

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: P821446

Luminaire Tested: **TT-D2-830-12VDC-DL**

Issue Date: 5/19/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P821446  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-473-26)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/19/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TT-D2-830-12VDC-DL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE  
3000K, 80 CRI LEDS AND DRIVE LANE DISTRIBUTION  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

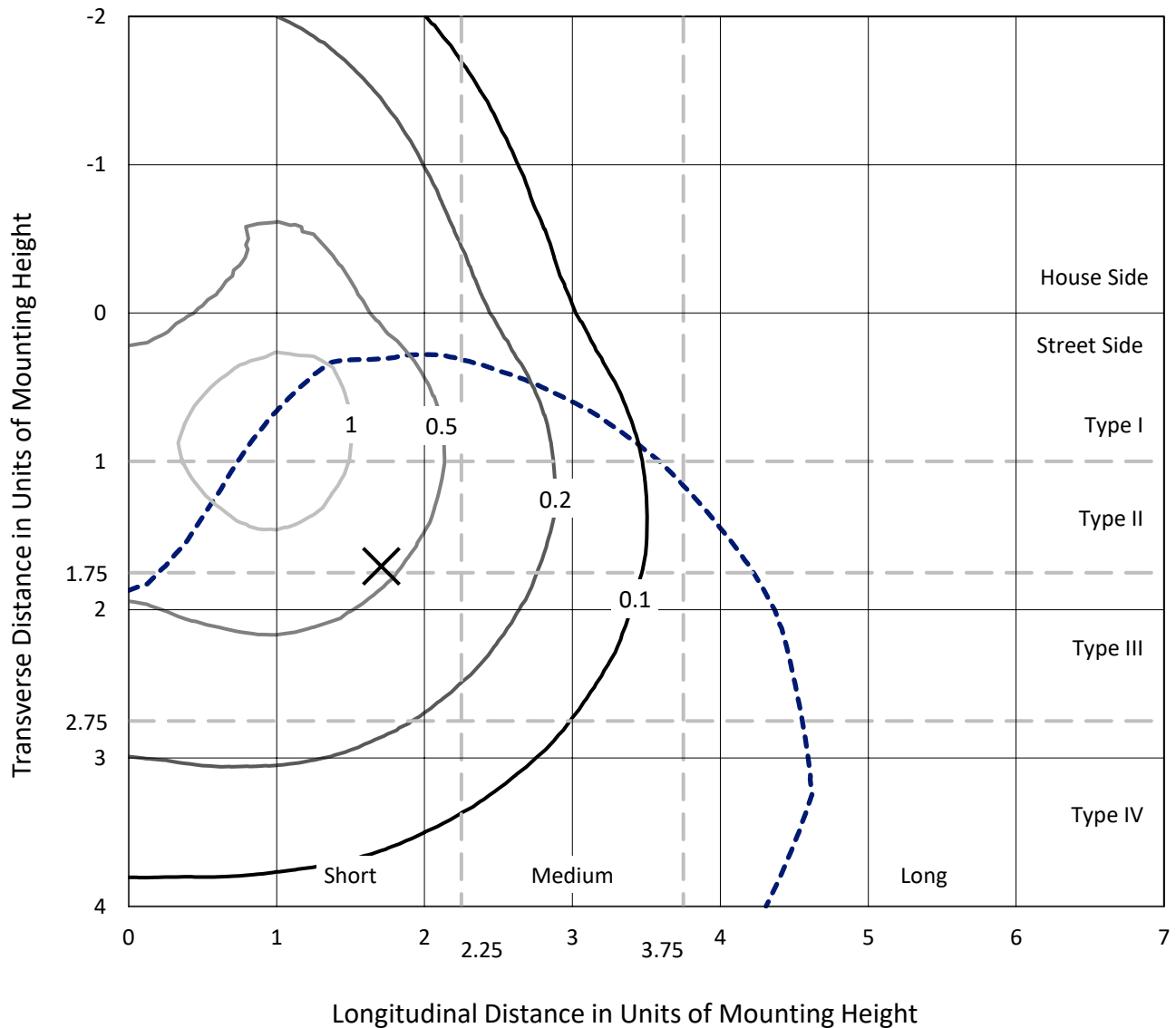
Lumens per Lamp: N/A  
Luminaire Lumens: 3985 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

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: P821446  
 CATALOG NUMBER: TT-D2-830-12VDC-DL

## Iso-Footcandle Lines of Horizontal Illumination

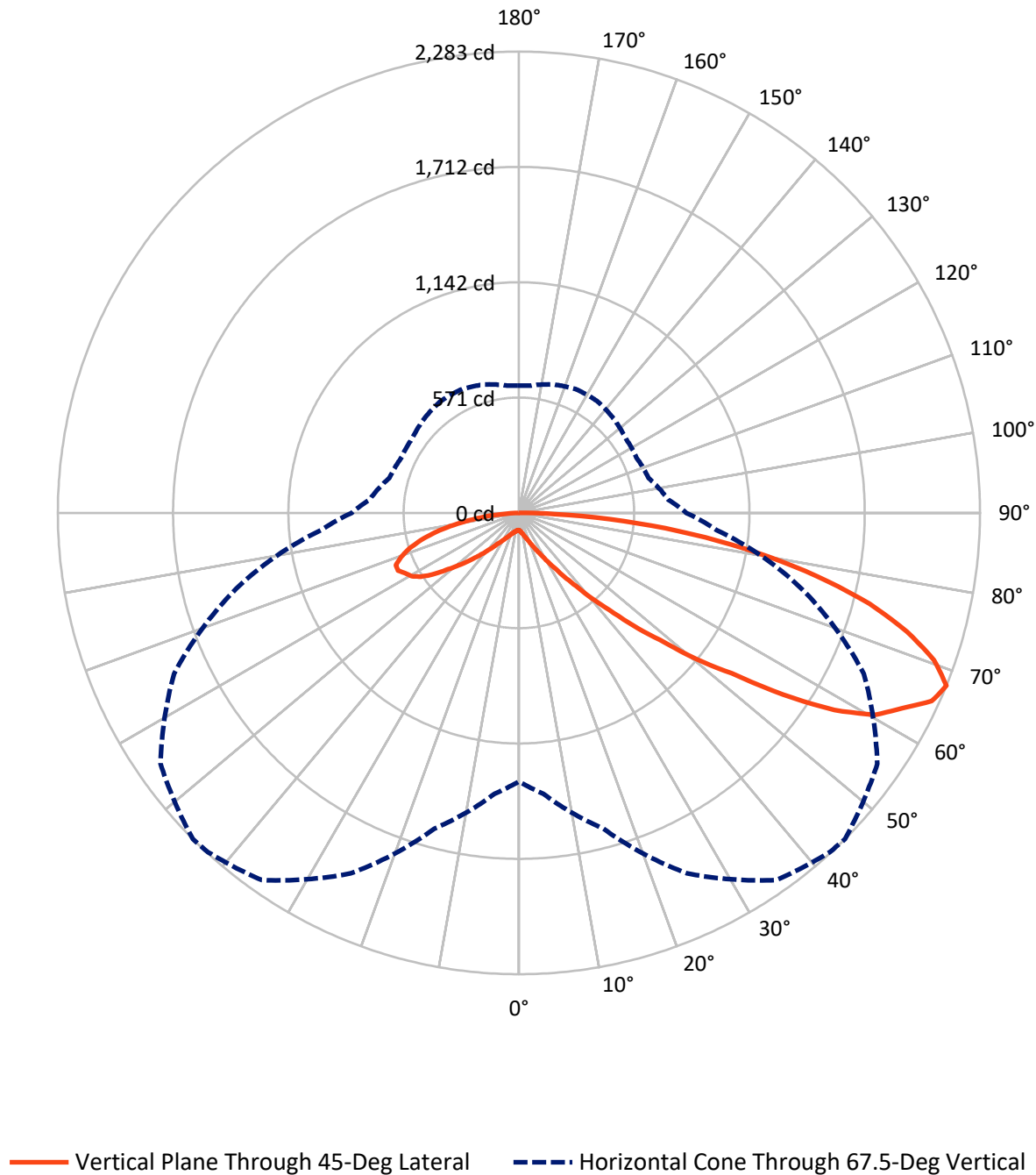
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.4 fc  
 Type IV - Short - N/A

REPORT NUMBER: P821446  
CATALOG NUMBER: TT-D2-830-12VDC-DL

## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1161.2   | 0.0    | 1161.2 |
|                    | % Fixture | 29.1     | 0.0    | 29.1   |
| <b>Street Side</b> | Lumens    | 2823.8   | 0.0    | 2823.8 |
|                    | % Fixture | 70.9     | 0.0    | 70.9   |
| <b>Total</b>       | Lumens    | 3985.0   | 0.0    | 3985.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 8.9    | 0.2       |
| 10°-20°   | 33.1   | 0.8       |
| 20°-30°   | 78.2   | 2.0       |
| 30°-40°   | 176.9  | 4.4       |
| 40°-50°   | 394.4  | 9.9       |
| 50°-60°   | 793.0  | 19.9      |
| 60°-70°   | 1164.6 | 29.2      |
| 70°-80°   | 1024.1 | 25.7      |
| 80°-90°   | 311.8  | 7.8       |
| 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°    | 3985.0 | 100.0     |
| 0°-180°   | 3985.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P821446

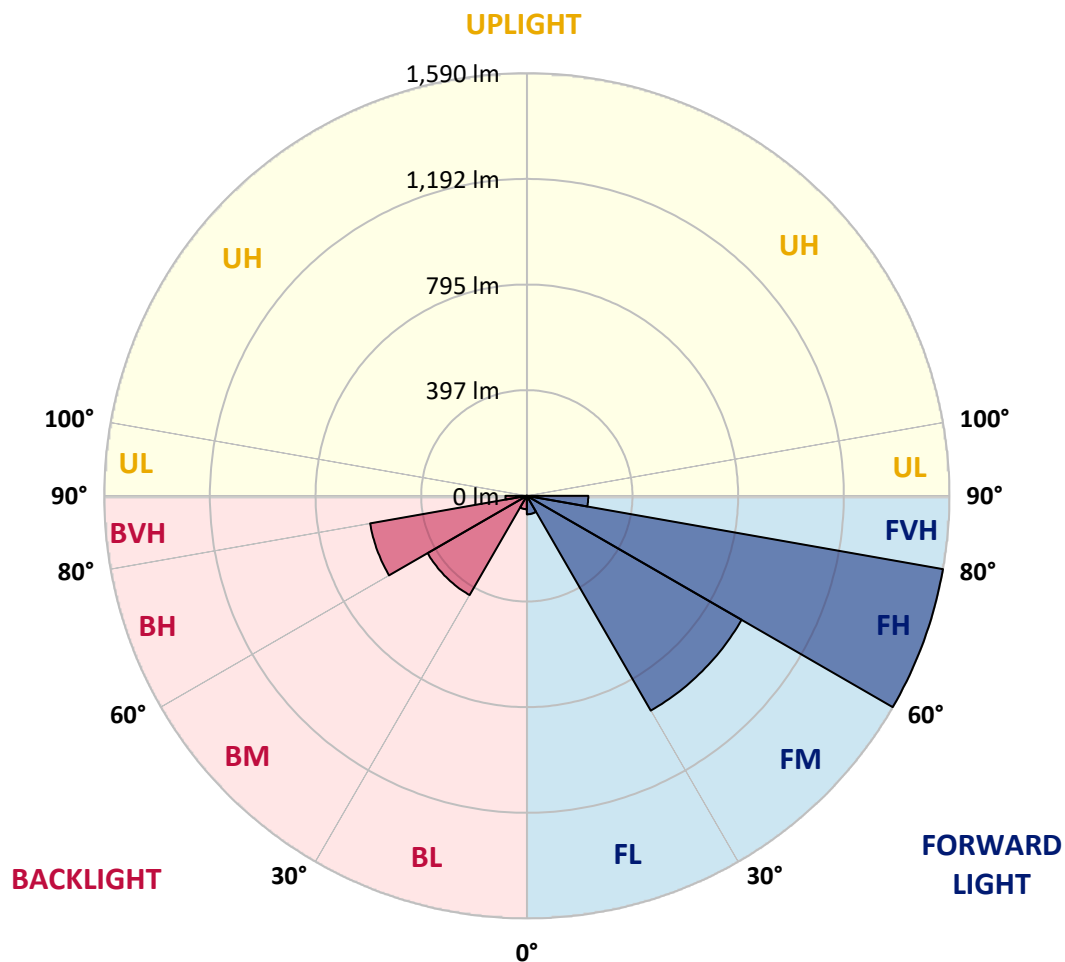
CATALOG NUMBER: TT-D2-830-12VDC-DL

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 69.6   | 1.7       |                         |      |         |
| FM   | (30°-60°)   | 933.2  | 23.4      |                         |      |         |
| FH   | (60°-80°)   | 1589.9 | 39.9      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 231.0  | 5.8       |                         |      | G3/500  |
| BL   | (0°-30°)    | 50.5   | 1.3       | B0/110                  |      |         |
| BM   | (30°-60°)   | 431.1  | 10.8      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 598.8  | 15.0      | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 80.8   | 2.0       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type IV Short





REPORT NUMBER: P821446

CATALOG NUMBER: TT-D2-830-12VDC-DL

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 42.5°  | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   | 86.4   |
| 2.5°  | 90.2   | 89.4   | 89.4   | 89.4   | 88.7   | 88.7   | 88.7   | 88.7   | 87.9   | 87.9   | 87.9   |
| 5°    | 95.4   | 94.6   | 95.4   | 93.9   | 93.1   | 93.1   | 92.4   | 92.4   | 91.7   | 90.9   | 90.2   |
| 7.5°  | 102.8  | 102.1  | 102.1  | 100.6  | 99.9   | 99.1   | 99.1   | 97.6   | 96.9   | 95.4   | 93.9   |
| 10°   | 111.0  | 111.0  | 110.3  | 109.5  | 108.0  | 106.6  | 106.6  | 104.3  | 103.6  | 101.3  | 99.1   |
| 12.5° | 120.7  | 120.7  | 120.7  | 119.2  | 117.7  | 117.0  | 115.5  | 114.0  | 111.8  | 108.0  | 105.8  |
| 15°   | 132.6  | 132.6  | 132.6  | 131.1  | 129.7  | 128.2  | 127.4  | 124.4  | 120.7  | 117.0  | 112.5  |
| 17.5° | 147.5  | 146.1  | 146.1  | 144.6  | 143.1  | 142.3  | 140.8  | 137.9  | 132.6  | 128.2  | 122.2  |
| 20°   | 163.9  | 163.2  | 162.4  | 162.4  | 161.0  | 159.5  | 158.7  | 154.2  | 148.3  | 140.1  | 132.6  |
| 22.5° | 182.6  | 181.8  | 181.8  | 183.3  | 182.6  | 180.3  | 180.3  | 173.6  | 165.4  | 155.7  | 144.6  |
| 25°   | 205.7  | 204.9  | 206.4  | 209.4  | 209.4  | 207.9  | 205.7  | 199.0  | 187.0  | 173.6  | 160.2  |
| 27.5° | 231.0  | 230.3  | 233.2  | 238.5  | 239.9  | 237.7  | 236.2  | 228.8  | 215.4  | 197.5  | 178.1  |
| 30°   | 261.6  | 262.3  | 270.5  | 276.5  | 280.2  | 278.7  | 277.9  | 269.7  | 248.1  | 227.3  | 201.9  |
| 32.5° | 298.8  | 296.6  | 307.0  | 316.7  | 323.4  | 327.1  | 324.9  | 315.2  | 296.6  | 263.8  | 231.7  |
| 35°   | 338.3  | 339.0  | 351.7  | 365.9  | 381.5  | 383.0  | 387.5  | 377.8  | 352.5  | 313.7  | 269.0  |
| 37.5° | 389.7  | 383.8  | 400.1  | 427.0  | 445.6  | 462.0  | 459.0  | 453.1  | 423.2  | 371.8  | 310.7  |
| 40°   | 435.9  | 434.4  | 457.5  | 494.8  | 529.1  | 552.9  | 555.9  | 548.4  | 508.9  | 435.9  | 355.4  |
| 42.5° | 488.8  | 493.3  | 525.3  | 576.8  | 628.9  | 663.2  | 655.0  | 651.3  | 605.1  | 511.9  | 416.5  |
| 45°   | 542.5  | 557.4  | 598.4  | 672.9  | 734.0  | 783.2  | 797.3  | 784.7  | 728.0  | 631.9  | 494.0  |
| 47.5° | 607.3  | 627.4  | 678.1  | 778.7  | 878.5  | 935.9  | 938.9  | 976.9  | 891.2  | 747.4  | 574.5  |
| 50°   | 693.0  | 701.9  | 772.7  | 895.7  | 1032.8 | 1113.3 | 1136.4 | 1137.1 | 1051.4 | 863.6  | 665.4  |
| 52.5° | 777.2  | 783.9  | 877.1  | 1035.8 | 1222.1 | 1313.7 | 1318.9 | 1348.0 | 1231.0 | 1051.4 | 795.8  |
| 55°   | 878.5  | 875.6  | 1003.7 | 1194.5 | 1414.3 | 1547.7 | 1586.4 | 1625.9 | 1476.9 | 1199.7 | 870.3  |
| 57.5° | 976.9  | 972.4  | 1126.7 | 1377.1 | 1677.4 | 1810.0 | 1842.0 | 1813.7 | 1592.4 | 1261.6 | 906.9  |
| 60°   | 1067.8 | 1083.5 | 1271.2 | 1579.0 | 1880.8 | 2007.5 | 2029.1 | 1952.3 | 1666.9 | 1309.2 | 930.0  |
| 62.5° | 1162.4 | 1193.7 | 1421.0 | 1747.4 | 2036.5 | 2127.4 | 2128.9 | 2038.8 | 1791.4 | 1401.6 | 1005.2 |
| 65°   | 1251.1 | 1301.0 | 1537.3 | 1891.2 | 2145.3 | 2236.2 | 2246.7 | 2165.4 | 1913.6 | 1482.1 | 1017.9 |
| 67.5° | 1329.4 | 1395.7 | 1617.7 | 1968.7 | 2219.1 | 2277.9 | 2283.2 | 2166.2 | 1884.5 | 1449.3 | 982.9  |
| 70°   | 1392.7 | 1446.4 | 1667.7 | 1970.2 | 2167.7 | 2184.1 | 2180.3 | 2055.9 | 1804.0 | 1384.5 | 924.0  |
| 72.5° | 1417.3 | 1461.3 | 1643.8 | 1877.8 | 2016.4 | 2012.7 | 2009.7 | 1894.9 | 1671.4 | 1276.5 | 839.0  |
| 75°   | 1382.3 | 1394.9 | 1513.4 | 1680.3 | 1768.3 | 1789.1 | 1792.1 | 1688.5 | 1466.5 | 1116.2 | 719.8  |
| 77.5° | 1237.7 | 1231.0 | 1321.9 | 1432.2 | 1498.5 | 1513.4 | 1510.4 | 1424.0 | 1229.5 | 927.7  | 603.6  |
| 80°   | 981.4  | 995.5  | 1052.2 | 1125.2 | 1191.5 | 1207.9 | 1197.5 | 1131.9 | 956.8  | 723.5  | 463.5  |
| 82.5° | 686.3  | 703.4  | 751.1  | 806.3  | 856.2  | 856.2  | 865.9  | 802.5  | 678.1  | 519.4  | 324.1  |
| 85°   | 370.3  | 360.7  | 412.8  | 475.4  | 511.2  | 517.9  | 521.6  | 500.7  | 419.5  | 313.7  | 192.3  |
| 87.5° | 61.1   | 65.6   | 81.2   | 124.4  | 141.6  | 163.9  | 174.4  | 136.4  | 82.7   | 52.9   | 38.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



REPORT NUMBER: P821446

CATALOG NUMBER: TT-D2-830-12VDC-DL

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  |
| 2.5°  | 87.9  | 87.2  | 86.4  | 85.7  | 85.7  | 84.9  | 84.9  | 84.9  | 85.7  | 85.7  | 85.7  |
| 5°    | 90.2  | 89.4  | 88.7  | 87.9  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  | 86.4  |
| 7.5°  | 93.9  | 92.4  | 91.7  | 90.2  | 88.7  | 88.7  | 87.9  | 87.9  | 87.9  | 88.7  | 87.9  |
| 10°   | 98.4  | 96.9  | 95.4  | 93.1  | 92.4  | 91.7  | 90.9  | 90.9  | 91.7  | 91.7  | 90.9  |
| 12.5° | 103.6 | 102.8 | 99.9  | 97.6  | 96.1  | 95.4  | 94.6  | 95.4  | 94.6  | 95.4  | 95.4  |
| 15°   | 111.0 | 108.8 | 105.1 | 102.8 | 100.6 | 99.9  | 99.1  | 99.9  | 99.9  | 100.6 | 99.9  |
| 17.5° | 119.2 | 116.2 | 112.5 | 108.8 | 105.8 | 105.1 | 105.1 | 105.1 | 105.8 | 106.6 | 105.8 |
| 20°   | 128.9 | 125.2 | 120.0 | 115.5 | 112.5 | 111.8 | 111.8 | 112.5 | 113.3 | 114.0 | 114.0 |
| 22.5° | 138.6 | 135.6 | 128.2 | 122.2 | 120.7 | 120.0 | 119.2 | 120.7 | 122.2 | 123.0 | 123.7 |
| 25°   | 153.5 | 147.5 | 138.6 | 131.9 | 128.9 | 128.9 | 129.7 | 131.1 | 131.9 | 133.4 | 132.6 |
| 27.5° | 169.2 | 162.4 | 151.3 | 142.3 | 140.1 | 139.3 | 140.8 | 142.3 | 145.3 | 145.3 | 144.6 |
| 30°   | 190.8 | 179.6 | 165.4 | 157.2 | 151.3 | 152.0 | 154.2 | 156.5 | 159.5 | 161.0 | 161.0 |
| 32.5° | 215.4 | 203.4 | 184.1 | 171.4 | 168.4 | 169.2 | 169.9 | 173.6 | 176.6 | 179.6 | 177.3 |
| 35°   | 247.4 | 232.5 | 208.6 | 194.5 | 187.0 | 186.3 | 189.3 | 193.7 | 196.7 | 198.2 | 198.2 |
| 37.5° | 282.4 | 263.0 | 233.2 | 221.3 | 212.4 | 211.6 | 212.4 | 216.1 | 219.8 | 221.3 | 224.3 |
| 40°   | 324.9 | 301.0 | 266.0 | 246.6 | 239.9 | 238.5 | 241.4 | 246.6 | 246.6 | 248.9 | 249.6 |
| 42.5° | 377.0 | 346.5 | 307.8 | 282.4 | 274.2 | 274.2 | 273.5 | 277.9 | 277.9 | 277.9 | 276.5 |
| 45°   | 443.4 | 409.1 | 358.4 | 332.3 | 318.2 | 310.7 | 313.0 | 310.0 | 309.2 | 311.5 | 304.8 |
| 47.5° | 507.5 | 464.2 | 404.6 | 376.3 | 362.1 | 357.7 | 349.5 | 347.2 | 343.5 | 343.5 | 333.8 |
| 50°   | 582.0 | 528.3 | 470.9 | 430.7 | 417.3 | 404.6 | 397.9 | 387.5 | 376.3 | 374.1 | 370.3 |
| 52.5° | 706.4 | 639.3 | 549.2 | 506.0 | 471.7 | 459.0 | 443.4 | 430.0 | 416.5 | 406.1 | 412.1 |
| 55°   | 757.1 | 688.5 | 602.8 | 561.1 | 537.3 | 525.3 | 496.3 | 478.4 | 458.3 | 443.4 | 451.6 |
| 57.5° | 782.4 | 707.9 | 628.2 | 596.9 | 590.2 | 579.0 | 557.4 | 526.8 | 503.7 | 485.1 | 486.6 |
| 60°   | 796.6 | 718.3 | 641.6 | 613.3 | 609.5 | 617.0 | 605.8 | 584.9 | 549.2 | 530.6 | 528.3 |
| 62.5° | 851.0 | 769.0 | 679.6 | 639.3 | 631.1 | 636.4 | 639.3 | 626.7 | 596.9 | 572.3 | 565.6 |
| 65°   | 862.1 | 775.0 | 687.0 | 661.0 | 661.7 | 663.2 | 665.4 | 652.0 | 637.1 | 606.6 | 600.6 |
| 67.5° | 828.6 | 742.9 | 664.7 | 643.1 | 644.6 | 661.7 | 675.1 | 674.4 | 658.0 | 631.9 | 629.7 |
| 70°   | 777.9 | 694.5 | 622.2 | 602.8 | 606.6 | 622.2 | 651.3 | 666.2 | 663.2 | 646.1 | 649.8 |
| 72.5° | 699.0 | 624.4 | 561.1 | 546.2 | 555.1 | 570.0 | 597.6 | 624.4 | 640.1 | 643.8 | 652.0 |
| 75°   | 606.6 | 546.9 | 487.3 | 478.4 | 485.1 | 502.2 | 527.6 | 558.9 | 593.1 | 611.8 | 617.0 |
| 77.5° | 500.7 | 446.3 | 402.4 | 396.4 | 406.1 | 421.8 | 447.1 | 471.7 | 510.4 | 543.2 | 550.7 |
| 80°   | 392.0 | 345.0 | 313.7 | 308.5 | 314.5 | 327.9 | 347.2 | 367.4 | 404.6 | 430.0 | 433.7 |
| 82.5° | 272.0 | 243.7 | 223.5 | 220.6 | 224.3 | 229.5 | 245.2 | 263.8 | 284.7 | 304.8 | 307.0 |
| 85°   | 158.0 | 140.1 | 134.9 | 130.4 | 138.6 | 138.6 | 142.3 | 152.8 | 163.2 | 164.7 | 169.2 |
| 87.5° | 29.1  | 27.6  | 28.3  | 20.9  | 26.1  | 18.6  | 18.6  | 23.8  | 17.9  | 20.9  | 17.1  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)