

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: P195240

Luminaire Tested: **NAV-AF-06-D-UNV-SL4-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195240
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 37698 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G5

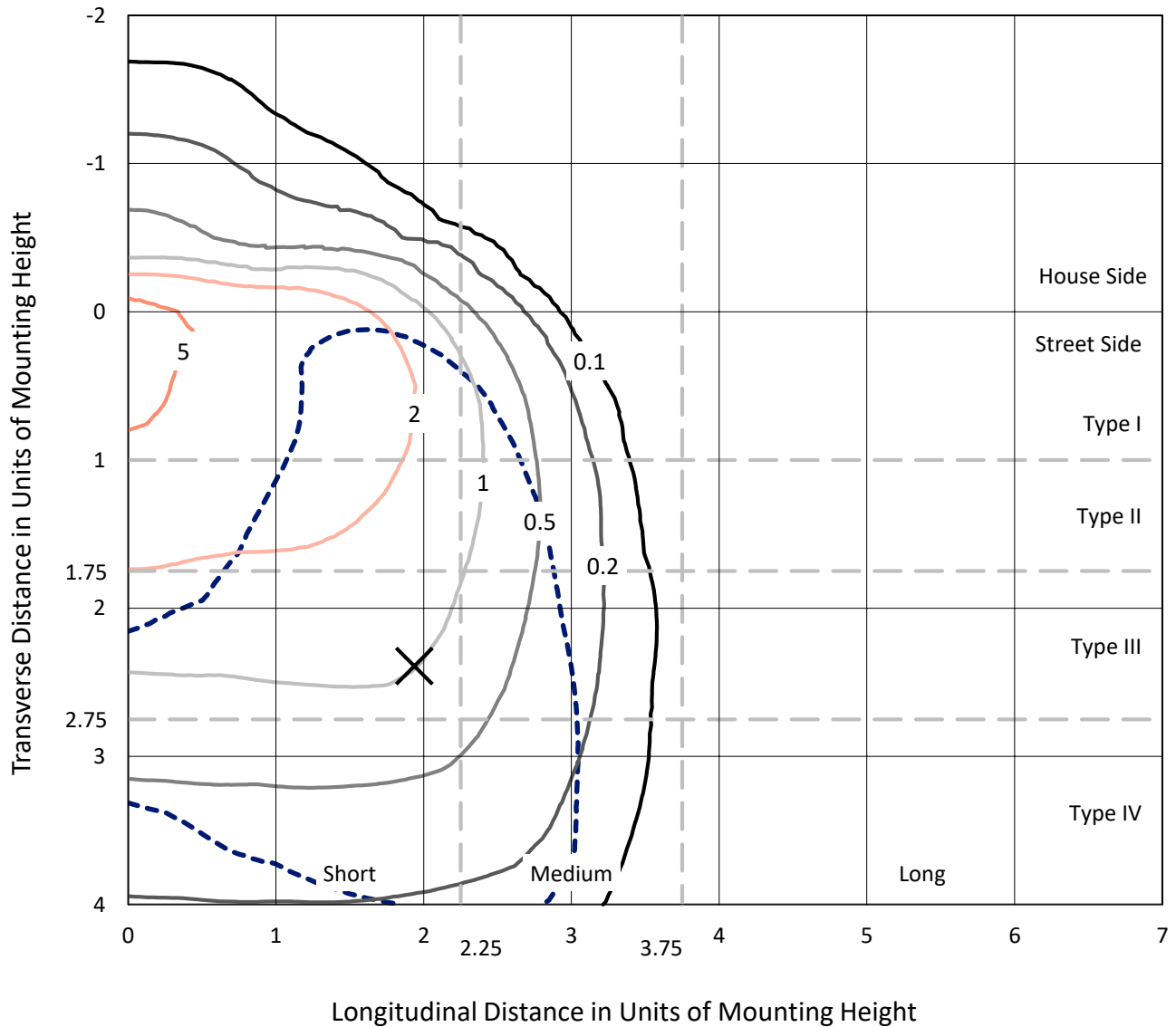
Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

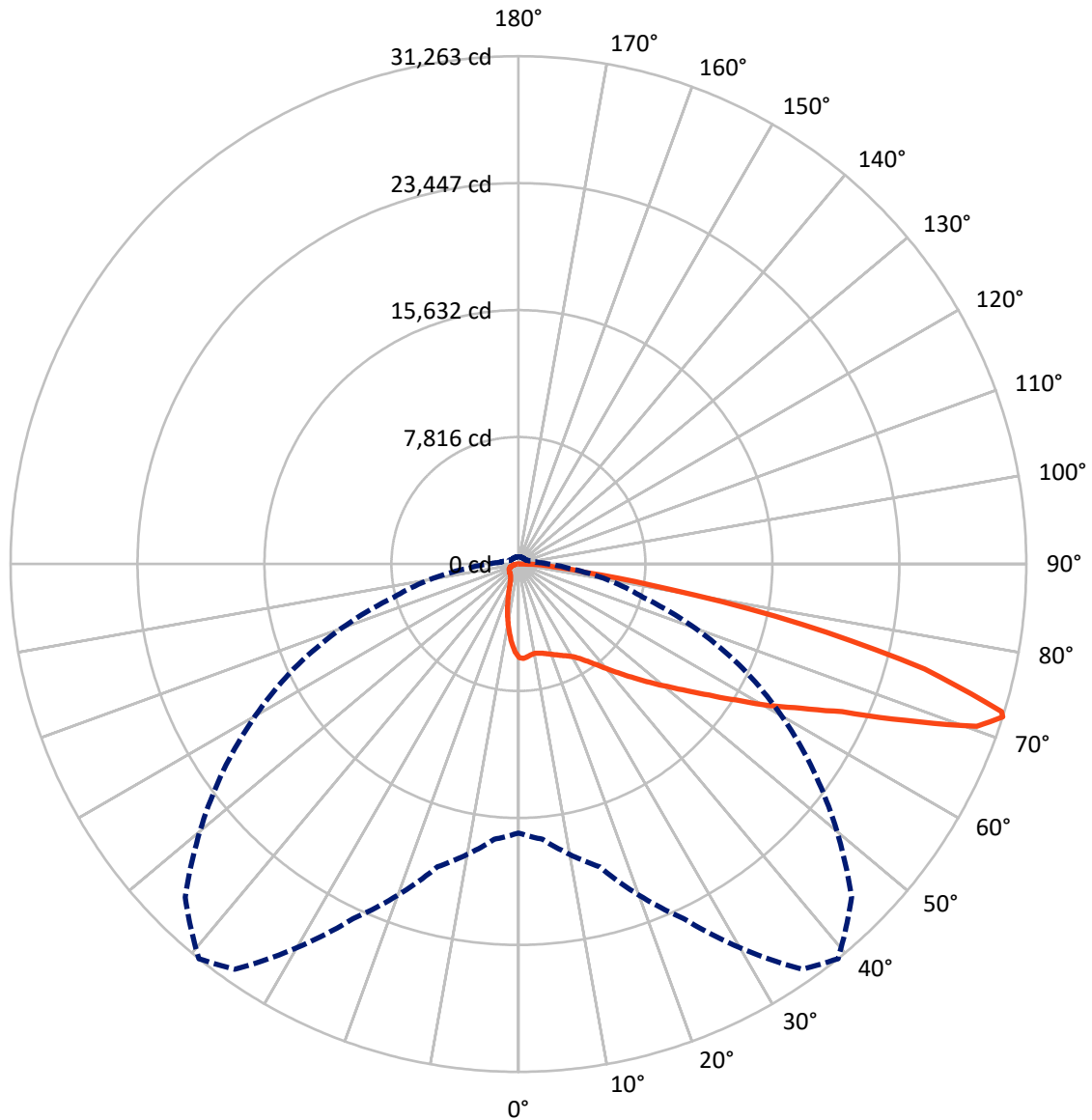
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.4 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 | 4322.6 | 0.0 | 4322.6 |
| | % Fixture | 11.5 | 0.0 | 11.5 |
| Street Side | Lumens | 33375.4 | 0.0 | 33375.4 |
| | % Fixture | 88.5 | 0.0 | 88.5 |
| Total | Lumens | 37698.0 | 0.0 | 37698.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 494.7 | 1.3 |
| 10°-20° | 1243.2 | 3.3 |
| 20°-30° | 1937.4 | 5.1 |
| 30°-40° | 2983.0 | 7.9 |
| 40°-50° | 4862.9 | 12.9 |
| 50°-60° | 7556.4 | 20.0 |
| 60°-70° | 10114.0 | 26.8 |
| 70°-80° | 7273.4 | 19.3 |
| 80°-90° | 1233.0 | 3.3 |
| 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° | 37698.0 | 100.0 |
| 0°-180° | 37698.0 | 100.0 |

Coefficient of Utilization



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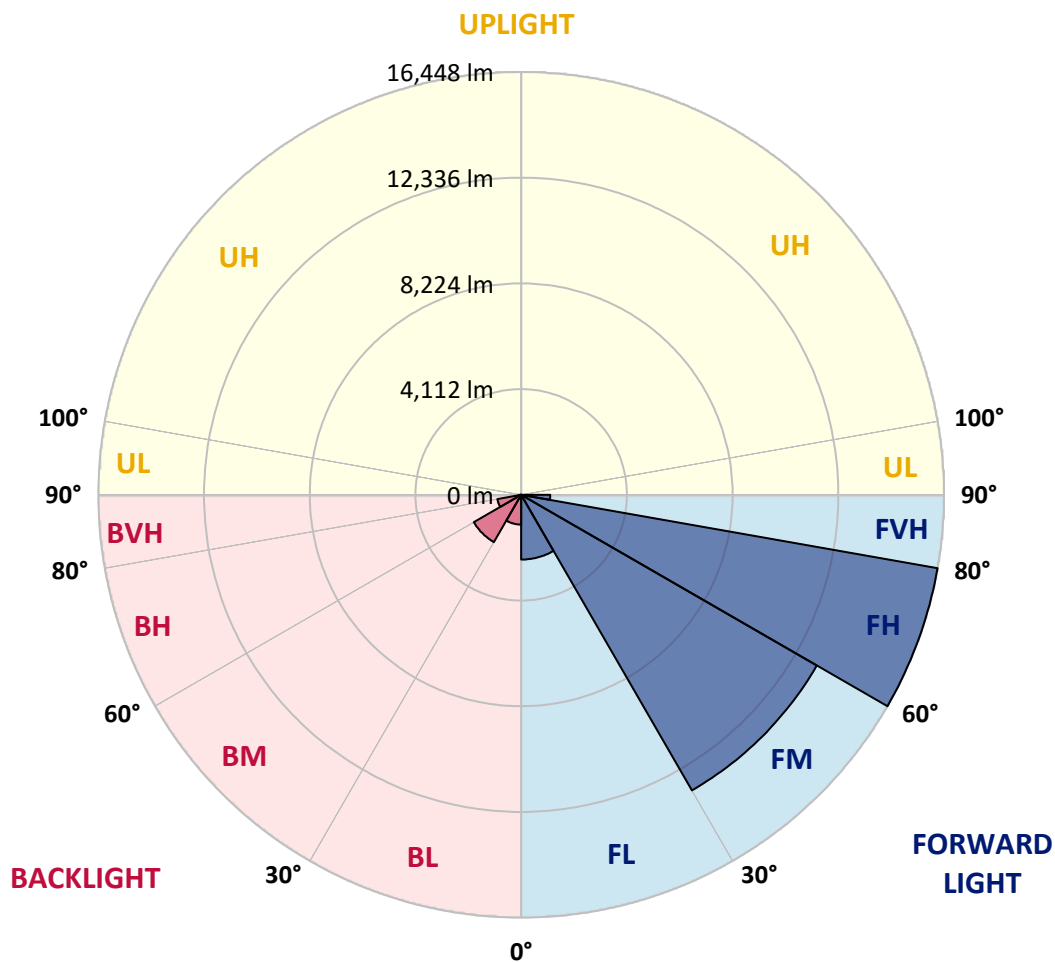
CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-7060-1200

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 2518.2 | 6.7 | | | |
| FM | (30°-60°) | 13278.0 | 35.2 | | | |
| FH | (60°-80°) | 16448.2 | 43.6 | | | G5 |
| FVH | (80°-90°) | 1131.1 | 3.0 | | | G5 |
| BL | (0°-30°) | 1157.2 | 3.1 | B3/2500 | | |
| BM | (30°-60°) | 2124.3 | 5.6 | B2/2500 | | |
| BH | (60°-80°) | 939.2 | 2.5 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 101.9 | 0.3 | | | G2/225 |
| 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° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 |
| 2.5° | 5881.2 | 5883.7 | 5876.1 | 5853.3 | 5833.1 | 5823.0 | 5805.2 | 5774.9 | 5734.4 | 5706.5 | 5683.8 |
| 5° | 5825.5 | 5833.1 | 5828.0 | 5790.1 | 5754.6 | 5734.4 | 5706.5 | 5663.5 | 5610.4 | 5587.6 | 5534.5 |
| 7.5° | 5782.5 | 5787.5 | 5772.3 | 5729.3 | 5661.0 | 5635.7 | 5585.1 | 5529.4 | 5481.3 | 5448.4 | 5385.2 |
| 10° | 5752.1 | 5757.2 | 5744.5 | 5701.5 | 5625.6 | 5595.2 | 5534.5 | 5473.7 | 5410.5 | 5370.0 | 5299.1 |
| 12.5° | 5709.1 | 5719.2 | 5719.2 | 5699.0 | 5648.3 | 5628.1 | 5567.4 | 5501.6 | 5443.4 | 5400.3 | 5311.8 |
| 15° | 5701.5 | 5714.1 | 5736.9 | 5734.4 | 5719.2 | 5704.0 | 5655.9 | 5590.1 | 5539.5 | 5488.9 | 5380.1 |
| 17.5° | 5764.8 | 5792.6 | 5838.1 | 5853.3 | 5843.2 | 5810.3 | 5754.6 | 5693.9 | 5638.2 | 5590.1 | 5456.0 |
| 20° | 5924.2 | 5939.4 | 6007.7 | 6038.1 | 5987.4 | 5939.4 | 5866.0 | 5787.5 | 5736.9 | 5699.0 | 5526.9 |
| 22.5° | 6164.6 | 6184.8 | 6240.5 | 6243.0 | 6136.8 | 6078.6 | 5984.9 | 5888.8 | 5840.7 | 5825.5 | 5623.0 |
| 25° | 6549.2 | 6544.2 | 6559.4 | 6496.1 | 6303.8 | 6235.4 | 6121.6 | 6010.2 | 5977.3 | 6007.7 | 5764.8 |
| 27.5° | 7009.8 | 6997.2 | 6949.1 | 6784.6 | 6493.6 | 6405.0 | 6268.3 | 6169.7 | 6169.7 | 6240.5 | 5957.1 |
| 30° | 7541.2 | 7528.6 | 7371.7 | 7095.9 | 6718.8 | 6617.6 | 6473.3 | 6369.6 | 6422.7 | 6559.4 | 6217.7 |
| 32.5° | 8103.0 | 8057.5 | 7837.3 | 7467.9 | 7040.2 | 6928.8 | 6789.7 | 6683.4 | 6784.6 | 7017.4 | 6592.3 |
| 35° | 8631.9 | 8606.6 | 8335.9 | 7898.1 | 7455.2 | 7361.6 | 7265.4 | 7133.8 | 7295.8 | 7657.7 | 7121.2 |
| 37.5° | 9178.6 | 9158.3 | 8826.8 | 8361.2 | 7961.3 | 7898.1 | 7817.1 | 7726.0 | 7986.6 | 8462.4 | 7837.3 |
| 40° | 9788.4 | 9747.9 | 9330.4 | 8864.8 | 8551.0 | 8520.6 | 8477.6 | 8452.3 | 8872.4 | 9580.9 | 8743.3 |
| 42.5° | 10479.3 | 10400.8 | 9861.8 | 9419.0 | 9193.7 | 9219.1 | 9196.3 | 9297.5 | 9940.3 | 10871.5 | 9821.3 |
| 45° | 11268.9 | 11112.0 | 10390.7 | 10008.6 | 9904.8 | 10006.1 | 10054.2 | 10312.3 | 11203.1 | 12362.1 | 11025.9 |
| 47.5° | 12007.8 | 11805.3 | 10970.2 | 10648.9 | 10707.1 | 10881.7 | 11018.3 | 11473.8 | 12587.3 | 13834.9 | 12255.8 |
| 50° | 12688.5 | 12460.8 | 11590.2 | 11311.9 | 11595.3 | 11843.3 | 12126.7 | 12769.5 | 14060.1 | 15350.7 | 13384.5 |
| 52.5° | 13192.1 | 13027.6 | 12210.2 | 12035.6 | 12615.1 | 12944.1 | 13397.1 | 14209.4 | 15548.1 | 16795.7 | 14391.6 |
| 55° | 13581.8 | 13493.3 | 12815.1 | 12865.7 | 13769.1 | 14239.8 | 14788.9 | 15722.7 | 17122.2 | 18091.4 | 15201.4 |
| 57.5° | 14032.3 | 13966.5 | 13505.9 | 13867.8 | 15201.4 | 15793.6 | 16441.4 | 17479.0 | 18620.3 | 19232.7 | 15836.6 |
| 60° | 14508.0 | 14508.0 | 14275.2 | 15074.9 | 16993.1 | 17671.3 | 18316.6 | 19123.9 | 20113.4 | 20260.1 | 16094.7 |
| 62.5° | 14867.4 | 14961.0 | 15044.5 | 16360.5 | 18693.7 | 19536.4 | 20245.0 | 21019.3 | 21659.6 | 20766.3 | 15487.4 |
| 65° | 15388.7 | 15588.6 | 16059.3 | 17845.9 | 20799.2 | 21902.5 | 22859.1 | 23509.5 | 22912.2 | 20363.9 | 13505.9 |
| 67.5° | 16284.5 | 16580.6 | 17582.8 | 20057.7 | 24023.2 | 25675.7 | 26604.4 | 25480.8 | 22666.8 | 17830.8 | 10345.2 |
| 70° | 17091.8 | 17509.4 | 19222.6 | 22864.2 | 28213.9 | 29929.6 | 29502.0 | 25022.8 | 19741.4 | 13070.7 | 6364.5 |
| 72° | 16555.3 | 17010.8 | 19298.5 | 24086.4 | 30453.5 | 31263.3 | 29008.5 | 22175.8 | 15254.6 | 7976.5 | 3138.0 |
| 72.5° | 16203.6 | 16676.8 | 19053.0 | 24056.1 | 30514.2 | 31093.7 | 28322.7 | 21044.6 | 13847.6 | 6979.5 | 2538.2 |
| 75° | 13536.3 | 13941.2 | 16383.2 | 21320.5 | 26890.4 | 25827.5 | 22102.4 | 13619.8 | 6364.5 | 2254.8 | 1305.8 |
| 77.5° | 8839.5 | 9148.2 | 11296.7 | 14771.2 | 18835.4 | 17813.0 | 13452.8 | 6377.2 | 2386.4 | 1369.1 | 981.9 |
| 80° | 4441.2 | 4661.4 | 6045.7 | 7766.5 | 10165.5 | 9353.2 | 6210.1 | 3084.8 | 1596.8 | 989.5 | 771.8 |
| 82.5° | 3089.9 | 3292.3 | 4162.9 | 3965.5 | 4248.9 | 4112.3 | 2920.3 | 2573.6 | 1194.5 | 625.1 | 404.9 |
| 85° | 2591.4 | 2801.4 | 3444.2 | 2826.7 | 2313.0 | 2108.0 | 2092.8 | 2431.9 | 789.6 | 308.7 | 341.6 |
| 87.5° | 2259.8 | 2578.7 | 2841.9 | 2065.0 | 1586.7 | 1399.4 | 1541.1 | 2229.5 | 250.5 | 169.6 | 103.8 |
| 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° | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 | 5757.2 |
| 2.5° | 5645.8 | 5638.2 | 5600.3 | 5542.1 | 5499.0 | 5471.2 | 5418.1 | 5415.5 | 5420.6 | 5375.0 | 5392.8 |
| 5° | 5486.4 | 5456.0 | 5357.3 | 5223.2 | 5114.4 | 5010.6 | 4896.8 | 4858.8 | 4825.9 | 4757.6 | 4765.2 |
| 7.5° | 5319.4 | 5266.2 | 5094.1 | 4874.0 | 4663.9 | 4471.6 | 4281.8 | 4188.2 | 4117.3 | 4028.7 | 4028.7 |
| 10° | 5220.7 | 5137.2 | 4874.0 | 4552.6 | 4218.5 | 3937.6 | 3654.2 | 3484.7 | 3360.7 | 3246.8 | 3239.2 |
| 12.5° | 5215.6 | 5089.1 | 4722.1 | 4279.3 | 3821.2 | 3426.5 | 3039.3 | 2778.6 | 2593.9 | 2459.8 | 2447.1 |
| 15° | 5256.1 | 5079.0 | 4595.6 | 4023.7 | 3446.7 | 2933.0 | 2454.7 | 2123.2 | 1887.8 | 1738.5 | 1723.4 |
| 17.5° | 5291.5 | 5066.3 | 4459.0 | 3755.4 | 3082.3 | 2457.2 | 1925.8 | 1581.6 | 1358.9 | 1237.5 | 1224.8 |
| 20° | 5324.4 | 5038.5 | 4284.3 | 3472.0 | 2679.9 | 2011.8 | 1505.7 | 1227.4 | 1080.6 | 1012.2 | 1004.7 |
| 22.5° | 5372.5 | 5013.2 | 4102.1 | 3153.2 | 2285.2 | 1637.3 | 1242.5 | 1042.6 | 964.2 | 931.3 | 926.2 |
| 25° | 5451.0 | 5015.7 | 3925.0 | 2826.7 | 1923.3 | 1364.0 | 1075.5 | 951.5 | 908.5 | 885.7 | 885.7 |
| 27.5° | 5564.8 | 5046.1 | 3750.4 | 2495.2 | 1617.1 | 1176.7 | 976.8 | 903.4 | 875.6 | 857.9 | 852.8 |
| 30° | 5731.9 | 5101.7 | 3565.6 | 2181.4 | 1374.1 | 1047.7 | 918.6 | 873.1 | 850.3 | 835.1 | 832.6 |
| 32.5° | 5974.8 | 5200.4 | 3370.8 | 1895.4 | 1189.4 | 956.6 | 875.6 | 847.8 | 830.0 | 817.4 | 814.9 |
| 35° | 6336.7 | 5375.0 | 3181.0 | 1652.5 | 1057.8 | 890.8 | 840.2 | 817.4 | 807.3 | 802.2 | 799.7 |
| 37.5° | 6868.1 | 5655.9 | 3001.3 | 1462.7 | 971.8 | 847.8 | 804.7 | 792.1 | 787.0 | 787.0 | 787.0 |
| 40° | 7536.2 | 6025.4 | 2839.4 | 1328.6 | 923.7 | 814.9 | 779.4 | 769.3 | 769.3 | 771.8 | 771.8 |
| 42.5° | 8348.5 | 6488.5 | 2700.2 | 1237.5 | 895.8 | 792.1 | 761.7 | 756.7 | 754.1 | 754.1 | 756.7 |
| 45° | 9292.4 | 7035.1 | 2614.1 | 1166.6 | 875.6 | 779.4 | 749.1 | 746.5 | 736.4 | 731.3 | 731.3 |
| 47.5° | 10241.4 | 7619.7 | 2609.1 | 1126.1 | 850.3 | 764.2 | 736.4 | 736.4 | 716.2 | 706.0 | 708.6 |
| 50° | 11127.1 | 8143.5 | 2664.7 | 1116.0 | 835.1 | 741.5 | 723.8 | 726.3 | 698.5 | 685.8 | 683.3 |
| 52.5° | 11840.8 | 8543.4 | 2733.1 | 1128.7 | 835.1 | 721.2 | 701.0 | 713.6 | 683.3 | 668.1 | 665.6 |
| 55° | 12392.4 | 8821.7 | 2758.4 | 1156.5 | 845.2 | 703.5 | 680.7 | 701.0 | 678.2 | 658.0 | 658.0 |
| 57.5° | 12787.2 | 8910.3 | 2649.6 | 1169.1 | 860.4 | 701.0 | 660.5 | 698.5 | 685.8 | 660.5 | 660.5 |
| 60° | 12643.0 | 8396.6 | 2244.7 | 1121.1 | 857.9 | 695.9 | 645.3 | 703.5 | 711.1 | 683.3 | 683.3 |
| 62.5° | 11516.9 | 7025.0 | 1801.8 | 1012.2 | 814.9 | 678.2 | 627.6 | 698.5 | 728.8 | 718.7 | 713.6 |
| 65° | 9375.9 | 5152.3 | 1396.9 | 883.2 | 741.5 | 640.2 | 589.6 | 652.9 | 688.3 | 698.5 | 701.0 |
| 67.5° | 6607.4 | 3262.0 | 1085.6 | 751.6 | 650.4 | 584.6 | 546.6 | 577.0 | 589.6 | 594.7 | 604.8 |
| 70° | 3613.7 | 1766.4 | 862.9 | 632.7 | 556.7 | 528.9 | 501.1 | 503.6 | 498.5 | 493.5 | 498.5 |
| 72° | 1814.5 | 1154.0 | 728.8 | 549.1 | 493.5 | 475.8 | 463.1 | 455.5 | 455.5 | 447.9 | 450.5 |
| 72.5° | 1561.4 | 1073.0 | 703.5 | 528.9 | 478.3 | 463.1 | 453.0 | 445.4 | 442.9 | 437.8 | 440.3 |
| 75° | 1040.1 | 850.3 | 587.1 | 442.9 | 407.4 | 397.3 | 402.4 | 394.8 | 397.3 | 392.2 | 394.8 |
| 77.5° | 840.2 | 731.3 | 498.5 | 374.5 | 349.2 | 334.0 | 344.2 | 346.7 | 351.8 | 346.7 | 344.2 |
| 80° | 703.5 | 622.5 | 417.6 | 308.7 | 291.0 | 278.4 | 283.4 | 301.1 | 303.7 | 288.5 | 286.0 |
| 82.5° | 455.5 | 501.1 | 329.0 | 240.4 | 222.7 | 217.6 | 230.3 | 248.0 | 253.1 | 232.8 | 227.8 |
| 85° | 382.1 | 402.4 | 237.9 | 164.5 | 146.8 | 141.7 | 167.0 | 184.7 | 197.4 | 177.1 | 172.1 |
| 87.5° | 106.3 | 197.4 | 116.4 | 78.4 | 65.8 | 65.8 | 81.0 | 96.2 | 113.9 | 116.4 | 116.4 |
| 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)