

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: McGRAW-EDISON

Report Number: P237513

Luminaire Tested: **CTN-8-4-D-E1-T4-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P237513  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1707-171-27)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: CTN-8-4-D-E1-T4-HSS  
Description: CELESTEON HIGH MAST LUMINAIRE  
(8) 70 CRI, 4000K LEDS AND TYPE IV OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 37885 lumens  
Efficiency: N/A  
Efficacy: 116.6 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B3 - U0 - G5

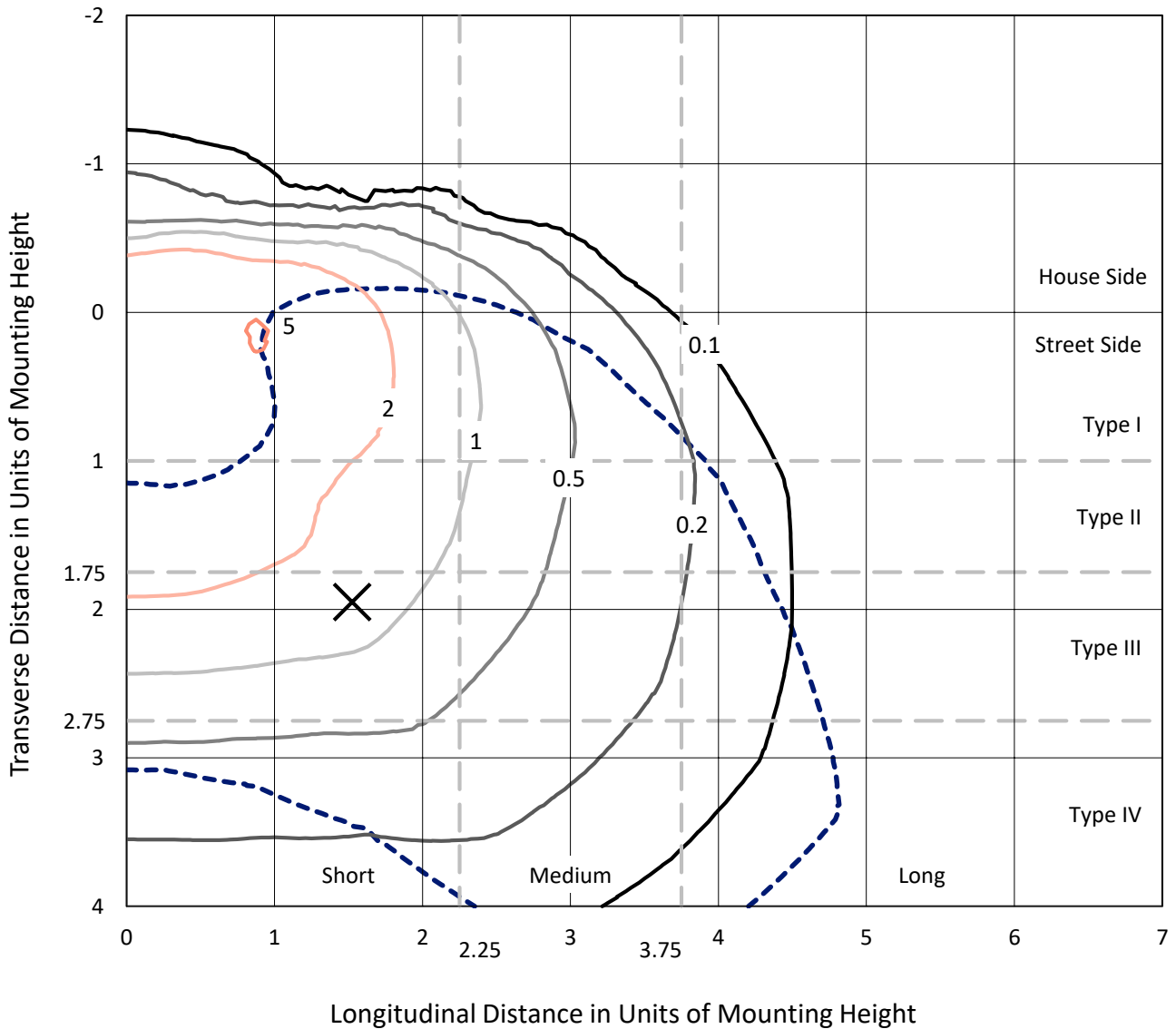
Input Watts (W): 325  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

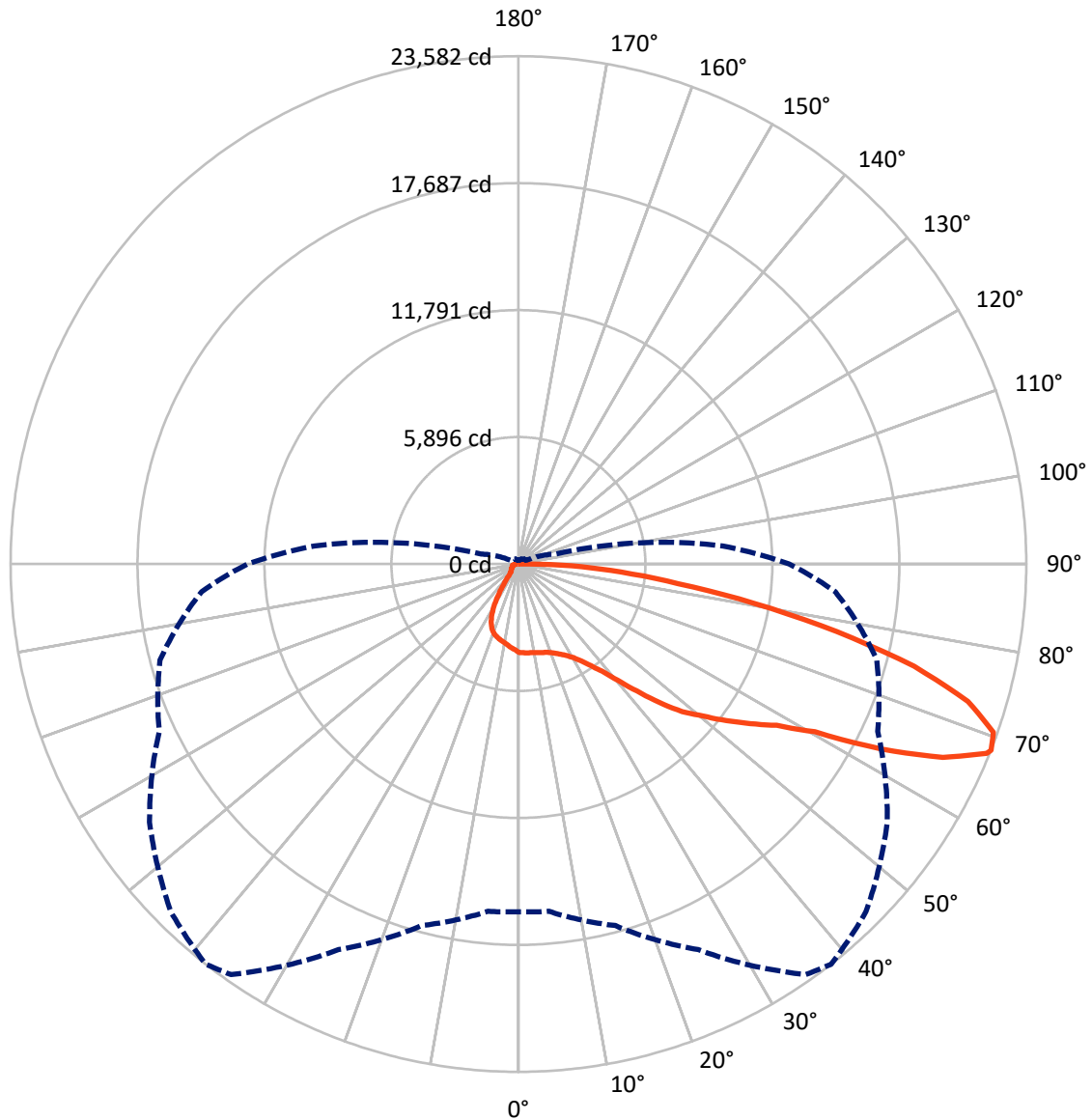


Based on 30 foot mounting height. Maximum calculated value = 5.2 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 38-Deg Lateral    - - - Horizontal Cone Through 68-Deg Vertical

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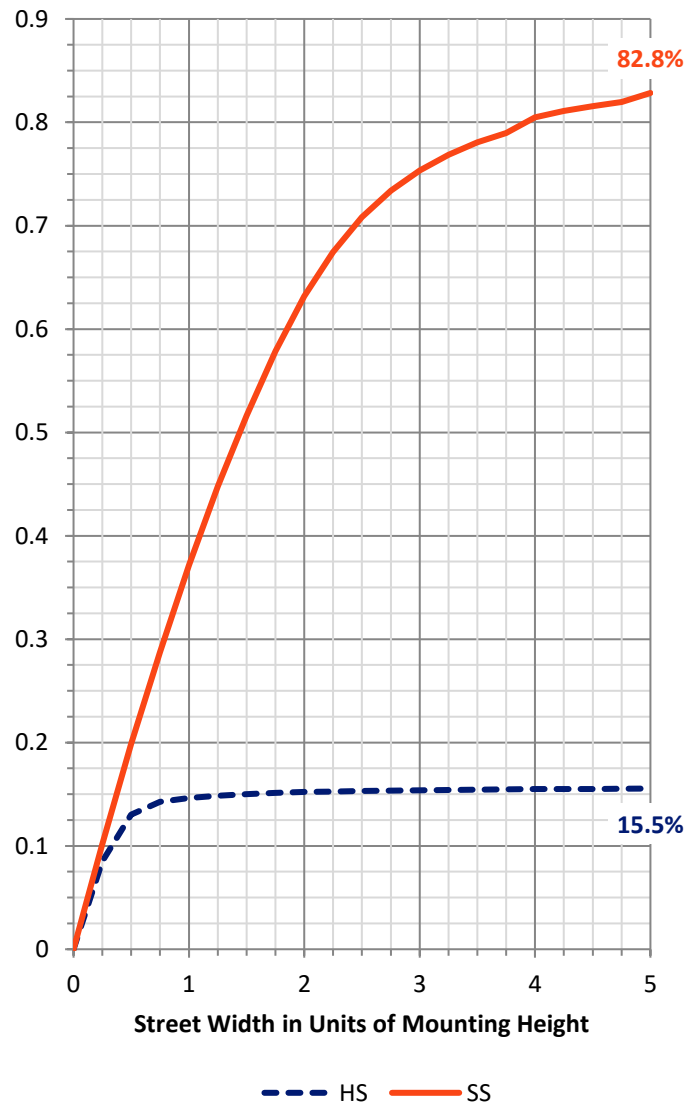
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 5975.6   | 0.0    | 5975.6  |
|                    | % Fixture | 15.8     | 0.0    | 15.8    |
| <b>Street Side</b> | Lumens    | 31909.4  | 0.0    | 31909.4 |
|                    | % Fixture | 84.2     | 0.0    | 84.2    |
| <b>Total</b>       | Lumens    | 37885.0  | 0.0    | 37885.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 387.9   | 1.0       |
| 10°-20°   | 1152.0  | 3.0       |
| 20°-30°   | 1922.6  | 5.1       |
| 30°-40°   | 2949.0  | 7.8       |
| 40°-50°   | 5077.1  | 13.4      |
| 50°-60°   | 7545.2  | 19.9      |
| 60°-70°   | 9981.7  | 26.3      |
| 70°-80°   | 7330.7  | 19.3      |
| 80°-90°   | 1538.8  | 4.1       |
| 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°    | 37885.0 | 100.0     |
| 0°-180°   | 37885.0 | 100.0     |



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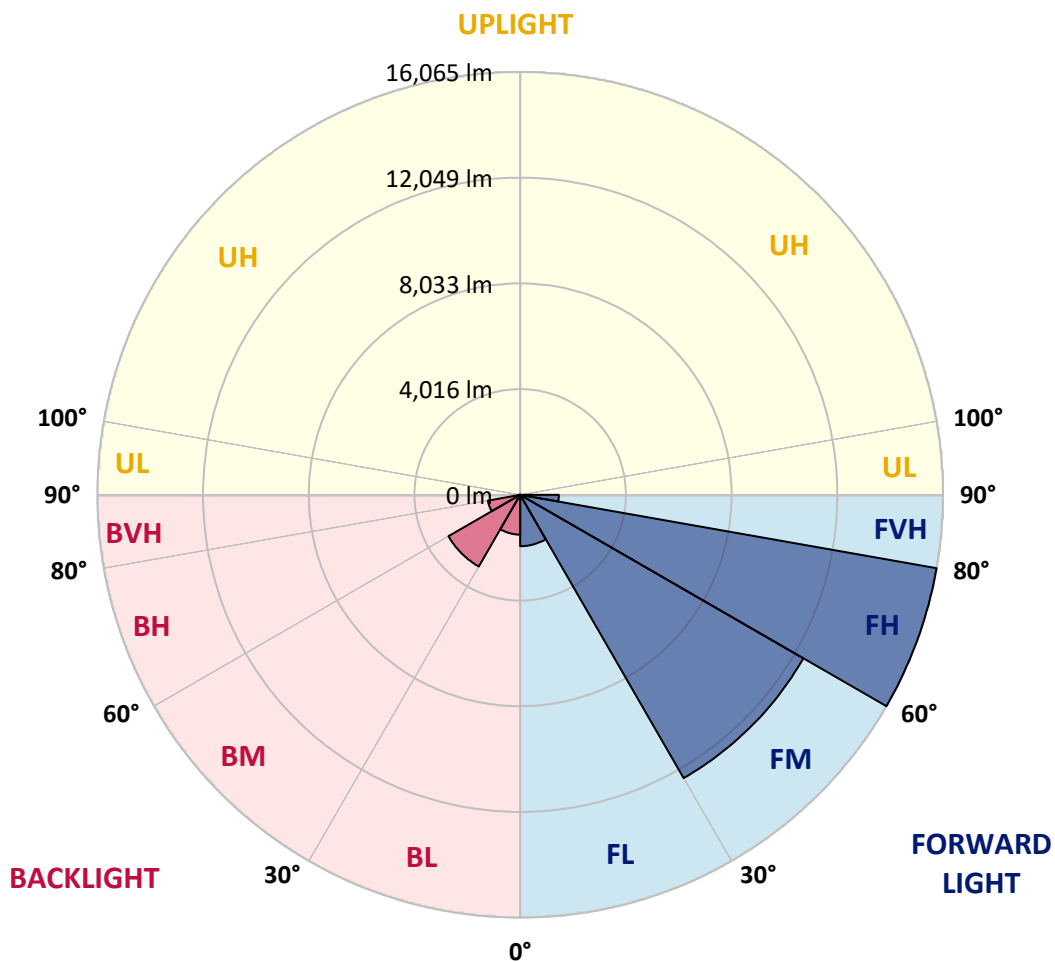
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|---------|-----------|-------------------------|------|---------|
|      |             |         |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1950.6  | 5.1       |                         |      |         |
| FM   | (30°-60°)   | 12425.7 | 32.8      |                         |      |         |
| FH   | (60°-80°)   | 16065.1 | 42.4      |                         |      | G5      |
| FVH  | (80°-90°)   | 1468.0  | 3.9       |                         |      | G5      |
| BL   | (0°-30°)    | 1511.9  | 4.0       | B3/2500                 |      |         |
| BM   | (30°-60°)   | 3145.6  | 8.3       | B3/5000                 |      |         |
| BH   | (60°-80°)   | 1247.2  | 3.3       | B3/2500                 |      | G3/2500 |
| BVH  | (80°-90°)   | 70.8    | 0.2       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G5**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 38°     | 45°     | 55°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  | 4114.3  |
| 2.5°  | 4201.6  | 4172.5  | 4178.0  | 4196.0  | 4122.6  | 4117.1  | 4140.6  | 4114.3  | 4148.9  | 4132.3  | 4133.7  |
| 5°    | 4212.6  | 4185.0  | 4196.0  | 4223.7  | 4154.5  | 4153.1  | 4179.4  | 4146.2  | 4172.5  | 4151.7  | 4146.2  |
| 7.5°  | 4203.0  | 4178.0  | 4186.3  | 4212.6  | 4153.1  | 4157.3  | 4191.9  | 4180.8  | 4219.6  | 4198.8  | 4183.6  |
| 10°   | 4198.8  | 4182.2  | 4183.6  | 4219.6  | 4172.5  | 4183.6  | 4227.9  | 4234.8  | 4297.1  | 4279.1  | 4272.2  |
| 12.5° | 4161.4  | 4148.9  | 4161.4  | 4218.2  | 4203.0  | 4225.1  | 4284.7  | 4320.7  | 4394.1  | 4387.1  | 4401.0  |
| 15°   | 4139.3  | 4133.7  | 4143.4  | 4209.9  | 4227.9  | 4263.9  | 4342.8  | 4413.4  | 4502.1  | 4514.5  | 4546.4  |
| 17.5° | 4165.6  | 4173.9  | 4191.9  | 4245.9  | 4270.8  | 4308.2  | 4396.8  | 4493.8  | 4619.8  | 4673.8  | 4711.2  |
| 20°   | 4276.3  | 4286.0  | 4302.7  | 4337.3  | 4365.0  | 4396.8  | 4475.8  | 4586.6  | 4754.1  | 4838.6  | 4898.1  |
| 22.5° | 4437.0  | 4420.4  | 4443.9  | 4473.0  | 4481.3  | 4509.0  | 4589.3  | 4700.1  | 4889.8  | 5017.2  | 5100.3  |
| 25°   | 4561.6  | 4550.5  | 4574.1  | 4623.9  | 4622.6  | 4647.5  | 4726.4  | 4840.0  | 5044.9  | 5227.7  | 5374.5  |
| 27.5° | 4691.8  | 4684.9  | 4694.6  | 4761.0  | 4787.4  | 4817.8  | 4887.1  | 5014.5  | 5245.7  | 5475.6  | 5706.9  |
| 30°   | 4880.1  | 4895.4  | 4878.7  | 4954.9  | 5011.7  | 5046.3  | 5116.9  | 5273.4  | 5521.3  | 5835.7  | 6127.9  |
| 32.5° | 5172.3  | 5179.3  | 5151.6  | 5236.0  | 5317.7  | 5370.4  | 5438.2  | 5643.2  | 5914.6  | 6298.2  | 6674.9  |
| 35°   | 5795.5  | 5796.9  | 5683.3  | 5670.9  | 5716.6  | 5792.7  | 5892.4  | 6197.1  | 6601.5  | 7192.8  | 7619.3  |
| 37.5° | 6740.0  | 6694.3  | 6586.2  | 6375.7  | 6307.9  | 6321.7  | 6464.4  | 6888.1  | 7501.6  | 8592.9  | 9001.4  |
| 40°   | 7822.9  | 7770.3  | 7580.5  | 7302.2  | 7102.8  | 7090.3  | 7138.8  | 7647.0  | 8544.4  | 10167.4 | 10373.7 |
| 42.5° | 8991.7  | 8955.7  | 8648.3  | 8360.2  | 8105.4  | 8065.2  | 7955.8  | 8465.5  | 9693.8  | 11573.0 | 11571.6 |
| 45°   | 10070.5 | 10063.5 | 9688.3  | 9545.6  | 9275.6  | 9170.3  | 9040.2  | 9436.2  | 10875.1 | 12680.9 | 12547.9 |
| 47.5° | 11082.8 | 11062.0 | 10663.2 | 10499.8 | 10293.4 | 10236.6 | 10082.9 | 10359.9 | 11884.6 | 13715.3 | 13384.4 |
| 50°   | 12157.4 | 12093.7 | 11501.0 | 11336.2 | 11132.6 | 11088.3 | 11008.0 | 11326.5 | 12984.1 | 14619.6 | 14071.2 |
| 52.5° | 13406.5 | 13309.6 | 12500.8 | 12194.8 | 12049.4 | 12078.5 | 12027.2 | 12312.5 | 14213.9 | 15375.7 | 14633.5 |
| 55°   | 14884.1 | 14593.3 | 13820.6 | 13265.3 | 12942.6 | 13076.9 | 12977.2 | 13333.1 | 15393.7 | 15964.3 | 15043.4 |
| 57.5° | 15968.5 | 15967.1 | 15652.7 | 14863.4 | 14132.2 | 14139.1 | 13938.3 | 14344.0 | 16347.9 | 16550.1 | 15283.0 |
| 60°   | 17209.3 | 17282.7 | 17390.7 | 17040.3 | 16177.6 | 15816.1 | 15109.9 | 15345.3 | 17115.1 | 16975.2 | 15389.6 |
| 62.5° | 18288.0 | 18331.0 | 18808.7 | 18943.1 | 19009.5 | 18920.9 | 17350.5 | 16498.8 | 17742.4 | 17212.0 | 15420.1 |
| 65°   | 18249.3 | 18245.1 | 19278.2 | 20178.3 | 21577.0 | 21655.9 | 21203.1 | 18211.9 | 18228.5 | 17242.5 | 15262.2 |
| 67.5° | 16468.4 | 16552.8 | 17934.9 | 19864.0 | 23200.0 | 23449.3 | 22824.7 | 20699.0 | 18408.5 | 17228.6 | 14885.5 |
| 68°   | 16149.9 | 16185.9 | 17381.0 | 19753.2 | 23269.3 | 23582.2 | 22827.5 | 20906.7 | 18403.0 | 17230.0 | 14769.2 |
| 70°   | 14121.1 | 14175.1 | 15568.2 | 18411.3 | 23288.7 | 23396.7 | 22485.5 | 21020.3 | 18220.2 | 17101.2 | 13930.0 |
| 72.5° | 11147.9 | 11210.2 | 12480.1 | 15535.0 | 21837.4 | 21833.2 | 20952.4 | 20068.9 | 17601.2 | 16159.6 | 11816.7 |
| 75°   | 8076.3  | 8279.9  | 9390.5  | 12201.7 | 18693.8 | 18979.1 | 18865.5 | 18689.6 | 15839.7 | 13655.8 | 8339.4  |
| 77.5° | 5662.6  | 5766.4  | 6812.0  | 9177.3  | 14690.3 | 15126.5 | 15892.3 | 16119.4 | 13204.3 | 10141.1 | 3755.7  |
| 80°   | 3571.5  | 3766.7  | 4632.2  | 6517.0  | 10702.0 | 11104.9 | 12032.8 | 12415.0 | 9746.4  | 4974.3  | 657.8   |
| 82.5° | 2081.4  | 2197.7  | 2834.7  | 4221.0  | 7195.6  | 7476.7  | 8084.6  | 7615.2  | 3950.9  | 661.9   | 365.6   |
| 85°   | 1008.2  | 1114.8  | 1521.9  | 2401.3  | 4492.4  | 4776.3  | 5104.5  | 3320.8  | 653.6   | 260.3   | 246.5   |
| 87.5° | 408.5   | 419.6   | 623.2   | 1066.3  | 2239.3  | 2483.0  | 2402.7  | 1089.9  | 170.3   | 94.2    | 77.6    |
| 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°    | 4114.3  | 4114.3  | 4114.3 | 4114.3 | 4114.3 | 4114.3 | 4114.3 | 4114.3 | 4114.3 | 4114.3 | 4114.3 |
| 2.5°  | 4140.6  | 4119.9  | 4094.9 | 4086.6 | 4028.5 | 4025.7 | 3977.2 | 4047.9 | 4027.1 | 4028.5 | 4045.1 |
| 5°    | 4143.4  | 4119.9  | 4071.4 | 4049.2 | 3986.9 | 3970.3 | 3890.0 | 3934.3 | 3887.2 | 3883.1 | 3910.8 |
| 7.5°  | 4172.5  | 4146.2  | 4076.9 | 4042.3 | 3926.0 | 3870.6 | 3794.4 | 3833.2 | 3761.2 | 3746.0 | 3751.5 |
| 10°   | 4250.0  | 4216.8  | 4132.3 | 4050.6 | 3906.6 | 3826.3 | 3676.7 | 3689.2 | 3625.5 | 3604.7 | 3622.7 |
| 12.5° | 4367.7  | 4327.6  | 4226.5 | 4106.0 | 3923.2 | 3782.0 | 3599.2 | 3525.8 | 3428.8 | 3397.0 | 3406.7 |
| 15°   | 4528.4  | 4481.3  | 4348.4 | 4208.5 | 3959.2 | 3761.2 | 3511.9 | 3359.6 | 3171.3 | 3118.6 | 3099.2 |
| 17.5° | 4704.3  | 4654.4  | 4500.7 | 4324.8 | 4022.9 | 3737.7 | 3412.2 | 3169.9 | 2898.4 | 2779.3 | 2772.4 |
| 20°   | 4910.6  | 4856.6  | 4696.0 | 4460.5 | 4074.2 | 3708.6 | 3287.6 | 2940.0 | 2586.9 | 2387.4 | 2373.6 |
| 22.5° | 5147.4  | 5100.3  | 4918.9 | 4581.0 | 4100.5 | 3632.4 | 3099.2 | 2646.4 | 2204.6 | 1955.4 | 1942.9 |
| 25°   | 5425.8  | 5381.4  | 5126.6 | 4665.5 | 4071.4 | 3498.1 | 2841.7 | 2286.4 | 1754.6 | 1505.3 | 1494.2 |
| 27.5° | 5758.1  | 5688.9  | 5290.0 | 4690.4 | 3985.5 | 3277.9 | 2519.0 | 1823.8 | 1296.2 | 1106.5 | 1096.8 |
| 30°   | 6136.2  | 6012.9  | 5443.8 | 4683.5 | 3833.2 | 2996.8 | 2074.5 | 1344.7 | 920.9  | 793.5  | 789.4  |
| 32.5° | 6612.6  | 6396.5  | 5590.6 | 4628.1 | 3615.8 | 2628.4 | 1578.7 | 933.4  | 661.9  | 599.6  | 598.2  |
| 35°   | 7407.4  | 6944.9  | 5751.2 | 4528.4 | 3320.8 | 2145.1 | 1094.0 | 635.6  | 538.7  | 526.2  | 526.2  |
| 37.5° | 8592.9  | 7849.2  | 5979.7 | 4369.1 | 2938.6 | 1635.5 | 720.1  | 505.5  | 506.8  | 513.8  | 515.2  |
| 40°   | 9810.1  | 8889.2  | 6310.7 | 4132.3 | 2492.7 | 1149.4 | 523.5  | 469.5  | 486.1  | 497.2  | 505.5  |
| 42.5° | 10927.7 | 9830.9  | 6679.0 | 3808.3 | 1988.6 | 758.9  | 468.1  | 451.5  | 459.8  | 468.1  | 476.4  |
| 45°   | 11865.2 | 10656.3 | 7026.6 | 3438.5 | 1473.5 | 540.1  | 463.9  | 430.7  | 426.5  | 432.1  | 437.6  |
| 47.5° | 12655.9 | 11327.9 | 7270.3 | 3021.7 | 1002.6 | 462.5  | 452.8  | 408.5  | 394.7  | 396.1  | 398.8  |
| 50°   | 13259.7 | 11802.9 | 7378.4 | 2563.3 | 664.7  | 450.1  | 432.1  | 385.0  | 362.8  | 362.8  | 365.6  |
| 52.5° | 13666.9 | 12100.6 | 7314.7 | 2046.8 | 477.8  | 443.1  | 415.4  | 360.1  | 333.7  | 337.9  | 340.7  |
| 55°   | 13968.8 | 12259.9 | 7064.0 | 1503.9 | 421.0  | 422.4  | 396.1  | 331.0  | 308.8  | 319.9  | 324.0  |
| 57.5° | 14086.5 | 12255.7 | 6643.0 | 1038.6 | 418.2  | 390.5  | 368.4  | 306.0  | 288.0  | 303.3  | 310.2  |
| 60°   | 14043.5 | 12053.5 | 6030.9 | 707.6  | 409.9  | 365.6  | 339.3  | 282.5  | 268.7  | 268.7  | 270.0  |
| 62.5° | 13957.7 | 11769.7 | 5143.3 | 524.8  | 390.5  | 347.6  | 317.1  | 263.1  | 246.5  | 238.2  | 235.4  |
| 65°   | 13569.9 | 11081.4 | 3776.4 | 452.8  | 371.1  | 337.9  | 296.4  | 245.1  | 223.0  | 209.1  | 206.3  |
| 67.5° | 12802.7 | 9897.4  | 2110.5 | 418.2  | 357.3  | 332.4  | 282.5  | 228.5  | 203.6  | 187.0  | 185.6  |
| 68°   | 12567.3 | 9527.6  | 1789.2 | 415.4  | 360.1  | 332.4  | 281.1  | 224.3  | 200.8  | 182.8  | 181.4  |
| 70°   | 11174.2 | 7685.8  | 739.5  | 390.5  | 379.4  | 333.7  | 274.2  | 211.9  | 189.7  | 171.7  | 170.3  |
| 72.5° | 8451.6  | 4452.2  | 390.5  | 339.3  | 369.7  | 328.2  | 277.0  | 202.2  | 180.0  | 159.3  | 156.5  |
| 75°   | 4657.2  | 1275.4  | 347.6  | 275.6  | 342.1  | 346.2  | 282.5  | 200.8  | 174.5  | 148.2  | 142.6  |
| 77.5° | 1034.5  | 415.4   | 324.0  | 241.0  | 295.0  | 318.5  | 261.7  | 191.1  | 177.3  | 135.7  | 130.2  |
| 80°   | 396.1   | 337.9   | 307.4  | 185.6  | 234.0  | 270.0  | 217.4  | 170.3  | 181.4  | 127.4  | 120.5  |
| 82.5° | 331.0   | 296.4   | 282.5  | 144.0  | 162.0  | 198.0  | 174.5  | 145.4  | 167.6  | 117.7  | 112.2  |
| 85°   | 243.7   | 286.7   | 199.4  | 113.6  | 119.1  | 121.9  | 121.9  | 113.6  | 144.0  | 103.9  | 98.3   |
| 87.5° | 98.3    | 138.5   | 84.5   | 52.6   | 60.9   | 56.8   | 49.9   | 60.9   | 83.1   | 73.4   | 73.4   |
| 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)