

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: P270669

Luminaire Tested: **NAV-AF-06-D-UNV-SL2-7027-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270669
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-06-D-UNV-SL2-7027-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 2700K, 800mA 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: 20626.8 lumens
Efficiency: N/A
Efficacy: 82.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - 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

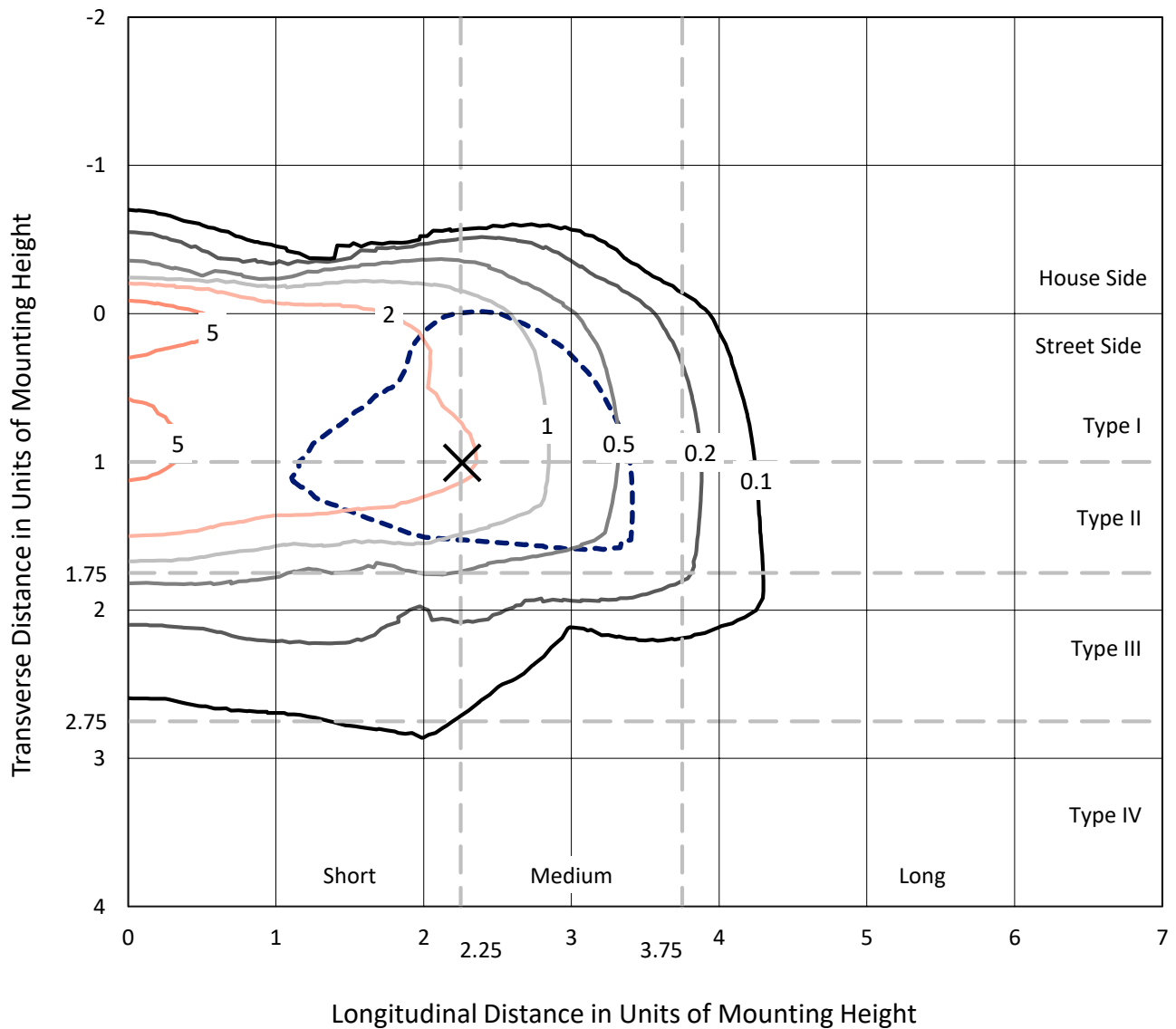


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

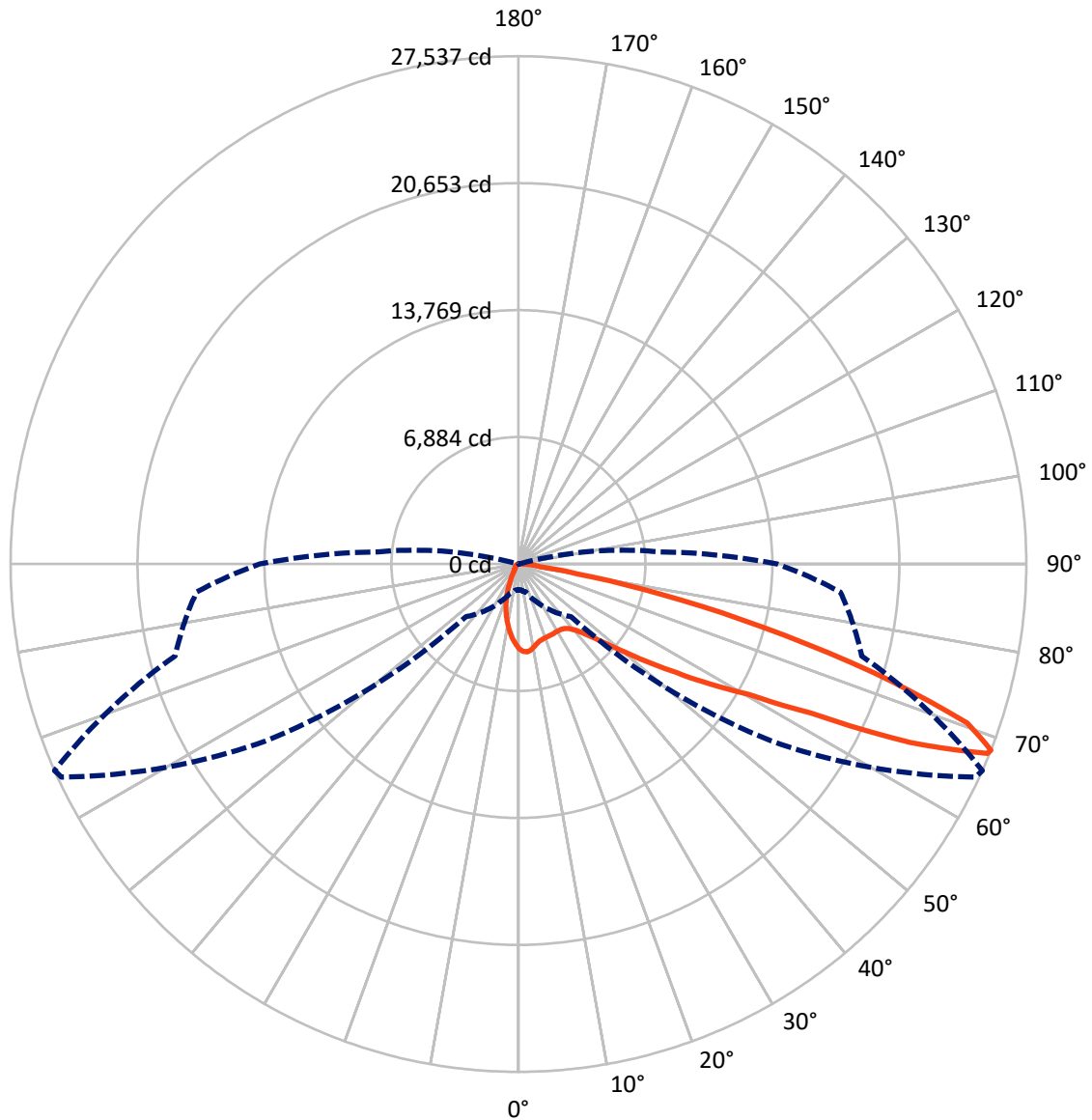


Based on 25 foot mounting height. Maximum calculated value = 7.4 fc
 Type II - Medium - Semi-Cutoff

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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 | 2089.3 | 0.0 | 2089.3 |
| | % Fixture | 10.1 | 0.0 | 10.1 |
| Street Side | Lumens | 18537.5 | 0.0 | 18537.5 |
| | % Fixture | 89.9 | 0.0 | 89.9 |
| Total | Lumens | 20626.8 | 0.0 | 20626.8 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 376.7 | 1.8 |
| 10°-20° | 810.6 | 3.9 |
| 20°-30° | 1174.6 | 5.7 |
| 30°-40° | 1798.1 | 8.7 |
| 40°-50° | 3075.5 | 14.9 |
| 50°-60° | 4811.0 | 23.3 |
| 60°-70° | 5539.7 | 26.9 |
| 70°-80° | 2772.1 | 13.4 |
| 80°-90° | 268.5 | 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° | 20626.8 | 100.0 |
| 0°-180° | 20626.8 | 100.0 |

Coefficient of Utilization



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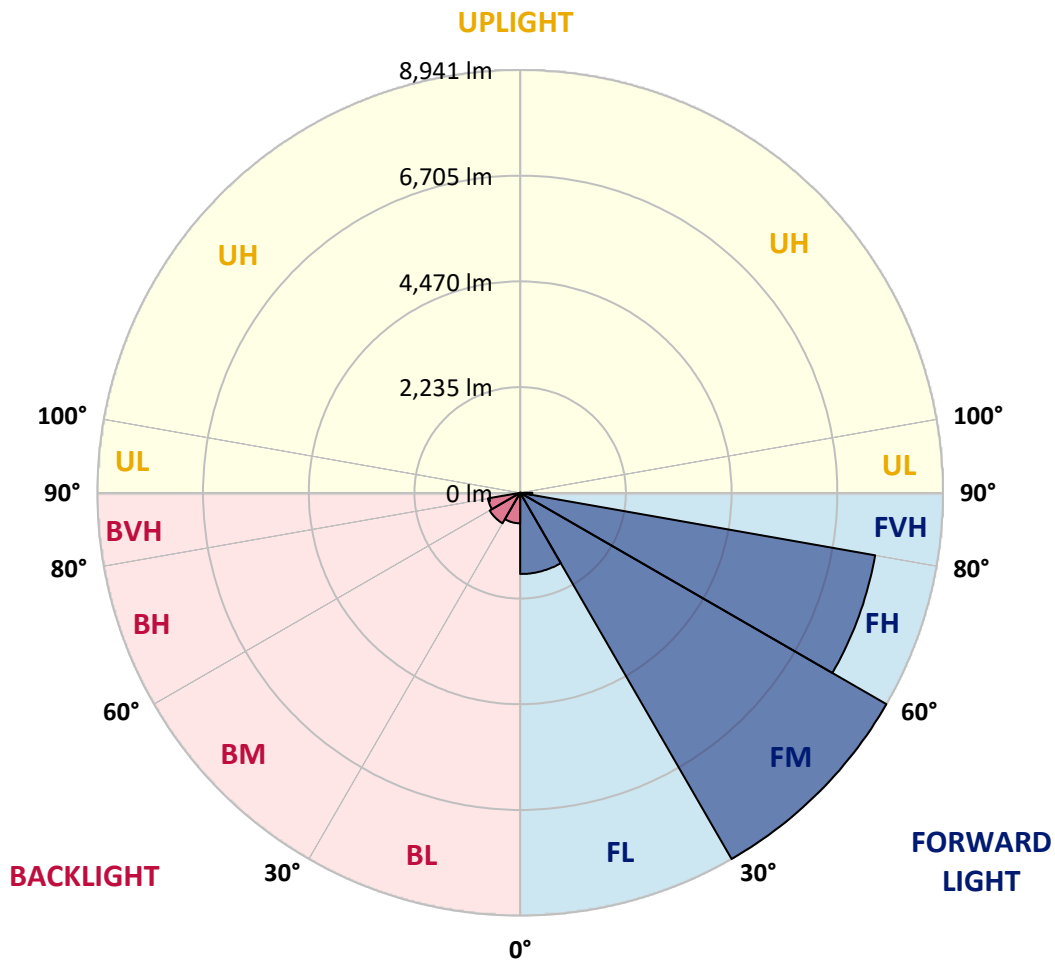
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 1717.1 | 8.3 | | | |
| FM (30°-60°) | 8940.6 | 43.3 | | | |
| FH (60°-80°) | 7621.5 | 36.9 | | | G4/12000 |
| FVH (80°-90°) | 258.3 | 1.3 | | | G3/500 |
| BL (0°-30°) | 644.8 | 3.1 | B2/1000 | | |
| BM (30°-60°) | 744.0 | 3.6 | B1/1000 | | |
| BH (60°-80°) | 690.3 | 3.3 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 10.2 | 0.0 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 |
| 2.5° | 4833.5 | 4836.7 | 4835.0 | 4840.0 | 4836.7 | 4812.4 | 4786.4 | 4731.6 | 4736.4 | 4665.1 | 4585.8 |
| 5° | 4493.4 | 4521.0 | 4548.5 | 4576.1 | 4642.4 | 4700.7 | 4770.3 | 4786.4 | 4786.4 | 4725.1 | 4608.5 |
| 7.5° | 4146.9 | 4148.6 | 4179.4 | 4216.6 | 4305.5 | 4412.5 | 4574.3 | 4720.1 | 4723.4 | 4739.5 | 4611.7 |
| 10° | 3886.2 | 3894.3 | 3915.4 | 3955.9 | 4044.9 | 4150.2 | 4331.4 | 4559.8 | 4577.7 | 4697.4 | 4579.3 |
| 12.5° | 3683.8 | 3693.6 | 3716.2 | 3763.2 | 3844.1 | 3952.6 | 4143.7 | 4404.4 | 4428.6 | 4657.1 | 4569.6 |
| 15° | 3528.4 | 3541.3 | 3559.2 | 3606.1 | 3693.6 | 3808.5 | 4017.4 | 4300.7 | 4329.9 | 4640.9 | 4600.3 |
| 17.5° | 3463.5 | 3463.5 | 3462.0 | 3494.3 | 3581.8 | 3698.4 | 3917.0 | 4245.7 | 4282.9 | 4653.8 | 4652.1 |
| 20° | 3491.2 | 3486.2 | 3452.2 | 3444.1 | 3497.6 | 3614.2 | 3837.6 | 4210.0 | 4252.1 | 4678.1 | 4715.4 |
| 22.5° | 3636.9 | 3627.1 | 3551.0 | 3487.8 | 3471.7 | 3549.5 | 3784.2 | 4185.8 | 4236.0 | 4728.3 | 4799.5 |
| 25° | 3946.2 | 3917.0 | 3811.8 | 3669.2 | 3541.3 | 3533.3 | 3747.0 | 4172.8 | 4226.3 | 4786.4 | 4891.8 |
| 27.5° | 4347.6 | 4339.6 | 4171.2 | 3980.1 | 3734.1 | 3586.7 | 3735.6 | 4163.1 | 4216.6 | 4828.6 | 4966.3 |
| 30° | 4846.4 | 4849.7 | 4655.3 | 4405.9 | 4033.6 | 3737.3 | 3771.3 | 4158.3 | 4213.3 | 4831.9 | 4998.7 |
| 32.5° | 5361.4 | 5364.6 | 5202.7 | 4935.5 | 4443.2 | 3996.3 | 3871.6 | 4180.9 | 4231.1 | 4818.9 | 4997.0 |
| 35° | 5856.9 | 5861.7 | 5764.6 | 5549.2 | 4990.5 | 4355.8 | 4061.1 | 4258.7 | 4294.3 | 4827.0 | 4993.8 |
| 37.5° | 6483.4 | 6502.9 | 6383.1 | 6182.3 | 5677.1 | 4883.6 | 4370.3 | 4415.7 | 4444.9 | 4893.3 | 5018.1 |
| 40° | 7552.2 | 7526.3 | 7183.0 | 6843.0 | 6422.1 | 5526.6 | 4817.3 | 4686.2 | 4695.9 | 5065.1 | 5110.4 |
| 42.5° | 8797.5 | 8765.0 | 8177.4 | 7591.0 | 7187.9 | 6302.1 | 5388.9 | 5100.7 | 5099.0 | 5353.3 | 5311.1 |
| 45° | 9869.4 | 9849.9 | 9231.4 | 8449.3 | 8036.3 | 7158.8 | 6093.3 | 5698.2 | 5678.7 | 5852.0 | 5677.1 |
| 47.5° | 10630.5 | 10614.3 | 10146.3 | 9362.6 | 9017.6 | 8101.2 | 6972.6 | 6512.6 | 6472.2 | 6504.5 | 6271.3 |
| 50° | 10704.9 | 10687.1 | 10523.6 | 10020.0 | 10164.1 | 9483.9 | 8059.1 | 7579.8 | 7527.9 | 7477.8 | 7170.1 |
| 52.5° | 10008.6 | 10006.9 | 10092.8 | 10060.5 | 10967.2 | 11263.6 | 9391.7 | 8899.5 | 8838.0 | 8710.0 | 8404.0 |
| 55° | 8585.3 | 8577.2 | 8902.7 | 9375.5 | 10949.4 | 13099.9 | 11423.8 | 10470.1 | 10389.2 | 10133.3 | 9731.8 |
| 57.5° | 6273.0 | 6231.0 | 6911.0 | 7913.3 | 10180.3 | 13903.0 | 14651.0 | 12421.4 | 12286.9 | 11475.7 | 10857.2 |
| 60° | 3463.5 | 3479.8 | 4354.2 | 5541.1 | 8358.5 | 13744.2 | 17620.9 | 14696.5 | 14343.3 | 12633.5 | 12010.1 |
| 62.5° | 1941.4 | 1982.0 | 2632.9 | 3601.2 | 5328.9 | 12456.9 | 19214.1 | 18611.8 | 17761.6 | 13983.9 | 13467.4 |
| 65° | 1468.6 | 1493.0 | 1820.1 | 2778.6 | 3360.0 | 8705.1 | 19468.3 | 24086.6 | 23353.0 | 16030.7 | 15787.8 |
| 67.5° | 1382.9 | 1402.3 | 1562.6 | 2304.2 | 3060.3 | 4514.5 | 17554.4 | 27325.1 | 27417.3 | 18822.2 | 17585.2 |
| 68° | 1392.6 | 1416.8 | 1577.2 | 2216.7 | 3055.6 | 4038.4 | 16738.3 | 27341.3 | 27537.2 | 19272.4 | 17523.6 |
| 70° | 1279.2 | 1285.7 | 1667.9 | 2174.6 | 2961.6 | 3181.8 | 12108.9 | 25467.7 | 25819.2 | 19808.3 | 15907.6 |
| 72.5° | 488.9 | 490.7 | 748.1 | 1883.1 | 3102.4 | 3199.7 | 6099.8 | 20129.0 | 20146.8 | 17238.7 | 12401.9 |
| 75° | 254.2 | 213.7 | 234.7 | 589.4 | 2963.2 | 3118.6 | 3060.3 | 13744.2 | 13658.5 | 11658.7 | 7599.2 |
| 77.5° | 174.9 | 148.9 | 157.1 | 204.1 | 1232.3 | 3117.1 | 2210.3 | 7903.6 | 7885.9 | 4959.8 | 2168.1 |
| 80° | 98.8 | 85.8 | 94.0 | 171.7 | 432.4 | 2926.0 | 2059.8 | 3397.2 | 3201.3 | 871.1 | 351.3 |
| 82.5° | 50.1 | 42.1 | 50.1 | 144.1 | 268.9 | 1841.0 | 2003.0 | 1332.6 | 1186.9 | 207.2 | 228.3 |
| 85° | 12.9 | 12.9 | 24.3 | 100.4 | 166.7 | 604.0 | 1795.7 | 961.8 | 864.7 | 90.6 | 162.0 |
| 87.5° | 3.2 | 1.5 | 9.7 | 37.2 | 59.8 | 131.2 | 995.9 | 536.0 | 461.5 | 46.9 | 94.0 |
| 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° | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 | 4595.5 |
| 2.5° | 4553.4 | 4508.1 | 4418.9 | 4318.5 | 4247.4 | 4169.7 | 4124.3 | 4069.2 | 4027.1 | 3989.8 | 4017.4 |
| 5° | 4537.2 | 4449.8 | 4252.1 | 4030.3 | 3844.1 | 3666.1 | 3533.3 | 3406.9 | 3311.4 | 3251.4 | 3275.8 |
| 7.5° | 4495.1 | 4365.6 | 4044.9 | 3698.4 | 3393.9 | 3107.3 | 2874.1 | 2665.4 | 2503.3 | 2415.9 | 2443.5 |
| 10° | 4423.9 | 4240.9 | 3810.2 | 3329.2 | 2903.3 | 2498.5 | 2152.0 | 1841.0 | 1606.3 | 1496.1 | 1522.1 |
| 12.5° | 4372.1 | 4130.8 | 3567.2 | 2973.0 | 2412.7 | 1837.8 | 1378.0 | 1021.7 | 838.7 | 728.6 | 738.3 |
| 15° | 4349.4 | 4044.9 | 3340.5 | 2597.3 | 1876.6 | 1180.5 | 744.9 | 539.3 | 476.0 | 453.4 | 455.0 |
| 17.5° | 4352.6 | 3976.8 | 3125.2 | 2207.0 | 1335.9 | 678.5 | 456.6 | 411.3 | 401.6 | 396.7 | 396.7 |
| 20° | 4360.6 | 3908.9 | 2901.7 | 1800.7 | 854.9 | 437.1 | 380.5 | 366.0 | 361.1 | 354.7 | 356.3 |
| 22.5° | 4384.9 | 3857.1 | 2676.6 | 1392.6 | 526.2 | 356.3 | 336.9 | 323.8 | 315.8 | 306.1 | 307.7 |
| 25° | 4422.1 | 3818.2 | 2454.8 | 1002.2 | 370.8 | 311.0 | 293.0 | 275.3 | 260.7 | 249.4 | 250.9 |
| 27.5° | 4444.9 | 3763.2 | 2218.4 | 683.3 | 307.7 | 272.0 | 247.8 | 223.5 | 207.2 | 197.5 | 195.9 |
| 30° | 4428.6 | 3674.1 | 1949.6 | 448.6 | 272.0 | 234.7 | 205.6 | 178.1 | 162.0 | 153.8 | 153.8 |
| 32.5° | 4384.9 | 3559.2 | 1653.3 | 327.2 | 241.3 | 202.4 | 166.7 | 142.6 | 131.2 | 126.3 | 127.9 |
| 35° | 4334.7 | 3439.3 | 1337.4 | 276.9 | 217.0 | 171.7 | 136.1 | 116.6 | 111.7 | 110.1 | 110.1 |
| 37.5° | 4307.3 | 3335.6 | 1034.7 | 250.9 | 194.4 | 142.6 | 111.7 | 100.4 | 95.5 | 95.5 | 95.5 |
| 40° | 4337.9 | 3256.4 | 766.0 | 231.6 | 171.7 | 118.1 | 94.0 | 85.8 | 84.3 | 84.3 | 84.3 |
| 42.5° | 4469.2 | 3228.8 | 560.3 | 215.4 | 148.9 | 98.8 | 80.9 | 74.5 | 72.9 | 74.5 | 74.5 |
| 45° | 4725.1 | 3288.8 | 424.3 | 199.2 | 127.9 | 80.9 | 69.6 | 64.8 | 64.8 | 66.4 | 66.4 |
| 47.5° | 5159.0 | 3442.6 | 348.2 | 183.0 | 106.9 | 68.0 | 59.8 | 56.7 | 56.7 | 58.3 | 58.3 |
| 50° | 5832.5 | 3727.5 | 312.5 | 165.2 | 89.0 | 58.3 | 50.1 | 48.6 | 48.6 | 50.1 | 51.8 |
| 52.5° | 6856.0 | 4270.1 | 294.7 | 147.3 | 72.9 | 48.6 | 42.1 | 40.5 | 42.1 | 43.7 | 43.7 |
| 55° | 7994.2 | 4964.7 | 273.7 | 129.5 | 61.5 | 40.5 | 34.0 | 34.0 | 35.7 | 38.8 | 38.8 |
| 57.5° | 9054.8 | 5635.0 | 254.2 | 106.9 | 53.4 | 32.3 | 27.5 | 27.5 | 30.7 | 34.0 | 34.0 |
| 60° | 10175.5 | 6292.4 | 228.3 | 85.8 | 45.4 | 26.0 | 22.6 | 22.6 | 27.5 | 30.7 | 32.3 |
| 62.5° | 11559.8 | 7056.7 | 194.4 | 68.0 | 35.7 | 19.5 | 16.2 | 21.0 | 26.0 | 30.7 | 30.7 |
| 65° | 13561.4 | 8007.2 | 152.3 | 53.4 | 27.5 | 14.6 | 12.9 | 19.5 | 24.3 | 29.1 | 30.7 |
| 67.5° | 14288.4 | 7885.9 | 115.0 | 43.7 | 21.0 | 11.3 | 11.3 | 17.7 | 24.3 | 29.1 | 29.1 |
| 68° | 14022.8 | 7620.2 | 110.1 | 42.1 | 19.5 | 11.3 | 11.3 | 17.7 | 24.3 | 29.1 | 29.1 |
| 70° | 12218.9 | 6229.2 | 90.6 | 32.3 | 16.2 | 9.7 | 9.7 | 16.2 | 24.3 | 27.5 | 29.1 |
| 72.5° | 9148.8 | 4138.9 | 77.8 | 21.0 | 14.6 | 9.7 | 8.1 | 16.2 | 22.6 | 27.5 | 27.5 |
| 75° | 5248.0 | 1718.1 | 66.4 | 16.2 | 12.9 | 8.1 | 8.1 | 14.6 | 22.6 | 27.5 | 27.5 |
| 77.5° | 1483.2 | 401.6 | 53.4 | 12.9 | 11.3 | 8.1 | 6.5 | 14.6 | 21.0 | 26.0 | 26.0 |
| 80° | 272.0 | 119.8 | 42.1 | 11.3 | 9.7 | 8.1 | 6.5 | 14.6 | 21.0 | 26.0 | 26.0 |
| 82.5° | 179.8 | 56.7 | 30.7 | 11.3 | 9.7 | 8.1 | 6.5 | 12.9 | 19.5 | 24.3 | 24.3 |
| 85° | 134.3 | 40.5 | 19.5 | 11.3 | 9.7 | 8.1 | 6.5 | 12.9 | 19.5 | 24.3 | 24.3 |
| 87.5° | 74.5 | 17.7 | 14.6 | 12.9 | 11.3 | 8.1 | 6.5 | 11.3 | 17.7 | 22.6 | 22.6 |
| 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)