

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: P197100

Luminaire Tested: **NAV-AF-06-D-UNV-SL3-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197100
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-SL3-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 CRI, 3000K, 800mA 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: 23718 lumens
Efficiency: N/A
Efficacy: 95.3 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

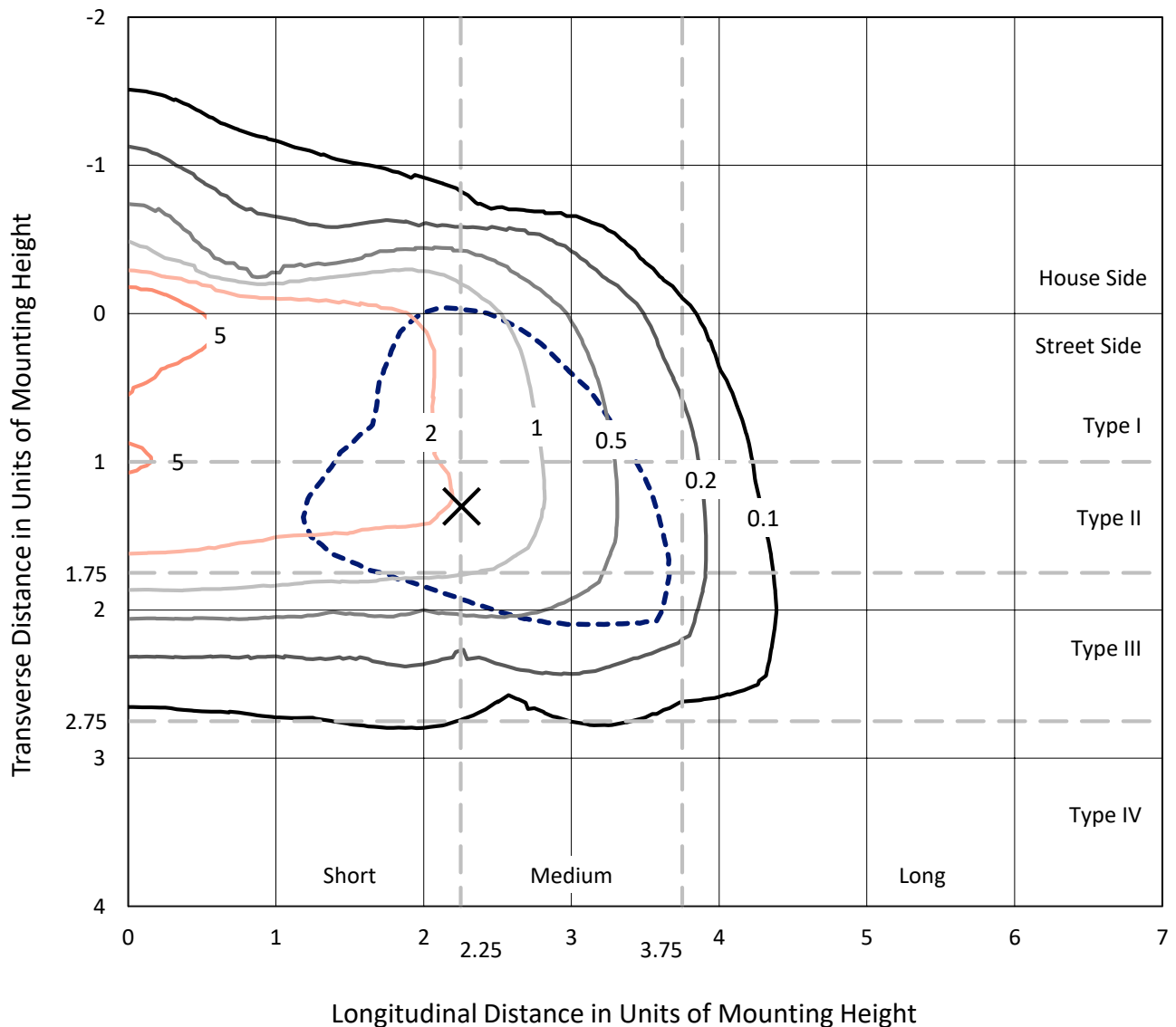
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

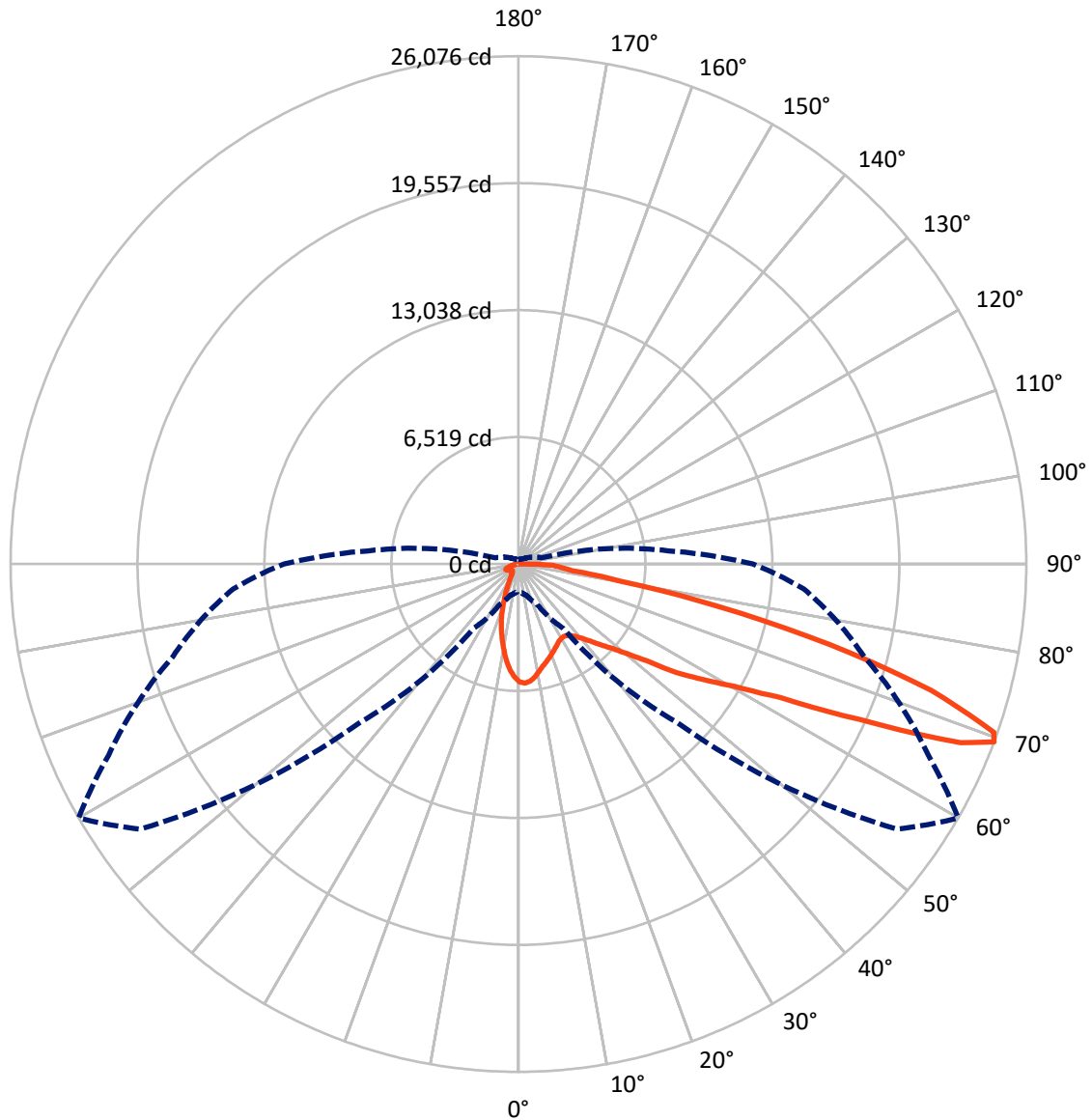
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 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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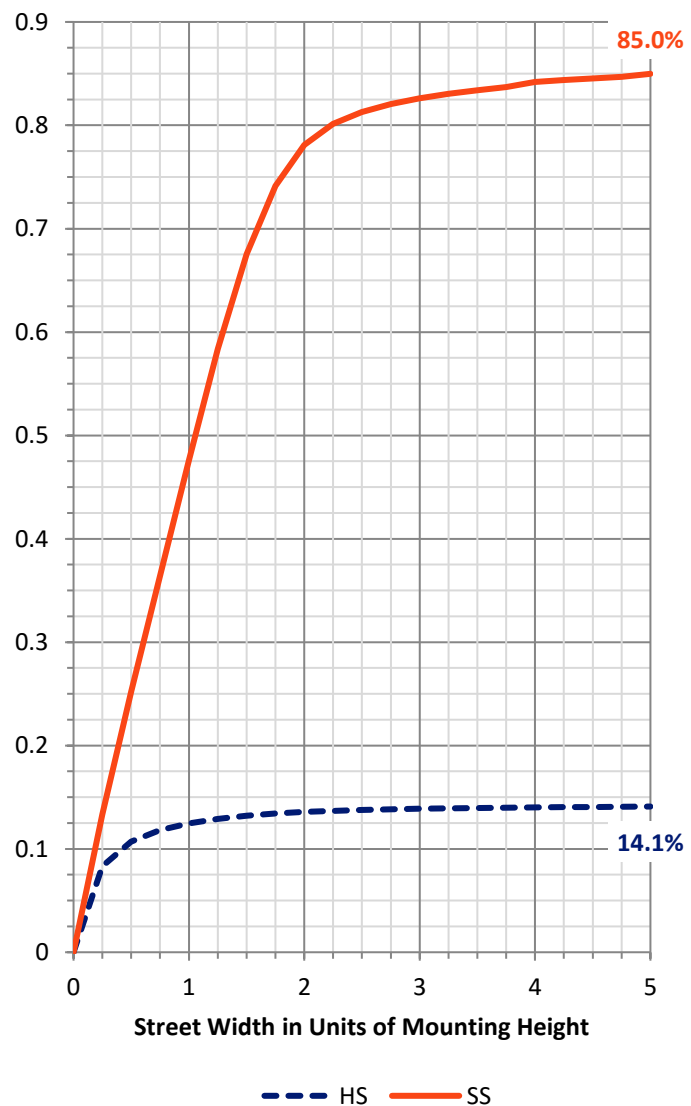
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3383.0 | 0.0 | 3383.0 |
| | % Fixture | 14.3 | 0.0 | 14.3 |
| Street Side | Lumens | 20335.0 | 0.0 | 20335.0 |
| | % Fixture | 85.7 | 0.0 | 85.7 |
| Total | Lumens | 23718.0 | 0.0 | 23718.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 513.4 | 2.2 |
| 10°-20° | 1099.2 | 4.6 |
| 20°-30° | 1402.3 | 5.9 |
| 30°-40° | 1929.7 | 8.1 |
| 40°-50° | 3125.7 | 13.2 |
| 50°-60° | 4905.6 | 20.7 |
| 60°-70° | 6540.1 | 27.6 |
| 70°-80° | 3637.8 | 15.3 |
| 80°-90° | 564.2 | 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° | 23718.0 | 100.0 |
| 0°-180° | 23718.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P197100

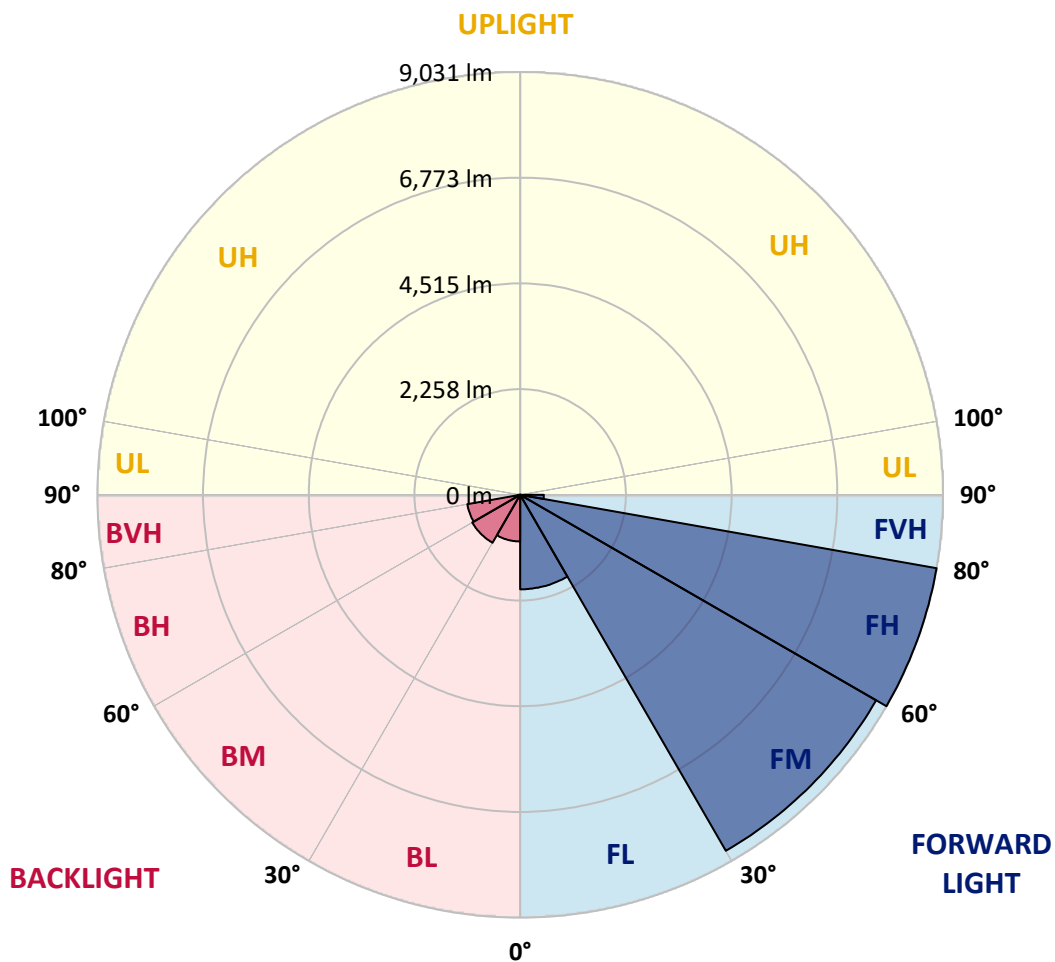
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 2017.9 | 8.5 | | | |
| FM | (30°-60°) | 8779.2 | 37.0 | | | |
| FH | (60°-80°) | 9030.9 | 38.1 | | | G4/12000 |
| FVH | (80°-90°) | 507.0 | 2.1 | | | G4/750 |
| BL | (0°-30°) | 997.0 | 4.2 | B2/1000 | | |
| BM | (30°-60°) | 1181.8 | 5.0 | B2/2500 | | |
| BH | (60°-80°) | 1147.0 | 4.8 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 57.2 | 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° | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 |
| 2.5° | 6212.9 | 6229.7 | 6229.7 | 6216.0 | 6208.4 | 6164.3 | 6138.4 | 6120.2 | 6088.2 | 6028.9 | 5975.7 |
| 5° | 5990.9 | 6022.8 | 6036.5 | 6042.6 | 6082.1 | 6068.5 | 6070.0 | 6057.8 | 6030.4 | 5966.6 | 5879.9 |
| 7.5° | 5583.3 | 5589.4 | 5613.7 | 5654.8 | 5750.6 | 5817.5 | 5872.3 | 5882.9 | 5876.8 | 5829.7 | 5708.0 |
| 10° | 5181.8 | 5192.4 | 5221.3 | 5291.3 | 5382.5 | 5478.3 | 5597.0 | 5645.6 | 5682.1 | 5666.9 | 5513.3 |
| 12.5° | 4848.7 | 4850.2 | 4882.1 | 4962.7 | 5064.6 | 5184.8 | 5346.0 | 5422.1 | 5508.8 | 5543.7 | 5371.9 |
| 15° | 4527.8 | 4549.1 | 4579.5 | 4676.8 | 4803.1 | 4955.1 | 5140.7 | 5245.6 | 5359.7 | 5460.1 | 5262.4 |
| 17.5° | 4284.4 | 4301.1 | 4319.4 | 4400.0 | 4546.0 | 4736.1 | 4965.8 | 5078.3 | 5228.9 | 5382.5 | 5149.8 |
| 20° | 4150.6 | 4156.7 | 4143.0 | 4182.5 | 4305.7 | 4511.0 | 4777.2 | 4912.6 | 5092.0 | 5308.0 | 5034.2 |
| 22.5° | 4123.2 | 4123.2 | 4073.0 | 4065.4 | 4120.2 | 4293.5 | 4582.5 | 4748.3 | 4967.3 | 5256.3 | 4930.8 |
| 25° | 4251.0 | 4241.8 | 4147.5 | 4060.8 | 4041.1 | 4129.3 | 4397.0 | 4600.8 | 4860.8 | 5254.8 | 4853.2 |
| 27.5° | 4492.8 | 4480.6 | 4363.5 | 4217.5 | 4091.3 | 4053.2 | 4254.0 | 4462.4 | 4777.2 | 5306.5 | 4813.7 |
| 30° | 4793.9 | 4789.4 | 4670.7 | 4488.2 | 4279.9 | 4083.7 | 4197.7 | 4390.9 | 4720.9 | 5402.3 | 4812.2 |
| 32.5° | 5124.0 | 5102.7 | 5029.7 | 4847.2 | 4576.4 | 4252.5 | 4231.2 | 4393.9 | 4705.7 | 5542.2 | 4847.2 |
| 35° | 5475.3 | 5460.1 | 5441.8 | 5257.8 | 4953.6 | 4550.6 | 4378.7 | 4498.9 | 4780.2 | 5736.9 | 4946.0 |
| 37.5° | 5922.4 | 5905.7 | 5936.1 | 5735.4 | 5402.3 | 4941.5 | 4628.1 | 4708.8 | 4932.3 | 6019.8 | 5130.0 |
| 40° | 6717.9 | 6669.2 | 6584.0 | 6275.3 | 5925.5 | 5420.5 | 4988.6 | 5000.8 | 5192.4 | 6398.5 | 5425.1 |
| 42.5° | 8024.4 | 7867.7 | 7446.4 | 6879.1 | 6477.6 | 5977.2 | 5458.6 | 5400.8 | 5551.3 | 6898.9 | 5854.0 |
| 45° | 9333.9 | 9157.4 | 8445.6 | 7537.7 | 7049.4 | 6574.9 | 6039.6 | 5901.2 | 5998.5 | 7481.4 | 6406.1 |
| 47.5° | 10179.5 | 10092.8 | 9289.8 | 8196.2 | 7648.7 | 7225.9 | 6704.2 | 6476.1 | 6546.0 | 8141.5 | 7087.5 |
| 50° | 10427.4 | 10352.9 | 9721.7 | 8711.8 | 8214.5 | 8012.2 | 7527.0 | 7224.3 | 7236.5 | 8912.6 | 7904.2 |
| 52.5° | 10241.8 | 10211.4 | 9793.2 | 9031.2 | 8734.6 | 8841.1 | 8666.2 | 8244.9 | 8144.5 | 9758.2 | 8789.4 |
| 55° | 9993.9 | 10004.6 | 9843.4 | 9352.1 | 9263.9 | 9613.7 | 10156.7 | 9817.5 | 9391.7 | 10638.8 | 9711.0 |
| 57.5° | 9213.7 | 9221.3 | 9644.1 | 9963.5 | 10273.8 | 10696.6 | 11317.1 | 11174.2 | 10678.3 | 11589.4 | 10743.7 |
| 60° | 7419.0 | 7478.3 | 8419.8 | 9837.3 | 11428.2 | 12830.4 | 12982.5 | 12736.1 | 12047.2 | 12684.4 | 12086.7 |
| 62.5° | 5300.4 | 5353.6 | 6444.1 | 8539.9 | 11292.8 | 15245.7 | 16057.8 | 15078.4 | 13904.2 | 14322.5 | 13975.7 |
| 65° | 2784.8 | 2775.7 | 3619.8 | 5901.2 | 9511.8 | 15805.4 | 20903.5 | 19236.5 | 17032.7 | 16574.9 | 15800.8 |
| 67.5° | 1555.9 | 1606.1 | 1933.1 | 2976.4 | 6199.3 | 13910.3 | 23998.5 | 24489.8 | 21382.6 | 18362.0 | 15721.7 |
| 69° | 1438.8 | 1455.5 | 1674.5 | 2301.1 | 4041.1 | 11476.8 | 23732.4 | 26076.1 | 23216.8 | 18369.6 | 14708.8 |
| 70° | 1397.7 | 1416.0 | 1615.2 | 2120.2 | 3394.7 | 9403.8 | 22763.5 | 25890.5 | 23662.4 | 17962.0 | 13787.1 |
| 72.5° | 1253.2 | 1277.6 | 1470.7 | 1905.7 | 2860.8 | 4847.2 | 18336.2 | 22159.7 | 21434.3 | 15698.9 | 10690.5 |
| 75° | 1069.2 | 1110.3 | 1402.3 | 1892.0 | 2710.3 | 3081.4 | 12228.2 | 16509.5 | 15952.9 | 11227.4 | 6065.4 |
| 77.5° | 442.6 | 447.1 | 612.9 | 1385.6 | 2844.1 | 2949.1 | 6571.9 | 10457.8 | 9257.8 | 4923.2 | 1826.6 |
| 80° | 308.7 | 302.7 | 305.7 | 404.6 | 2295.1 | 2968.8 | 3371.9 | 5318.6 | 4133.8 | 1298.9 | 854.8 |
| 82.5° | 260.1 | 257.0 | 269.2 | 254.0 | 777.2 | 3368.8 | 2819.8 | 2772.6 | 1946.8 | 699.6 | 407.6 |
| 85° | 171.9 | 167.3 | 220.5 | 231.2 | 369.6 | 2675.3 | 3032.7 | 2179.5 | 1451.0 | 374.1 | 173.4 |
| 87.5° | 83.7 | 85.2 | 126.2 | 156.7 | 196.2 | 847.1 | 2904.9 | 1723.2 | 1120.9 | 162.7 | 70.0 |
| 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° | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 | 6051.7 |
| 2.5° | 5954.4 | 5908.8 | 5867.7 | 5816.0 | 5776.4 | 5743.0 | 5697.3 | 5695.8 | 5688.2 | 5698.9 | 5701.9 |
| 5° | 5822.1 | 5746.0 | 5630.4 | 5501.2 | 5409.9 | 5289.7 | 5172.6 | 5133.1 | 5089.0 | 5084.4 | 5098.1 |
| 7.5° | 5622.8 | 5504.2 | 5306.5 | 5108.8 | 4911.0 | 4708.8 | 4517.1 | 4419.8 | 4325.5 | 4296.6 | 4310.3 |
| 10° | 5400.8 | 5250.2 | 4947.5 | 4625.1 | 4346.8 | 4045.6 | 3753.6 | 3565.0 | 3393.2 | 3320.2 | 3338.4 |
| 12.5° | 5227.4 | 5035.8 | 4609.9 | 4191.6 | 3774.9 | 3343.0 | 2958.2 | 2585.6 | 2304.2 | 2178.0 | 2185.6 |
| 15° | 5078.3 | 4833.5 | 4293.5 | 3736.9 | 3215.2 | 2623.6 | 2089.7 | 1657.8 | 1411.4 | 1320.2 | 1317.1 |
| 17.5° | 4917.1 | 4620.5 | 3963.5 | 3314.1 | 2637.3 | 1905.7 | 1399.2 | 1143.7 | 1046.4 | 1016.0 | 1016.0 |
| 20° | 4745.3 | 4401.5 | 3618.3 | 2853.2 | 2028.9 | 1330.8 | 1052.5 | 953.6 | 917.1 | 908.0 | 906.5 |
| 22.5° | 4585.6 | 4187.1 | 3271.5 | 2362.0 | 1467.7 | 1009.9 | 895.8 | 857.8 | 851.7 | 859.3 | 859.3 |
| 25° | 4459.3 | 3998.5 | 2920.2 | 1844.9 | 1067.7 | 845.6 | 797.0 | 792.4 | 815.2 | 842.6 | 847.1 |
| 27.5° | 4365.0 | 3829.7 | 2573.4 | 1347.5 | 839.5 | 736.1 | 719.4 | 739.2 | 792.4 | 847.1 | 857.8 |
| 30° | 4299.6 | 3685.2 | 2158.2 | 968.8 | 699.6 | 644.9 | 652.5 | 687.5 | 768.1 | 851.7 | 874.5 |
| 32.5° | 4270.7 | 3568.1 | 1739.9 | 743.7 | 597.7 | 567.3 | 587.1 | 632.7 | 716.4 | 800.0 | 827.4 |
| 35° | 4298.1 | 3482.9 | 1353.6 | 617.5 | 523.2 | 500.4 | 523.2 | 570.3 | 625.1 | 666.2 | 682.9 |
| 37.5° | 4397.0 | 3452.5 | 1019.0 | 547.5 | 474.5 | 451.7 | 470.0 | 501.9 | 526.2 | 541.4 | 549.1 |
| 40° | 4605.3 | 3484.4 | 798.5 | 511.0 | 447.1 | 421.3 | 425.9 | 441.1 | 457.8 | 470.0 | 471.5 |
| 42.5° | 4936.9 | 3589.4 | 710.3 | 497.3 | 430.4 | 397.0 | 389.4 | 400.0 | 418.3 | 435.0 | 438.0 |
| 45° | 5378.0 | 3764.3 | 701.1 | 501.9 | 422.8 | 377.2 | 362.0 | 372.6 | 397.0 | 424.3 | 428.9 |
| 47.5° | 5948.3 | 4041.1 | 743.7 | 526.2 | 427.4 | 366.5 | 343.7 | 354.4 | 386.3 | 422.8 | 428.9 |
| 50° | 6623.6 | 4424.3 | 822.8 | 562.7 | 448.7 | 366.5 | 336.1 | 345.2 | 378.7 | 419.8 | 425.9 |
| 52.5° | 7419.0 | 4958.2 | 904.9 | 599.2 | 479.1 | 380.2 | 339.2 | 337.6 | 368.1 | 406.1 | 413.7 |
| 55° | 8296.6 | 5621.3 | 984.0 | 631.2 | 495.8 | 398.5 | 346.8 | 328.5 | 352.9 | 383.3 | 389.4 |
| 57.5° | 9329.3 | 6529.3 | 1122.4 | 661.6 | 504.9 | 412.2 | 355.9 | 319.4 | 333.1 | 354.4 | 358.9 |
| 60° | 10730.1 | 7863.1 | 1391.6 | 713.3 | 521.7 | 418.3 | 357.4 | 310.3 | 308.7 | 324.0 | 325.5 |
| 62.5° | 12556.7 | 9425.1 | 1648.7 | 774.1 | 555.1 | 419.8 | 351.3 | 304.2 | 289.0 | 293.5 | 293.5 |
| 65° | 13855.5 | 10000.0 | 1574.1 | 825.9 | 585.6 | 418.3 | 345.2 | 299.6 | 273.8 | 266.2 | 266.2 |
| 67.5° | 13116.4 | 8833.5 | 1336.9 | 839.5 | 588.6 | 401.5 | 331.6 | 289.0 | 260.1 | 241.8 | 241.8 |
| 69° | 12030.4 | 7743.0 | 1227.4 | 815.2 | 564.3 | 381.7 | 316.4 | 278.3 | 251.0 | 229.7 | 229.7 |
| 70° | 11145.3 | 6917.1 | 1160.5 | 786.3 | 535.4 | 365.0 | 302.7 | 267.7 | 241.8 | 223.6 | 222.1 |
| 72.5° | 8320.9 | 4616.0 | 991.6 | 678.3 | 439.5 | 308.7 | 264.6 | 238.8 | 217.5 | 205.3 | 205.3 |
| 75° | 4390.9 | 2313.3 | 812.2 | 553.6 | 339.2 | 246.4 | 217.5 | 200.8 | 188.6 | 187.1 | 185.6 |
| 77.5° | 1438.8 | 1046.4 | 584.0 | 416.7 | 249.4 | 191.6 | 173.4 | 162.7 | 161.2 | 167.3 | 167.3 |
| 80° | 777.2 | 625.1 | 375.7 | 281.4 | 173.4 | 143.0 | 133.8 | 132.3 | 136.9 | 146.0 | 146.0 |
| 82.5° | 377.2 | 308.7 | 223.6 | 173.4 | 118.6 | 104.9 | 104.9 | 106.5 | 112.5 | 123.2 | 123.2 |
| 85° | 162.7 | 146.0 | 129.3 | 97.3 | 73.0 | 65.4 | 74.5 | 82.1 | 86.7 | 94.3 | 97.3 |
| 87.5° | 77.6 | 68.4 | 59.3 | 38.0 | 31.9 | 33.5 | 39.5 | 48.7 | 57.8 | 63.9 | 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)