

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: P196879

Luminaire Tested: **NAV-AF-01-D-UNV-5MQ-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196879
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-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 80 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4290 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B3 - U0 - G1

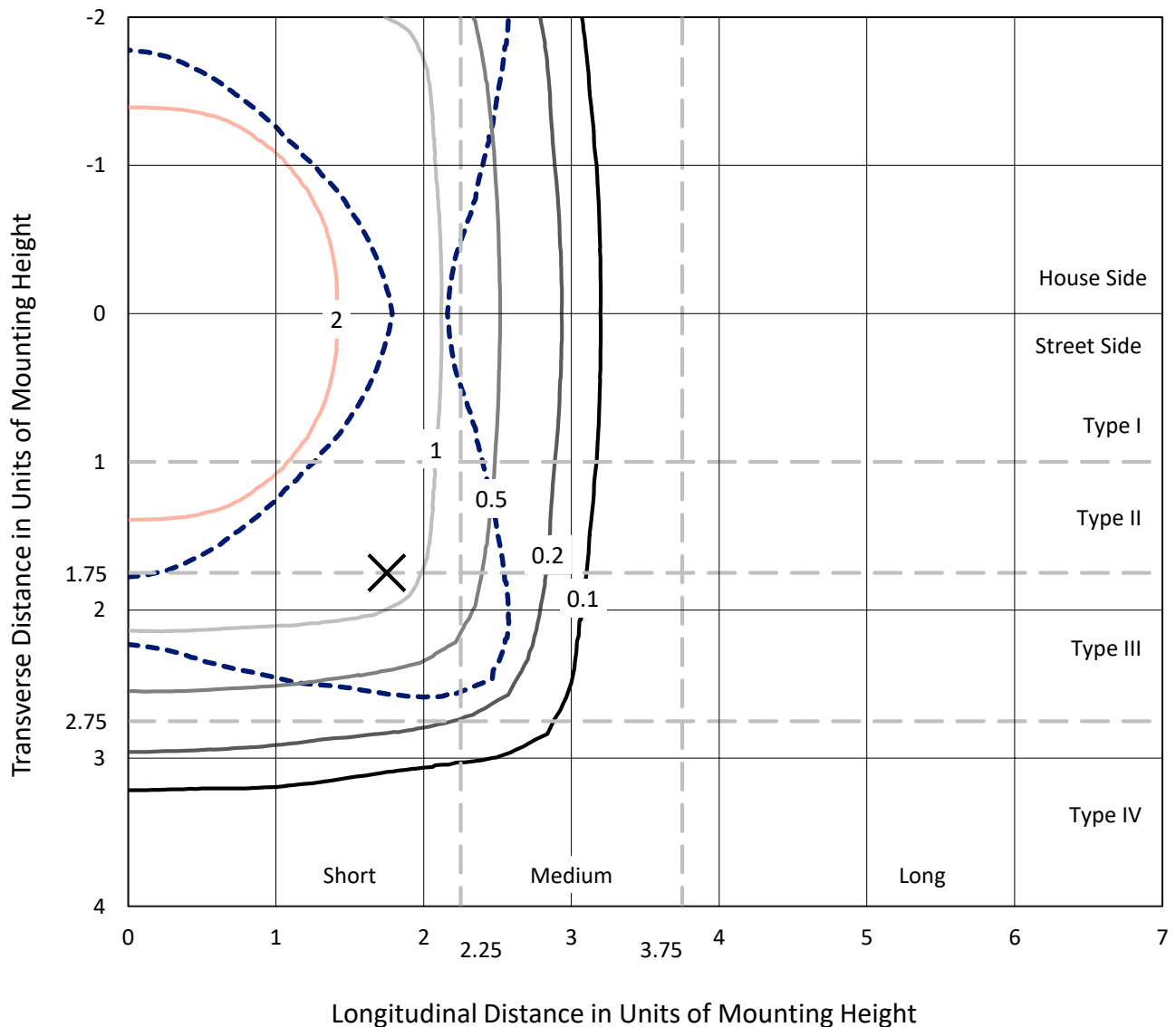
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

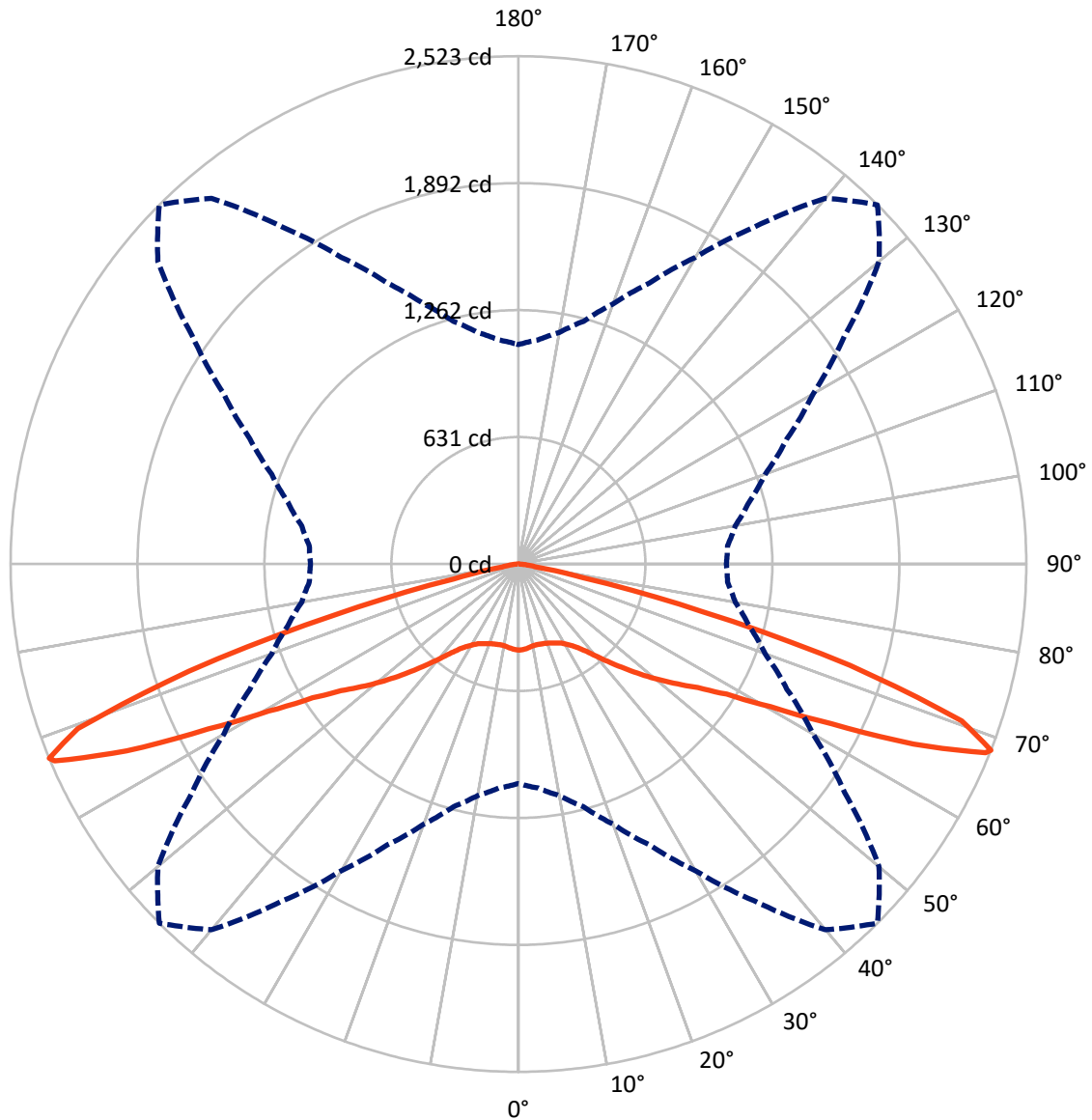
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.3 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 | 2145.0 | 0.0 | 2145.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 2145.0 | 0.0 | 2145.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 4290.0 | 0.0 | 4290.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 40.0 | 0.9 |
| 10°-20° | 116.1 | 2.7 |
| 20°-30° | 197.4 | 4.6 |
| 30°-40° | 323.1 | 7.5 |
| 40°-50° | 577.4 | 13.5 |
| 50°-60° | 975.2 | 22.7 |
| 60°-70° | 1512.2 | 35.2 |
| 70°-80° | 519.9 | 12.1 |
| 80°-90° | 28.6 | 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° | 4290.0 | 100.0 |
| 0°-180° | 4290.0 | 100.0 |



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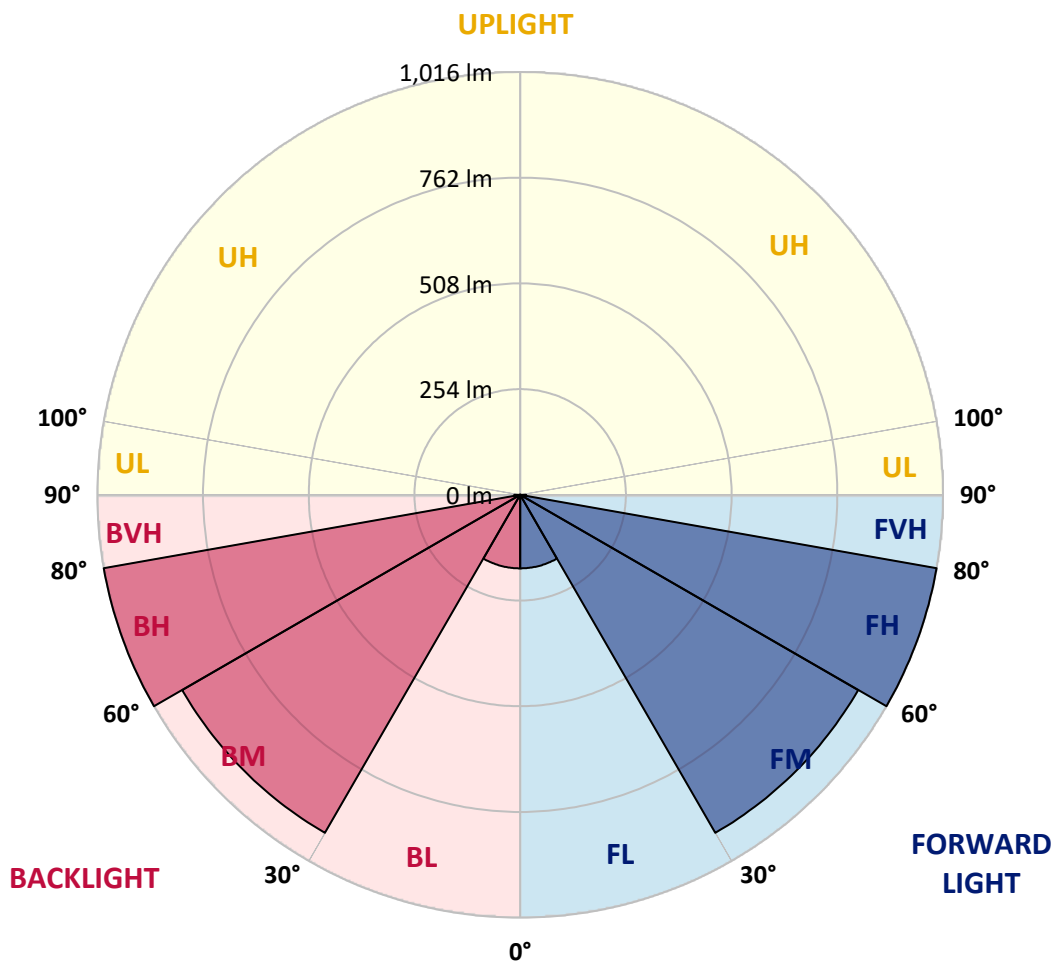
CATALOG NUMBER: NAV-AF-01-D-UNV-5MQ-8030-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 176.8 | 4.1 | | | |
| FM | (30°-60°) | 937.9 | 21.9 | | | |
| FH | (60°-80°) | 1016.0 | 23.7 | | | G1/1800 |
| FVH | (80°-90°) | 14.3 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 176.8 | 4.1 | B1/500 | | |
| BM | (30°-60°) | 937.9 | 21.9 | B1/1000 | | |
| BH | (60°-80°) | 1016.0 | 23.7 | B3/2500 | | G1/1800 |
| BVH | (80°-90°) | 14.3 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G1

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 |
| 2.5° | 429.8 | 429.8 | 430.3 | 430.0 | 429.3 | 428.5 | 427.7 | 426.9 | 426.4 | 425.8 | 425.3 |
| 5° | 425.3 | 425.3 | 426.1 | 425.6 | 425.1 | 424.3 | 423.7 | 422.9 | 422.4 | 421.9 | 422.2 |
| 7.5° | 419.5 | 420.1 | 420.6 | 420.3 | 419.3 | 419.0 | 418.2 | 418.0 | 417.4 | 416.6 | 416.9 |
| 10° | 414.5 | 414.8 | 415.3 | 415.1 | 414.8 | 414.0 | 413.8 | 413.5 | 413.2 | 412.2 | 411.9 |
| 12.5° | 409.6 | 410.1 | 410.6 | 410.9 | 410.6 | 410.9 | 411.1 | 411.4 | 411.1 | 410.6 | 410.6 |
| 15° | 405.6 | 406.1 | 406.9 | 407.7 | 408.0 | 409.6 | 410.6 | 411.7 | 412.4 | 412.7 | 411.9 |
| 17.5° | 403.5 | 404.3 | 405.3 | 406.9 | 408.2 | 410.1 | 411.9 | 413.5 | 414.8 | 415.1 | 414.3 |
| 20° | 403.2 | 404.0 | 405.6 | 407.4 | 409.8 | 412.2 | 415.1 | 417.4 | 418.7 | 419.5 | 418.7 |
| 22.5° | 405.1 | 406.1 | 408.2 | 410.6 | 413.5 | 416.6 | 420.3 | 422.9 | 425.6 | 426.6 | 425.8 |
| 25° | 410.3 | 411.4 | 413.8 | 416.6 | 419.8 | 423.7 | 427.4 | 430.8 | 433.5 | 434.8 | 433.7 |
| 27.5° | 421.4 | 421.6 | 424.3 | 427.4 | 431.1 | 434.5 | 439.2 | 440.8 | 442.9 | 444.2 | 442.9 |
| 30° | 436.9 | 437.4 | 439.8 | 444.8 | 448.2 | 452.6 | 455.3 | 456.8 | 459.2 | 460.5 | 458.9 |
| 32.5° | 460.5 | 461.0 | 463.1 | 467.9 | 471.0 | 474.4 | 477.6 | 478.6 | 481.0 | 482.6 | 480.7 |
| 35° | 493.9 | 494.9 | 496.8 | 499.9 | 502.5 | 505.2 | 507.5 | 506.8 | 508.3 | 510.4 | 508.6 |
| 37.5° | 539.6 | 539.3 | 539.9 | 542.2 | 544.8 | 546.4 | 550.1 | 548.3 | 549.8 | 551.7 | 550.6 |
| 40° | 592.9 | 592.9 | 592.7 | 596.9 | 597.9 | 599.5 | 603.4 | 601.1 | 603.2 | 605.3 | 603.4 |
| 42.5° | 653.6 | 654.7 | 656.0 | 659.4 | 662.3 | 662.8 | 664.6 | 663.6 | 666.2 | 668.0 | 666.2 |
| 45° | 723.5 | 725.1 | 726.6 | 734.5 | 735.8 | 736.9 | 738.2 | 734.8 | 737.7 | 739.2 | 738.7 |
| 47.5° | 796.0 | 798.9 | 802.3 | 810.4 | 815.7 | 818.1 | 819.1 | 815.2 | 815.4 | 817.8 | 818.1 |
| 50° | 877.9 | 881.1 | 884.5 | 893.7 | 898.7 | 902.9 | 904.2 | 899.8 | 900.3 | 902.1 | 902.6 |
| 52.5° | 953.6 | 957.3 | 964.6 | 977.0 | 984.1 | 991.4 | 992.0 | 986.4 | 988.8 | 990.1 | 989.1 |
| 55° | 1024.8 | 1029.5 | 1039.2 | 1055.8 | 1068.7 | 1083.1 | 1089.7 | 1083.6 | 1083.6 | 1082.6 | 1082.1 |
| 57.5° | 1107.8 | 1113.1 | 1123.0 | 1142.2 | 1160.1 | 1180.8 | 1198.7 | 1204.7 | 1215.8 | 1219.5 | 1213.7 |
| 60° | 1232.9 | 1238.4 | 1248.6 | 1273.8 | 1296.4 | 1326.6 | 1356.1 | 1380.0 | 1418.8 | 1439.9 | 1421.0 |
| 62.5° | 1347.1 | 1355.5 | 1379.7 | 1423.8 | 1472.7 | 1528.7 | 1593.5 | 1639.8 | 1710.4 | 1745.6 | 1698.1 |
| 65° | 1321.1 | 1338.2 | 1385.5 | 1454.8 | 1555.7 | 1677.1 | 1809.2 | 1936.1 | 2082.2 | 2157.0 | 2060.4 |
| 67.5° | 1154.0 | 1168.5 | 1219.5 | 1300.1 | 1425.9 | 1593.3 | 1798.7 | 2061.4 | 2362.7 | 2503.0 | 2332.0 |
| 68° | 1090.2 | 1117.3 | 1168.0 | 1248.1 | 1375.0 | 1539.4 | 1758.8 | 2042.5 | 2371.4 | 2523.0 | 2338.3 |
| 70° | 835.9 | 845.6 | 894.2 | 966.2 | 1103.1 | 1264.4 | 1485.8 | 1809.2 | 2180.9 | 2337.0 | 2147.1 |
| 72.5° | 397.2 | 403.0 | 434.5 | 505.4 | 592.4 | 723.7 | 919.2 | 1224.2 | 1559.1 | 1721.5 | 1532.1 |
| 75° | 145.5 | 146.8 | 154.2 | 171.0 | 203.6 | 253.0 | 346.8 | 536.4 | 794.1 | 947.0 | 797.3 |
| 77.5° | 78.5 | 78.8 | 81.7 | 85.9 | 91.7 | 98.3 | 112.4 | 150.8 | 243.3 | 331.0 | 256.9 |
| 80° | 49.4 | 49.1 | 52.0 | 55.4 | 59.4 | 62.5 | 63.8 | 68.3 | 77.0 | 90.1 | 82.8 |
| 82.5° | 25.2 | 27.6 | 34.2 | 37.8 | 43.6 | 44.7 | 43.3 | 43.1 | 45.7 | 49.4 | 51.0 |
| 85° | 13.9 | 12.3 | 18.1 | 24.2 | 26.3 | 27.1 | 27.3 | 25.7 | 25.2 | 24.7 | 26.0 |
| 87.5° | 7.1 | 6.6 | 7.9 | 12.1 | 12.9 | 10.5 | 10.8 | 9.2 | 6.3 | 6.3 | 6.6 |
| 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° | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 | 427.9 |
| 2.5° | 424.8 | 425.1 | 424.5 | 424.5 | 424.5 | 424.8 | 424.5 | 424.3 |
| 5° | 421.4 | 421.9 | 421.9 | 422.2 | 422.4 | 422.4 | 422.4 | 422.4 |
| 7.5° | 416.4 | 416.6 | 417.2 | 417.2 | 417.2 | 417.2 | 417.2 | 417.2 |
| 10° | 411.7 | 411.1 | 410.9 | 410.3 | 410.3 | 409.6 | 409.8 | 410.1 |
| 12.5° | 409.3 | 408.2 | 407.7 | 406.9 | 406.4 | 405.6 | 405.6 | 405.9 |
| 15° | 410.3 | 408.8 | 407.2 | 406.7 | 406.1 | 405.6 | 405.1 | 405.3 |
| 17.5° | 412.4 | 410.6 | 408.8 | 407.7 | 406.7 | 405.9 | 405.6 | 405.9 |
| 20° | 416.9 | 414.3 | 411.4 | 409.6 | 407.4 | 406.9 | 406.1 | 406.9 |
| 22.5° | 422.9 | 419.8 | 416.1 | 412.7 | 410.3 | 409.3 | 408.2 | 409.0 |
| 25° | 430.3 | 426.9 | 423.2 | 419.3 | 416.6 | 415.9 | 414.5 | 414.5 |
| 27.5° | 440.5 | 437.7 | 434.5 | 430.8 | 428.2 | 427.4 | 425.3 | 425.3 |
| 30° | 456.8 | 453.9 | 451.1 | 447.9 | 445.3 | 444.5 | 441.9 | 441.9 |
| 32.5° | 478.4 | 475.2 | 473.4 | 470.8 | 468.7 | 467.3 | 464.2 | 463.9 |
| 35° | 507.3 | 504.4 | 504.1 | 502.3 | 500.2 | 500.4 | 497.3 | 496.8 |
| 37.5° | 548.8 | 546.4 | 547.2 | 545.6 | 543.8 | 545.4 | 543.5 | 543.5 |
| 40° | 601.8 | 601.1 | 601.8 | 600.8 | 601.1 | 601.3 | 599.7 | 600.3 |
| 42.5° | 665.9 | 663.8 | 668.6 | 668.0 | 667.3 | 669.4 | 665.7 | 663.1 |
| 45° | 739.8 | 739.0 | 743.7 | 744.5 | 742.9 | 744.2 | 737.7 | 737.4 |
| 47.5° | 819.9 | 819.9 | 824.1 | 823.6 | 822.0 | 822.3 | 814.4 | 809.4 |
| 50° | 903.4 | 902.9 | 907.1 | 906.1 | 904.0 | 903.7 | 895.5 | 890.6 |
| 52.5° | 990.4 | 990.4 | 996.4 | 993.5 | 988.5 | 986.2 | 976.2 | 969.6 |
| 55° | 1086.5 | 1085.2 | 1087.1 | 1077.6 | 1067.9 | 1060.8 | 1048.4 | 1043.4 |
| 57.5° | 1208.2 | 1192.9 | 1179.8 | 1167.7 | 1154.0 | 1145.6 | 1131.2 | 1125.9 |
| 60° | 1380.8 | 1340.0 | 1322.4 | 1298.3 | 1275.7 | 1264.4 | 1245.2 | 1235.0 |
| 62.5° | 1619.8 | 1552.3 | 1504.5 | 1451.2 | 1399.7 | 1363.4 | 1334.3 | 1321.4 |
| 65° | 1896.2 | 1749.1 | 1627.4 | 1513.2 | 1416.2 | 1339.3 | 1296.4 | 1283.0 |
| 67.5° | 2001.3 | 1731.2 | 1521.3 | 1357.4 | 1239.7 | 1148.0 | 1096.8 | 1086.0 |
| 68° | 1978.9 | 1690.2 | 1472.2 | 1304.3 | 1186.1 | 1093.6 | 1042.7 | 1032.9 |
| 70° | 1745.6 | 1425.9 | 1195.8 | 1028.7 | 918.4 | 830.4 | 794.4 | 778.9 |
| 72.5° | 1190.0 | 915.8 | 702.5 | 561.9 | 479.4 | 423.7 | 390.6 | 379.3 |
| 75° | 547.7 | 370.1 | 247.2 | 184.7 | 156.8 | 143.4 | 133.2 | 130.6 |
| 77.5° | 159.7 | 116.1 | 99.8 | 92.5 | 87.0 | 82.2 | 78.8 | 78.5 |
| 80° | 75.9 | 71.2 | 69.1 | 64.4 | 59.4 | 54.9 | 51.8 | 52.3 |
| 82.5° | 51.0 | 49.7 | 49.7 | 44.9 | 37.0 | 31.8 | 26.3 | 23.6 |
| 85° | 27.1 | 28.1 | 29.7 | 28.1 | 24.4 | 18.1 | 11.8 | 12.9 |
| 87.5° | 9.2 | 10.5 | 11.0 | 10.8 | 9.7 | 7.4 | 5.5 | 5.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)