

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: P197292

Luminaire Tested: **NAV-AF-06-D-UNV-T3R-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197292
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-T3R-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24155 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B3 - U0 - G4

Input Watts (W): 249
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

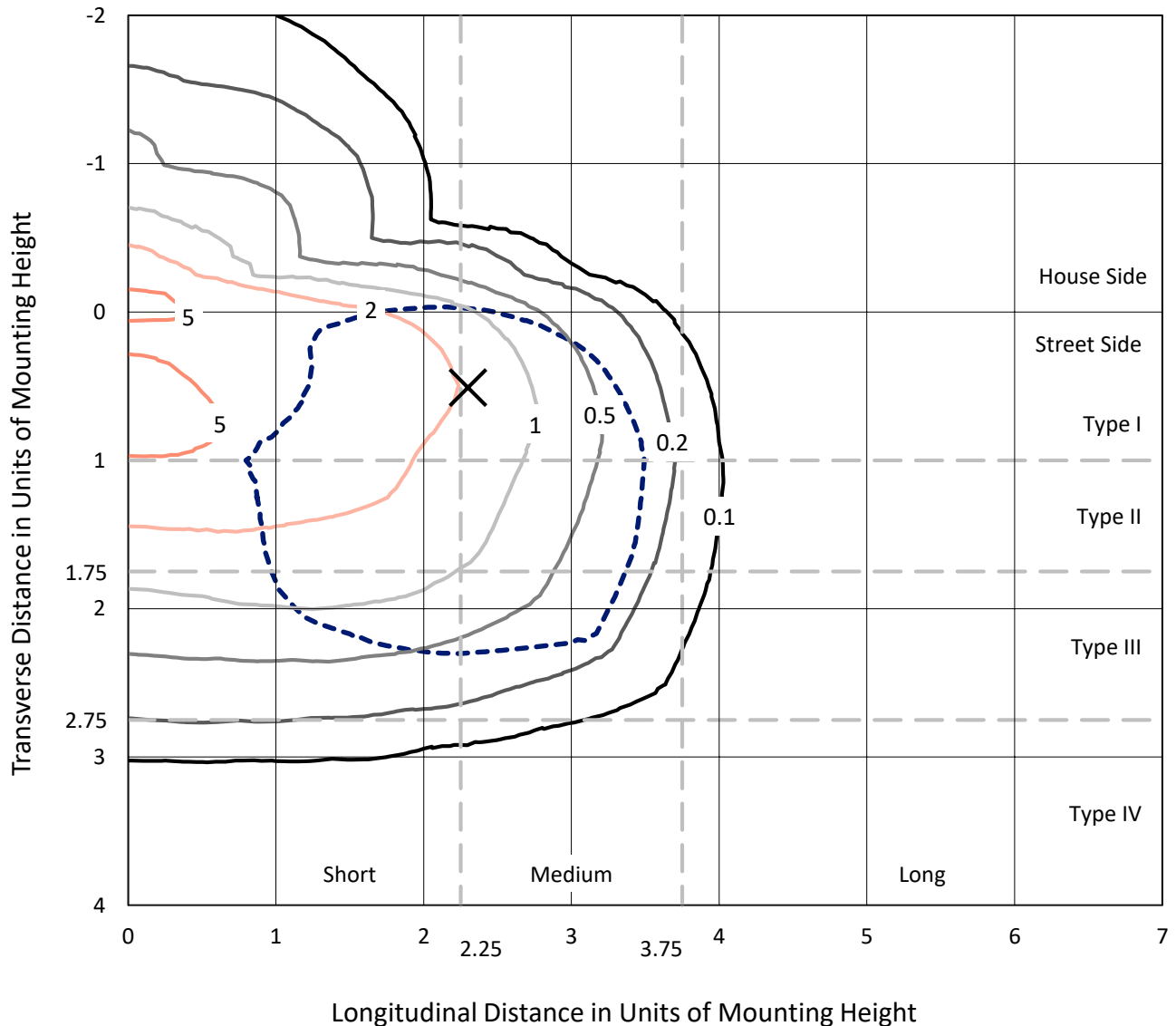


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Iso-Footcandle Lines of Horizontal Illumination

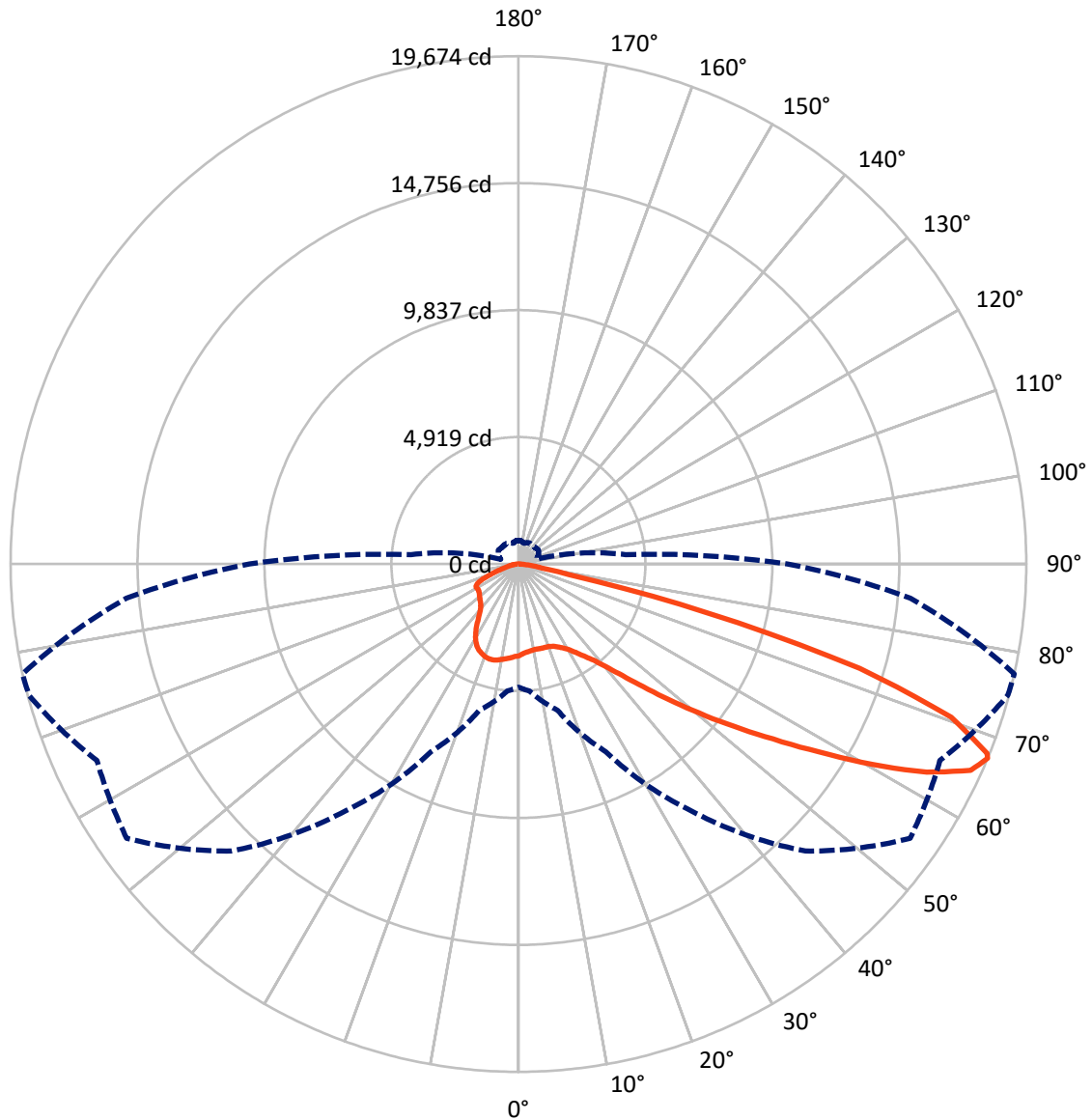
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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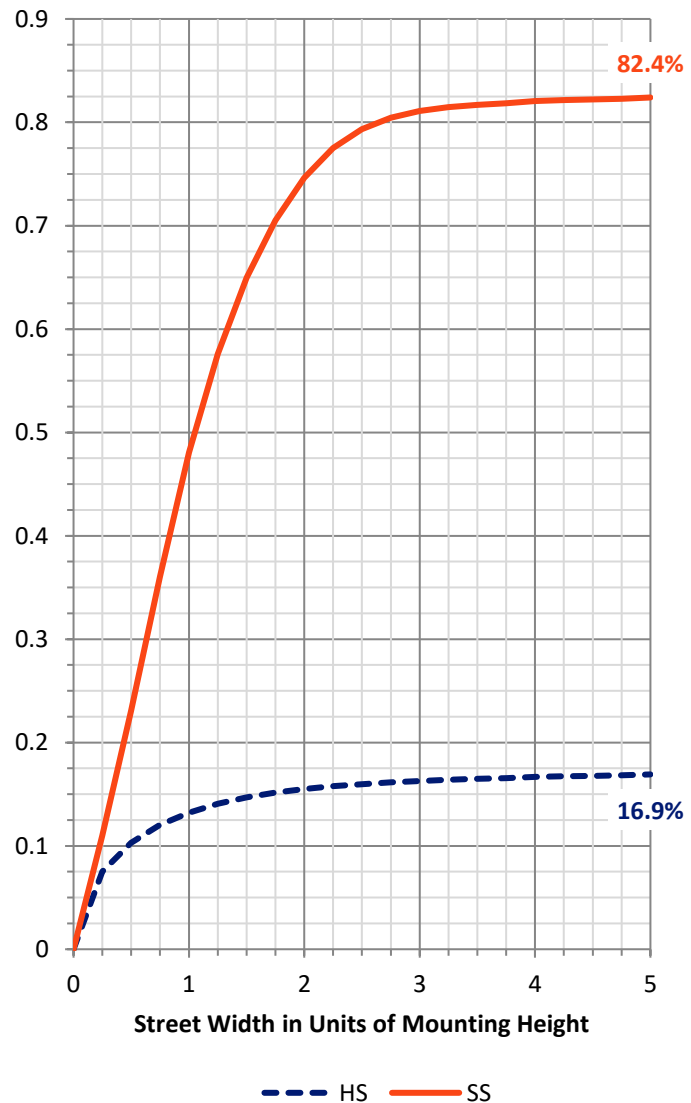
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4151.0 | 0.0 | 4151.0 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 20004.0 | 0.0 | 20004.0 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 24155.0 | 0.0 | 24155.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 316.6 | 1.3 |
| 10°-20° | 876.8 | 3.6 |
| 20°-30° | 1489.8 | 6.2 |
| 30°-40° | 2383.4 | 9.9 |
| 40°-50° | 3669.2 | 15.2 |
| 50°-60° | 5090.7 | 21.1 |
| 60°-70° | 6790.7 | 28.1 |
| 70°-80° | 3231.7 | 13.4 |
| 80°-90° | 306.0 | 1.3 |
| 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° | 24155.0 | 100.0 |
| 0°-180° | 24155.0 | 100.0 |



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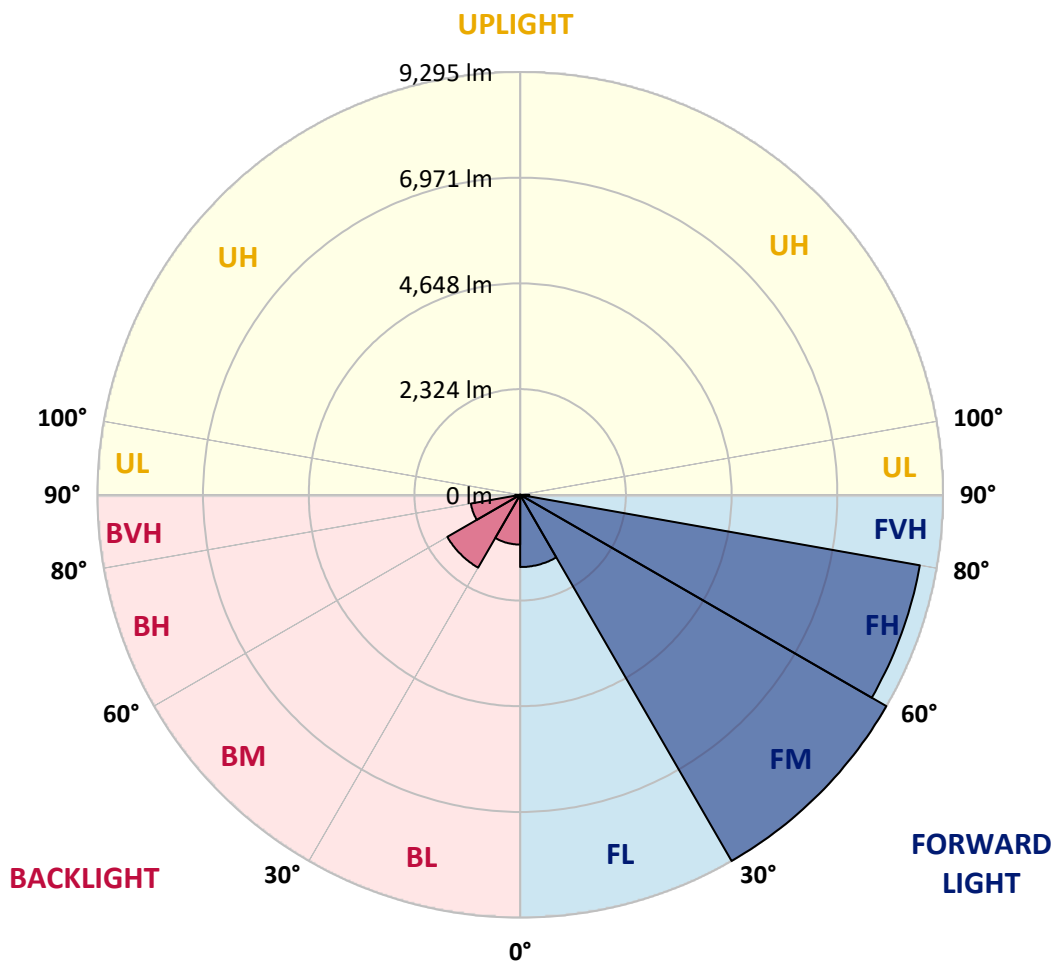
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1588.4 | 6.6 | | | |
| FM | (30°-60°) | 9295.1 | 38.5 | | | |
| FH | (60°-80°) | 8921.7 | 36.9 | | | G4/12000 |
| FVH | (80°-90°) | 198.7 | 0.8 | | | G2/225 |
| BL | (0°-30°) | 1094.9 | 4.5 | B3/2500 | | |
| BM | (30°-60°) | 1848.3 | 7.7 | B2/2500 | | |
| BH | (60°-80°) | 1100.6 | 4.6 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 107.3 | 0.4 | | | G2/225 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77.5° | 85° |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 |
| 2.5° | 3187.7 | 3202.6 | 3204.1 | 3247.4 | 3266.8 | 3316.1 | 3369.8 | 3417.6 | 3459.4 | 3474.4 | 3501.2 |
| 5° | 2868.2 | 2868.2 | 2872.7 | 2901.0 | 2956.3 | 3035.4 | 3147.4 | 3269.8 | 3398.2 | 3429.6 | 3508.7 |
| 7.5° | 2700.9 | 2703.9 | 2706.9 | 2735.3 | 2778.6 | 2848.8 | 2960.7 | 3128.0 | 3341.5 | 3393.7 | 3532.6 |
| 10° | 2715.9 | 2711.4 | 2696.5 | 2690.5 | 2708.4 | 2753.2 | 2850.3 | 3022.0 | 3293.7 | 3374.3 | 3575.9 |
| 12.5° | 2950.3 | 2941.3 | 2892.1 | 2820.4 | 2754.7 | 2738.3 | 2805.5 | 2968.2 | 3271.3 | 3374.3 | 3649.0 |
| 15° | 3351.9 | 3357.9 | 3260.8 | 3111.5 | 2939.8 | 2823.4 | 2814.4 | 2948.8 | 3263.8 | 3383.3 | 3734.1 |
| 17.5° | 3874.5 | 3877.5 | 3743.1 | 3526.6 | 3241.4 | 3001.1 | 2875.6 | 2948.8 | 3263.8 | 3392.2 | 3816.3 |
| 20° | 4429.9 | 4409.0 | 4256.7 | 3985.0 | 3614.7 | 3247.4 | 2987.6 | 2966.7 | 3272.8 | 3405.7 | 3893.9 |
| 22.5° | 4906.2 | 4886.8 | 4727.0 | 4441.9 | 4017.8 | 3538.6 | 3138.4 | 3026.4 | 3322.1 | 3460.9 | 4002.9 |
| 25° | 5322.8 | 5334.7 | 5179.4 | 4858.4 | 4419.5 | 3867.0 | 3363.9 | 3163.8 | 3425.1 | 3561.0 | 4137.3 |
| 27.5° | 5828.9 | 5806.5 | 5627.4 | 5321.3 | 4833.0 | 4207.4 | 3646.1 | 3337.0 | 3547.5 | 3681.9 | 4301.5 |
| 30° | 6414.2 | 6403.7 | 6161.9 | 5846.8 | 5288.4 | 4588.2 | 3925.3 | 3523.6 | 3707.3 | 3847.6 | 4507.6 |
| 32.5° | 7124.9 | 7123.4 | 6863.6 | 6476.9 | 5800.5 | 5018.2 | 4255.2 | 3778.9 | 3940.2 | 4082.0 | 4780.8 |
| 35° | 7929.7 | 7928.2 | 7659.4 | 7148.8 | 6390.3 | 5494.5 | 4643.4 | 4089.5 | 4228.4 | 4377.7 | 5106.3 |
| 37.5° | 8488.1 | 8479.1 | 8338.8 | 7843.1 | 7042.8 | 6048.4 | 5128.7 | 4507.6 | 4555.3 | 4722.6 | 5498.9 |
| 40° | 8595.6 | 8649.3 | 8770.2 | 8477.6 | 7755.0 | 6663.5 | 5615.4 | 4957.0 | 5001.8 | 5216.8 | 5993.2 |
| 42.5° | 8479.1 | 8549.3 | 8950.9 | 9033.0 | 8467.2 | 7408.6 | 6224.6 | 5579.6 | 5636.3 | 5903.6 | 6574.0 |
| 45° | 8377.6 | 8438.8 | 8942.0 | 9340.6 | 9170.4 | 8220.8 | 6984.5 | 6339.5 | 6447.0 | 6778.5 | 7236.9 |
| 47.5° | 8204.4 | 8261.1 | 8765.8 | 9395.8 | 9572.0 | 9003.2 | 7899.8 | 7253.3 | 7438.4 | 7840.1 | 7992.4 |
| 50° | 8195.4 | 8220.8 | 8525.4 | 9210.7 | 9710.9 | 9597.4 | 8913.6 | 8322.3 | 8606.0 | 9068.9 | 8828.5 |
| 52.5° | 7968.5 | 8146.1 | 8422.4 | 8915.1 | 9713.9 | 9943.8 | 9912.4 | 9494.4 | 9931.9 | 10444.0 | 9745.2 |
| 55° | 6579.9 | 6784.5 | 8079.0 | 8770.2 | 9695.9 | 10240.9 | 10824.7 | 10741.1 | 11424.9 | 11963.9 | 10772.4 |
| 57.5° | 6144.0 | 6230.5 | 7087.6 | 8813.5 | 9845.3 | 10732.1 | 11737.0 | 12080.4 | 13133.0 | 13721.2 | 12004.2 |
| 60° | 6024.5 | 6115.6 | 6889.0 | 8834.4 | 10249.9 | 11626.5 | 12974.7 | 13592.8 | 15141.1 | 15765.2 | 13403.2 |
| 62.5° | 5891.6 | 6009.6 | 6903.9 | 8853.9 | 10960.6 | 12949.3 | 14617.1 | 15233.7 | 17203.1 | 17760.0 | 14714.1 |
| 65° | 5503.4 | 5660.2 | 6627.7 | 8731.4 | 11738.5 | 14609.6 | 16788.0 | 16944.8 | 18906.6 | 19260.5 | 15505.5 |
| 67° | 4767.3 | 4939.1 | 5869.2 | 8023.7 | 11666.8 | 15727.9 | 18524.4 | 18015.3 | 19630.8 | 19674.1 | 15248.6 |
| 67.5° | 4534.4 | 4712.1 | 5612.4 | 7729.6 | 11462.2 | 15874.2 | 18832.0 | 18163.1 | 19624.8 | 19577.0 | 15009.8 |
| 70° | 3053.3 | 3253.4 | 3974.5 | 5675.1 | 9194.3 | 14773.9 | 18757.3 | 17707.7 | 18337.8 | 17789.8 | 12895.6 |
| 72.5° | 1515.5 | 1521.4 | 1982.8 | 3108.6 | 5570.6 | 10596.3 | 15647.3 | 15148.6 | 14864.9 | 13830.2 | 9463.0 |
| 75° | 730.1 | 743.5 | 936.2 | 1373.6 | 2348.6 | 5470.6 | 10670.9 | 10221.5 | 8703.1 | 7535.5 | 4736.0 |
| 77.5° | 556.9 | 570.3 | 727.1 | 894.3 | 979.4 | 1784.2 | 5285.4 | 4271.7 | 2521.8 | 2014.1 | 1334.8 |
| 80° | 430.0 | 455.4 | 613.6 | 686.8 | 648.0 | 715.2 | 1661.8 | 1307.9 | 980.9 | 900.3 | 661.4 |
| 82.5° | 335.9 | 350.9 | 521.1 | 521.1 | 447.9 | 479.3 | 773.4 | 755.5 | 609.2 | 549.4 | 355.3 |
| 85° | 237.4 | 267.3 | 419.6 | 388.2 | 294.1 | 297.1 | 462.8 | 443.4 | 313.5 | 252.3 | 138.9 |
| 87.5° | 106.0 | 135.9 | 298.6 | 253.8 | 156.8 | 120.9 | 189.6 | 162.7 | 123.9 | 95.6 | 64.2 |
| 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° | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 | 3555.0 |
| 2.5° | 3531.1 | 3555.0 | 3592.3 | 3614.7 | 3644.6 | 3656.5 | 3668.5 | 3689.4 | 3705.8 | 3701.3 | 3693.8 |
| 5° | 3563.9 | 3604.3 | 3650.5 | 3665.5 | 3665.5 | 3650.5 | 3641.6 | 3643.1 | 3638.6 | 3635.6 | 3626.6 |
| 7.5° | 3611.7 | 3667.0 | 3699.8 | 3684.9 | 3638.6 | 3580.4 | 3525.1 | 3492.3 | 3460.9 | 3441.5 | 3447.5 |
| 10° | 3678.9 | 3740.1 | 3741.6 | 3675.9 | 3565.4 | 3438.5 | 3329.5 | 3259.4 | 3192.2 | 3162.3 | 3171.3 |
| 12.5° | 3776.0 | 3837.2 | 3784.9 | 3643.1 | 3449.0 | 3250.4 | 3050.3 | 2905.5 | 2775.6 | 2744.2 | 2735.3 |
| 15° | 3880.5 | 3928.2 | 3811.8 | 3572.9 | 3281.8 | 2954.8 | 2618.8 | 2402.3 | 2257.5 | 2232.1 | 2223.2 |
| 17.5° | 3971.5 | 3998.4 | 3798.4 | 3447.5 | 3017.5 | 2502.4 | 2111.2 | 1964.9 | 1935.0 | 1949.9 | 1949.9 |
| 20° | 4052.2 | 4043.2 | 3740.1 | 3253.4 | 2600.9 | 2000.7 | 1773.8 | 1772.3 | 1812.6 | 1849.9 | 1852.9 |
| 22.5° | 4153.7 | 4083.5 | 3647.6 | 2965.2 | 2103.7 | 1669.2 | 1630.4 | 1669.2 | 1714.0 | 1755.8 | 1760.3 |
| 25° | 4274.6 | 4128.3 | 3523.6 | 2554.6 | 1691.6 | 1515.5 | 1531.9 | 1564.7 | 1593.1 | 1625.9 | 1627.4 |
| 27.5° | 4395.6 | 4162.7 | 3348.9 | 2072.4 | 1467.7 | 1416.9 | 1434.8 | 1448.3 | 1455.7 | 1476.6 | 1476.6 |
| 30° | 4535.9 | 4189.5 | 3096.6 | 1660.3 | 1364.7 | 1330.3 | 1319.9 | 1313.9 | 1319.9 | 1348.2 | 1349.7 |
| 32.5° | 4712.1 | 4237.3 | 2751.7 | 1424.4 | 1316.9 | 1269.1 | 1215.4 | 1185.5 | 1206.4 | 1257.2 | 1266.1 |
| 35° | 4912.2 | 4294.0 | 2338.1 | 1330.3 | 1300.5 | 1239.2 | 1140.7 | 1094.4 | 1101.9 | 1148.2 | 1155.6 |
| 37.5° | 5163.0 | 4367.2 | 1930.5 | 1307.9 | 1316.9 | 1236.3 | 1106.4 | 1040.7 | 1007.8 | 1009.3 | 1007.8 |
| 40° | 5484.0 | 4440.4 | 1608.0 | 1313.9 | 1352.7 | 1243.7 | 1089.9 | 986.9 | 918.2 | 921.2 | 927.2 |
| 42.5° | 5820.0 | 4488.1 | 1403.5 | 1331.8 | 1396.0 | 1254.2 | 1084.0 | 934.7 | 874.9 | 925.7 | 972.0 |
| 45° | 6212.6 | 4474.7 | 1297.5 | 1348.2 | 1428.9 | 1258.7 | 1061.6 | 928.7 | 879.4 | 1031.7 | 1118.3 |
| 47.5° | 6663.5 | 4416.5 | 1237.7 | 1355.7 | 1437.8 | 1257.2 | 1045.1 | 948.1 | 916.7 | 1181.0 | 1279.6 |
| 50° | 7153.3 | 4325.4 | 1190.0 | 1343.8 | 1433.3 | 1251.2 | 1063.1 | 972.0 | 931.7 | 1213.9 | 1290.0 |
| 52.5° | 7689.3 | 4241.8 | 1140.7 | 1316.9 | 1410.9 | 1233.3 | 1085.5 | 961.5 | 889.9 | 1118.3 | 1176.5 |
| 55° | 8323.8 | 4222.4 | 1085.5 | 1270.6 | 1373.6 | 1213.9 | 1073.5 | 928.7 | 843.6 | 991.4 | 1027.2 |
| 57.5° | 9049.5 | 4343.3 | 1013.8 | 1213.9 | 1322.9 | 1175.0 | 1045.1 | 910.8 | 827.2 | 901.8 | 921.2 |
| 60° | 9970.7 | 4610.6 | 937.6 | 1154.1 | 1260.1 | 1116.8 | 1019.8 | 915.2 | 831.6 | 888.4 | 892.9 |
| 62.5° | 10690.3 | 4851.0 | 869.0 | 1081.0 | 1176.5 | 1046.6 | 992.9 | 919.7 | 845.1 | 906.3 | 898.8 |
| 65° | 10951.6 | 4733.0 | 783.9 | 972.0 | 1058.6 | 969.0 | 955.6 | 922.7 | 845.1 | 916.7 | 900.3 |
| 67° | 10415.6 | 4170.1 | 703.2 | 863.0 | 946.6 | 900.3 | 919.7 | 910.8 | 830.1 | 915.2 | 886.9 |
| 67.5° | 10160.3 | 3971.5 | 682.3 | 845.1 | 916.7 | 879.4 | 910.8 | 904.8 | 825.7 | 912.3 | 879.4 |
| 70° | 8379.1 | 2848.8 | 576.3 | 709.2 | 767.4 | 774.9 | 855.5 | 866.0 | 789.8 | 857.0 | 797.3 |
| 72.5° | 5961.8 | 1782.7 | 497.2 | 549.4 | 619.6 | 662.9 | 780.9 | 813.7 | 742.1 | 745.0 | 695.8 |
| 75° | 2950.3 | 957.1 | 443.4 | 424.0 | 482.3 | 552.4 | 680.8 | 742.1 | 671.9 | 621.1 | 604.7 |
| 77.5° | 995.9 | 542.0 | 374.8 | 341.9 | 374.8 | 443.4 | 564.4 | 648.0 | 592.7 | 525.6 | 515.1 |
| 80° | 515.1 | 394.2 | 292.6 | 274.7 | 295.6 | 343.4 | 441.9 | 539.0 | 506.1 | 509.1 | 419.6 |
| 82.5° | 321.0 | 240.4 | 210.5 | 209.0 | 224.0 | 262.8 | 325.5 | 437.5 | 434.5 | 371.8 | 270.2 |
| 85° | 149.3 | 138.9 | 134.4 | 138.9 | 143.3 | 149.3 | 212.0 | 312.1 | 330.0 | 200.1 | 177.7 |
| 87.5° | 62.7 | 61.2 | 53.8 | 58.2 | 64.2 | 62.7 | 85.1 | 132.9 | 185.1 | 125.4 | 115.0 |
| 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)