

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: P821442

Luminaire Tested: **TT-D2-830-12VDC-CQ-UPL**

Issue Date: 7/23/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P821442  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-2) AND  
Test Lab: INNOVATION CENTER  
Issue Date: 7/23/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D2-830-12VDC-CQ-UPL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
3000K, 80 CRI LEDS AND CONCENTRATED DISTRIBUTION  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

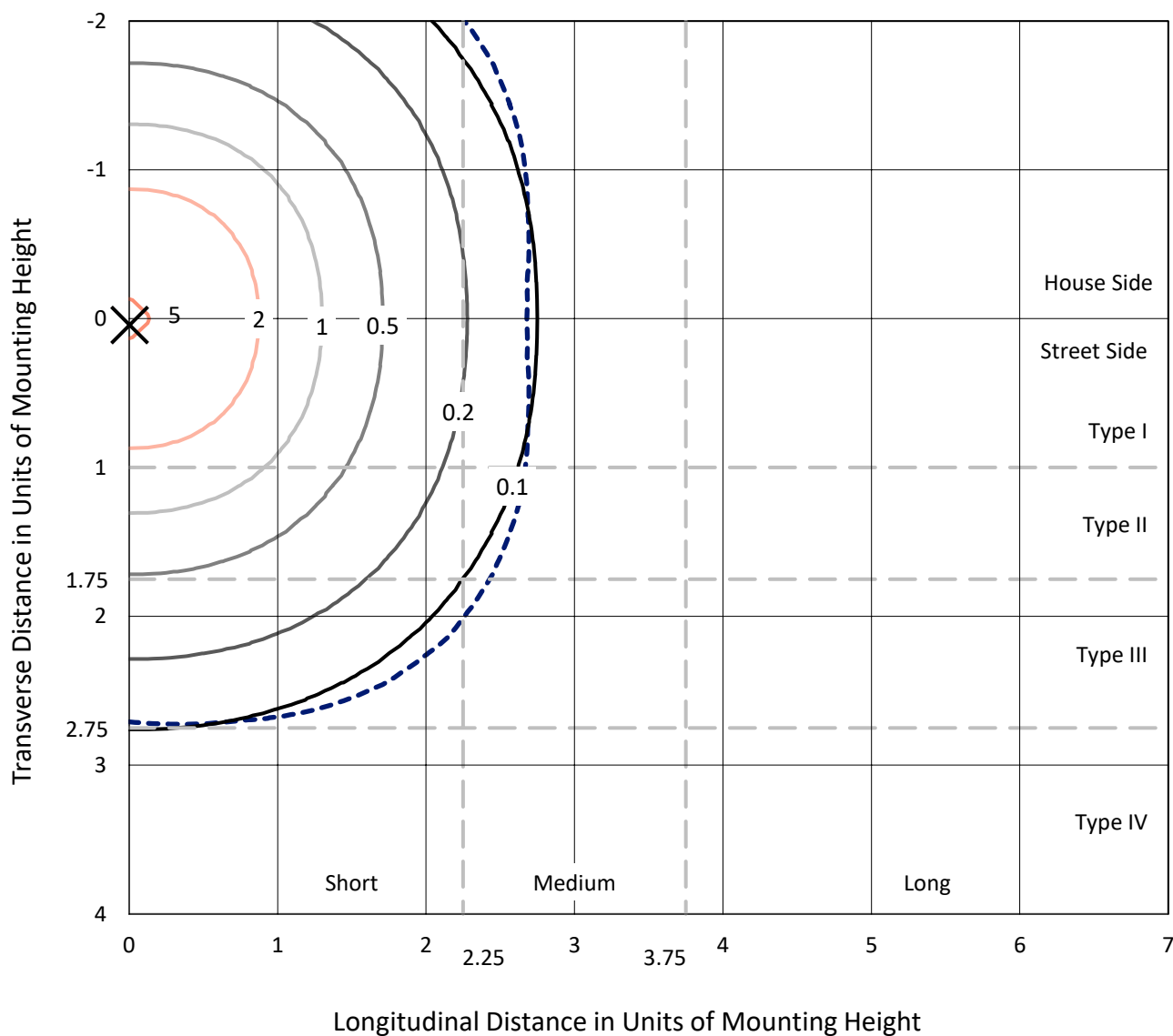
Lumens per Lamp: N/A  
Luminaire Lumens: 5475.7 lumens  
Efficiency: N/A  
Efficacy: 144.1 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type V - Short  
BUG Rating: B2 - U4 - G1

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: P821442  
 CATALOG NUMBER: TT-D2-830-12VDC-CQ-UPL

## Iso-Footcandle Lines of Horizontal Illumination

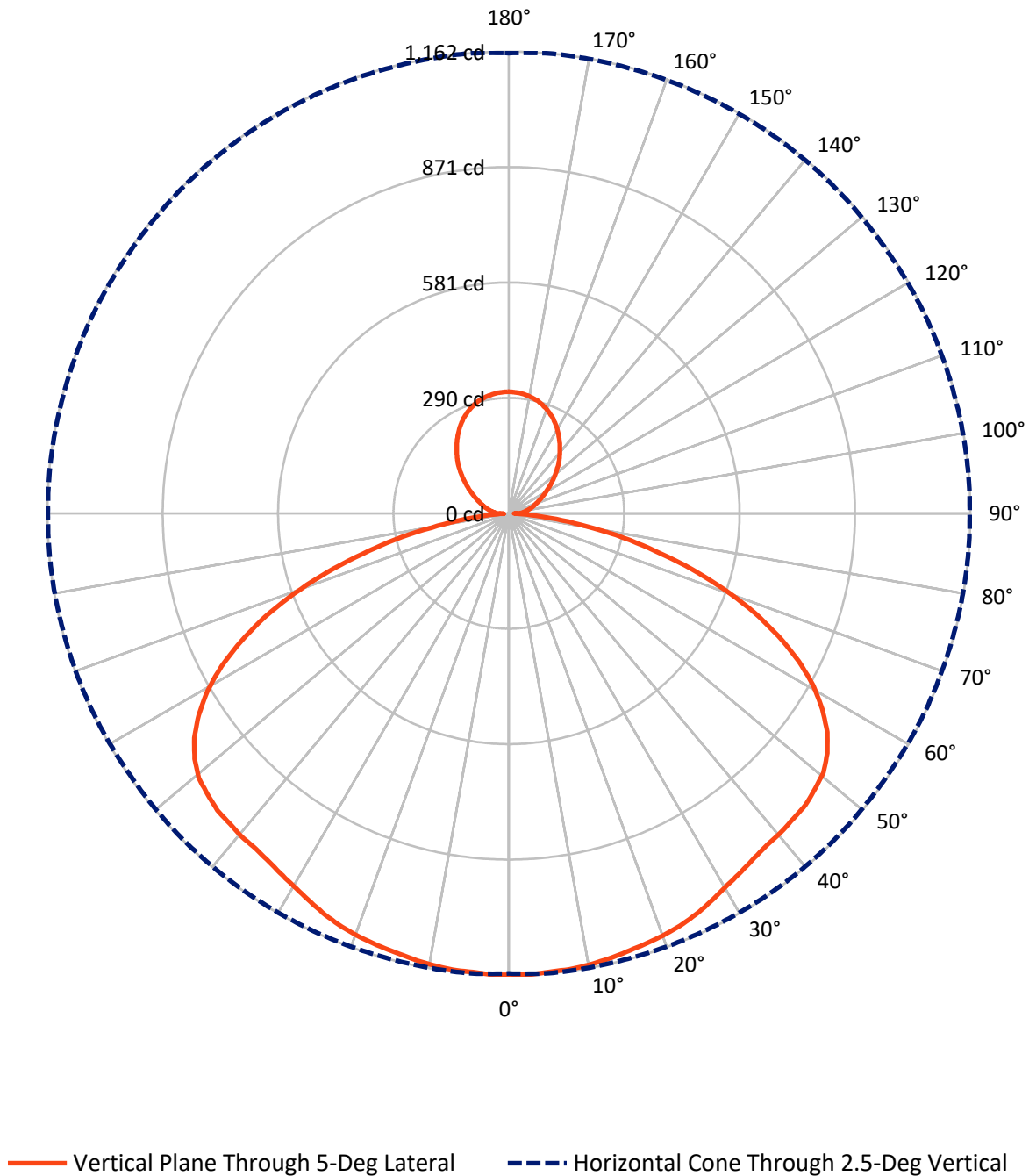
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 5.2 fc  
 Type V - Short - N/A

REPORT NUMBER: P821442  
CATALOG NUMBER: TT-D2-830-12VDC-CQ-UPL

## Luminous Intensity Polar Plot



REPORT NUMBER: P821442

CATALOG NUMBER: TT-D2-830-12VDC-CQ-UPL

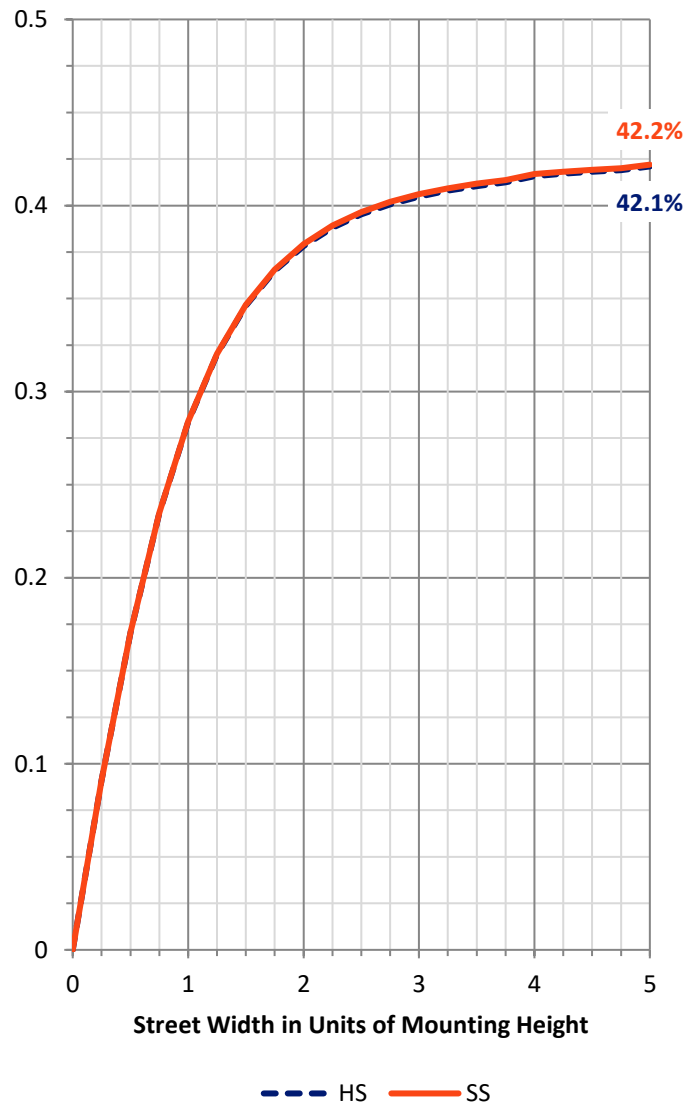
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2322.0   | 415.9  | 2737.9 |
|                    | % Fixture | 42.4     | 7.6    | 50.0   |
| <b>Street Side</b> | Lumens    | 2322.0   | 415.9  | 2737.9 |
|                    | % Fixture | 42.4     | 7.6    | 50.0   |
| <b>Total</b>       | Lumens    | 4644.0   | 831.7  | 5475.7 |
|                    | % Fixture | 84.8     | 15.2   | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 110.4  | 2.0       |
| 10°-20°   | 323.3  | 5.9       |
| 20°-30°   | 514.2  | 9.4       |
| 30°-40°   | 676.4  | 12.4      |
| 40°-50°   | 827.9  | 15.1      |
| 50°-60°   | 896.7  | 16.4      |
| 60°-70°   | 771.4  | 14.1      |
| 70°-80°   | 433.7  | 7.9       |
| 80°-90°   | 90.0   | 1.6       |
| 90°-100°  | 42.6   | 0.8       |
| 100°-110° | 66.0   | 1.2       |
| 110°-120° | 91.9   | 1.7       |
| 120°-130° | 119.0  | 2.2       |
| 130°-140° | 138.7  | 2.5       |
| 140°-150° | 140.5  | 2.6       |
| 150°-160° | 121.9  | 2.2       |
| 160°-170° | 82.2   | 1.5       |
| 170°-180° | 28.9   | 0.5       |
| 0°-90°    | 4644.0 | 84.8      |
| 0°-180°   | 5475.7 | 100.0     |



REPORT NUMBER: P821442

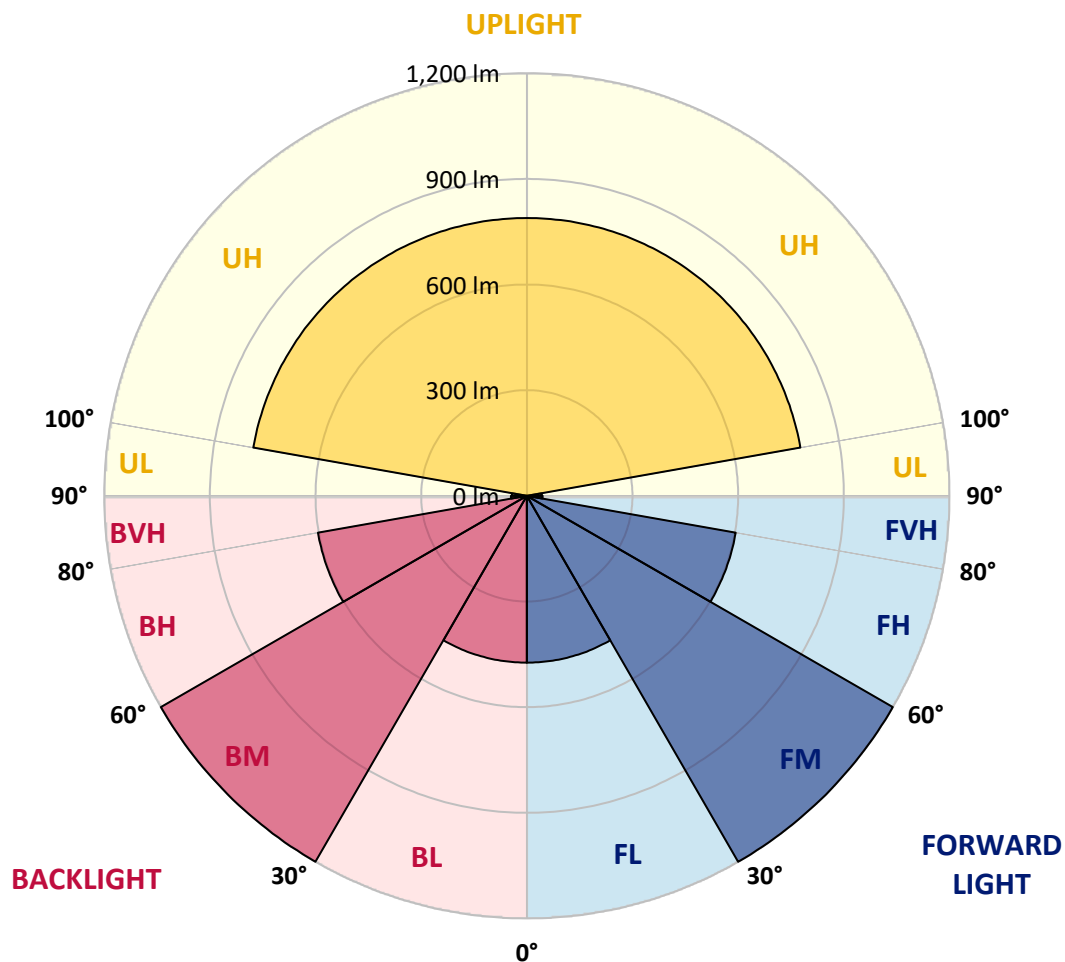
CATALOG NUMBER: TT-D2-830-12VDC-CQ-UPL

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |         |        |
|------|-------------|--------|-----------|-------------------------|---------|--------|
|      |             |        |           | B                       | U       | G      |
| FL   | (0°-30°)    | 474.0  | 8.7       |                         |         |        |
| FM   | (30°-60°)   | 1200.5 | 21.9      |                         |         |        |
| FH   | (60°-80°)   | 602.6  | 11.0      |                         |         | G0/660 |
| FVH  | (80°-90°)   | 45.0   | 0.8       |                         |         | G1/100 |
| BL   | (0°-30°)    | 474.0  | 8.7       | B1/500                  |         |        |
| BM   | (30°-60°)   | 1200.5 | 21.9      | B2/2500                 |         |        |
| BH   | (60°-80°)   | 602.6  | 11.0      | B2/1000                 |         | G0/660 |
| BVH  | (80°-90°)   | 45.0   | 0.8       |                         |         | G1/100 |
| UL   | (90°-100°)  | 42.6   | 0.8       |                         | U2/50   |        |
| UH   | (100°-180°) | 789.1  | 14.4      |                         | U4/1000 |        |

**BUG Rating: B2-U4-G1**

Type V Short





REPORT NUMBER: P821442

CATALOG NUMBER: TT-D2-830-12VDC-CQ-UPL

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 | 1160.8 |
| 2.5°   | 1157.8 | 1161.5 | 1160.1 | 1160.1 | 1160.1 | 1160.1 | 1158.6 | 1160.1 | 1160.1 | 1160.8 | 1160.1 |
| 5°     | 1158.6 | 1157.8 | 1157.8 | 1158.6 | 1158.6 | 1159.3 | 1157.8 | 1158.6 | 1159.3 | 1159.3 | 1160.1 |
| 7.5°   | 1156.4 | 1157.1 | 1155.6 | 1157.1 | 1155.6 | 1156.4 | 1156.4 | 1157.1 | 1156.4 | 1157.1 | 1158.6 |
| 10°    | 1151.9 | 1152.7 | 1151.9 | 1151.9 | 1151.9 | 1153.4 | 1150.5 | 1152.7 | 1151.9 | 1152.7 | 1151.9 |
| 12.5°  | 1143.8 | 1147.5 | 1146.0 | 1147.5 | 1147.5 | 1147.5 | 1145.3 | 1146.8 | 1147.5 | 1147.5 | 1147.5 |
| 15°    | 1140.1 | 1140.9 | 1138.6 | 1141.6 | 1142.3 | 1143.1 | 1140.1 | 1141.6 | 1141.6 | 1142.3 | 1143.1 |
| 17.5°  | 1132.0 | 1135.7 | 1134.9 | 1137.2 | 1136.4 | 1138.6 | 1137.9 | 1137.2 | 1136.4 | 1137.9 | 1136.4 |
| 20°    | 1126.1 | 1129.8 | 1129.0 | 1131.3 | 1132.0 | 1134.2 | 1132.0 | 1132.0 | 1129.8 | 1130.5 | 1132.7 |
| 22.5°  | 1120.2 | 1121.7 | 1121.7 | 1123.9 | 1123.9 | 1126.1 | 1123.9 | 1123.1 | 1123.1 | 1122.4 | 1124.6 |
| 25°    | 1110.6 | 1111.3 | 1110.6 | 1112.8 | 1114.3 | 1115.7 | 1115.0 | 1113.5 | 1112.8 | 1112.8 | 1112.1 |
| 27.5°  | 1095.1 | 1098.0 | 1099.5 | 1102.5 | 1103.2 | 1105.4 | 1102.5 | 1102.5 | 1101.0 | 1099.5 | 1100.2 |
| 30°    | 1083.3 | 1084.7 | 1084.7 | 1091.4 | 1091.4 | 1095.1 | 1091.4 | 1090.6 | 1089.9 | 1089.2 | 1087.7 |
| 32.5°  | 1072.2 | 1074.4 | 1076.6 | 1081.8 | 1085.5 | 1087.0 | 1084.7 | 1083.3 | 1079.6 | 1077.4 | 1076.6 |
| 35°    | 1063.3 | 1064.1 | 1068.5 | 1075.9 | 1080.3 | 1084.0 | 1081.0 | 1077.4 | 1072.2 | 1068.5 | 1071.4 |
| 37.5°  | 1056.7 | 1057.4 | 1064.1 | 1073.7 | 1081.8 | 1084.7 | 1080.3 | 1074.4 | 1066.3 | 1061.8 | 1060.4 |
| 40°    | 1050.8 | 1055.2 | 1062.6 | 1075.9 | 1084.7 | 1089.2 | 1085.5 | 1077.4 | 1065.5 | 1056.7 | 1055.9 |
| 42.5°  | 1047.8 | 1050.0 | 1061.1 | 1076.6 | 1089.2 | 1095.1 | 1089.9 | 1078.8 | 1064.1 | 1053.7 | 1053.0 |
| 45°    | 1040.4 | 1047.1 | 1057.4 | 1077.4 | 1091.4 | 1098.8 | 1091.4 | 1077.4 | 1059.6 | 1047.8 | 1045.6 |
| 47.5°  | 1034.5 | 1036.7 | 1053.0 | 1075.9 | 1092.9 | 1098.8 | 1091.4 | 1073.7 | 1051.5 | 1036.0 | 1034.5 |
| 50°    | 1020.5 | 1025.7 | 1041.9 | 1066.3 | 1086.2 | 1092.1 | 1083.3 | 1059.6 | 1034.5 | 1017.5 | 1014.6 |
| 52.5°  | 999.1  | 1003.5 | 1022.7 | 1053.0 | 1072.2 | 1078.8 | 1065.5 | 1040.4 | 1010.9 | 990.2  | 990.2  |
| 55°    | 965.8  | 972.5  | 992.4  | 1023.4 | 1047.8 | 1053.7 | 1038.2 | 1011.6 | 978.4  | 957.7  | 957.0  |
| 57.5°  | 926.0  | 930.4  | 951.8  | 985.8  | 1009.4 | 1018.3 | 1002.8 | 973.2  | 940.0  | 915.6  | 913.4  |
| 60°    | 874.3  | 880.2  | 903.1  | 935.6  | 959.9  | 967.3  | 954.0  | 924.5  | 890.5  | 864.7  | 864.7  |
| 62.5°  | 812.3  | 818.9  | 841.8  | 875.0  | 900.1  | 911.2  | 892.7  | 864.7  | 829.2  | 804.1  | 801.9  |
| 65°    | 739.9  | 745.8  | 766.5  | 801.2  | 827.0  | 835.2  | 821.1  | 791.6  | 757.6  | 734.0  | 731.8  |
| 67.5°  | 658.7  | 666.8  | 687.5  | 717.0  | 739.2  | 749.5  | 740.6  | 714.0  | 678.6  | 654.2  | 652.0  |
| 70°    | 570.8  | 576.7  | 592.9  | 620.3  | 645.4  | 652.8  | 639.5  | 621.7  | 588.5  | 566.4  | 563.4  |
| 72.5°  | 477.0  | 482.2  | 495.5  | 521.3  | 539.0  | 548.6  | 541.3  | 518.4  | 491.8  | 473.3  | 476.3  |
| 75°    | 382.5  | 381.8  | 396.5  | 415.0  | 431.2  | 437.9  | 432.7  | 417.9  | 393.6  | 378.1  | 377.3  |
| 77.5°  | 288.0  | 295.4  | 300.5  | 316.0  | 329.3  | 334.5  | 327.1  | 315.3  | 296.8  | 284.3  | 286.5  |
| 80°    | 202.3  | 197.9  | 207.5  | 217.1  | 226.0  | 231.1  | 226.7  | 220.0  | 207.5  | 197.9  | 196.4  |
| 82.5°  | 124.1  | 120.4  | 124.8  | 133.7  | 139.6  | 141.0  | 141.8  | 133.7  | 128.5  | 121.1  | 122.6  |
| 85°    | 54.6   | 55.4   | 59.1   | 65.0   | 65.7   | 66.5   | 66.5   | 65.0   | 59.1   | 58.3   | 56.9   |
| 87.5°  | 13.3   | 13.3   | 14.0   | 16.2   | 16.2   | 17.0   | 17.0   | 14.8   | 14.0   | 12.6   | 13.3   |
| 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: P821442

CATALOG NUMBER: TT-D2-830-12VDC-CQ-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)