

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: P821320

Luminaire Tested: **TT-D4-740-24VDC-WQ-UPL**

Issue Date: 7/23/2020

Test Information

Test Method: LM-79-08
Report Number: P821320
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G2-2002-677-1) AND
Test Lab: INNOVATION CENTER
Issue Date: 7/23/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D4-740-24VDC-WQ-UPL
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
4000K, 70 CRI LEDS AND WIDE DISTRIBUTION
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

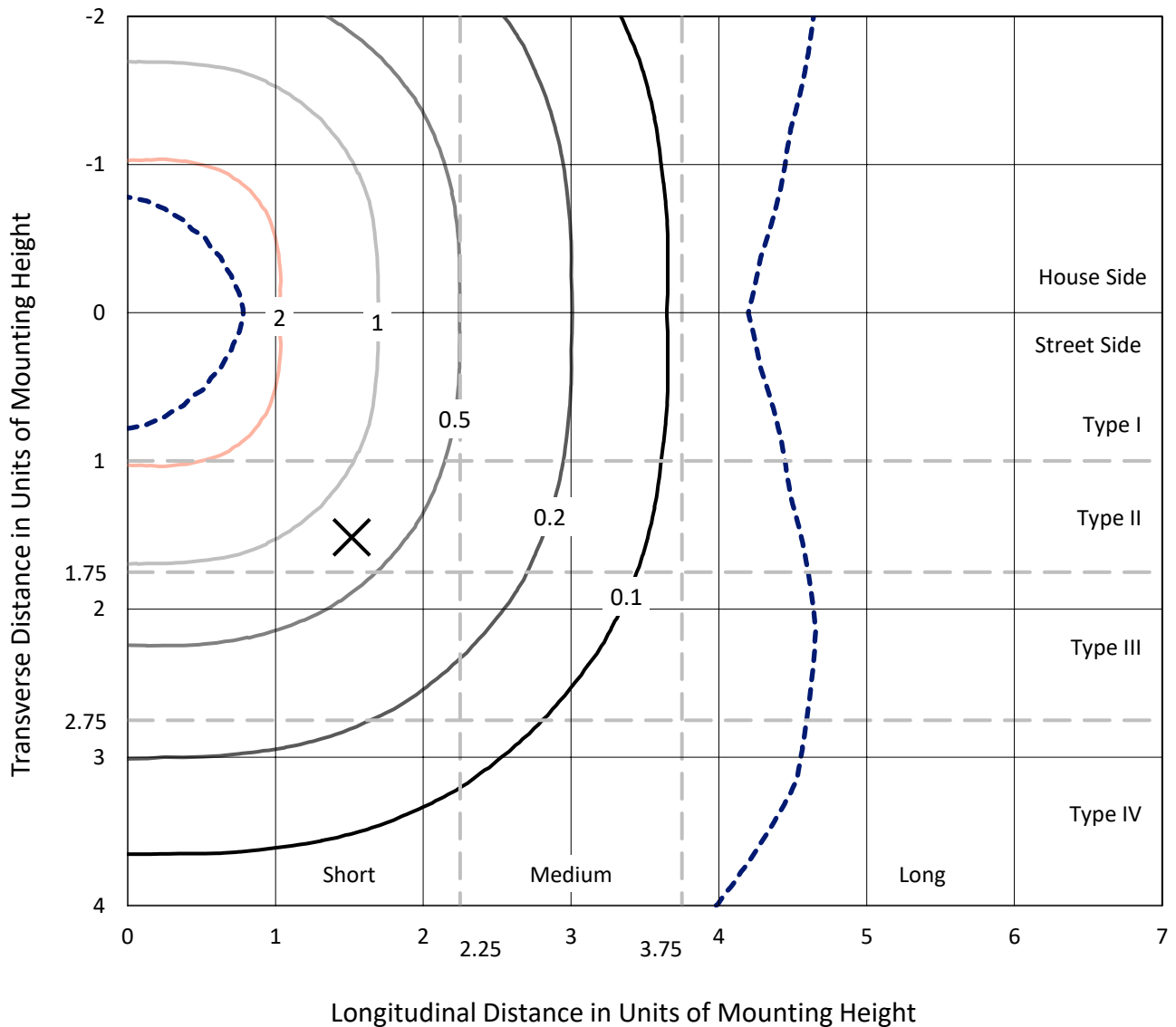
Lumens per Lamp: N/A
Luminaire Lumens: 8458.7 lumens
Efficiency: N/A
Efficacy: 148.4 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')
IES Classification: Type V - Short
BUG Rating: B3 - U4 - G2

Input Watts (W): 57
Input Voltage (V): NR
Input Current (A_{in}): 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

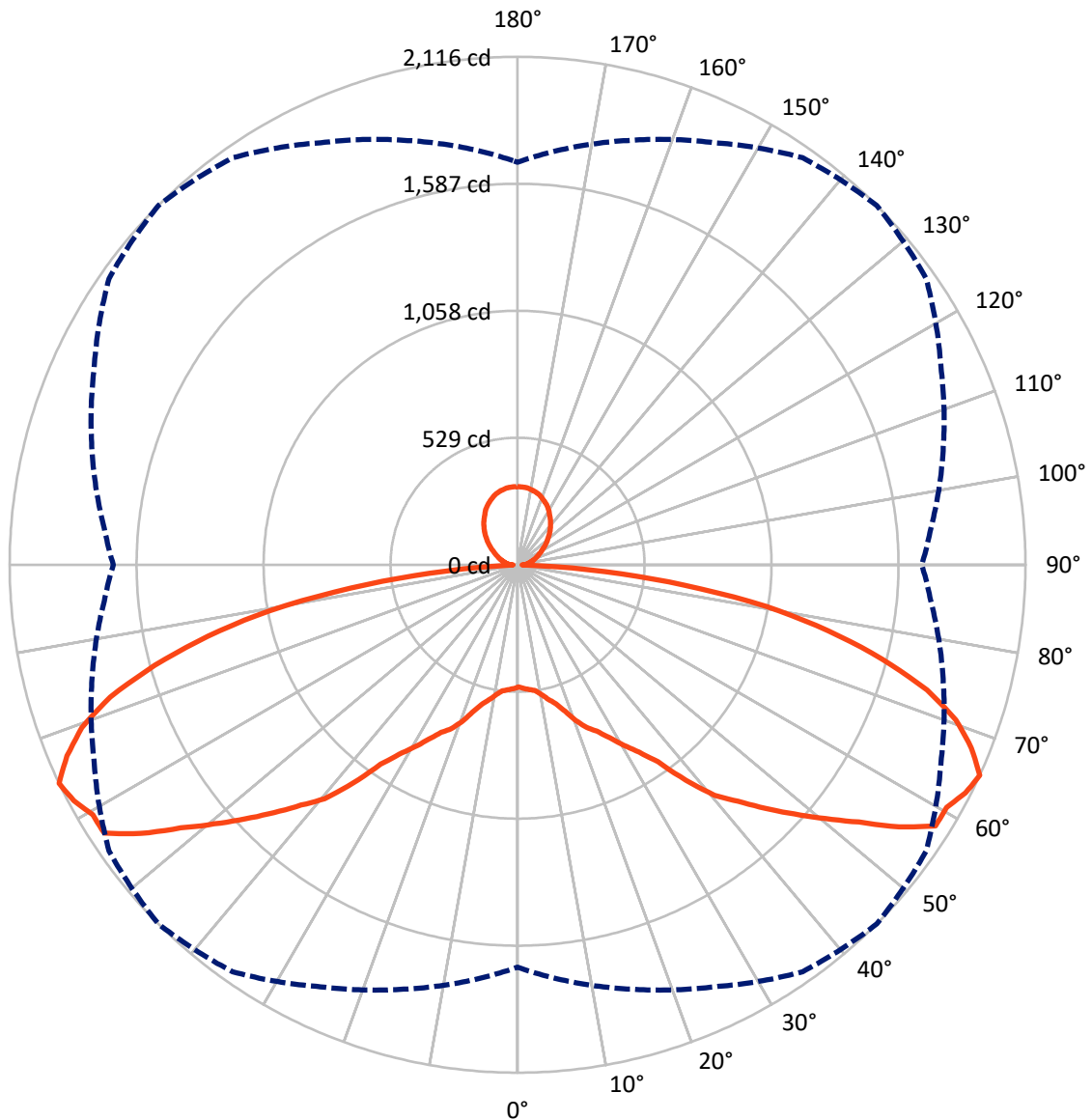
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 2.6 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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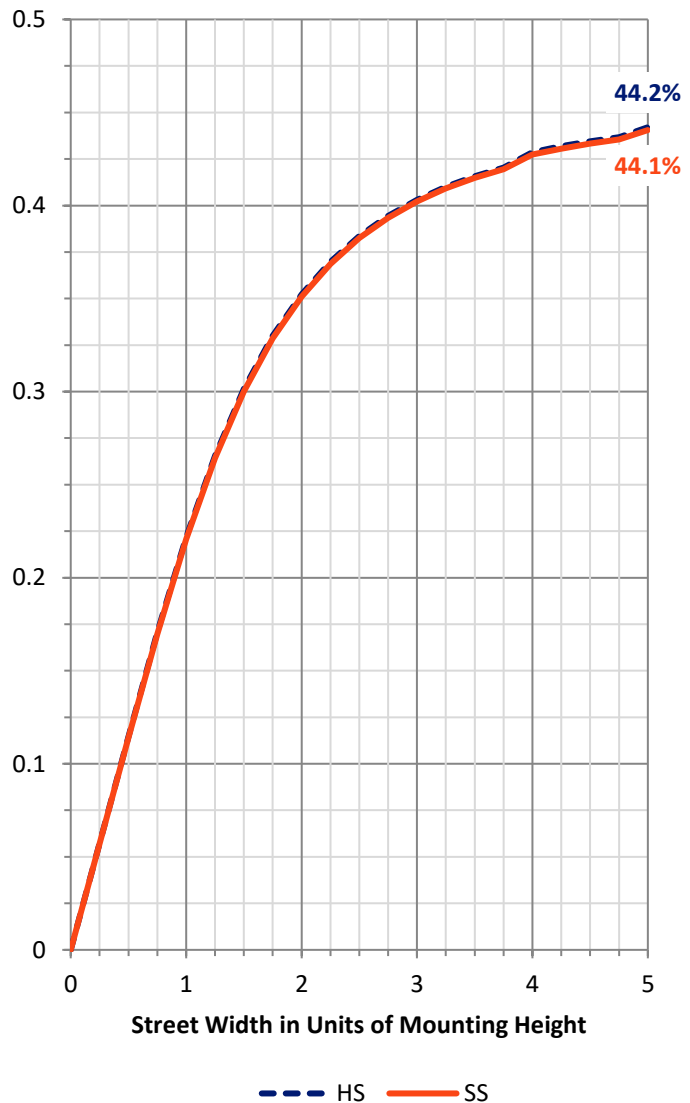
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 3786.6 | 442.7 | 4229.4 |
| | % Fixture | 44.8 | 5.2 | 50.0 |
| Street Side | Lumens | 3786.6 | 442.7 | 4229.4 |
| | % Fixture | 44.8 | 5.2 | 50.0 |
| Total | Lumens | 7573.3 | 885.5 | 8458.7 |
| | % Fixture | 89.5 | 10.5 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 50.8 | 0.6 |
| 10°-20° | 174.7 | 2.1 |
| 20°-30° | 358.8 | 4.2 |
| 30°-40° | 637.4 | 7.5 |
| 40°-50° | 1074.4 | 12.7 |
| 50°-60° | 1584.9 | 18.7 |
| 60°-70° | 1860.1 | 22.0 |
| 70°-80° | 1449.1 | 17.1 |
| 80°-90° | 383.1 | 4.5 |
| 90°-100° | 45.4 | 0.5 |
| 100°-110° | 70.3 | 0.8 |
| 110°-120° | 97.7 | 1.2 |
| 120°-130° | 126.6 | 1.5 |
| 130°-140° | 147.6 | 1.7 |
| 140°-150° | 149.5 | 1.8 |
| 150°-160° | 129.8 | 1.5 |
| 160°-170° | 87.7 | 1.0 |
| 170°-180° | 30.8 | 0.4 |
| 0°-90° | 7573.3 | 89.5 |
| 0°-180° | 8458.7 | 100.0 |

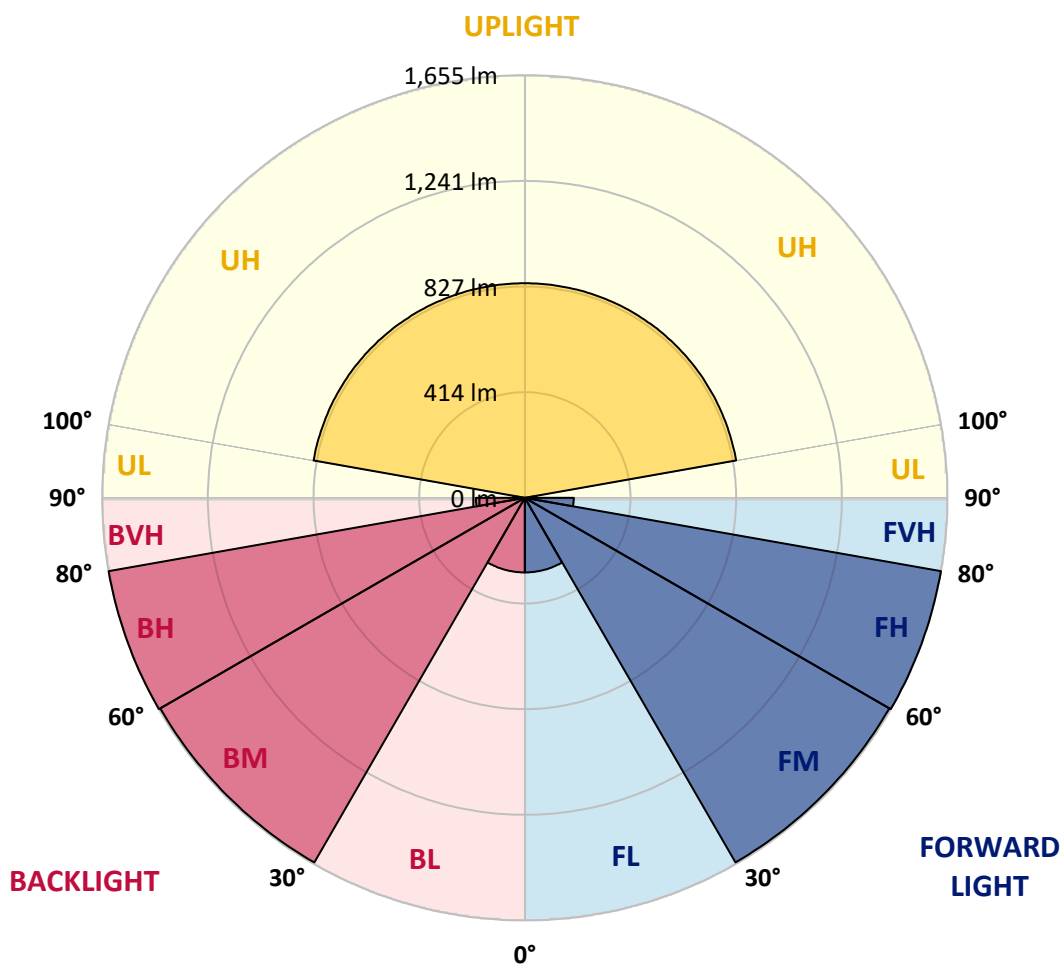


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|---------|---------|
| | | | B | U | G |
| FL (0°-30°) | 292.1 | 3.5 | | | |
| FM (30°-60°) | 1648.3 | 19.5 | | | |
| FH (60°-80°) | 1654.6 | 19.6 | | | G1/1800 |
| FVH (80°-90°) | 191.6 | 2.3 | | | G2/225 |
| BL (0°-30°) | 292.1 | 3.5 | B1/500 | | |
| BM (30°-60°) | 1648.3 | 19.5 | B2/2500 | | |
| BH (60°-80°) | 1654.6 | 19.6 | B3/2500 | | G1/1800 |
| BVH (80°-90°) | 191.6 | 2.3 | | | G2/225 |
| UL (90°-100°) | 45.4 | 0.5 | | U2/50 | |
| UH (100°-180°) | 840.1 | 9.9 | | U4/1000 | |

BUG Rating: B3-U4-G2
 Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 | 509.4 |
| 2.5° | 517.7 | 517.7 | 517.7 | 516.6 | 516.6 | 516.6 | 516.6 | 517.7 | 517.7 | 517.7 | 517.7 |
| 5° | 529.7 | 529.7 | 527.3 | 524.9 | 522.5 | 522.5 | 523.7 | 524.9 | 526.1 | 528.5 | 528.5 |
| 7.5° | 536.8 | 536.8 | 535.6 | 533.2 | 529.7 | 529.7 | 530.8 | 533.2 | 534.4 | 534.4 | 533.2 |
| 10° | 546.3 | 547.5 | 551.1 | 552.3 | 549.9 | 549.9 | 551.1 | 552.3 | 549.9 | 546.3 | 546.3 |
| 12.5° | 568.9 | 570.1 | 574.9 | 578.5 | 578.5 | 576.1 | 577.3 | 579.6 | 573.7 | 567.7 | 568.9 |
| 15° | 601.1 | 601.1 | 602.3 | 605.8 | 603.4 | 601.1 | 603.4 | 604.6 | 601.1 | 599.9 | 602.3 |
| 17.5° | 643.9 | 643.9 | 636.8 | 642.7 | 643.9 | 642.7 | 645.1 | 639.2 | 635.6 | 640.3 | 642.7 |
| 20° | 690.3 | 685.6 | 682.0 | 686.8 | 696.3 | 692.7 | 697.5 | 684.4 | 680.8 | 683.2 | 684.4 |
| 22.5° | 720.1 | 723.7 | 726.0 | 728.4 | 741.5 | 736.8 | 741.5 | 727.2 | 724.8 | 720.1 | 716.5 |
| 25° | 755.8 | 759.4 | 773.6 | 766.5 | 774.8 | 767.7 | 773.6 | 765.3 | 770.1 | 755.8 | 755.8 |
| 27.5° | 796.3 | 803.4 | 811.7 | 808.2 | 818.9 | 815.3 | 818.9 | 807.0 | 808.2 | 802.2 | 799.8 |
| 30° | 851.0 | 851.0 | 848.6 | 855.8 | 874.8 | 872.4 | 873.6 | 858.2 | 847.4 | 848.6 | 853.4 |
| 32.5° | 905.8 | 898.6 | 902.2 | 923.6 | 935.5 | 930.8 | 933.1 | 926.0 | 902.2 | 897.4 | 901.0 |
| 35° | 956.9 | 967.7 | 976.0 | 993.8 | 1010.5 | 1008.1 | 1006.9 | 995.0 | 979.6 | 960.5 | 954.6 |
| 37.5° | 1036.7 | 1048.6 | 1071.2 | 1103.3 | 1133.1 | 1139.0 | 1123.6 | 1108.1 | 1072.4 | 1045.0 | 1030.7 |
| 40° | 1141.4 | 1142.6 | 1168.8 | 1230.7 | 1258.1 | 1262.8 | 1254.5 | 1228.3 | 1173.6 | 1142.6 | 1141.4 |
| 42.5° | 1233.1 | 1224.7 | 1267.6 | 1320.0 | 1345.0 | 1347.3 | 1341.4 | 1320.0 | 1267.6 | 1223.6 | 1231.9 |
| 45° | 1304.5 | 1304.5 | 1355.7 | 1397.3 | 1437.8 | 1447.3 | 1436.6 | 1391.4 | 1356.9 | 1305.7 | 1302.1 |
| 47.5° | 1370.0 | 1387.8 | 1430.7 | 1481.8 | 1539.0 | 1552.1 | 1539.0 | 1485.4 | 1427.1 | 1389.0 | 1368.8 |
| 50° | 1448.5 | 1469.9 | 1500.9 | 1580.6 | 1644.9 | 1662.7 | 1643.7 | 1585.4 | 1500.9 | 1468.7 | 1456.8 |
| 52.5° | 1540.2 | 1558.0 | 1606.8 | 1706.8 | 1754.4 | 1780.6 | 1765.1 | 1709.2 | 1609.2 | 1560.4 | 1550.9 |
| 55° | 1649.7 | 1633.0 | 1709.2 | 1805.6 | 1893.7 | 1928.2 | 1897.2 | 1808.0 | 1721.1 | 1633.0 | 1649.7 |
| 57.5° | 1705.6 | 1686.6 | 1793.7 | 1885.3 | 2007.9 | 2053.1 | 2015.1 | 1892.5 | 1793.7 | 1692.5 | 1704.4 |
| 60° | 1710.4 | 1718.7 | 1799.6 | 1949.6 | 2034.1 | 2053.1 | 2041.2 | 1960.3 | 1803.2 | 1725.8 | 1703.2 |
| 62.5° | 1696.1 | 1747.3 | 1816.3 | 1971.0 | 2047.2 | 2093.6 | 2053.1 | 1973.4 | 1823.4 | 1755.6 | 1697.3 |
| 65° | 1677.0 | 1728.2 | 1830.6 | 1940.1 | 2069.8 | 2116.2 | 2078.1 | 1946.0 | 1835.3 | 1728.2 | 1684.2 |
| 67.5° | 1643.7 | 1625.9 | 1752.0 | 1898.4 | 2011.5 | 2038.9 | 2015.1 | 1900.8 | 1750.8 | 1623.5 | 1647.3 |
| 70° | 1537.8 | 1522.3 | 1630.6 | 1791.3 | 1899.6 | 1937.7 | 1909.1 | 1793.7 | 1633.0 | 1525.9 | 1540.2 |
| 72.5° | 1380.7 | 1385.4 | 1490.2 | 1643.7 | 1760.3 | 1784.2 | 1768.7 | 1642.5 | 1496.1 | 1391.4 | 1372.3 |
| 75° | 1197.4 | 1209.3 | 1309.2 | 1448.5 | 1554.4 | 1568.7 | 1553.2 | 1454.5 | 1308.1 | 1216.4 | 1191.4 |
| 77.5° | 984.3 | 1002.2 | 1083.1 | 1222.4 | 1292.6 | 1324.7 | 1299.7 | 1225.9 | 1089.1 | 1006.9 | 981.9 |
| 80° | 762.9 | 768.9 | 826.0 | 937.9 | 1030.7 | 1052.2 | 1028.4 | 941.5 | 833.2 | 771.3 | 753.4 |
| 82.5° | 499.9 | 509.4 | 560.6 | 646.3 | 707.0 | 701.0 | 707.0 | 639.2 | 566.5 | 507.0 | 477.3 |
| 85° | 222.6 | 241.6 | 276.1 | 316.6 | 355.9 | 366.6 | 355.9 | 321.4 | 276.1 | 236.9 | 232.1 |
| 87.5° | 15.5 | 17.9 | 21.4 | 22.6 | 25.0 | 19.0 | 19.0 | 19.0 | 16.7 | 19.0 | 15.5 |
| 90° | 32.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| 92.5° | 37.0 | 37.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| 95° | 42.0 | 42.0 | 42.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 |
| 97.5° | 48.0 | 48.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 |
| 100° | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 | 53.0 |
| 102.5° | 60.0 | 59.0 | 60.0 | 60.0 | 59.0 | 59.0 | 59.0 | 60.0 | 60.0 | 60.0 | 59.0 |
| 105° | 66.0 | 66.0 | 66.0 | 66.0 | 66.0 | 66.0 | 66.0 | 67.0 | 66.0 | 66.0 | 66.0 |
| 107.5° | 73.0 | 73.0 | 73.0 | 74.0 | 74.0 | 74.0 | 74.0 | 74.0 | 73.0 | 74.0 | 73.0 |
| 110° | 80.0 | 80.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 89.0 | 89.0 | 89.0 | 89.0 | 89.0 | 90.0 | 90.0 | 90.0 | 90.0 | 90.0 | 89.0 |
| 115° | 97.0 | 97.0 | 98.0 | 98.0 | 98.0 | 98.0 | 99.0 | 99.0 | 98.0 | 98.0 | 98.0 |
| 117.5° | 107.0 | 107.0 | 107.0 | 107.0 | 107.0 | 108.0 | 108.0 | 108.0 | 108.0 | 108.0 | 107.0 |
| 120° | 117.0 | 117.0 | 117.0 | 118.0 | 118.0 | 118.0 | 119.0 | 119.0 | 118.0 | 118.0 | 118.0 |
| 122.5° | 129.0 | 128.0 | 129.0 | 129.0 | 129.0 | 129.0 | 130.0 | 130.0 | 130.0 | 130.0 | 129.0 |
| 125° | 140.0 | 140.0 | 141.0 | 141.0 | 141.0 | 141.0 | 142.0 | 142.0 | 142.0 | 142.0 | 141.0 |
| 127.5° | 153.0 | 153.0 | 153.0 | 153.0 | 153.0 | 154.0 | 154.0 | 154.0 | 154.0 | 154.0 | 154.0 |
| 130° | 165.0 | 165.0 | 166.0 | 166.0 | 166.0 | 166.0 | 167.0 | 167.0 | 167.0 | 167.0 | 166.0 |
| 132.5° | 179.0 | 178.0 | 179.0 | 178.0 | 178.0 | 179.0 | 179.0 | 180.0 | 179.0 | 180.0 | 179.0 |
| 135° | 191.0 | 191.0 | 191.0 | 191.0 | 191.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 | 192.0 |
| 137.5° | 204.0 | 203.0 | 204.0 | 203.0 | 203.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 |
| 140° | 216.0 | 215.0 | 216.0 | 215.0 | 216.0 | 216.0 | 216.0 | 216.0 | 216.0 | 216.0 | 216.0 |
| 142.5° | 228.0 | 227.0 | 228.0 | 227.0 | 227.0 | 228.0 | 228.0 | 228.0 | 228.0 | 228.0 | 228.0 |
| 145° | 239.0 | 239.0 | 239.0 | 238.0 | 239.0 | 239.0 | 239.0 | 239.0 | 239.0 | 239.0 | 239.0 |
| 147.5° | 250.0 | 249.0 | 250.0 | 249.0 | 249.0 | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 | 250.0 |
| 150° | 263.0 | 262.0 | 263.0 | 262.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 | 263.0 |
| 152.5° | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 | 273.0 |
| 155° | 282.0 | 282.0 | 283.0 | 282.0 | 282.0 | 282.0 | 283.0 | 282.0 | 282.0 | 282.0 | 282.0 |
| 157.5° | 290.0 | 290.0 | 290.0 | 290.0 | 290.0 | 290.0 | 291.0 | 291.0 | 290.0 | 291.0 | 290.0 |
| 160° | 298.0 | 298.0 | 299.0 | 298.0 | 298.0 | 298.0 | 299.0 | 298.0 | 298.0 | 298.0 | 298.0 |
| 162.5° | 306.0 | 305.0 | 306.0 | 305.0 | 306.0 | 306.0 | 306.0 | 306.0 | 306.0 | 306.0 | 306.0 |
| 165° | 311.0 | 311.0 | 312.0 | 311.0 | 311.0 | 311.0 | 312.0 | 311.0 | 311.0 | 311.0 | 311.0 |
| 167.5° | 316.0 | 315.0 | 316.0 | 316.0 | 316.0 | 316.0 | 316.0 | 316.0 | 316.0 | 316.0 | 316.0 |
| 170° | 319.0 | 319.0 | 320.0 | 319.0 | 319.0 | 319.0 | 320.0 | 319.0 | 319.0 | 319.0 | 319.0 |
| 172.5° | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 | 323.0 |
| 175° | 324.0 | 324.0 | 325.0 | 324.0 | 325.0 | 324.0 | 325.0 | 324.0 | 324.0 | 324.0 | 324.0 |
| 177.5° | 325.0 | 325.0 | 326.0 | 325.0 | 325.0 | 325.0 | 325.0 | 325.0 | 325.0 | 325.0 | 325.0 |
| 180° | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 | 326.0 |

(END OF REPORT)