

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: P195654

Luminaire Tested: **NAV-AF-06-D-UNV-SL3-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195654
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-06-D-UNV-SL3-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 615mA 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: 23703 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B3 - U0 - G4

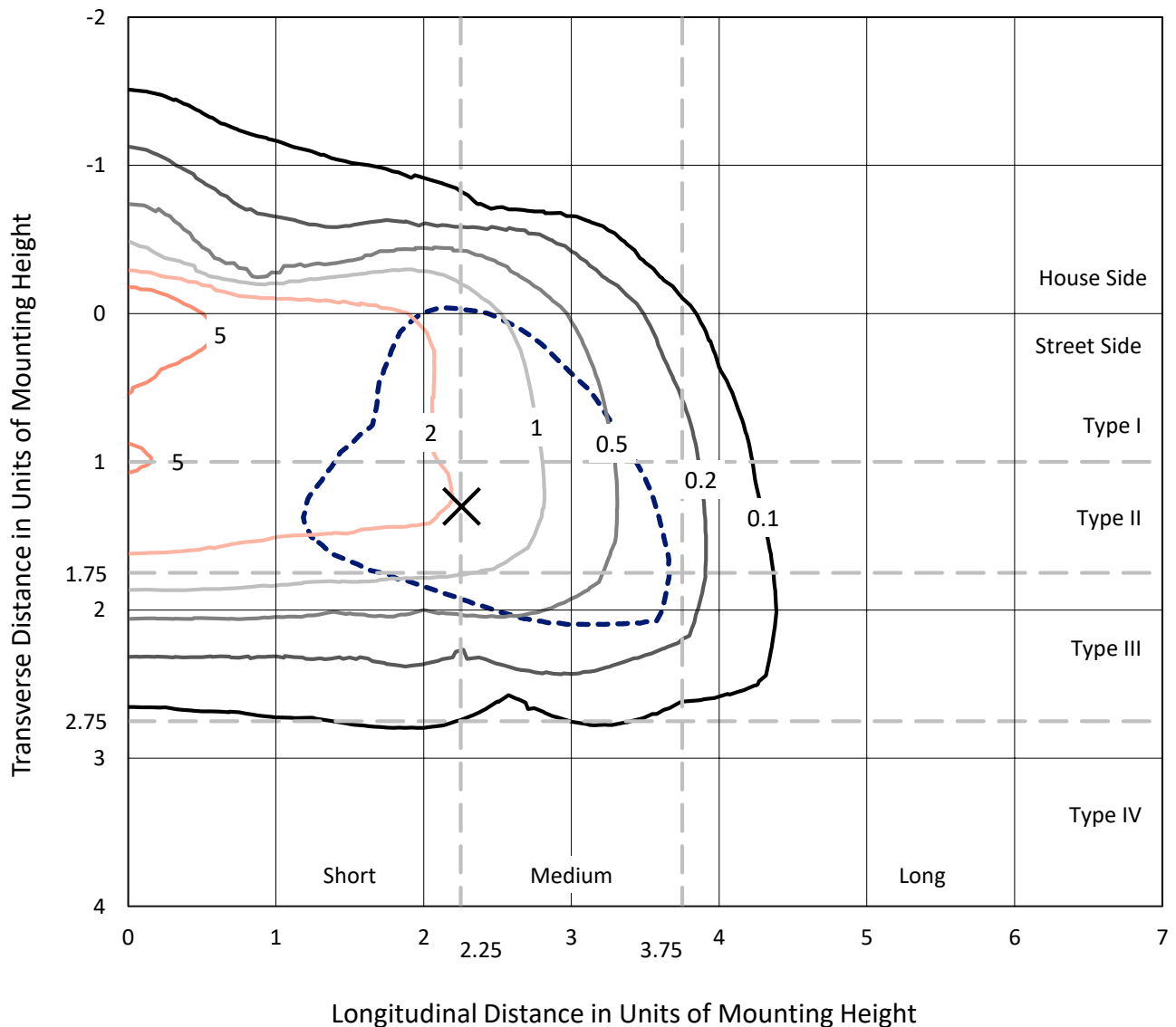
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

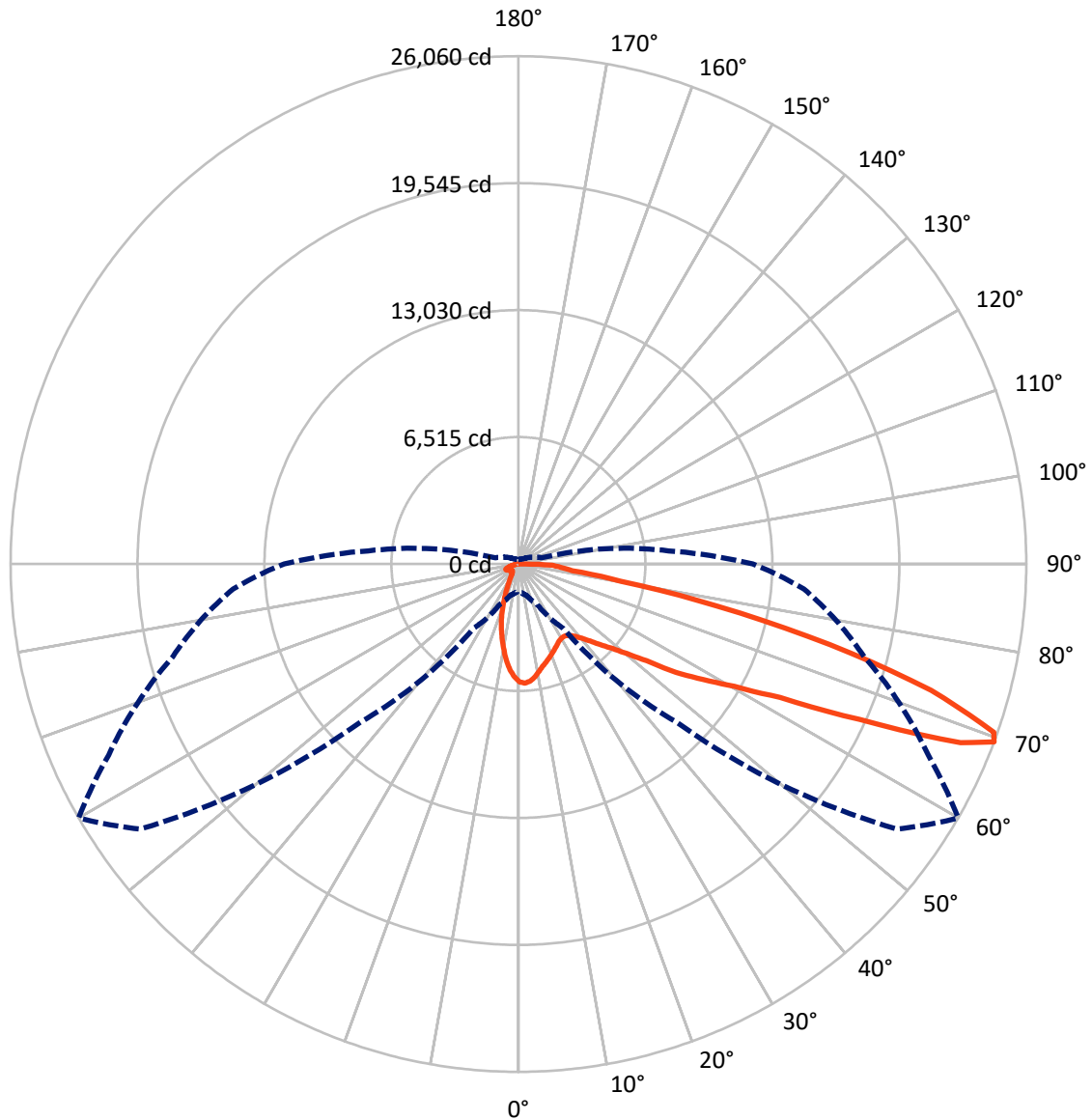
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.7 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 | 3380.8 | 0.0 | 3380.8 |
| | % Fixture | 14.3 | 0.0 | 14.3 |
| Street Side | Lumens | 20322.2 | 0.0 | 20322.2 |
| | % Fixture | 85.7 | 0.0 | 85.7 |
| Total | Lumens | 23703.0 | 0.0 | 23703.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 513.1 | 2.2 |
| 10°-20° | 1098.5 | 4.6 |
| 20°-30° | 1401.4 | 5.9 |
| 30°-40° | 1928.4 | 8.1 |
| 40°-50° | 3123.7 | 13.2 |
| 50°-60° | 4902.5 | 20.7 |
| 60°-70° | 6536.0 | 27.6 |
| 70°-80° | 3635.5 | 15.3 |
| 80°-90° | 563.9 | 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° | 23703.0 | 100.0 |
| 0°-180° | 23703.0 | 100.0 |



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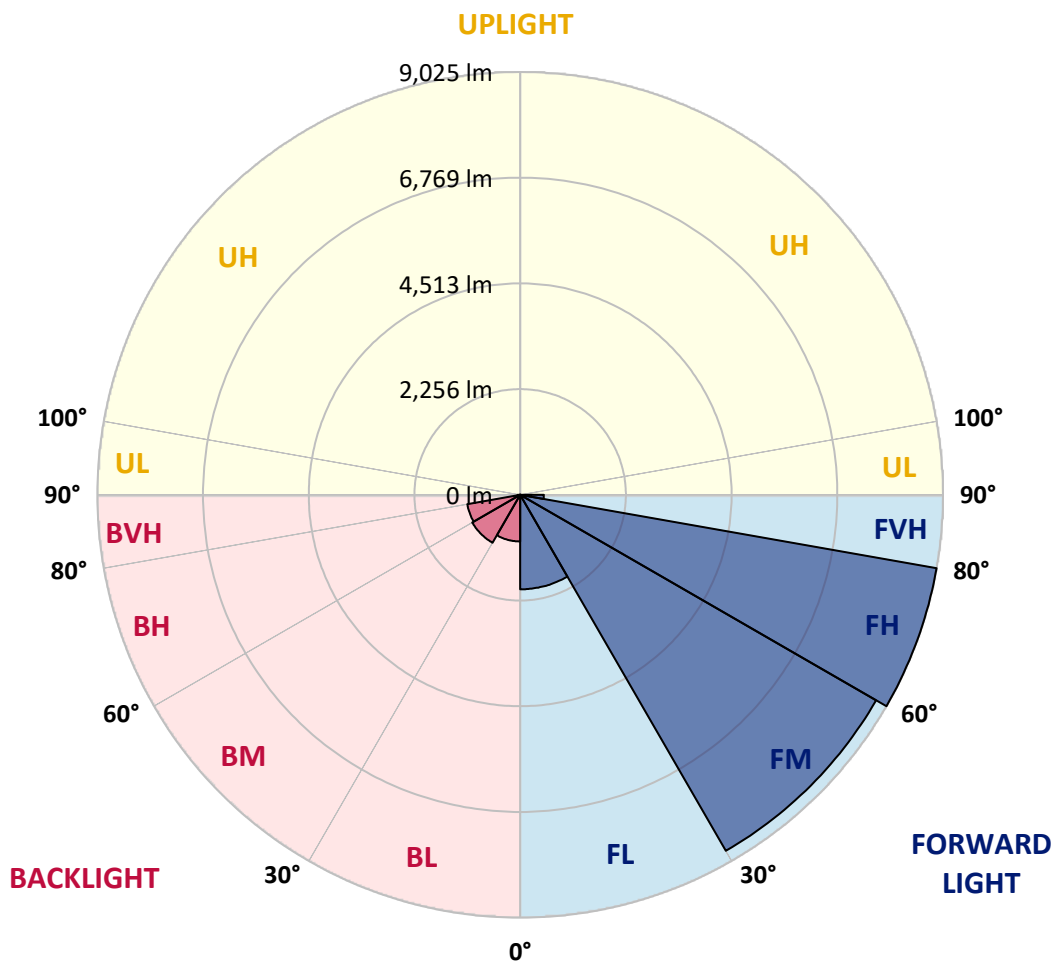
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 2016.7 | 8.5 | | | |
| FM | (30°-60°) | 8773.6 | 37.0 | | | |
| FH | (60°-80°) | 9025.2 | 38.1 | | | G4/12000 |
| FVH | (80°-90°) | 506.7 | 2.1 | | | G4/750 |
| BL | (0°-30°) | 996.3 | 4.2 | B2/1000 | | |
| BM | (30°-60°) | 1181.1 | 5.0 | B2/2500 | | |
| BH | (60°-80°) | 1146.3 | 4.8 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 57.1 | 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-G4

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|-------|---------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 |
| 2.5° | 6209.0 | 6225.7 | 6225.7 | 6212.1 | 6204.5 | 6160.4 | 6134.5 | 6116.3 | 6084.4 | 6025.1 | 5971.9 |
| 5° | 5987.1 | 6019.0 | 6032.7 | 6038.8 | 6078.3 | 6064.6 | 6066.1 | 6054.0 | 6026.6 | 5962.8 | 5876.1 |
| 7.5° | 5579.7 | 5585.8 | 5610.1 | 5651.2 | 5746.9 | 5813.8 | 5868.5 | 5879.2 | 5873.1 | 5826.0 | 5704.4 |
| 10° | 5178.5 | 5189.1 | 5218.0 | 5287.9 | 5379.1 | 5474.9 | 5593.4 | 5642.1 | 5678.5 | 5663.3 | 5509.8 |
| 12.5° | 4845.6 | 4847.1 | 4879.1 | 4959.6 | 5061.4 | 5181.5 | 5342.6 | 5418.6 | 5505.3 | 5540.2 | 5368.5 |
| 15° | 4524.9 | 4546.2 | 4576.6 | 4673.9 | 4800.0 | 4952.0 | 5137.4 | 5242.3 | 5356.3 | 5456.6 | 5259.0 |
| 17.5° | 4281.7 | 4298.4 | 4316.7 | 4397.2 | 4543.1 | 4733.1 | 4962.6 | 5075.1 | 5225.6 | 5379.1 | 5146.6 |
| 20° | 4148.0 | 4154.0 | 4140.4 | 4179.9 | 4303.0 | 4508.2 | 4774.2 | 4909.5 | 5088.8 | 5304.6 | 5031.0 |
| 22.5° | 4120.6 | 4120.6 | 4070.4 | 4062.8 | 4117.6 | 4290.8 | 4579.6 | 4745.3 | 4964.2 | 5253.0 | 4927.7 |
| 25° | 4248.3 | 4239.2 | 4144.9 | 4058.3 | 4038.5 | 4126.7 | 4394.2 | 4597.9 | 4857.8 | 5251.4 | 4850.2 |
| 27.5° | 4489.9 | 4477.8 | 4360.7 | 4214.8 | 4088.7 | 4050.7 | 4251.3 | 4459.5 | 4774.2 | 5303.1 | 4810.7 |
| 30° | 4790.9 | 4786.3 | 4667.8 | 4485.4 | 4277.1 | 4081.1 | 4195.1 | 4388.1 | 4717.9 | 5398.9 | 4809.1 |
| 32.5° | 5120.7 | 5099.4 | 5026.5 | 4844.1 | 4573.5 | 4249.8 | 4228.5 | 4391.1 | 4702.7 | 5538.7 | 4844.1 |
| 35° | 5471.8 | 5456.6 | 5438.4 | 5254.5 | 4950.5 | 4547.7 | 4375.9 | 4496.0 | 4777.2 | 5733.3 | 4942.9 |
| 37.5° | 5918.7 | 5902.0 | 5932.4 | 5731.7 | 5398.9 | 4938.3 | 4625.2 | 4705.8 | 4929.2 | 6016.0 | 5126.8 |
| 40° | 6713.6 | 6665.0 | 6579.9 | 6271.3 | 5921.7 | 5417.1 | 4985.4 | 4997.6 | 5189.1 | 6394.4 | 5421.7 |
| 42.5° | 8019.3 | 7862.7 | 7441.7 | 6874.8 | 6473.5 | 5973.4 | 5455.1 | 5397.4 | 5547.8 | 6894.5 | 5850.3 |
| 45° | 9328.0 | 9151.6 | 8440.3 | 7532.9 | 7045.0 | 6570.8 | 6035.7 | 5897.4 | 5994.7 | 7476.7 | 6402.0 |
| 47.5° | 10173.0 | 10086.4 | 9283.9 | 8191.0 | 7643.8 | 7221.3 | 6700.0 | 6472.0 | 6541.9 | 8136.3 | 7083.0 |
| 50° | 10420.8 | 10346.3 | 9715.5 | 8706.3 | 8209.3 | 8007.1 | 7522.3 | 7219.8 | 7231.9 | 8906.9 | 7899.2 |
| 52.5° | 10235.4 | 10205.0 | 9787.0 | 9025.5 | 8729.1 | 8835.5 | 8660.7 | 8239.7 | 8139.4 | 9752.0 | 8783.8 |
| 55° | 9987.6 | 9998.3 | 9837.1 | 9346.2 | 9258.0 | 9607.6 | 10150.3 | 9811.3 | 9385.7 | 10632.1 | 9704.9 |
| 57.5° | 9207.9 | 9215.5 | 9638.0 | 9957.2 | 10267.3 | 10689.8 | 11310.0 | 11167.1 | 10671.6 | 11582.0 | 10737.0 |
| 60° | 7414.3 | 7473.6 | 8414.5 | 9831.1 | 11420.9 | 12822.3 | 12974.3 | 12728.1 | 12039.6 | 12676.4 | 12079.1 |
| 62.5° | 5297.0 | 5350.2 | 6440.0 | 8534.5 | 11285.7 | 15236.0 | 16047.7 | 15068.8 | 13895.4 | 14313.4 | 13966.9 |
| 65° | 2783.0 | 2773.9 | 3617.5 | 5897.4 | 9505.8 | 15795.4 | 20890.2 | 19224.4 | 17022.0 | 16564.5 | 15790.8 |
| 67.5° | 1554.9 | 1605.1 | 1931.9 | 2974.5 | 6195.3 | 13901.5 | 23983.3 | 24474.3 | 21369.0 | 18350.4 | 15711.8 |
| 69° | 1437.9 | 1454.6 | 1673.5 | 2299.7 | 4038.5 | 11469.6 | 23717.4 | 26059.6 | 23202.1 | 18358.0 | 14699.5 |
| 70° | 1396.8 | 1415.1 | 1614.2 | 2118.8 | 3392.5 | 9397.9 | 22749.1 | 25874.2 | 23647.4 | 17950.7 | 13778.4 |
| 72.5° | 1252.4 | 1276.8 | 1469.8 | 1904.5 | 2859.0 | 4844.1 | 18324.6 | 22145.7 | 21420.7 | 15689.0 | 10683.8 |
| 75° | 1068.5 | 1109.6 | 1401.4 | 1890.8 | 2708.6 | 3079.4 | 12220.4 | 16499.1 | 15942.8 | 11220.3 | 6061.6 |
| 77.5° | 442.3 | 446.9 | 612.5 | 1384.7 | 2842.3 | 2947.2 | 6567.7 | 10451.2 | 9252.0 | 4920.1 | 1825.5 |
| 80° | 308.6 | 302.5 | 305.5 | 404.3 | 2293.6 | 2966.9 | 3369.7 | 5315.3 | 4131.2 | 1298.0 | 854.2 |
| 82.5° | 259.9 | 256.9 | 269.0 | 253.8 | 776.7 | 3366.7 | 2818.0 | 2770.9 | 1945.5 | 699.2 | 407.3 |
| 85° | 171.8 | 167.2 | 220.4 | 231.0 | 369.3 | 2673.6 | 3030.8 | 2178.1 | 1450.0 | 373.9 | 173.3 |
| 87.5° | 83.6 | 85.1 | 126.2 | 156.6 | 196.1 | 846.6 | 2903.1 | 1722.1 | 1120.2 | 162.6 | 69.9 |
| 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° | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 | 6047.9 |
| 2.5° | 5950.6 | 5905.0 | 5864.0 | 5812.3 | 5772.8 | 5739.3 | 5693.7 | 5692.2 | 5684.6 | 5695.3 | 5698.3 |
| 5° | 5818.4 | 5742.4 | 5626.9 | 5497.7 | 5406.5 | 5286.4 | 5169.4 | 5129.8 | 5085.8 | 5081.2 | 5094.9 |
| 7.5° | 5619.3 | 5500.7 | 5303.1 | 5105.5 | 4907.9 | 4705.8 | 4514.3 | 4417.0 | 4322.7 | 4293.9 | 4307.5 |
| 10° | 5397.4 | 5246.9 | 4944.4 | 4622.2 | 4344.0 | 4043.1 | 3751.2 | 3562.8 | 3391.0 | 3318.1 | 3336.3 |
| 12.5° | 5224.1 | 5032.6 | 4607.0 | 4189.0 | 3772.5 | 3340.9 | 2956.3 | 2583.9 | 2302.7 | 2176.6 | 2184.2 |
| 15° | 5075.1 | 4830.4 | 4290.8 | 3734.5 | 3213.2 | 2621.9 | 2088.4 | 1656.7 | 1410.5 | 1319.3 | 1316.3 |
| 17.5° | 4914.0 | 4617.6 | 3961.0 | 3312.0 | 2635.6 | 1904.5 | 1398.4 | 1143.0 | 1045.7 | 1015.3 | 1015.3 |
| 20° | 4742.3 | 4398.7 | 3616.0 | 2851.4 | 2027.6 | 1330.0 | 1051.8 | 953.0 | 916.5 | 907.4 | 905.9 |
| 22.5° | 4582.7 | 4184.4 | 3269.4 | 2360.5 | 1466.8 | 1009.2 | 895.3 | 857.3 | 851.2 | 858.8 | 858.8 |
| 25° | 4456.5 | 3996.0 | 2918.3 | 1843.7 | 1067.0 | 845.1 | 796.5 | 791.9 | 814.7 | 842.1 | 846.6 |
| 27.5° | 4362.3 | 3827.2 | 2571.8 | 1346.7 | 839.0 | 735.7 | 718.9 | 738.7 | 791.9 | 846.6 | 857.3 |
| 30° | 4296.9 | 3682.8 | 2156.8 | 968.2 | 699.2 | 644.5 | 652.1 | 687.0 | 767.6 | 851.2 | 874.0 |
| 32.5° | 4268.0 | 3565.8 | 1738.8 | 743.3 | 597.3 | 566.9 | 586.7 | 632.3 | 715.9 | 799.5 | 826.9 |
| 35° | 4295.4 | 3480.7 | 1352.8 | 617.1 | 522.9 | 500.1 | 522.9 | 570.0 | 624.7 | 665.7 | 682.5 |
| 37.5° | 4394.2 | 3450.3 | 1018.4 | 547.2 | 474.2 | 451.4 | 469.7 | 501.6 | 525.9 | 541.1 | 548.7 |
| 40° | 4602.4 | 3482.2 | 798.0 | 510.7 | 446.9 | 421.0 | 425.6 | 440.8 | 457.5 | 469.7 | 471.2 |
| 42.5° | 4933.8 | 3587.1 | 709.8 | 497.0 | 430.1 | 396.7 | 389.1 | 399.7 | 418.0 | 434.7 | 437.7 |
| 45° | 5374.6 | 3761.9 | 700.7 | 501.6 | 422.5 | 376.9 | 361.7 | 372.4 | 396.7 | 424.1 | 428.6 |
| 47.5° | 5944.5 | 4038.5 | 743.3 | 525.9 | 427.1 | 366.3 | 343.5 | 354.1 | 386.1 | 422.5 | 428.6 |
| 50° | 6619.4 | 4421.5 | 822.3 | 562.4 | 448.4 | 366.3 | 335.9 | 345.0 | 378.5 | 419.5 | 425.6 |
| 52.5° | 7414.3 | 4955.0 | 904.4 | 598.9 | 478.8 | 380.0 | 338.9 | 337.4 | 367.8 | 405.8 | 413.4 |
| 55° | 8291.3 | 5617.7 | 983.4 | 630.8 | 495.5 | 398.2 | 346.5 | 328.3 | 352.6 | 383.0 | 389.1 |
| 57.5° | 9323.4 | 6525.2 | 1121.7 | 661.2 | 504.6 | 411.9 | 355.7 | 319.2 | 332.9 | 354.1 | 358.7 |
| 60° | 10723.3 | 7858.2 | 1390.8 | 712.9 | 521.3 | 418.0 | 357.2 | 310.1 | 308.6 | 323.8 | 325.3 |
| 62.5° | 12548.7 | 9419.2 | 1647.6 | 773.7 | 554.8 | 419.5 | 351.1 | 304.0 | 288.8 | 293.4 | 293.4 |
| 65° | 13846.8 | 9993.7 | 1573.2 | 825.3 | 585.2 | 418.0 | 345.0 | 299.4 | 273.6 | 266.0 | 266.0 |
| 67.5° | 13108.1 | 8827.9 | 1336.0 | 839.0 | 588.2 | 401.3 | 331.3 | 288.8 | 259.9 | 241.7 | 241.7 |
| 69° | 12022.8 | 7738.1 | 1226.6 | 814.7 | 563.9 | 381.5 | 316.2 | 278.2 | 250.8 | 229.5 | 229.5 |
| 70° | 11138.2 | 6912.7 | 1159.7 | 785.8 | 535.0 | 364.8 | 302.5 | 267.5 | 241.7 | 223.4 | 221.9 |
| 72.5° | 8315.7 | 4613.1 | 991.0 | 677.9 | 439.3 | 308.6 | 264.5 | 238.6 | 217.4 | 205.2 | 205.2 |
| 75° | 4388.1 | 2311.8 | 811.7 | 553.3 | 338.9 | 246.2 | 217.4 | 200.6 | 188.5 | 187.0 | 185.4 |
| 77.5° | 1437.9 | 1045.7 | 583.7 | 416.5 | 249.3 | 191.5 | 173.3 | 162.6 | 161.1 | 167.2 | 167.2 |
| 80° | 776.7 | 624.7 | 375.4 | 281.2 | 173.3 | 142.9 | 133.8 | 132.2 | 136.8 | 145.9 | 145.9 |
| 82.5° | 376.9 | 308.6 | 223.4 | 173.3 | 118.6 | 104.9 | 104.9 | 106.4 | 112.5 | 123.1 | 123.1 |
| 85° | 162.6 | 145.9 | 129.2 | 97.3 | 73.0 | 65.4 | 74.5 | 82.1 | 86.6 | 94.2 | 97.3 |
| 87.5° | 77.5 | 68.4 | 59.3 | 38.0 | 31.9 | 33.4 | 39.5 | 48.6 | 57.8 | 63.8 | 65.4 |
| 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)