

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: P270608

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7027-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270608
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SL4-7027-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21282.5 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G4

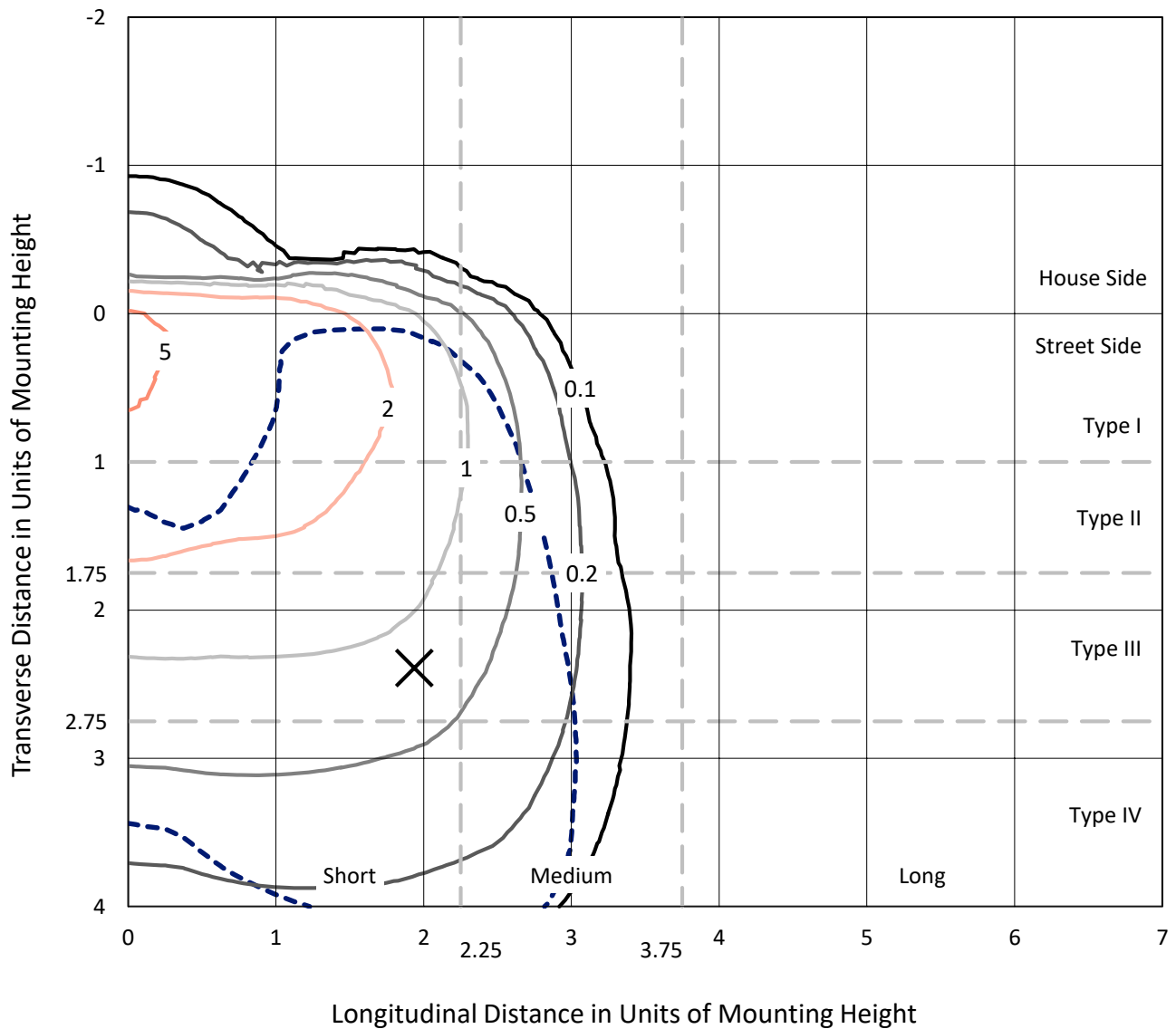
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

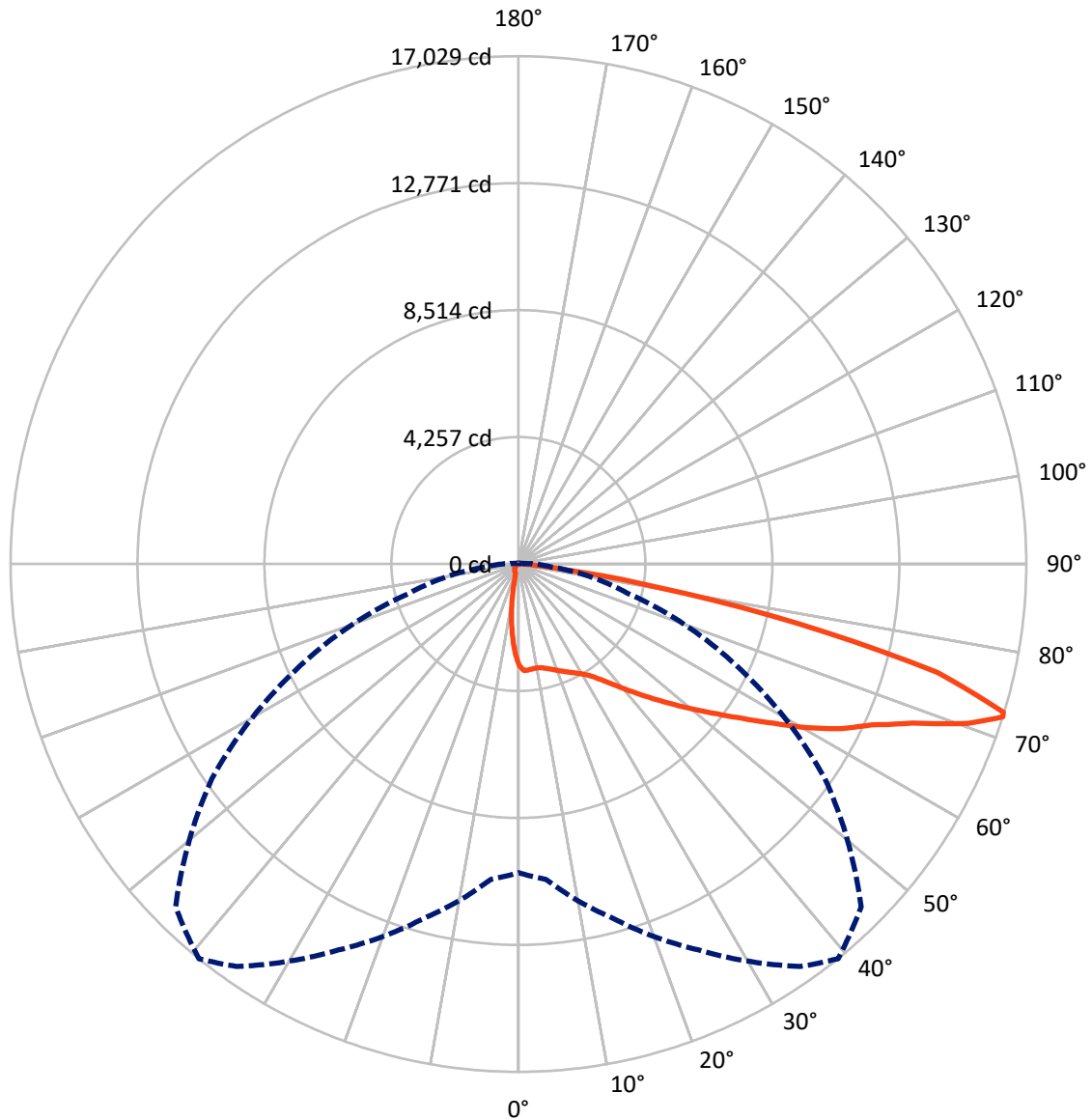
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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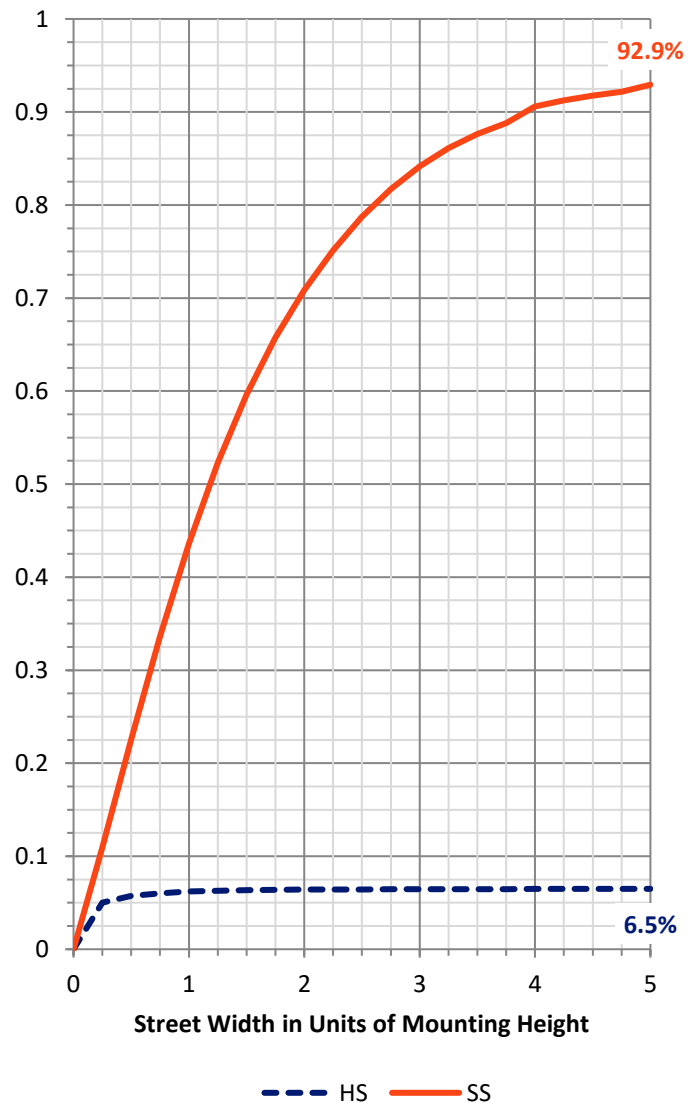
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1394.8 | 0.0 | 1394.8 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 19887.6 | 0.0 | 19887.6 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 21282.5 | 0.0 | 21282.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 277.1 | 1.3 |
| 10°-20° | 670.8 | 3.2 |
| 20°-30° | 1114.0 | 5.2 |
| 30°-40° | 1775.6 | 8.3 |
| 40°-50° | 2930.8 | 13.8 |
| 50°-60° | 4426.0 | 20.8 |
| 60°-70° | 5765.6 | 27.1 |
| 70°-80° | 3895.9 | 18.3 |
| 80°-90° | 426.7 | 2.0 |
| 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° | 21282.5 | 100.0 |
| 0°-180° | 21282.5 | 100.0 |



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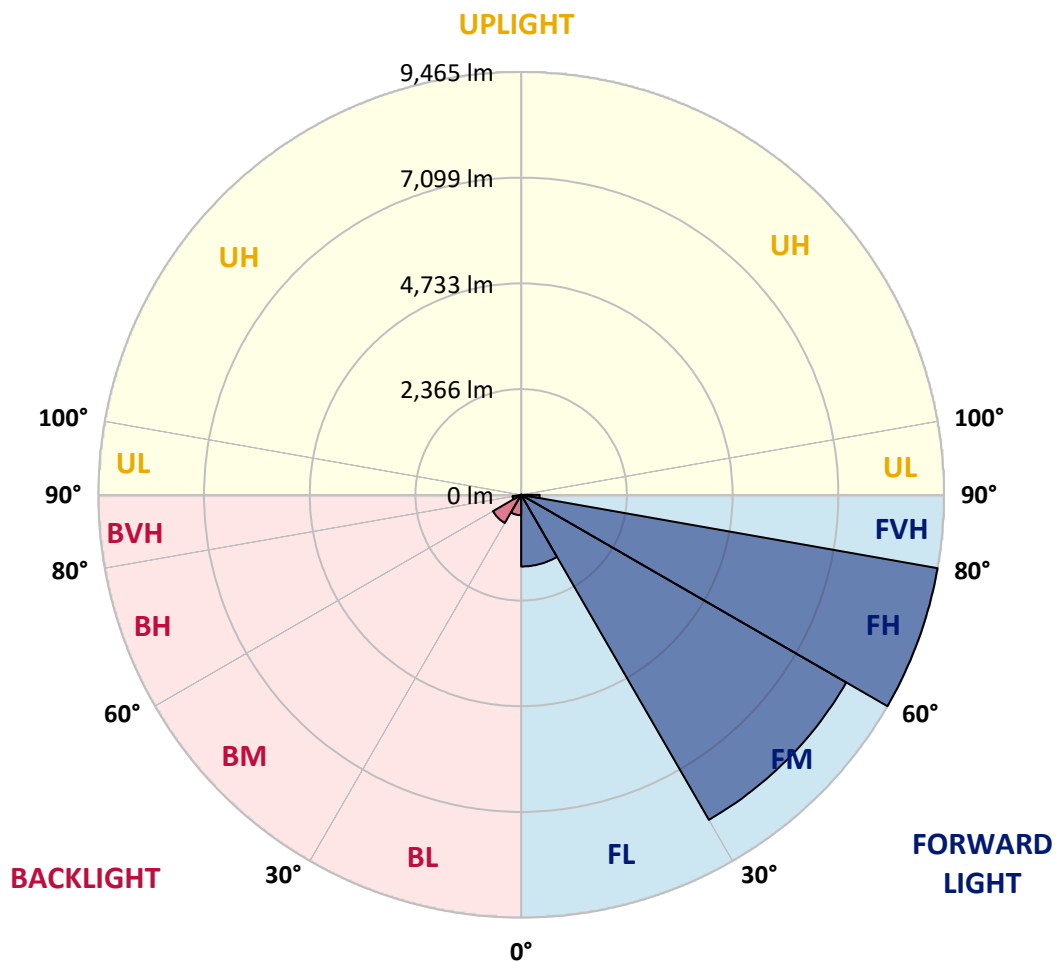
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1605.2 | 7.5 | | | |
| FM | (30°-60°) | 8402.6 | 39.5 | | | |
| FH | (60°-80°) | 9465.5 | 44.5 | | | G4/12000 |
| FVH | (80°-90°) | 414.4 | 1.9 | | | G3/500 |
| BL | (0°-30°) | 456.7 | 2.1 | B1/500 | | |
| BM | (30°-60°) | 729.8 | 3.4 | B1/1000 | | |
| BH | (60°-80°) | 196.1 | 0.9 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 12.3 | 0.1 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0° | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 |
| 2.5° | 3627.3 | 3634.0 | 3625.6 | 3610.5 | 3588.8 | 3575.3 | 3557.0 | 3516.9 | 3466.6 | 3423.1 | 3373.0 |
| 5° | 3655.7 | 3659.1 | 3648.9 | 3620.6 | 3587.1 | 3568.6 | 3545.3 | 3501.8 | 3449.9 | 3389.7 | 3299.4 |
| 7.5° | 3664.0 | 3662.4 | 3650.6 | 3615.5 | 3563.7 | 3540.2 | 3500.1 | 3446.5 | 3393.0 | 3337.8 | 3235.8 |
| 10° | 3660.8 | 3660.8 | 3652.2 | 3618.9 | 3560.3 | 3538.6 | 3493.4 | 3436.5 | 3369.6 | 3314.3 | 3205.6 |
| 12.5° | 3648.9 | 3655.7 | 3650.6 | 3632.2 | 3588.8 | 3572.0 | 3531.9 | 3475.1 | 3411.5 | 3354.5 | 3239.1 |
| 15° | 3664.0 | 3674.1 | 3684.0 | 3677.4 | 3652.2 | 3637.2 | 3600.4 | 3541.8 | 3490.1 | 3429.8 | 3306.0 |
| 17.5° | 3724.3 | 3746.0 | 3769.5 | 3771.2 | 3744.3 | 3717.5 | 3675.8 | 3615.5 | 3565.4 | 3510.1 | 3376.3 |
| 20° | 3838.1 | 3854.7 | 3898.3 | 3906.6 | 3853.1 | 3814.7 | 3756.1 | 3685.7 | 3635.6 | 3588.8 | 3441.5 |
| 22.5° | 4007.0 | 4025.5 | 4060.6 | 4048.8 | 3958.6 | 3913.3 | 3839.7 | 3759.3 | 3707.6 | 3680.7 | 3516.9 |
| 25° | 4262.9 | 4268.0 | 4276.4 | 4224.5 | 4075.6 | 4025.5 | 3935.0 | 3844.7 | 3803.0 | 3799.7 | 3623.9 |
| 27.5° | 4564.2 | 4570.8 | 4534.0 | 4418.7 | 4206.1 | 4140.8 | 4038.8 | 3956.9 | 3936.7 | 3961.9 | 3759.3 |
| 30° | 4908.8 | 4910.4 | 4808.4 | 4621.1 | 4356.7 | 4284.7 | 4179.4 | 4089.1 | 4107.4 | 4169.4 | 3933.4 |
| 32.5° | 5261.8 | 5245.2 | 5104.6 | 4860.3 | 4562.5 | 4475.4 | 4385.2 | 4294.7 | 4348.3 | 4473.7 | 4187.7 |
| 35° | 5584.8 | 5578.0 | 5412.4 | 5128.0 | 4830.1 | 4753.2 | 4688.0 | 4592.7 | 4679.6 | 4883.7 | 4534.0 |
| 37.5° | 5907.7 | 5902.7 | 5713.6 | 5417.5 | 5159.8 | 5104.6 | 5056.0 | 4982.4 | 5124.7 | 5424.1 | 4997.5 |
| 40° | 6264.1 | 6255.6 | 6023.0 | 5738.6 | 5542.9 | 5512.8 | 5484.3 | 5452.5 | 5695.2 | 6111.8 | 5574.7 |
| 42.5° | 6704.1 | 6667.2 | 6350.9 | 6088.4 | 5964.6 | 5972.9 | 5974.5 | 6006.3 | 6386.1 | 6930.0 | 6255.6 |
| 45° | 7209.3 | 7127.3 | 6680.6 | 6463.1 | 6428.0 | 6478.1 | 6528.3 | 6660.6 | 7190.9 | 7871.8 | 7008.5 |
| 47.5° | 7699.6 | 7567.3 | 7060.4 | 6866.4 | 6938.2 | 7042.1 | 7162.5 | 7420.1 | 8094.4 | 8857.3 | 7691.2 |
| 50° | 8121.1 | 7985.7 | 7436.9 | 7276.2 | 7505.5 | 7659.4 | 7873.6 | 8263.4 | 9048.0 | 9690.5 | 8121.1 |
| 52.5° | 8452.4 | 8345.3 | 7835.0 | 7727.9 | 8134.5 | 8345.3 | 8681.6 | 9193.6 | 9948.1 | 10239.2 | 8422.2 |
| 55° | 8696.8 | 8643.1 | 8216.4 | 8231.6 | 8833.8 | 9138.4 | 9556.7 | 10135.5 | 10707.7 | 10665.8 | 8648.2 |
| 57.5° | 8972.7 | 8930.9 | 8616.4 | 8825.5 | 9675.5 | 10068.7 | 10552.1 | 11017.3 | 11259.9 | 11008.9 | 8869.0 |
| 60° | 9255.4 | 9268.9 | 9101.5 | 9544.9 | 10716.2 | 11151.1 | 11572.8 | 11688.1 | 11733.3 | 11356.9 | 9101.5 |
| 62.5° | 9469.7 | 9526.5 | 9541.5 | 10321.3 | 11783.4 | 12155.0 | 12337.3 | 12255.3 | 12245.2 | 11823.8 | 9083.1 |
| 65° | 9715.6 | 9864.5 | 10112.1 | 11172.8 | 12753.9 | 12998.1 | 13128.6 | 13247.5 | 12996.5 | 11962.5 | 8189.8 |
| 67.5° | 10140.5 | 10374.7 | 10932.0 | 12216.8 | 13875.0 | 14236.2 | 14606.0 | 14480.5 | 13108.5 | 10552.1 | 6238.9 |
| 70° | 10712.7 | 10998.8 | 11982.6 | 13580.3 | 15395.7 | 16001.4 | 16310.9 | 14381.9 | 11129.3 | 7291.4 | 3290.9 |
| 72° | 10351.3 | 10610.7 | 12307.1 | 14276.5 | 16473.2 | 17028.6 | 16254.0 | 12544.8 | 8067.6 | 3779.4 | 1102.6 |
| 72.5° | 10000.0 | 10267.6 | 12203.5 | 14268.0 | 16580.2 | 17005.2 | 15884.2 | 11820.3 | 7139.0 | 2941.3 | 759.5 |
| 75° | 6938.2 | 7276.2 | 10461.8 | 12825.8 | 14972.4 | 14505.7 | 12153.3 | 7157.4 | 2586.6 | 505.2 | 250.9 |
| 77.5° | 3587.1 | 3848.1 | 6345.9 | 9063.1 | 10435.0 | 9556.7 | 7182.6 | 3105.3 | 716.0 | 267.6 | 165.6 |
| 80° | 2223.6 | 2352.3 | 2968.0 | 4465.5 | 5420.8 | 4741.6 | 3168.9 | 1254.8 | 458.5 | 158.9 | 132.2 |
| 82.5° | 1151.1 | 1249.8 | 1868.8 | 1801.9 | 2002.7 | 1664.6 | 1169.5 | 1050.7 | 282.7 | 98.8 | 135.6 |
| 85° | 378.1 | 401.5 | 1147.8 | 1197.9 | 856.7 | 575.5 | 518.6 | 1002.1 | 81.9 | 63.6 | 115.4 |
| 87.5° | 50.1 | 58.6 | 403.2 | 685.9 | 421.7 | 261.0 | 311.3 | 353.0 | 28.4 | 35.2 | 31.8 |
| 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° | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 | 3406.5 |
| 2.5° | 3339.4 | 3317.7 | 3249.1 | 3180.4 | 3101.8 | 3030.0 | 2973.1 | 2936.3 | 2953.0 | 2897.8 | 2906.1 |
| 5° | 3244.0 | 3189.0 | 3038.2 | 2876.1 | 2700.3 | 2536.4 | 2405.9 | 2308.9 | 2290.5 | 2206.7 | 2210.1 |
| 7.5° | 3152.2 | 3061.8 | 2817.4 | 2549.7 | 2258.7 | 2022.8 | 1808.6 | 1621.3 | 1554.2 | 1485.6 | 1445.6 |
| 10° | 3101.8 | 2978.2 | 2631.8 | 2241.9 | 1832.1 | 1485.6 | 1184.5 | 948.6 | 849.9 | 778.0 | 742.9 |
| 12.5° | 3116.9 | 2953.0 | 2492.8 | 1962.5 | 1423.9 | 983.7 | 669.2 | 496.9 | 436.7 | 403.2 | 391.5 |
| 15° | 3167.2 | 2957.9 | 2367.5 | 1689.8 | 1035.7 | 595.7 | 393.2 | 336.2 | 331.3 | 329.6 | 327.9 |
| 17.5° | 3214.0 | 2963.0 | 2235.3 | 1405.4 | 692.7 | 379.9 | 316.3 | 311.3 | 311.3 | 311.3 | 311.3 |
| 20° | 3262.6 | 2964.6 | 2089.6 | 1107.6 | 455.1 | 311.3 | 297.8 | 294.5 | 297.8 | 297.8 | 297.8 |
| 22.5° | 3319.3 | 2976.4 | 1949.1 | 818.1 | 336.2 | 292.8 | 284.5 | 282.7 | 284.5 | 284.5 | 282.7 |
| 25° | 3389.7 | 3001.4 | 1796.9 | 585.5 | 304.4 | 281.1 | 272.7 | 271.1 | 272.7 | 271.1 | 271.1 |
| 27.5° | 3483.4 | 3035.0 | 1619.6 | 420.0 | 291.1 | 269.3 | 261.0 | 261.0 | 261.0 | 259.3 | 259.3 |
| 30° | 3603.8 | 3075.1 | 1382.0 | 331.3 | 277.8 | 257.6 | 250.9 | 250.9 | 249.3 | 247.7 | 247.7 |
| 32.5° | 3776.1 | 3140.4 | 1122.6 | 299.4 | 262.7 | 242.6 | 236.0 | 237.6 | 236.0 | 234.3 | 232.5 |
| 35° | 4020.5 | 3242.4 | 866.7 | 282.7 | 247.7 | 227.5 | 220.9 | 220.9 | 220.9 | 217.5 | 217.5 |
| 37.5° | 4366.8 | 3398.0 | 649.1 | 266.0 | 232.5 | 212.4 | 204.2 | 204.2 | 202.5 | 199.2 | 200.9 |
| 40° | 4795.1 | 3593.8 | 470.2 | 250.9 | 217.5 | 195.7 | 189.1 | 185.7 | 182.4 | 179.0 | 179.0 |
| 42.5° | 5310.4 | 3784.5 | 353.0 | 236.0 | 202.5 | 182.4 | 174.0 | 170.7 | 164.0 | 160.5 | 158.9 |
| 45° | 5887.6 | 3986.9 | 292.8 | 217.5 | 185.7 | 167.4 | 160.5 | 153.9 | 145.5 | 140.6 | 138.9 |
| 47.5° | 6374.5 | 4110.7 | 261.0 | 199.2 | 169.1 | 152.3 | 145.5 | 135.6 | 125.5 | 122.1 | 122.1 |
| 50° | 6667.2 | 4058.9 | 234.3 | 180.6 | 152.3 | 137.3 | 128.8 | 115.4 | 108.8 | 105.5 | 103.8 |
| 52.5° | 6831.3 | 3904.9 | 212.4 | 165.6 | 137.3 | 120.5 | 108.8 | 97.0 | 93.8 | 90.4 | 90.4 |
| 55° | 6943.3 | 3682.4 | 189.1 | 150.6 | 123.7 | 105.5 | 92.0 | 83.6 | 80.3 | 78.6 | 77.0 |
| 57.5° | 7050.3 | 3411.5 | 167.4 | 137.3 | 110.4 | 93.8 | 78.6 | 75.3 | 68.6 | 67.0 | 67.0 |
| 60° | 7082.1 | 3038.2 | 147.2 | 122.1 | 98.8 | 81.9 | 68.6 | 63.6 | 57.0 | 55.2 | 55.2 |
| 62.5° | 6677.3 | 2417.6 | 130.6 | 103.8 | 87.0 | 70.2 | 60.2 | 53.4 | 46.8 | 46.8 | 46.8 |
| 65° | 5579.7 | 1641.4 | 112.1 | 90.4 | 77.0 | 60.2 | 51.8 | 43.5 | 40.2 | 40.2 | 40.2 |
| 67.5° | 3886.5 | 915.2 | 95.4 | 77.0 | 65.2 | 50.1 | 43.5 | 36.8 | 35.2 | 36.8 | 36.8 |
| 70° | 1751.8 | 363.1 | 80.3 | 63.6 | 53.4 | 41.9 | 36.8 | 31.8 | 35.2 | 35.2 | 35.2 |
| 72° | 525.4 | 194.0 | 67.0 | 51.8 | 43.5 | 36.8 | 31.8 | 30.2 | 33.4 | 35.2 | 35.2 |
| 72.5° | 389.9 | 174.0 | 63.6 | 50.1 | 43.5 | 35.2 | 30.2 | 30.2 | 33.4 | 35.2 | 35.2 |
| 75° | 200.9 | 118.8 | 48.5 | 36.8 | 31.8 | 28.4 | 25.2 | 28.4 | 33.4 | 33.4 | 33.4 |
| 77.5° | 157.3 | 97.0 | 40.2 | 28.4 | 26.8 | 25.2 | 23.4 | 26.8 | 30.2 | 30.2 | 30.2 |
| 80° | 147.2 | 63.6 | 31.8 | 26.8 | 23.4 | 21.7 | 21.7 | 23.4 | 26.8 | 28.4 | 28.4 |
| 82.5° | 148.8 | 51.8 | 28.4 | 25.2 | 21.7 | 20.1 | 20.1 | 21.7 | 25.2 | 26.8 | 26.8 |
| 85° | 95.4 | 35.2 | 25.2 | 21.7 | 20.1 | 18.4 | 18.4 | 20.1 | 23.4 | 25.2 | 25.2 |
| 87.5° | 31.8 | 26.8 | 21.7 | 20.1 | 16.7 | 16.7 | 16.7 | 16.7 | 20.1 | 21.7 | 23.4 |
| 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)