

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: P195446

Luminaire Tested: **NAV-AF-02-D-UNV-5MQ-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195446  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)  
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-5MQ-7050  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V  
MEDIUM OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12972 lumens  
Efficiency: N/A  
Efficacy: 114.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type V - Short - Full Cutoff  
BUG Rating: B4 - U0 - G2

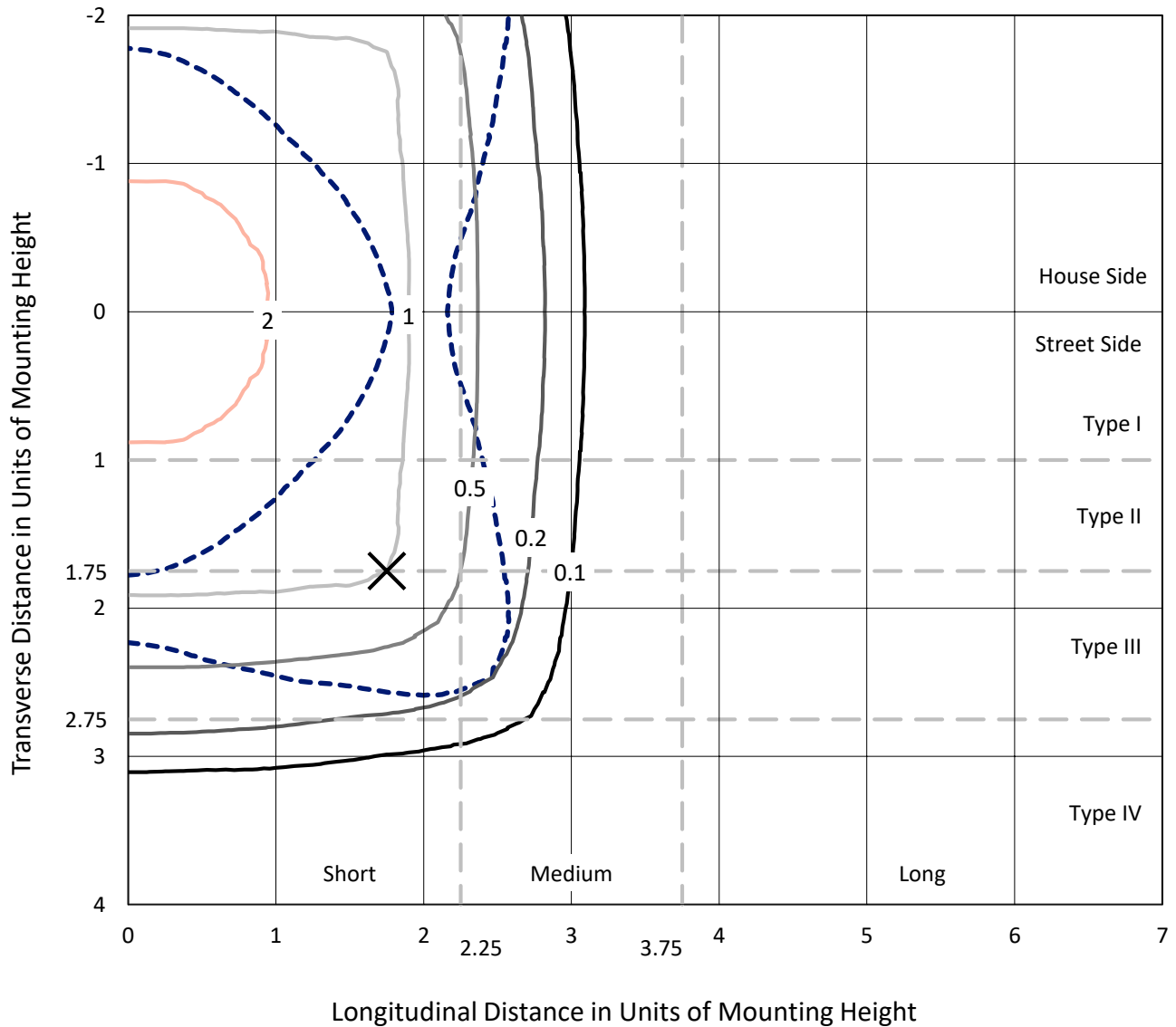
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

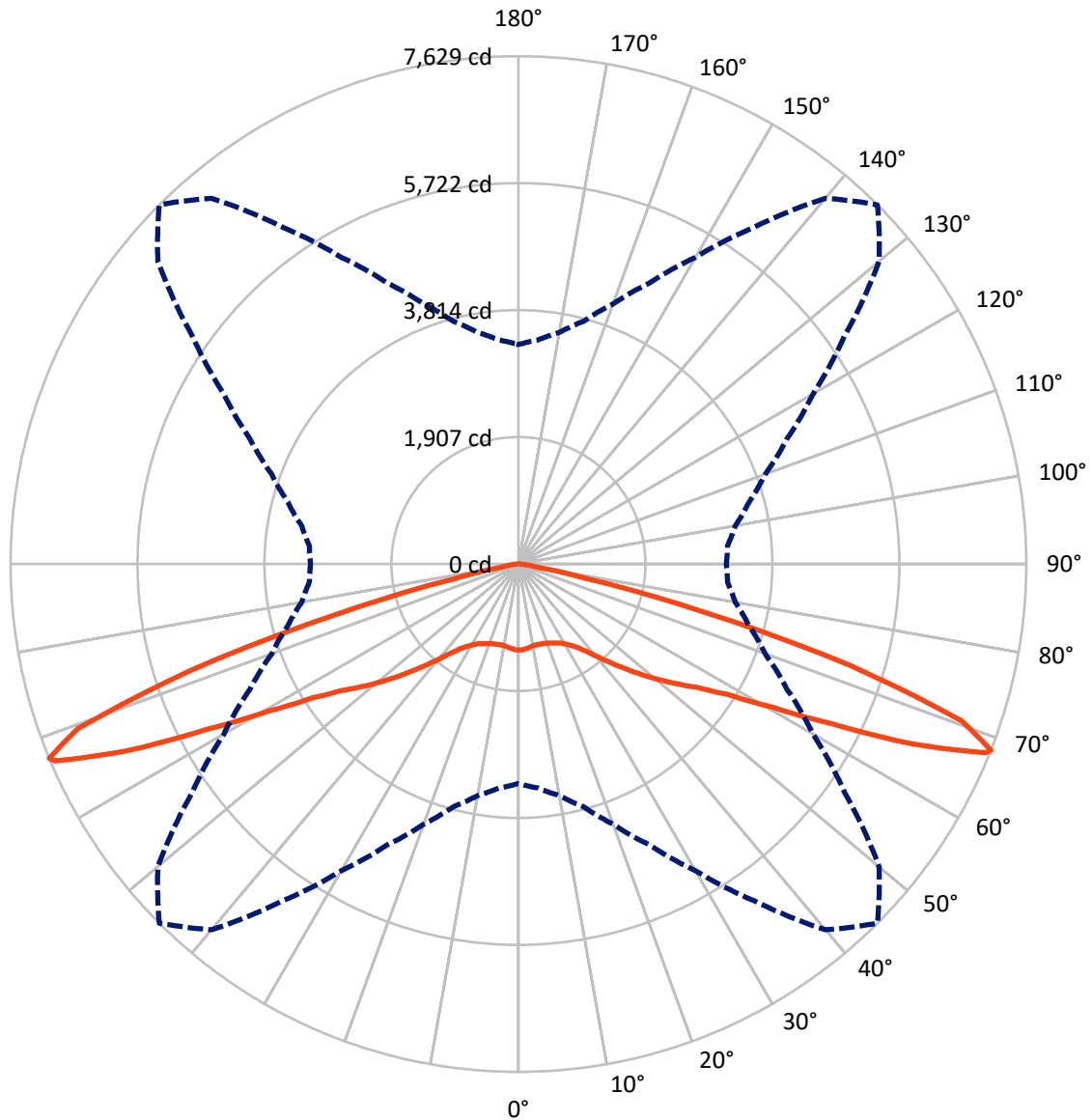


Based on 20 foot mounting height. Maximum calculated value = 3.2 fc  
 Type V - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 6486.0   | 0.0    | 6486.0  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 6486.0   | 0.0    | 6486.0  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 12972.0  | 0.0    | 12972.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 121.1   | 0.9       |
| 10°-20°   | 351.2   | 2.7       |
| 20°-30°   | 597.0   | 4.6       |
| 30°-40°   | 977.0   | 7.5       |
| 40°-50°   | 1746.0  | 13.5      |
| 50°-60°   | 2948.8  | 22.7      |
| 60°-70°   | 4572.4  | 35.2      |
| 70°-80°   | 1572.1  | 12.1      |
| 80°-90°   | 86.4    | 0.7       |
| 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°    | 12972.0 | 100.0     |
| 0°-180°   | 12972.0 | 100.0     |



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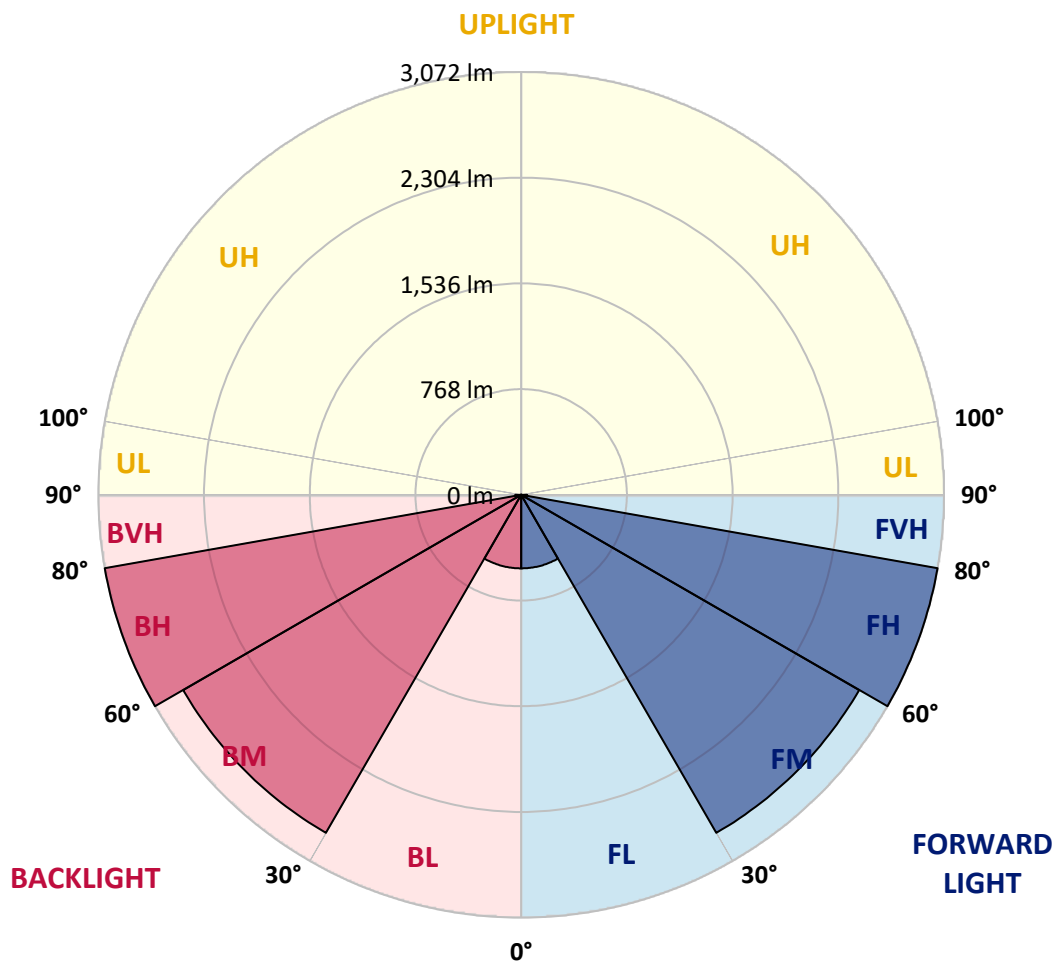
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 534.6  | 4.1       |                         |      |         |
| FM   | (30°-60°)   | 2835.9 | 21.9      |                         |      |         |
| FH   | (60°-80°)   | 3072.3 | 23.7      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 43.2   | 0.3       |                         |      | G1/100  |
| BL   | (0°-30°)    | 534.6  | 4.1       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 2835.9 | 21.9      | B3/5000                 |      |         |
| BH   | (60°-80°)   | 3072.3 | 23.7      | B4/5000                 |      | G2/5000 |
| BVH  | (80°-90°)   | 43.2   | 0.3       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B4-U0-G2**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 25°    | 30°    | 35°    | 40°    | 45°    | 50°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 |
| 2.5°  | 1299.6 | 1299.6 | 1301.1 | 1300.4 | 1298.0 | 1295.6 | 1293.2 | 1290.8 | 1289.2 | 1287.6 | 1286.1 |
| 5°    | 1286.1 | 1286.1 | 1288.4 | 1286.8 | 1285.3 | 1282.9 | 1281.3 | 1278.9 | 1277.3 | 1275.7 | 1276.5 |
| 7.5°  | 1268.6 | 1270.2 | 1271.8 | 1271.0 | 1267.8 | 1267.0 | 1264.6 | 1263.8 | 1262.2 | 1259.8 | 1260.6 |
| 10°   | 1253.5 | 1254.3 | 1255.9 | 1255.1 | 1254.3 | 1251.9 | 1251.1 | 1250.3 | 1249.5 | 1246.3 | 1245.5 |
| 12.5° | 1238.4 | 1240.0 | 1241.6 | 1242.4 | 1241.6 | 1242.4 | 1243.2 | 1244.0 | 1243.2 | 1241.6 | 1241.6 |
| 15°   | 1226.5 | 1228.1 | 1230.4 | 1232.8 | 1233.6 | 1238.4 | 1241.6 | 1244.7 | 1247.1 | 1247.9 | 1245.5 |
| 17.5° | 1220.1 | 1222.5 | 1225.7 | 1230.4 | 1234.4 | 1240.0 | 1245.5 | 1250.3 | 1254.3 | 1255.1 | 1252.7 |
| 20°   | 1219.3 | 1221.7 | 1226.5 | 1232.0 | 1239.2 | 1246.3 | 1255.1 | 1262.2 | 1266.2 | 1268.6 | 1266.2 |
| 22.5° | 1224.9 | 1228.1 | 1234.4 | 1241.6 | 1250.3 | 1259.8 | 1271.0 | 1278.9 | 1286.8 | 1290.0 | 1287.6 |
| 25°   | 1240.8 | 1244.0 | 1251.1 | 1259.8 | 1269.4 | 1281.3 | 1292.4 | 1302.7 | 1310.7 | 1314.6 | 1311.5 |
| 27.5° | 1274.1 | 1274.9 | 1282.9 | 1292.4 | 1303.5 | 1313.9 | 1328.2 | 1332.9 | 1339.3 | 1343.2 | 1339.3 |
| 30°   | 1321.0 | 1322.6 | 1329.7 | 1344.8 | 1355.2 | 1368.7 | 1376.6 | 1381.4 | 1388.5 | 1392.5 | 1387.7 |
| 32.5° | 1392.5 | 1394.1 | 1400.4 | 1414.7 | 1424.3 | 1434.6 | 1444.1 | 1447.3 | 1454.5 | 1459.2 | 1453.7 |
| 35°   | 1493.4 | 1496.6 | 1502.1 | 1511.6 | 1519.6 | 1527.5 | 1534.7 | 1532.3 | 1537.1 | 1543.4 | 1537.9 |
| 37.5° | 1631.6 | 1630.8 | 1632.4 | 1639.5 | 1647.5 | 1652.2 | 1663.4 | 1657.8 | 1662.6 | 1668.1 | 1665.0 |
| 40°   | 1792.8 | 1792.8 | 1792.1 | 1804.8 | 1807.9 | 1812.7 | 1824.6 | 1817.5 | 1823.8 | 1830.2 | 1824.6 |
| 42.5° | 1976.3 | 1979.5 | 1983.5 | 1993.8 | 2002.6 | 2004.1 | 2009.7 | 2006.5 | 2014.5 | 2020.0 | 2014.5 |
| 45°   | 2187.6 | 2192.4 | 2197.2 | 2221.0 | 2225.0 | 2228.2 | 2232.1 | 2221.8 | 2230.5 | 2235.3 | 2233.7 |
| 47.5° | 2406.9 | 2415.6 | 2425.9 | 2450.6 | 2466.5 | 2473.6 | 2476.8 | 2464.9 | 2465.7 | 2472.8 | 2473.6 |
| 50°   | 2654.7 | 2664.2 | 2674.6 | 2702.4 | 2717.5 | 2730.2 | 2734.2 | 2720.6 | 2722.2 | 2727.8 | 2729.4 |
| 52.5° | 2883.5 | 2894.6 | 2916.9 | 2954.2 | 2975.6 | 2997.9 | 2999.5 | 2982.8 | 2989.9 | 2993.9 | 2990.7 |
| 55°   | 3098.8 | 3113.1 | 3142.4 | 3192.5 | 3231.4 | 3275.1 | 3295.0 | 3276.7 | 3276.7 | 3273.5 | 3271.9 |
| 57.5° | 3349.8 | 3365.7 | 3395.8 | 3453.8 | 3507.8 | 3570.6 | 3624.6 | 3642.9 | 3676.3 | 3687.4 | 3669.9 |
| 60°   | 3727.9 | 3744.6 | 3775.5 | 3851.8 | 3920.1 | 4011.5 | 4100.4 | 4172.7 | 4290.3 | 4353.8 | 4296.6 |
| 62.5° | 4073.4 | 4098.8 | 4171.9 | 4305.4 | 4453.1 | 4622.3 | 4818.5 | 4958.3 | 5172.0 | 5278.5 | 5134.7 |
| 65°   | 3994.8 | 4046.4 | 4189.4 | 4399.1 | 4704.1 | 5071.1 | 5470.7 | 5854.4 | 6296.0 | 6522.4 | 6230.1 |
| 67.5° | 3489.6 | 3533.3 | 3687.4 | 3931.2 | 4311.7 | 4817.7 | 5438.9 | 6233.3 | 7144.4 | 7568.6 | 7051.4 |
| 68°   | 3296.6 | 3378.4 | 3531.7 | 3774.0 | 4157.6 | 4654.9 | 5318.2 | 6176.1 | 7170.6 | 7628.9 | 7070.5 |
| 70°   | 2527.6 | 2557.0 | 2704.0 | 2921.6 | 3335.5 | 3823.2 | 4492.8 | 5470.7 | 6594.7 | 7066.5 | 6492.2 |
| 72.5° | 1201.1 | 1218.5 | 1313.9 | 1528.3 | 1791.3 | 2188.4 | 2779.4 | 3701.7 | 4714.5 | 5205.4 | 4632.6 |
| 75°   | 440.1  | 444.0  | 466.3  | 517.1  | 615.6  | 765.0  | 1048.5 | 1622.1 | 2401.3 | 2863.6 | 2410.9 |
| 77.5° | 237.5  | 238.3  | 247.0  | 259.8  | 277.2  | 297.1  | 340.0  | 456.0  | 735.6  | 1000.9 | 776.9  |
| 80°   | 149.3  | 148.5  | 157.3  | 167.6  | 179.5  | 189.1  | 193.0  | 206.5  | 232.7  | 272.5  | 250.2  |
| 82.5° | 76.3   | 83.4   | 103.3  | 114.4  | 131.9  | 135.0  | 131.1  | 130.3  | 138.2  | 149.3  | 154.1  |
| 85°   | 42.1   | 37.3   | 54.8   | 73.1   | 79.4   | 81.8   | 82.6   | 77.8   | 76.3   | 74.7   | 78.6   |
| 87.5° | 21.4   | 19.9   | 23.8   | 36.5   | 38.9   | 31.8   | 32.6   | 27.8   | 19.1   | 19.1   | 19.9   |
| 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):**

|       | 55°    | 60°    | 65°    | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 | 1294.0 |
| 2.5°  | 1284.5 | 1285.3 | 1283.7 | 1283.7 | 1283.7 | 1284.5 | 1283.7 | 1282.9 |
| 5°    | 1274.1 | 1275.7 | 1275.7 | 1276.5 | 1277.3 | 1277.3 | 1277.3 | 1277.3 |
| 7.5°  | 1259.0 | 1259.8 | 1261.4 | 1261.4 | 1261.4 | 1261.4 | 1261.4 | 1261.4 |
| 10°   | 1244.7 | 1243.2 | 1242.4 | 1240.8 | 1240.8 | 1238.4 | 1239.2 | 1240.0 |
| 12.5° | 1237.6 | 1234.4 | 1232.8 | 1230.4 | 1228.9 | 1226.5 | 1226.5 | 1227.3 |
| 15°   | 1240.8 | 1236.0 | 1231.2 | 1229.7 | 1228.1 | 1226.5 | 1224.9 | 1225.7 |
| 17.5° | 1247.1 | 1241.6 | 1236.0 | 1232.8 | 1229.7 | 1227.3 | 1226.5 | 1227.3 |
| 20°   | 1260.6 | 1252.7 | 1244.0 | 1238.4 | 1232.0 | 1230.4 | 1228.1 | 1230.4 |
| 22.5° | 1278.9 | 1269.4 | 1258.2 | 1247.9 | 1240.8 | 1237.6 | 1234.4 | 1236.8 |
| 25°   | 1301.1 | 1290.8 | 1279.7 | 1267.8 | 1259.8 | 1257.5 | 1253.5 | 1253.5 |
| 27.5° | 1332.1 | 1323.4 | 1313.9 | 1302.7 | 1294.8 | 1292.4 | 1286.1 | 1286.1 |
| 30°   | 1381.4 | 1372.6 | 1363.9 | 1354.4 | 1346.4 | 1344.0 | 1336.1 | 1336.1 |
| 32.5° | 1446.5 | 1437.0 | 1431.4 | 1423.5 | 1417.1 | 1413.1 | 1403.6 | 1402.8 |
| 35°   | 1533.9 | 1525.2 | 1524.4 | 1518.8 | 1512.4 | 1513.2 | 1503.7 | 1502.1 |
| 37.5° | 1659.4 | 1652.2 | 1654.6 | 1649.9 | 1644.3 | 1649.1 | 1643.5 | 1643.5 |
| 40°   | 1819.9 | 1817.5 | 1819.9 | 1816.7 | 1817.5 | 1818.3 | 1813.5 | 1815.1 |
| 42.5° | 2013.7 | 2007.3 | 2021.6 | 2020.0 | 2017.6 | 2024.0 | 2012.9 | 2004.9 |
| 45°   | 2236.9 | 2234.5 | 2248.8 | 2251.2 | 2246.4 | 2250.4 | 2230.5 | 2229.7 |
| 47.5° | 2479.2 | 2479.2 | 2491.9 | 2490.3 | 2485.5 | 2486.3 | 2462.5 | 2447.4 |
| 50°   | 2731.8 | 2730.2 | 2742.9 | 2739.7 | 2733.4 | 2732.6 | 2707.9 | 2692.8 |
| 52.5° | 2994.7 | 2994.7 | 3013.0 | 3004.2 | 2989.1 | 2982.0 | 2951.8 | 2931.9 |
| 55°   | 3285.4 | 3281.5 | 3287.0 | 3258.4 | 3229.0 | 3207.6 | 3170.2 | 3155.2 |
| 57.5° | 3653.2 | 3607.1 | 3567.4 | 3530.9 | 3489.6 | 3464.2 | 3420.5 | 3404.6 |
| 60°   | 4175.1 | 4052.0 | 3998.8 | 3925.7 | 3857.4 | 3823.2 | 3765.2 | 3734.2 |
| 62.5° | 4898.0 | 4693.8 | 4549.2 | 4388.0 | 4232.3 | 4122.7 | 4034.5 | 3995.6 |
| 65°   | 5733.6 | 5288.8 | 4921.0 | 4575.5 | 4282.3 | 4049.6 | 3920.1 | 3879.6 |
| 67.5° | 6051.4 | 5234.8 | 4600.1 | 4104.4 | 3748.5 | 3471.3 | 3316.4 | 3283.8 |
| 68°   | 5983.8 | 5110.8 | 4451.5 | 3943.9 | 3586.5 | 3306.9 | 3152.8 | 3123.4 |
| 70°   | 5278.5 | 4311.7 | 3615.9 | 3110.7 | 2777.0 | 2510.9 | 2402.1 | 2355.2 |
| 72.5° | 3598.4 | 2769.1 | 2124.1 | 1699.1 | 1449.7 | 1281.3 | 1181.2 | 1147.0 |
| 75°   | 1656.2 | 1119.2 | 747.5  | 558.4  | 474.2  | 433.7  | 402.7  | 394.8  |
| 77.5° | 483.0  | 351.1  | 301.9  | 279.6  | 262.9  | 248.6  | 238.3  | 237.5  |
| 80°   | 229.6  | 215.3  | 208.9  | 194.6  | 179.5  | 166.0  | 156.5  | 158.1  |
| 82.5° | 154.1  | 150.1  | 150.1  | 135.8  | 112.0  | 96.1   | 79.4   | 71.5   |
| 85°   | 81.8   | 85.0   | 89.8   | 85.0   | 73.9   | 54.8   | 35.7   | 38.9   |
| 87.5° | 27.8   | 31.8   | 33.4   | 32.6   | 29.4   | 22.2   | 16.7   | 16.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)