

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: LUMARK

Report Number: P197283

Luminaire Tested: **NAV-AF-03-D-UNV-T3R-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197283
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-T3R-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9905 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 96
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

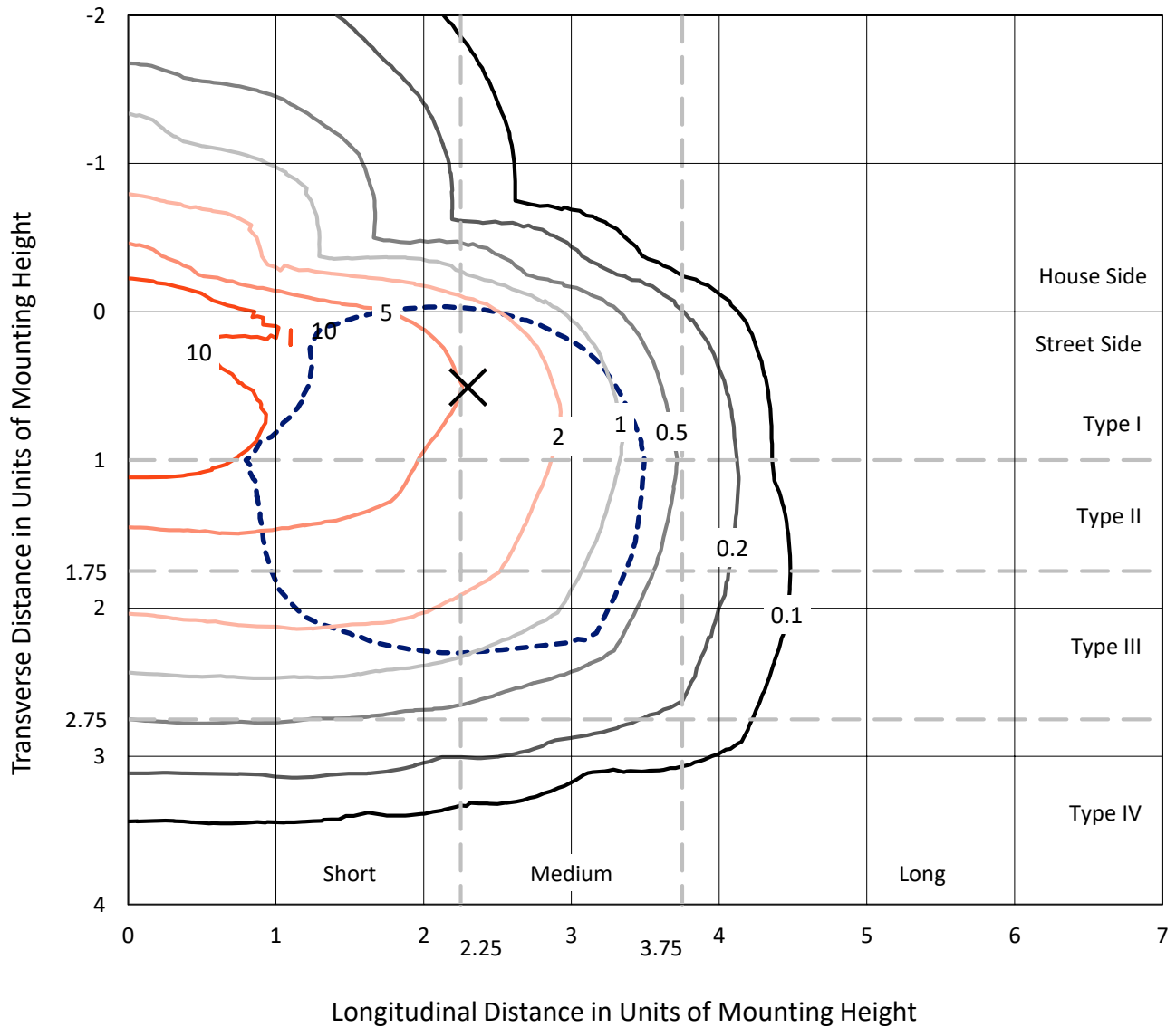


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Iso-Footcandle Lines of Horizontal Illumination

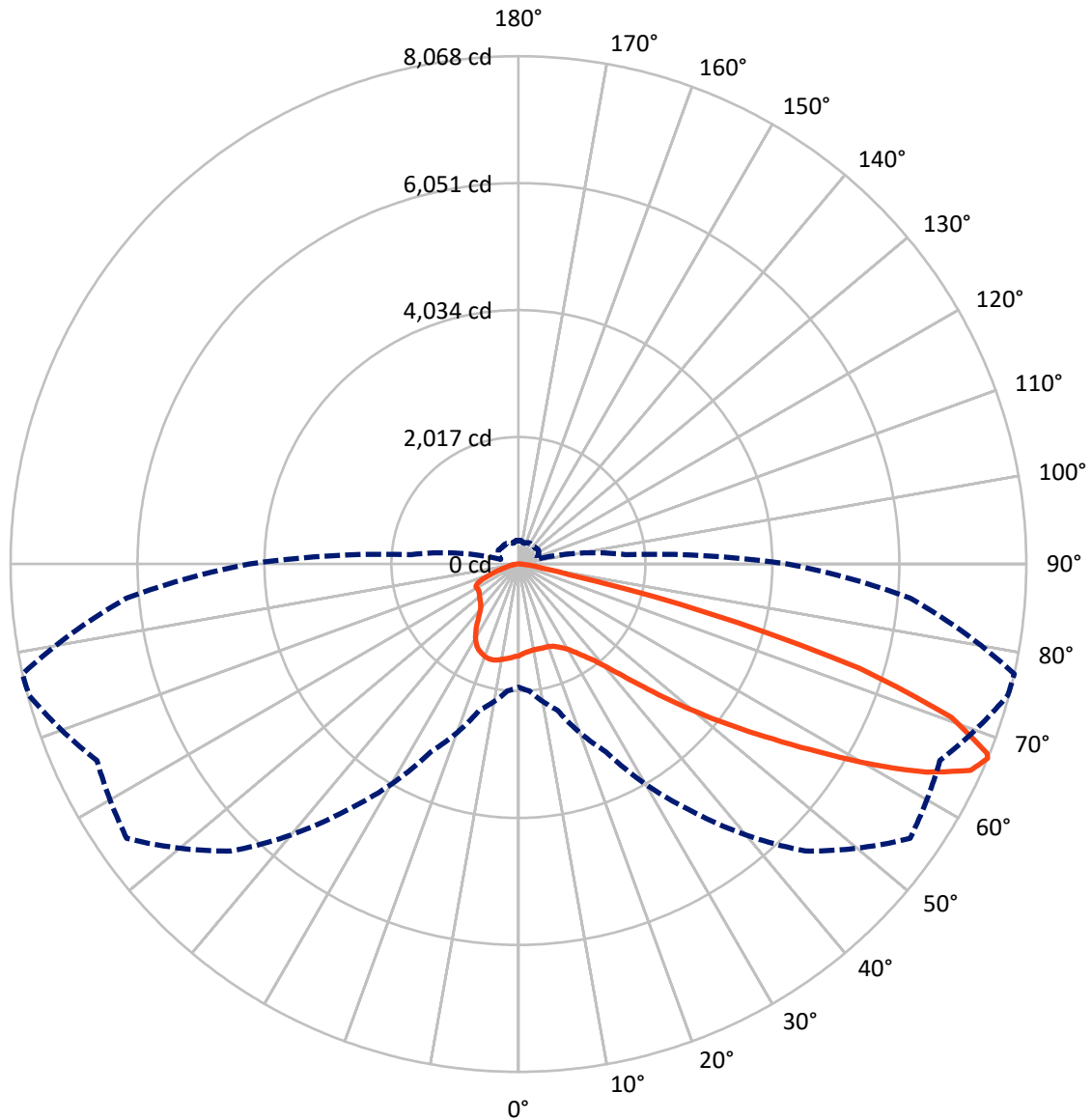
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.5 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1702.2 | 0.0 | 1702.2 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 8202.8 | 0.0 | 8202.8 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 9905.0 | 0.0 | 9905.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 129.8 | 1.3 |
| 10°-20° | 359.6 | 3.6 |
| 20°-30° | 610.9 | 6.2 |
| 30°-40° | 977.3 | 9.9 |
| 40°-50° | 1504.6 | 15.2 |
| 50°-60° | 2087.5 | 21.1 |
| 60°-70° | 2784.6 | 28.1 |
| 70°-80° | 1325.2 | 13.4 |
| 80°-90° | 125.5 | 1.3 |
| 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° | 9905.0 | 100.0 |
| 0°-180° | 9905.0 | 100.0 |



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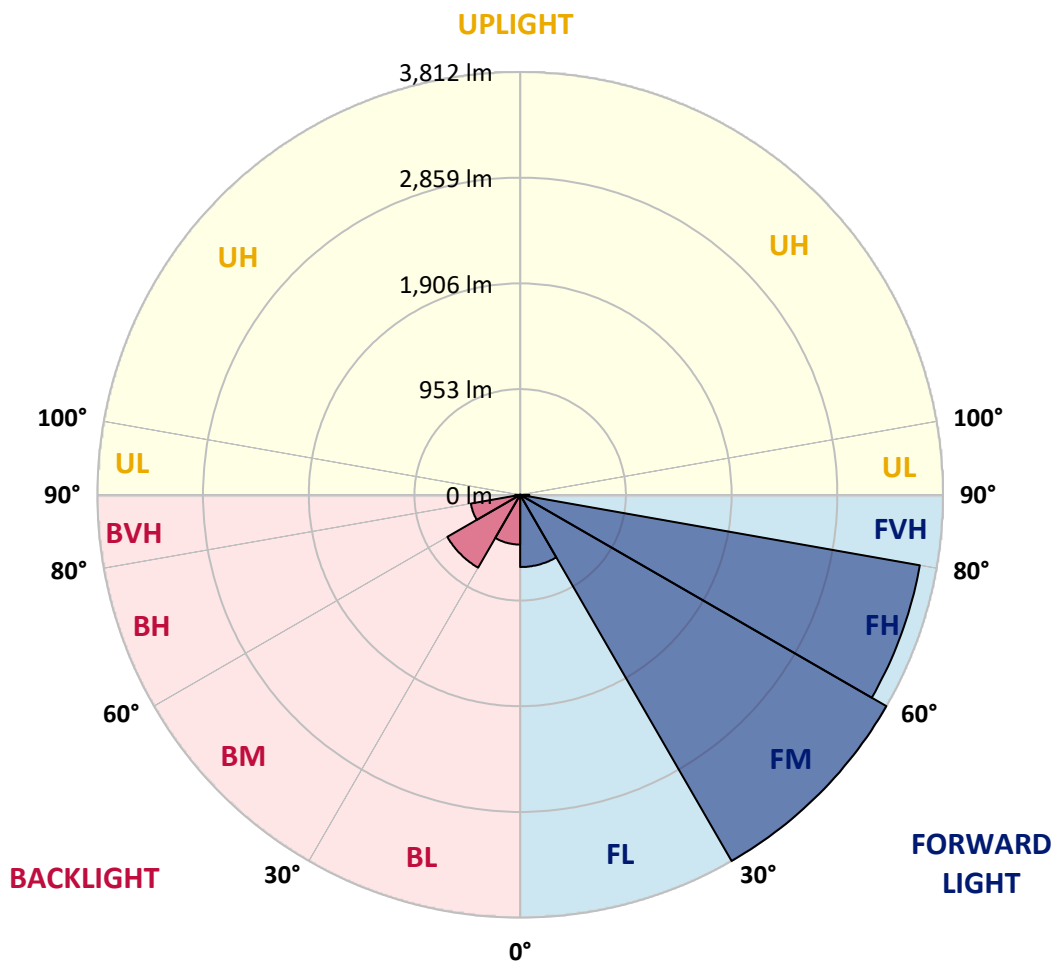
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 651.3 | 6.6 | | | |
| FM | (30°-60°) | 3811.6 | 38.5 | | | |
| FH | (60°-80°) | 3658.4 | 36.9 | | | G2/5000 |
| FVH | (80°-90°) | 81.5 | 0.8 | | | G1/100 |
| BL | (0°-30°) | 449.0 | 4.5 | B1/500 | | |
| BM | (30°-60°) | 757.9 | 7.7 | B1/1000 | | |
| BH | (60°-80°) | 451.3 | 4.6 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 44.0 | 0.4 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77.5° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 |
| 2.5° | 1307.1 | 1313.3 | 1313.9 | 1331.6 | 1339.6 | 1359.8 | 1381.8 | 1401.4 | 1418.6 | 1424.7 | 1435.7 |
| 5° | 1176.1 | 1176.1 | 1178.0 | 1189.6 | 1212.2 | 1244.7 | 1290.6 | 1340.8 | 1393.5 | 1406.3 | 1438.8 |
| 7.5° | 1107.6 | 1108.8 | 1110.0 | 1121.6 | 1139.4 | 1168.2 | 1214.1 | 1282.7 | 1370.2 | 1391.6 | 1448.6 |
| 10° | 1113.7 | 1111.8 | 1105.7 | 1103.3 | 1110.6 | 1129.0 | 1168.8 | 1239.2 | 1350.6 | 1383.7 | 1466.3 |
| 12.5° | 1209.8 | 1206.1 | 1185.9 | 1156.5 | 1129.6 | 1122.9 | 1150.4 | 1217.1 | 1341.4 | 1383.7 | 1496.3 |
| 15° | 1374.5 | 1376.9 | 1337.1 | 1275.9 | 1205.5 | 1157.8 | 1154.1 | 1209.2 | 1338.4 | 1387.3 | 1531.2 |
| 17.5° | 1588.8 | 1590.0 | 1534.9 | 1446.1 | 1329.2 | 1230.6 | 1179.2 | 1209.2 | 1338.4 | 1391.0 | 1564.9 |
| 20° | 1816.5 | 1808.0 | 1745.5 | 1634.1 | 1482.2 | 1331.6 | 1225.1 | 1216.5 | 1342.0 | 1396.5 | 1596.7 |
| 22.5° | 2011.8 | 2003.9 | 1938.4 | 1821.4 | 1647.6 | 1451.0 | 1286.9 | 1241.0 | 1362.2 | 1419.2 | 1641.4 |
| 25° | 2182.7 | 2187.6 | 2123.9 | 1992.2 | 1812.2 | 1585.7 | 1379.4 | 1297.3 | 1404.5 | 1460.2 | 1696.5 |
| 27.5° | 2390.2 | 2381.0 | 2307.6 | 2182.0 | 1981.8 | 1725.3 | 1495.1 | 1368.4 | 1454.7 | 1509.8 | 1763.9 |
| 30° | 2630.2 | 2625.9 | 2526.7 | 2397.6 | 2168.6 | 1881.4 | 1609.6 | 1444.9 | 1520.2 | 1577.8 | 1848.4 |
| 32.5° | 2921.6 | 2921.0 | 2814.5 | 2655.9 | 2378.6 | 2057.8 | 1744.9 | 1549.6 | 1615.7 | 1673.9 | 1960.4 |
| 35° | 3251.6 | 3251.0 | 3140.8 | 2931.4 | 2620.4 | 2253.1 | 1904.1 | 1676.9 | 1733.9 | 1795.1 | 2093.9 |
| 37.5° | 3480.6 | 3476.9 | 3419.4 | 3216.1 | 2888.0 | 2480.2 | 2103.1 | 1848.4 | 1868.0 | 1936.5 | 2254.9 |
| 40° | 3524.7 | 3546.7 | 3596.3 | 3476.3 | 3180.0 | 2732.5 | 2302.7 | 2032.7 | 2051.0 | 2139.2 | 2457.6 |
| 42.5° | 3476.9 | 3505.7 | 3670.4 | 3704.1 | 3472.0 | 3038.0 | 2552.5 | 2288.0 | 2311.2 | 2420.8 | 2695.7 |
| 45° | 3435.3 | 3460.4 | 3666.7 | 3830.2 | 3760.4 | 3371.0 | 2864.1 | 2599.6 | 2643.7 | 2779.6 | 2967.6 |
| 47.5° | 3364.3 | 3387.6 | 3594.5 | 3852.9 | 3925.1 | 3691.8 | 3239.4 | 2974.3 | 3050.2 | 3214.9 | 3277.3 |
| 50° | 3360.6 | 3371.0 | 3495.9 | 3776.9 | 3982.0 | 3935.5 | 3655.1 | 3412.7 | 3529.0 | 3718.8 | 3620.2 |
| 52.5° | 3267.6 | 3340.4 | 3453.7 | 3655.7 | 3983.3 | 4077.6 | 4064.7 | 3893.3 | 4072.7 | 4282.7 | 3996.1 |
| 55° | 2698.2 | 2782.0 | 3312.9 | 3596.3 | 3975.9 | 4199.4 | 4438.8 | 4404.5 | 4684.9 | 4905.9 | 4417.3 |
| 57.5° | 2519.4 | 2554.9 | 2906.3 | 3614.1 | 4037.1 | 4400.8 | 4812.9 | 4953.7 | 5385.3 | 5626.5 | 4922.5 |
| 60° | 2470.4 | 2507.8 | 2824.9 | 3622.7 | 4203.1 | 4767.6 | 5320.4 | 5573.9 | 6208.8 | 6464.7 | 5496.1 |
| 62.5° | 2415.9 | 2464.3 | 2831.0 | 3630.6 | 4494.5 | 5310.0 | 5993.9 | 6246.7 | 7054.3 | 7282.7 | 6033.7 |
| 65° | 2256.7 | 2321.0 | 2717.8 | 3580.4 | 4813.5 | 5990.8 | 6884.1 | 6948.4 | 7752.9 | 7898.0 | 6358.2 |
| 67° | 1954.9 | 2025.3 | 2406.7 | 3290.2 | 4784.1 | 6449.4 | 7596.1 | 7387.4 | 8049.8 | 8067.6 | 6252.9 |
| 67.5° | 1859.4 | 1932.2 | 2301.4 | 3169.6 | 4700.2 | 6509.4 | 7722.2 | 7448.0 | 8047.4 | 8027.8 | 6154.9 |
| 70° | 1252.0 | 1334.1 | 1629.8 | 2327.1 | 3770.2 | 6058.2 | 7691.6 | 7261.2 | 7519.6 | 7294.9 | 5288.0 |
| 72.5° | 621.4 | 623.9 | 813.1 | 1274.7 | 2284.3 | 4345.1 | 6416.3 | 6211.8 | 6095.5 | 5671.2 | 3880.4 |
| 75° | 299.4 | 304.9 | 383.9 | 563.3 | 963.1 | 2243.3 | 4375.7 | 4191.4 | 3568.8 | 3090.0 | 1942.0 |
| 77.5° | 228.4 | 233.9 | 298.2 | 366.7 | 401.6 | 731.6 | 2167.3 | 1751.6 | 1034.1 | 825.9 | 547.3 |
| 80° | 176.3 | 186.7 | 251.6 | 281.6 | 265.7 | 293.3 | 681.4 | 536.3 | 402.2 | 369.2 | 271.2 |
| 82.5° | 137.8 | 143.9 | 213.7 | 213.7 | 183.7 | 196.5 | 317.1 | 309.8 | 249.8 | 225.3 | 145.7 |
| 85° | 97.3 | 109.6 | 172.0 | 159.2 | 120.6 | 121.8 | 189.8 | 181.8 | 128.6 | 103.5 | 56.9 |
| 87.5° | 43.5 | 55.7 | 122.4 | 104.1 | 64.3 | 49.6 | 77.8 | 66.7 | 50.8 | 39.2 | 26.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 | 1457.8 |
| 2.5° | 1448.0 | 1457.8 | 1473.1 | 1482.2 | 1494.5 | 1499.4 | 1504.3 | 1512.9 | 1519.6 | 1517.8 | 1514.7 |
| 5° | 1461.4 | 1478.0 | 1496.9 | 1503.1 | 1503.1 | 1496.9 | 1493.3 | 1493.9 | 1492.0 | 1490.8 | 1487.1 |
| 7.5° | 1481.0 | 1503.7 | 1517.1 | 1511.0 | 1492.0 | 1468.2 | 1445.5 | 1432.0 | 1419.2 | 1411.2 | 1413.7 |
| 10° | 1508.6 | 1533.7 | 1534.3 | 1507.3 | 1462.0 | 1410.0 | 1365.3 | 1336.5 | 1309.0 | 1296.7 | 1300.4 |
| 12.5° | 1548.4 | 1573.5 | 1552.0 | 1493.9 | 1414.3 | 1332.9 | 1250.8 | 1191.4 | 1138.2 | 1125.3 | 1121.6 |
| 15° | 1591.2 | 1610.8 | 1563.1 | 1465.1 | 1345.7 | 1211.6 | 1073.9 | 985.1 | 925.7 | 915.3 | 911.6 |
| 17.5° | 1628.6 | 1639.6 | 1557.6 | 1413.7 | 1237.3 | 1026.1 | 865.7 | 805.7 | 793.5 | 799.6 | 799.6 |
| 20° | 1661.6 | 1658.0 | 1533.7 | 1334.1 | 1066.5 | 820.4 | 727.3 | 726.7 | 743.3 | 758.6 | 759.8 |
| 22.5° | 1703.3 | 1674.5 | 1495.7 | 1215.9 | 862.7 | 684.5 | 668.6 | 684.5 | 702.9 | 720.0 | 721.8 |
| 25° | 1752.9 | 1692.9 | 1444.9 | 1047.6 | 693.7 | 621.4 | 628.2 | 641.6 | 653.3 | 666.7 | 667.3 |
| 27.5° | 1802.4 | 1706.9 | 1373.3 | 849.8 | 601.8 | 581.0 | 588.4 | 593.9 | 596.9 | 605.5 | 605.5 |
| 30° | 1860.0 | 1718.0 | 1269.8 | 680.8 | 559.6 | 545.5 | 541.2 | 538.8 | 541.2 | 552.9 | 553.5 |
| 32.5° | 1932.2 | 1737.6 | 1128.4 | 584.1 | 540.0 | 520.4 | 498.4 | 486.1 | 494.7 | 515.5 | 519.2 |
| 35° | 2014.3 | 1760.8 | 958.8 | 545.5 | 533.3 | 508.2 | 467.8 | 448.8 | 451.8 | 470.8 | 473.9 |
| 37.5° | 2117.1 | 1790.8 | 791.6 | 536.3 | 540.0 | 506.9 | 453.7 | 426.7 | 413.3 | 413.9 | 413.3 |
| 40° | 2248.8 | 1820.8 | 659.4 | 538.8 | 554.7 | 510.0 | 446.9 | 404.7 | 376.5 | 377.8 | 380.2 |
| 42.5° | 2386.5 | 1840.4 | 575.5 | 546.1 | 572.4 | 514.3 | 444.5 | 383.3 | 358.8 | 379.6 | 398.6 |
| 45° | 2547.6 | 1834.9 | 532.0 | 552.9 | 585.9 | 516.1 | 435.3 | 380.8 | 360.6 | 423.1 | 458.6 |
| 47.5° | 2732.5 | 1811.0 | 507.6 | 555.9 | 589.6 | 515.5 | 428.6 | 388.8 | 375.9 | 484.3 | 524.7 |
| 50° | 2933.3 | 1773.7 | 488.0 | 551.0 | 587.8 | 513.1 | 435.9 | 398.6 | 382.0 | 497.8 | 529.0 |
| 52.5° | 3153.1 | 1739.4 | 467.8 | 540.0 | 578.6 | 505.7 | 445.1 | 394.3 | 364.9 | 458.6 | 482.4 |
| 55° | 3413.3 | 1731.4 | 445.1 | 521.0 | 563.3 | 497.8 | 440.2 | 380.8 | 345.9 | 406.5 | 421.2 |
| 57.5° | 3710.8 | 1781.0 | 415.7 | 497.8 | 542.4 | 481.8 | 428.6 | 373.5 | 339.2 | 369.8 | 377.8 |
| 60° | 4088.6 | 1890.6 | 384.5 | 473.3 | 516.7 | 458.0 | 418.2 | 375.3 | 341.0 | 364.3 | 366.1 |
| 62.5° | 4383.7 | 1989.2 | 356.3 | 443.3 | 482.4 | 429.2 | 407.1 | 377.1 | 346.5 | 371.6 | 368.6 |
| 65° | 4490.8 | 1940.8 | 321.4 | 398.6 | 434.1 | 397.3 | 391.8 | 378.4 | 346.5 | 375.9 | 369.2 |
| 67° | 4271.0 | 1710.0 | 288.4 | 353.9 | 388.2 | 369.2 | 377.1 | 373.5 | 340.4 | 375.3 | 363.7 |
| 67.5° | 4166.3 | 1628.6 | 279.8 | 346.5 | 375.9 | 360.6 | 373.5 | 371.0 | 338.6 | 374.1 | 360.6 |
| 70° | 3435.9 | 1168.2 | 236.3 | 290.8 | 314.7 | 317.8 | 350.8 | 355.1 | 323.9 | 351.4 | 326.9 |
| 72.5° | 2444.7 | 731.0 | 203.9 | 225.3 | 254.1 | 271.8 | 320.2 | 333.7 | 304.3 | 305.5 | 285.3 |
| 75° | 1209.8 | 392.4 | 181.8 | 173.9 | 197.8 | 226.5 | 279.2 | 304.3 | 275.5 | 254.7 | 248.0 |
| 77.5° | 408.4 | 222.2 | 153.7 | 140.2 | 153.7 | 181.8 | 231.4 | 265.7 | 243.1 | 215.5 | 211.2 |
| 80° | 211.2 | 161.6 | 120.0 | 112.7 | 121.2 | 140.8 | 181.2 | 221.0 | 207.6 | 208.8 | 172.0 |
| 82.5° | 131.6 | 98.6 | 86.3 | 85.7 | 91.8 | 107.8 | 133.5 | 179.4 | 178.2 | 152.4 | 110.8 |
| 85° | 61.2 | 56.9 | 55.1 | 56.9 | 58.8 | 61.2 | 86.9 | 128.0 | 135.3 | 82.0 | 72.9 |
| 87.5° | 25.7 | 25.1 | 22.0 | 23.9 | 26.3 | 25.7 | 34.9 | 54.5 | 75.9 | 51.4 | 47.1 |
| 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)