

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: P196548

Luminaire Tested: **NAV-AF-06-D-UNV-SL2-7030-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196548
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
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-SL2-7030-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22961.9 lumens
Efficiency: N/A
Efficacy: 92.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - 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

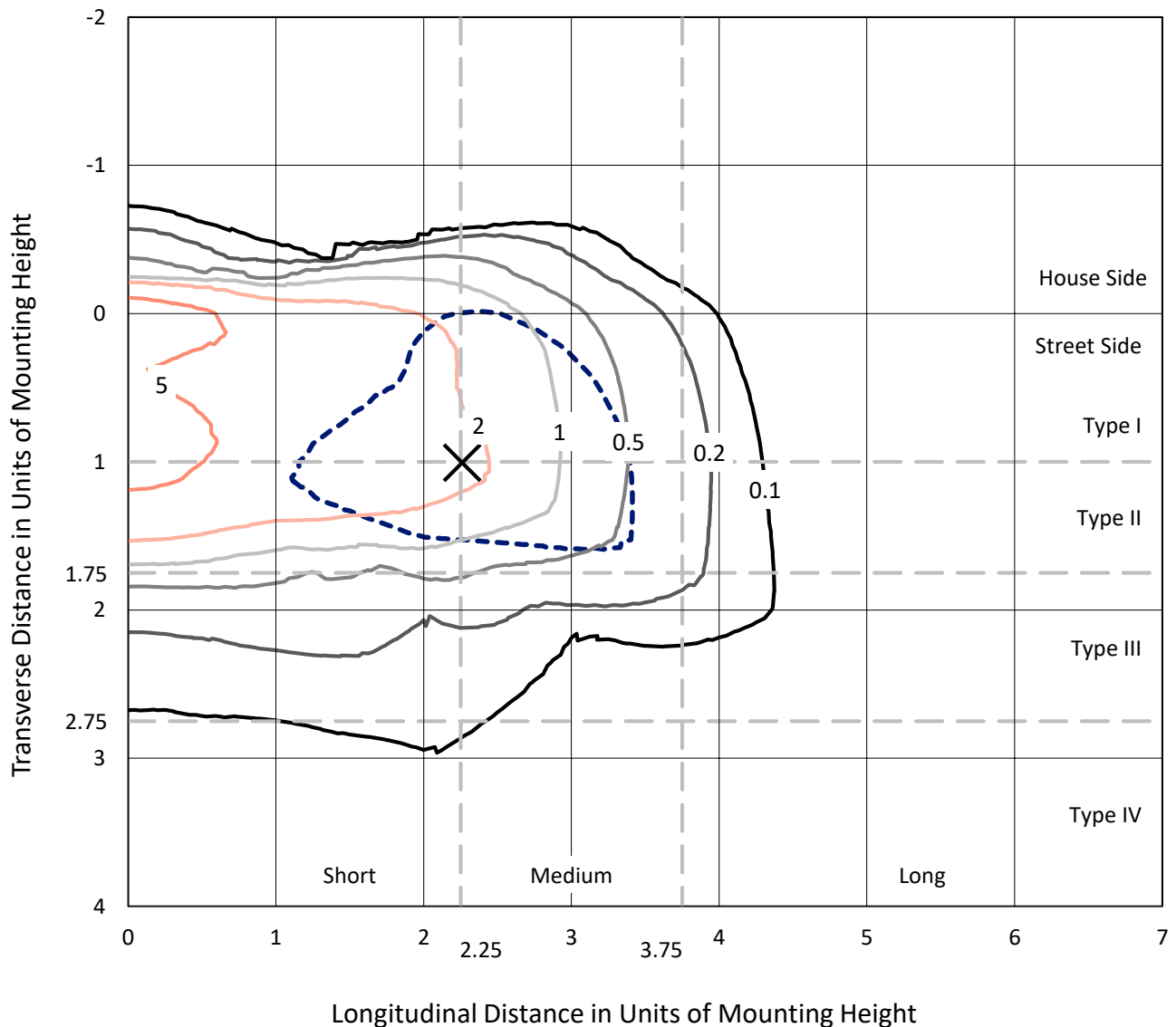


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

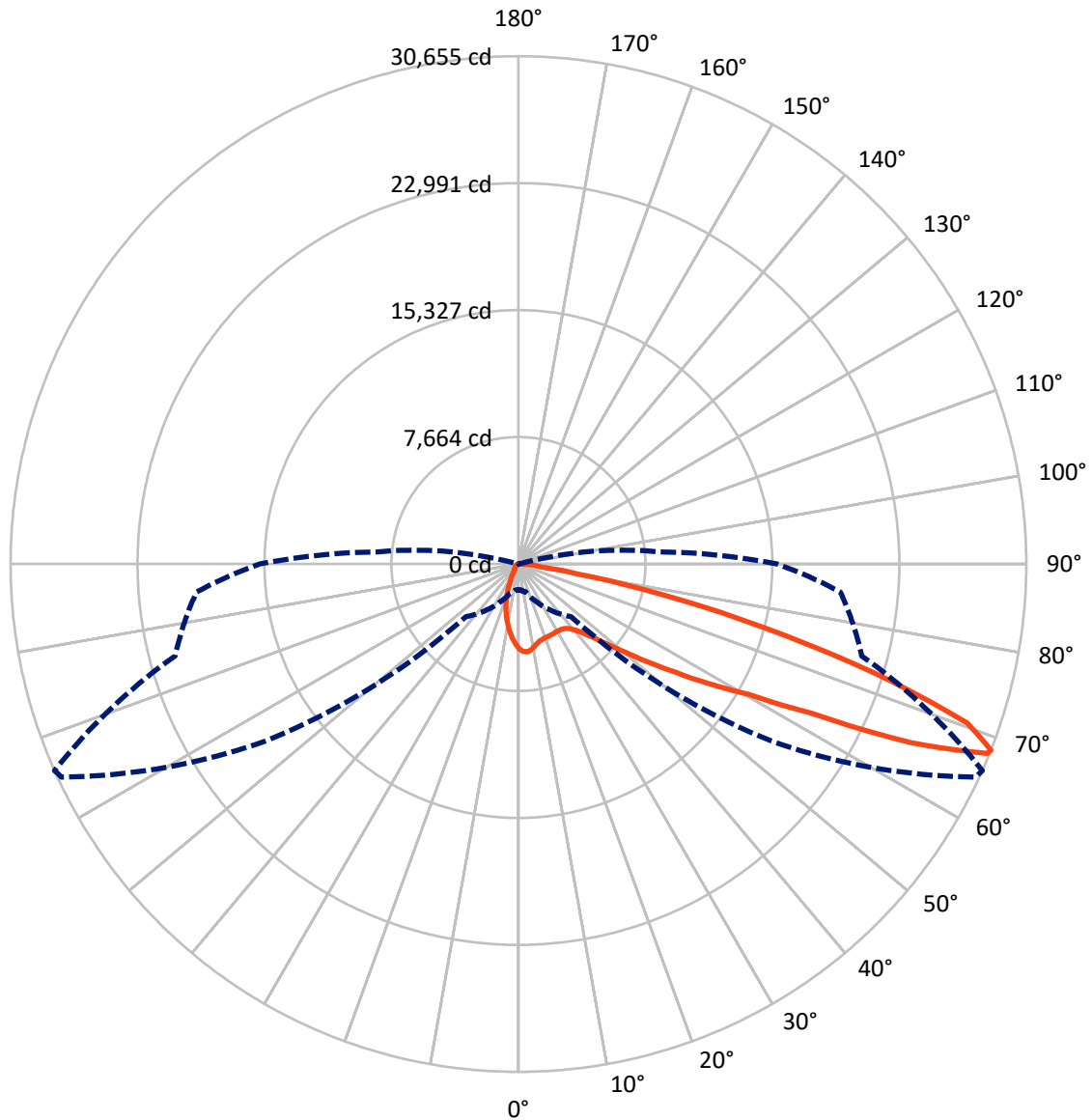


Based on 25 foot mounting height. Maximum calculated value = 8.2 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2325.8 | 0.0 | 2325.8 |
| | % Fixture | 10.1 | 0.0 | 10.1 |
| Street Side | Lumens | 20636.1 | 0.0 | 20636.1 |
| | % Fixture | 89.9 | 0.0 | 89.9 |
| Total | Lumens | 22961.9 | 0.0 | 22961.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 419.4 | 1.8 |
| 10°-20° | 902.3 | 3.9 |
| 20°-30° | 1307.6 | 5.7 |
| 30°-40° | 2001.7 | 8.7 |
| 40°-50° | 3423.7 | 14.9 |
| 50°-60° | 5355.6 | 23.3 |
| 60°-70° | 6166.8 | 26.9 |
| 70°-80° | 3086.0 | 13.4 |
| 80°-90° | 298.9 | 1.3 |
| 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° | 22961.9 | 100.0 |
| 0°-180° | 22961.9 | 100.0 |



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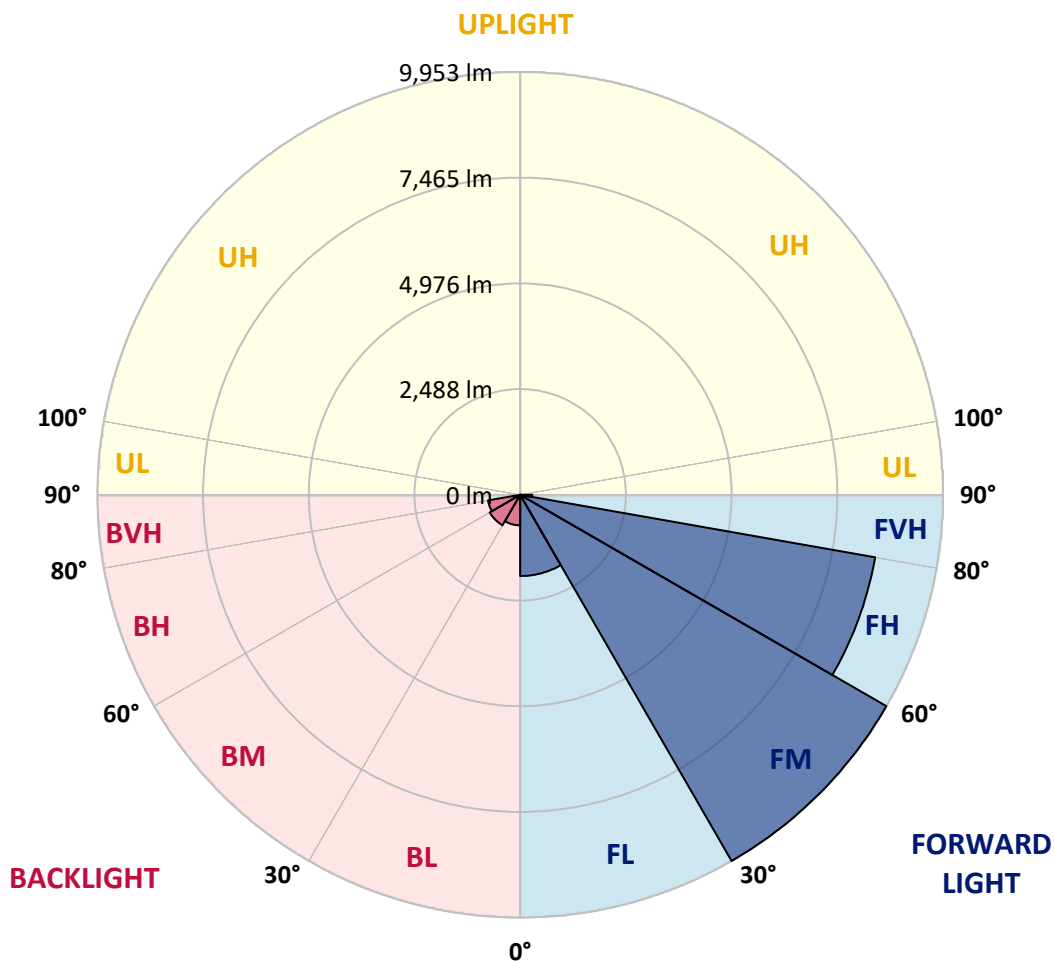
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1911.4 | 8.3 | | | |
| FM | (30°-60°) | 9952.8 | 43.3 | | | |
| FH | (60°-80°) | 8484.4 | 36.9 | | | G4/12000 |
| FVH | (80°-90°) | 287.5 | 1.3 | | | G3/500 |
| BL | (0°-30°) | 717.8 | 3.1 | B2/1000 | | |
| BM | (30°-60°) | 828.2 | 3.6 | B1/1000 | | |
| BH | (60°-80°) | 768.4 | 3.3 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 11.3 | 0.0 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 |
| 2.5° | 5380.7 | 5384.3 | 5382.4 | 5387.9 | 5384.3 | 5357.2 | 5328.3 | 5267.2 | 5272.6 | 5193.2 | 5104.9 |
| 5° | 5002.1 | 5032.8 | 5063.4 | 5094.1 | 5168.0 | 5232.9 | 5310.3 | 5328.3 | 5328.3 | 5260.0 | 5130.2 |
| 7.5° | 4616.4 | 4618.2 | 4652.5 | 4693.9 | 4792.9 | 4912.0 | 5092.2 | 5254.5 | 5258.1 | 5276.1 | 5133.8 |
| 10° | 4326.1 | 4335.2 | 4358.6 | 4403.7 | 4502.8 | 4620.0 | 4821.8 | 5076.0 | 5095.9 | 5229.2 | 5097.7 |
| 12.5° | 4100.8 | 4111.7 | 4136.9 | 4189.2 | 4279.3 | 4400.1 | 4612.8 | 4903.0 | 4930.0 | 5184.3 | 5086.9 |
| 15° | 3927.8 | 3942.2 | 3962.1 | 4014.3 | 4111.7 | 4239.7 | 4472.2 | 4787.6 | 4820.1 | 5166.3 | 5121.1 |
| 17.5° | 3855.6 | 3855.6 | 3853.9 | 3889.9 | 3987.3 | 4117.1 | 4360.4 | 4726.3 | 4767.8 | 5180.6 | 5178.8 |
| 20° | 3886.4 | 3880.9 | 3843.0 | 3834.0 | 3893.6 | 4023.4 | 4272.1 | 4686.6 | 4733.5 | 5207.7 | 5249.2 |
| 22.5° | 4048.6 | 4037.7 | 3953.0 | 3882.7 | 3864.7 | 3951.3 | 4212.6 | 4659.7 | 4715.5 | 5263.6 | 5342.8 |
| 25° | 4392.9 | 4360.4 | 4243.3 | 4084.6 | 3942.2 | 3933.3 | 4171.2 | 4645.2 | 4704.7 | 5328.3 | 5445.6 |
| 27.5° | 4839.8 | 4830.9 | 4643.4 | 4430.7 | 4156.8 | 3992.7 | 4158.5 | 4634.4 | 4693.9 | 5375.2 | 5528.5 |
| 30° | 5395.1 | 5398.7 | 5182.3 | 4904.7 | 4490.2 | 4160.4 | 4198.2 | 4629.0 | 4690.3 | 5378.9 | 5564.6 |
| 32.5° | 5968.3 | 5971.9 | 5791.7 | 5494.2 | 4946.2 | 4448.7 | 4309.9 | 4654.2 | 4710.1 | 5364.4 | 5562.7 |
| 35° | 6519.9 | 6525.3 | 6417.2 | 6177.4 | 5555.5 | 4848.9 | 4520.8 | 4740.8 | 4780.4 | 5373.5 | 5559.1 |
| 37.5° | 7217.4 | 7239.1 | 7105.7 | 6882.2 | 6319.8 | 5436.5 | 4865.1 | 4915.6 | 4948.1 | 5447.3 | 5586.2 |
| 40° | 8407.2 | 8378.3 | 7996.2 | 7617.7 | 7149.1 | 6152.2 | 5362.7 | 5216.7 | 5227.5 | 5638.5 | 5688.9 |
| 42.5° | 9793.4 | 9757.3 | 9103.1 | 8450.4 | 8001.6 | 7015.6 | 5999.0 | 5678.1 | 5676.3 | 5959.3 | 5912.4 |
| 45° | 10986.7 | 10965.0 | 10276.5 | 9405.8 | 8946.1 | 7969.2 | 6783.1 | 6343.3 | 6321.6 | 6514.5 | 6319.8 |
| 47.5° | 11833.9 | 11815.9 | 11294.9 | 10422.5 | 10038.5 | 9018.3 | 7761.9 | 7249.9 | 7204.9 | 7240.9 | 6981.3 |
| 50° | 11916.8 | 11897.0 | 11714.9 | 11154.3 | 11314.8 | 10557.6 | 8971.4 | 8437.9 | 8380.1 | 8324.3 | 7981.8 |
| 52.5° | 11141.7 | 11139.8 | 11235.4 | 11199.4 | 12208.8 | 12538.7 | 10454.9 | 9907.0 | 9838.5 | 9696.0 | 9355.4 |
| 55° | 9557.2 | 9548.2 | 9910.6 | 10436.9 | 12189.0 | 14582.9 | 12717.1 | 11655.4 | 11565.3 | 11280.5 | 10833.5 |
| 57.5° | 6983.2 | 6936.4 | 7693.4 | 8809.1 | 11332.8 | 15476.9 | 16309.6 | 13827.6 | 13677.9 | 12774.8 | 12086.3 |
| 60° | 3855.6 | 3873.7 | 4847.1 | 6168.4 | 9304.8 | 15300.2 | 19615.7 | 16360.2 | 15967.1 | 14063.7 | 13369.7 |
| 62.5° | 2161.2 | 2206.4 | 2931.0 | 4008.9 | 5932.2 | 13867.1 | 21389.3 | 20718.8 | 19772.4 | 15567.0 | 14992.0 |
| 65° | 1634.9 | 1662.0 | 2026.1 | 3093.2 | 3740.4 | 9690.6 | 21672.3 | 26813.4 | 25996.7 | 17845.5 | 17575.1 |
| 67.5° | 1539.4 | 1561.0 | 1739.5 | 2565.1 | 3406.8 | 5025.6 | 19541.7 | 30418.5 | 30521.1 | 20953.0 | 19576.0 |
| 68° | 1550.2 | 1577.2 | 1755.7 | 2467.7 | 3401.5 | 4495.6 | 18633.2 | 30436.5 | 30654.6 | 21454.2 | 19507.4 |
| 70° | 1424.0 | 1431.3 | 1856.7 | 2420.8 | 3296.9 | 3542.0 | 13479.7 | 28350.8 | 28742.1 | 22050.8 | 17708.5 |
| 72.5° | 544.3 | 546.2 | 832.8 | 2096.3 | 3453.6 | 3561.9 | 6790.3 | 22407.8 | 22427.6 | 19190.2 | 13805.9 |
| 75° | 283.0 | 237.9 | 261.3 | 656.1 | 3298.7 | 3471.7 | 3406.8 | 15300.2 | 15204.7 | 12978.5 | 8459.5 |
| 77.5° | 194.7 | 165.8 | 174.9 | 227.2 | 1371.8 | 3470.0 | 2460.5 | 8798.3 | 8778.6 | 5521.3 | 2413.6 |
| 80° | 110.0 | 95.5 | 104.6 | 191.1 | 481.3 | 3257.2 | 2293.0 | 3781.8 | 3563.7 | 969.7 | 391.1 |
| 82.5° | 55.8 | 46.9 | 55.8 | 160.4 | 299.3 | 2049.4 | 2229.8 | 1483.5 | 1321.3 | 230.7 | 254.1 |
| 85° | 14.4 | 14.4 | 27.0 | 111.8 | 185.6 | 672.4 | 1999.0 | 1070.7 | 962.6 | 100.9 | 180.3 |
| 87.5° | 3.6 | 1.7 | 10.8 | 41.4 | 66.6 | 146.0 | 1108.6 | 596.7 | 513.7 | 52.2 | 104.6 |
| 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° | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 | 5115.7 |
| 2.5° | 5068.9 | 5018.4 | 4919.2 | 4807.4 | 4728.2 | 4641.7 | 4591.2 | 4529.9 | 4483.0 | 4441.5 | 4472.2 |
| 5° | 5050.8 | 4953.5 | 4733.5 | 4486.6 | 4279.3 | 4081.1 | 3933.3 | 3792.6 | 3686.3 | 3619.5 | 3646.6 |
| 7.5° | 5004.0 | 4859.8 | 4502.8 | 4117.1 | 3778.1 | 3459.1 | 3199.5 | 2967.1 | 2786.7 | 2689.4 | 2720.1 |
| 10° | 4924.7 | 4721.0 | 4241.5 | 3706.1 | 3232.0 | 2781.4 | 2395.6 | 2049.4 | 1788.1 | 1665.5 | 1694.4 |
| 12.5° | 4867.0 | 4598.4 | 3971.0 | 3309.6 | 2685.8 | 2045.9 | 1534.0 | 1137.4 | 933.7 | 811.1 | 821.9 |
| 15° | 4841.8 | 4502.8 | 3718.7 | 2891.3 | 2089.1 | 1314.1 | 829.2 | 600.3 | 529.9 | 504.7 | 506.5 |
| 17.5° | 4845.3 | 4427.0 | 3479.0 | 2456.9 | 1487.1 | 755.3 | 508.3 | 457.9 | 447.1 | 441.6 | 441.6 |
| 20° | 4854.3 | 4351.4 | 3230.2 | 2004.5 | 951.7 | 486.6 | 423.6 | 407.4 | 402.0 | 394.8 | 396.6 |
| 22.5° | 4881.3 | 4293.8 | 2979.6 | 1550.2 | 585.8 | 396.6 | 375.0 | 360.5 | 351.5 | 340.7 | 342.5 |
| 25° | 4922.7 | 4250.5 | 2732.7 | 1115.7 | 412.8 | 346.2 | 326.2 | 306.5 | 290.2 | 277.6 | 279.3 |
| 27.5° | 4948.1 | 4189.2 | 2469.5 | 760.7 | 342.5 | 302.8 | 275.8 | 248.8 | 230.7 | 219.9 | 218.1 |
| 30° | 4930.0 | 4090.0 | 2170.3 | 499.4 | 302.8 | 261.3 | 228.9 | 198.3 | 180.3 | 171.2 | 171.2 |
| 32.5° | 4881.3 | 3962.1 | 1840.5 | 364.2 | 268.6 | 225.3 | 185.6 | 158.7 | 146.0 | 140.6 | 142.4 |
| 35° | 4825.4 | 3828.7 | 1488.8 | 308.2 | 241.6 | 191.1 | 151.5 | 129.8 | 124.3 | 122.6 | 122.6 |
| 37.5° | 4794.9 | 3713.2 | 1151.8 | 279.3 | 216.4 | 158.7 | 124.3 | 111.8 | 106.3 | 106.3 | 106.3 |
| 40° | 4829.0 | 3625.0 | 852.7 | 257.8 | 191.1 | 131.5 | 104.6 | 95.5 | 93.8 | 93.8 | 93.8 |
| 42.5° | 4975.1 | 3594.3 | 623.7 | 239.8 | 165.8 | 110.0 | 90.1 | 82.9 | 81.1 | 82.9 | 82.9 |
| 45° | 5260.0 | 3661.1 | 472.3 | 221.7 | 142.4 | 90.1 | 77.5 | 72.1 | 72.1 | 73.9 | 73.9 |
| 47.5° | 5743.0 | 3832.3 | 387.6 | 203.7 | 119.0 | 75.7 | 66.6 | 63.1 | 63.1 | 64.9 | 64.9 |
| 50° | 6492.8 | 4149.5 | 347.9 | 183.9 | 99.1 | 64.9 | 55.8 | 54.1 | 54.1 | 55.8 | 57.7 |
| 52.5° | 7632.1 | 4753.5 | 328.1 | 164.0 | 81.1 | 54.1 | 46.9 | 45.1 | 46.9 | 48.6 | 48.6 |
| 55° | 8899.2 | 5526.7 | 304.7 | 144.2 | 68.5 | 45.1 | 37.8 | 37.8 | 39.7 | 43.2 | 43.2 |
| 57.5° | 10079.9 | 6272.9 | 283.0 | 119.0 | 59.4 | 36.0 | 30.6 | 30.6 | 34.2 | 37.8 | 37.8 |
| 60° | 11327.4 | 7004.8 | 254.1 | 95.5 | 50.5 | 28.9 | 25.2 | 25.2 | 30.6 | 34.2 | 36.0 |
| 62.5° | 12868.5 | 7855.6 | 216.4 | 75.7 | 39.7 | 21.7 | 18.0 | 23.4 | 28.9 | 34.2 | 34.2 |
| 65° | 15096.6 | 8913.7 | 169.5 | 59.4 | 30.6 | 16.2 | 14.4 | 21.7 | 27.0 | 32.4 | 34.2 |
| 67.5° | 15905.9 | 8778.6 | 128.0 | 48.6 | 23.4 | 12.6 | 12.6 | 19.7 | 27.0 | 32.4 | 32.4 |
| 68° | 15610.3 | 8482.9 | 122.6 | 46.9 | 21.7 | 12.6 | 12.6 | 19.7 | 27.0 | 32.4 | 32.4 |
| 70° | 13602.2 | 6934.4 | 100.9 | 36.0 | 18.0 | 10.8 | 10.8 | 18.0 | 27.0 | 30.6 | 32.4 |
| 72.5° | 10184.5 | 4607.4 | 86.6 | 23.4 | 16.2 | 10.8 | 9.0 | 18.0 | 25.2 | 30.6 | 30.6 |
| 75° | 5842.1 | 1912.6 | 73.9 | 18.0 | 14.4 | 9.0 | 9.0 | 16.2 | 25.2 | 30.6 | 30.6 |
| 77.5° | 1651.1 | 447.1 | 59.4 | 14.4 | 12.6 | 9.0 | 7.2 | 16.2 | 23.4 | 28.9 | 28.9 |
| 80° | 302.8 | 133.4 | 46.9 | 12.6 | 10.8 | 9.0 | 7.2 | 16.2 | 23.4 | 28.9 | 28.9 |
| 82.5° | 200.1 | 63.1 | 34.2 | 12.6 | 10.8 | 9.0 | 7.2 | 14.4 | 21.7 | 27.0 | 27.0 |
| 85° | 149.5 | 45.1 | 21.7 | 12.6 | 10.8 | 9.0 | 7.2 | 14.4 | 21.7 | 27.0 | 27.0 |
| 87.5° | 82.9 | 19.7 | 16.2 | 14.4 | 12.6 | 9.0 | 7.2 | 12.6 | 19.7 | 25.2 | 25.2 |
| 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)