

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: P196454

Luminaire Tested: **NAV-AF-02-D-UNV-5WQ-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196454  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24131)  
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-5WQ-7030  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12255.6 lumens  
Efficiency: N/A  
Efficacy: 108.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type V - Short - Semi-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

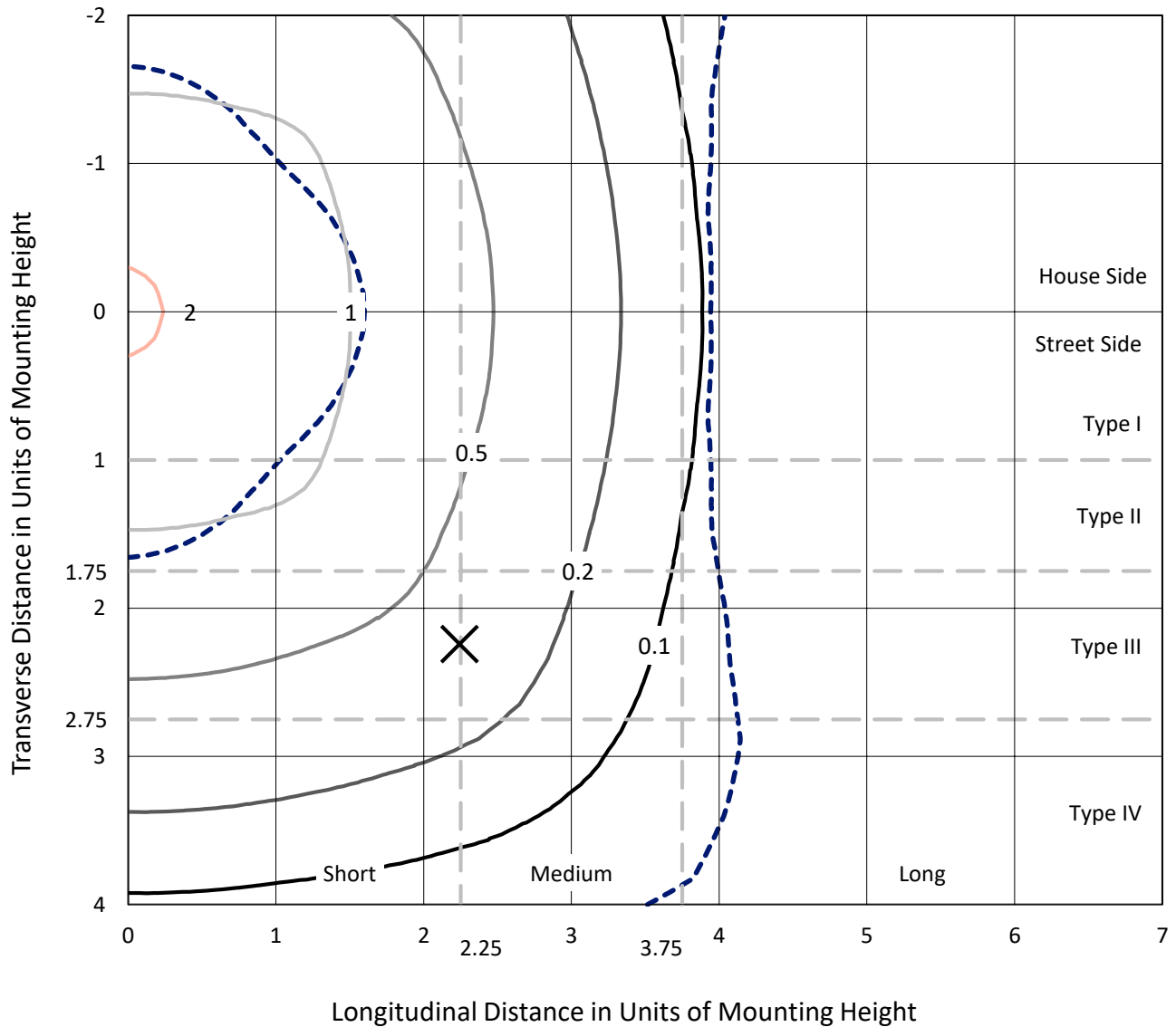


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

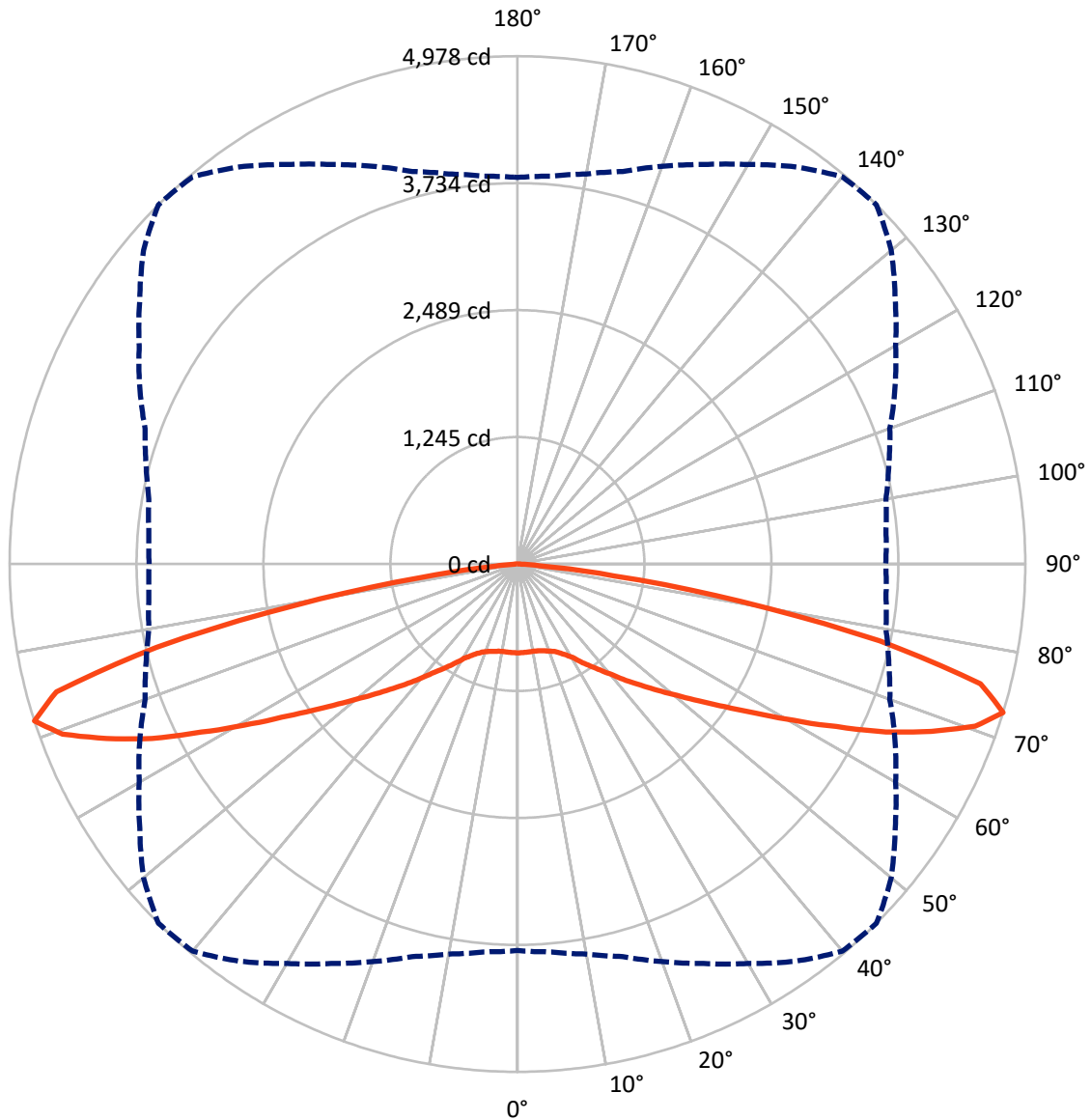


Based on 20 foot mounting height. Maximum calculated value = 2.2 fc  
 Type V - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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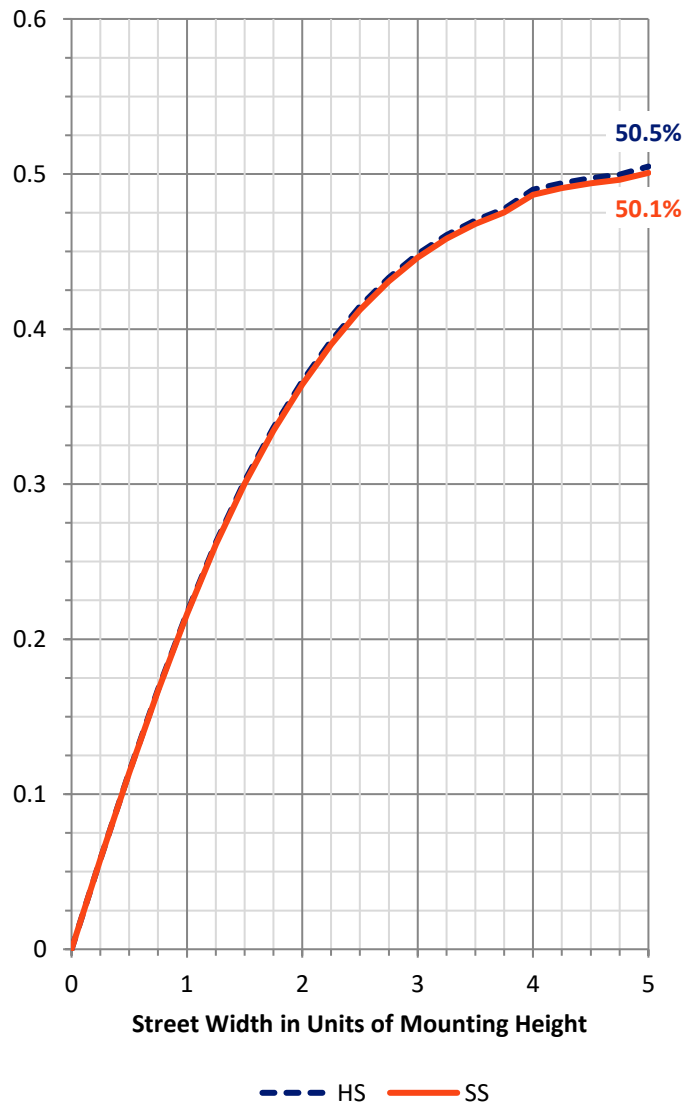
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 6127.8   | 0.0    | 6127.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Street Side</b> | Lumens    | 6127.8   | 0.0    | 6127.8  |
|                    | % Fixture | 50.0     | 0.0    | 50.0    |
| <b>Total</b>       | Lumens    | 12255.6  | 0.0    | 12255.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 83.2    | 0.7       |
| 10°-20°   | 251.7   | 2.1       |
| 20°-30°   | 454.4   | 3.7       |
| 30°-40°   | 775.0   | 6.3       |
| 40°-50°   | 1319.5  | 10.8      |
| 50°-60°   | 2123.5  | 17.3      |
| 60°-70°   | 3531.5  | 28.8      |
| 70°-80°   | 3416.3  | 27.9      |
| 80°-90°   | 300.7   | 2.5       |
| 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°    | 12255.6 | 100.0     |
| 0°-180°   | 12255.6 | 100.0     |

**Coefficient of Utilization**



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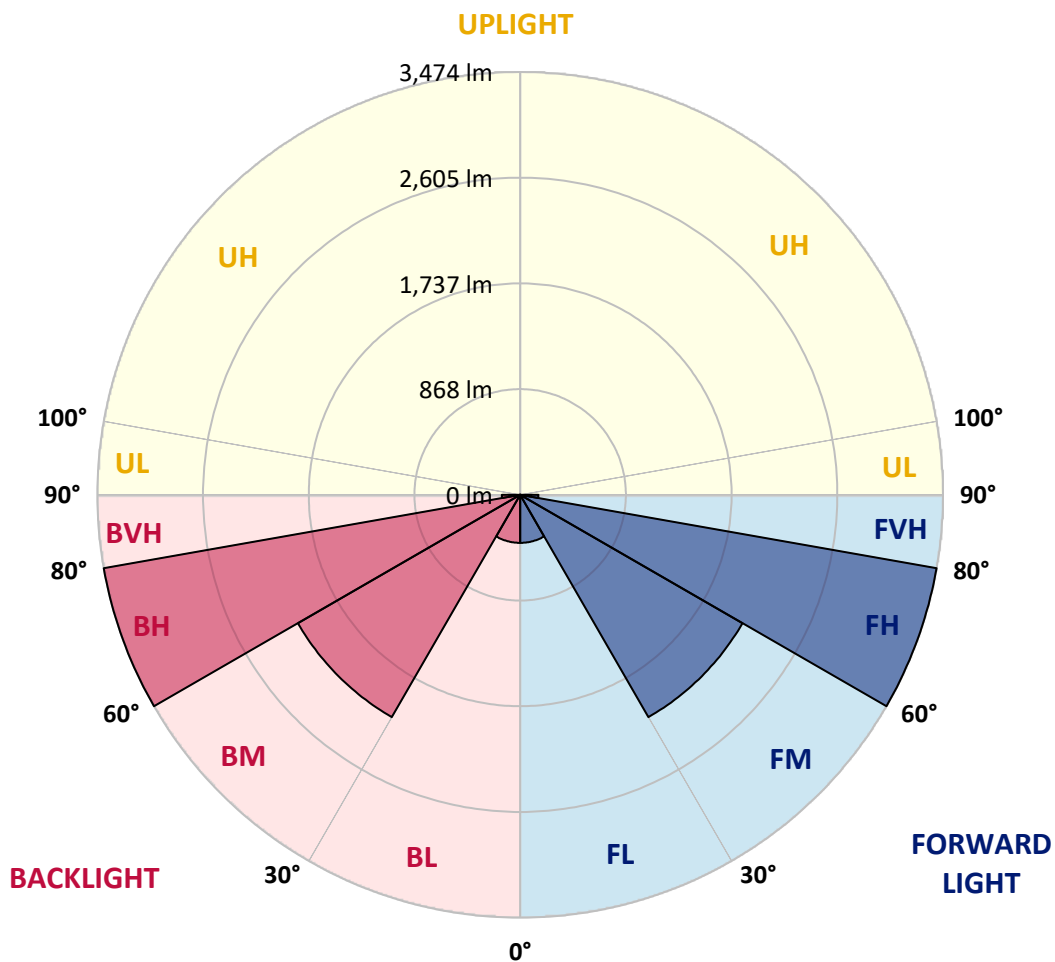
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 394.6  | 3.2       |                         |      |         |
| FM   | (30°-60°)   | 2109.0 | 17.2      |                         |      |         |
| FH   | (60°-80°)   | 3473.9 | 28.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 150.3  | 1.2       |                         |      | G2/225  |
| BL   | (0°-30°)    | 394.6  | 3.2       | B1/500                  |      |         |
| BM   | (30°-60°)   | 2109.0 | 17.2      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 3473.9 | 28.3      | B4/5000                 |      | G2/5000 |
| BVH  | (80°-90°)   | 150.3  | 1.2       |                         |      | G2/225  |
| 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°    | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  |
| 2.5°  | 878.1  | 878.1  | 878.8  | 878.1  | 876.6  | 875.8  | 873.5  | 872.0  | 870.6  | 869.8  | 868.3  |
| 5°    | 878.8  | 878.8  | 879.5  | 878.8  | 877.4  | 875.8  | 874.3  | 872.0  | 870.6  | 869.0  | 868.3  |
| 7.5°  | 881.8  | 882.6  | 883.4  | 882.6  | 879.5  | 878.1  | 875.8  | 873.5  | 870.6  | 869.0  | 867.5  |
| 10°   | 887.8  | 887.8  | 887.8  | 887.0  | 884.9  | 881.8  | 878.8  | 876.6  | 872.8  | 869.0  | 866.8  |
| 12.5° | 892.4  | 893.2  | 893.2  | 891.7  | 888.6  | 884.9  | 881.8  | 879.5  | 876.6  | 873.5  | 871.3  |
| 15°   | 899.2  | 899.2  | 898.4  | 895.4  | 890.9  | 887.8  | 886.4  | 885.6  | 884.9  | 883.4  | 881.0  |
| 17.5° | 912.8  | 912.0  | 909.8  | 905.2  | 900.0  | 897.7  | 896.2  | 896.2  | 896.2  | 895.4  | 894.0  |
| 20°   | 932.4  | 932.4  | 929.4  | 921.8  | 917.3  | 915.0  | 912.8  | 912.8  | 912.8  | 910.4  | 908.3  |
| 22.5° | 964.1  | 964.9  | 960.3  | 951.2  | 945.2  | 940.7  | 937.7  | 935.4  | 933.2  | 931.7  | 927.8  |
| 25°   | 1007.1 | 1006.3 | 1001.1 | 989.7  | 985.2  | 980.7  | 974.6  | 970.9  | 967.8  | 965.6  | 961.1  |
| 27.5° | 1052.2 | 1051.6 | 1045.5 | 1035.8 | 1032.7 | 1026.0 | 1021.3 | 1016.1 | 1012.4 | 1008.6 | 1004.1 |
| 30°   | 1110.4 | 1106.7 | 1102.1 | 1094.6 | 1093.0 | 1087.7 | 1081.7 | 1074.2 | 1068.1 | 1062.1 | 1056.9 |
| 32.5° | 1162.4 | 1162.4 | 1155.6 | 1151.9 | 1154.9 | 1152.6 | 1153.4 | 1148.9 | 1145.1 | 1142.9 | 1137.6 |
| 35°   | 1234.8 | 1234.8 | 1231.9 | 1227.3 | 1228.1 | 1222.8 | 1222.1 | 1222.8 | 1225.8 | 1225.8 | 1219.8 |
| 37.5° | 1331.5 | 1333.0 | 1323.1 | 1321.6 | 1317.8 | 1310.3 | 1306.5 | 1308.1 | 1314.8 | 1318.6 | 1310.3 |
| 40°   | 1451.4 | 1454.4 | 1451.4 | 1441.5 | 1437.1 | 1424.2 | 1416.6 | 1416.6 | 1422.0 | 1425.8 | 1422.7 |
| 42.5° | 1569.8 | 1575.1 | 1569.8 | 1562.3 | 1558.5 | 1548.6 | 1544.9 | 1547.9 | 1554.8 | 1559.2 | 1554.8 |
| 45°   | 1701.8 | 1705.6 | 1698.8 | 1689.8 | 1685.3 | 1680.0 | 1677.6 | 1680.0 | 1687.5 | 1692.0 | 1690.5 |
| 47.5° | 1831.6 | 1836.8 | 1828.6 | 1824.7 | 1824.7 | 1819.5 | 1825.5 | 1831.6 | 1838.4 | 1848.8 | 1844.4 |
| 50°   | 1958.4 | 1965.1 | 1959.8 | 1960.5 | 1966.5 | 1976.4 | 1987.8 | 1999.8 | 2011.9 | 2023.2 | 2024.7 |
| 52.5° | 2071.4 | 2082.1 | 2082.8 | 2096.3 | 2115.3 | 2130.3 | 2162.0 | 2188.4 | 2217.1 | 2226.8 | 2222.4 |
| 55°   | 2190.6 | 2205.0 | 2223.9 | 2245.0 | 2275.1 | 2306.0 | 2359.7 | 2407.2 | 2444.9 | 2468.2 | 2464.5 |
| 57.5° | 2361.1 | 2375.6 | 2395.1 | 2429.8 | 2475.0 | 2517.4 | 2590.4 | 2664.4 | 2721.7 | 2757.1 | 2739.7 |
| 60°   | 2582.2 | 2597.2 | 2622.9 | 2659.8 | 2718.7 | 2776.1 | 2876.4 | 2982.8 | 3071.8 | 3112.5 | 3080.8 |
| 62.5° | 2874.8 | 2889.2 | 2905.8 | 2954.8 | 3020.5 | 3094.3 | 3220.3 | 3356.9 | 3470.1 | 3509.3 | 3464.7 |
| 65°   | 3292.0 | 3309.4 | 3314.6 | 3354.6 | 3418.7 | 3487.3 | 3623.1 | 3777.1 | 3906.0 | 3970.2 | 3881.2 |
| 67.5° | 3762.1 | 3768.8 | 3789.8 | 3836.6 | 3902.3 | 3964.2 | 4071.2 | 4216.9 | 4340.6 | 4376.1 | 4281.0 |
| 70°   | 4037.3 | 4050.9 | 4087.8 | 4152.7 | 4231.2 | 4328.6 | 4445.4 | 4602.3 | 4742.6 | 4759.3 | 4638.5 |
| 72.5° | 3788.3 | 3816.3 | 3881.9 | 3983.0 | 4147.5 | 4320.2 | 4521.5 | 4753.3 | 4954.6 | 4978.0 | 4784.1 |
| 75°   | 3038.5 | 3070.1 | 3148.7 | 3259.5 | 3454.2 | 3710.7 | 4001.8 | 4349.6 | 4651.3 | 4689.9 | 4433.3 |
| 77.5° | 1619.5 | 1658.9 | 1772.7 | 1922.1 | 2199.7 | 2539.1 | 2889.9 | 3286.7 | 3543.2 | 3629.9 | 3445.2 |
| 80°   | 408.1  | 429.3  | 484.3  | 571.8  | 759.7  | 1033.5 | 1335.9 | 1762.9 | 2081.3 | 2216.4 | 2081.3 |
| 82.5° | 158.4  | 174.3  | 189.3  | 200.0  | 218.0  | 255.7  | 353.0  | 575.6  | 775.5  | 955.0  | 826.8  |
| 85°   | 61.0   | 64.9   | 93.5   | 106.4  | 106.4  | 116.9  | 134.3  | 158.4  | 196.1  | 214.2  | 179.5  |
| 87.5° | 24.1   | 26.4   | 32.4   | 49.8   | 51.3   | 45.3   | 48.3   | 54.3   | 41.5   | 34.8   | 39.3   |
| 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):**

|       | 55°    | 60°    | 65°    | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  | 871.3  |
| 2.5°  | 867.5  | 866.8  | 865.3  | 866.0  | 865.3  | 865.3  | 865.3  | 865.3  |
| 5°    | 866.8  | 866.8  | 865.3  | 865.3  | 865.3  | 866.0  | 865.3  | 865.3  |
| 7.5°  | 866.0  | 865.3  | 863.7  | 862.9  | 862.9  | 862.3  | 862.3  | 862.3  |
| 10°   | 864.5  | 862.9  | 861.5  | 860.8  | 860.8  | 859.3  | 859.3  | 859.3  |
| 12.5° | 868.3  | 866.0  | 864.5  | 863.7  | 863.7  | 863.7  | 864.5  | 864.5  |
| 15°   | 878.8  | 874.3  | 872.0  | 871.3  | 872.0  | 873.5  | 874.3  | 875.0  |
| 17.5° | 890.1  | 885.6  | 881.8  | 880.3  | 881.0  | 883.4  | 885.6  | 887.0  |
| 20°   | 904.4  | 900.8  | 896.2  | 894.7  | 894.7  | 897.7  | 899.2  | 901.5  |
| 22.5° | 924.9  | 921.8  | 918.1  | 915.8  | 914.3  | 918.1  | 920.3  | 921.8  |
| 25°   | 957.3  | 954.3  | 951.2  | 949.0  | 948.3  | 951.9  | 953.5  | 954.3  |
| 27.5° | 1000.3 | 997.2  | 995.8  | 995.1  | 992.7  | 994.3  | 996.6  | 995.8  |
| 30°   | 1056.1 | 1058.4 | 1056.1 | 1056.1 | 1052.2 | 1053.8 | 1052.2 | 1050.8 |
| 32.5° | 1130.9 | 1128.5 | 1121.8 | 1117.1 | 1111.9 | 1111.9 | 1109.6 | 1107.4 |
| 35°   | 1205.4 | 1197.9 | 1194.1 | 1196.4 | 1194.1 | 1195.7 | 1191.9 | 1188.0 |
| 37.5° | 1293.7 | 1289.1 | 1288.5 | 1295.3 | 1293.7 | 1295.3 | 1295.3 | 1290.0 |
| 40°   | 1410.6 | 1407.6 | 1412.9 | 1424.2 | 1428.8 | 1428.0 | 1429.5 | 1422.7 |
| 42.5° | 1544.9 | 1539.7 | 1541.8 | 1551.7 | 1557.0 | 1558.5 | 1557.7 | 1551.7 |
| 45°   | 1679.2 | 1680.7 | 1680.7 | 1691.3 | 1696.6 | 1699.5 | 1694.3 | 1692.0 |
| 47.5° | 1830.8 | 1833.1 | 1827.8 | 1834.6 | 1836.1 | 1841.3 | 1836.8 | 1833.1 |
| 50°   | 2005.8 | 1997.6 | 1985.5 | 1987.8 | 1987.8 | 1986.3 | 1981.0 | 1976.4 |
| 52.5° | 2201.2 | 2182.4 | 2159.7 | 2152.2 | 2143.8 | 2135.6 | 2125.0 | 2116.7 |
| 55°   | 2423.7 | 2391.3 | 2350.6 | 2331.7 | 2315.9 | 2297.0 | 2272.9 | 2264.6 |
| 57.5° | 2681.8 | 2625.9 | 2571.6 | 2537.6 | 2496.9 | 2472.0 | 2441.1 | 2439.5 |
| 60°   | 2988.0 | 2912.6 | 2816.8 | 2766.2 | 2725.5 | 2696.1 | 2672.7 | 2663.6 |
| 62.5° | 3341.8 | 3212.0 | 3108.8 | 3054.4 | 3006.9 | 2988.8 | 2959.3 | 2963.1 |
| 65°   | 3704.7 | 3572.7 | 3472.3 | 3428.5 | 3384.1 | 3372.0 | 3344.9 | 3354.6 |
| 67.5° | 4097.7 | 3989.0 | 3878.9 | 3838.2 | 3797.5 | 3785.4 | 3757.4 | 3765.7 |
| 70°   | 4449.9 | 4311.9 | 4186.7 | 4106.7 | 4037.3 | 3981.5 | 3946.0 | 3931.7 |
| 72.5° | 4520.0 | 4281.0 | 4084.1 | 3884.1 | 3768.8 | 3667.8 | 3626.2 | 3610.4 |
| 75°   | 4061.5 | 3690.3 | 3409.7 | 3175.1 | 3045.4 | 2898.2 | 2882.4 | 2860.5 |
| 77.5° | 3159.2 | 2736.8 | 2397.3 | 2095.6 | 1921.4 | 1741.8 | 1680.0 | 1633.2 |
| 80°   | 1884.4 | 1448.3 | 1122.5 | 786.7  | 642.0  | 516.7  | 485.7  | 453.3  |
| 82.5° | 674.3  | 432.2  | 291.1  | 227.0  | 202.9  | 187.1  | 175.1  | 159.2  |
| 85°   | 162.9  | 137.3  | 129.8  | 117.7  | 116.2  | 98.8   | 70.2   | 62.6   |
| 87.5° | 52.0   | 47.5   | 48.3   | 46.0   | 48.3   | 36.2   | 29.4   | 26.4   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)