

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: McGRAW-EDISON

Report Number: 768854

Luminaire Tested: **BRL-XX-50-HPS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: 768854  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: BRL-XX-50-HPS  
Description: 50W HPS ROUND ARCHITECTURAL BOLLARD WITH STACKED LOUVERS  
Light Source: 50 WATT HPS COATED ED-17  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 3800 (1 lamp)  
Luminaire Lumens: 1478.6 lumens  
Efficiency: 38.9%  
Efficacy: 29.6 lumens/watt  
Luminous Opening: Point Source (0' x 0' x 0')  
IES Classification: Type V - Medium - Semi-Cutoff  
BUG Rating: B1 - U3 - G1

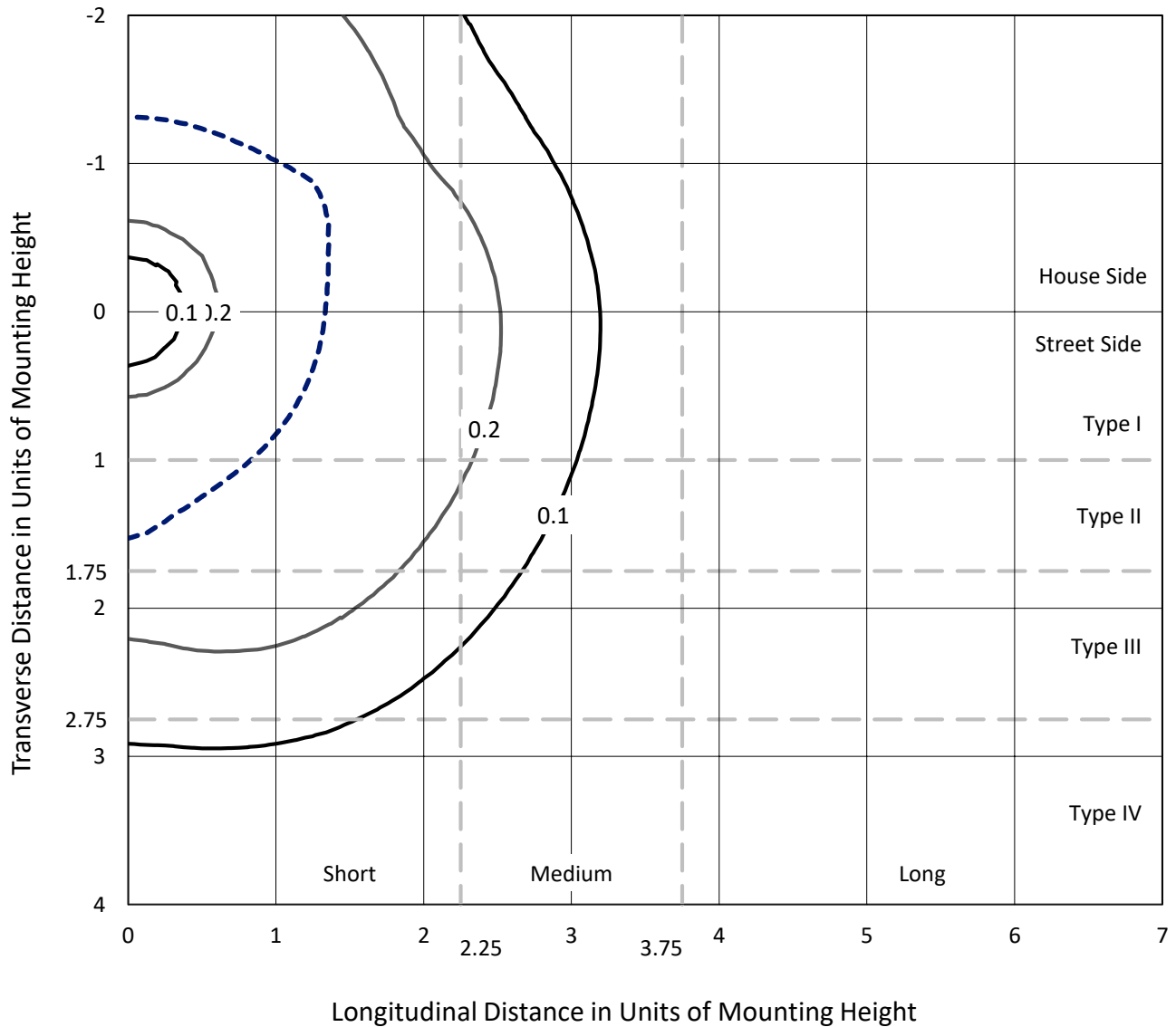
Input Watts (W): 50  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

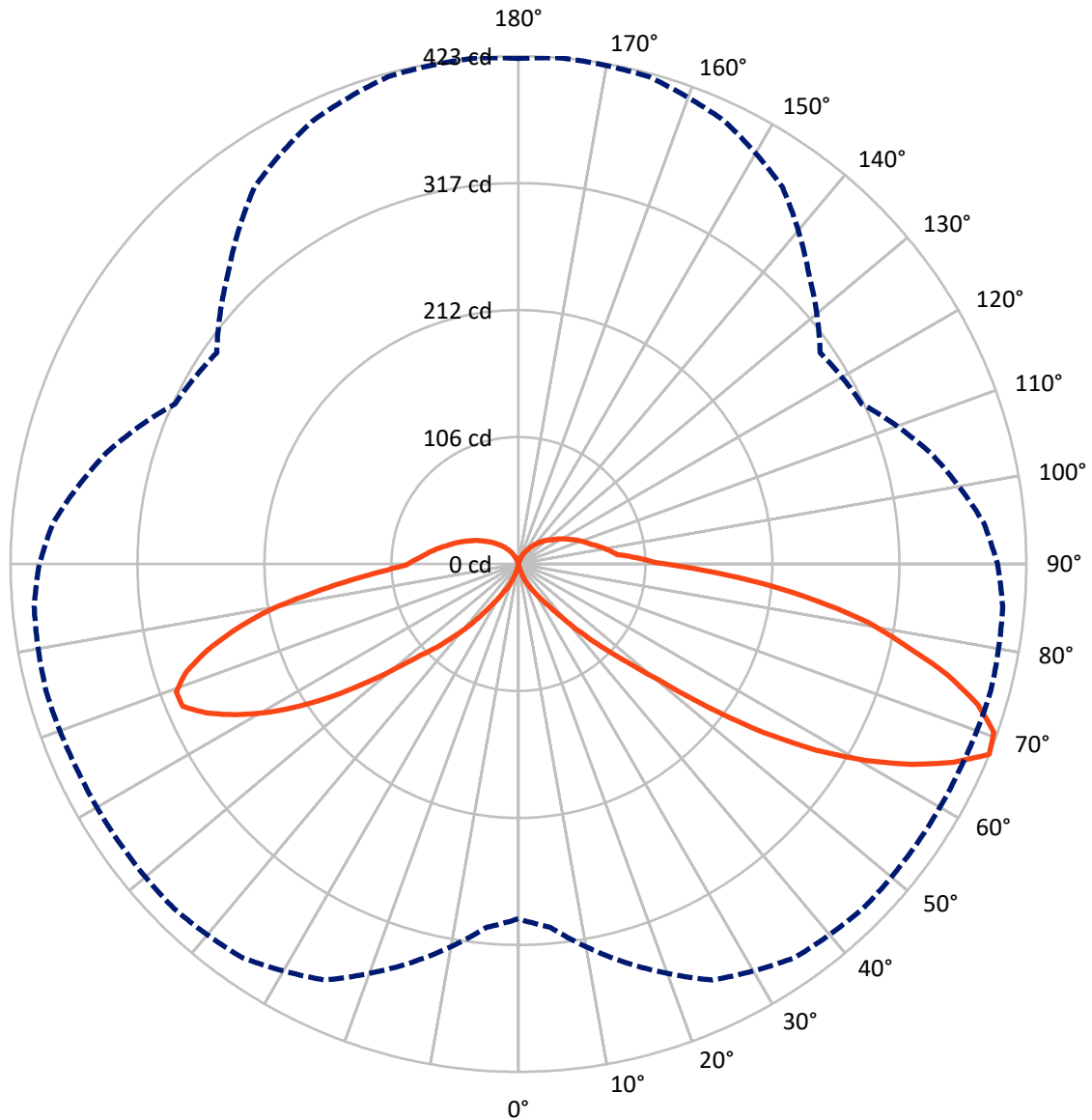
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 0.5 fc  
 Type V - Medium - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 175-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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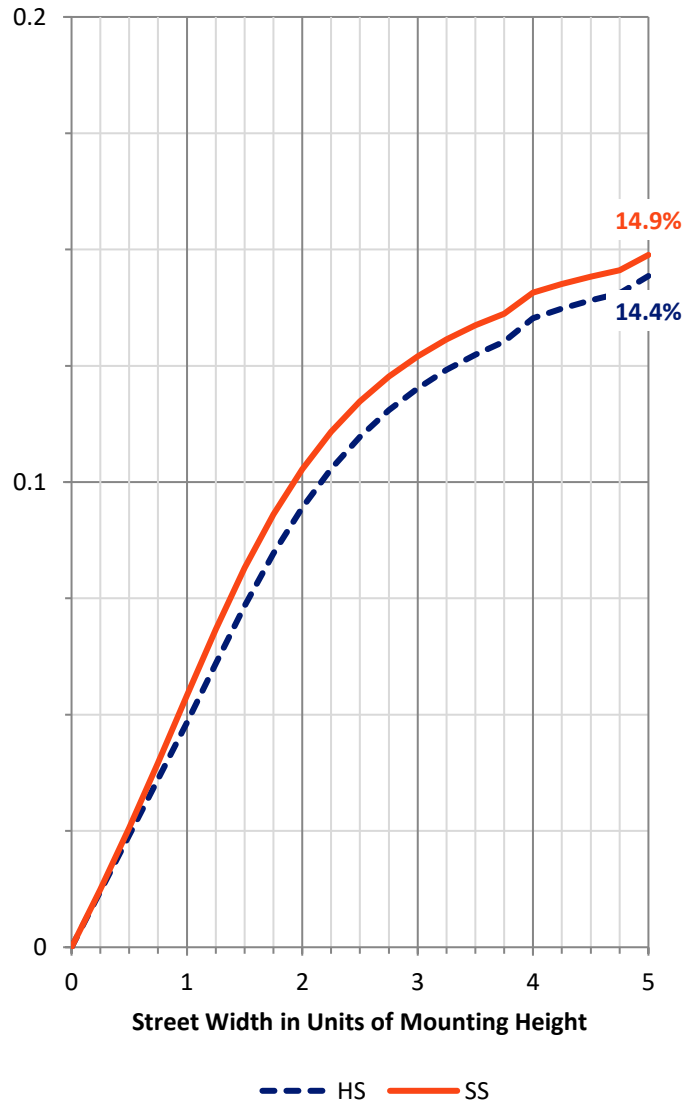
**FLUX DISTRIBUTION:**

|                    |        | Downward | Upward | Total  |
|--------------------|--------|----------|--------|--------|
| <b>House Side</b>  | Lumens | 597.0    | 136.6  | 733.6  |
|                    | % Lamp | 15.7     | 3.6    | 19.3   |
| <b>Street Side</b> | Lumens | 611.2    | 133.7  | 745.0  |
|                    | % Lamp | 16.1     | 3.5    | 19.6   |
| <b>Total</b>       | Lumens | 1208.3   | 270.3  | 1478.6 |
|                    | % Lamp | 31.8     | 7.1    | 38.9   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10°    | 0.0    | 0.0       | 0.0    |
| 10°-20°   | 1.6    | 0.1       | 0.0    |
| 20°-30°   | 9.8    | 0.7       | 0.3    |
| 30°-40°   | 29.3   | 2.0       | 0.8    |
| 40°-50°   | 80.1   | 5.4       | 2.1    |
| 50°-60°   | 204.0  | 13.8      | 5.4    |
| 60°-70°   | 350.4  | 23.7      | 9.2    |
| 70°-80°   | 342.7  | 23.2      | 9.0    |
| 80°-90°   | 190.2  | 12.9      | 5.0    |
| 90°-100°  | 92.8   | 6.3       | 2.4    |
| 100°-110° | 67.2   | 4.5       | 1.8    |
| 110°-120° | 47.4   | 3.2       | 1.2    |
| 120°-130° | 31.5   | 2.1       | 0.8    |
| 130°-140° | 19.0   | 1.3       | 0.5    |
| 140°-150° | 9.8    | 0.7       | 0.3    |
| 150°-160° | 3.6    | 0.2       | 0.1    |
| 160°-170° | 0.8    | 0.1       | 0.0    |
| 170°-180° | 0.1    | 0.0       | 0.0    |
| 0°-90°    | 1208.3 | 81.7      | 31.8   |
| 0°-180°   | 1478.6 | 100.0     | 38.9   |

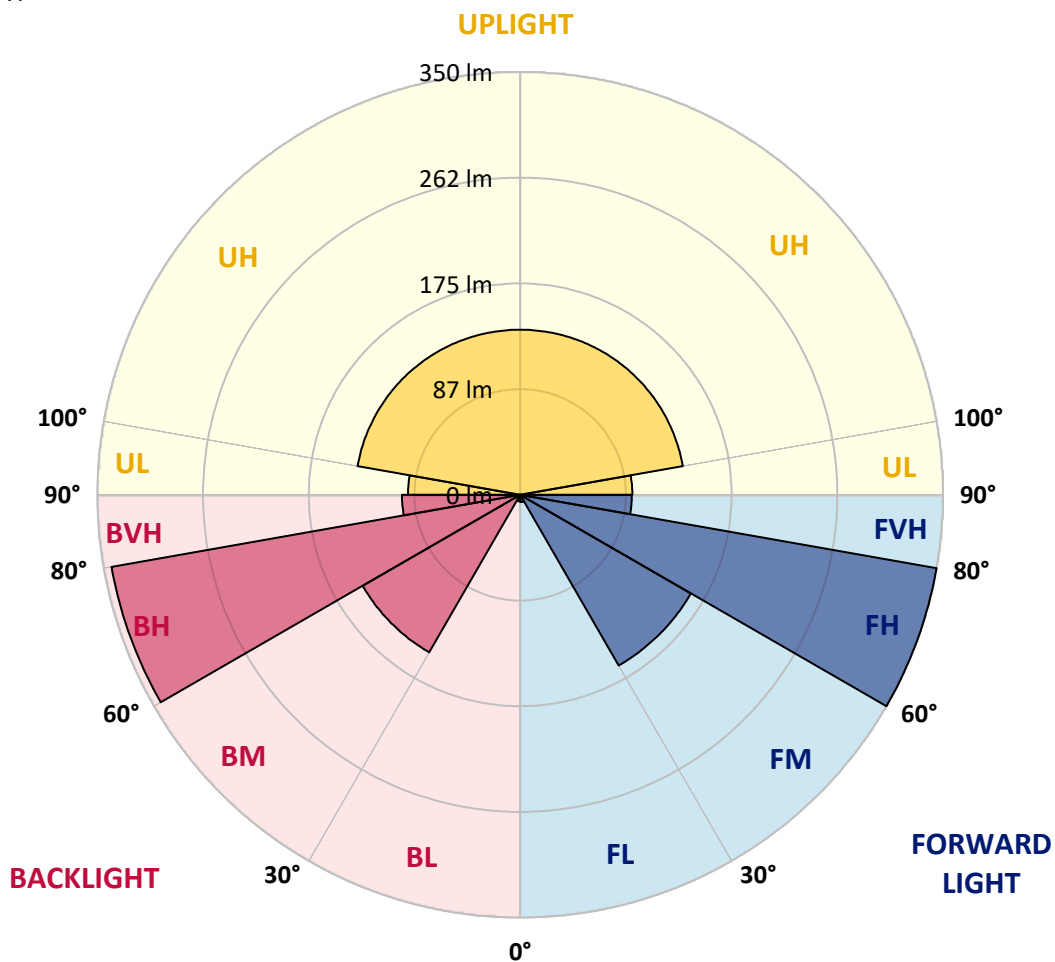


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Lamp | Zone Rating/Lumen Limit |        |        |
|----------------|--------|--------|-------------------------|--------|--------|
|                |        |        | B                       | U      | G      |
| FL (0°-30°)    | 6.0    | 0.2    |                         |        |        |
| FM (30°-60°)   | 163.0  | 4.3    |                         |        |        |
| FH (60°-80°)   | 349.8  | 9.2    |                         |        | G0/660 |
| FVH (80°-90°)  | 92.4   | 2.4    |                         |        | G1/100 |
| BL (0°-30°)    | 5.5    | 0.1    | B0/110                  |        |        |
| BM (30°-60°)   | 150.5  | 4.0    | B0/220                  |        |        |
| BH (60°-80°)   | 343.3  | 9.0    | B1/500                  |        | G0/660 |
| BVH (80°-90°)  | 97.8   | 2.6    |                         |        | G1/100 |
| UL (90°-100°)  | 92.8   | 2.4    |                         | U3/500 |        |
| UH (100°-180°) | 136.6  | 3.6    |                         | U3/500 |        |
| Trapped Light  | 2321.4 | 61.1   |                         |        |        |

**BUG Rating: B1-U3-G1**  
 Type V Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   | 90°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 2.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 5°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 7.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 10°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.5   | 0.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 12.5° | 2.0   | 2.0   | 2.0   | 2.5   | 2.5   | 2.5   | 2.9   | 2.9   | 2.5   | 2.5   | 2.0   |
| 15°   | 4.9   | 4.9   | 4.4   | 5.4   | 4.9   | 4.9   | 5.4   | 4.4   | 4.9   | 4.9   | 4.4   |
| 17.5° | 7.9   | 8.8   | 9.3   | 8.8   | 9.3   | 9.3   | 9.3   | 9.3   | 8.8   | 8.8   | 8.3   |
| 20°   | 11.8  | 11.8  | 11.8  | 12.8  | 12.3  | 13.3  | 12.8  | 12.8  | 12.3  | 12.3  | 11.8  |
| 22.5° | 16.7  | 16.7  | 17.2  | 17.2  | 17.2  | 17.7  | 17.2  | 17.2  | 16.7  | 16.7  | 16.7  |
| 25°   | 21.6  | 21.6  | 21.1  | 21.6  | 21.6  | 22.1  | 21.1  | 22.1  | 21.1  | 20.6  | 20.6  |
| 27.5° | 25.5  | 25.0  | 25.5  | 25.5  | 25.5  | 26.0  | 25.0  | 25.0  | 25.0  | 24.5  | 24.1  |
| 30°   | 30.4  | 30.9  | 30.9  | 31.4  | 31.4  | 31.4  | 30.9  | 30.9  | 29.9  | 29.9  | 29.9  |
| 32.5° | 37.3  | 37.3  | 37.8  | 37.8  | 37.3  | 37.8  | 37.3  | 36.3  | 36.3  | 35.8  | 35.8  |
| 35°   | 47.1  | 46.6  | 46.6  | 47.6  | 47.6  | 47.1  | 46.1  | 45.2  | 44.7  | 44.2  | 44.2  |
| 37.5° | 56.9  | 57.4  | 57.9  | 59.4  | 59.4  | 58.9  | 57.4  | 56.4  | 55.5  | 55.0  | 54.5  |
| 40°   | 68.7  | 70.2  | 72.2  | 73.6  | 73.1  | 73.6  | 72.6  | 71.2  | 69.2  | 68.2  | 67.7  |
| 42.5° | 81.5  | 82.5  | 84.9  | 88.4  | 89.3  | 89.3  | 88.4  | 87.4  | 85.4  | 83.4  | 83.0  |
| 45°   | 95.2  | 97.2  | 100.6 | 105.5 | 108.0 | 108.0 | 107.5 | 106.0 | 104.6 | 103.1 | 101.1 |
| 47.5° | 110.0 | 111.4 | 117.3 | 124.2 | 127.6 | 129.1 | 128.6 | 127.1 | 125.2 | 123.7 | 121.2 |
| 50°   | 130.6 | 133.0 | 143.8 | 154.6 | 159.5 | 161.0 | 160.5 | 158.6 | 156.1 | 153.6 | 150.7 |
| 52.5° | 156.1 | 160.0 | 178.7 | 195.4 | 203.2 | 205.7 | 206.2 | 203.7 | 200.3 | 195.9 | 191.4 |
| 55°   | 183.6 | 189.0 | 214.5 | 237.1 | 247.9 | 251.3 | 251.8 | 248.9 | 246.9 | 240.0 | 236.6 |
| 57.5° | 211.1 | 217.5 | 248.4 | 277.3 | 290.6 | 294.5 | 294.5 | 292.1 | 290.1 | 283.7 | 278.8 |
| 60°   | 237.6 | 244.0 | 279.3 | 312.7 | 328.4 | 333.3 | 331.8 | 329.4 | 327.4 | 321.5 | 316.6 |
| 62.5° | 260.2 | 267.5 | 308.3 | 343.6 | 361.3 | 365.2 | 364.2 | 360.8 | 360.3 | 355.9 | 350.0 |
| 65°   | 280.8 | 288.1 | 331.8 | 372.1 | 389.3 | 393.7 | 392.2 | 390.2 | 389.7 | 386.3 | 380.9 |
| 67.5° | 295.5 | 303.8 | 343.6 | 382.4 | 400.5 | 405.9 | 405.5 | 405.5 | 407.4 | 405.0 | 399.1 |
| 70°   | 297.5 | 304.3 | 339.7 | 375.5 | 393.2 | 398.1 | 398.1 | 399.6 | 401.5 | 400.1 | 396.1 |
| 72.5° | 284.7 | 291.1 | 323.5 | 355.4 | 370.6 | 374.5 | 373.5 | 374.5 | 378.5 | 379.4 | 376.5 |
| 75°   | 262.1 | 269.0 | 298.4 | 324.5 | 336.7 | 339.2 | 340.2 | 341.6 | 345.6 | 347.5 | 344.6 |
| 77.5° | 235.6 | 241.5 | 269.5 | 291.1 | 300.4 | 302.9 | 302.9 | 304.8 | 307.8 | 309.2 | 306.8 |
| 80°   | 206.2 | 211.1 | 232.2 | 250.8 | 260.7 | 264.1 | 264.6 | 267.0 | 269.5 | 269.5 | 267.5 |
| 82.5° | 167.9 | 172.3 | 189.5 | 205.2 | 214.0 | 216.5 | 217.5 | 219.9 | 222.4 | 222.9 | 220.9 |
| 85°   | 136.5 | 139.9 | 152.2 | 162.5 | 168.9 | 171.3 | 173.3 | 175.7 | 177.2 | 177.7 | 176.7 |
| 87.5° | 110.0 | 112.4 | 118.3 | 124.2 | 126.6 | 129.1 | 130.6 | 133.0 | 133.5 | 135.5 | 134.5 |
| 90°   | 92.3  | 93.3  | 95.7  | 98.7  | 97.7  | 97.7  | 98.7  | 100.1 | 101.1 | 102.1 | 102.6 |
| 95°   | 80.5  | 80.5  | 82.5  | 83.4  | 83.0  | 82.5  | 81.0  | 81.5  | 82.0  | 82.5  | 83.0  |
| 105°  | 60.9  | 61.4  | 62.3  | 61.8  | 61.8  | 61.8  | 61.4  | 61.4  | 61.8  | 61.8  | 61.8  |
| 115°  | 46.1  | 46.1  | 47.1  | 47.1  | 47.1  | 47.1  | 47.1  | 47.6  | 46.6  | 47.6  | 47.1  |
| 125°  | 33.4  | 33.4  | 33.9  | 34.4  | 34.4  | 34.4  | 34.4  | 34.4  | 34.4  | 34.9  | 34.4  |
| 135°  | 23.6  | 23.1  | 23.6  | 24.1  | 24.5  | 24.1  | 24.5  | 25.0  | 24.5  | 24.1  | 24.5  |
| 145°  | 13.7  | 14.7  | 14.2  | 14.2  | 15.2  | 15.2  | 15.2  | 14.7  | 15.2  | 14.7  | 14.7  |
| 155°  | 6.9   | 6.9   | 6.9   | 7.4   | 7.4   | 7.4   | 7.4   | 7.9   | 7.4   | 7.9   | 7.4   |
| 165°  | 1.0   | 0.5   | 1.0   | 0.5   | 0.5   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 0.5   |



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**CANDELA DISTRIBUTION (continued):**

|      | 0°  | 5°  | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 175° | 0.0 | 0.0 | 1.0 | 0.5 | 0.0 | 0.5 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 |
| 180° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |





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**CANDELA DISTRIBUTION (continued):**

|       | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 2.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 5°    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 7.5°  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 10°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 12.5° | 2.0   | 1.5   | 1.5   | 1.0   | 1.5   | 1.5   | 1.5   | 2.0   | 2.0   | 2.0   |
| 15°   | 4.4   | 3.9   | 3.4   | 3.4   | 3.4   | 3.4   | 3.9   | 3.9   | 4.4   | 4.9   |
| 17.5° | 7.9   | 7.4   | 7.4   | 7.4   | 7.4   | 7.9   | 8.3   | 7.9   | 7.9   | 7.9   |
| 20°   | 11.8  | 10.8  | 10.8  | 10.8  | 10.8  | 11.3  | 11.3  | 11.3  | 11.3  | 11.8  |
| 22.5° | 16.2  | 15.7  | 15.7  | 15.2  | 15.2  | 15.7  | 16.2  | 16.2  | 16.7  | 15.7  |
| 25°   | 20.6  | 20.1  | 19.1  | 19.6  | 19.6  | 20.1  | 20.1  | 20.1  | 20.1  | 20.6  |
| 27.5° | 24.5  | 23.6  | 23.6  | 23.1  | 23.6  | 23.1  | 24.1  | 24.1  | 23.6  | 23.6  |
| 30°   | 29.9  | 29.0  | 28.5  | 29.0  | 29.0  | 29.9  | 29.5  | 29.0  | 29.0  | 29.5  |
| 32.5° | 34.9  | 34.9  | 34.4  | 33.4  | 34.4  | 34.4  | 34.4  | 34.4  | 34.9  | 34.4  |
| 35°   | 44.2  | 42.7  | 42.2  | 42.2  | 42.2  | 41.7  | 41.7  | 41.7  | 41.7  | 42.2  |
| 37.5° | 54.0  | 53.0  | 51.5  | 51.5  | 52.0  | 51.5  | 52.0  | 51.5  | 51.5  | 51.1  |
| 40°   | 67.2  | 65.3  | 63.8  | 62.8  | 63.3  | 64.8  | 64.8  | 65.3  | 65.3  | 64.8  |
| 42.5° | 82.5  | 79.5  | 76.6  | 75.1  | 77.1  | 79.0  | 80.0  | 81.0  | 81.0  | 80.5  |
| 45°   | 100.1 | 95.7  | 90.8  | 88.8  | 92.8  | 96.2  | 99.2  | 101.1 | 100.6 | 100.1 |
| 47.5° | 119.3 | 112.9 | 106.5 | 104.6 | 109.0 | 115.8 | 119.3 | 121.7 | 122.2 | 121.7 |
| 50°   | 147.3 | 138.4 | 126.6 | 124.7 | 133.0 | 142.8 | 148.2 | 151.2 | 152.2 | 151.2 |
| 52.5° | 187.0 | 172.8 | 155.6 | 151.2 | 166.4 | 181.1 | 190.9 | 195.9 | 198.3 | 198.3 |
| 55°   | 229.7 | 210.6 | 187.5 | 181.6 | 202.2 | 221.9 | 235.6 | 243.5 | 247.4 | 247.4 |
| 57.5° | 271.0 | 248.4 | 219.4 | 211.6 | 236.6 | 262.1 | 278.3 | 287.6 | 292.6 | 292.6 |
| 60°   | 308.3 | 280.3 | 248.4 | 239.5 | 268.0 | 299.4 | 317.1 | 328.9 | 332.3 | 331.8 |
| 62.5° | 341.2 | 311.2 | 272.9 | 266.1 | 298.4 | 332.3 | 352.9 | 365.2 | 367.7 | 367.2 |
| 65°   | 372.1 | 338.7 | 296.5 | 289.1 | 324.5 | 362.8 | 384.3 | 396.6 | 398.1 | 397.6 |
| 67.5° | 389.3 | 355.9 | 315.6 | 306.8 | 342.1 | 383.4 | 406.9 | 420.2 | 423.1 | 421.2 |
| 70°   | 385.8 | 354.4 | 320.0 | 311.2 | 343.1 | 383.4 | 405.5 | 418.2 | 420.2 | 419.2 |
| 72.5° | 368.2 | 341.2 | 310.2 | 302.9 | 331.8 | 368.6 | 389.3 | 399.6 | 400.1 | 398.6 |
| 75°   | 338.7 | 317.1 | 288.6 | 282.2 | 309.2 | 342.1 | 360.3 | 368.2 | 369.6 | 368.2 |
| 77.5° | 302.4 | 285.7 | 259.7 | 254.8 | 280.8 | 308.3 | 323.0 | 330.4 | 330.8 | 329.9 |
| 80°   | 264.1 | 249.4 | 229.2 | 225.3 | 247.9 | 272.4 | 285.7 | 293.0 | 296.0 | 294.5 |
| 82.5° | 217.9 | 205.7 | 189.5 | 186.5 | 205.7 | 228.7 | 241.0 | 247.4 | 249.9 | 249.4 |
| 85°   | 174.7 | 165.9 | 154.1 | 151.7 | 165.9 | 183.1 | 193.4 | 199.8 | 202.7 | 202.2 |
| 87.5° | 133.0 | 129.1 | 122.7 | 121.7 | 130.1 | 140.4 | 148.7 | 152.7 | 154.6 | 155.1 |
| 90°   | 103.1 | 101.6 | 100.1 | 100.6 | 105.0 | 110.0 | 111.4 | 113.4 | 114.9 | 114.9 |
| 95°   | 83.0  | 83.4  | 82.5  | 82.5  | 83.9  | 84.9  | 83.4  | 82.5  | 82.5  | 82.5  |
| 105°  | 61.8  | 62.8  | 62.3  | 62.3  | 62.8  | 63.3  | 62.8  | 62.3  | 62.3  | 60.9  |
| 115°  | 47.1  | 47.1  | 48.1  | 47.1  | 47.6  | 47.6  | 47.6  | 47.1  | 47.6  | 47.1  |
| 125°  | 34.4  | 33.9  | 33.9  | 33.9  | 34.9  | 34.4  | 34.9  | 35.3  | 34.9  | 34.4  |
| 135°  | 24.5  | 24.1  | 23.6  | 24.1  | 24.5  | 24.5  | 25.5  | 25.0  | 25.5  | 24.5  |
| 145°  | 15.7  | 14.7  | 14.7  | 15.2  | 15.7  | 15.7  | 16.2  | 16.2  | 15.7  | 15.7  |
| 155°  | 7.4   | 7.4   | 7.9   | 7.4   | 7.9   | 8.3   | 7.9   | 8.3   | 8.3   | 7.9   |
| 165°  | 0.5   | 1.5   | 1.0   | 1.5   | 1.5   | 1.0   | 1.5   | 2.0   | 1.5   | 1.0   |



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**CANDELA DISTRIBUTION (continued):**

|      | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|------|-----|------|------|------|------|------|------|------|------|------|
| 175° | 0.0 | 1.5  | 0.5  | 1.5  | 1.5  | 1.0  | 1.5  | 2.0  | 1.5  | 0.0  |
| 180° | 1.0 | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  |

(END OF REPORT)