

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: P195818

Luminaire Tested: **NAV-AF-02-D-UNV-T3-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195818
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
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-T3-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8028 lumens
Efficiency: N/A
Efficacy: 121.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

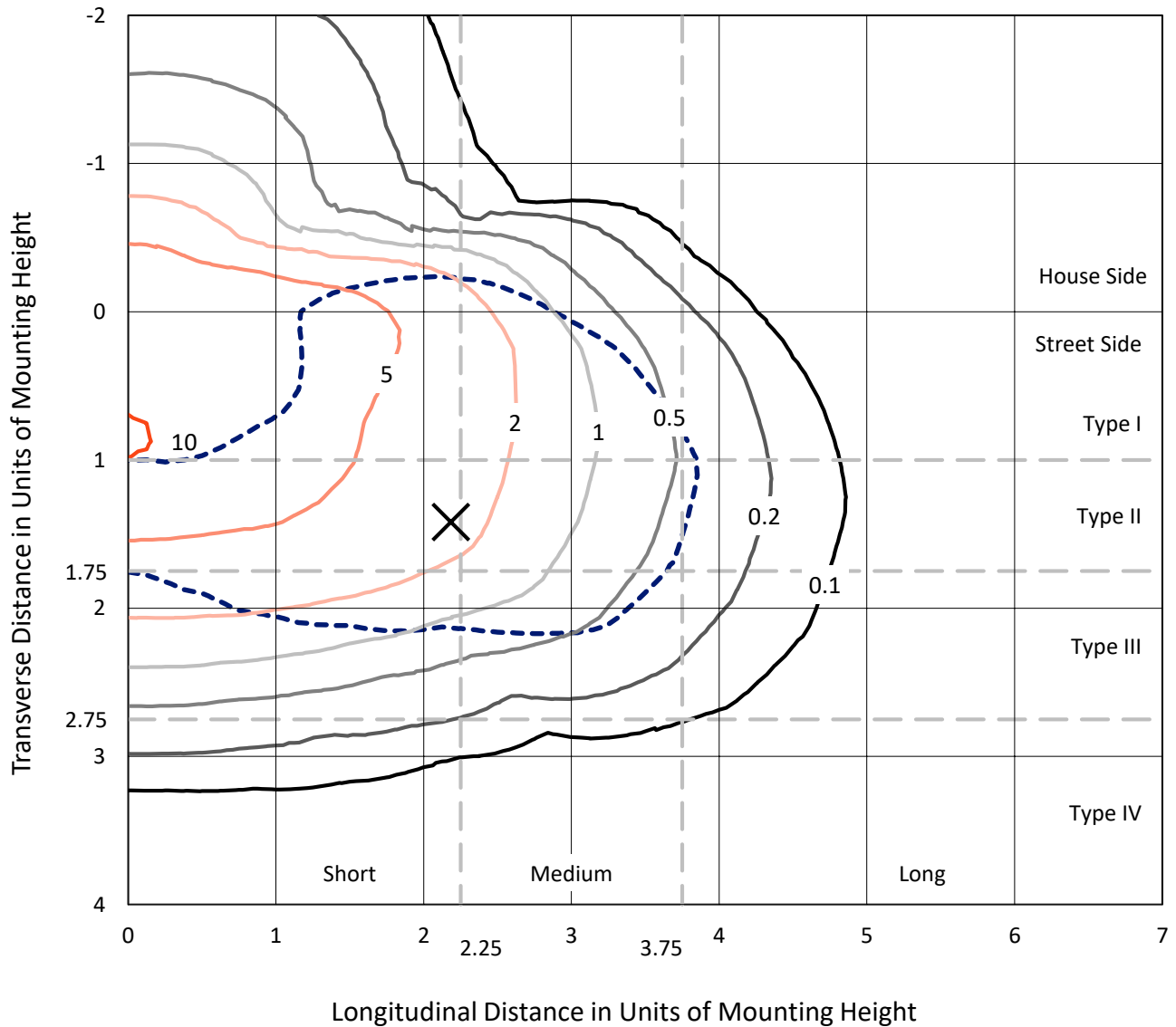
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

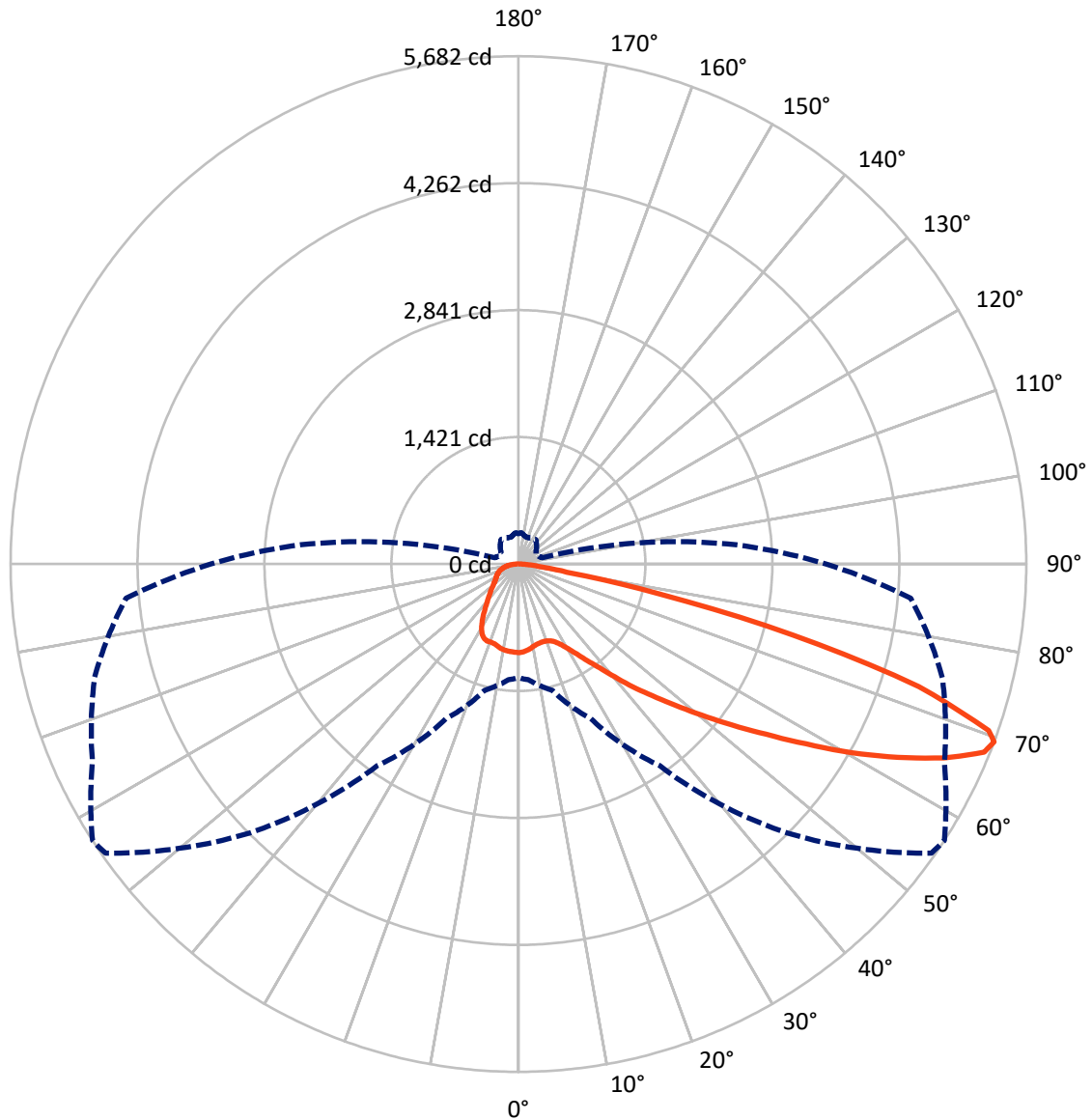
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.1 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1771.5 | 0.0 | 1771.5 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 6256.5 | 0.0 | 6256.5 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 8028.0 | 0.0 | 8028.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 92.9 | 1.2 |
| 10°-20° | 264.0 | 3.3 |
| 20°-30° | 439.2 | 5.5 |
| 30°-40° | 717.2 | 8.9 |
| 40°-50° | 1210.5 | 15.1 |
| 50°-60° | 1883.1 | 23.5 |
| 60°-70° | 2243.1 | 27.9 |
| 70°-80° | 1045.0 | 13.0 |
| 80°-90° | 132.9 | 1.7 |
| 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° | 8028.0 | 100.0 |
| 0°-180° | 8028.0 | 100.0 |



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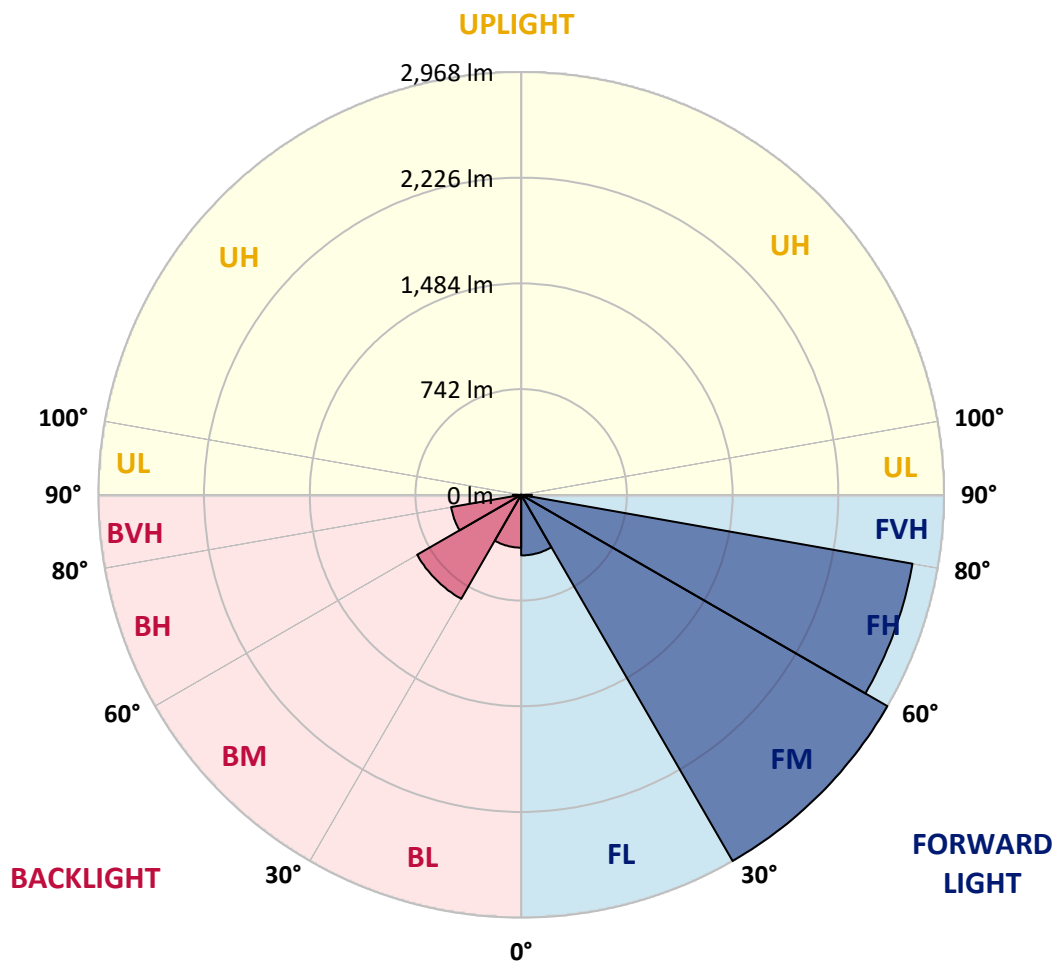
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 425.1 | 5.3 | | | |
| FM | (30°-60°) | 2967.7 | 37.0 | | | |
| FH | (60°-80°) | 2788.9 | 34.7 | | | G2/5000 |
| FVH | (80°-90°) | 74.7 | 0.9 | | | G1/100 |
| BL | (0°-30°) | 371.0 | 4.6 | B1/500 | | |
| BM | (30°-60°) | 843.1 | 10.5 | B1/1000 | | |
| BH | (60°-80°) | 499.2 | 6.2 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 58.2 | 0.7 | | | 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 Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 |
| 2.5° | 986.3 | 986.3 | 988.9 | 988.9 | 988.9 | 987.8 | 984.7 | 985.8 | 983.7 | 982.2 | 979.6 |
| 5° | 966.2 | 967.3 | 970.4 | 971.4 | 972.9 | 973.4 | 973.4 | 972.9 | 973.4 | 973.4 | 971.9 |
| 7.5° | 938.5 | 939.5 | 943.1 | 945.2 | 949.8 | 953.9 | 956.0 | 956.0 | 958.5 | 960.6 | 961.1 |
| 10° | 921.5 | 921.5 | 923.6 | 923.6 | 927.2 | 929.2 | 935.9 | 935.4 | 942.6 | 949.3 | 952.4 |
| 12.5° | 919.5 | 919.5 | 918.4 | 914.8 | 912.8 | 912.3 | 919.0 | 920.0 | 930.8 | 942.6 | 948.3 |
| 15° | 926.2 | 926.2 | 923.1 | 915.9 | 908.2 | 904.6 | 911.2 | 913.3 | 925.1 | 939.0 | 947.7 |
| 17.5° | 947.7 | 947.2 | 940.5 | 926.2 | 912.8 | 907.1 | 909.2 | 911.2 | 922.0 | 938.0 | 948.8 |
| 20° | 995.5 | 995.5 | 981.1 | 954.9 | 931.8 | 918.4 | 915.4 | 916.9 | 924.6 | 939.5 | 953.4 |
| 22.5° | 1079.3 | 1080.9 | 1055.2 | 1012.0 | 972.4 | 944.1 | 931.8 | 933.3 | 936.9 | 951.3 | 966.8 |
| 25° | 1202.7 | 1198.5 | 1162.1 | 1100.9 | 1039.2 | 990.9 | 965.7 | 967.3 | 967.3 | 980.6 | 996.6 |
| 27.5° | 1333.2 | 1334.2 | 1281.8 | 1216.0 | 1134.8 | 1062.9 | 1022.8 | 1022.3 | 1021.7 | 1034.6 | 1051.6 |
| 30° | 1480.7 | 1481.2 | 1420.6 | 1344.5 | 1251.5 | 1159.5 | 1099.4 | 1098.8 | 1094.2 | 1110.1 | 1132.2 |
| 32.5° | 1642.1 | 1641.6 | 1571.2 | 1485.3 | 1382.0 | 1277.7 | 1199.6 | 1199.1 | 1195.5 | 1217.1 | 1243.8 |
| 35° | 1821.0 | 1821.0 | 1751.1 | 1645.2 | 1533.6 | 1417.5 | 1327.0 | 1326.5 | 1328.6 | 1357.9 | 1383.1 |
| 37.5° | 2036.3 | 2040.9 | 1956.6 | 1828.1 | 1706.3 | 1582.5 | 1477.1 | 1474.0 | 1458.6 | 1508.0 | 1549.6 |
| 40° | 2260.9 | 2273.7 | 2186.4 | 2036.3 | 1904.7 | 1776.8 | 1660.6 | 1658.5 | 1645.2 | 1697.6 | 1764.9 |
| 42.5° | 2504.0 | 2533.3 | 2436.2 | 2283.0 | 2139.6 | 2001.3 | 1884.7 | 1879.0 | 1827.6 | 1909.4 | 2014.7 |
| 45° | 2822.7 | 2841.7 | 2700.8 | 2562.1 | 2426.9 | 2269.1 | 2130.4 | 2100.0 | 2048.6 | 2153.5 | 2290.2 |
| 47.5° | 3039.5 | 3030.3 | 2942.4 | 2849.4 | 2762.5 | 2611.4 | 2398.1 | 2359.6 | 2296.9 | 2435.6 | 2586.2 |
| 50° | 3174.2 | 3180.9 | 3131.5 | 3126.9 | 3122.3 | 3016.9 | 2700.3 | 2654.1 | 2581.6 | 2746.1 | 2921.8 |
| 52.5° | 3263.1 | 3232.8 | 3241.5 | 3346.4 | 3473.3 | 3423.0 | 3042.1 | 2990.7 | 2916.2 | 3080.7 | 3279.0 |
| 55° | 3226.1 | 3186.0 | 3266.7 | 3473.3 | 3771.9 | 3783.2 | 3417.3 | 3364.4 | 3300.6 | 3436.3 | 3708.7 |
| 57.5° | 3073.0 | 3093.0 | 3220.5 | 3507.8 | 3976.0 | 4106.0 | 3848.5 | 3794.5 | 3669.1 | 3806.9 | 4116.8 |
| 60° | 2857.6 | 2898.2 | 3093.0 | 3453.3 | 4118.9 | 4357.3 | 4321.9 | 4285.9 | 4070.0 | 4167.7 | 4545.4 |
| 62.5° | 2626.3 | 2666.4 | 2905.9 | 3360.3 | 4054.6 | 4579.9 | 4786.5 | 4764.4 | 4512.5 | 4515.1 | 4817.3 |
| 65° | 2284.5 | 2301.0 | 2545.6 | 3106.4 | 3876.3 | 4780.8 | 5251.6 | 5232.1 | 4935.5 | 4811.7 | 4893.4 |
| 67.5° | 1725.4 | 1745.9 | 1946.9 | 2452.1 | 3333.5 | 4671.9 | 5623.2 | 5620.1 | 5189.9 | 4921.7 | 4712.5 |
| 69° | 1274.1 | 1299.3 | 1463.2 | 1903.7 | 2756.4 | 4256.6 | 5640.7 | 5682.3 | 5258.8 | 4910.3 | 4406.7 |
| 70° | 932.3 | 961.1 | 1112.7 | 1511.0 | 2295.8 | 3798.1 | 5491.1 | 5580.5 | 5232.6 | 4838.9 | 4168.2 |
| 72.5° | 396.3 | 406.0 | 480.6 | 682.0 | 1164.6 | 2290.2 | 4497.6 | 4685.7 | 4725.8 | 4335.7 | 3256.4 |
| 75° | 248.2 | 251.3 | 280.6 | 350.0 | 518.1 | 947.2 | 2912.6 | 3169.1 | 3528.3 | 3363.9 | 2180.2 |
| 77.5° | 187.1 | 189.7 | 206.6 | 241.0 | 321.7 | 353.6 | 1351.2 | 1611.3 | 2020.9 | 1978.7 | 1085.0 |
| 80° | 143.4 | 144.9 | 156.2 | 175.3 | 226.7 | 221.5 | 438.4 | 551.0 | 843.4 | 744.2 | 383.9 |
| 82.5° | 112.6 | 113.1 | 122.8 | 126.4 | 158.3 | 149.0 | 220.0 | 245.2 | 340.8 | 283.2 | 187.6 |
| 85° | 99.7 | 101.2 | 111.0 | 92.5 | 101.2 | 89.9 | 120.8 | 131.1 | 180.9 | 170.6 | 70.9 |
| 87.5° | 50.9 | 53.5 | 93.0 | 79.1 | 50.9 | 42.7 | 52.9 | 57.0 | 73.5 | 79.7 | 34.4 |
| 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° | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 | 991.9 |
| 2.5° | 980.1 | 980.6 | 982.2 | 984.7 | 988.9 | 994.0 | 1000.2 | 1006.3 | 1009.9 | 1012.5 | 1011.5 |
| 5° | 971.9 | 972.4 | 975.5 | 980.1 | 985.3 | 993.0 | 1003.2 | 1011.0 | 1016.6 | 1020.2 | 1019.7 |
| 7.5° | 961.6 | 963.2 | 969.3 | 974.5 | 981.7 | 987.8 | 996.0 | 1003.2 | 1008.9 | 1012.5 | 1012.0 |
| 10° | 953.9 | 955.4 | 963.2 | 969.8 | 976.0 | 977.0 | 975.5 | 973.4 | 972.9 | 975.5 | 974.5 |
| 12.5° | 950.3 | 953.4 | 960.6 | 965.2 | 962.6 | 952.9 | 941.6 | 936.9 | 935.4 | 940.5 | 941.1 |
| 15° | 951.3 | 953.9 | 960.1 | 957.0 | 943.1 | 926.7 | 920.5 | 924.1 | 927.2 | 930.3 | 930.8 |
| 17.5° | 953.9 | 955.4 | 957.0 | 945.7 | 926.2 | 915.4 | 913.3 | 909.7 | 900.5 | 895.3 | 894.8 |
| 20° | 958.5 | 960.6 | 958.0 | 940.0 | 922.6 | 908.2 | 883.5 | 861.4 | 840.3 | 829.0 | 824.4 |
| 22.5° | 974.5 | 976.0 | 968.3 | 950.8 | 924.1 | 877.3 | 827.5 | 789.4 | 757.1 | 739.6 | 732.9 |
| 25° | 1005.8 | 1008.4 | 997.6 | 975.5 | 905.6 | 823.9 | 753.5 | 702.1 | 661.5 | 640.4 | 634.7 |
| 27.5° | 1060.8 | 1063.4 | 1051.6 | 994.0 | 862.4 | 752.4 | 667.1 | 616.2 | 581.3 | 563.3 | 560.7 |
| 30° | 1143.0 | 1146.6 | 1135.8 | 993.5 | 796.6 | 661.5 | 582.8 | 553.0 | 533.0 | 520.6 | 520.1 |
| 32.5° | 1257.1 | 1270.5 | 1226.3 | 976.0 | 715.4 | 569.5 | 519.1 | 508.8 | 499.1 | 490.8 | 490.8 |
| 35° | 1402.1 | 1433.4 | 1315.7 | 939.5 | 626.0 | 506.8 | 483.6 | 473.9 | 461.5 | 452.8 | 451.8 |
| 37.5° | 1575.3 | 1624.1 | 1379.5 | 874.8 | 548.9 | 476.4 | 462.0 | 446.1 | 426.6 | 409.6 | 405.5 |
| 40° | 1813.2 | 1824.5 | 1410.8 | 769.4 | 491.3 | 460.0 | 442.0 | 422.0 | 397.3 | 378.3 | 376.2 |
| 42.5° | 2052.2 | 2015.2 | 1404.6 | 656.3 | 458.4 | 445.1 | 421.4 | 399.3 | 377.2 | 361.3 | 361.3 |
| 45° | 2324.1 | 2181.7 | 1357.9 | 542.7 | 428.6 | 428.1 | 402.4 | 381.4 | 364.4 | 352.6 | 350.0 |
| 47.5° | 2584.2 | 2331.3 | 1277.2 | 459.0 | 397.8 | 411.2 | 390.1 | 373.1 | 357.7 | 346.4 | 344.4 |
| 50° | 2899.7 | 2504.5 | 1191.4 | 400.4 | 368.0 | 396.3 | 385.0 | 376.2 | 361.3 | 341.8 | 339.7 |
| 52.5° | 3213.3 | 2707.0 | 1125.1 | 356.2 | 341.8 | 384.4 | 388.0 | 389.1 | 375.2 | 337.2 | 334.6 |
| 55° | 3549.9 | 2923.4 | 1055.2 | 321.7 | 320.2 | 378.8 | 395.2 | 394.2 | 387.5 | 338.2 | 334.1 |
| 57.5° | 3870.1 | 3140.8 | 950.8 | 297.6 | 303.2 | 373.1 | 396.8 | 380.3 | 368.5 | 343.3 | 336.6 |
| 60° | 4135.3 | 3320.7 | 797.7 | 280.6 | 288.8 | 361.8 | 386.5 | 361.8 | 341.8 | 342.3 | 336.1 |
| 62.5° | 4264.3 | 3371.0 | 610.1 | 261.1 | 277.0 | 343.3 | 371.6 | 347.9 | 329.4 | 344.4 | 340.8 |
| 65° | 4166.1 | 3227.7 | 434.8 | 243.1 | 262.6 | 321.7 | 362.9 | 336.1 | 323.3 | 354.6 | 350.5 |
| 67.5° | 3813.6 | 2837.0 | 315.6 | 227.2 | 248.8 | 299.6 | 346.4 | 325.3 | 317.1 | 362.3 | 353.1 |
| 69° | 3438.9 | 2449.5 | 273.4 | 217.9 | 239.0 | 287.8 | 335.6 | 319.7 | 312.5 | 351.5 | 338.2 |
| 70° | 3127.4 | 2150.9 | 252.4 | 212.3 | 230.8 | 281.1 | 327.4 | 316.1 | 307.9 | 338.7 | 322.8 |
| 72.5° | 2242.4 | 1390.3 | 212.3 | 195.3 | 209.2 | 266.2 | 309.4 | 302.7 | 290.4 | 305.8 | 295.5 |
| 75° | 1354.8 | 725.7 | 180.4 | 177.8 | 186.6 | 245.7 | 288.3 | 280.1 | 267.8 | 269.3 | 264.2 |
| 77.5° | 622.4 | 335.1 | 151.1 | 157.3 | 162.9 | 220.0 | 262.6 | 253.4 | 242.1 | 238.0 | 238.5 |
| 80° | 272.9 | 195.8 | 126.4 | 134.1 | 137.2 | 197.9 | 234.9 | 224.6 | 212.3 | 234.4 | 217.4 |
| 82.5° | 147.5 | 113.6 | 98.7 | 103.8 | 112.6 | 172.2 | 204.0 | 190.7 | 178.9 | 208.2 | 168.1 |
| 85° | 59.6 | 58.1 | 66.8 | 72.0 | 78.1 | 123.9 | 170.6 | 156.8 | 142.4 | 127.5 | 124.4 |
| 87.5° | 25.7 | 27.8 | 32.9 | 34.9 | 41.6 | 77.1 | 114.6 | 100.2 | 100.7 | 86.3 | 84.8 |
| 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)