

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: P821495

Luminaire Tested: **TT-D2-735-12VDC-RW-UPL**

Issue Date: 10/29/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P821495  
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-D2-735-12VDC-RW-UPL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
3500K, 70 CRI LEDS AND RECTANGULAR DISTRIBUTION  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

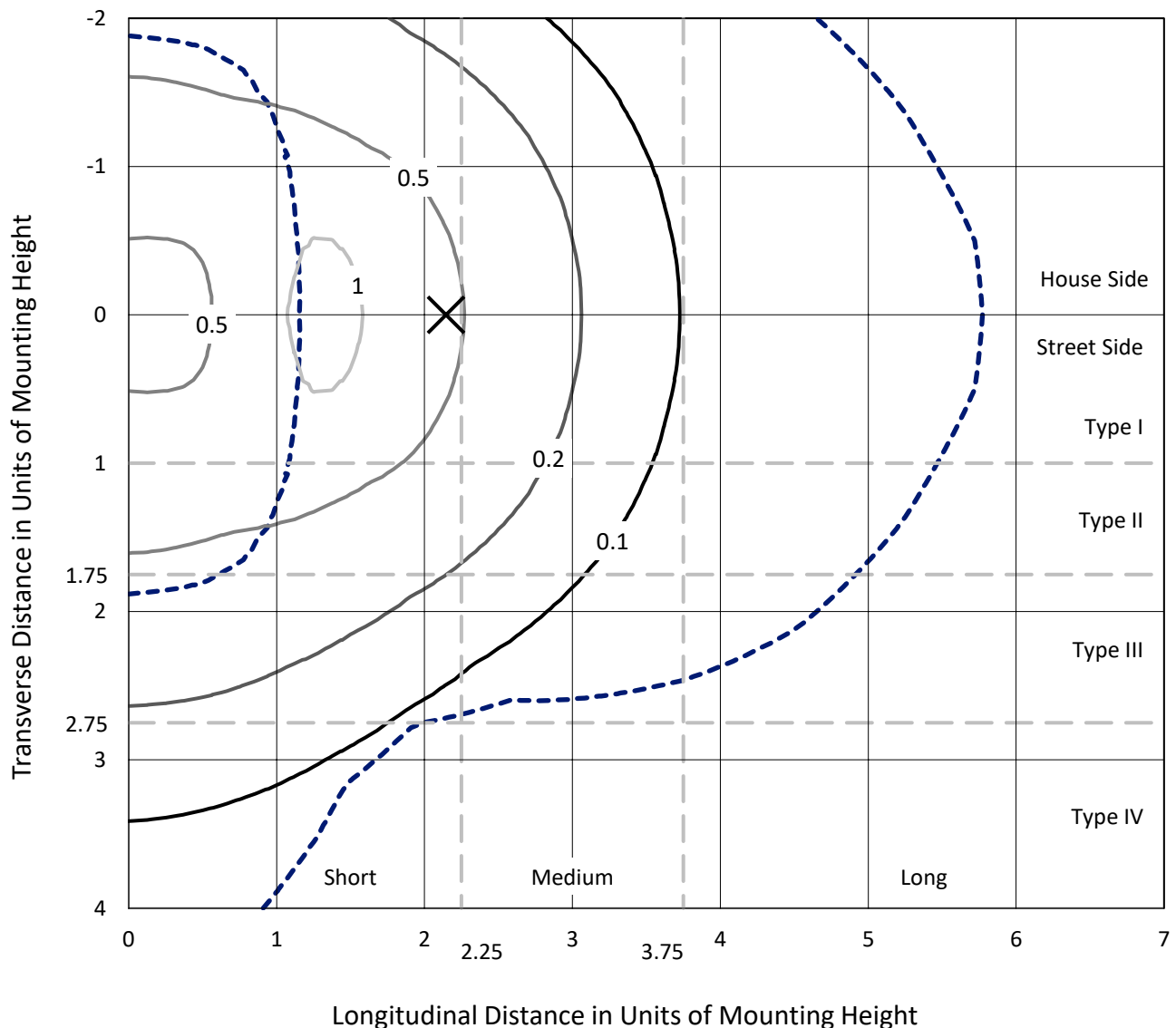
Lumens per Lamp: N/A  
Luminaire Lumens: 4819.8 lumens  
Efficiency: N/A  
Efficacy: 126.8 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U4 - G3

Input Watts (W): 38  
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

REPORT NUMBER: P821495  
 CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

## Iso-Footcandle Lines of Horizontal Illumination

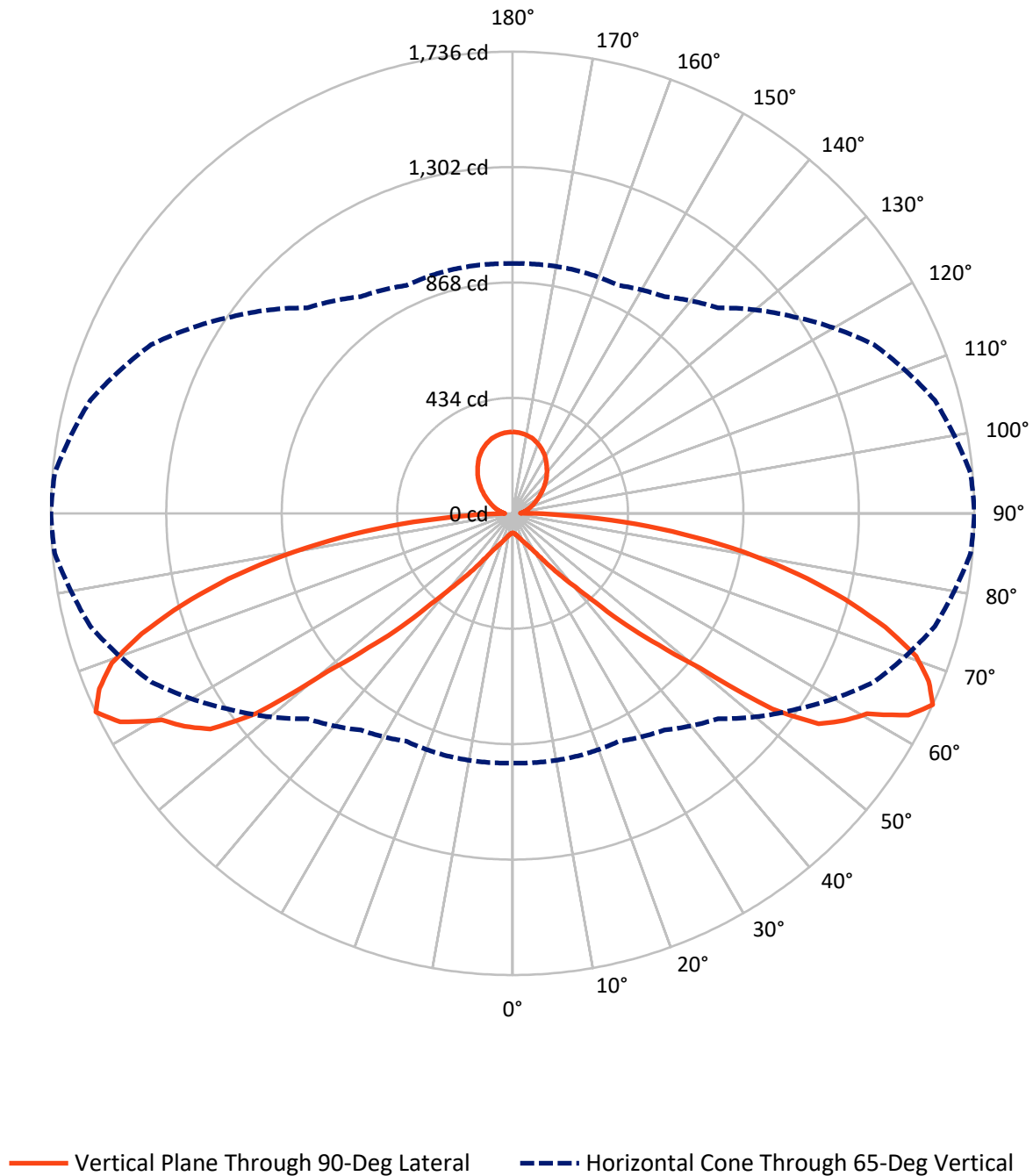
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.2 fc  
 Type IV - Short - N/A

REPORT NUMBER: P821495  
CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

## Luminous Intensity Polar Plot



REPORT NUMBER: P821495

CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

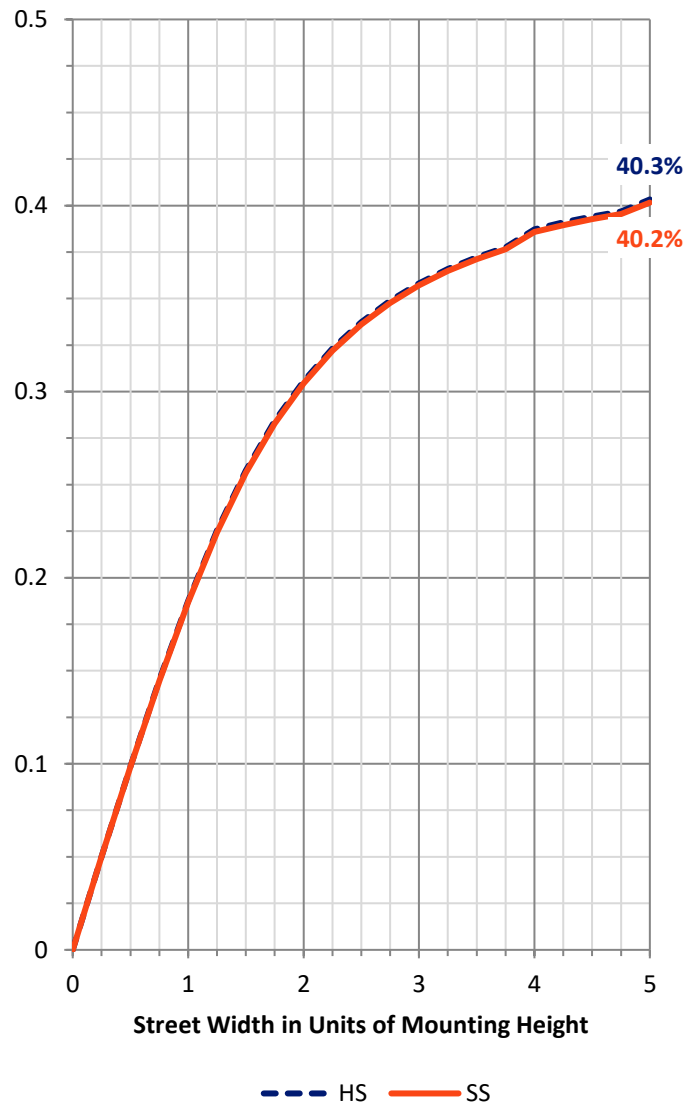
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1994.0   | 415.9  | 2409.9 |
|                    | % Fixture | 41.4     | 8.6    | 50.0   |
| <b>Street Side</b> | Lumens    | 1994.0   | 415.9  | 2409.9 |
|                    | % Fixture | 41.4     | 8.6    | 50.0   |
| <b>Total</b>       | Lumens    | 3988.0   | 831.7  | 4819.8 |
|                    | % Fixture | 82.7     | 17.3   | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 7.6    | 0.2       |
| 10°-20°   | 28.4   | 0.6       |
| 20°-30°   | 65.7   | 1.4       |
| 30°-40°   | 148.4  | 3.1       |
| 40°-50°   | 361.6  | 7.5       |
| 50°-60°   | 813.1  | 16.9      |
| 60°-70°   | 1188.3 | 24.7      |
| 70°-80°   | 1035.5 | 21.5      |
| 80°-90°   | 339.4  | 7.0       |
| 90°-100°  | 42.6   | 0.9       |
| 100°-110° | 66.0   | 1.4       |
| 110°-120° | 91.9   | 1.9       |
| 120°-130° | 119.0  | 2.5       |
| 130°-140° | 138.7  | 2.9       |
| 140°-150° | 140.5  | 2.9       |
| 150°-160° | 121.9  | 2.5       |
| 160°-170° | 82.2   | 1.7       |
| 170°-180° | 28.9   | 0.6       |
| 0°-90°    | 3988.0 | 82.7      |
| 0°-180°   | 4819.8 | 100.0     |



REPORT NUMBER: P821495

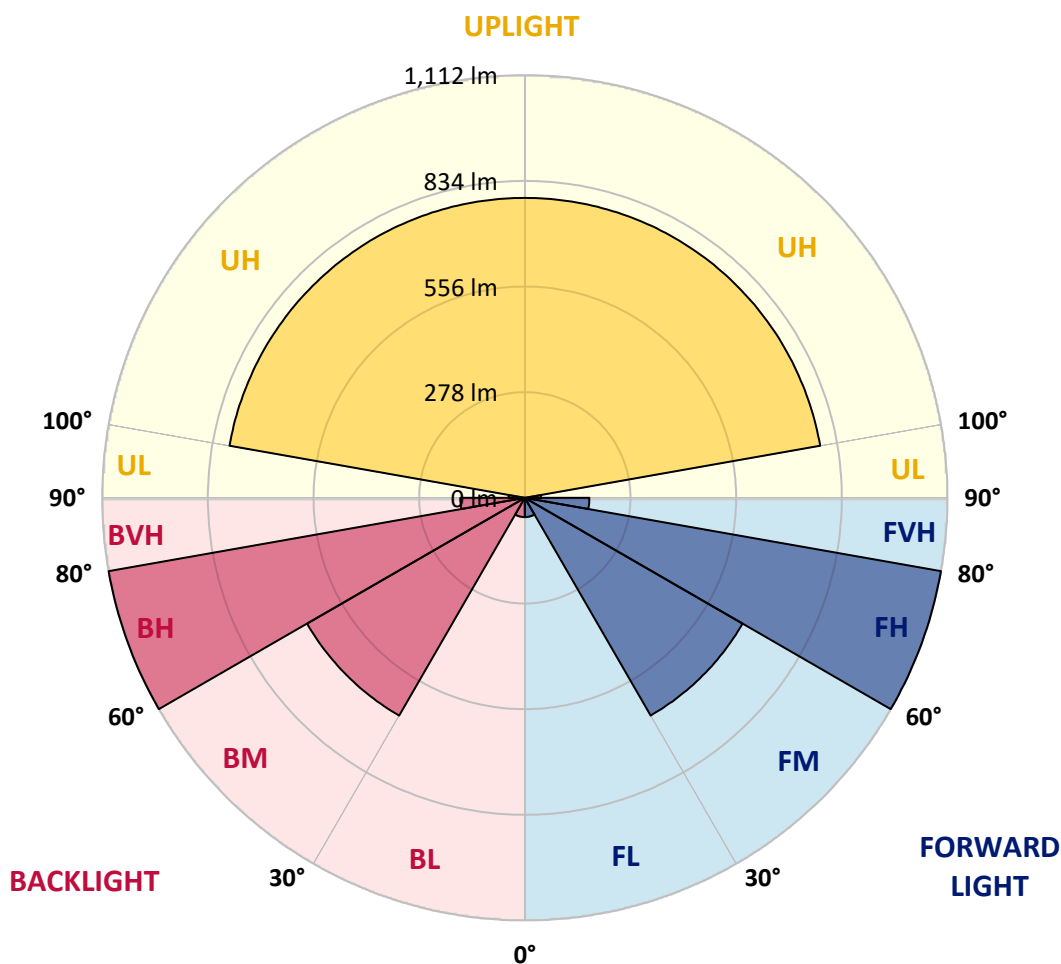
CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |         |         |
|------|-------------|--------|-----------|-------------------------|---------|---------|
|      |             |        |           | B                       | U       | G       |
| FL   | (0°-30°)    | 50.8   | 1.1       |                         |         |         |
| FM   | (30°-60°)   | 661.6  | 13.7      |                         |         |         |
| FH   | (60°-80°)   | 1111.9 | 23.1      |                         |         | G1/1800 |
| FVH  | (80°-90°)   | 169.7  | 3.5       |                         |         | G2/225  |
| BL   | (0°-30°)    | 50.8   | 1.1       | B0/110                  |         |         |
| BM   | (30°-60°)   | 661.6  | 13.7      | B1/1000                 |         |         |
| BH   | (60°-80°)   | 1111.9 | 23.1      | B3/2500                 |         | G3/2500 |
| BVH  | (80°-90°)   | 169.7  | 3.5       |                         |         | G2/225  |
| UL   | (90°-100°)  | 42.6   | 0.9       |                         | U2/50   |         |
| UH   | (100°-180°) | 789.1  | 16.4      |                         | U4/1000 |         |

**BUG Rating: B3-U4-G3**

Type IV Short





REPORT NUMBER: P821495

CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 5°     | 15°   | 25°   | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|--------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 72.8   | 72.8   | 72.8  | 72.8  | 72.8   | 72.8   | 72.8   | 72.8   | 72.8   | 72.8   | 72.8   |
| 2.5°   | 73.7   | 73.7   | 74.7  | 74.7  | 74.7   | 74.7   | 74.7   | 74.7   | 74.7   | 74.7   | 74.7   |
| 5°     | 76.6   | 76.6   | 76.6  | 76.6  | 77.5   | 77.5   | 76.6   | 76.6   | 76.6   | 76.6   | 76.6   |
| 7.5°   | 81.3   | 80.4   | 81.3  | 81.3  | 81.3   | 80.4   | 80.4   | 80.4   | 79.4   | 79.4   | 79.4   |
| 10°    | 86.0   | 86.0   | 87.0  | 86.0  | 86.0   | 85.1   | 85.1   | 85.1   | 84.1   | 84.1   | 84.1   |
| 12.5°  | 92.6   | 92.6   | 92.6  | 92.6  | 91.7   | 91.7   | 90.7   | 89.8   | 88.9   | 88.9   | 88.9   |
| 15°    | 101.1  | 100.2  | 100.2 | 99.3  | 98.3   | 97.4   | 96.4   | 96.4   | 95.5   | 95.5   | 95.5   |
| 17.5°  | 109.7  | 109.7  | 108.7 | 107.8 | 105.9  | 104.9  | 104.9  | 104.0  | 103.0  | 103.0  | 103.0  |
| 20°    | 120.1  | 120.1  | 119.1 | 117.2 | 115.3  | 114.4  | 113.4  | 113.4  | 112.5  | 112.5  | 112.5  |
| 22.5°  | 132.3  | 131.4  | 129.5 | 127.6 | 125.7  | 124.8  | 123.8  | 122.9  | 122.9  | 122.9  | 122.9  |
| 25°    | 145.6  | 144.6  | 143.7 | 140.9 | 138.0  | 137.1  | 135.2  | 135.2  | 134.2  | 135.2  | 135.2  |
| 27.5°  | 161.6  | 160.7  | 158.8 | 156.0 | 152.2  | 150.3  | 149.4  | 149.4  | 150.3  | 150.3  | 151.2  |
| 30°    | 181.5  | 179.6  | 177.7 | 173.9 | 170.2  | 167.3  | 167.3  | 168.3  | 171.1  | 173.0  | 173.0  |
| 32.5°  | 205.1  | 204.2  | 201.3 | 197.6 | 191.0  | 189.1  | 191.0  | 196.6  | 200.4  | 203.2  | 205.1  |
| 35°    | 232.5  | 231.6  | 227.8 | 221.2 | 216.5  | 215.5  | 221.2  | 230.7  | 242.9  | 246.7  | 248.6  |
| 37.5°  | 262.8  | 263.7  | 259.0 | 251.5 | 246.7  | 248.6  | 260.0  | 277.9  | 290.2  | 298.7  | 300.6  |
| 40°    | 300.6  | 302.5  | 296.8 | 288.3 | 283.6  | 291.2  | 309.1  | 329.9  | 351.7  | 362.1  | 364.9  |
| 42.5°  | 345.0  | 347.9  | 340.3 | 331.8 | 329.0  | 341.3  | 366.8  | 400.8  | 439.6  | 451.9  | 456.6  |
| 45°    | 399.9  | 401.8  | 392.3 | 384.7 | 382.8  | 404.6  | 448.1  | 504.8  | 566.2  | 594.6  | 599.3  |
| 47.5°  | 465.1  | 464.1  | 455.6 | 446.2 | 448.1  | 479.3  | 544.5  | 621.1  | 686.3  | 729.8  | 739.2  |
| 50°    | 539.8  | 535.0  | 528.4 | 517.1 | 529.4  | 574.7  | 657.0  | 749.6  | 859.3  | 898.0  | 915.1  |
| 52.5°  | 614.4  | 605.9  | 600.3 | 592.7 | 614.4  | 673.1  | 788.4  | 950.0  | 1115.5 | 1204.3 | 1222.3 |
| 55°    | 681.6  | 674.9  | 672.1 | 673.1 | 707.1  | 791.2  | 942.5  | 1149.5 | 1309.2 | 1383.0 | 1396.2 |
| 57.5°  | 747.7  | 744.0  | 741.1 | 746.8 | 800.7  | 910.3  | 1080.5 | 1274.3 | 1405.7 | 1460.5 | 1469.9 |
| 60°    | 810.1  | 813.9  | 812.0 | 829.0 | 894.3  | 1004.9 | 1152.3 | 1343.3 | 1469.9 | 1520.0 | 1530.4 |
| 62.5°  | 879.1  | 882.0  | 882.0 | 900.9 | 953.8  | 1051.2 | 1201.5 | 1424.6 | 1585.3 | 1659.0 | 1670.3 |
| 65°    | 938.7  | 940.6  | 944.4 | 945.3 | 994.5  | 1091.8 | 1288.4 | 1499.2 | 1642.9 | 1728.0 | 1735.6 |
| 67.5°  | 983.1  | 985.0  | 980.3 | 975.6 | 1013.4 | 1101.3 | 1281.8 | 1489.8 | 1617.4 | 1681.7 | 1687.4 |
| 70°    | 1019.0 | 1010.5 | 997.3 | 973.7 | 986.0  | 1052.1 | 1227.0 | 1414.2 | 1542.7 | 1600.4 | 1608.9 |
| 72.5°  | 1023.8 | 1016.2 | 974.6 | 921.7 | 906.5  | 964.2  | 1130.6 | 1298.8 | 1409.4 | 1464.3 | 1465.2 |
| 75°    | 995.4  | 975.6  | 906.5 | 827.1 | 798.8  | 853.6  | 996.3  | 1149.5 | 1238.3 | 1284.7 | 1289.4 |
| 77.5°  | 899.9  | 881.0  | 794.1 | 703.3 | 671.2  | 718.4  | 839.4  | 963.3  | 1048.3 | 1093.7 | 1096.6 |
| 80°    | 730.7  | 724.1  | 644.7 | 561.5 | 522.8  | 550.2  | 656.0  | 753.4  | 822.4  | 876.3  | 881.0  |
| 82.5°  | 538.8  | 533.2  | 472.7 | 399.9 | 368.7  | 391.4  | 467.0  | 538.8  | 603.1  | 646.6  | 649.4  |
| 85°    | 336.5  | 325.2  | 287.4 | 236.3 | 215.5  | 230.7  | 280.8  | 329.0  | 386.6  | 420.7  | 422.6  |
| 87.5°  | 112.5  | 107.8  | 92.6  | 76.6  | 64.3   | 67.1   | 82.2   | 100.2  | 146.5  | 161.6  | 171.1  |
| 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   |

REPORT NUMBER: P821495

CATALOG NUMBER: TT-D2-735-12VDC-RW-UPL

**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)