

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: P195597

Luminaire Tested: **NAV-AF-03-D-UNV-SL2-7050-1200-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195597
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
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-SL2-7050-1200-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16209 lumens
Efficiency: N/A
Efficacy: 84.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 191
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

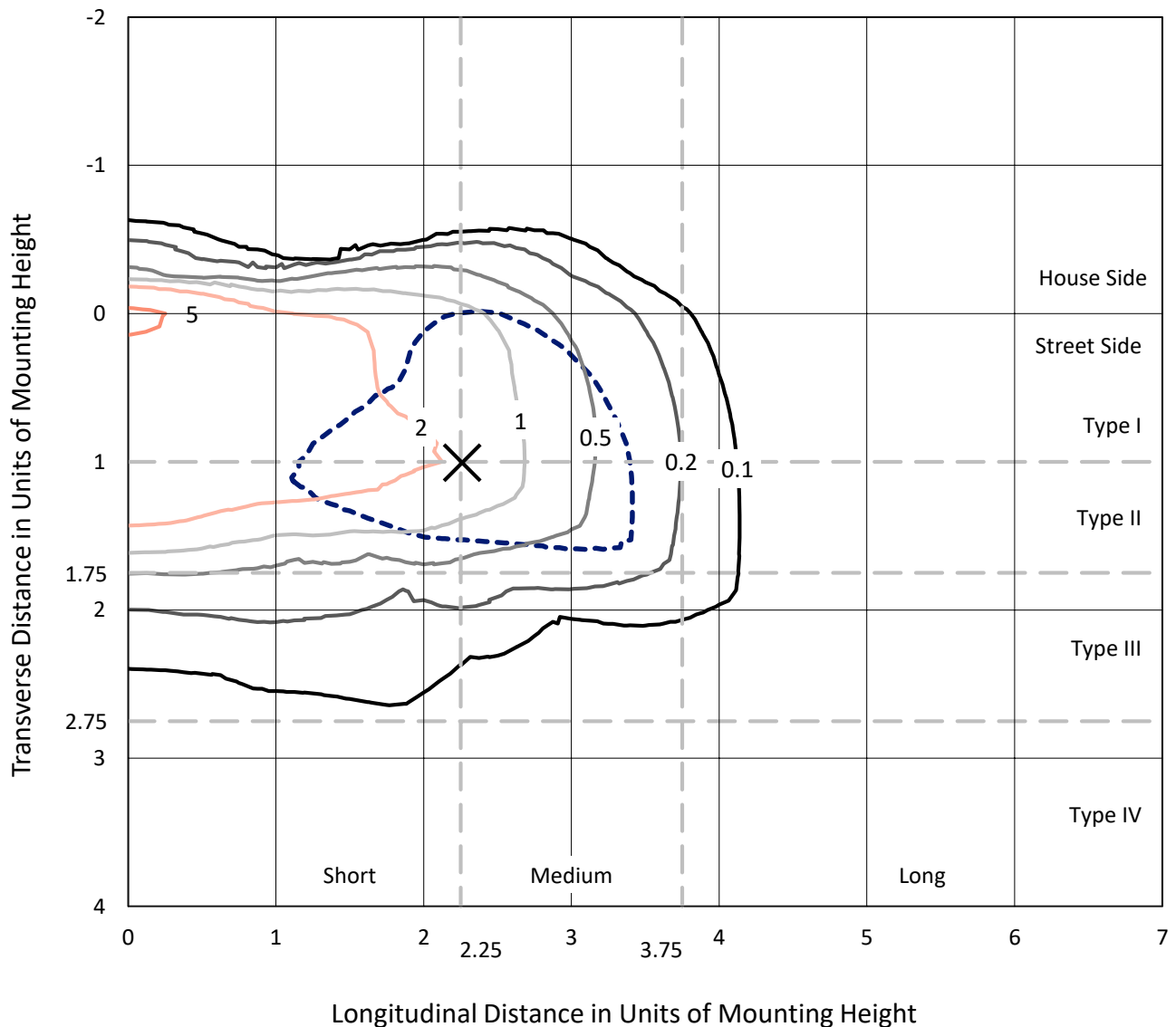


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Iso-Footcandle Lines of Horizontal Illumination

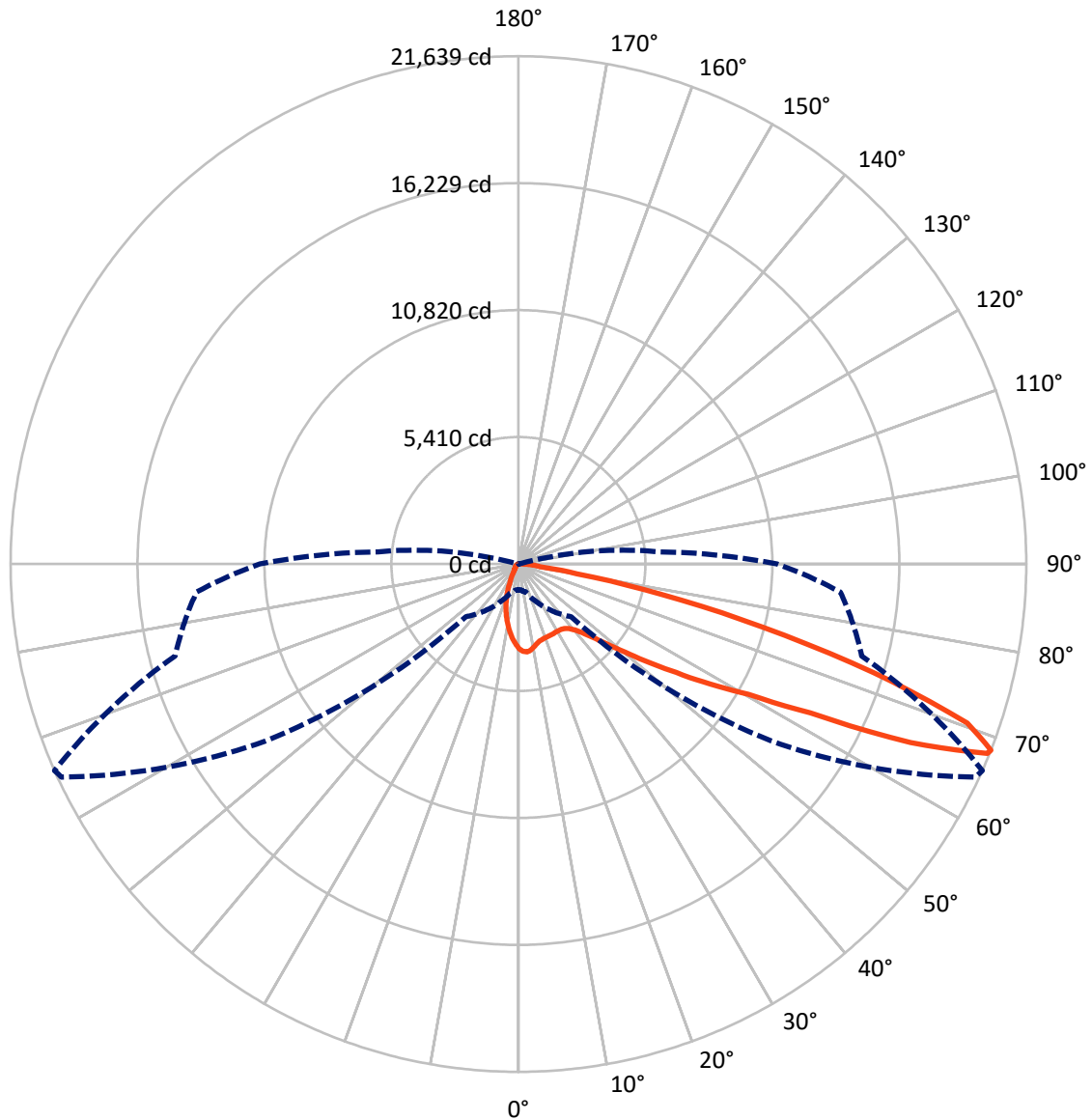
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.8 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1641.8 | 0.0 | 1641.8 |
| | % Fixture | 10.1 | 0.0 | 10.1 |
| Street Side | Lumens | 14567.2 | 0.0 | 14567.2 |
| | % Fixture | 89.9 | 0.0 | 89.9 |
| Total | Lumens | 16209.0 | 0.0 | 16209.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 296.0 | 1.8 |
| 10°-20° | 637.0 | 3.9 |
| 20°-30° | 923.0 | 5.7 |
| 30°-40° | 1413.0 | 8.7 |
| 40°-50° | 2416.8 | 14.9 |
| 50°-60° | 3780.6 | 23.3 |
| 60°-70° | 4353.2 | 26.9 |
| 70°-80° | 2178.4 | 13.4 |
| 80°-90° | 211.0 | 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° | 16209.0 | 100.0 |
| 0°-180° | 16209.0 | 100.0 |



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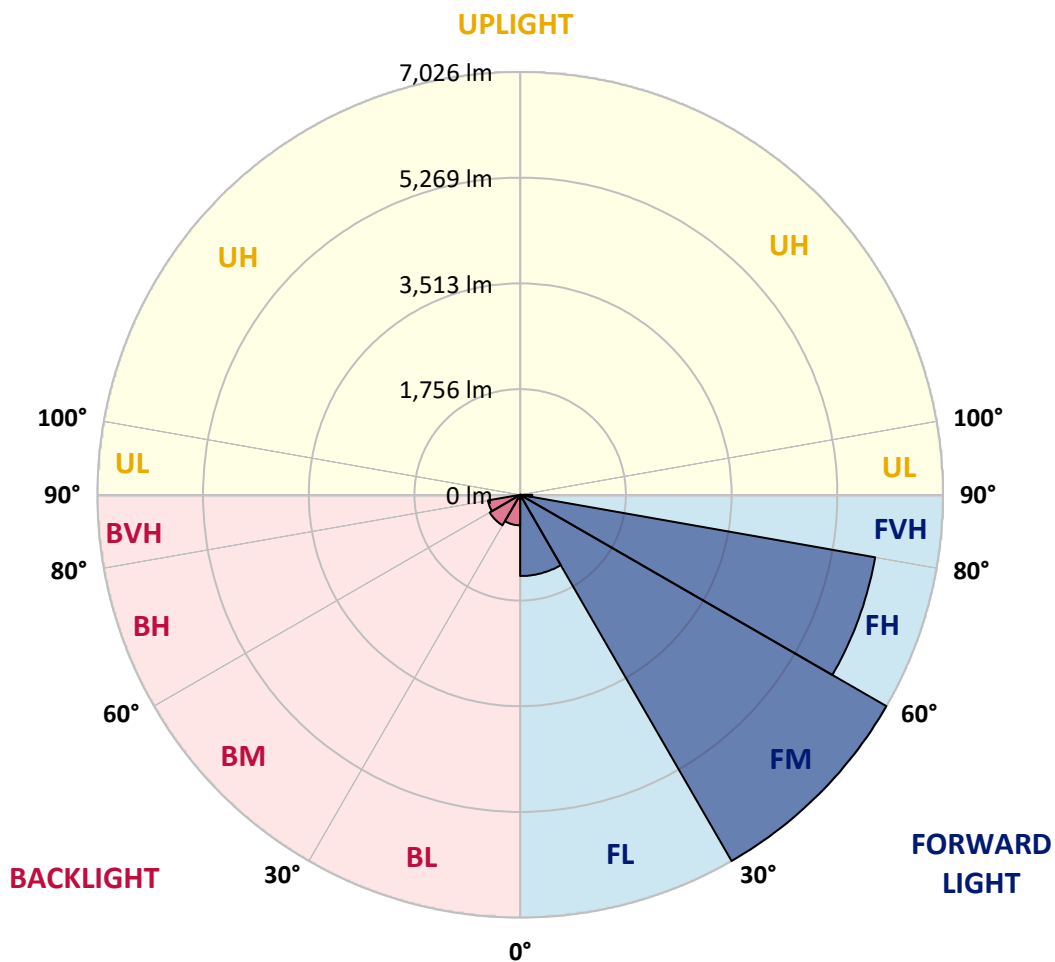
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1349.3 | 8.3 | | | |
| FM | (30°-60°) | 7025.7 | 43.3 | | | |
| FH | (60°-80°) | 5989.2 | 36.9 | | | G3/7500 |
| FVH | (80°-90°) | 203.0 | 1.3 | | | G2/225 |
| BL | (0°-30°) | 506.7 | 3.1 | B2/1000 | | |
| BM | (30°-60°) | 584.6 | 3.6 | B1/1000 | | |
| BH | (60°-80°) | 542.4 | 3.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 8.0 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 |
| 2.5° | 3798.3 | 3800.8 | 3799.5 | 3803.4 | 3800.8 | 3781.7 | 3761.4 | 3718.1 | 3721.9 | 3665.9 | 3603.6 |
| 5° | 3531.0 | 3552.7 | 3574.3 | 3595.9 | 3648.1 | 3693.9 | 3748.6 | 3761.4 | 3761.4 | 3713.0 | 3621.4 |
| 7.5° | 3258.7 | 3260.0 | 3284.2 | 3313.5 | 3383.4 | 3467.4 | 3594.7 | 3709.2 | 3711.7 | 3724.5 | 3623.9 |
| 10° | 3053.9 | 3060.2 | 3076.8 | 3108.6 | 3178.6 | 3261.3 | 3403.8 | 3583.2 | 3597.2 | 3691.4 | 3598.5 |
| 12.5° | 2894.8 | 2902.5 | 2920.3 | 2957.2 | 3020.8 | 3106.0 | 3256.2 | 3461.1 | 3480.1 | 3659.6 | 3590.9 |
| 15° | 2772.7 | 2782.8 | 2796.8 | 2833.7 | 2902.5 | 2992.8 | 3156.9 | 3379.6 | 3402.5 | 3646.8 | 3615.0 |
| 17.5° | 2721.8 | 2721.8 | 2720.5 | 2745.9 | 2814.7 | 2906.3 | 3078.1 | 3336.4 | 3365.6 | 3657.0 | 3655.7 |
| 20° | 2743.4 | 2739.6 | 2712.9 | 2706.5 | 2748.5 | 2840.1 | 3015.7 | 3308.4 | 3341.5 | 3676.1 | 3705.4 |
| 22.5° | 2857.9 | 2850.3 | 2790.5 | 2740.9 | 2728.1 | 2789.2 | 2973.7 | 3289.3 | 3328.7 | 3715.6 | 3771.5 |
| 25° | 3101.0 | 3078.1 | 2995.3 | 2883.4 | 2782.8 | 2776.5 | 2944.4 | 3279.1 | 3321.1 | 3761.4 | 3844.1 |
| 27.5° | 3416.5 | 3410.2 | 3277.8 | 3127.7 | 2934.3 | 2818.5 | 2935.5 | 3271.5 | 3313.5 | 3794.4 | 3902.6 |
| 30° | 3808.4 | 3811.0 | 3658.3 | 3462.3 | 3169.7 | 2936.8 | 2963.5 | 3267.7 | 3310.9 | 3797.0 | 3928.1 |
| 32.5° | 4213.1 | 4215.6 | 4088.4 | 3878.4 | 3491.6 | 3140.4 | 3042.4 | 3285.5 | 3324.9 | 3786.8 | 3926.8 |
| 35° | 4602.5 | 4606.3 | 4529.9 | 4360.7 | 3921.7 | 3422.9 | 3191.3 | 3346.5 | 3374.5 | 3793.2 | 3924.2 |
| 37.5° | 5094.9 | 5110.2 | 5016.0 | 4858.2 | 4461.2 | 3837.7 | 3434.3 | 3470.0 | 3492.9 | 3845.3 | 3943.3 |
| 40° | 5934.7 | 5914.3 | 5644.6 | 5377.4 | 5046.5 | 4342.9 | 3785.5 | 3682.5 | 3690.1 | 3980.2 | 4015.9 |
| 42.5° | 6913.2 | 6887.8 | 6425.9 | 5965.2 | 5648.4 | 4952.4 | 4234.7 | 4008.2 | 4006.9 | 4206.7 | 4173.6 |
| 45° | 7755.6 | 7740.3 | 7254.2 | 6639.6 | 6315.2 | 5625.5 | 4788.2 | 4477.8 | 4462.5 | 4598.6 | 4461.2 |
| 47.5° | 8353.6 | 8340.9 | 7973.2 | 7357.3 | 7086.3 | 6366.1 | 5479.2 | 5117.8 | 5086.0 | 5111.4 | 4928.2 |
| 50° | 8412.2 | 8398.2 | 8269.6 | 7873.9 | 7987.2 | 7452.7 | 6333.0 | 5956.3 | 5915.6 | 5876.2 | 5634.4 |
| 52.5° | 7865.0 | 7863.7 | 7931.2 | 7905.7 | 8618.3 | 8851.2 | 7380.2 | 6993.4 | 6945.0 | 6844.5 | 6604.0 |
| 55° | 6746.5 | 6740.2 | 6995.9 | 7367.5 | 8604.3 | 10294.1 | 8977.1 | 8227.7 | 8164.0 | 7963.0 | 7647.4 |
| 57.5° | 4929.5 | 4896.4 | 5430.8 | 6218.5 | 7999.9 | 10925.3 | 11513.1 | 9761.0 | 9655.3 | 9017.9 | 8531.8 |
| 60° | 2721.8 | 2734.5 | 3421.6 | 4354.3 | 6568.4 | 10800.6 | 13846.8 | 11548.8 | 11271.4 | 9927.7 | 9437.8 |
| 62.5° | 1525.7 | 1557.5 | 2069.0 | 2829.9 | 4187.6 | 9789.0 | 15098.9 | 14625.5 | 13957.5 | 10988.9 | 10583.0 |
| 65° | 1154.1 | 1173.2 | 1430.2 | 2183.5 | 2640.3 | 6840.7 | 15298.7 | 18927.7 | 18351.3 | 12597.3 | 12406.4 |
| 67.5° | 1086.7 | 1101.9 | 1227.9 | 1810.7 | 2404.9 | 3547.6 | 13794.6 | 21472.6 | 21545.1 | 14791.0 | 13818.8 |
| 68° | 1094.3 | 1113.4 | 1239.4 | 1742.0 | 2401.1 | 3173.5 | 13153.3 | 21485.3 | 21639.3 | 15144.7 | 13770.4 |
| 70° | 1005.2 | 1010.3 | 1310.6 | 1708.9 | 2327.3 | 2500.4 | 9515.4 | 20013.1 | 20289.2 | 15565.9 | 12500.5 |
| 72.5° | 384.3 | 385.6 | 587.9 | 1479.9 | 2438.0 | 2514.4 | 4793.3 | 15817.8 | 15831.8 | 13546.5 | 9745.7 |
| 75° | 199.8 | 168.0 | 184.5 | 463.2 | 2328.6 | 2450.7 | 2404.9 | 10800.6 | 10733.1 | 9161.6 | 5971.6 |
| 77.5° | 137.4 | 117.1 | 123.4 | 160.3 | 968.3 | 2449.5 | 1736.9 | 6210.8 | 6196.8 | 3897.5 | 1703.8 |
| 80° | 77.6 | 67.4 | 73.8 | 134.9 | 339.7 | 2299.3 | 1618.6 | 2669.6 | 2515.6 | 684.6 | 276.1 |
| 82.5° | 39.4 | 33.1 | 39.4 | 113.2 | 211.2 | 1446.8 | 1574.0 | 1047.2 | 932.7 | 162.9 | 179.4 |
| 85° | 10.2 | 10.2 | 19.1 | 78.9 | 131.1 | 474.6 | 1411.1 | 755.8 | 679.5 | 71.3 | 127.2 |
| 87.5° | 2.5 | 1.3 | 7.6 | 29.3 | 47.1 | 103.1 | 782.6 | 421.2 | 362.6 | 36.9 | 73.8 |
| 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° | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 | 3611.2 |
| 2.5° | 3578.1 | 3542.5 | 3472.5 | 3393.6 | 3337.6 | 3276.6 | 3240.9 | 3197.7 | 3164.6 | 3135.3 | 3156.9 |
| 5° | 3565.4 | 3496.7 | 3341.5 | 3167.1 | 3020.8 | 2880.8 | 2776.5 | 2677.2 | 2602.2 | 2555.1 | 2574.2 |
| 7.5° | 3532.3 | 3430.5 | 3178.6 | 2906.3 | 2667.1 | 2441.8 | 2258.6 | 2094.5 | 1967.2 | 1898.5 | 1920.1 |
| 10° | 3476.3 | 3332.5 | 2994.1 | 2616.2 | 2281.5 | 1963.4 | 1691.1 | 1446.8 | 1262.3 | 1175.7 | 1196.1 |
| 12.5° | 3435.6 | 3246.0 | 2803.2 | 2336.2 | 1895.9 | 1444.2 | 1082.9 | 802.9 | 659.1 | 572.6 | 580.2 |
| 15° | 3417.8 | 3178.6 | 2625.1 | 2041.0 | 1474.8 | 927.6 | 585.3 | 423.7 | 374.1 | 356.3 | 357.6 |
| 17.5° | 3420.3 | 3125.1 | 2455.8 | 1734.3 | 1049.8 | 533.2 | 358.8 | 323.2 | 315.6 | 311.8 | 311.8 |
| 20° | 3426.7 | 3071.7 | 2280.2 | 1415.0 | 671.9 | 343.6 | 299.0 | 287.6 | 283.8 | 278.7 | 279.9 |
| 22.5° | 3445.8 | 3031.0 | 2103.4 | 1094.3 | 413.5 | 279.9 | 264.7 | 254.5 | 248.1 | 240.5 | 241.8 |
| 25° | 3475.1 | 3000.4 | 1929.0 | 787.6 | 291.4 | 244.3 | 230.3 | 216.3 | 204.9 | 196.0 | 197.2 |
| 27.5° | 3492.9 | 2957.2 | 1743.3 | 537.0 | 241.8 | 213.8 | 194.7 | 175.6 | 162.9 | 155.2 | 154.0 |
| 30° | 3480.1 | 2887.2 | 1532.0 | 352.5 | 213.8 | 184.5 | 161.6 | 140.0 | 127.2 | 120.9 | 120.9 |
| 32.5° | 3445.8 | 2796.8 | 1299.2 | 257.0 | 189.6 | 159.1 | 131.1 | 112.0 | 103.1 | 99.3 | 100.5 |
| 35° | 3406.3 | 2702.7 | 1051.0 | 217.6 | 170.5 | 134.9 | 106.9 | 91.6 | 87.8 | 86.5 | 86.5 |
| 37.5° | 3384.7 | 2621.2 | 813.1 | 197.2 | 152.7 | 112.0 | 87.8 | 78.9 | 75.1 | 75.1 | 75.1 |
| 40° | 3408.9 | 2558.9 | 601.9 | 182.0 | 134.9 | 92.9 | 73.8 | 67.4 | 66.2 | 66.2 | 66.2 |
| 42.5° | 3512.0 | 2537.3 | 440.3 | 169.2 | 117.1 | 77.6 | 63.6 | 58.5 | 57.3 | 58.5 | 58.5 |
| 45° | 3713.0 | 2584.3 | 333.4 | 156.5 | 100.5 | 63.6 | 54.7 | 50.9 | 50.9 | 52.2 | 52.2 |
| 47.5° | 4054.0 | 2705.2 | 273.6 | 143.8 | 84.0 | 53.4 | 47.1 | 44.5 | 44.5 | 45.8 | 45.8 |
| 50° | 4583.4 | 2929.2 | 245.6 | 129.8 | 70.0 | 45.8 | 39.4 | 38.2 | 38.2 | 39.4 | 40.7 |
| 52.5° | 5387.6 | 3355.4 | 231.6 | 115.8 | 57.3 | 38.2 | 33.1 | 31.8 | 33.1 | 34.4 | 34.4 |
| 55° | 6282.1 | 3901.3 | 215.0 | 101.8 | 48.4 | 31.8 | 26.7 | 26.7 | 28.0 | 30.5 | 30.5 |
| 57.5° | 7115.5 | 4428.1 | 199.8 | 84.0 | 42.0 | 25.4 | 21.6 | 21.6 | 24.2 | 26.7 | 26.7 |
| 60° | 7996.1 | 4944.7 | 179.4 | 67.4 | 35.6 | 20.4 | 17.8 | 17.8 | 21.6 | 24.2 | 25.4 |
| 62.5° | 9084.0 | 5545.3 | 152.7 | 53.4 | 28.0 | 15.3 | 12.7 | 16.5 | 20.4 | 24.2 | 24.2 |
| 65° | 10656.8 | 6292.3 | 119.6 | 42.0 | 21.6 | 11.5 | 10.2 | 15.3 | 19.1 | 22.9 | 24.2 |
| 67.5° | 11228.1 | 6196.8 | 90.3 | 34.4 | 16.5 | 8.9 | 8.9 | 14.0 | 19.1 | 22.9 | 22.9 |
| 68° | 11019.4 | 5988.1 | 86.5 | 33.1 | 15.3 | 8.9 | 8.9 | 14.0 | 19.1 | 22.9 | 22.9 |
| 70° | 9601.9 | 4895.1 | 71.3 | 25.4 | 12.7 | 7.6 | 7.6 | 12.7 | 19.1 | 21.6 | 22.9 |
| 72.5° | 7189.3 | 3252.4 | 61.1 | 16.5 | 11.5 | 7.6 | 6.4 | 12.7 | 17.8 | 21.6 | 21.6 |
| 75° | 4124.0 | 1350.1 | 52.2 | 12.7 | 10.2 | 6.4 | 6.4 | 11.5 | 17.8 | 21.6 | 21.6 |
| 77.5° | 1165.6 | 315.6 | 42.0 | 10.2 | 8.9 | 6.4 | 5.1 | 11.5 | 16.5 | 20.4 | 20.4 |
| 80° | 213.8 | 94.2 | 33.1 | 8.9 | 7.6 | 6.4 | 5.1 | 11.5 | 16.5 | 20.4 | 20.4 |
| 82.5° | 141.2 | 44.5 | 24.2 | 8.9 | 7.6 | 6.4 | 5.1 | 10.2 | 15.3 | 19.1 | 19.1 |
| 85° | 105.6 | 31.8 | 15.3 | 8.9 | 7.6 | 6.4 | 5.1 | 10.2 | 15.3 | 19.1 | 19.1 |
| 87.5° | 58.5 | 14.0 | 11.5 | 10.2 | 8.9 | 6.4 | 5.1 | 8.9 | 14.0 | 17.8 | 17.8 |
| 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)