5° | 215° | 217.5° |
|--------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 112.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 115°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 117.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 120°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 122.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 125°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 127.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 130°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 132.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 135°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 137.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 140°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 142.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 145°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 147.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 150°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 152.5° | 0.0    | 0.0  | 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° | 0.0    | 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° | 0.0    | 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° | 0.0    | 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: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 220°  | 222.5° | 225°  | 227.5° | 230°  | 232.5° | 235°  | 237.5° | 240°  | 242.5° | 245°  |
|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| 0°     | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 | 506.9  | 506.9 |
| 2.5°   | 554.1 | 561.0  | 568.3 | 565.3  | 562.5 | 559.6  | 556.8 | 557.2  | 557.9 | 558.4  | 558.9 |
| 5°     | 544.2 | 543.8  | 543.6 | 551.7  | 560.1 | 568.3  | 576.4 | 585.3  | 594.3 | 603.3  | 612.1 |
| 7.5°   | 475.7 | 474.8  | 474.0 | 484.5  | 495.1 | 505.6  | 516.2 | 528.4  | 541.0 | 553.1  | 565.3 |
| 10°    | 427.3 | 429.2  | 431.1 | 435.4  | 440.0 | 444.2  | 448.6 | 460.3  | 472.1 | 483.6  | 495.4 |
| 12.5°  | 444.2 | 457.7  | 471.4 | 474.0  | 476.5 | 479.1  | 481.4 | 483.1  | 484.8 | 486.5  | 488.1 |
| 15°    | 402.1 | 418.6  | 435.2 | 442.1  | 448.9 | 455.8  | 462.5 | 480.2  | 497.7 | 515.5  | 533.0 |
| 17.5°  | 334.9 | 352.3  | 369.7 | 390.6  | 411.5 | 432.3  | 453.2 | 472.3  | 491.5 | 510.7  | 529.9 |
| 20°    | 256.3 | 279.3  | 302.3 | 328.7  | 355.4 | 381.7  | 408.1 | 427.3  | 446.2 | 465.4  | 484.4 |
| 22.5°  | 184.2 | 202.8  | 221.6 | 253.4  | 285.1 | 316.9  | 348.6 | 381.9  | 415.5 | 448.9  | 482.2 |
| 25°    | 140.3 | 152.0  | 164.0 | 195.4  | 226.8 | 258.0  | 289.4 | 335.2  | 381.0 | 426.8  | 472.6 |
| 27.5°  | 119.2 | 127.3  | 135.2 | 163.6  | 191.8 | 219.9  | 248.1 | 302.6  | 357.0 | 411.5  | 465.9 |
| 30°    | 112.2 | 117.7  | 123.3 | 147.2  | 171.5 | 195.4  | 219.4 | 274.6  | 329.7 | 384.8  | 440.0 |
| 32.5°  | 103.6 | 108.1  | 112.9 | 134.0  | 155.1 | 176.0  | 197.1 | 251.0  | 305.0 | 358.7  | 412.6 |
| 35°    | 93.8  | 98.8   | 103.6 | 124.7  | 145.8 | 166.7  | 187.8 | 243.6  | 299.4 | 355.4  | 411.2 |
| 37.5°  | 93.0  | 97.1   | 100.9 | 125.4  | 150.1 | 174.6  | 199.0 | 254.9  | 310.7 | 366.4  | 422.2 |
| 40°    | 92.1  | 95.9   | 99.7  | 124.7  | 149.3 | 174.3  | 199.0 | 257.5  | 316.0 | 374.5  | 433.0 |
| 42.5°  | 94.4  | 99.5   | 104.8 | 126.8  | 148.9 | 170.7  | 192.7 | 254.4  | 316.0 | 377.4  | 439.0 |
| 45°    | 97.8  | 104.3  | 110.7 | 130.9  | 151.0 | 171.2  | 191.3 | 258.2  | 325.1 | 391.8  | 458.7 |
| 47.5°  | 100.9 | 104.0  | 107.2 | 126.4  | 145.3 | 164.5  | 183.4 | 251.8  | 320.0 | 388.4  | 456.8 |
| 50°    | 103.9 | 102.2  | 100.5 | 121.6  | 142.7 | 163.6  | 184.6 | 249.8  | 314.8 | 380.0  | 445.0 |
| 52.5°  | 98.0  | 94.7   | 91.1  | 113.7  | 136.2 | 158.5  | 181.0 | 246.7  | 312.4 | 378.1  | 443.8 |
| 55°    | 87.3  | 83.4   | 79.6  | 101.9  | 123.9 | 146.2  | 168.3 | 233.8  | 299.2 | 364.7  | 430.1 |
| 57.5°  | 76.3  | 74.8   | 73.2  | 90.1   | 107.2 | 123.9  | 141.0 | 213.7  | 286.5 | 359.1  | 431.8 |
| 60°    | 65.0  | 66.4   | 68.1  | 80.3   | 92.6  | 104.5  | 116.8 | 187.9  | 258.9 | 330.1  | 401.1 |
| 62.5°  | 57.5  | 60.2   | 62.6  | 72.9   | 83.4  | 93.8   | 104.0 | 171.2  | 238.3 | 305.5  | 372.6 |
| 65°    | 50.4  | 53.2   | 56.1  | 68.4   | 80.8  | 93.0   | 105.3 | 162.0  | 218.9 | 275.7  | 332.6 |
| 67.5°  | 43.9  | 46.0   | 48.4  | 64.5   | 80.6  | 96.6   | 112.7 | 159.2  | 205.5 | 252.0  | 298.3 |
| 70°    | 38.3  | 40.3   | 42.5  | 61.1   | 79.8  | 98.6   | 117.2 | 156.8  | 196.6 | 236.2  | 275.7 |
| 72.5°  | 33.8  | 35.5   | 37.2  | 56.1   | 75.0  | 94.0   | 112.9 | 148.2  | 183.1 | 218.5  | 253.4 |
| 75°    | 29.5  | 30.2   | 31.2  | 47.3   | 63.1  | 79.1   | 94.9  | 118.5  | 142.2 | 165.7  | 189.2 |
| 77.5°  | 21.4  | 21.4   | 21.6  | 26.4   | 30.9  | 35.7   | 40.3  | 54.9   | 69.5  | 83.9   | 98.6  |
| 80°    | 14.6  | 14.9   | 14.9  | 16.8   | 18.5  | 20.3   | 22.0  | 25.1   | 28.1  | 31.2   | 34.1  |
| 82.5°  | 7.4   | 7.0    | 6.7   | 8.7    | 10.5  | 12.4   | 14.4  | 15.1   | 15.6  | 16.3   | 16.8  |
| 85°    | 0.8   | 0.3    | 0.0   | 1.2    | 2.4   | 3.6    | 4.8   | 5.7    | 6.7   | 7.7    | 8.7   |
| 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   |
| 92.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 95°    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 97.5°  | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 100°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 102.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 105°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 107.5° | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |
| 110°   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 220° | 222.5° | 225° | 227.5° | 230° | 232.5° | 235° | 237.5° | 240° | 242.5° | 245° |
|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 112.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 115°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 117.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 120°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 122.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 125°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 127.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 130°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 132.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 135°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 137.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 140°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 142.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 145°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 147.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 150°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 152.5° | 0.0  | 0.0    | 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° | 0.0  | 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° | 0.0  | 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° | 0.0  | 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  |

REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 247.5° | 250°   | 252.5° | 255°   | 257.5° | 260°   | 262.5° | 265°   | 267.5° | 270°   | 272.5° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  |
| 2.5°   | 557.0  | 555.1  | 553.1  | 551.2  | 563.0  | 574.9  | 586.7  | 598.5  | 631.8  | 653.6  | 651.2  |
| 5°     | 620.8  | 629.4  | 638.0  | 646.7  | 660.5  | 674.7  | 688.6  | 702.5  | 751.9  | 782.1  | 786.4  |
| 7.5°   | 578.8  | 592.0  | 605.4  | 618.6  | 645.5  | 672.0  | 699.0  | 725.5  | 766.1  | 797.4  | 815.2  |
| 10°    | 510.4  | 525.6  | 540.4  | 555.5  | 585.8  | 616.2  | 646.4  | 676.6  | 722.2  | 765.6  | 787.8  |
| 12.5°  | 511.9  | 535.7  | 559.4  | 583.1  | 609.5  | 635.9  | 662.0  | 688.4  | 716.2  | 730.8  | 762.2  |
| 15°    | 551.7  | 570.4  | 589.1  | 607.8  | 642.4  | 676.8  | 711.1  | 745.7  | 762.2  | 797.4  | 834.2  |
| 17.5°  | 566.3  | 603.0  | 639.4  | 675.9  | 719.1  | 761.9  | 805.2  | 848.0  | 879.2  | 928.1  | 966.0  |
| 20°    | 539.3  | 594.2  | 648.8  | 703.7  | 762.9  | 822.1  | 881.3  | 940.6  | 974.7  | 1021.2 | 1079.6 |
| 22.5°  | 540.4  | 598.7  | 656.7  | 715.0  | 796.8  | 878.2  | 960.1  | 1041.5 | 1132.9 | 1222.6 | 1251.1 |
| 25°    | 548.9  | 625.0  | 701.1  | 777.3  | 871.8  | 966.3  | 1060.7 | 1155.2 | 1265.5 | 1359.7 | 1397.6 |
| 27.5°  | 551.7  | 637.6  | 723.2  | 808.9  | 943.2  | 1077.5 | 1211.7 | 1346.0 | 1477.7 | 1584.2 | 1624.6 |
| 30°    | 544.7  | 649.8  | 754.5  | 859.3  | 1024.0 | 1188.8 | 1353.5 | 1518.2 | 1643.1 | 1767.1 | 1817.4 |
| 32.5°  | 546.4  | 680.2  | 814.0  | 947.8  | 1141.8 | 1335.9 | 1529.9 | 1723.9 | 1803.7 | 1915.5 | 2004.2 |
| 35°    | 557.9  | 704.7  | 851.2  | 997.9  | 1212.5 | 1427.1 | 1641.7 | 1856.3 | 1987.2 | 2105.1 | 2180.5 |
| 37.5°  | 584.8  | 747.3  | 909.7  | 1072.2 | 1335.9 | 1600.0 | 1863.7 | 2127.5 | 2330.0 | 2532.6 | 2567.2 |
| 40°    | 604.7  | 776.4  | 948.0  | 1119.7 | 1425.9 | 1732.1 | 2038.3 | 2344.4 | 2573.7 | 2793.5 | 2817.0 |
| 42.5°  | 627.2  | 815.2  | 1003.4 | 1191.4 | 1533.8 | 1876.1 | 2218.5 | 2561.0 | 2826.3 | 3050.5 | 3066.1 |
| 45°    | 651.9  | 845.4  | 1038.7 | 1231.9 | 1590.6 | 1949.0 | 2307.8 | 2666.2 | 2976.2 | 3236.6 | 3177.8 |
| 47.5°  | 663.6  | 870.6  | 1077.5 | 1284.4 | 1669.0 | 2053.4 | 2437.9 | 2822.3 | 3100.4 | 3330.1 | 3261.5 |
| 50°    | 672.8  | 900.4  | 1128.1 | 1355.6 | 1758.9 | 2162.2 | 2565.5 | 2968.8 | 3247.6 | 3459.5 | 3352.2 |
| 52.5°  | 698.5  | 952.8  | 1207.4 | 1461.8 | 1890.8 | 2319.5 | 2748.4 | 3177.2 | 3446.8 | 3641.6 | 3491.0 |
| 55°    | 723.3  | 1016.4 | 1309.6 | 1602.6 | 2063.9 | 2525.5 | 2986.8 | 3448.1 | 3716.6 | 3883.4 | 3678.9 |
| 57.5°  | 754.8  | 1077.9 | 1400.9 | 1723.9 | 2217.4 | 2710.8 | 3204.0 | 3697.4 | 3960.0 | 4144.4 | 3931.9 |
| 60°    | 746.6  | 1091.9 | 1437.4 | 1782.6 | 2285.2 | 2787.8 | 3290.3 | 3792.9 | 4104.8 | 4331.4 | 4187.3 |
| 62.5°  | 715.0  | 1057.3 | 1399.5 | 1741.9 | 2235.6 | 2729.0 | 3222.7 | 3716.1 | 4089.9 | 4396.8 | 4348.4 |
| 65°    | 650.9  | 969.1  | 1287.5 | 1605.7 | 2077.1 | 2548.7 | 3020.1 | 3491.5 | 3952.8 | 4343.3 | 4360.7 |
| 67.5°  | 566.8  | 835.4  | 1103.7 | 1372.2 | 1811.9 | 2251.7 | 2691.1 | 3130.8 | 3675.4 | 4130.9 | 4182.2 |
| 70°    | 477.6  | 679.3  | 881.2  | 1082.7 | 1469.7 | 1856.7 | 2243.5 | 2630.5 | 3196.6 | 3655.0 | 3751.8 |
| 72.5°  | 382.9  | 512.6  | 642.1  | 771.5  | 1050.9 | 1330.0 | 1609.3 | 1888.4 | 2386.4 | 2742.2 | 2911.2 |
| 75°    | 248.1  | 307.2  | 366.1  | 425.1  | 611.2  | 797.0  | 983.0  | 1168.9 | 1499.5 | 1761.5 | 1952.7 |
| 77.5°  | 110.5  | 122.5  | 134.3  | 146.2  | 289.9  | 433.5  | 577.1  | 720.7  | 864.4  | 1022.6 | 1067.4 |
| 80°    | 39.5   | 44.8   | 50.4   | 55.7   | 126.1  | 196.9  | 267.3  | 337.8  | 407.3  | 489.2  | 509.0  |
| 82.5°  | 16.6   | 16.6   | 16.3   | 16.1   | 41.2   | 66.4   | 91.6   | 116.8  | 135.0  | 155.1  | 158.9  |
| 85°    | 6.7    | 5.0    | 3.1    | 1.2    | 5.3    | 9.6    | 13.7   | 17.7   | 28.5   | 25.9   | 47.9   |
| 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    |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 110°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 247.5° | 250° | 252.5° | 255° | 257.5° | 260° | 262.5° | 265° | 267.5° | 270° | 272.5° |
|--------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 112.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 115°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 117.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 120°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 122.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 125°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 127.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 130°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 132.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 135°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 137.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 140°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 142.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 145°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 147.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 150°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 152.5° | 0.0    | 0.0  | 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° | 0.0    | 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° | 0.0    | 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° | 0.0    | 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    |

REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 275°   | 277.5° | 280°   | 282.5° | 285°   | 287.5° | 290°   | 292.5° | 295°   | 297.5° | 300°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  |
| 2.5°   | 642.1  | 641.6  | 641.1  | 640.7  | 640.2  | 631.5  | 623.2  | 614.5  | 606.1  | 616.7  | 627.2  |
| 5°     | 779.5  | 792.0  | 804.4  | 817.1  | 829.5  | 833.2  | 836.8  | 840.4  | 844.0  | 851.7  | 859.3  |
| 7.5°   | 830.1  | 851.2  | 872.0  | 893.1  | 914.0  | 933.4  | 952.6  | 972.0  | 991.4  | 986.6  | 981.8  |
| 10°    | 812.6  | 850.7  | 888.8  | 927.2  | 965.3  | 973.7  | 982.1  | 990.7  | 999.1  | 1020.9 | 1042.7 |
| 12.5°  | 793.6  | 839.4  | 885.2  | 931.0  | 976.8  | 1002.2 | 1027.4 | 1052.8 | 1078.2 | 1100.3 | 1122.3 |
| 15°    | 883.5  | 912.8  | 942.1  | 971.5  | 1000.8 | 1023.0 | 1045.2 | 1067.4 | 1089.5 | 1104.9 | 1119.9 |
| 17.5°  | 1001.8 | 1016.1 | 1030.5 | 1045.2 | 1059.5 | 1077.0 | 1094.5 | 1112.0 | 1129.5 | 1138.7 | 1147.7 |
| 20°    | 1126.6 | 1132.9 | 1139.2 | 1145.4 | 1151.6 | 1137.7 | 1123.8 | 1109.9 | 1095.9 | 1104.6 | 1113.0 |
| 22.5°  | 1252.0 | 1254.2 | 1256.6 | 1258.7 | 1260.9 | 1228.6 | 1196.2 | 1163.8 | 1131.4 | 1117.8 | 1104.1 |
| 25°    | 1445.1 | 1429.3 | 1413.4 | 1397.6 | 1381.8 | 1343.4 | 1305.1 | 1266.6 | 1228.3 | 1194.5 | 1160.7 |
| 27.5°  | 1654.1 | 1600.4 | 1547.0 | 1493.3 | 1439.8 | 1401.4 | 1363.1 | 1324.7 | 1286.3 | 1235.5 | 1184.7 |
| 30°    | 1864.9 | 1778.3 | 1692.1 | 1605.4 | 1519.2 | 1473.6 | 1428.0 | 1382.3 | 1336.7 | 1285.9 | 1235.3 |
| 32.5°  | 2058.2 | 1954.1 | 1850.1 | 1745.7 | 1641.7 | 1564.9 | 1488.2 | 1411.5 | 1334.8 | 1299.3 | 1263.8 |
| 35°    | 2218.3 | 2095.3 | 1972.3 | 1849.1 | 1726.0 | 1650.1 | 1574.1 | 1498.1 | 1422.0 | 1369.3 | 1316.8 |
| 37.5°  | 2492.1 | 2353.8 | 2215.4 | 2077.1 | 1938.8 | 1834.9 | 1731.3 | 1627.6 | 1523.7 | 1488.5 | 1453.2 |
| 40°    | 2744.6 | 2570.3 | 2396.0 | 2221.7 | 2047.3 | 1960.3 | 1873.5 | 1786.5 | 1699.7 | 1641.9 | 1584.3 |
| 42.5°  | 2945.3 | 2761.6 | 2578.2 | 2394.5 | 2210.9 | 2124.8 | 2038.9 | 1952.9 | 1866.8 | 1828.2 | 1789.9 |
| 45°    | 2988.6 | 2815.6 | 2642.7 | 2469.6 | 2296.5 | 2246.4 | 2196.5 | 2146.4 | 2096.5 | 2069.9 | 2043.6 |
| 47.5°  | 3074.2 | 2886.6 | 2699.0 | 2511.3 | 2323.6 | 2301.0 | 2278.5 | 2255.7 | 2233.2 | 2245.9 | 2258.6 |
| 50°    | 3122.3 | 2930.6 | 2739.1 | 2547.5 | 2355.9 | 2362.4 | 2368.6 | 2375.1 | 2381.6 | 2471.7 | 2561.6 |
| 52.5°  | 3215.3 | 3021.8 | 2828.3 | 2634.8 | 2441.3 | 2482.1 | 2522.6 | 2563.3 | 2603.8 | 2728.0 | 2852.0 |
| 55°    | 3381.4 | 3191.3 | 3001.2 | 2810.8 | 2620.7 | 2674.3 | 2728.0 | 2782.0 | 2835.7 | 2967.6 | 3099.2 |
| 57.5°  | 3627.6 | 3438.9 | 3250.5 | 3061.8 | 2873.4 | 2926.8 | 2980.3 | 3033.7 | 3087.2 | 3206.4 | 3325.3 |
| 60°    | 3937.7 | 3743.9 | 3550.4 | 3356.7 | 3163.2 | 3183.4 | 3203.2 | 3223.4 | 3243.5 | 3371.6 | 3499.4 |
| 62.5°  | 4179.1 | 4001.0 | 3823.1 | 3644.9 | 3467.0 | 3444.7 | 3422.6 | 3400.3 | 3378.3 | 3475.6 | 3572.7 |
| 65°    | 4235.2 | 4109.8 | 3984.7 | 3859.2 | 3733.8 | 3665.3 | 3596.9 | 3528.4 | 3459.8 | 3499.2 | 3538.4 |
| 67.5°  | 4074.6 | 3989.9 | 3905.6 | 3820.9 | 3736.3 | 3593.2 | 3450.0 | 3306.6 | 3163.5 | 3142.6 | 3121.8 |
| 70°    | 3701.7 | 3655.5 | 3609.4 | 3563.1 | 3517.1 | 3296.5 | 3076.2 | 2855.6 | 2635.3 | 2582.2 | 2529.3 |
| 72.5°  | 2921.0 | 2949.9 | 2978.6 | 3007.6 | 3036.4 | 2800.2 | 2564.3 | 2328.1 | 2092.0 | 2024.8 | 1958.0 |
| 75°    | 2059.9 | 2157.4 | 2255.0 | 2352.6 | 2450.1 | 2234.9 | 2019.8 | 1804.5 | 1589.1 | 1524.6 | 1460.4 |
| 77.5°  | 1116.8 | 1299.8 | 1482.7 | 1665.7 | 1848.6 | 1671.0 | 1493.5 | 1315.8 | 1138.2 | 1093.3 | 1048.8 |
| 80°    | 529.4  | 634.9  | 740.2  | 845.7  | 951.1  | 911.1  | 871.1  | 830.8  | 790.8  | 800.5  | 810.4  |
| 82.5°  | 162.3  | 238.6  | 314.8  | 391.0  | 467.3  | 473.3  | 479.1  | 485.0  | 491.0  | 505.9  | 520.5  |
| 85°    | 54.4   | 74.6   | 94.7   | 114.9  | 135.0  | 170.5  | 205.9  | 241.7  | 277.2  | 254.1  | 231.4  |
| 87.5°  | 0.0    | 0.8    | 1.2    | 1.9    | 2.4    | 7.4    | 12.4   | 17.5   | 22.5   | 19.4   | 16.6   |
| 90°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 110°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 275° | 277.5° | 280° | 282.5° | 285° | 287.5° | 290° | 292.5° | 295° | 297.5° | 300° |
|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 112.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 115°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 117.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 120°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 122.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 125°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 127.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 130°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 132.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 135°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 137.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 140°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 142.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 145°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 147.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 150°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 152.5° | 0.0  | 0.0    | 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° | 0.0  | 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° | 0.0  | 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° | 0.0  | 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  |



REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 302.5° | 305°   | 307.5° | 310°   | 312.5° | 315°   | 317.5° | 320°   | 322.5° | 325°   | 327.5° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  |
| 2.5°   | 638.0  | 648.6  | 648.8  | 649.3  | 649.5  | 649.8  | 650.9  | 652.2  | 653.6  | 654.8  | 646.9  |
| 5°     | 867.2  | 874.9  | 860.7  | 846.6  | 832.2  | 818.1  | 830.8  | 843.5  | 856.2  | 868.9  | 863.4  |
| 7.5°   | 976.8  | 972.0  | 970.3  | 968.9  | 967.2  | 965.8  | 970.6  | 975.4  | 980.2  | 984.9  | 984.4  |
| 10°    | 1064.6 | 1086.4 | 1091.7 | 1097.0 | 1102.4 | 1107.7 | 1096.7 | 1085.7 | 1074.7 | 1063.6 | 1059.0 |
| 12.5°  | 1144.4 | 1166.5 | 1184.0 | 1201.5 | 1219.2 | 1236.7 | 1220.9 | 1205.3 | 1189.5 | 1173.9 | 1159.0 |
| 15°    | 1135.3 | 1150.4 | 1164.8 | 1179.2 | 1193.6 | 1208.0 | 1202.7 | 1197.6 | 1192.4 | 1187.1 | 1184.7 |
| 17.5°  | 1157.1 | 1166.2 | 1162.9 | 1159.5 | 1155.9 | 1152.5 | 1150.9 | 1149.4 | 1147.7 | 1146.1 | 1140.3 |
| 20°    | 1121.6 | 1130.3 | 1128.1 | 1126.2 | 1124.0 | 1121.8 | 1120.4 | 1119.0 | 1117.6 | 1116.1 | 1111.6 |
| 22.5°  | 1090.5 | 1076.8 | 1073.2 | 1069.8 | 1066.3 | 1062.9 | 1063.4 | 1063.8 | 1064.1 | 1064.6 | 1085.2 |
| 25°    | 1126.9 | 1093.1 | 1079.9 | 1066.7 | 1053.3 | 1040.1 | 1046.1 | 1051.9 | 1057.9 | 1063.8 | 1093.6 |
| 27.5°  | 1133.6 | 1082.7 | 1061.7 | 1040.6 | 1019.5 | 998.4  | 1019.9 | 1041.5 | 1063.1 | 1084.7 | 1132.9 |
| 30°    | 1184.4 | 1133.9 | 1104.4 | 1075.1 | 1045.7 | 1016.4 | 1044.0 | 1071.5 | 1099.1 | 1126.6 | 1178.9 |
| 32.5°  | 1228.1 | 1192.6 | 1171.5 | 1150.4 | 1129.3 | 1108.2 | 1109.4 | 1110.3 | 1111.6 | 1112.8 | 1186.3 |
| 35°    | 1264.0 | 1211.6 | 1192.4 | 1173.4 | 1154.2 | 1135.3 | 1163.8 | 1192.4 | 1220.9 | 1249.4 | 1315.6 |
| 37.5°  | 1418.0 | 1382.7 | 1347.5 | 1312.5 | 1277.2 | 1242.3 | 1265.0 | 1287.8 | 1310.8 | 1333.6 | 1406.7 |
| 40°    | 1526.6 | 1469.1 | 1460.0 | 1451.1 | 1442.0 | 1433.1 | 1444.8 | 1456.4 | 1468.0 | 1479.8 | 1543.9 |
| 42.5°  | 1751.3 | 1712.7 | 1687.9 | 1663.5 | 1638.8 | 1614.4 | 1623.7 | 1633.0 | 1642.6 | 1651.9 | 1712.7 |
| 45°    | 2016.9 | 1990.3 | 1974.0 | 1957.7 | 1941.1 | 1924.8 | 1910.7 | 1896.8 | 1882.6 | 1868.7 | 1930.4 |
| 47.5°  | 2271.3 | 2284.0 | 2320.0 | 2355.7 | 2391.7 | 2427.4 | 2398.2 | 2368.9 | 2339.4 | 2310.1 | 2310.4 |
| 50°    | 2651.8 | 2741.8 | 2759.9 | 2777.9 | 2796.2 | 2814.2 | 2751.8 | 2689.5 | 2626.9 | 2564.5 | 2557.1 |
| 52.5°  | 2976.2 | 3100.1 | 3106.6 | 3113.1 | 3119.8 | 3126.3 | 3101.2 | 3075.9 | 3050.5 | 3025.4 | 2958.5 |
| 55°    | 3231.1 | 3362.7 | 3371.6 | 3380.2 | 3389.1 | 3397.7 | 3375.6 | 3353.8 | 3331.8 | 3309.7 | 3242.1 |
| 57.5°  | 3444.5 | 3563.4 | 3568.7 | 3573.7 | 3579.0 | 3584.3 | 3585.9 | 3587.6 | 3589.5 | 3591.2 | 3499.8 |
| 60°    | 3627.4 | 3755.5 | 3744.9 | 3734.6 | 3724.0 | 3713.8 | 3697.9 | 3682.0 | 3666.2 | 3650.4 | 3591.5 |
| 62.5°  | 3670.1 | 3767.4 | 3751.2 | 3735.1 | 3718.8 | 3702.7 | 3689.3 | 3676.1 | 3662.6 | 3649.3 | 3611.6 |
| 65°    | 3577.8 | 3617.1 | 3600.3 | 3583.6 | 3566.5 | 3549.7 | 3541.1 | 3532.7 | 3524.0 | 3515.5 | 3510.7 |
| 67.5°  | 3100.7 | 3079.8 | 3099.7 | 3119.6 | 3139.5 | 3159.4 | 3186.5 | 3213.6 | 3240.9 | 3268.0 | 3252.2 |
| 70°    | 2476.0 | 2423.1 | 2445.2 | 2466.9 | 2489.0 | 2510.8 | 2551.8 | 2592.8 | 2634.0 | 2675.1 | 2664.1 |
| 72.5°  | 1890.8 | 1823.7 | 1826.8 | 1829.9 | 1833.2 | 1836.4 | 1835.2 | 1834.2 | 1833.0 | 1831.8 | 1851.0 |
| 75°    | 1395.9 | 1331.4 | 1301.0 | 1270.5 | 1240.1 | 1209.6 | 1202.2 | 1194.8 | 1187.4 | 1179.9 | 1215.6 |
| 77.5°  | 1003.9 | 959.3  | 938.4  | 917.8  | 897.0  | 876.3  | 886.9  | 897.4  | 908.3  | 918.8  | 931.2  |
| 80°    | 820.5  | 830.3  | 814.2  | 798.4  | 782.4  | 766.3  | 778.3  | 790.0  | 802.1  | 814.0  | 776.8  |
| 82.5°  | 535.4  | 550.0  | 500.7  | 451.2  | 401.9  | 352.4  | 382.4  | 412.4  | 442.6  | 472.6  | 457.2  |
| 85°    | 208.4  | 185.6  | 158.3  | 131.2  | 103.9  | 76.5   | 99.5   | 122.5  | 145.6  | 168.5  | 183.9  |
| 87.5°  | 13.5   | 10.5   | 8.4    | 6.2    | 3.9    | 1.7    | 3.6    | 5.5    | 7.7    | 9.6    | 16.1   |
| 90°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 110°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 302.5° | 305° | 307.5° | 310° | 312.5° | 315° | 317.5° | 320° | 322.5° | 325° | 327.5° |
|--------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|
| 112.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 115°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 117.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 120°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 122.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 125°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 127.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 130°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 132.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 135°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 137.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 140°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 142.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 145°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 147.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 150°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    |
| 152.5° | 0.0    | 0.0  | 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° | 0.0    | 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° | 0.0    | 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° | 0.0    | 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    |



REPORT NUMBER: P822787

CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 330°   | 332.5° | 335°   | 337.5° | 340°   | 342.5° | 345°   | 347.5° | 350°   | 352.5° | 355°   |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  | 506.9  |
| 2.5°   | 639.3  | 631.3  | 623.6  | 608.6  | 593.4  | 578.3  | 563.2  | 584.3  | 605.4  | 626.5  | 647.6  |
| 5°     | 858.1  | 852.6  | 847.3  | 848.8  | 850.2  | 851.9  | 853.3  | 856.5  | 859.6  | 862.4  | 865.5  |
| 7.5°   | 984.3  | 983.8  | 983.3  | 972.2  | 961.2  | 950.0  | 938.9  | 944.4  | 950.0  | 955.4  | 961.0  |
| 10°    | 1054.7 | 1050.2 | 1045.7 | 1021.4 | 997.2  | 972.8  | 948.5  | 937.9  | 927.2  | 916.7  | 906.1  |
| 12.5°  | 1144.1 | 1129.1 | 1114.2 | 1088.3 | 1062.6 | 1036.7 | 1010.8 | 1001.3 | 991.4  | 981.8  | 972.0  |
| 15°    | 1182.6 | 1180.1 | 1177.9 | 1159.5 | 1140.8 | 1122.3 | 1103.7 | 1070.8 | 1037.7 | 1004.9 | 972.0  |
| 17.5°  | 1134.5 | 1128.6 | 1122.9 | 1152.0 | 1181.0 | 1210.3 | 1239.6 | 1205.5 | 1171.5 | 1137.5 | 1103.4 |
| 20°    | 1107.0 | 1102.4 | 1097.9 | 1152.3 | 1206.5 | 1260.9 | 1315.1 | 1300.0 | 1284.6 | 1269.6 | 1254.5 |
| 22.5°  | 1105.8 | 1126.6 | 1147.2 | 1195.0 | 1242.4 | 1290.2 | 1337.6 | 1363.8 | 1390.2 | 1416.3 | 1442.4 |
| 25°    | 1123.3 | 1153.3 | 1183.0 | 1262.1 | 1341.2 | 1420.6 | 1499.7 | 1529.7 | 1559.4 | 1589.4 | 1619.2 |
| 27.5°  | 1180.9 | 1229.1 | 1277.0 | 1346.0 | 1415.1 | 1484.4 | 1553.5 | 1618.9 | 1684.6 | 1750.1 | 1815.5 |
| 30°    | 1231.0 | 1283.2 | 1335.5 | 1417.8 | 1499.7 | 1582.0 | 1664.0 | 1746.0 | 1827.9 | 1909.9 | 1992.0 |
| 32.5°  | 1260.0 | 1333.8 | 1407.4 | 1507.4 | 1607.1 | 1707.1 | 1807.1 | 1897.0 | 1987.0 | 2076.6 | 2166.5 |
| 35°    | 1381.8 | 1448.2 | 1514.4 | 1624.9 | 1735.4 | 1846.2 | 1956.7 | 2067.9 | 2179.2 | 2290.3 | 2401.5 |
| 37.5°  | 1479.8 | 1553.2 | 1626.3 | 1747.1 | 1867.8 | 1988.6 | 2109.5 | 2263.1 | 2417.1 | 2570.8 | 2724.4 |
| 40°    | 1607.9 | 1671.9 | 1735.9 | 1849.1 | 1962.0 | 2075.2 | 2188.4 | 2383.3 | 2578.2 | 2772.9 | 2967.8 |
| 42.5°  | 1773.0 | 1833.8 | 1894.4 | 2015.5 | 2136.6 | 2257.6 | 2378.7 | 2594.5 | 2810.3 | 3025.8 | 3241.7 |
| 45°    | 1992.0 | 2053.8 | 2115.5 | 2211.8 | 2308.2 | 2404.6 | 2501.0 | 2730.5 | 2959.6 | 3189.1 | 3418.3 |
| 47.5°  | 2310.6 | 2310.9 | 2311.1 | 2380.7 | 2450.1 | 2519.9 | 2589.5 | 2820.6 | 3051.5 | 3282.6 | 3513.5 |
| 50°    | 2549.7 | 2542.0 | 2534.6 | 2570.5 | 2606.3 | 2642.2 | 2678.2 | 2890.8 | 3103.8 | 3316.4 | 3529.1 |
| 52.5°  | 2891.9 | 2824.9 | 2758.2 | 2779.6 | 2800.7 | 2822.1 | 2843.2 | 3023.2 | 3203.5 | 3383.6 | 3563.7 |
| 55°    | 3174.7 | 3107.1 | 3039.5 | 3031.6 | 3023.7 | 3015.8 | 3007.9 | 3173.6 | 3339.2 | 3504.9 | 3670.6 |
| 57.5°  | 3408.8 | 3317.4 | 3226.3 | 3208.0 | 3190.1 | 3171.9 | 3153.6 | 3328.5 | 3502.9 | 3677.8 | 3852.3 |
| 60°    | 3532.7 | 3473.8 | 3414.7 | 3403.0 | 3391.0 | 3379.2 | 3367.3 | 3510.7 | 3654.0 | 3797.4 | 3940.8 |
| 62.5°  | 3574.2 | 3536.6 | 3499.2 | 3521.2 | 3543.2 | 3565.6 | 3587.6 | 3650.7 | 3713.5 | 3776.6 | 3839.4 |
| 65°    | 3506.1 | 3501.3 | 3496.5 | 3541.8 | 3586.9 | 3632.2 | 3677.5 | 3662.0 | 3646.1 | 3630.5 | 3614.9 |
| 67.5°  | 3236.6 | 3220.7 | 3205.2 | 3304.7 | 3404.0 | 3503.4 | 3602.9 | 3527.4 | 3451.6 | 3376.1 | 3300.6 |
| 70°    | 2653.0 | 2641.8 | 2630.7 | 2774.1 | 2917.5 | 3061.1 | 3204.5 | 3112.8 | 3021.3 | 2929.7 | 2838.1 |
| 72.5°  | 1869.9 | 1889.1 | 1908.3 | 2077.4 | 2246.1 | 2415.1 | 2583.9 | 2491.7 | 2399.3 | 2307.0 | 2214.7 |
| 75°    | 1251.1 | 1286.8 | 1322.6 | 1496.6 | 1670.7 | 1845.0 | 2019.1 | 1910.7 | 1802.3 | 1693.9 | 1585.6 |
| 77.5°  | 943.7  | 956.2  | 968.6  | 1078.7 | 1188.8 | 1299.0 | 1409.1 | 1319.7 | 1230.0 | 1140.6 | 1050.9 |
| 80°    | 739.7  | 702.2  | 665.2  | 701.3  | 737.6  | 773.7  | 810.0  | 756.5  | 703.0  | 649.8  | 596.3  |
| 82.5°  | 441.9  | 426.5  | 411.2  | 430.9  | 450.3  | 470.0  | 489.6  | 466.6  | 443.3  | 420.3  | 397.1  |
| 85°    | 199.0  | 214.3  | 229.5  | 249.3  | 269.0  | 288.9  | 308.8  | 276.7  | 244.5  | 212.4  | 180.3  |
| 87.5°  | 22.3   | 28.8   | 35.2   | 43.6   | 52.1   | 60.5   | 68.8   | 53.7   | 38.3   | 23.3   | 8.2    |
| 90°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 110°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 330° | 332.5° | 335° | 337.5° | 340° | 342.5° | 345° | 347.5° | 350° | 352.5° | 355° |
|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 112.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 115°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 117.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 120°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 122.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 125°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 127.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 130°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 132.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 135°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 137.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 140°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 142.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 145°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 147.5° | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 150°   | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 152.5° | 0.0  | 0.0    | 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° | 0.0  | 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° | 0.0  | 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° | 0.0  | 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  |



REPORT NUMBER: P822787  
 CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 357.5° | 360°   |
|--------|--------|--------|
| 0°     | 506.9  | 506.9  |
| 2.5°   | 659.9  | 672.0  |
| 5°     | 865.3  | 864.9  |
| 7.5°   | 946.6  | 932.0  |
| 10°    | 892.6  | 879.2  |
| 12.5°  | 937.7  | 903.5  |
| 15°    | 946.1  | 920.2  |
| 17.5°  | 1061.2 | 1018.8 |
| 20°    | 1200.0 | 1145.4 |
| 22.5°  | 1367.6 | 1292.5 |
| 25°    | 1529.9 | 1440.7 |
| 27.5°  | 1762.0 | 1708.3 |
| 30°    | 1937.8 | 1883.4 |
| 32.5°  | 2129.6 | 2092.7 |
| 35°    | 2364.8 | 2327.9 |
| 37.5°  | 2734.0 | 2743.4 |
| 40°    | 2973.6 | 2979.3 |
| 42.5°  | 3264.0 | 3286.2 |
| 45°    | 3443.2 | 3468.2 |
| 47.5°  | 3548.3 | 3583.1 |
| 50°    | 3585.2 | 3641.3 |
| 52.5°  | 3632.9 | 3702.0 |
| 55°    | 3747.6 | 3824.5 |
| 57.5°  | 3913.7 | 3975.1 |
| 60°    | 3943.7 | 3946.5 |
| 62.5°  | 3795.0 | 3750.7 |
| 65°    | 3567.7 | 3520.5 |
| 67.5°  | 3272.1 | 3243.4 |
| 70°    | 2800.2 | 2762.4 |
| 72.5°  | 2144.2 | 2073.7 |
| 75°    | 1498.3 | 1411.0 |
| 77.5°  | 1005.1 | 959.3  |
| 80°    | 597.7  | 599.0  |
| 82.5°  | 408.1  | 418.9  |
| 85°    | 178.2  | 175.7  |
| 87.5°  | 5.7    | 3.1    |
| 90°    | 0.0    | 0.0    |
| 92.5°  | 0.0    | 0.0    |
| 95°    | 0.0    | 0.0    |
| 97.5°  | 0.0    | 0.0    |
| 100°   | 0.0    | 0.0    |
| 102.5° | 0.0    | 0.0    |
| 105°   | 0.0    | 0.0    |
| 107.5° | 0.0    | 0.0    |
| 110°   | 0.0    | 0.0    |



REPORT NUMBER: P822787  
CATALOG NUMBER: MSA-SA1D-840-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|        | 357.5° | 360° |
|--------|--------|------|
| 112.5° | 0.0    | 0.0  |
| 115°   | 0.0    | 0.0  |
| 117.5° | 0.0    | 0.0  |
| 120°   | 0.0    | 0.0  |
| 122.5° | 0.0    | 0.0  |
| 125°   | 0.0    | 0.0  |
| 127.5° | 0.0    | 0.0  |
| 130°   | 0.0    | 0.0  |
| 132.5° | 0.0    | 0.0  |
| 135°   | 0.0    | 0.0  |
| 137.5° | 0.0    | 0.0  |
| 140°   | 0.0    | 0.0  |
| 142.5° | 0.0    | 0.0  |
| 145°   | 0.0    | 0.0  |
| 147.5° | 0.0    | 0.0  |
| 150°   | 0.0    | 0.0  |
| 152.5° | 0.0    | 0.0  |
| 155°   | 0.0    | 0.0  |
| 157.5° | 0.0    | 0.0  |
| 160°   | 0.0    | 0.0  |
| 162.5° | 0.0    | 0.0  |
| 165°   | 0.0    | 0.0  |
| 167.5° | 0.0    | 0.0  |
| 170°   | 0.0    | 0.0  |
| 172.5° | 0.0    | 0.0  |
| 175°   | 0.0    | 0.0  |
| 177.5° | 0.0    | 0.0  |
| 180°   | 0.0    | 0.0  |

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-2309-178-2

Test Date: 09/22/2023

Luminaire Tested: GALN-SA2A-840-U-T4W

Data in this report applies to families of products including GALN-SA2A-840-U-T4W.

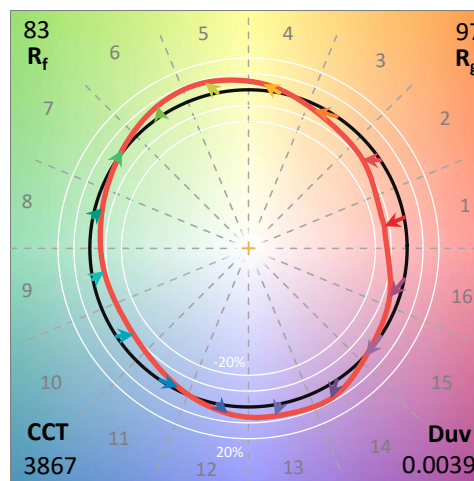
### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2309-178-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 09/22/2023  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **GALN-SA2A-840-U-T4W**  
 Description: GALLEON 2 AREA AND ROADWAY LUMINAIRE. (2) 80 CRI, 4000K, 615MA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS

LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS

### Spectral Parameters

|                           |        |           |      |      |      |
|---------------------------|--------|-----------|------|------|------|
| CCT (K):                  | 3867   | CRI (Ra): | 79.8 |      |      |
| CIE u':                   | 0.2254 | R1:       | 76.6 | R9:  | -8.6 |
| CIE v':                   | 0.5090 | R2:       | 84.7 | R10: | 66.3 |
| Duv:                      | 0.0039 | R3:       | 93.7 | R11: | 80.5 |
| CIE x:                    | 0.3895 | R4:       | 80.6 | R12: | 67.3 |
| CIE y:                    | 0.3908 | R5:       | 77.9 | R13: | 77.9 |
| CIE z:                    | 0.2197 | R6:       | 81.2 | R14: | 96.6 |
| Peak Wavelength (nm):     | 593    | R7:       | 84.2 |      |      |
| Dominant Wavelength (nm): | 577    | R8:       | 59.0 |      |      |
| Purity:                   | 34.3   |           |      |      |      |
| Rf:                       | 82.7   |           |      |      |      |
| Rg:                       | 96.5   |           |      |      |      |



### Test Conditions

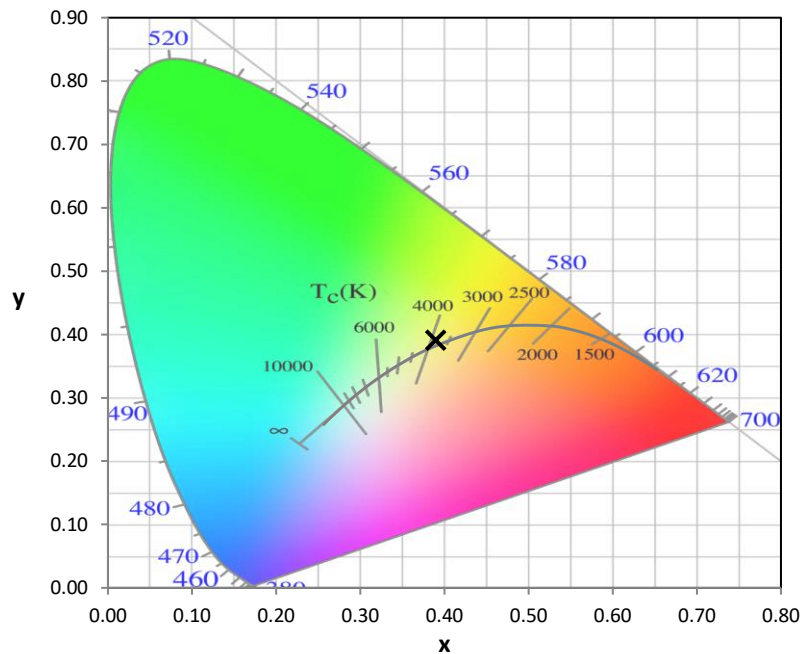
Stabilization Time: 25M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.8/46%  
 Sphere Temperature (°C): 24.7

REPORT NUMBER: SP1-2309-178-2

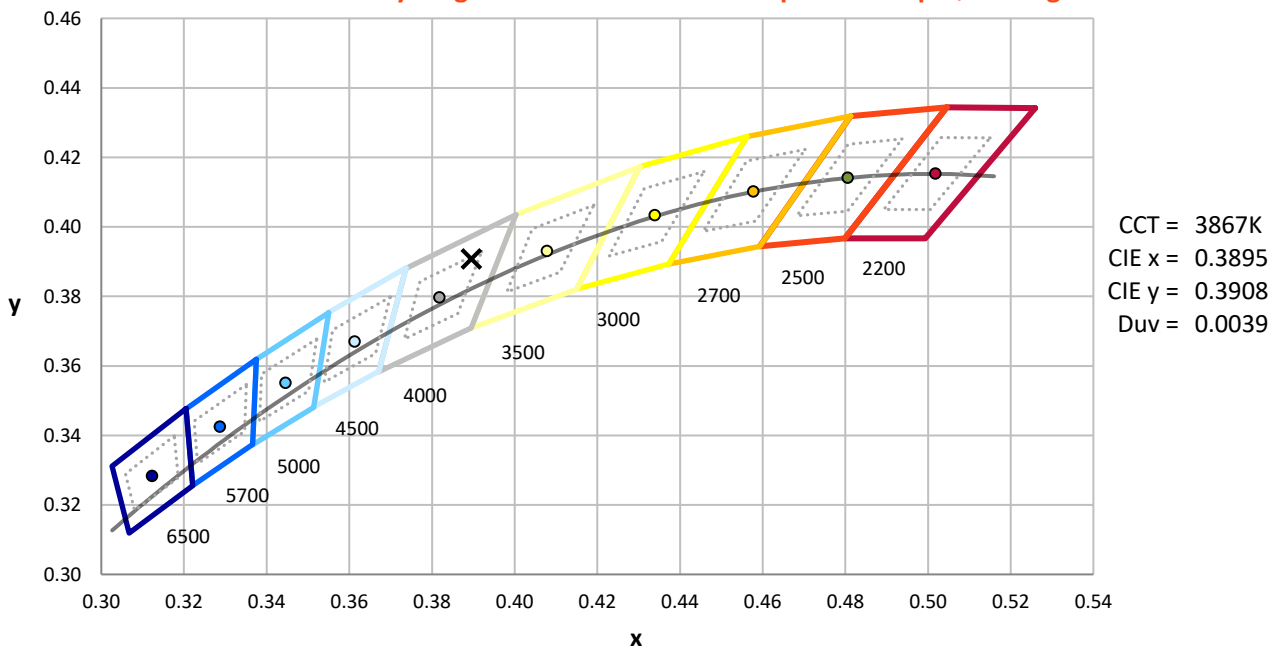
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 8/9/2023         | 2/9/2024             |
| Power Meter                    | XITRON 2801 IN0071    | 11/29/2022       | 11/29/2023           |
| AC Power Source                | CHROMA 61603 IN0063   | 11/28/2022       | 11/28/2023           |
| DC Power Source                | AGILENT E3634A IN0208 | 11/28/2022       | 11/28/2023           |
| Sphere Thermometer             | ONSET IN0085          | 11/28/2022       | 11/28/2023           |
| Room Thermometer               | ONSET IN0046          | 11/28/2022       | 11/28/2023           |

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CIE 1931 Chromaticity Diagram



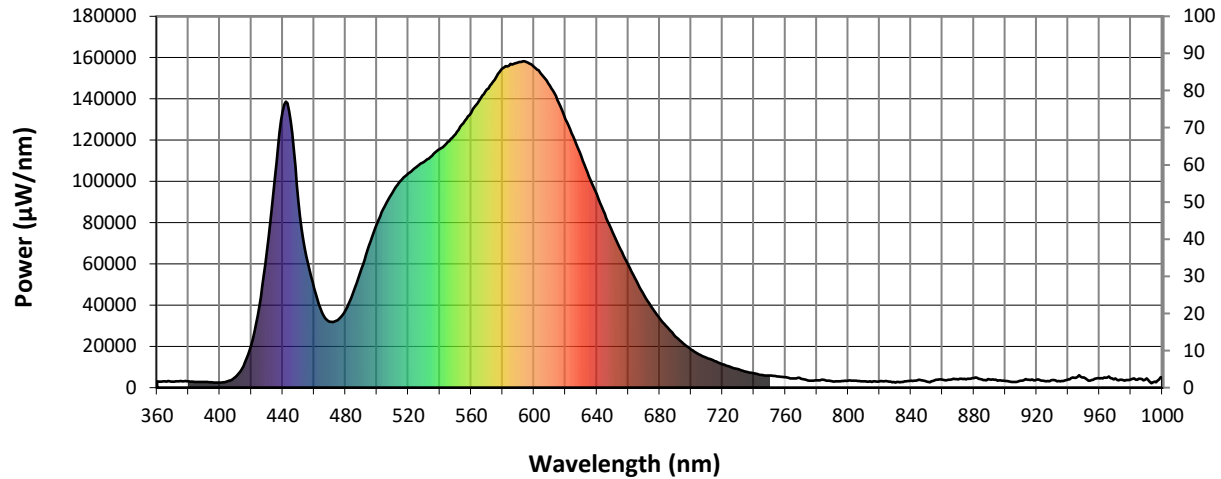
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2309-178-2

**Photopic Flux vs. Wavelength**

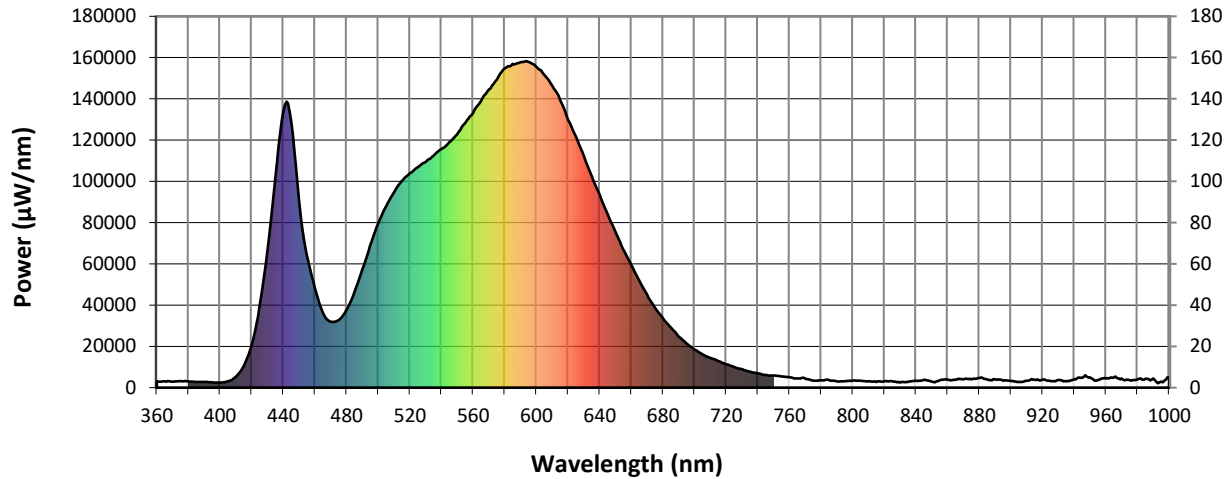


#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

REPORT NUMBER: SP1-2309-178-2

Scotopic Flux vs. Wavelength



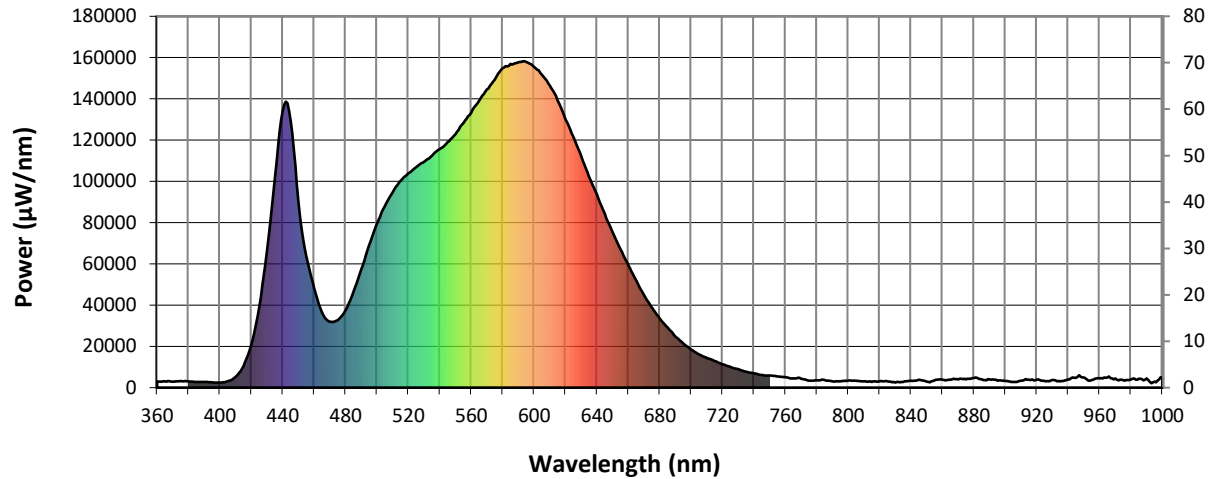
Scotopic Lumens: 14236

S/P: 1.59

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(Φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

REPORT NUMBER: SP1-2309-178-2

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5542.6**

**M/P: 0.62**

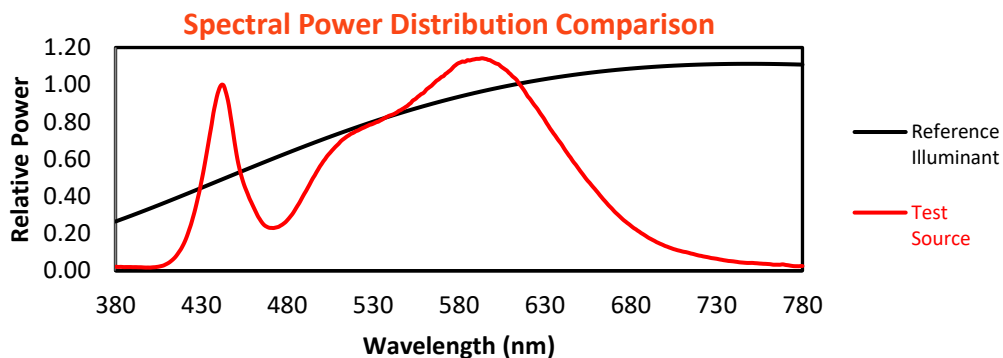
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 360       | 3123             | NR               | 490       | 57459            | NR               | 620       | 129941           | NR               | 750       | 5858             | NR               | 880       | 4622             | NR               |
| 365       | 3041             | NR               | 495       | 69038            | NR               | 625       | 121678           | NR               | 755       | 5395             | NR               | 885       | 3949             | NR               |
| 370       | 2965             | NR               | 500       | 79493            | NR               | 630       | 112252           | NR               | 760       | 5011             | NR               | 890       | 4035             | NR               |
| 375       | 3195             | NR               | 505       | 87950            | NR               | 635       | 102369           | NR               | 765       | 4514             | NR               | 895       | 3391             | NR               |
| 380       | 3028             | NR               | 510       | 94704            | NR               | 640       | 93616            | NR               | 770       | 4375             | NR               | 900       | 3268             | NR               |
| 385       | 2738             | NR               | 515       | 100214           | NR               | 645       | 84211            | NR               | 775       | 3450             | NR               | 905       | 2767             | NR               |
| 390       | 2690             | NR               | 520       | 103961           | NR               | 650       | 75380            | NR               | 780       | 3547             | NR               | 910       | 3391             | NR               |
| 395       | 2604             | NR               | 525       | 106854           | NR               | 655       | 66946            | NR               | 785       | 3648             | NR               | 915       | 3784             | NR               |
| 400       | 2384             | NR               | 530       | 109533           | NR               | 660       | 59483            | NR               | 790       | 3081             | NR               | 920       | 3790             | NR               |
| 405       | 3031             | NR               | 535       | 112417           | NR               | 665       | 51858            | NR               | 795       | 3104             | NR               | 925       | 3175             | NR               |
| 410       | 5239             | NR               | 540       | 115725           | NR               | 670       | 44882            | NR               | 800       | 3444             | NR               | 930       | 3642             | NR               |
| 415       | 10499            | NR               | 545       | 119091           | NR               | 675       | 38742            | NR               | 805       | 3315             | NR               | 935       | 3040             | NR               |
| 420       | 20790            | NR               | 550       | 122884           | NR               | 680       | 33597            | NR               | 810       | 3022             | NR               | 940       | 4039             | NR               |
| 425       | 39276            | NR               | 555       | 128300           | NR               | 685       | 29101            | NR               | 815       | 2832             | NR               | 945       | 4797             | NR               |
| 430       | 66418            | NR               | 560       | 133274           | NR               | 690       | 24855            | NR               | 820       | 3142             | NR               | 950       | 4945             | NR               |
| 435       | 101961           | NR               | 565       | 139112           | NR               | 695       | 21367            | NR               | 825       | 3115             | NR               | 955       | 3757             | NR               |
| 440       | 134023           | NR               | 570       | 144467           | NR               | 700       | 18479            | NR               | 830       | 2520             | NR               | 960       | 4539             | NR               |
| 445       | 129385           | NR               | 575       | 149331           | NR               | 705       | 16131            | NR               | 835       | 2783             | NR               | 965       | 4857             | NR               |
| 450       | 90434            | NR               | 580       | 154784           | NR               | 710       | 14388            | NR               | 840       | 3364             | NR               | 970       | 4463             | NR               |
| 455       | 63521            | NR               | 585       | 156899           | NR               | 715       | 12865            | NR               | 845       | 3807             | NR               | 975       | 3718             | NR               |
| 460       | 48429            | NR               | 590       | 157796           | NR               | 720       | 11277            | NR               | 850       | 2907             | NR               | 980       | 3955             | NR               |
| 465       | 36445            | NR               | 595       | 157849           | NR               | 725       | 10063            | NR               | 855       | 3470             | NR               | 985       | 4314             | NR               |
| 470       | 31953            | NR               | 600       | 155418           | NR               | 730       | 8942             | NR               | 860       | 3820             | NR               | 990       | 4478             | NR               |
| 475       | 32768            | NR               | 605       | 151601           | NR               | 735       | 7722             | NR               | 865       | 3922             | NR               | 995       | 2959             | NR               |
| 480       | 37631            | NR               | 610       | 146416           | NR               | 740       | 6964             | NR               | 870       | 4061             | NR               | 1000      | 4570             | NR               |
| 485       | 46354            | NR               | 615       | 139241           | NR               | 745       | 6117             | NR               | 875       | 3975             | NR               |           |                  |                  |

REPORT NUMBER: SP1-2309-178-2

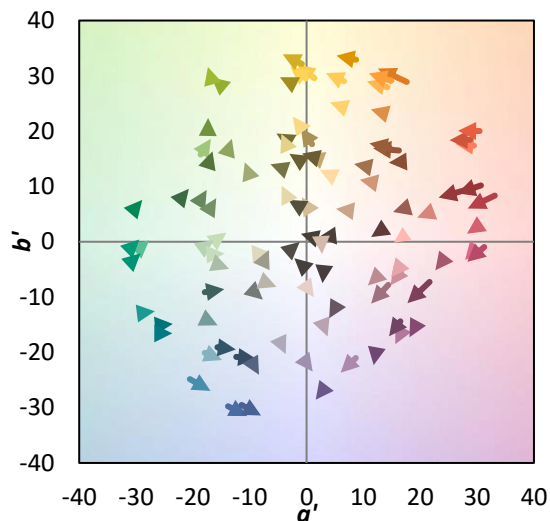
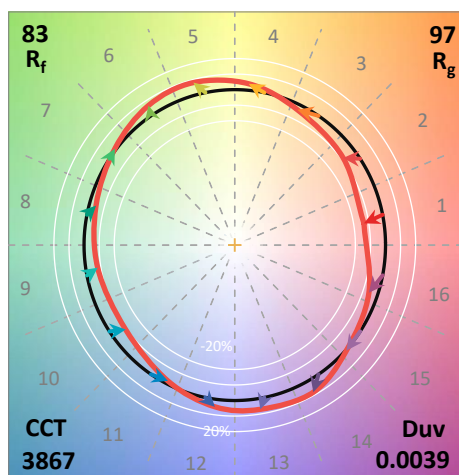
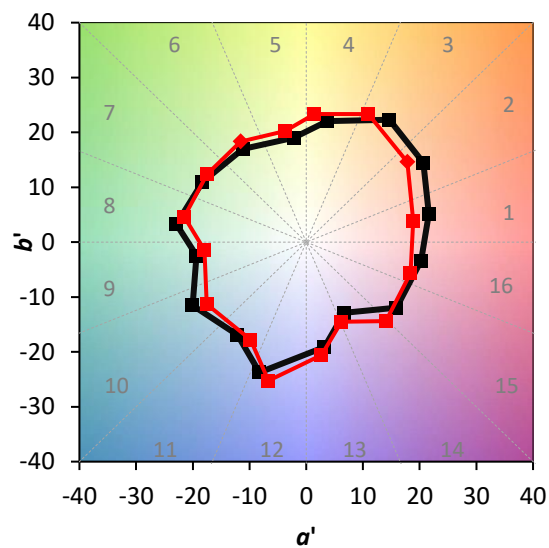
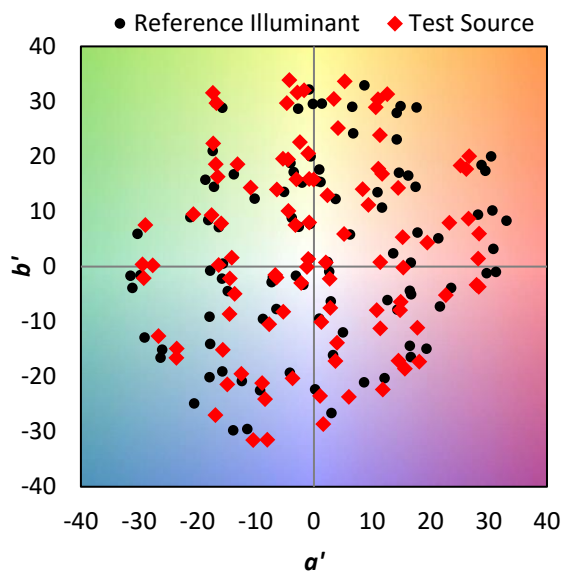
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**Summary**

$R_f = 82.7$   
 $R_g = 96.5$   
 $CIE R_a = 79.8$   
 $R_g = -8.6$



**Color Vector Graphics**

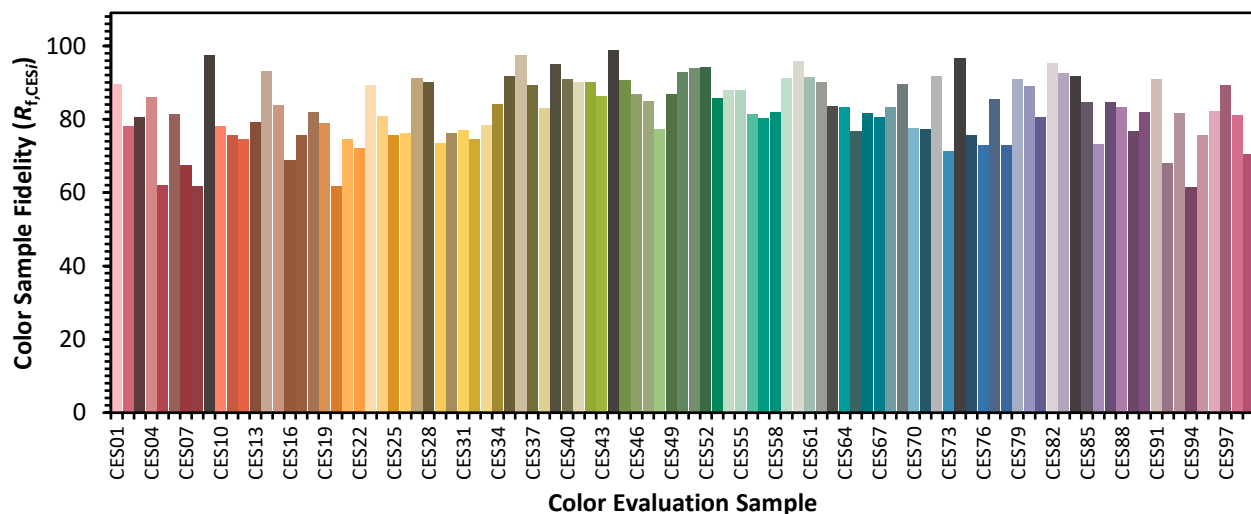


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

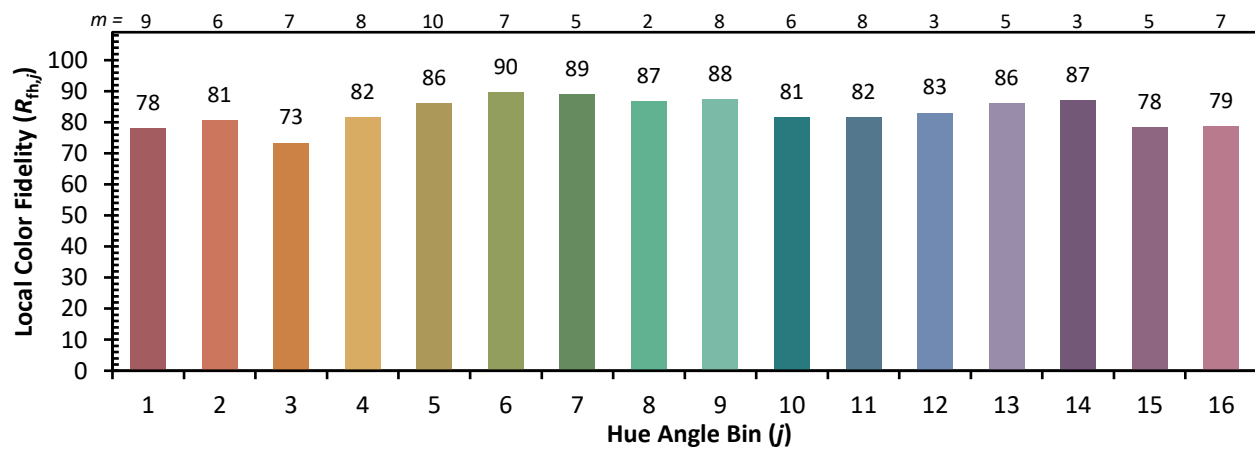
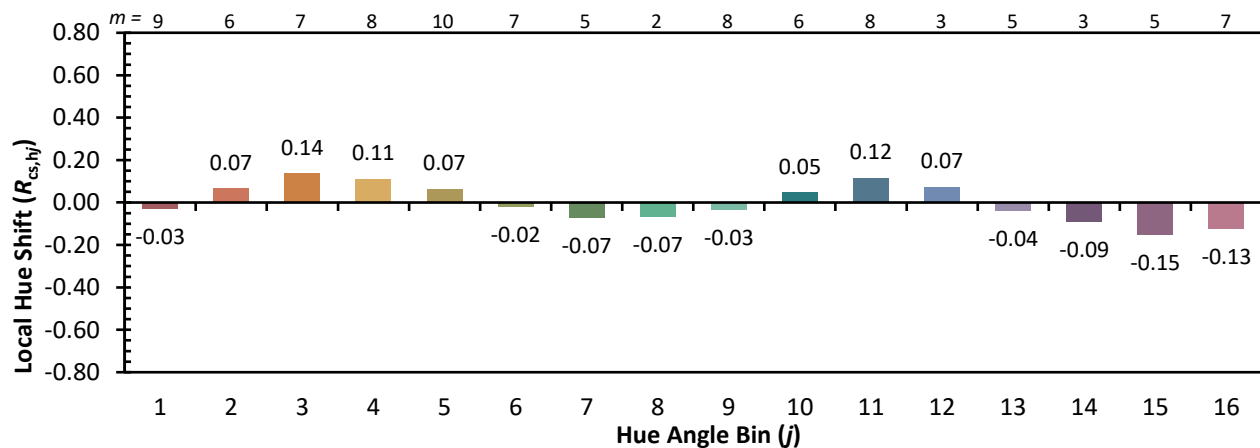
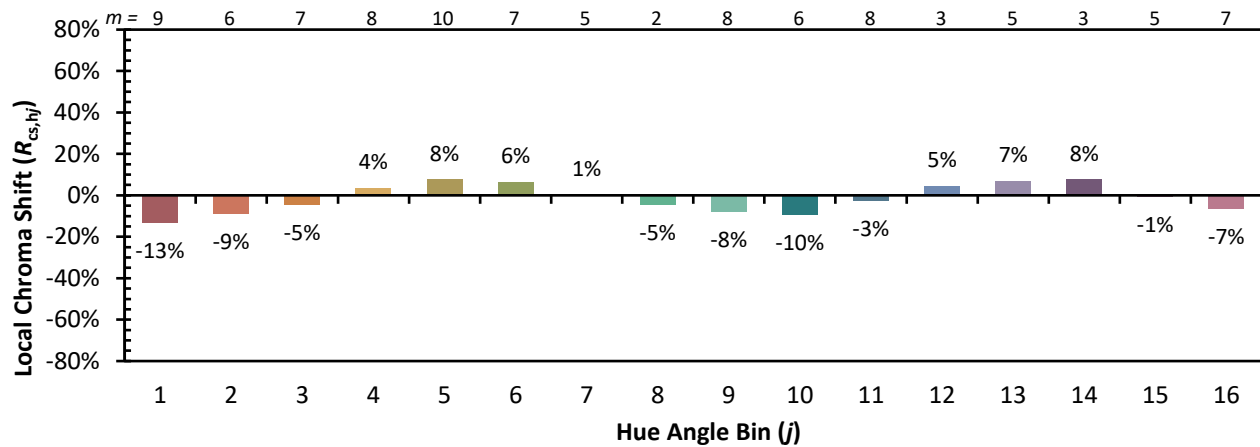
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 76 | CES51 = 94 | CES76 = 73 |
| CES02 = 61 | CES27 = 91 | CES52 = 94 | CES77 = 85 |
| CES03 = 31 | CES28 = 90 | CES53 = 86 | CES78 = 73 |
| CES04 = 69 | CES29 = 73 | CES54 = 88 | CES79 = 91 |
| CES05 = 48 | CES30 = 76 | CES55 = 88 | CES80 = 89 |
| CES06 = 50 | CES31 = 77 | CES56 = 81 | CES81 = 80 |
| CES07 = 40 | CES32 = 74 | CES57 = 80 | CES82 = 95 |
| CES08 = 39 | CES33 = 78 | CES58 = 82 | CES83 = 92 |
| CES09 = 29 | CES34 = 84 | CES59 = 91 | CES84 = 92 |
| CES10 = 74 | CES35 = 92 | CES60 = 96 | CES85 = 85 |
| CES11 = 57 | CES36 = 97 | CES61 = 92 | CES86 = 73 |
| CES12 = 63 | CES37 = 89 | CES62 = 90 | CES87 = 85 |
| CES13 = 42 | CES38 = 83 | CES63 = 83 | CES88 = 83 |
| CES14 = 74 | CES39 = 95 | CES64 = 83 | CES89 = 77 |
| CES15 = 71 | CES40 = 91 | CES65 = 77 | CES90 = 82 |
| CES16 = 47 | CES41 = 90 | CES66 = 82 | CES91 = 91 |
| CES17 = 49 | CES42 = 90 | CES67 = 80 | CES92 = 68 |
| CES18 = 56 | CES43 = 86 | CES68 = 83 | CES93 = 82 |
| CES19 = 71 | CES44 = 99 | CES69 = 90 | CES94 = 61 |
| CES20 = 65 | CES45 = 91 | CES70 = 77 | CES95 = 76 |
| CES21 = 86 | CES46 = 87 | CES71 = 77 | CES96 = 82 |
| CES22 = 78 | CES47 = 85 | CES72 = 92 | CES97 = 89 |
| CES23 = 91 | CES48 = 77 | CES73 = 71 | CES98 = 81 |
| CES24 = 90 | CES49 = 87 | CES74 = 97 | CES99 = 70 |
| CES25 = 71 | CES50 = 93 | CES75 = 76 |            |



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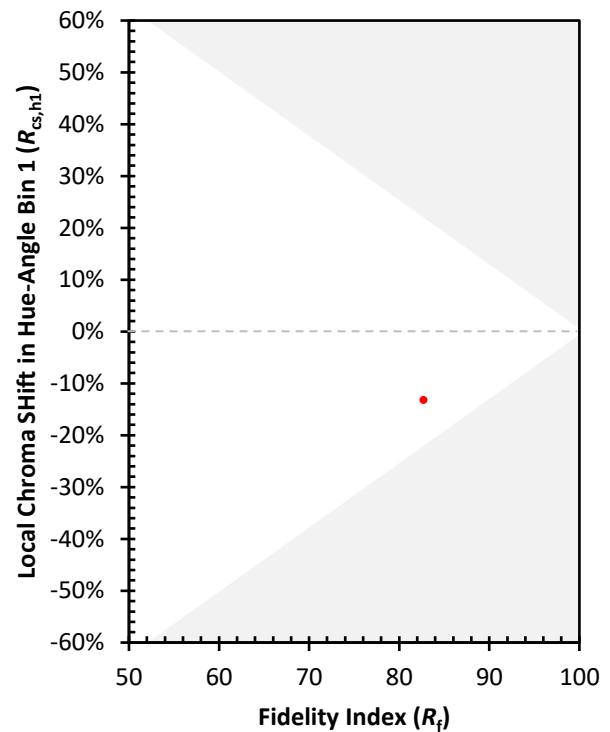
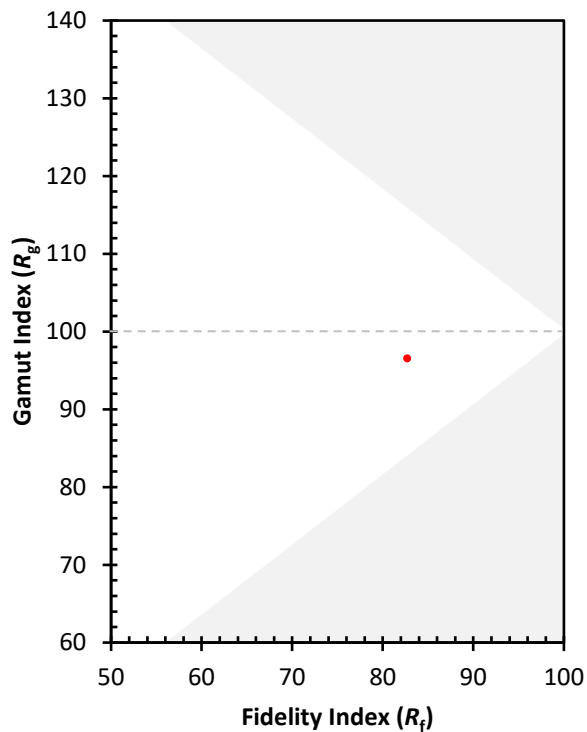
Color Rendition by Hue-Angle Bin



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**Measure Comparisons**



(END OF REPORT)