

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: P270349

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-7027-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270349
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SL2-7027-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6974.4 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 85
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

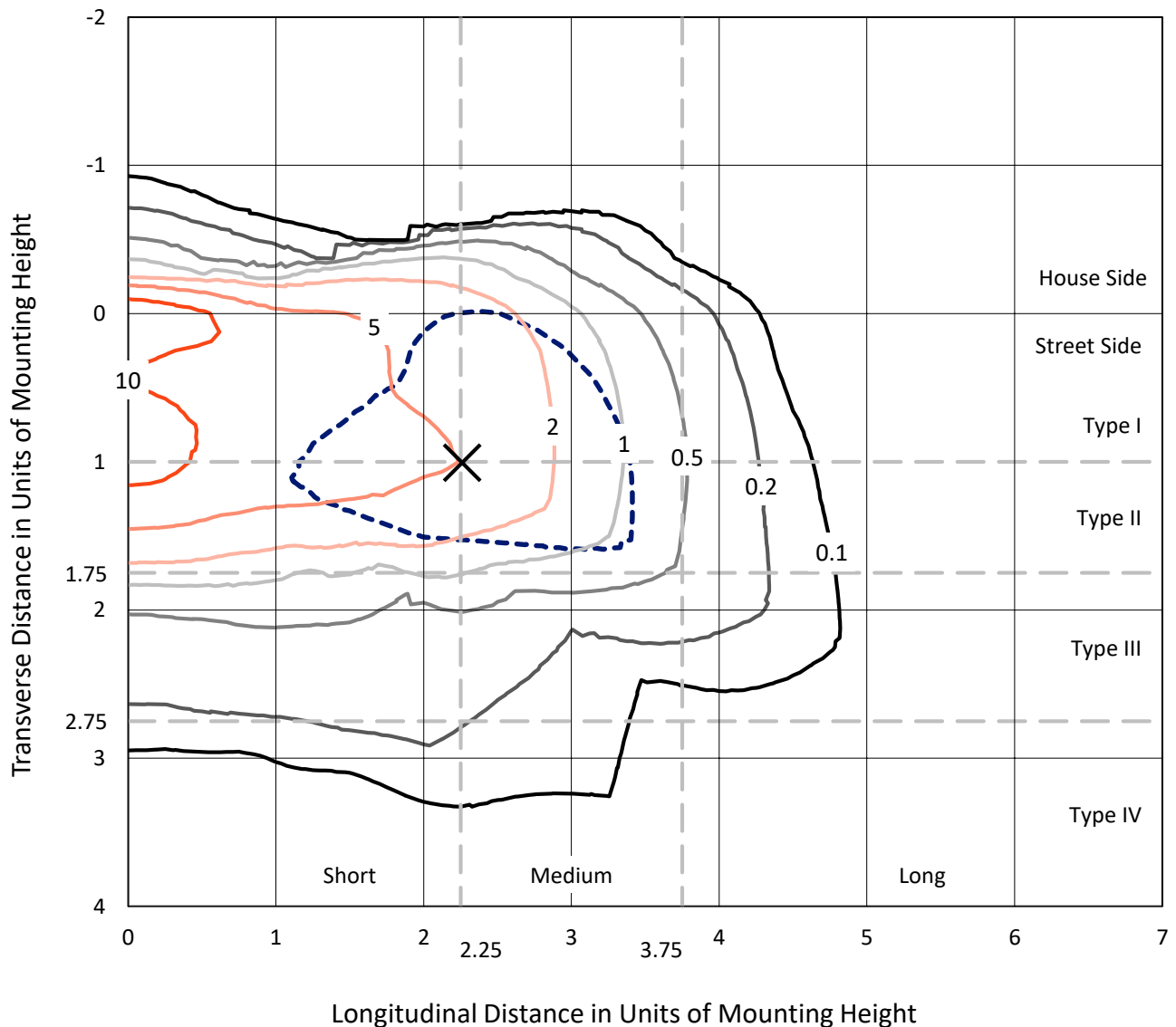


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

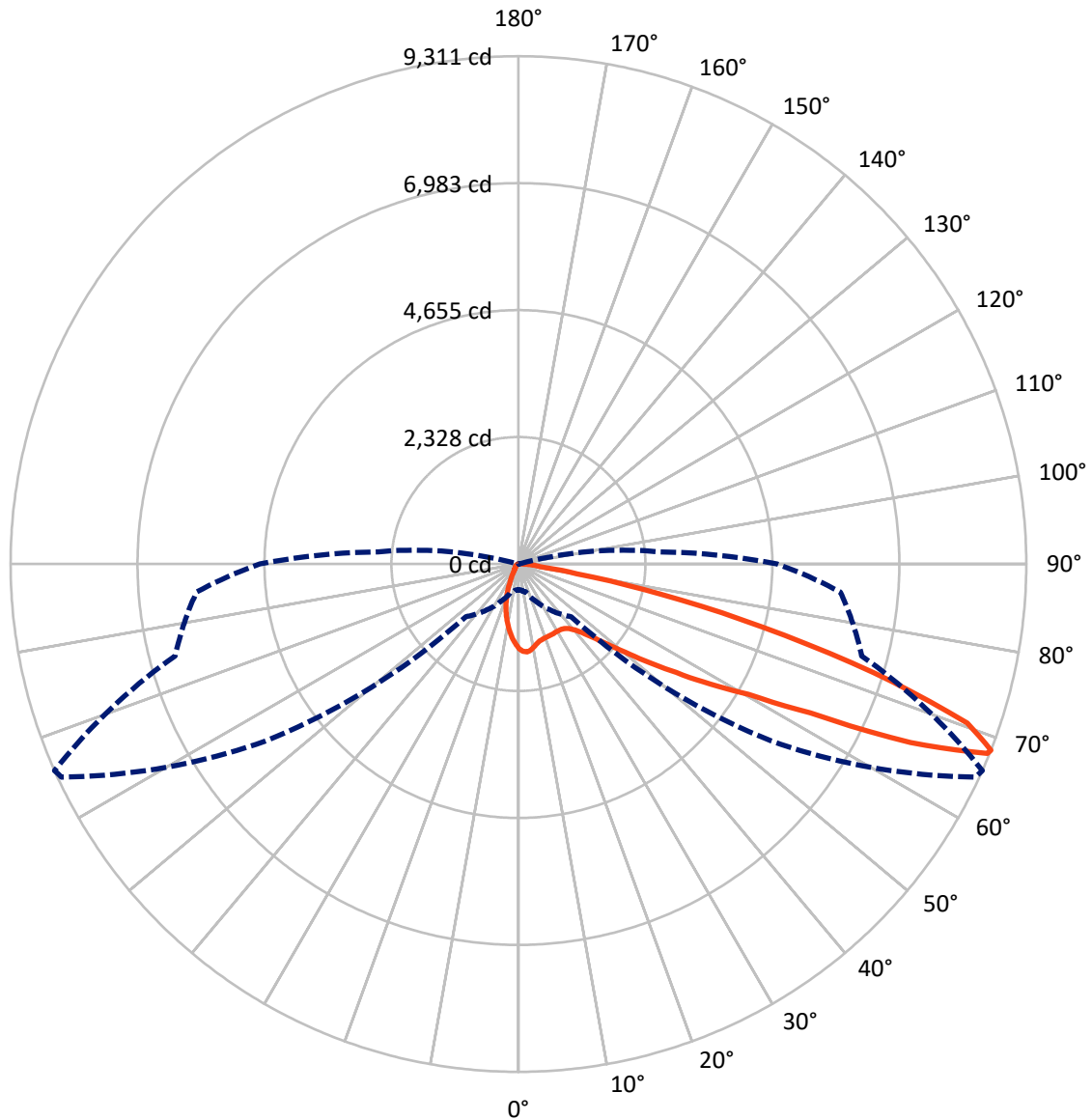


Based on 10 foot mounting height. Maximum calculated value = 15.5 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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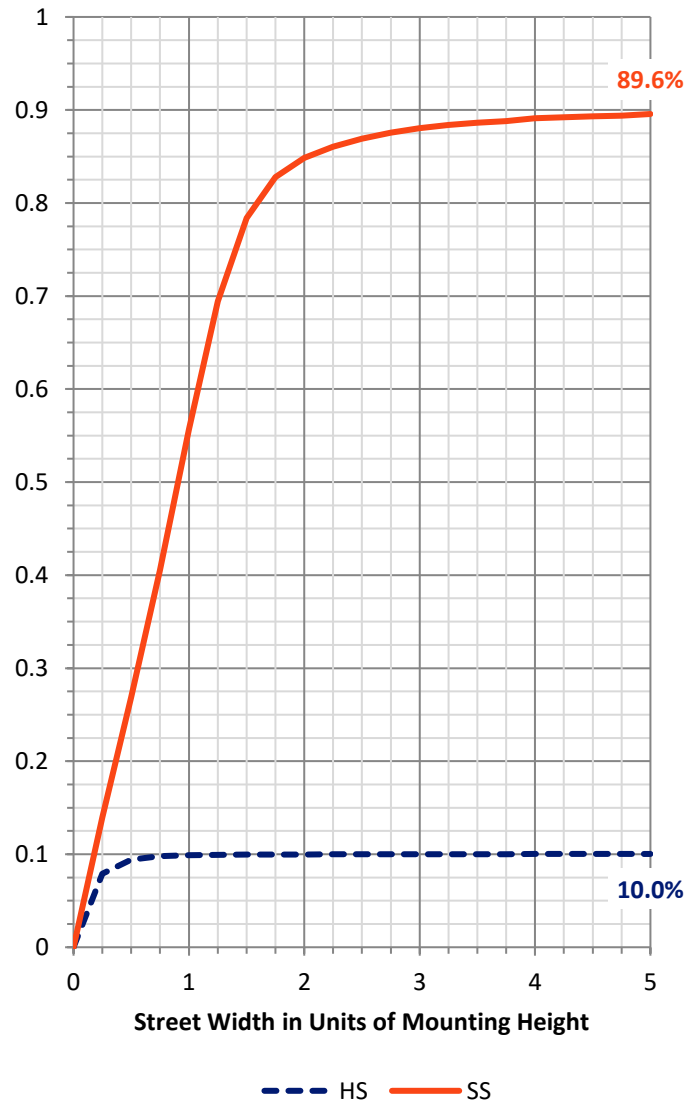
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 706.4 | 0.0 | 706.4 |
| | % Fixture | 10.1 | 0.0 | 10.1 |
| Street Side | Lumens | 6268.0 | 0.0 | 6268.0 |
| | % Fixture | 89.9 | 0.0 | 89.9 |
| Total | Lumens | 6974.4 | 0.0 | 6974.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 127.4 | 1.8 |
| 10°-20° | 274.1 | 3.9 |
| 20°-30° | 397.2 | 5.7 |
| 30°-40° | 608.0 | 8.7 |
| 40°-50° | 1039.9 | 14.9 |
| 50°-60° | 1626.7 | 23.3 |
| 60°-70° | 1873.1 | 26.9 |
| 70°-80° | 937.3 | 13.4 |
| 80°-90° | 90.8 | 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° | 6974.4 | 100.0 |
| 0°-180° | 6974.4 | 100.0 |



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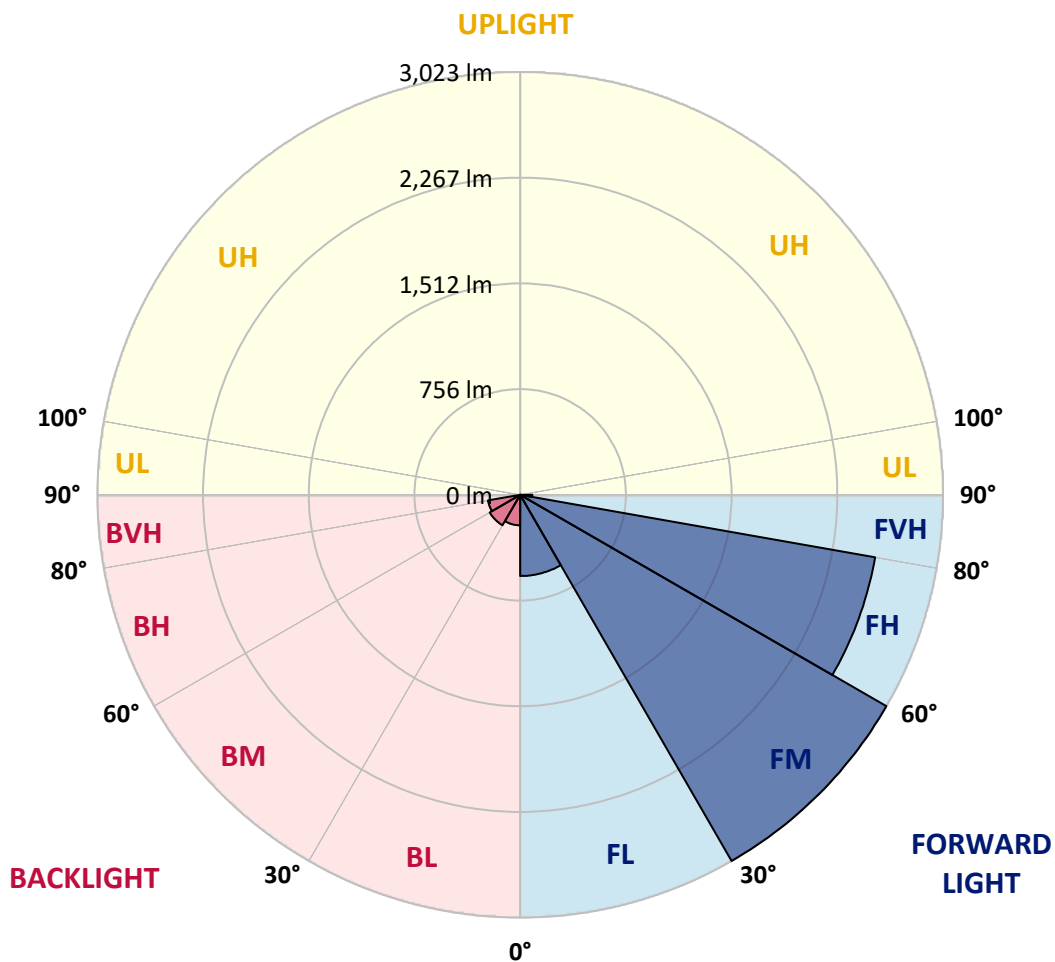
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 580.6 | 8.3 | | | |
| FM (30°-60°) | 3023.0 | 43.3 | | | |
| FH (60°-80°) | 2577.0 | 36.9 | | | G2/5000 |
| FVH (80°-90°) | 87.3 | 1.3 | | | G1/100 |
| BL (0°-30°) | 218.0 | 3.1 | B1/500 | | |
| BM (30°-60°) | 251.6 | 3.6 | B1/1000 | | |
| BH (60°-80°) | 233.4 | 3.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 3.4 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 |
| 2.5° | 1634.3 | 1635.5 | 1634.8 | 1636.5 | 1635.5 | 1627.2 | 1618.4 | 1599.8 | 1601.5 | 1577.3 | 1550.6 |
| 5° | 1519.4 | 1528.6 | 1538.0 | 1547.3 | 1569.7 | 1589.5 | 1612.9 | 1618.4 | 1618.4 | 1597.6 | 1558.2 |
| 7.5° | 1402.2 | 1402.8 | 1413.2 | 1425.7 | 1455.9 | 1491.9 | 1546.7 | 1596.0 | 1597.0 | 1602.5 | 1559.3 |
| 10° | 1314.0 | 1316.7 | 1323.9 | 1337.5 | 1367.7 | 1403.2 | 1464.5 | 1541.9 | 1547.8 | 1588.4 | 1548.4 |
| 12.5° | 1245.6 | 1248.9 | 1256.5 | 1272.4 | 1299.8 | 1336.5 | 1401.0 | 1489.2 | 1497.5 | 1574.5 | 1545.1 |
| 15° | 1192.9 | 1197.4 | 1203.4 | 1219.3 | 1248.9 | 1287.7 | 1358.3 | 1454.1 | 1464.1 | 1569.2 | 1555.4 |
| 17.5° | 1171.1 | 1171.1 | 1170.6 | 1181.5 | 1211.0 | 1250.5 | 1324.5 | 1435.6 | 1448.2 | 1573.6 | 1573.0 |
| 20° | 1180.5 | 1178.8 | 1167.3 | 1164.6 | 1182.6 | 1222.1 | 1297.6 | 1423.5 | 1437.7 | 1581.7 | 1594.3 |
| 22.5° | 1229.7 | 1226.5 | 1200.7 | 1179.4 | 1173.8 | 1200.1 | 1279.5 | 1415.3 | 1432.3 | 1598.8 | 1622.8 |
| 25° | 1334.3 | 1324.5 | 1288.9 | 1240.6 | 1197.4 | 1194.7 | 1266.9 | 1411.0 | 1429.1 | 1618.4 | 1654.0 |
| 27.5° | 1470.0 | 1467.3 | 1410.3 | 1345.8 | 1262.6 | 1212.7 | 1263.0 | 1407.6 | 1425.7 | 1632.7 | 1679.2 |
| 30° | 1638.7 | 1639.8 | 1574.1 | 1489.7 | 1363.8 | 1263.6 | 1275.1 | 1405.9 | 1424.6 | 1633.7 | 1690.3 |
| 32.5° | 1812.8 | 1813.9 | 1759.2 | 1668.8 | 1502.3 | 1351.2 | 1309.1 | 1413.7 | 1430.6 | 1629.3 | 1689.6 |
| 35° | 1980.4 | 1982.0 | 1949.1 | 1876.3 | 1687.5 | 1472.9 | 1373.1 | 1440.0 | 1452.0 | 1632.1 | 1688.5 |
| 37.5° | 2192.3 | 2198.8 | 2158.3 | 2090.4 | 1919.6 | 1651.3 | 1477.7 | 1493.1 | 1503.0 | 1654.6 | 1696.7 |
| 40° | 2553.6 | 2544.8 | 2428.7 | 2313.8 | 2171.5 | 1868.7 | 1628.8 | 1584.5 | 1587.8 | 1712.6 | 1727.9 |
| 42.5° | 2974.6 | 2963.7 | 2765.0 | 2566.7 | 2430.5 | 2130.9 | 1822.1 | 1724.7 | 1724.0 | 1810.1 | 1795.8 |
| 45° | 3337.1 | 3330.5 | 3121.3 | 2856.9 | 2717.4 | 2420.6 | 2060.4 | 1926.7 | 1920.0 | 1978.6 | 1919.6 |
| 47.5° | 3594.4 | 3588.9 | 3430.6 | 3165.6 | 3049.0 | 2739.2 | 2357.6 | 2202.0 | 2188.5 | 2199.3 | 2120.4 |
| 50° | 3619.6 | 3613.5 | 3558.2 | 3388.0 | 3436.7 | 3206.8 | 2725.0 | 2562.9 | 2545.3 | 2528.4 | 2424.3 |
| 52.5° | 3384.2 | 3383.6 | 3412.7 | 3401.7 | 3708.3 | 3808.5 | 3175.6 | 3009.1 | 2988.3 | 2945.1 | 2841.6 |
| 55° | 2903.0 | 2900.2 | 3010.2 | 3170.1 | 3702.3 | 4429.4 | 3862.7 | 3540.2 | 3512.8 | 3426.3 | 3290.5 |
| 57.5° | 2121.1 | 2106.9 | 2336.9 | 2675.7 | 3442.1 | 4700.9 | 4953.9 | 4199.9 | 4154.5 | 3880.1 | 3671.1 |
| 60° | 1171.1 | 1176.6 | 1472.2 | 1873.5 | 2826.2 | 4647.2 | 5958.0 | 4969.2 | 4849.8 | 4271.7 | 4060.9 |
| 62.5° | 656.5 | 670.1 | 890.2 | 1217.7 | 1801.9 | 4212.1 | 6496.7 | 6293.0 | 6005.6 | 4728.3 | 4553.7 |
| 65° | 496.7 | 504.8 | 615.3 | 939.5 | 1136.0 | 2943.3 | 6582.7 | 8144.3 | 7896.2 | 5420.4 | 5338.2 |
| 67.5° | 467.6 | 474.1 | 528.4 | 779.1 | 1034.8 | 1526.5 | 5935.6 | 9239.2 | 9270.4 | 6364.2 | 5945.9 |
| 68° | 470.8 | 479.1 | 533.2 | 749.5 | 1033.1 | 1365.6 | 5659.6 | 9244.6 | 9310.9 | 6516.5 | 5925.1 |
| 70° | 432.5 | 434.7 | 564.0 | 735.4 | 1001.4 | 1075.9 | 4094.3 | 8611.2 | 8730.1 | 6697.8 | 5378.7 |
| 72.5° | 165.4 | 165.8 | 253.0 | 636.8 | 1049.0 | 1081.9 | 2062.5 | 6806.1 | 6812.0 | 5828.8 | 4193.4 |
| 75° | 86.0 | 72.3 | 79.4 | 199.3 | 1001.9 | 1054.5 | 1034.8 | 4647.2 | 4618.2 | 3942.0 | 2569.4 |
| 77.5° | 59.1 | 50.3 | 53.1 | 69.0 | 416.6 | 1053.9 | 747.4 | 2672.4 | 2666.3 | 1677.0 | 733.0 |
| 80° | 33.3 | 29.0 | 31.8 | 58.0 | 146.2 | 989.4 | 696.5 | 1148.7 | 1082.4 | 294.6 | 118.8 |
| 82.5° | 17.0 | 14.3 | 17.0 | 48.7 | 90.9 | 622.5 | 677.2 | 450.6 | 401.4 | 70.1 | 77.3 |
| 85° | 4.4 | 4.4 | 8.3 | 34.0 | 56.5 | 204.3 | 607.2 | 325.2 | 292.4 | 30.6 | 54.7 |
| 87.5° | 1.1 | 0.5 | 3.2 | 12.5 | 20.2 | 44.3 | 336.8 | 181.2 | 156.0 | 15.9 | 31.8 |
| 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° | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 | 1553.8 |
| 2.5° | 1539.5 | 1524.2 | 1494.2 | 1460.3 | 1436.1 | 1409.8 | 1394.4 | 1375.9 | 1361.7 | 1349.1 | 1358.3 |
| 5° | 1534.1 | 1504.5 | 1437.7 | 1362.8 | 1299.8 | 1239.5 | 1194.7 | 1151.9 | 1119.6 | 1099.3 | 1107.6 |
| 7.5° | 1519.9 | 1476.1 | 1367.7 | 1250.5 | 1147.6 | 1050.7 | 971.8 | 901.2 | 846.5 | 816.9 | 826.3 |
| 10° | 1495.8 | 1434.0 | 1288.3 | 1125.7 | 981.7 | 844.8 | 727.6 | 622.5 | 543.1 | 505.8 | 514.6 |
| 12.5° | 1478.3 | 1396.7 | 1206.2 | 1005.3 | 815.8 | 621.4 | 466.0 | 345.5 | 283.7 | 246.3 | 249.6 |
| 15° | 1470.6 | 1367.7 | 1129.4 | 878.3 | 634.6 | 399.1 | 251.9 | 182.4 | 160.9 | 153.3 | 153.9 |
| 17.5° | 1471.8 | 1344.8 | 1056.6 | 746.2 | 451.7 | 229.3 | 154.4 | 139.1 | 135.7 | 134.1 | 134.1 |
| 20° | 1474.5 | 1321.6 | 981.0 | 608.8 | 289.1 | 147.9 | 128.6 | 123.7 | 122.1 | 120.0 | 120.5 |
| 22.5° | 1482.7 | 1304.2 | 905.0 | 470.8 | 178.0 | 120.5 | 113.8 | 109.6 | 106.8 | 103.5 | 104.1 |
| 25° | 1495.3 | 1291.0 | 830.0 | 338.9 | 125.4 | 105.1 | 99.2 | 93.1 | 88.2 | 84.4 | 84.9 |
| 27.5° | 1503.0 | 1272.4 | 750.1 | 231.0 | 104.1 | 91.9 | 83.7 | 75.5 | 70.1 | 66.8 | 66.3 |
| 30° | 1497.5 | 1242.3 | 659.1 | 151.6 | 91.9 | 79.4 | 69.4 | 60.2 | 54.7 | 52.0 | 52.0 |
| 32.5° | 1482.7 | 1203.4 | 559.0 | 110.6 | 81.6 | 68.5 | 56.5 | 48.1 | 44.3 | 42.7 | 43.3 |
| 35° | 1465.7 | 1162.9 | 452.2 | 93.7 | 73.4 | 58.0 | 46.1 | 39.4 | 37.8 | 37.2 | 37.2 |
| 37.5° | 1456.4 | 1127.9 | 349.9 | 84.9 | 65.7 | 48.1 | 37.8 | 34.0 | 32.2 | 32.2 | 32.2 |
| 40° | 1466.8 | 1101.1 | 259.0 | 78.3 | 58.0 | 40.0 | 31.8 | 29.0 | 28.4 | 28.4 | 28.4 |
| 42.5° | 1511.0 | 1091.7 | 189.5 | 72.9 | 50.3 | 33.3 | 27.4 | 25.2 | 24.7 | 25.2 | 25.2 |
| 45° | 1597.6 | 1112.0 | 143.5 | 67.4 | 43.3 | 27.4 | 23.5 | 21.9 | 21.9 | 22.5 | 22.5 |
| 47.5° | 1744.4 | 1164.1 | 117.7 | 61.9 | 36.1 | 22.9 | 20.2 | 19.1 | 19.1 | 19.8 | 19.8 |
| 50° | 1972.0 | 1260.3 | 105.7 | 55.9 | 30.2 | 19.8 | 17.0 | 16.3 | 16.3 | 17.0 | 17.5 |
| 52.5° | 2318.2 | 1443.8 | 99.6 | 49.9 | 24.7 | 16.3 | 14.3 | 13.7 | 14.3 | 14.8 | 14.8 |
| 55° | 2703.1 | 1678.7 | 92.5 | 43.7 | 20.8 | 13.7 | 11.5 | 11.5 | 12.0 | 13.1 | 13.1 |
| 57.5° | 3061.7 | 1905.3 | 86.0 | 36.1 | 18.1 | 11.0 | 9.3 | 9.3 | 10.4 | 11.5 | 11.5 |
| 60° | 3440.6 | 2127.6 | 77.3 | 29.0 | 15.4 | 8.8 | 7.6 | 7.6 | 9.3 | 10.4 | 11.0 |
| 62.5° | 3908.6 | 2386.1 | 65.7 | 22.9 | 12.0 | 6.6 | 5.5 | 7.1 | 8.8 | 10.4 | 10.4 |
| 65° | 4585.4 | 2707.4 | 51.5 | 18.1 | 9.3 | 4.9 | 4.4 | 6.6 | 8.3 | 9.8 | 10.4 |
| 67.5° | 4831.3 | 2666.3 | 38.8 | 14.8 | 7.1 | 3.9 | 3.9 | 6.0 | 8.3 | 9.8 | 9.8 |
| 68° | 4741.4 | 2576.6 | 37.2 | 14.3 | 6.6 | 3.9 | 3.9 | 6.0 | 8.3 | 9.8 | 9.8 |
| 70° | 4131.6 | 2106.3 | 30.6 | 11.0 | 5.5 | 3.2 | 3.2 | 5.5 | 8.3 | 9.3 | 9.8 |
| 72.5° | 3093.5 | 1399.4 | 26.3 | 7.1 | 4.9 | 3.2 | 2.8 | 5.5 | 7.6 | 9.3 | 9.3 |
| 75° | 1774.5 | 580.9 | 22.5 | 5.5 | 4.4 | 2.8 | 2.8 | 4.9 | 7.6 | 9.3 | 9.3 |
| 77.5° | 501.6 | 135.7 | 18.1 | 4.4 | 3.9 | 2.8 | 2.2 | 4.9 | 7.1 | 8.8 | 8.8 |
| 80° | 91.9 | 40.6 | 14.3 | 3.9 | 3.2 | 2.8 | 2.2 | 4.9 | 7.1 | 8.8 | 8.8 |
| 82.5° | 60.7 | 19.1 | 10.4 | 3.9 | 3.2 | 2.8 | 2.2 | 4.4 | 6.6 | 8.3 | 8.3 |
| 85° | 45.5 | 13.7 | 6.6 | 3.9 | 3.2 | 2.8 | 2.2 | 4.4 | 6.6 | 8.3 | 8.3 |
| 87.5° | 25.2 | 6.0 | 4.9 | 4.4 | 3.9 | 2.8 | 2.2 | 3.9 | 6.0 | 7.6 | 7.6 |
| 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)