

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: P196393

Luminaire Tested: **NAV-AF-01-D-UNV-5MQ-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196393
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-01-D-UNV-5MQ-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 3000K, 615mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4146.4 lumens
Efficiency: N/A
Efficacy: 122.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B2 - U0 - G1

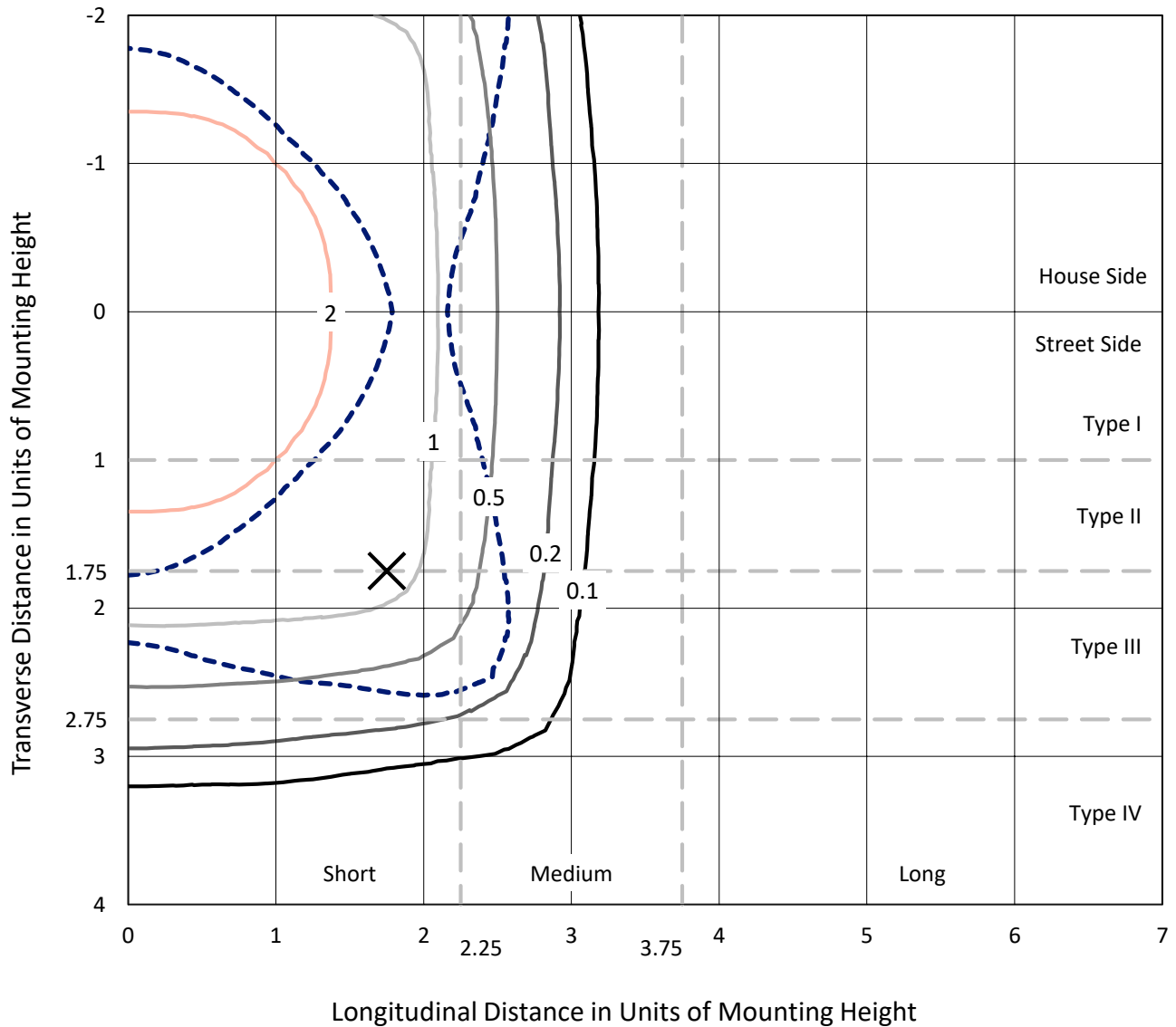
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

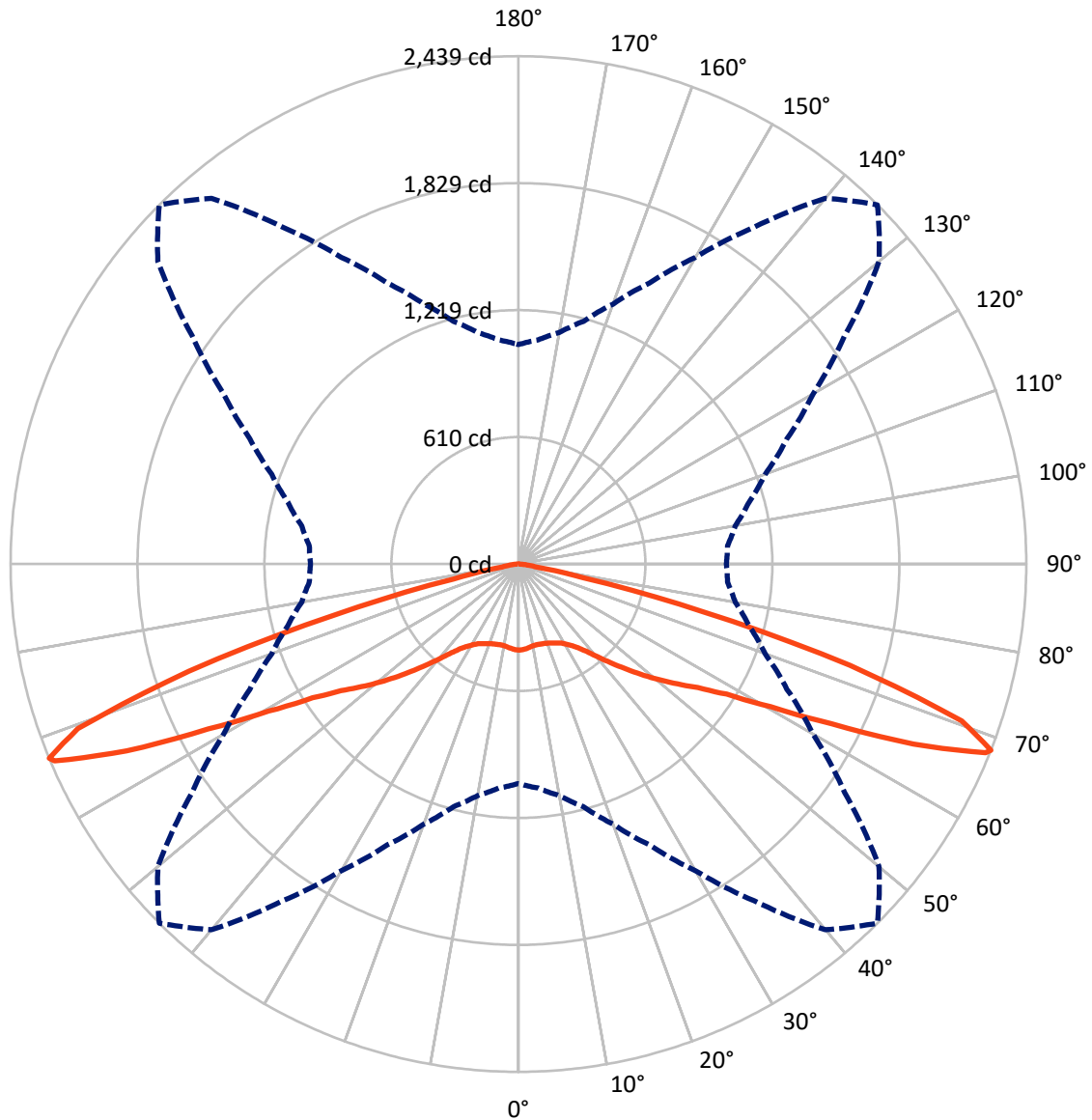
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.1 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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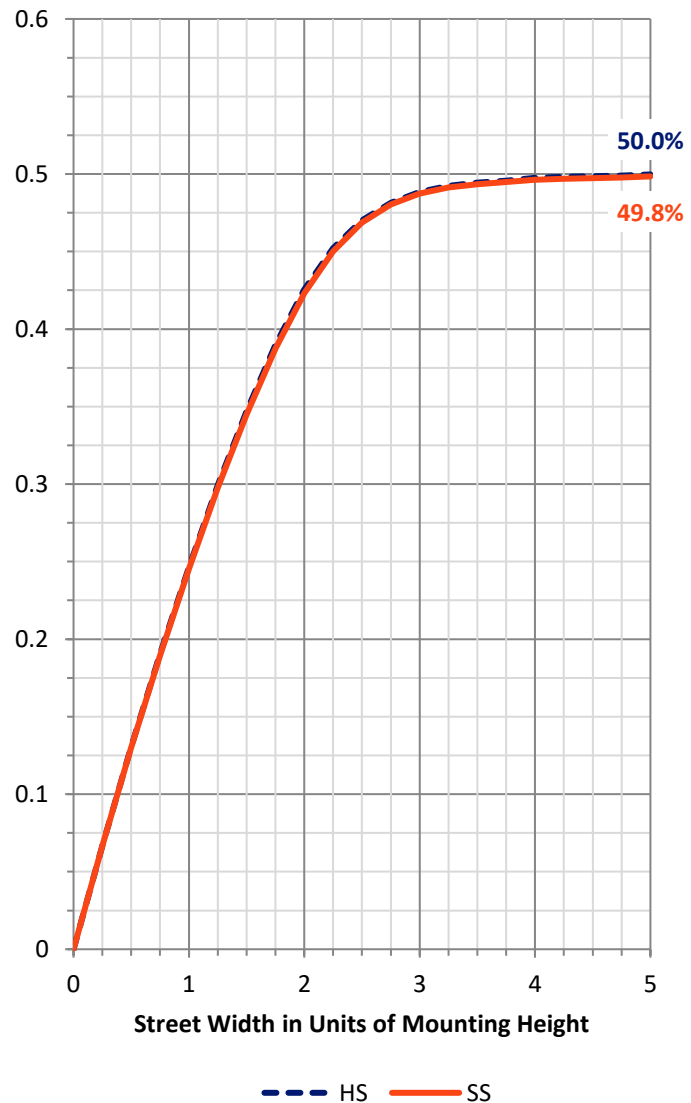
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 2073.2 | 0.0 | 2073.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 2073.2 | 0.0 | 2073.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 4146.4 | 0.0 | 4146.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 38.7 | 0.9 |
| 10°-20° | 112.2 | 2.7 |
| 20°-30° | 190.8 | 4.6 |
| 30°-40° | 312.3 | 7.5 |
| 40°-50° | 558.1 | 13.5 |
| 50°-60° | 942.5 | 22.7 |
| 60°-70° | 1461.5 | 35.2 |
| 70°-80° | 502.5 | 12.1 |
| 80°-90° | 27.6 | 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° | 4146.4 | 100.0 |
| 0°-180° | 4146.4 | 100.0 |



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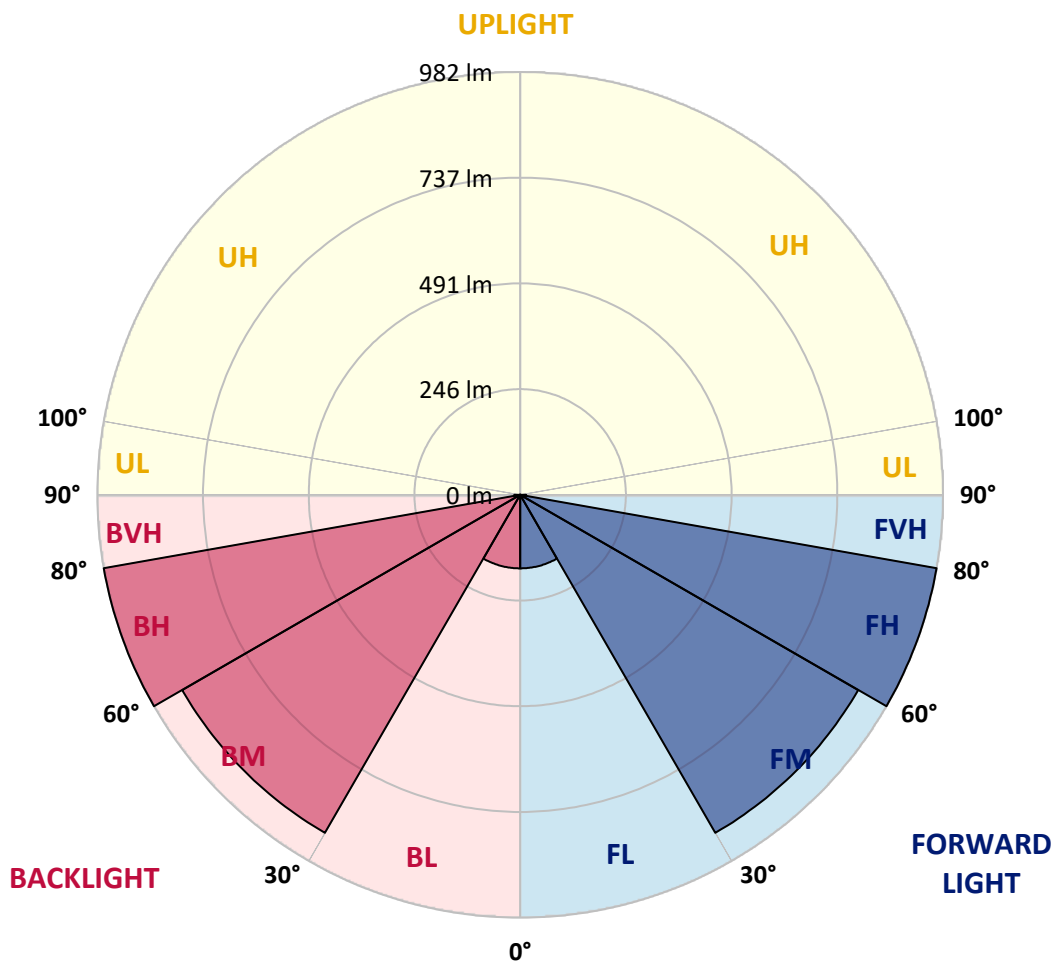
CATALOG NUMBER: NAV-AF-01-D-UNV-5MQ-7030-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 170.9 | 4.1 | | | |
| FM (30°-60°) | 906.5 | 21.9 | | | |
| FH (60°-80°) | 982.0 | 23.7 | | | G1/1800 |
| FVH (80°-90°) | 13.8 | 0.3 | | | G1/100 |
| BL (0°-30°) | 170.9 | 4.1 | B1/500 | | |
| BM (30°-60°) | 906.5 | 21.9 | B1/1000 | | |
| BH (60°-80°) | 982.0 | 23.7 | B2/1000 | | G1/1800 |
| BVH (80°-90°) | 13.8 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G1

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 |
| 2.5° | 415.4 | 415.4 | 415.9 | 415.6 | 414.8 | 414.1 | 413.3 | 412.6 | 412.1 | 411.6 | 411.1 |
| 5° | 411.1 | 411.1 | 411.8 | 411.4 | 410.9 | 410.0 | 409.5 | 408.7 | 408.3 | 407.7 | 408.0 |
| 7.5° | 405.5 | 406.0 | 406.6 | 406.2 | 405.3 | 405.1 | 404.3 | 403.9 | 403.5 | 402.7 | 402.9 |
| 10° | 400.7 | 400.9 | 401.4 | 401.2 | 400.9 | 400.1 | 399.9 | 399.7 | 399.4 | 398.4 | 398.1 |
| 12.5° | 395.8 | 396.4 | 396.8 | 397.1 | 396.8 | 397.1 | 397.3 | 397.6 | 397.3 | 396.8 | 396.8 |
| 15° | 392.0 | 392.6 | 393.4 | 394.1 | 394.3 | 395.8 | 396.8 | 397.9 | 398.7 | 398.9 | 398.1 |
| 17.5° | 390.0 | 390.7 | 391.8 | 393.4 | 394.5 | 396.4 | 398.1 | 399.7 | 400.9 | 401.2 | 400.4 |
| 20° | 389.7 | 390.5 | 392.0 | 393.8 | 396.1 | 398.4 | 401.2 | 403.5 | 404.7 | 405.5 | 404.7 |
| 22.5° | 391.4 | 392.6 | 394.5 | 396.8 | 399.7 | 402.7 | 406.2 | 408.7 | 411.4 | 412.4 | 411.6 |
| 25° | 396.6 | 397.6 | 399.9 | 402.7 | 405.8 | 409.5 | 413.1 | 416.4 | 418.9 | 420.2 | 419.2 |
| 27.5° | 407.3 | 407.5 | 410.0 | 413.1 | 416.8 | 420.0 | 424.6 | 426.0 | 428.1 | 429.4 | 428.1 |
| 30° | 422.3 | 422.8 | 425.0 | 429.8 | 433.2 | 437.5 | 440.0 | 441.5 | 443.8 | 445.1 | 443.6 |
| 32.5° | 445.1 | 445.6 | 447.6 | 452.3 | 455.3 | 458.6 | 461.6 | 462.6 | 464.9 | 466.4 | 464.7 |
| 35° | 477.4 | 478.3 | 480.0 | 483.2 | 485.7 | 488.3 | 490.6 | 489.8 | 491.3 | 493.3 | 491.5 |
| 37.5° | 521.5 | 521.2 | 521.8 | 524.1 | 526.6 | 528.2 | 531.6 | 529.9 | 531.4 | 533.1 | 532.2 |
| 40° | 573.1 | 573.1 | 572.8 | 576.9 | 577.9 | 579.4 | 583.2 | 580.9 | 583.0 | 585.0 | 583.2 |
| 42.5° | 631.7 | 632.7 | 634.0 | 637.3 | 640.1 | 640.6 | 642.3 | 641.4 | 643.9 | 645.7 | 643.9 |
| 45° | 699.3 | 700.8 | 702.3 | 709.9 | 711.2 | 712.3 | 713.5 | 710.1 | 712.9 | 714.4 | 714.0 |
| 47.5° | 769.3 | 772.1 | 775.4 | 783.3 | 788.5 | 790.7 | 791.7 | 787.9 | 788.1 | 790.4 | 790.7 |
| 50° | 848.5 | 851.5 | 855.0 | 863.8 | 868.6 | 872.7 | 874.0 | 869.6 | 870.1 | 871.9 | 872.4 |
| 52.5° | 921.7 | 925.2 | 932.3 | 944.3 | 951.1 | 958.2 | 958.7 | 953.4 | 955.7 | 957.0 | 955.9 |
| 55° | 990.6 | 995.1 | 1004.4 | 1020.5 | 1032.9 | 1046.8 | 1053.3 | 1047.4 | 1047.4 | 1046.3 | 1045.8 |
| 57.5° | 1070.7 | 1075.7 | 1085.5 | 1103.9 | 1121.2 | 1141.3 | 1158.5 | 1164.3 | 1175.1 | 1178.7 | 1173.0 |
| 60° | 1191.6 | 1196.9 | 1206.8 | 1231.3 | 1252.9 | 1282.2 | 1310.7 | 1333.7 | 1371.3 | 1391.6 | 1373.4 |
| 62.5° | 1302.1 | 1310.1 | 1333.5 | 1376.2 | 1423.4 | 1477.5 | 1540.2 | 1585.0 | 1653.2 | 1687.2 | 1641.3 |
| 65° | 1276.9 | 1293.4 | 1339.1 | 1406.1 | 1503.6 | 1621.0 | 1748.7 | 1871.3 | 2012.4 | 2084.8 | 1991.4 |
| 67.5° | 1115.4 | 1129.4 | 1178.7 | 1256.6 | 1378.2 | 1539.9 | 1738.6 | 1992.5 | 2283.6 | 2419.2 | 2253.9 |
| 68° | 1053.7 | 1079.9 | 1128.8 | 1206.3 | 1328.9 | 1487.9 | 1699.8 | 1974.1 | 2292.0 | 2438.5 | 2260.0 |
| 70° | 808.0 | 817.4 | 864.4 | 933.8 | 1066.2 | 1222.1 | 1436.1 | 1748.7 | 2107.9 | 2258.7 | 2075.2 |
| 72.5° | 383.9 | 389.5 | 420.0 | 488.5 | 572.5 | 699.5 | 888.4 | 1183.2 | 1506.9 | 1663.8 | 1480.8 |
| 75° | 140.6 | 141.9 | 149.0 | 165.3 | 196.7 | 244.5 | 335.2 | 518.4 | 767.5 | 915.4 | 770.6 |
| 77.5° | 75.9 | 76.2 | 79.0 | 83.0 | 88.6 | 94.9 | 108.7 | 145.8 | 235.1 | 319.9 | 248.3 |
| 80° | 47.7 | 47.5 | 50.3 | 53.5 | 57.4 | 60.4 | 61.7 | 66.0 | 74.4 | 87.1 | 80.0 |
| 82.5° | 24.4 | 26.7 | 33.0 | 36.6 | 42.2 | 43.1 | 41.8 | 41.6 | 44.1 | 47.7 | 49.2 |
| 85° | 13.4 | 11.9 | 17.5 | 23.4 | 25.3 | 26.1 | 26.4 | 24.9 | 24.4 | 23.8 | 25.1 |
| 87.5° | 6.9 | 6.3 | 7.6 | 11.7 | 12.4 | 10.2 | 10.4 | 8.8 | 6.1 | 6.1 | 6.3 |
| 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° | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 | 413.6 |
| 2.5° | 410.6 | 410.9 | 410.3 | 410.3 | 410.3 | 410.6 | 410.3 | 410.0 |
| 5° | 407.3 | 407.7 | 407.7 | 408.0 | 408.3 | 408.3 | 408.3 | 408.3 |
| 7.5° | 402.4 | 402.7 | 403.1 | 403.1 | 403.1 | 403.1 | 403.1 | 403.1 |
| 10° | 397.9 | 397.3 | 397.1 | 396.6 | 396.6 | 395.8 | 396.1 | 396.4 |
| 12.5° | 395.6 | 394.5 | 394.1 | 393.4 | 392.8 | 392.0 | 392.0 | 392.2 |
| 15° | 396.6 | 395.1 | 393.6 | 393.0 | 392.6 | 392.0 | 391.4 | 391.8 |
| 17.5° | 398.7 | 396.8 | 395.1 | 394.1 | 393.0 | 392.2 | 392.0 | 392.2 |
| 20° | 402.9 | 400.4 | 397.6 | 395.8 | 393.8 | 393.4 | 392.6 | 393.4 |
| 22.5° | 408.7 | 405.8 | 402.2 | 398.9 | 396.6 | 395.6 | 394.5 | 395.3 |
| 25° | 415.9 | 412.6 | 409.0 | 405.3 | 402.7 | 402.0 | 400.7 | 400.7 |
| 27.5° | 425.8 | 423.1 | 420.0 | 416.4 | 413.9 | 413.1 | 411.1 | 411.1 |
| 30° | 441.5 | 438.7 | 436.0 | 432.8 | 430.4 | 429.6 | 427.1 | 427.1 |
| 32.5° | 462.3 | 459.3 | 457.6 | 454.9 | 453.0 | 451.7 | 448.6 | 448.4 |
| 35° | 490.2 | 487.6 | 487.3 | 485.4 | 483.5 | 483.7 | 480.6 | 480.0 |
| 37.5° | 530.5 | 528.2 | 529.0 | 527.4 | 525.5 | 527.0 | 525.3 | 525.3 |
| 40° | 581.7 | 580.9 | 581.7 | 580.7 | 580.9 | 581.1 | 579.6 | 580.1 |
| 42.5° | 643.6 | 641.6 | 646.2 | 645.7 | 644.9 | 647.0 | 643.4 | 641.0 |
| 45° | 715.0 | 714.2 | 718.8 | 719.6 | 718.1 | 719.4 | 712.9 | 712.7 |
| 47.5° | 792.4 | 792.4 | 796.5 | 796.0 | 794.5 | 794.8 | 787.1 | 782.3 |
| 50° | 873.2 | 872.7 | 876.7 | 875.7 | 873.7 | 873.4 | 865.6 | 860.8 |
| 52.5° | 957.2 | 957.2 | 963.1 | 960.3 | 955.5 | 953.2 | 943.6 | 937.1 |
| 55° | 1050.2 | 1048.9 | 1050.6 | 1041.6 | 1032.2 | 1025.3 | 1013.4 | 1008.6 |
| 57.5° | 1167.8 | 1153.0 | 1140.3 | 1128.6 | 1115.4 | 1107.4 | 1093.3 | 1088.2 |
| 60° | 1334.5 | 1295.2 | 1278.2 | 1254.9 | 1233.0 | 1222.1 | 1203.5 | 1193.6 |
| 62.5° | 1565.5 | 1500.3 | 1454.1 | 1402.6 | 1352.8 | 1317.7 | 1289.6 | 1277.1 |
| 65° | 1832.8 | 1690.5 | 1573.0 | 1462.6 | 1368.8 | 1294.4 | 1252.9 | 1240.1 |
| 67.5° | 1934.2 | 1673.2 | 1470.4 | 1311.9 | 1198.1 | 1109.5 | 1060.1 | 1049.7 |
| 68° | 1912.7 | 1633.7 | 1422.9 | 1260.7 | 1146.3 | 1057.0 | 1007.8 | 998.4 |
| 70° | 1687.2 | 1378.2 | 1155.8 | 994.3 | 887.6 | 802.6 | 767.8 | 752.8 |
| 72.5° | 1150.2 | 885.1 | 678.9 | 543.1 | 463.4 | 409.5 | 377.6 | 366.7 |
| 75° | 529.4 | 357.8 | 239.0 | 178.5 | 151.6 | 138.6 | 128.7 | 126.2 |
| 77.5° | 154.4 | 112.2 | 96.4 | 89.4 | 84.0 | 79.4 | 76.2 | 75.9 |
| 80° | 73.4 | 68.9 | 66.7 | 62.2 | 57.4 | 53.1 | 50.0 | 50.5 |
| 82.5° | 49.2 | 48.0 | 48.0 | 43.3 | 35.8 | 30.7 | 25.3 | 22.8 |
| 85° | 26.1 | 27.2 | 28.7 | 27.2 | 23.6 | 17.5 | 11.5 | 12.4 |
| 87.5° | 8.8 | 10.2 | 10.7 | 10.4 | 9.4 | 7.1 | 5.4 | 5.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)