

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: P197154

Luminaire Tested: **NAV-AF-06-D-UNV-SL4-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197154
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-SL4-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 CRI, 3000K, 1050mA 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: 28042 lumens
Efficiency: N/A
Efficacy: 84.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G5

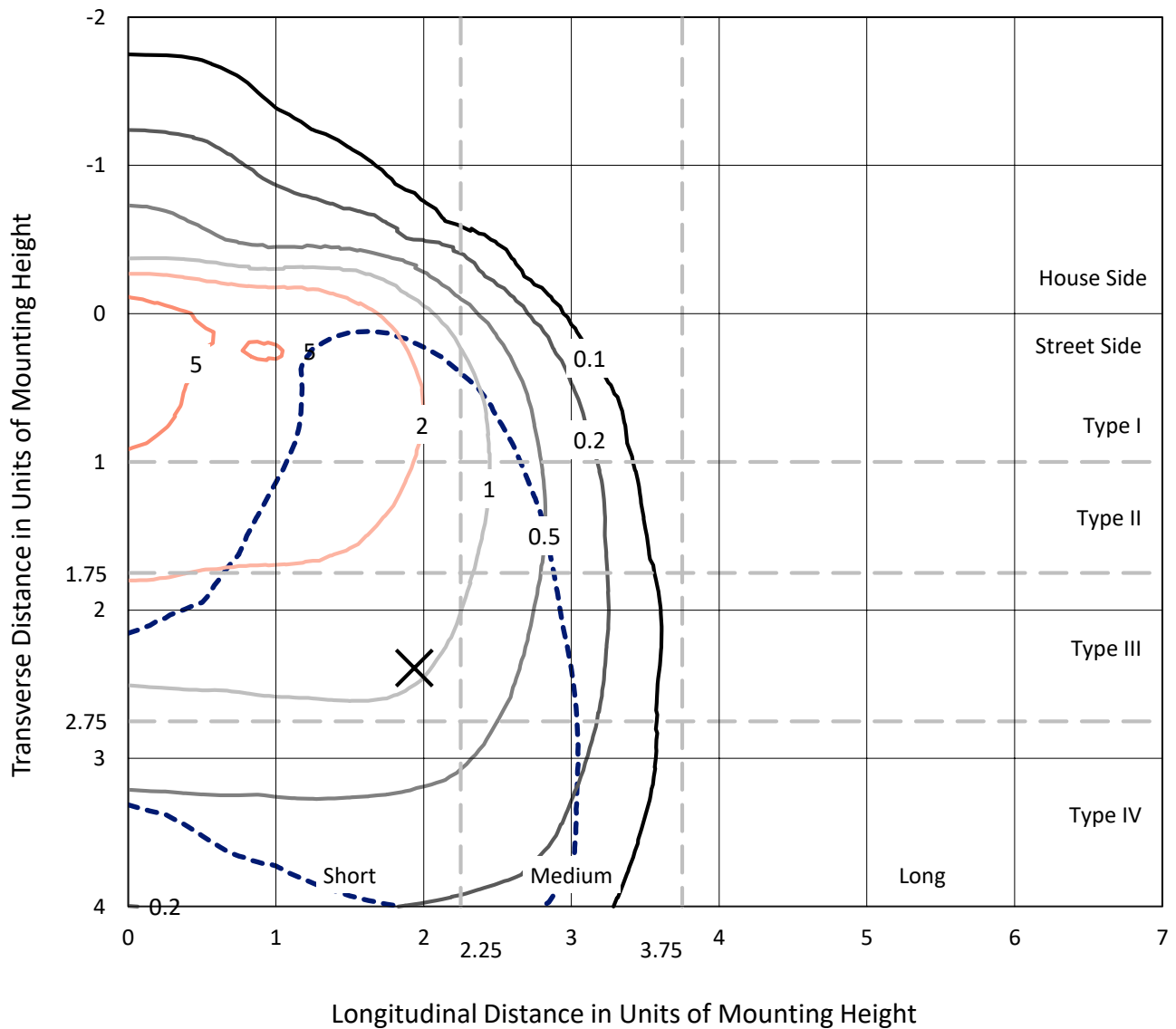
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

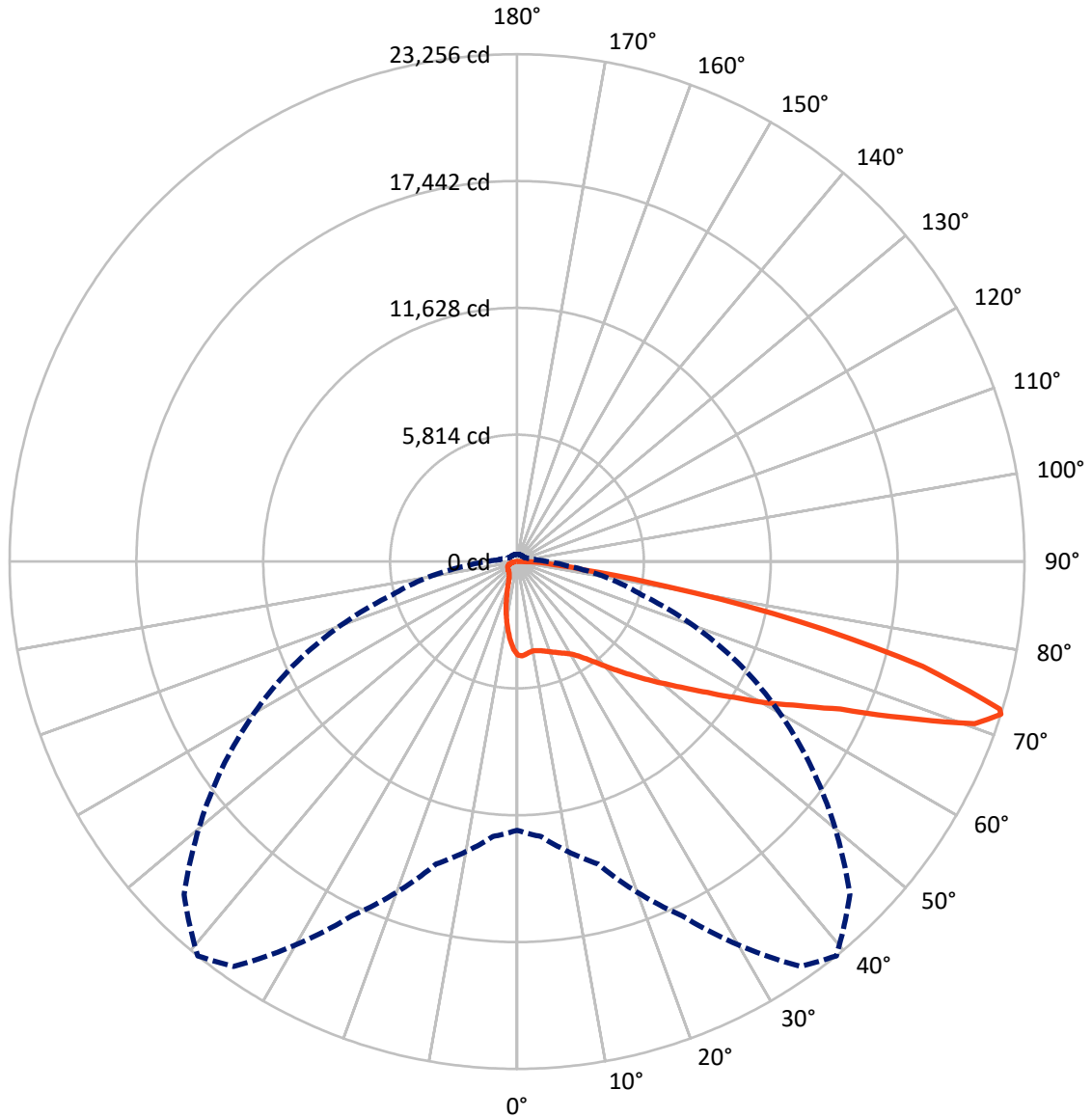
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.9 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 | 3215.4 | 0.0 | 3215.4 |
| | % Fixture | 11.5 | 0.0 | 11.5 |
| Street Side | Lumens | 24826.6 | 0.0 | 24826.6 |
| | % Fixture | 88.5 | 0.0 | 88.5 |
| Total | Lumens | 28042.0 | 0.0 | 28042.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 368.0 | 1.3 |
| 10°-20° | 924.8 | 3.3 |
| 20°-30° | 1441.1 | 5.1 |
| 30°-40° | 2218.9 | 7.9 |
| 40°-50° | 3617.3 | 12.9 |
| 50°-60° | 5620.9 | 20.0 |
| 60°-70° | 7523.4 | 26.8 |
| 70°-80° | 5410.4 | 19.3 |
| 80°-90° | 917.2 | 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° | 28042.0 | 100.0 |
| 0°-180° | 28042.0 | 100.0 |



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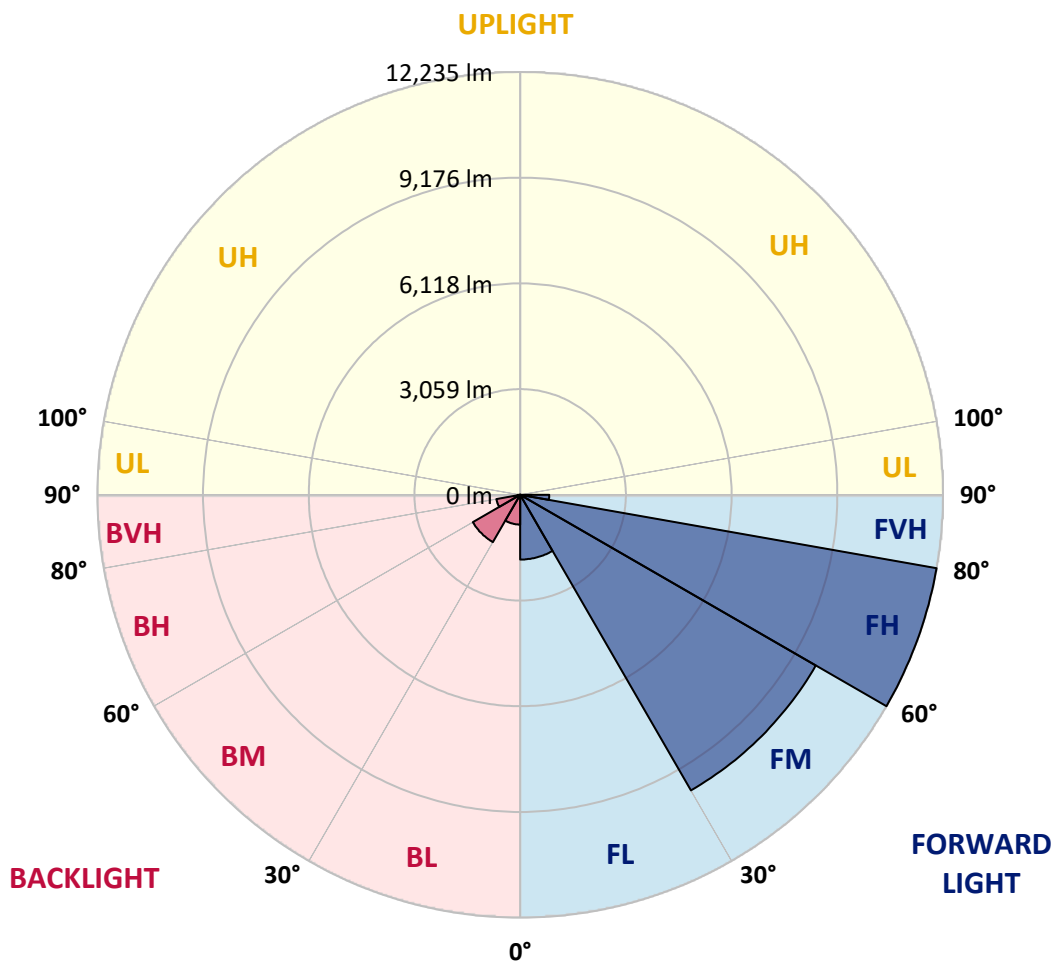
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1873.2 | 6.7 | | | |
| FM | (30°-60°) | 9876.9 | 35.2 | | | |
| FH | (60°-80°) | 12235.2 | 43.6 | | | G5 |
| FVH | (80°-90°) | 841.4 | 3.0 | | | G5 |
| BL | (0°-30°) | 860.8 | 3.1 | B2/1000 | | |
| BM | (30°-60°) | 1580.2 | 5.6 | B2/2500 | | |
| BH | (60°-80°) | 698.6 | 2.5 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 75.8 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 |
| 2.5° | 4374.8 | 4376.6 | 4371.0 | 4354.0 | 4339.0 | 4331.5 | 4318.3 | 4295.7 | 4265.6 | 4244.9 | 4227.9 |
| 5° | 4333.3 | 4339.0 | 4335.2 | 4307.0 | 4280.6 | 4265.6 | 4244.9 | 4212.9 | 4173.3 | 4156.4 | 4116.9 |
| 7.5° | 4301.3 | 4305.1 | 4293.8 | 4261.8 | 4211.0 | 4192.2 | 4154.5 | 4113.1 | 4077.3 | 4052.9 | 4005.8 |
| 10° | 4278.8 | 4282.5 | 4273.1 | 4241.1 | 4184.6 | 4162.0 | 4116.9 | 4071.7 | 4024.6 | 3994.5 | 3941.8 |
| 12.5° | 4246.8 | 4254.3 | 4254.3 | 4239.2 | 4201.6 | 4186.5 | 4141.3 | 4092.4 | 4049.1 | 4017.1 | 3951.2 |
| 15° | 4241.1 | 4250.5 | 4267.5 | 4265.6 | 4254.3 | 4243.0 | 4207.2 | 4158.3 | 4120.6 | 4083.0 | 4002.0 |
| 17.5° | 4288.2 | 4308.9 | 4342.8 | 4354.0 | 4346.5 | 4322.0 | 4280.6 | 4235.5 | 4194.0 | 4158.3 | 4058.5 |
| 20° | 4406.8 | 4418.1 | 4468.9 | 4491.5 | 4453.8 | 4418.1 | 4363.5 | 4305.1 | 4267.5 | 4239.2 | 4111.2 |
| 22.5° | 4585.6 | 4600.6 | 4642.1 | 4643.9 | 4564.9 | 4521.6 | 4451.9 | 4380.4 | 4344.6 | 4333.3 | 4182.7 |
| 25° | 4871.7 | 4868.0 | 4879.2 | 4832.2 | 4689.1 | 4638.3 | 4553.6 | 4470.8 | 4446.3 | 4468.9 | 4288.2 |
| 27.5° | 5214.3 | 5204.9 | 5169.1 | 5046.8 | 4830.3 | 4764.4 | 4662.8 | 4589.4 | 4589.4 | 4642.1 | 4431.2 |
| 30° | 5609.6 | 5600.2 | 5483.5 | 5278.3 | 4997.8 | 4922.5 | 4815.2 | 4738.1 | 4777.6 | 4879.2 | 4625.1 |
| 32.5° | 6027.5 | 5993.6 | 5829.9 | 5555.0 | 5236.9 | 5154.1 | 5050.5 | 4971.5 | 5046.8 | 5220.0 | 4903.7 |
| 35° | 6421.0 | 6402.1 | 6200.7 | 5875.0 | 5545.6 | 5476.0 | 5404.4 | 5306.6 | 5427.0 | 5696.2 | 5297.1 |
| 37.5° | 6827.6 | 6812.5 | 6565.9 | 6219.5 | 5922.1 | 5875.0 | 5814.8 | 5747.0 | 5940.9 | 6294.8 | 5829.9 |
| 40° | 7281.2 | 7251.1 | 6940.5 | 6594.1 | 6360.7 | 6338.1 | 6306.1 | 6287.3 | 6599.8 | 7126.9 | 6503.8 |
| 42.5° | 7795.1 | 7736.8 | 7335.8 | 7006.4 | 6838.9 | 6857.7 | 6840.7 | 6916.0 | 7394.2 | 8086.9 | 7305.7 |
| 45° | 8382.4 | 8265.7 | 7729.2 | 7445.0 | 7367.8 | 7443.1 | 7478.9 | 7670.9 | 8333.5 | 9195.6 | 8201.7 |
| 47.5° | 8932.1 | 8781.5 | 8160.3 | 7921.2 | 7964.5 | 8094.4 | 8196.1 | 8534.9 | 9363.2 | 10291.2 | 9116.6 |
| 50° | 9438.5 | 9269.1 | 8621.5 | 8414.4 | 8625.3 | 8809.7 | 9020.6 | 9498.7 | 10458.8 | 11418.8 | 9956.1 |
| 52.5° | 9813.1 | 9690.7 | 9082.7 | 8952.8 | 9383.9 | 9628.6 | 9965.6 | 10569.8 | 11565.6 | 12493.7 | 10705.4 |
| 55° | 10103.0 | 10037.1 | 9532.6 | 9570.2 | 10242.3 | 10592.4 | 11000.9 | 11695.5 | 12736.5 | 13457.5 | 11307.7 |
| 57.5° | 10438.0 | 10389.1 | 10046.5 | 10315.7 | 11307.7 | 11748.2 | 12230.1 | 13001.9 | 13850.9 | 14306.4 | 11780.2 |
| 60° | 10791.9 | 10791.9 | 10618.8 | 11213.6 | 12640.5 | 13145.0 | 13625.0 | 14225.5 | 14961.5 | 15070.7 | 11972.2 |
| 62.5° | 11059.2 | 11128.9 | 11191.0 | 12169.9 | 13905.5 | 14532.3 | 15059.4 | 15635.4 | 16111.7 | 15447.2 | 11520.4 |
| 65° | 11447.0 | 11595.7 | 11945.9 | 13274.9 | 15471.7 | 16292.4 | 17003.9 | 17487.7 | 17043.5 | 15147.9 | 10046.5 |
| 67.5° | 12113.4 | 12333.6 | 13079.1 | 14920.1 | 17869.9 | 19099.1 | 19789.9 | 18954.1 | 16860.9 | 13263.6 | 7695.4 |
| 70° | 12713.9 | 13024.5 | 14298.9 | 17007.7 | 20987.2 | 22263.4 | 21945.3 | 18613.4 | 14684.8 | 9722.7 | 4734.3 |
| 72° | 12314.8 | 12653.7 | 14355.4 | 17916.9 | 22653.1 | 23255.5 | 21578.2 | 16495.7 | 11347.3 | 5933.4 | 2334.2 |
| 72.5° | 12053.2 | 12405.2 | 14172.8 | 17894.3 | 22698.3 | 23129.4 | 21068.1 | 15654.2 | 10300.6 | 5191.7 | 1888.1 |
| 75° | 10069.1 | 10370.3 | 12186.8 | 15859.4 | 20002.6 | 19212.0 | 16441.1 | 10131.2 | 4734.3 | 1677.2 | 971.3 |
| 77.5° | 6575.3 | 6805.0 | 8403.1 | 10987.7 | 14010.9 | 13250.4 | 10007.0 | 4743.7 | 1775.1 | 1018.4 | 730.4 |
| 80° | 3303.7 | 3467.4 | 4497.1 | 5777.2 | 7561.7 | 6957.4 | 4619.5 | 2294.7 | 1187.8 | 736.0 | 574.1 |
| 82.5° | 2298.4 | 2449.0 | 3096.6 | 2949.8 | 3160.6 | 3058.9 | 2172.3 | 1914.4 | 888.5 | 465.0 | 301.2 |
| 85° | 1927.6 | 2083.8 | 2562.0 | 2102.7 | 1720.5 | 1568.1 | 1556.8 | 1809.0 | 587.3 | 229.7 | 254.1 |
| 87.5° | 1681.0 | 1918.2 | 2114.0 | 1536.1 | 1180.3 | 1041.0 | 1146.4 | 1658.4 | 186.4 | 126.1 | 77.2 |
| 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° | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 | 4282.5 |
| 2.5° | 4199.7 | 4194.0 | 4165.8 | 4122.5 | 4090.5 | 4069.8 | 4030.3 | 4028.4 | 4032.2 | 3998.3 | 4011.4 |
| 5° | 4081.1 | 4058.5 | 3985.1 | 3885.3 | 3804.4 | 3727.2 | 3642.5 | 3614.3 | 3589.8 | 3539.0 | 3544.6 |
| 7.5° | 3956.9 | 3917.3 | 3789.3 | 3625.6 | 3469.3 | 3326.2 | 3185.1 | 3115.4 | 3062.7 | 2996.8 | 2996.8 |
| 10° | 3883.4 | 3821.3 | 3625.6 | 3386.5 | 3138.0 | 2929.1 | 2718.2 | 2592.1 | 2499.9 | 2415.2 | 2409.5 |
| 12.5° | 3879.7 | 3785.6 | 3512.6 | 3183.2 | 2842.5 | 2548.8 | 2260.8 | 2066.9 | 1929.5 | 1829.7 | 1820.3 |
| 15° | 3909.8 | 3778.0 | 3418.5 | 2993.1 | 2563.9 | 2181.7 | 1826.0 | 1579.4 | 1404.3 | 1293.2 | 1281.9 |
| 17.5° | 3936.2 | 3768.6 | 3316.8 | 2793.5 | 2292.8 | 1827.8 | 1432.5 | 1176.5 | 1010.9 | 920.5 | 911.1 |
| 20° | 3960.6 | 3747.9 | 3186.9 | 2582.7 | 1993.5 | 1496.5 | 1120.0 | 913.0 | 803.8 | 753.0 | 747.3 |
| 22.5° | 3996.4 | 3729.1 | 3051.4 | 2345.5 | 1699.8 | 1217.9 | 924.3 | 775.6 | 717.2 | 692.7 | 689.0 |
| 25° | 4054.7 | 3731.0 | 2919.6 | 2102.7 | 1430.6 | 1014.6 | 800.0 | 707.8 | 675.8 | 658.8 | 658.8 |
| 27.5° | 4139.5 | 3753.6 | 2789.8 | 1856.1 | 1202.9 | 875.3 | 726.6 | 672.0 | 651.3 | 638.1 | 634.4 |
| 30° | 4263.7 | 3795.0 | 2652.3 | 1622.7 | 1022.2 | 779.3 | 683.3 | 649.4 | 632.5 | 621.2 | 619.3 |
| 32.5° | 4444.4 | 3868.4 | 2507.4 | 1409.9 | 884.7 | 711.6 | 651.3 | 630.6 | 617.4 | 608.0 | 606.1 |
| 35° | 4713.6 | 3998.3 | 2366.2 | 1229.2 | 786.9 | 662.6 | 625.0 | 608.0 | 600.5 | 596.7 | 594.8 |
| 37.5° | 5108.9 | 4207.2 | 2232.6 | 1088.0 | 722.9 | 630.6 | 598.6 | 589.2 | 585.4 | 585.4 | 585.4 |
| 40° | 5605.9 | 4482.1 | 2112.1 | 988.3 | 687.1 | 606.1 | 579.8 | 572.3 | 572.3 | 574.1 | 574.1 |
| 42.5° | 6210.1 | 4826.5 | 2008.5 | 920.5 | 666.4 | 589.2 | 566.6 | 562.8 | 561.0 | 561.0 | 562.8 |
| 45° | 6912.3 | 5233.1 | 1944.5 | 867.8 | 651.3 | 579.8 | 557.2 | 555.3 | 547.8 | 544.0 | 544.0 |
| 47.5° | 7618.2 | 5668.0 | 1940.8 | 837.7 | 632.5 | 568.5 | 547.8 | 547.8 | 532.7 | 525.2 | 527.1 |
| 50° | 8277.0 | 6057.6 | 1982.2 | 830.1 | 621.2 | 551.6 | 538.4 | 540.3 | 519.5 | 510.1 | 508.3 |
| 52.5° | 8807.9 | 6355.1 | 2033.0 | 839.6 | 621.2 | 536.5 | 521.4 | 530.8 | 508.3 | 497.0 | 495.1 |
| 55° | 9218.2 | 6562.1 | 2051.8 | 860.3 | 628.7 | 523.3 | 506.4 | 521.4 | 504.5 | 489.4 | 489.4 |
| 57.5° | 9511.9 | 6628.0 | 1970.9 | 869.7 | 640.0 | 521.4 | 491.3 | 519.5 | 510.1 | 491.3 | 491.3 |
| 60° | 9404.6 | 6245.9 | 1669.7 | 833.9 | 638.1 | 517.7 | 480.0 | 523.3 | 529.0 | 508.3 | 508.3 |
| 62.5° | 8566.9 | 5225.6 | 1340.3 | 753.0 | 606.1 | 504.5 | 466.8 | 519.5 | 542.1 | 534.6 | 530.8 |
| 65° | 6974.4 | 3832.6 | 1039.1 | 657.0 | 551.6 | 476.3 | 438.6 | 485.7 | 512.0 | 519.5 | 521.4 |
| 67.5° | 4915.0 | 2426.4 | 807.6 | 559.1 | 483.8 | 434.8 | 406.6 | 429.2 | 438.6 | 442.4 | 449.9 |
| 70° | 2688.1 | 1313.9 | 641.9 | 470.6 | 414.1 | 393.4 | 372.7 | 374.6 | 370.8 | 367.1 | 370.8 |
| 72° | 1349.7 | 858.4 | 542.1 | 408.5 | 367.1 | 353.9 | 344.5 | 338.8 | 338.8 | 333.2 | 335.1 |
| 72.5° | 1161.5 | 798.1 | 523.3 | 393.4 | 355.8 | 344.5 | 337.0 | 331.3 | 329.4 | 325.7 | 327.5 |
| 75° | 773.7 | 632.5 | 436.7 | 329.4 | 303.1 | 295.5 | 299.3 | 293.7 | 295.5 | 291.8 | 293.7 |
| 77.5° | 625.0 | 544.0 | 370.8 | 278.6 | 259.8 | 248.5 | 256.0 | 257.9 | 261.7 | 257.9 | 256.0 |
| 80° | 523.3 | 463.1 | 310.6 | 229.7 | 216.5 | 207.1 | 210.8 | 224.0 | 225.9 | 214.6 | 212.7 |
| 82.5° | 338.8 | 372.7 | 244.7 | 178.8 | 165.7 | 161.9 | 171.3 | 184.5 | 188.2 | 173.2 | 169.4 |
| 85° | 284.2 | 299.3 | 176.9 | 122.4 | 109.2 | 105.4 | 124.2 | 137.4 | 146.8 | 131.8 | 128.0 |
| 87.5° | 79.1 | 146.8 | 86.6 | 58.4 | 48.9 | 48.9 | 60.2 | 71.5 | 84.7 | 86.6 | 86.6 |
| 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)