

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: P196257

Luminaire Tested: **NAV-AF-03-D-UNV-T2-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196257
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)
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-T2-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14653.8 lumens
Efficiency: N/A
Efficacy: 118.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

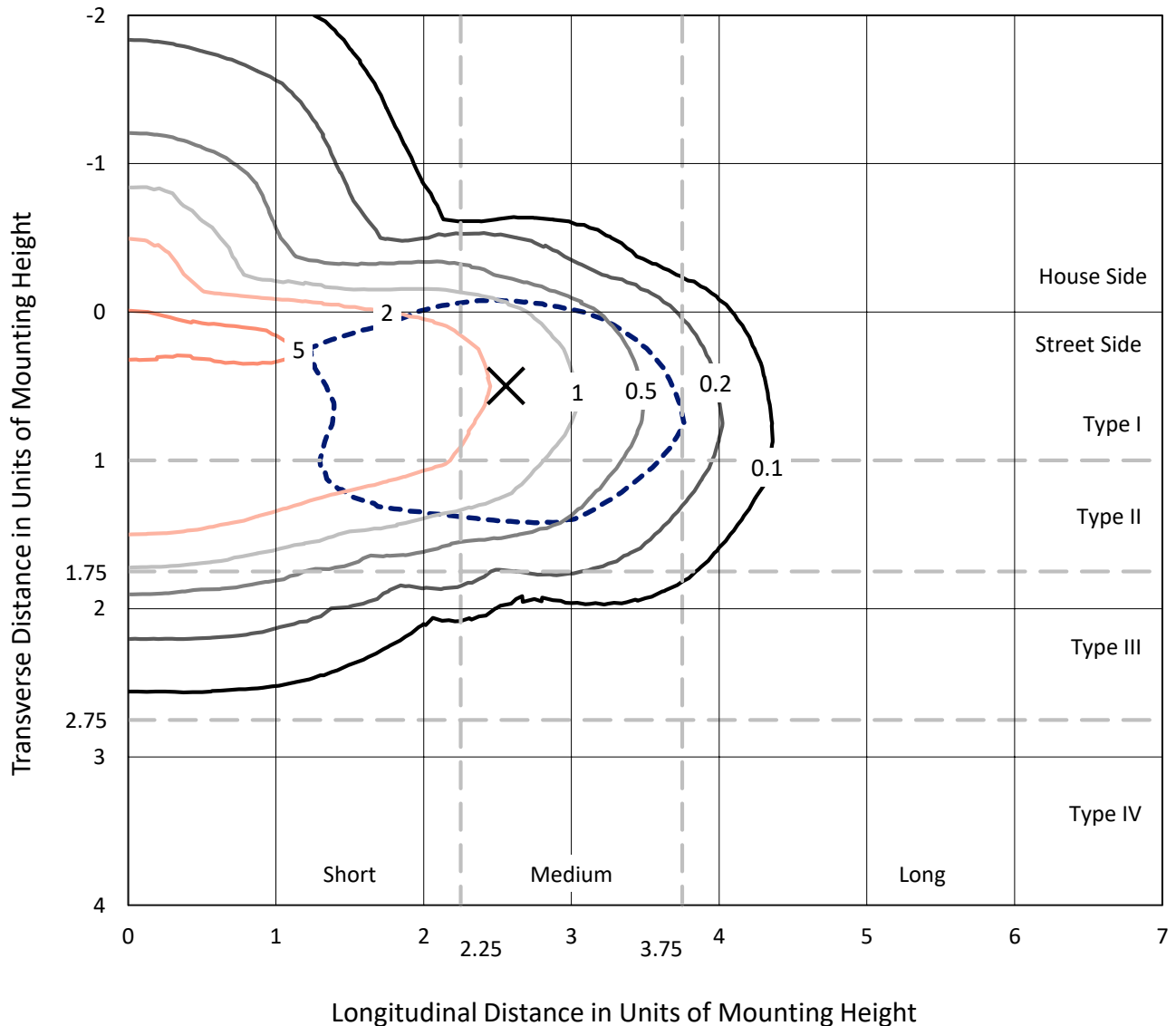
Input Watts (W): 124
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196257
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Iso-Footcandle Lines of Horizontal Illumination

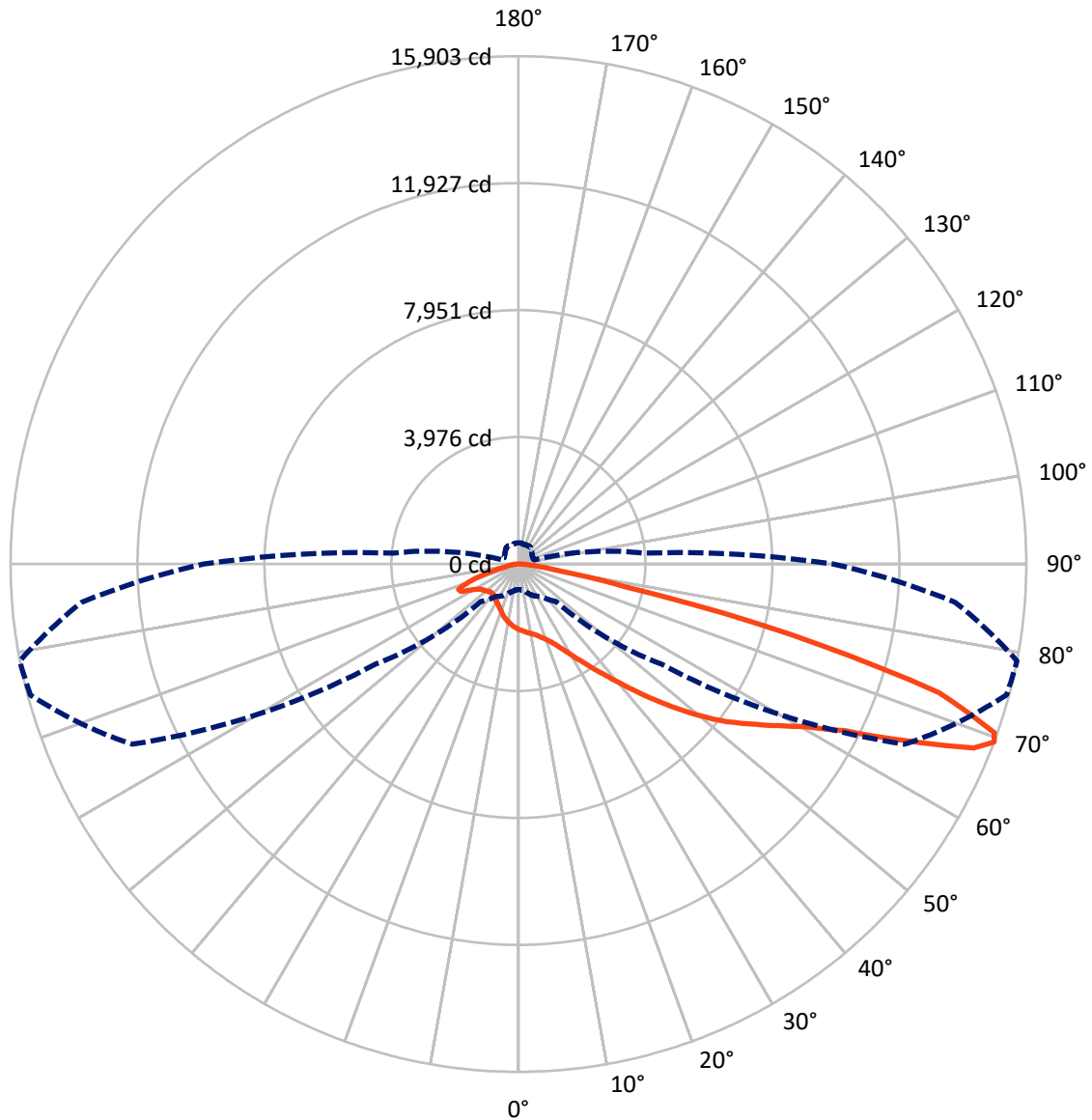
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.2 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2756.6 | 0.0 | 2756.6 |
| | % Fixture | 18.8 | 0.0 | 18.8 |
| Street Side | Lumens | 11897.1 | 0.0 | 11897.1 |
| | % Fixture | 81.2 | 0.0 | 81.2 |
| Total | Lumens | 14653.8 | 0.0 | 14653.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 190.6 | 1.3 |
| 10°-20° | 546.6 | 3.7 |
| 20°-30° | 903.1 | 6.2 |
| 30°-40° | 1462.4 | 10.0 |
| 40°-50° | 2336.2 | 15.9 |
| 50°-60° | 3345.7 | 22.8 |
| 60°-70° | 3727.6 | 25.4 |
| 70°-80° | 1864.9 | 12.7 |
| 80°-90° | 276.8 | 1.9 |
| 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° | 14653.8 | 100.0 |
| 0°-180° | 14653.8 | 100.0 |



REPORT NUMBER: P196257

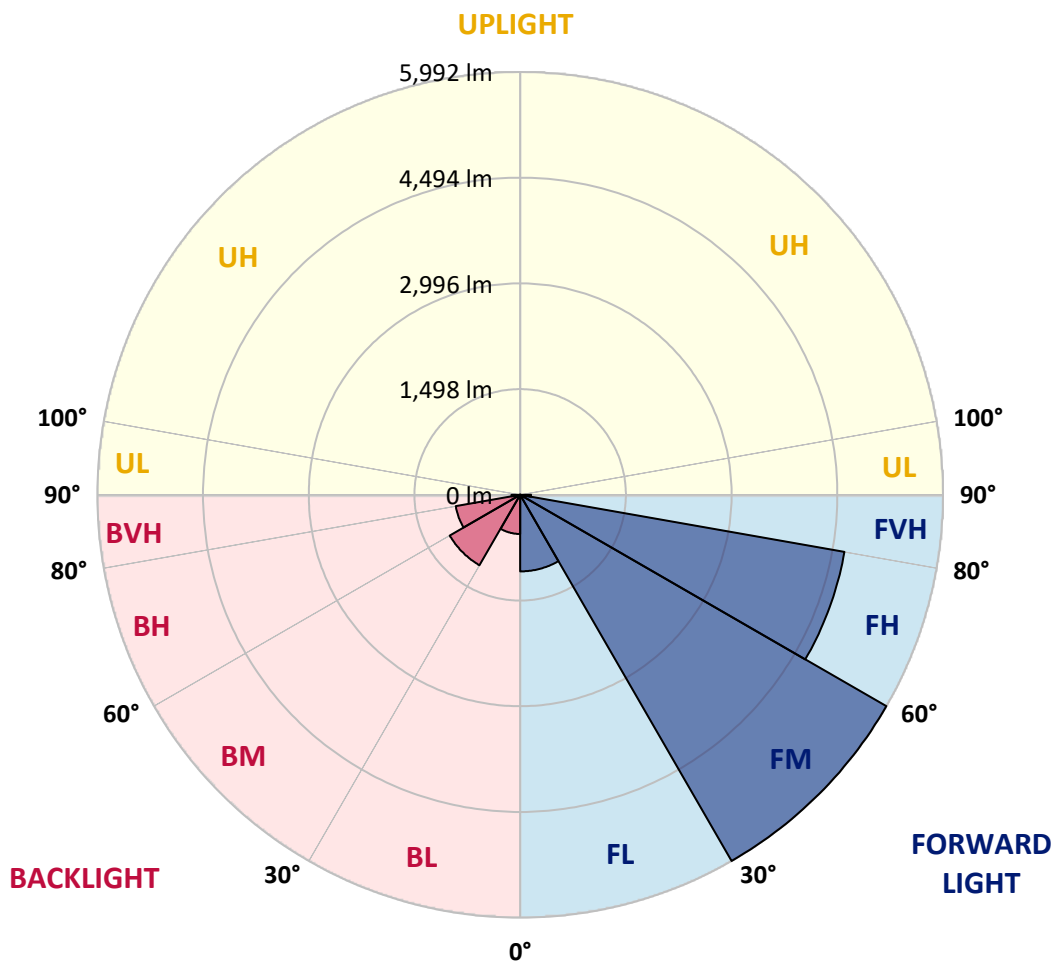
CATALOG NUMBER: NAV-AF-03-D-UNV-T2-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1085.0 | 7.4 | | | |
| FM (30°-60°) | 5991.9 | 40.9 | | | |
| FH (60°-80°) | 4665.6 | 31.8 | | | G2/5000 |
| FVH (80°-90°) | 154.6 | 1.1 | | | G2/225 |
| BL (0°-30°) | 555.3 | 3.8 | B2/1000 | | |
| BM (30°-60°) | 1152.3 | 7.9 | B2/2500 | | |
| BH (60°-80°) | 926.9 | 6.3 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 122.1 | 0.8 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 |
| 2.5° | 2257.8 | 2252.9 | 2251.9 | 2237.6 | 2229.9 | 2213.6 | 2175.3 | 2135.9 | 2099.5 | 2080.4 | 2060.2 |
| 5° | 2446.6 | 2437.0 | 2432.2 | 2408.2 | 2387.2 | 2350.7 | 2290.3 | 2228.0 | 2162.8 | 2129.3 | 2089.0 |
| 7.5° | 2560.7 | 2561.6 | 2561.6 | 2542.4 | 2521.4 | 2477.3 | 2400.6 | 2315.2 | 2218.4 | 2174.3 | 2111.1 |
| 10° | 2570.3 | 2571.2 | 2585.6 | 2590.4 | 2595.1 | 2572.2 | 2501.2 | 2393.8 | 2269.2 | 2211.7 | 2129.3 |
| 12.5° | 2475.3 | 2482.1 | 2506.0 | 2540.5 | 2589.4 | 2614.4 | 2583.7 | 2478.2 | 2334.4 | 2264.4 | 2163.7 |
| 15° | 2347.9 | 2354.5 | 2385.2 | 2437.9 | 2516.6 | 2599.9 | 2643.1 | 2575.1 | 2419.7 | 2337.2 | 2214.6 |
| 17.5° | 2285.5 | 2293.1 | 2314.3 | 2356.5 | 2433.2 | 2545.3 | 2674.7 | 2678.6 | 2520.3 | 2425.5 | 2274.9 |
| 20° | 2255.8 | 2261.5 | 2288.3 | 2322.9 | 2381.4 | 2488.7 | 2677.6 | 2787.8 | 2640.2 | 2530.0 | 2348.8 |
| 22.5° | 2323.8 | 2325.8 | 2339.2 | 2358.4 | 2397.7 | 2480.1 | 2675.7 | 2901.0 | 2789.8 | 2661.3 | 2443.7 |
| 25° | 2523.3 | 2510.8 | 2501.2 | 2477.3 | 2486.8 | 2545.3 | 2706.4 | 3021.8 | 2981.5 | 2833.9 | 2570.3 |
| 27.5° | 2759.1 | 2757.2 | 2732.3 | 2676.7 | 2641.2 | 2678.6 | 2793.6 | 3156.9 | 3216.4 | 3053.4 | 2736.1 |
| 30° | 3021.8 | 3022.7 | 2996.8 | 2928.8 | 2856.9 | 2860.7 | 2932.6 | 3313.2 | 3497.3 | 3318.0 | 2940.3 |
| 32.5° | 3297.0 | 3314.2 | 3266.3 | 3198.2 | 3110.9 | 3083.2 | 3132.1 | 3502.1 | 3822.3 | 3630.6 | 3177.1 |
| 35° | 3625.7 | 3628.6 | 3575.9 | 3476.2 | 3388.9 | 3344.8 | 3390.0 | 3738.0 | 4197.2 | 3997.7 | 3465.7 |
| 37.5° | 3967.0 | 3968.9 | 3914.3 | 3786.9 | 3676.6 | 3647.8 | 3697.7 | 4024.6 | 4594.1 | 4415.7 | 3805.1 |
| 40° | 4246.1 | 4266.1 | 4223.0 | 4103.2 | 3992.0 | 3974.7 | 4046.6 | 4367.8 | 5101.1 | 4910.4 | 4208.6 |
| 42.5° | 4562.4 | 4585.4 | 4533.6 | 4409.0 | 4320.8 | 4315.0 | 4427.2 | 4759.0 | 5605.5 | 5482.7 | 4666.0 |
| 45° | 4919.1 | 4951.6 | 4879.7 | 4739.7 | 4665.0 | 4791.5 | 4798.3 | 5192.3 | 6186.4 | 6123.2 | 5180.7 |
| 47.5° | 5308.3 | 5335.1 | 5276.6 | 5126.1 | 5044.6 | 5227.7 | 5161.6 | 5661.0 | 6814.4 | 6809.6 | 5737.7 |
| 50° | 5608.3 | 5638.1 | 5643.8 | 5577.6 | 5492.3 | 5515.3 | 5560.4 | 6153.9 | 7440.4 | 7515.2 | 6314.0 |
| 52.5° | 5553.7 | 5582.4 | 5711.9 | 5885.3 | 6022.5 | 5963.1 | 6017.7 | 6677.3 | 8045.3 | 8203.5 | 6861.3 |
| 55° | 5112.7 | 5128.1 | 5370.6 | 5782.8 | 6366.6 | 6650.4 | 6654.3 | 7246.7 | 8620.5 | 8842.0 | 7380.9 |
| 57.5° | 4318.0 | 4319.8 | 4635.3 | 5243.0 | 6166.2 | 7096.2 | 7658.9 | 7961.9 | 9220.7 | 9547.6 | 8025.2 |
| 60° | 3055.3 | 3063.0 | 3430.2 | 4225.0 | 5448.2 | 7042.5 | 8739.4 | 9241.7 | 9915.7 | 10340.4 | 8855.4 |
| 62.5° | 1813.8 | 1831.1 | 2108.2 | 2745.7 | 4046.6 | 6352.3 | 9377.9 | 11518.6 | 10939.6 | 11503.3 | 10184.2 |
| 65° | 1180.2 | 1194.5 | 1360.4 | 1680.6 | 2390.9 | 4621.8 | 9167.9 | 13723.6 | 12877.1 | 13332.5 | 12093.8 |
| 67.5° | 908.8 | 920.3 | 1050.7 | 1244.4 | 1466.8 | 2498.4 | 7330.2 | 14185.7 | 15235.5 | 15377.4 | 13705.4 |
| 69° | 798.6 | 808.1 | 904.1 | 1090.1 | 1234.8 | 1653.7 | 5462.6 | 13346.8 | 15825.0 | 15902.7 | 13725.5 |
| 70° | 740.1 | 747.8 | 837.9 | 998.9 | 1134.1 | 1320.1 | 4180.8 | 12372.8 | 15609.4 | 15807.9 | 13329.6 |
| 72.5° | 609.7 | 616.4 | 680.7 | 804.3 | 927.1 | 940.5 | 1852.2 | 9034.7 | 13143.6 | 13778.2 | 11280.0 |
| 75° | 509.0 | 512.9 | 555.1 | 645.2 | 750.6 | 748.7 | 946.2 | 5117.5 | 8020.3 | 8776.8 | 6964.9 |
| 77.5° | 424.7 | 427.6 | 455.4 | 511.0 | 592.5 | 589.6 | 666.2 | 2208.9 | 3541.4 | 3416.8 | 2397.7 |
| 80° | 374.8 | 376.8 | 391.2 | 405.5 | 457.3 | 454.4 | 493.7 | 1014.3 | 1440.9 | 1331.6 | 906.9 |
| 82.5° | 284.7 | 288.6 | 361.4 | 368.2 | 354.8 | 342.3 | 344.1 | 590.5 | 738.2 | 672.1 | 487.0 |
| 85° | 161.0 | 162.0 | 232.0 | 271.3 | 308.7 | 232.0 | 223.4 | 304.8 | 364.3 | 319.3 | 212.9 |
| 87.5° | 71.9 | 74.8 | 111.2 | 128.5 | 166.8 | 136.2 | 127.5 | 129.4 | 157.2 | 130.4 | 84.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P196257

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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 | 2056.4 |
| 2.5° | 2041.1 | 2024.7 | 1986.4 | 1947.1 | 1907.8 | 1882.8 | 1857.0 | 1833.0 | 1823.4 | 1822.5 | 1804.3 |
| 5° | 2049.7 | 2011.3 | 1924.1 | 1828.2 | 1737.2 | 1666.2 | 1606.7 | 1568.4 | 1531.1 | 1524.3 | 1508.0 |
| 7.5° | 2052.6 | 1990.3 | 1848.4 | 1694.9 | 1555.9 | 1458.2 | 1398.7 | 1372.8 | 1354.6 | 1349.8 | 1344.1 |
| 10° | 2051.6 | 1963.3 | 1764.0 | 1554.1 | 1395.8 | 1322.1 | 1300.0 | 1305.7 | 1313.4 | 1317.3 | 1317.3 |
| 12.5° | 2067.0 | 1951.0 | 1679.6 | 1421.7 | 1292.3 | 1256.8 | 1274.1 | 1303.9 | 1326.9 | 1336.4 | 1338.3 |
| 15° | 2094.7 | 1943.3 | 1586.6 | 1306.7 | 1219.5 | 1228.1 | 1270.3 | 1313.4 | 1346.0 | 1360.4 | 1364.2 |
| 17.5° | 2129.3 | 1932.8 | 1479.3 | 1211.8 | 1177.3 | 1207.0 | 1261.6 | 1316.2 | 1355.6 | 1373.8 | 1376.7 |
| 20° | 2167.6 | 1917.4 | 1368.1 | 1140.8 | 1139.9 | 1177.3 | 1231.9 | 1293.3 | 1335.5 | 1355.6 | 1354.6 |
| 22.5° | 2219.4 | 1903.0 | 1264.5 | 1089.0 | 1098.6 | 1133.1 | 1178.2 | 1233.9 | 1273.2 | 1291.4 | 1287.5 |
| 25° | 2288.3 | 1889.6 | 1171.5 | 1043.1 | 1051.7 | 1074.7 | 1106.3 | 1148.5 | 1176.3 | 1185.9 | 1179.2 |
| 27.5° | 2381.4 | 1879.1 | 1098.6 | 1000.9 | 999.9 | 1010.5 | 1029.6 | 1052.6 | 1066.0 | 1063.2 | 1052.6 |
| 30° | 2495.5 | 1868.5 | 1044.9 | 963.5 | 950.0 | 949.1 | 957.7 | 971.2 | 979.8 | 962.5 | 953.9 |
| 32.5° | 2622.9 | 1850.3 | 997.1 | 930.9 | 906.9 | 898.3 | 902.1 | 920.3 | 955.8 | 938.6 | 931.8 |
| 35° | 2773.5 | 1829.1 | 949.1 | 895.4 | 877.2 | 860.9 | 863.8 | 903.1 | 1010.5 | 998.0 | 991.2 |
| 37.5° | 2954.7 | 1810.0 | 905.0 | 857.0 | 856.1 | 836.0 | 834.0 | 881.1 | 1024.8 | 998.0 | 992.3 |
| 40° | 3172.3 | 1806.1 | 865.7 | 814.9 | 830.2 | 822.6 | 815.8 | 844.7 | 945.3 | 890.6 | 880.0 |
| 42.5° | 3435.0 | 1823.4 | 837.0 | 774.6 | 800.5 | 818.8 | 806.3 | 812.9 | 854.2 | 805.3 | 796.7 |
| 45° | 3741.7 | 1870.4 | 815.8 | 739.2 | 768.8 | 815.8 | 801.5 | 795.8 | 802.4 | 775.6 | 769.9 |
| 47.5° | 4099.4 | 1953.8 | 801.5 | 709.4 | 739.2 | 808.1 | 799.5 | 788.1 | 785.2 | 769.9 | 766.0 |
| 50° | 4481.9 | 2066.0 | 791.9 | 682.6 | 712.3 | 794.7 | 798.6 | 782.3 | 777.5 | 770.8 | 768.8 |
| 52.5° | 4861.5 | 2187.7 | 780.4 | 659.6 | 690.3 | 778.5 | 799.5 | 776.5 | 769.9 | 766.0 | 764.0 |
| 55° | 5239.2 | 2314.3 | 759.2 | 639.4 | 673.9 | 759.2 | 798.6 | 768.8 | 761.2 | 761.2 | 761.2 |
| 57.5° | 5729.1 | 2506.9 | 731.5 | 623.2 | 652.8 | 734.4 | 786.1 | 760.3 | 749.7 | 750.6 | 751.6 |
| 60° | 6436.6 | 2830.1 | 700.8 | 605.0 | 625.0 | 705.6 | 766.9 | 744.9 | 732.4 | 736.3 | 737.2 |
| 62.5° | 7618.7 | 3394.8 | 658.6 | 579.1 | 596.3 | 674.9 | 742.0 | 723.8 | 712.3 | 719.0 | 720.0 |
| 65° | 9194.8 | 4078.3 | 603.0 | 546.5 | 566.6 | 640.4 | 710.4 | 698.9 | 686.4 | 702.8 | 701.7 |
| 67.5° | 10156.4 | 4278.6 | 544.5 | 512.0 | 537.9 | 604.0 | 671.1 | 666.2 | 657.7 | 686.4 | 684.5 |
| 69° | 9840.9 | 3916.3 | 511.0 | 489.9 | 517.7 | 579.1 | 646.2 | 644.3 | 637.5 | 665.3 | 663.4 |
| 70° | 9351.0 | 3577.9 | 489.9 | 475.5 | 507.2 | 563.7 | 629.8 | 629.8 | 623.2 | 647.1 | 642.3 |
| 72.5° | 7511.3 | 2653.6 | 441.0 | 439.1 | 470.8 | 521.5 | 585.7 | 590.5 | 586.8 | 595.4 | 590.5 |
| 75° | 4409.9 | 1599.1 | 393.0 | 398.8 | 426.6 | 476.5 | 536.8 | 540.7 | 536.8 | 535.9 | 536.8 |
| 77.5° | 1529.1 | 717.1 | 347.1 | 355.7 | 379.6 | 430.5 | 483.1 | 490.8 | 485.1 | 478.4 | 480.3 |
| 80° | 598.2 | 417.1 | 297.2 | 309.6 | 329.8 | 378.7 | 429.5 | 434.2 | 425.6 | 424.7 | 417.1 |
| 82.5° | 359.5 | 254.1 | 231.1 | 251.1 | 276.1 | 328.9 | 371.0 | 369.1 | 362.4 | 401.7 | 351.8 |
| 85° | 156.3 | 141.0 | 168.7 | 188.8 | 201.3 | 246.4 | 313.5 | 304.8 | 288.6 | 254.1 | 248.3 |
| 87.5° | 63.3 | 72.8 | 93.0 | 112.2 | 120.8 | 159.2 | 214.7 | 207.0 | 209.9 | 172.6 | 171.7 |
| 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)