

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: P821436

Luminaire Tested: **TT-D1-830-12VDC-RW-UPL**

Issue Date: 10/29/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P821436  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-2) AND  
Test Lab: INNOVATION CENTER  
Issue Date: 10/29/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D1-830-12VDC-RW-UPL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
3000K, 80 CRI LEDS AND RECTANGULAR DISTRIBUTION  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

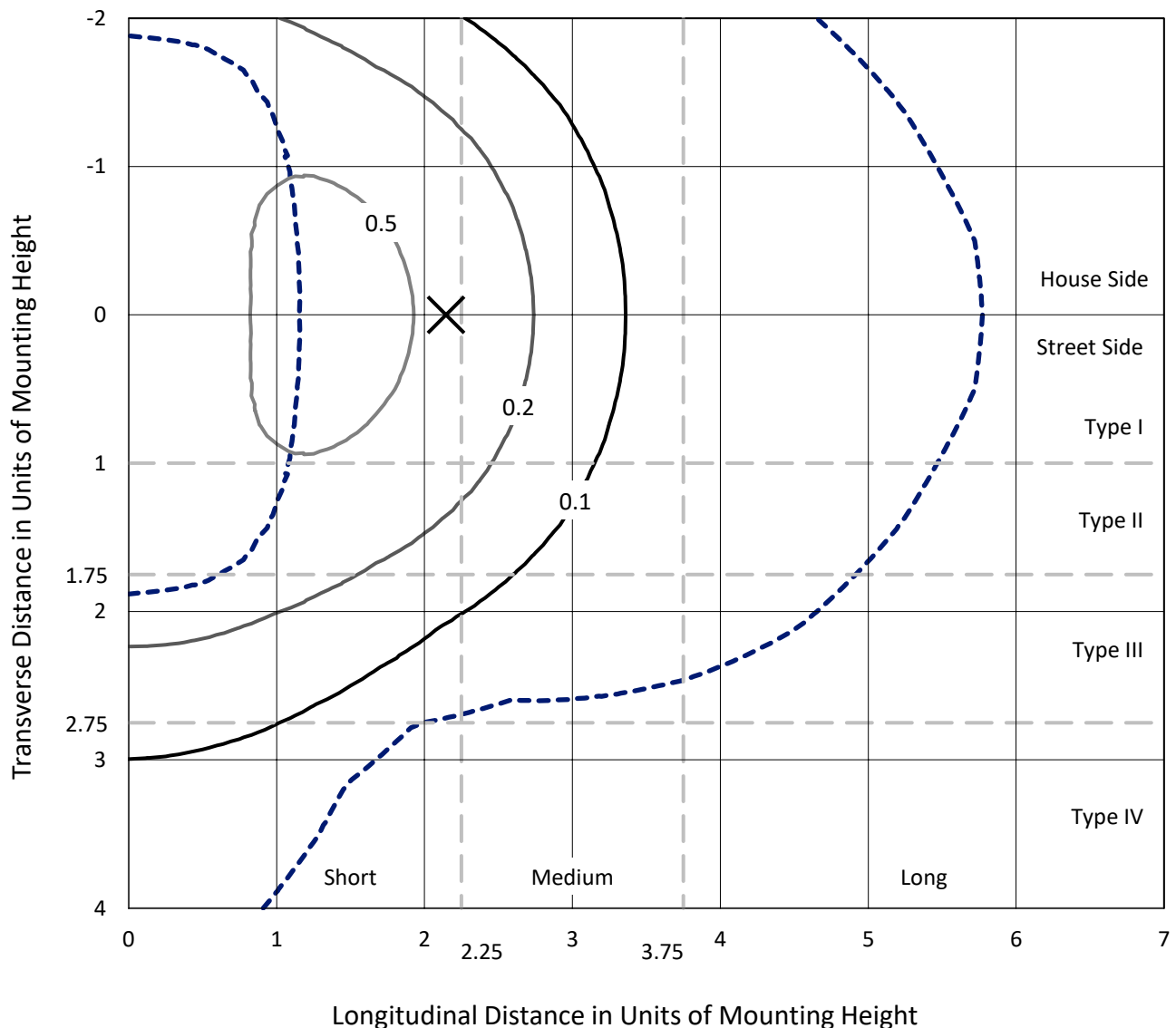
Lumens per Lamp: N/A  
Luminaire Lumens: 3592.7 lumens  
Efficiency: N/A  
Efficacy: 128.3 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U4 - G2

Input Watts (W): 28  
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

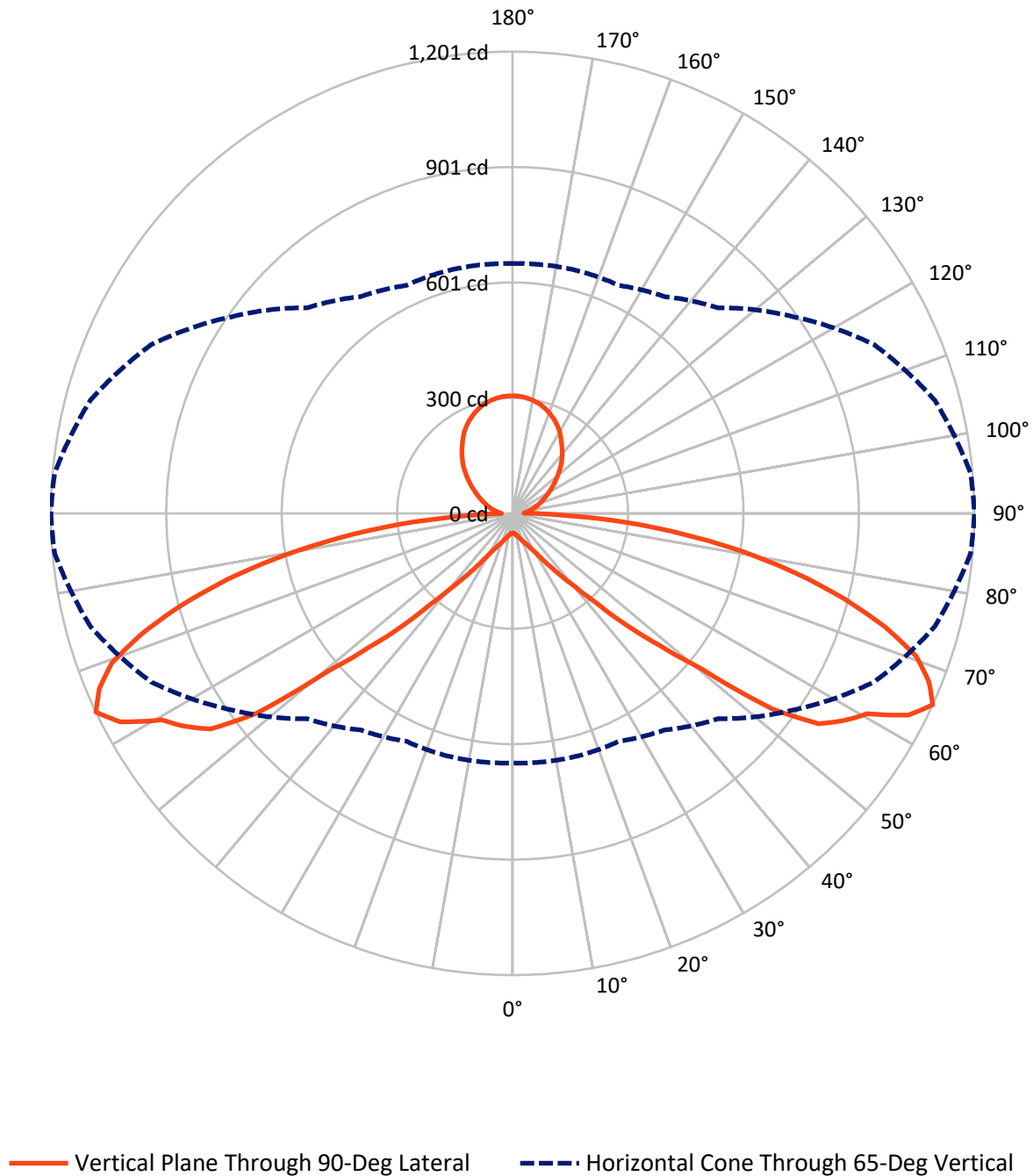
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 0.8 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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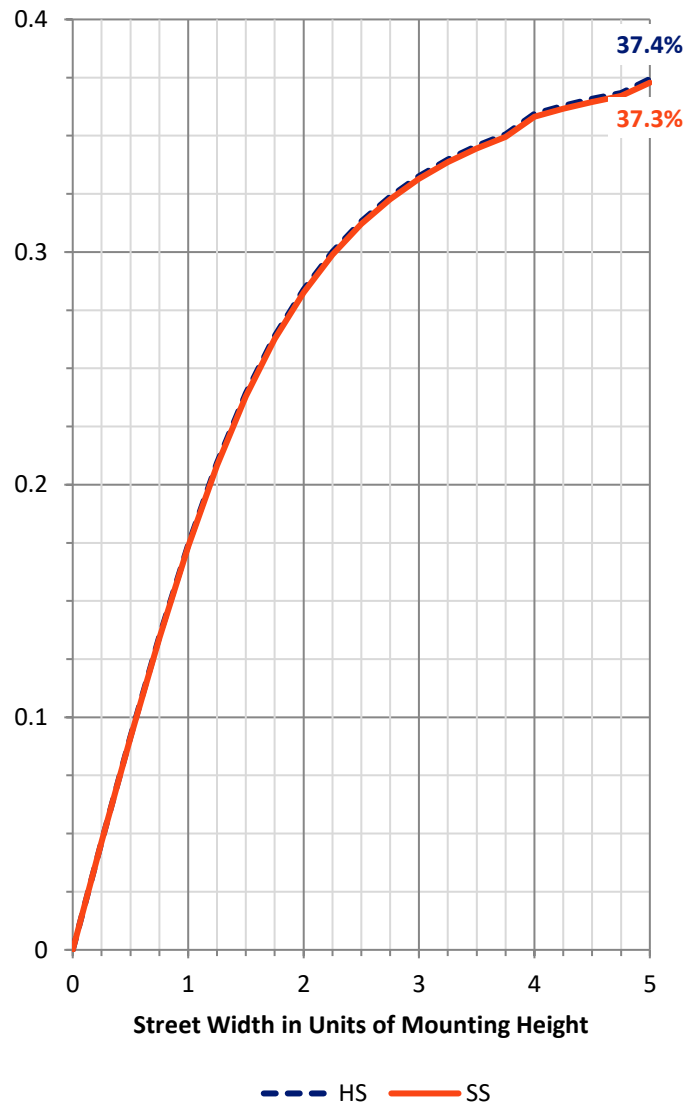
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1380.5   | 415.9  | 1796.4 |
|                    | % Fixture | 38.4     | 11.6   | 50.0   |
| <b>Street Side</b> | Lumens    | 1380.5   | 415.9  | 1796.4 |
|                    | % Fixture | 38.4     | 11.6   | 50.0   |
| <b>Total</b>       | Lumens    | 2761.0   | 831.7  | 3592.7 |
|                    | % Fixture | 76.8     | 23.2   | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 5.3    | 0.1       |
| 10°-20°   | 19.7   | 0.5       |
| 20°-30°   | 45.4   | 1.3       |
| 30°-40°   | 102.7  | 2.9       |
| 40°-50°   | 250.2  | 7.0       |
| 50°-60°   | 562.7  | 15.7      |
| 60°-70°   | 822.3  | 22.9      |
| 70°-80°   | 716.6  | 19.9      |
| 80°-90°   | 236.1  | 6.6       |
| 90°-100°  | 42.6   | 1.2       |
| 100°-110° | 66.0   | 1.8       |
| 110°-120° | 91.9   | 2.6       |
| 120°-130° | 119.0  | 3.3       |
| 130°-140° | 138.7  | 3.9       |
| 140°-150° | 140.5  | 3.9       |
| 150°-160° | 121.9  | 3.4       |
| 160°-170° | 82.2   | 2.3       |
| 170°-180° | 28.9   | 0.8       |
| 0°-90°    | 2761.0 | 76.8      |
| 0°-180°   | 3592.7 | 100.0     |

**Coefficient of Utilization**



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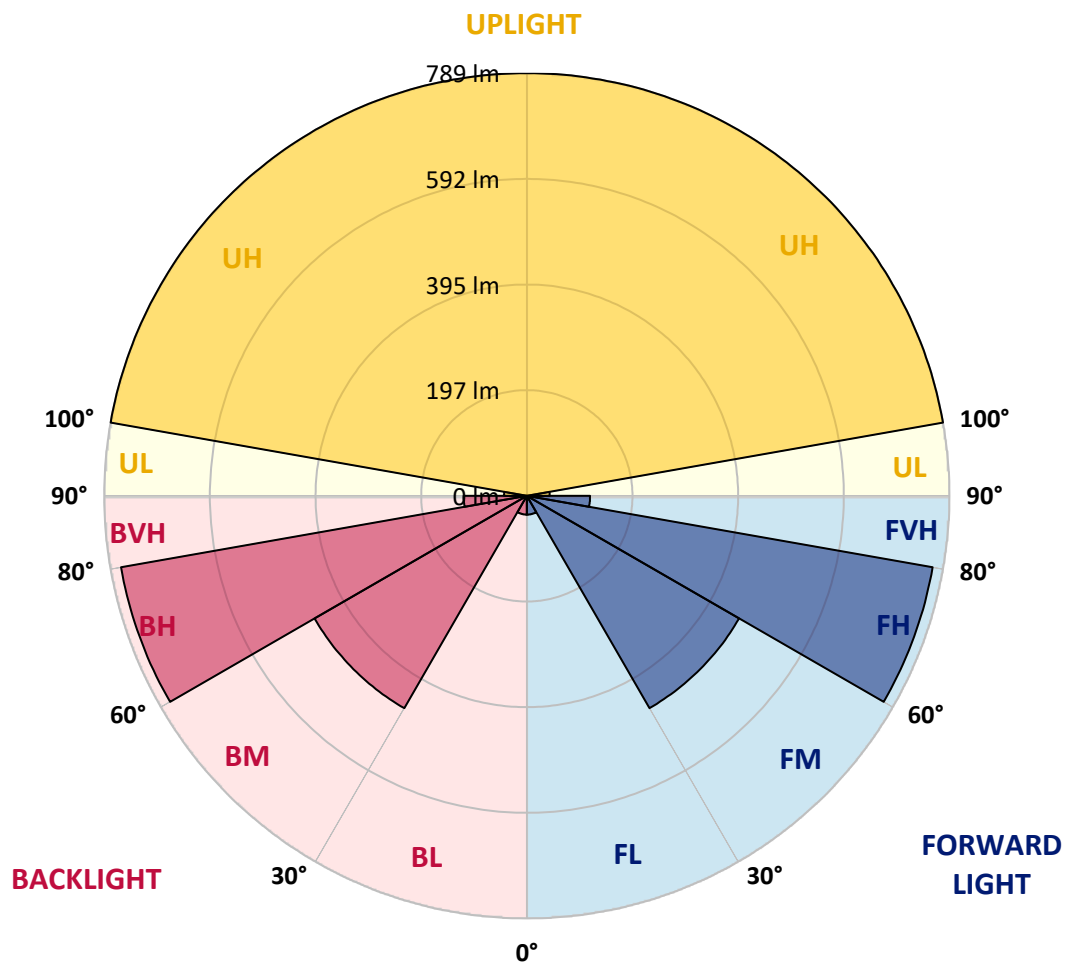
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |         |         |
|------|-------------|--------|-----------|-------------------------|---------|---------|
|      |             |        |           | B                       | U       | G       |
| FL   | (0°-30°)    | 35.2   | 1.0       |                         |         |         |
| FM   | (30°-60°)   | 457.8  | 12.7      |                         |         |         |
| FH   | (60°-80°)   | 769.5  | 21.4      |                         |         | G1/1800 |
| FVH  | (80°-90°)   | 118.0  | 3.3       |                         |         | G2/225  |
| BL   | (0°-30°)    | 35.2   | 1.0       | B0/110                  |         |         |
| BM   | (30°-60°)   | 457.8  | 12.7      | B1/1000                 |         |         |
| BH   | (60°-80°)   | 769.5  | 21.4      | B2/1000                 |         | G2/1000 |
| BVH  | (80°-90°)   | 118.0  | 3.3       |                         |         | G2/225  |
| UL   | (90°-100°)  | 42.6   | 1.2       |                         | U2/50   |         |
| UH   | (100°-180°) | 789.1  | 22.0      |                         | U4/1000 |         |

**BUG Rating: B2-U4-G2**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°   | 65°    | 75°    | 85°    | 90°    |
|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| 0°     | 50.4  | 50.4  | 50.4  | 50.4  | 50.4  | 50.4  | 50.4  | 50.4   | 50.4   | 50.4   | 50.4   |
| 2.5°   | 51.0  | 51.0  | 51.7  | 51.7  | 51.7  | 51.7  | 51.7  | 51.7   | 51.7   | 51.7   | 51.7   |
| 5°     | 53.0  | 53.0  | 53.0  | 53.0  | 53.6  | 53.6  | 53.0  | 53.0   | 53.0   | 53.0   | 53.0   |
| 7.5°   | 56.3  | 55.6  | 56.3  | 56.3  | 56.3  | 55.6  | 55.6  | 55.6   | 54.9   | 54.9   | 54.9   |
| 10°    | 59.5  | 59.5  | 60.2  | 59.5  | 59.5  | 58.9  | 58.9  | 58.9   | 58.2   | 58.2   | 58.2   |
| 12.5°  | 64.1  | 64.1  | 64.1  | 64.1  | 63.5  | 63.5  | 62.8  | 62.1   | 61.5   | 61.5   | 61.5   |
| 15°    | 70.0  | 69.3  | 69.3  | 68.7  | 68.0  | 67.4  | 66.7  | 66.7   | 66.1   | 66.1   | 66.1   |
| 17.5°  | 75.9  | 75.9  | 75.2  | 74.6  | 73.3  | 72.6  | 72.6  | 72.0   | 71.3   | 71.3   | 71.3   |
| 20°    | 83.1  | 83.1  | 82.4  | 81.1  | 79.8  | 79.2  | 78.5  | 78.5   | 77.8   | 77.8   | 77.8   |
| 22.5°  | 91.6  | 90.9  | 89.6  | 88.3  | 87.0  | 86.3  | 85.7  | 85.0   | 85.0   | 85.0   | 85.0   |
| 25°    | 100.7 | 100.1 | 99.4  | 97.5  | 95.5  | 94.9  | 93.5  | 93.5   | 92.9   | 93.5   | 93.5   |
| 27.5°  | 111.9 | 111.2 | 109.9 | 107.9 | 105.3 | 104.0 | 103.4 | 103.4  | 104.0  | 104.0  | 104.7  |
| 30°    | 125.6 | 124.3 | 123.0 | 120.4 | 117.7 | 115.8 | 115.8 | 116.4  | 118.4  | 119.7  | 119.7  |
| 32.5°  | 142.0 | 141.3 | 139.3 | 136.7 | 132.1 | 130.8 | 132.1 | 136.1  | 138.7  | 140.6  | 142.0  |
| 35°    | 160.9 | 160.3 | 157.7 | 153.1 | 149.8 | 149.1 | 153.1 | 159.6  | 168.1  | 170.7  | 172.0  |
| 37.5°  | 181.9 | 182.5 | 179.2 | 174.0 | 170.7 | 172.0 | 179.9 | 192.3  | 200.8  | 206.7  | 208.0  |
| 40°    | 208.0 | 209.3 | 205.4 | 199.5 | 196.2 | 201.5 | 213.9 | 228.3  | 243.3  | 250.5  | 252.5  |
| 42.5°  | 238.8 | 240.7 | 235.5 | 229.6 | 227.6 | 236.2 | 253.8 | 277.4  | 304.2  | 312.7  | 316.0  |
| 45°    | 276.7 | 278.0 | 271.5 | 266.2 | 264.9 | 280.0 | 310.1 | 349.3  | 391.8  | 411.5  | 414.7  |
| 47.5°  | 321.8 | 321.2 | 315.3 | 308.8 | 310.1 | 331.7 | 376.8 | 429.8  | 474.9  | 505.0  | 511.6  |
| 50°    | 373.5 | 370.3 | 365.7 | 357.8 | 366.3 | 397.7 | 454.6 | 518.8  | 594.6  | 621.5  | 633.2  |
| 52.5°  | 425.2 | 419.3 | 415.4 | 410.2 | 425.2 | 465.8 | 545.6 | 657.4  | 771.9  | 833.4  | 845.8  |
| 55°    | 471.7 | 467.1 | 465.1 | 465.8 | 489.3 | 547.5 | 652.2 | 795.5  | 906.0  | 957.0  | 966.2  |
| 57.5°  | 517.4 | 514.8 | 512.9 | 516.8 | 554.1 | 630.0 | 747.7 | 881.8  | 972.7  | 1010.7 | 1017.2 |
| 60°    | 560.6 | 563.2 | 561.9 | 573.7 | 618.8 | 695.4 | 797.4 | 929.6  | 1017.2 | 1051.9 | 1059.1 |
| 62.5°  | 608.4 | 610.3 | 610.3 | 623.4 | 660.1 | 727.4 | 831.4 | 985.8  | 1097.0 | 1148.1 | 1155.9 |
| 65°    | 649.6 | 650.9 | 653.5 | 654.2 | 688.2 | 755.6 | 891.6 | 1037.5 | 1136.9 | 1195.8 | 1201.0 |
| 67.5°  | 680.3 | 681.6 | 678.4 | 675.1 | 701.3 | 762.1 | 887.0 | 1031.0 | 1119.3 | 1163.8 | 1167.7 |
| 70°    | 705.2 | 699.3 | 690.1 | 673.8 | 682.3 | 728.1 | 849.1 | 978.6  | 1067.6 | 1107.5 | 1113.4 |
| 72.5°  | 708.5 | 703.2 | 674.4 | 637.8 | 627.3 | 667.2 | 782.4 | 898.8  | 975.4  | 1013.3 | 1014.0 |
| 75°    | 688.8 | 675.1 | 627.3 | 572.4 | 552.8 | 590.7 | 689.5 | 795.5  | 857.0  | 889.0  | 892.3  |
| 77.5°  | 622.8 | 609.7 | 549.5 | 486.7 | 464.5 | 497.2 | 580.9 | 666.6  | 725.5  | 756.9  | 758.8  |
| 80°    | 505.7 | 501.1 | 446.1 | 388.6 | 361.8 | 380.7 | 454.0 | 521.4  | 569.1  | 606.4  | 609.7  |
| 82.5°  | 372.9 | 368.9 | 327.1 | 276.7 | 255.1 | 270.8 | 323.2 | 372.9  | 417.4  | 447.4  | 449.4  |
| 85°    | 232.9 | 225.0 | 198.9 | 163.5 | 149.1 | 159.6 | 194.3 | 227.6  | 267.6  | 291.1  | 292.4  |
| 87.5°  | 77.8  | 74.6  | 64.1  | 53.0  | 44.5  | 46.4  | 56.9  | 69.3   | 101.4  | 111.9  | 118.4  |
| 90°    | 30.1  | 29.1  | 29.1  | 29.1  | 29.1  | 29.1  | 29.1  | 29.1   | 29.1   | 29.1   | 29.1   |
| 92.5°  | 34.8  | 34.2  | 34.2  | 33.8  | 33.8  | 33.8  | 33.8  | 33.8   | 33.8   | 33.8   | 33.8   |
| 95°    | 39.4  | 39.4  | 39.4  | 38.5  | 38.5  | 38.5  | 38.5  | 38.5   | 38.5   | 38.5   | 38.5   |
| 97.5°  | 44.6  | 44.6  | 44.6  | 44.2  | 44.2  | 44.2  | 44.2  | 44.2   | 44.2   | 44.2   | 44.2   |
| 100°   | 49.8  | 49.8  | 49.8  | 49.8  | 49.8  | 49.8  | 49.8  | 49.8   | 49.8   | 49.8   | 49.8   |
| 102.5° | 55.9  | 55.9  | 55.9  | 55.9  | 55.9  | 55.9  | 55.9  | 56.4   | 55.9   | 55.9   | 55.9   |
| 105°   | 62.0  | 62.0  | 62.0  | 62.0  | 62.0  | 62.0  | 62.0  | 62.9   | 62.0   | 62.0   | 62.0   |
| 107.5° | 68.6  | 68.6  | 69.0  | 69.0  | 69.0  | 69.0  | 69.0  | 69.5   | 69.0   | 69.0   | 69.0   |
| 110°   | 75.1  | 75.1  | 76.1  | 76.1  | 76.1  | 76.1  | 76.1  | 76.1   | 76.1   | 76.1   | 76.1   |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   | 90°   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 83.1  | 83.1  | 84.0  | 84.0  | 84.0  | 84.0  | 84.6  | 84.6  | 84.0  | 84.0  | 84.0  |
| 115°   | 91.1  | 91.1  | 92.0  | 92.0  | 92.0  | 92.0  | 93.0  | 93.0  | 92.0  | 92.0  | 92.0  |
| 117.5° | 100.5 | 100.5 | 101.0 | 101.4 | 101.4 | 101.4 | 102.4 | 102.4 | 101.4 | 101.4 | 101.4 |
| 120°   | 109.9 | 109.9 | 109.9 | 110.8 | 110.8 | 110.8 | 111.8 | 111.8 | 110.8 | 110.8 | 110.8 |
| 122.5° | 120.7 | 120.7 | 121.2 | 121.6 | 121.6 | 121.6 | 122.6 | 122.6 | 122.1 | 122.1 | 121.6 |
| 125°   | 131.5 | 131.5 | 132.4 | 132.4 | 132.4 | 132.4 | 133.4 | 133.4 | 133.4 | 133.4 | 132.4 |
| 127.5° | 143.2 | 143.2 | 144.2 | 144.2 | 144.2 | 144.2 | 145.1 | 145.1 | 145.1 | 145.1 | 144.2 |
| 130°   | 155.0 | 155.0 | 155.9 | 155.9 | 155.9 | 155.9 | 156.8 | 156.8 | 156.8 | 156.8 | 155.9 |
| 132.5° | 167.2 | 167.2 | 167.6 | 167.6 | 167.6 | 168.1 | 168.6 | 168.6 | 168.6 | 168.6 | 168.1 |
| 135°   | 179.4 | 179.4 | 179.4 | 179.4 | 179.4 | 180.3 | 180.3 | 180.3 | 180.3 | 180.3 | 180.3 |
| 137.5° | 191.2 | 190.6 | 191.2 | 190.6 | 191.2 | 191.6 | 191.6 | 191.6 | 191.6 | 191.6 | 191.6 |
| 140°   | 202.9 | 201.9 | 202.9 | 201.9 | 202.9 | 202.9 | 202.9 | 202.9 | 202.9 | 202.9 | 202.9 |
| 142.5° | 213.7 | 213.2 | 213.7 | 212.7 | 213.7 | 213.7 | 213.7 | 213.7 | 213.7 | 213.7 | 213.7 |
| 145°   | 224.5 | 224.5 | 224.5 | 223.5 | 224.5 | 224.5 | 224.5 | 224.5 | 224.5 | 224.5 | 224.5 |
| 147.5° | 235.8 | 235.3 | 235.8 | 234.8 | 235.8 | 235.8 | 235.8 | 235.8 | 235.8 | 235.8 | 235.8 |
| 150°   | 247.0 | 246.1 | 247.0 | 246.1 | 247.0 | 247.0 | 247.0 | 247.0 | 247.0 | 247.0 | 247.0 |
| 152.5° | 256.0 | 255.5 | 256.4 | 255.5 | 256.0 | 256.0 | 256.4 | 256.0 | 256.0 | 256.0 | 256.0 |
| 155°   | 264.9 | 264.9 | 265.8 | 264.9 | 264.9 | 264.9 | 265.8 | 264.9 | 264.9 | 264.9 | 264.9 |
| 157.5° | 272.4 | 272.4 | 273.3 | 272.4 | 272.4 | 272.4 | 273.3 | 272.4 | 272.4 | 272.4 | 272.4 |
| 160°   | 279.9 | 279.9 | 280.8 | 279.9 | 279.9 | 279.9 | 280.8 | 279.9 | 279.9 | 279.9 | 279.9 |
| 162.5° | 286.0 | 286.0 | 286.9 | 286.0 | 286.0 | 286.0 | 286.9 | 286.0 | 286.0 | 286.0 | 286.0 |
| 165°   | 292.1 | 292.1 | 293.0 | 292.1 | 292.1 | 292.1 | 293.0 | 292.1 | 292.1 | 292.1 | 292.1 |
| 167.5° | 295.8 | 295.8 | 296.8 | 295.8 | 295.8 | 295.8 | 296.8 | 295.8 | 295.8 | 295.8 | 295.8 |
| 170°   | 299.6 | 299.6 | 300.5 | 299.6 | 299.6 | 299.6 | 300.5 | 299.6 | 299.6 | 299.6 | 299.6 |
| 172.5° | 302.0 | 302.0 | 302.8 | 302.0 | 302.4 | 302.0 | 302.8 | 302.0 | 302.0 | 302.0 | 302.0 |
| 175°   | 304.3 | 304.3 | 305.2 | 304.3 | 305.2 | 304.3 | 305.2 | 304.3 | 304.3 | 304.3 | 304.3 |
| 177.5° | 305.2 | 305.2 | 305.7 | 305.2 | 305.7 | 305.2 | 305.7 | 305.2 | 305.2 | 305.2 | 305.2 |
| 180°   | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 | 306.2 |

(END OF REPORT)