

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: P270516

Luminaire Tested: **NAV-AF-04-D-UNV-SL3-7027-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270516
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SL3-7027-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17102.3 lumens
Efficiency: N/A
Efficacy: 100.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 171
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

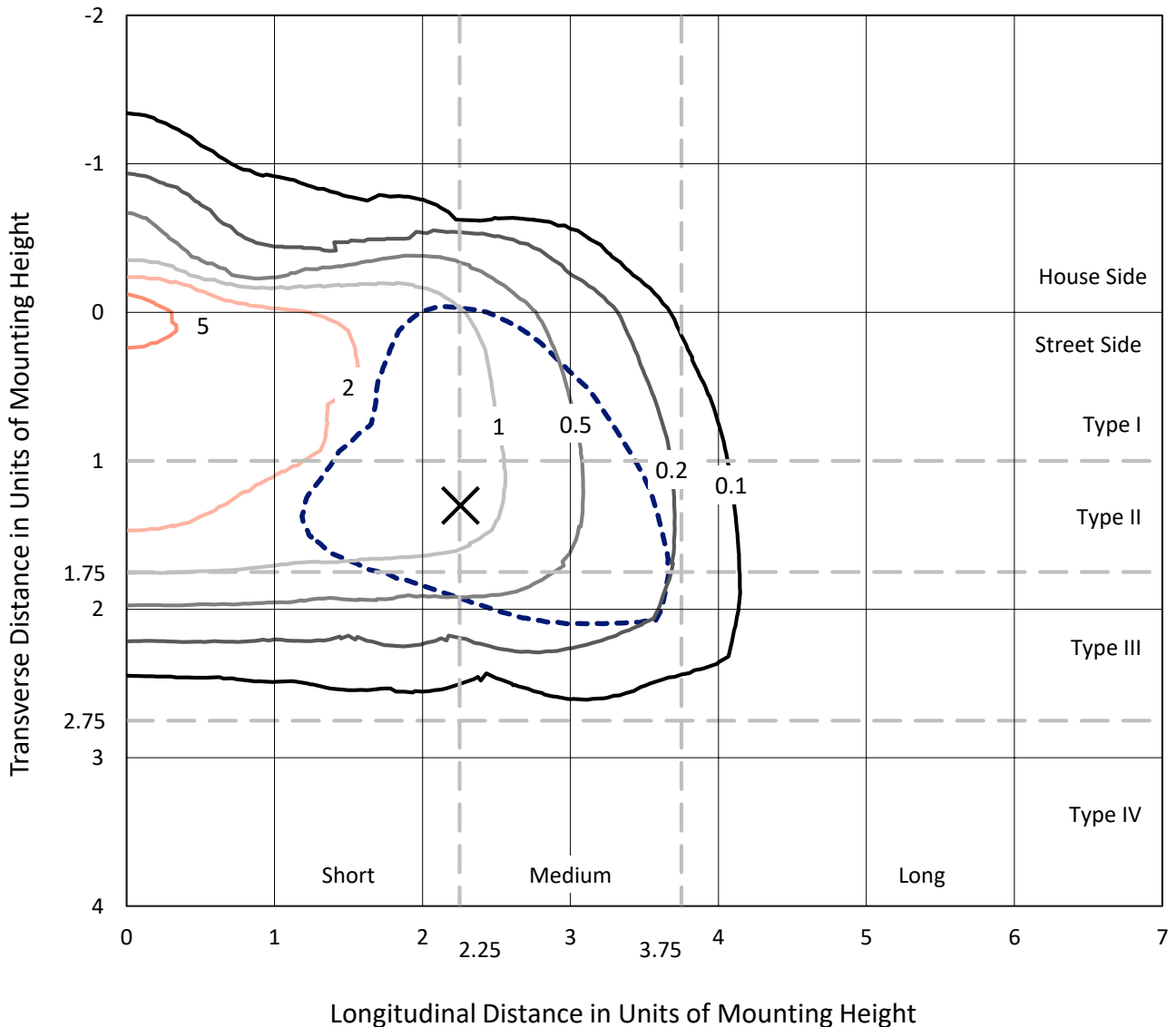


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

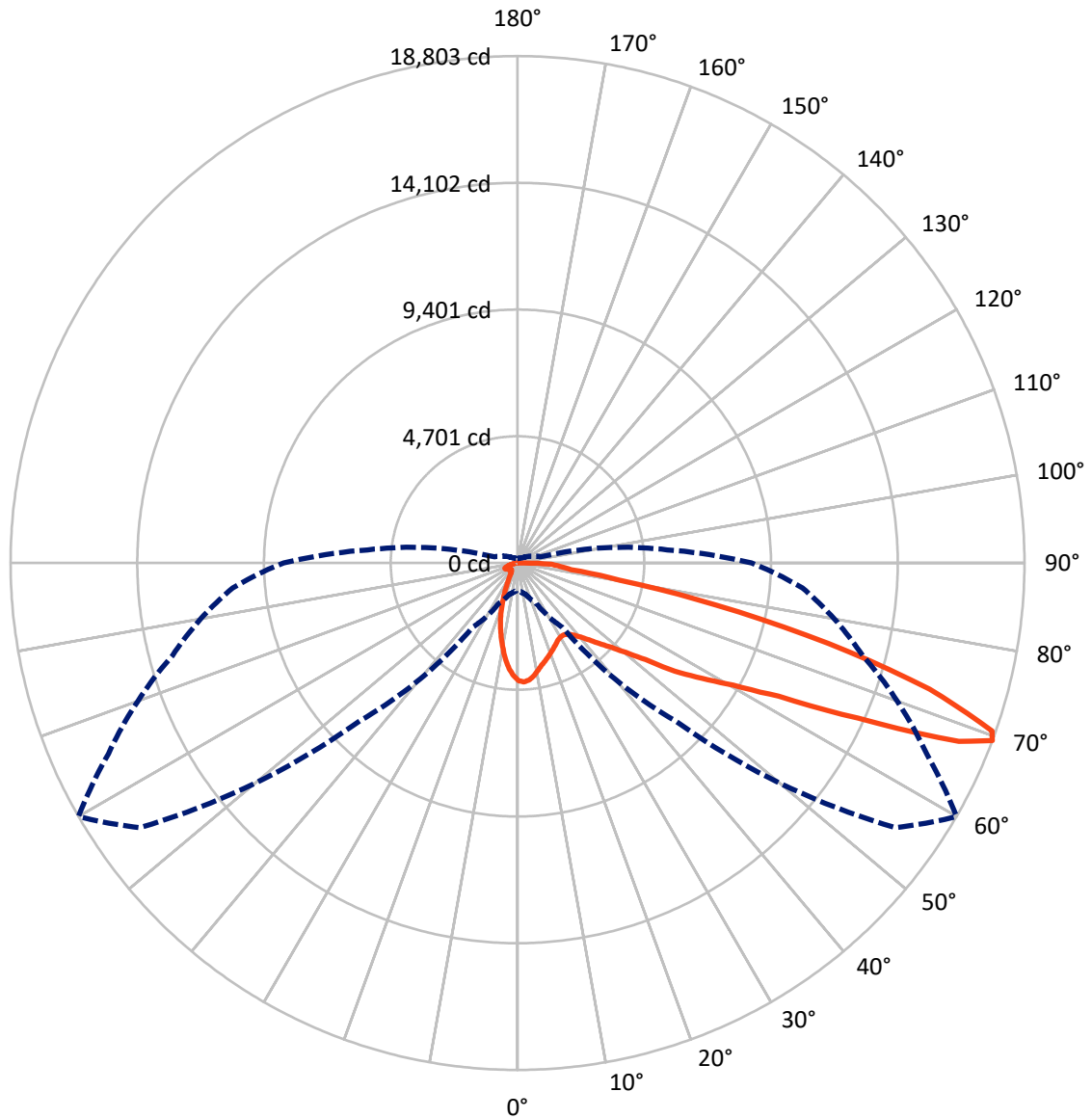


Based on 25 foot mounting height. Maximum calculated value = 7 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2439.3 | 0.0 | 2439.3 |
| | % Fixture | 14.3 | 0.0 | 14.3 |
| Street Side | Lumens | 14663.0 | 0.0 | 14663.0 |
| | % Fixture | 85.7 | 0.0 | 85.7 |
| Total | Lumens | 17102.3 | 0.0 | 17102.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 370.2 | 2.2 |
| 10°-20° | 792.6 | 4.6 |
| 20°-30° | 1011.1 | 5.9 |
| 30°-40° | 1391.4 | 8.1 |
| 40°-50° | 2253.8 | 13.2 |
| 50°-60° | 3537.3 | 20.7 |
| 60°-70° | 4715.9 | 27.6 |
| 70°-80° | 2623.1 | 15.3 |
| 80°-90° | 406.8 | 2.4 |
| 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° | 17102.3 | 100.0 |
| 0°-180° | 17102.3 | 100.0 |

Coefficient of Utilization



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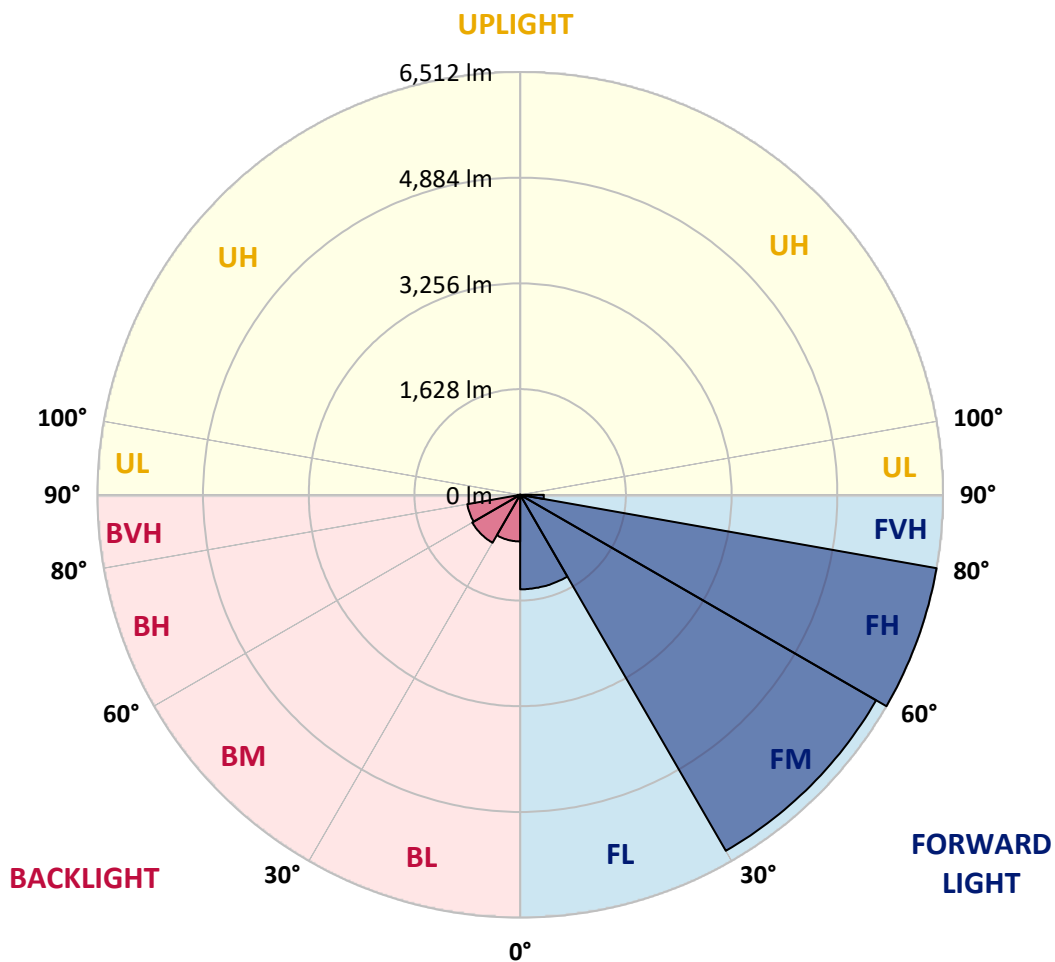
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1455.1 | 8.5 | | | |
| FM | (30°-60°) | 6330.4 | 37.0 | | | |
| FH | (60°-80°) | 6511.9 | 38.1 | | | G3/7500 |
| FVH | (80°-90°) | 365.6 | 2.1 | | | G3/500 |
| BL | (0°-30°) | 718.9 | 4.2 | B2/1000 | | |
| BM | (30°-60°) | 852.2 | 5.0 | B1/1000 | | |
| BH | (60°-80°) | 827.1 | 4.8 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 41.2 | 0.2 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 |
| 2.5° | 4479.9 | 4492.1 | 4492.1 | 4482.2 | 4476.7 | 4444.9 | 4426.2 | 4413.1 | 4390.0 | 4347.3 | 4308.9 |
| 5° | 4319.8 | 4342.9 | 4352.7 | 4357.0 | 4385.6 | 4375.7 | 4376.9 | 4368.1 | 4348.3 | 4302.3 | 4239.8 |
| 7.5° | 4025.9 | 4030.3 | 4047.9 | 4077.4 | 4146.5 | 4194.8 | 4234.3 | 4241.9 | 4237.6 | 4203.6 | 4115.9 |
| 10° | 3736.4 | 3744.0 | 3764.9 | 3815.5 | 3881.1 | 3950.2 | 4035.7 | 4070.8 | 4097.2 | 4086.2 | 3975.4 |
| 12.5° | 3496.3 | 3497.3 | 3520.4 | 3578.5 | 3652.0 | 3738.6 | 3854.8 | 3909.7 | 3972.1 | 3997.4 | 3873.5 |
| 15° | 3264.8 | 3280.3 | 3302.1 | 3372.2 | 3463.3 | 3573.0 | 3706.8 | 3782.5 | 3864.7 | 3937.1 | 3794.5 |
| 17.5° | 3089.5 | 3101.4 | 3114.7 | 3172.8 | 3277.9 | 3415.0 | 3580.6 | 3661.9 | 3770.4 | 3881.1 | 3713.4 |
| 20° | 2992.9 | 2997.3 | 2987.4 | 3015.9 | 3104.7 | 3252.8 | 3444.7 | 3542.2 | 3671.7 | 3827.4 | 3630.1 |
| 22.5° | 2973.1 | 2973.1 | 2936.9 | 2931.3 | 2971.0 | 3096.0 | 3304.3 | 3423.9 | 3581.8 | 3790.2 | 3555.4 |
| 25° | 3065.2 | 3058.6 | 2990.6 | 2928.1 | 2913.9 | 2977.5 | 3170.5 | 3317.5 | 3504.9 | 3789.1 | 3499.5 |
| 27.5° | 3239.6 | 3230.8 | 3146.5 | 3041.1 | 2950.0 | 2922.6 | 3067.4 | 3217.6 | 3444.7 | 3826.3 | 3471.1 |
| 30° | 3456.8 | 3453.4 | 3367.9 | 3236.4 | 3086.0 | 2944.6 | 3026.8 | 3166.2 | 3404.0 | 3895.4 | 3470.0 |
| 32.5° | 3694.6 | 3679.4 | 3626.7 | 3495.1 | 3300.0 | 3066.4 | 3051.0 | 3168.3 | 3393.2 | 3996.3 | 3495.1 |
| 35° | 3948.1 | 3937.1 | 3923.9 | 3791.2 | 3571.9 | 3281.2 | 3157.4 | 3244.0 | 3446.8 | 4136.6 | 3566.5 |
| 37.5° | 4270.5 | 4258.4 | 4280.3 | 4135.5 | 3895.4 | 3563.1 | 3337.3 | 3395.4 | 3556.6 | 4340.7 | 3699.1 |
| 40° | 4844.1 | 4808.9 | 4747.5 | 4524.9 | 4272.7 | 3908.5 | 3597.2 | 3605.8 | 3744.0 | 4613.8 | 3911.8 |
| 42.5° | 5786.2 | 5673.2 | 5369.3 | 4960.4 | 4670.7 | 4310.0 | 3936.1 | 3894.3 | 4002.8 | 4974.5 | 4221.1 |
| 45° | 6730.3 | 6603.1 | 6089.9 | 5435.1 | 5083.1 | 4741.0 | 4355.0 | 4255.1 | 4325.2 | 5394.6 | 4619.3 |
| 47.5° | 7340.1 | 7277.6 | 6698.5 | 5909.9 | 5515.2 | 5210.3 | 4834.1 | 4669.7 | 4720.1 | 5870.6 | 5110.5 |
| 50° | 7518.9 | 7465.2 | 7010.1 | 6281.8 | 5923.2 | 5777.3 | 5427.5 | 5209.2 | 5218.1 | 6426.6 | 5699.4 |
| 52.5° | 7385.1 | 7363.1 | 7061.5 | 6512.2 | 6298.2 | 6375.0 | 6248.9 | 5945.2 | 5872.8 | 7036.3 | 6337.7 |
| 55° | 7206.4 | 7214.0 | 7097.8 | 6743.5 | 6679.8 | 6932.1 | 7323.6 | 7079.2 | 6772.1 | 7671.3 | 7002.4 |
| 57.5° | 6643.8 | 6649.3 | 6954.0 | 7184.4 | 7408.1 | 7712.9 | 8160.5 | 8057.3 | 7699.8 | 8356.8 | 7747.1 |
| 60° | 5349.6 | 5392.3 | 6071.3 | 7093.3 | 8240.5 | 9251.6 | 9361.2 | 9183.6 | 8686.8 | 9146.4 | 8715.4 |
| 62.5° | 3822.0 | 3860.3 | 4646.7 | 6157.9 | 8142.9 | 10993.2 | 11578.9 | 10872.5 | 10026.0 | 10327.5 | 10077.5 |
| 65° | 2008.0 | 2001.5 | 2610.1 | 4255.1 | 6858.6 | 11396.7 | 15072.8 | 13870.9 | 12281.7 | 11951.7 | 11393.5 |
| 67.5° | 1122.0 | 1158.2 | 1393.9 | 2146.2 | 4470.1 | 10030.3 | 17304.6 | 17658.8 | 15418.2 | 13240.3 | 11336.4 |
| 69° | 1037.5 | 1049.5 | 1207.4 | 1659.3 | 2913.9 | 8275.5 | 17112.7 | 18802.7 | 16741.0 | 13245.8 | 10606.1 |
| 70° | 1007.9 | 1021.1 | 1164.7 | 1528.7 | 2447.8 | 6780.8 | 16414.1 | 18668.8 | 17062.2 | 12951.9 | 9941.5 |
| 72.5° | 903.7 | 921.2 | 1060.4 | 1374.1 | 2062.9 | 3495.1 | 13221.7 | 15978.7 | 15455.6 | 11320.0 | 7708.5 |
| 75° | 770.9 | 800.6 | 1011.1 | 1364.3 | 1954.4 | 2221.9 | 8817.4 | 11904.5 | 11503.2 | 8095.7 | 4373.6 |
| 77.5° | 319.2 | 322.4 | 442.0 | 999.0 | 2050.8 | 2126.5 | 4738.7 | 7540.8 | 6675.6 | 3550.0 | 1317.2 |
| 80° | 222.6 | 218.3 | 220.4 | 291.7 | 1654.9 | 2140.8 | 2431.4 | 3835.1 | 2980.8 | 936.6 | 616.3 |
| 82.5° | 187.6 | 185.3 | 194.2 | 183.2 | 560.5 | 2429.1 | 2033.3 | 1999.3 | 1403.7 | 504.5 | 293.9 |
| 85° | 124.0 | 120.6 | 159.0 | 166.6 | 266.4 | 1929.1 | 2186.8 | 1571.6 | 1046.3 | 269.9 | 125.0 |
| 87.5° | 60.4 | 61.4 | 91.0 | 112.9 | 141.5 | 610.8 | 2094.7 | 1242.5 | 808.2 | 117.4 | 50.5 |
| 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° | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 | 4363.6 |
| 2.5° | 4293.4 | 4260.7 | 4230.9 | 4193.7 | 4165.3 | 4141.0 | 4108.2 | 4107.1 | 4101.7 | 4109.2 | 4111.5 |
| 5° | 4198.0 | 4143.3 | 4059.9 | 3966.7 | 3900.9 | 3814.3 | 3729.9 | 3701.2 | 3669.4 | 3666.3 | 3676.0 |
| 7.5° | 4054.4 | 3968.9 | 3826.3 | 3683.8 | 3541.2 | 3395.4 | 3257.2 | 3186.9 | 3118.9 | 3098.2 | 3108.0 |
| 10° | 3894.3 | 3785.7 | 3567.4 | 3335.0 | 3134.4 | 2917.2 | 2706.7 | 2570.6 | 2446.8 | 2394.1 | 2407.2 |
| 12.5° | 3769.3 | 3631.0 | 3324.1 | 3022.4 | 2722.0 | 2410.5 | 2133.0 | 1864.3 | 1661.4 | 1570.4 | 1575.9 |
| 15° | 3661.9 | 3485.2 | 3096.0 | 2694.6 | 2318.3 | 1891.8 | 1506.8 | 1195.4 | 1017.7 | 951.9 | 949.7 |
| 17.5° | 3545.6 | 3331.8 | 2858.0 | 2389.8 | 1901.6 | 1374.1 | 1008.9 | 824.7 | 754.5 | 732.6 | 732.6 |
| 20° | 3421.6 | 3173.8 | 2608.9 | 2057.4 | 1463.0 | 959.6 | 758.9 | 687.7 | 661.3 | 654.8 | 653.6 |
| 22.5° | 3306.5 | 3019.2 | 2358.9 | 1703.1 | 1058.4 | 728.2 | 645.9 | 618.6 | 614.1 | 619.7 | 619.7 |
| 25° | 3215.6 | 2883.2 | 2105.6 | 1330.3 | 769.8 | 609.8 | 574.6 | 571.4 | 587.9 | 607.6 | 610.8 |
| 27.5° | 3147.5 | 2761.5 | 1855.5 | 971.6 | 605.4 | 530.8 | 518.7 | 533.0 | 571.4 | 610.8 | 618.6 |
| 30° | 3100.3 | 2657.2 | 1556.3 | 698.6 | 504.5 | 465.1 | 470.5 | 495.8 | 553.9 | 614.1 | 630.6 |
| 32.5° | 3079.5 | 2572.8 | 1254.7 | 536.3 | 430.9 | 409.1 | 423.3 | 456.2 | 516.5 | 576.8 | 596.7 |
| 35° | 3099.2 | 2511.4 | 976.1 | 445.3 | 377.3 | 360.8 | 377.3 | 411.2 | 450.7 | 480.4 | 492.5 |
| 37.5° | 3170.5 | 2489.5 | 734.8 | 394.9 | 342.2 | 325.7 | 338.9 | 361.8 | 379.4 | 390.5 | 396.0 |
| 40° | 3320.8 | 2512.5 | 575.8 | 368.5 | 322.4 | 303.7 | 307.1 | 318.0 | 330.0 | 338.9 | 340.0 |
| 42.5° | 3559.9 | 2588.1 | 512.2 | 358.7 | 310.4 | 286.2 | 280.7 | 288.4 | 301.7 | 313.7 | 315.8 |
| 45° | 3877.9 | 2714.3 | 505.6 | 361.8 | 304.9 | 271.9 | 261.0 | 268.8 | 286.2 | 306.0 | 309.2 |
| 47.5° | 4289.1 | 2913.9 | 536.3 | 379.4 | 308.2 | 264.3 | 247.8 | 255.5 | 278.6 | 304.9 | 309.2 |
| 50° | 4776.1 | 3190.3 | 593.3 | 405.8 | 323.5 | 264.3 | 242.4 | 248.9 | 273.1 | 302.6 | 307.1 |
| 52.5° | 5349.6 | 3575.2 | 652.4 | 432.1 | 345.5 | 274.2 | 244.6 | 243.5 | 265.4 | 292.8 | 298.2 |
| 55° | 5982.4 | 4053.3 | 709.5 | 455.1 | 357.5 | 287.4 | 250.1 | 237.0 | 254.4 | 276.4 | 280.7 |
| 57.5° | 6727.0 | 4708.0 | 809.4 | 477.1 | 364.2 | 297.2 | 256.6 | 230.2 | 240.1 | 255.5 | 258.8 |
| 60° | 7737.1 | 5669.8 | 1003.4 | 514.3 | 376.2 | 301.7 | 257.8 | 223.7 | 222.6 | 233.6 | 234.6 |
| 62.5° | 9054.2 | 6796.1 | 1188.7 | 558.1 | 400.3 | 302.6 | 253.3 | 219.4 | 208.3 | 211.7 | 211.7 |
| 65° | 9990.8 | 7210.8 | 1135.1 | 595.4 | 422.3 | 301.7 | 248.9 | 216.0 | 197.4 | 191.9 | 191.9 |
| 67.5° | 9457.9 | 6369.5 | 964.1 | 605.4 | 424.4 | 289.6 | 239.0 | 208.3 | 187.6 | 174.5 | 174.5 |
| 69° | 8674.8 | 5583.2 | 885.0 | 587.9 | 406.8 | 275.3 | 228.1 | 200.7 | 181.0 | 165.6 | 165.6 |
| 70° | 8036.4 | 4987.7 | 836.9 | 567.0 | 386.0 | 263.3 | 218.3 | 193.0 | 174.5 | 161.2 | 160.1 |
| 72.5° | 6000.0 | 3328.4 | 715.1 | 489.1 | 316.9 | 222.6 | 190.8 | 172.1 | 156.8 | 148.0 | 148.0 |
| 75° | 3166.2 | 1668.1 | 585.6 | 399.1 | 244.6 | 177.7 | 156.8 | 144.7 | 136.1 | 134.8 | 133.8 |
| 77.5° | 1037.5 | 754.5 | 421.1 | 300.6 | 179.8 | 138.2 | 125.0 | 117.4 | 116.2 | 120.6 | 120.6 |
| 80° | 560.5 | 450.7 | 270.8 | 202.8 | 125.0 | 103.0 | 96.5 | 95.4 | 98.8 | 105.3 | 105.3 |
| 82.5° | 271.9 | 222.6 | 161.2 | 125.0 | 85.6 | 75.6 | 75.6 | 76.7 | 81.1 | 88.8 | 88.8 |
| 85° | 117.4 | 105.3 | 93.2 | 70.2 | 52.6 | 47.2 | 53.8 | 59.2 | 62.5 | 68.0 | 70.2 |
| 87.5° | 56.0 | 49.3 | 42.8 | 27.4 | 23.0 | 24.2 | 28.6 | 35.2 | 41.7 | 46.1 | 47.2 |
| 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)