

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: P270599

Luminaire Tested: **NAV-AF-05-D-UNV-SL3-7027-1200-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270599
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24263)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SL3-7027-1200-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 2700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24327 lumens
Efficiency: N/A
Efficacy: 76.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G4

Input Watts (W): 320
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

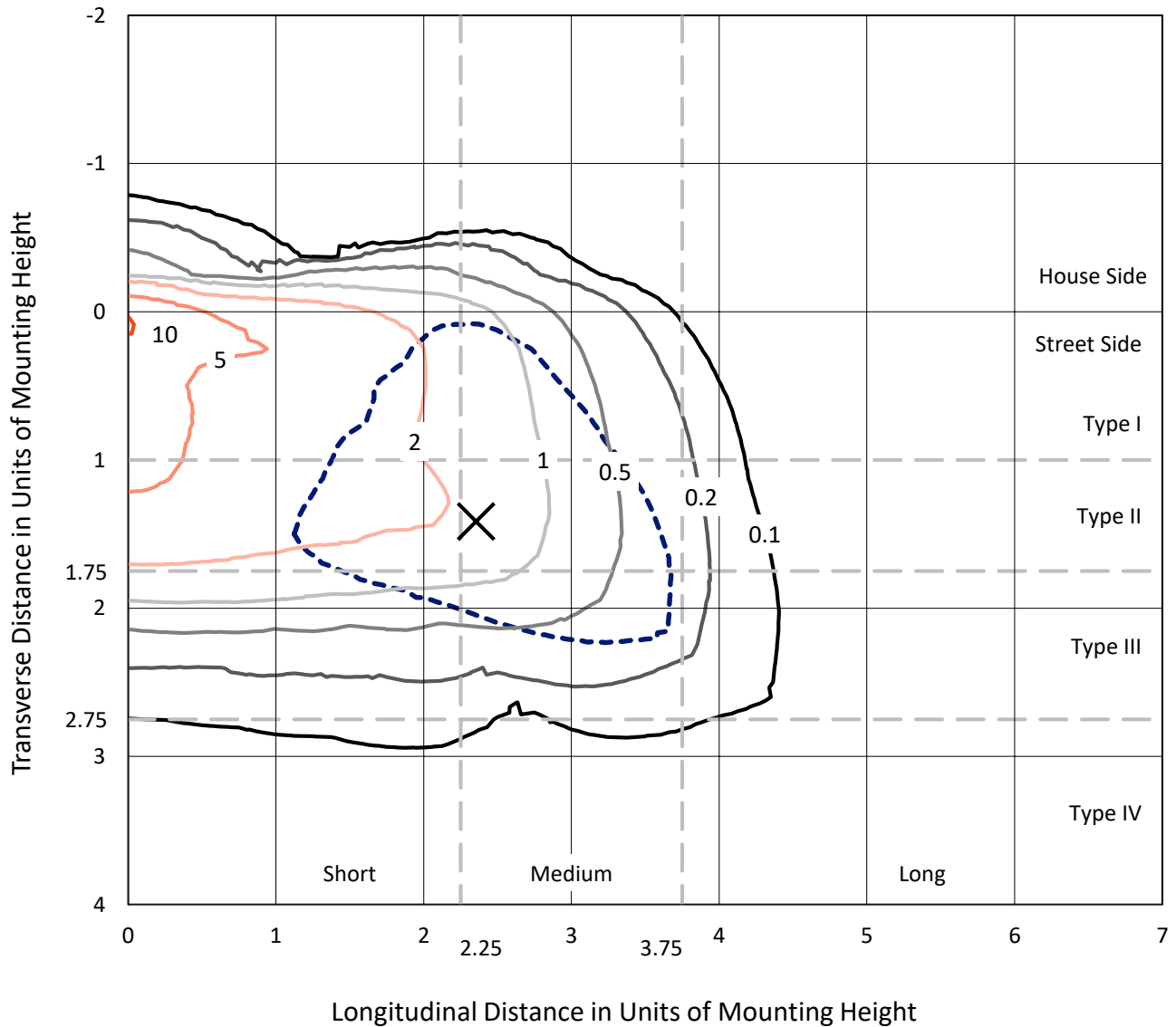


REPORT NUMBER: P270599

CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-7027-1200-HSS

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

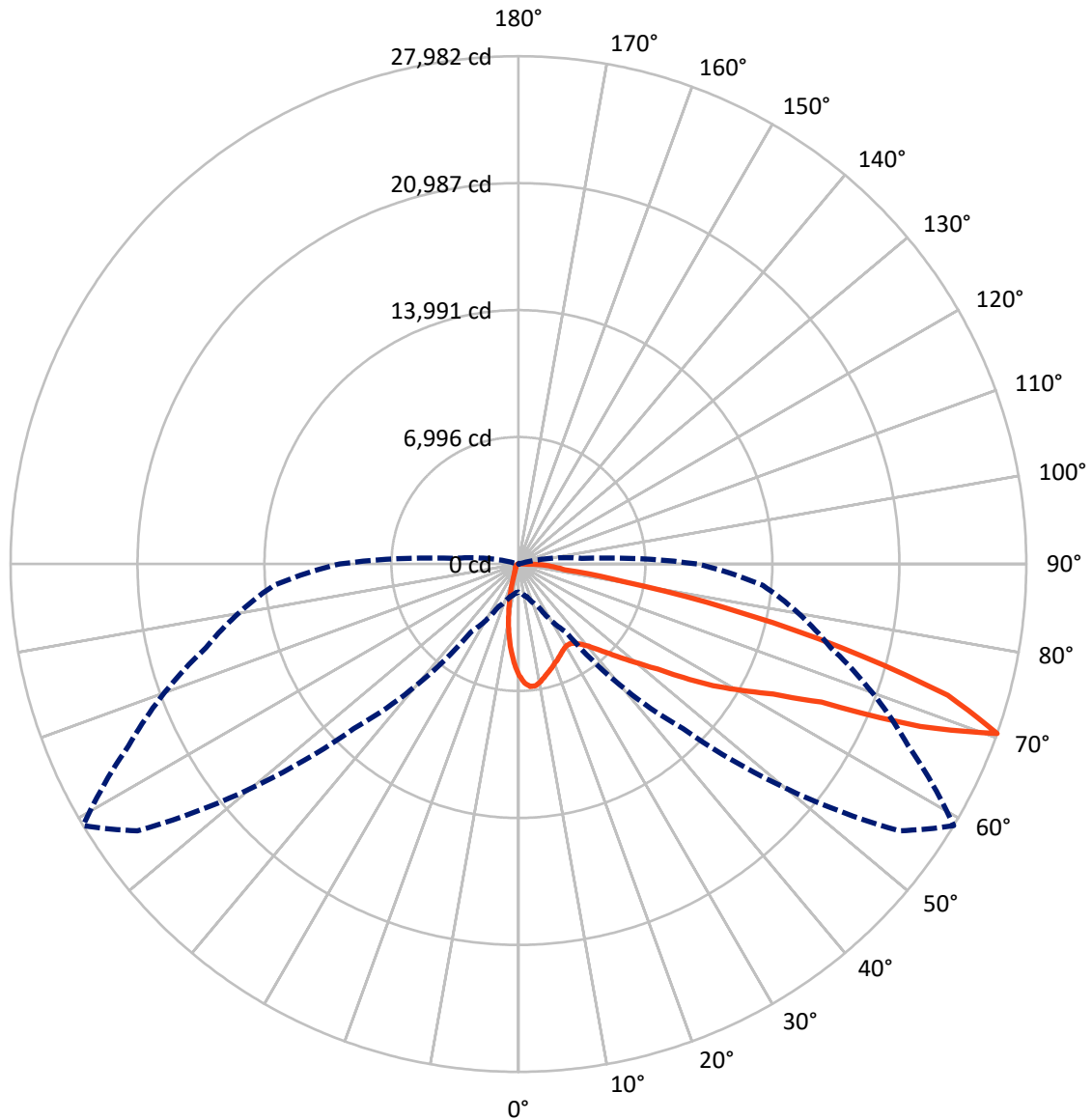


Based on 25 foot mounting height. Maximum calculated value = 10.5 fc
 Type III - Medium - Non-Cutoff

REPORT NUMBER: P270599

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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CATALOG NUMBER: NAV-AF-05-D-UNV-SL3-7027-1200-HSS

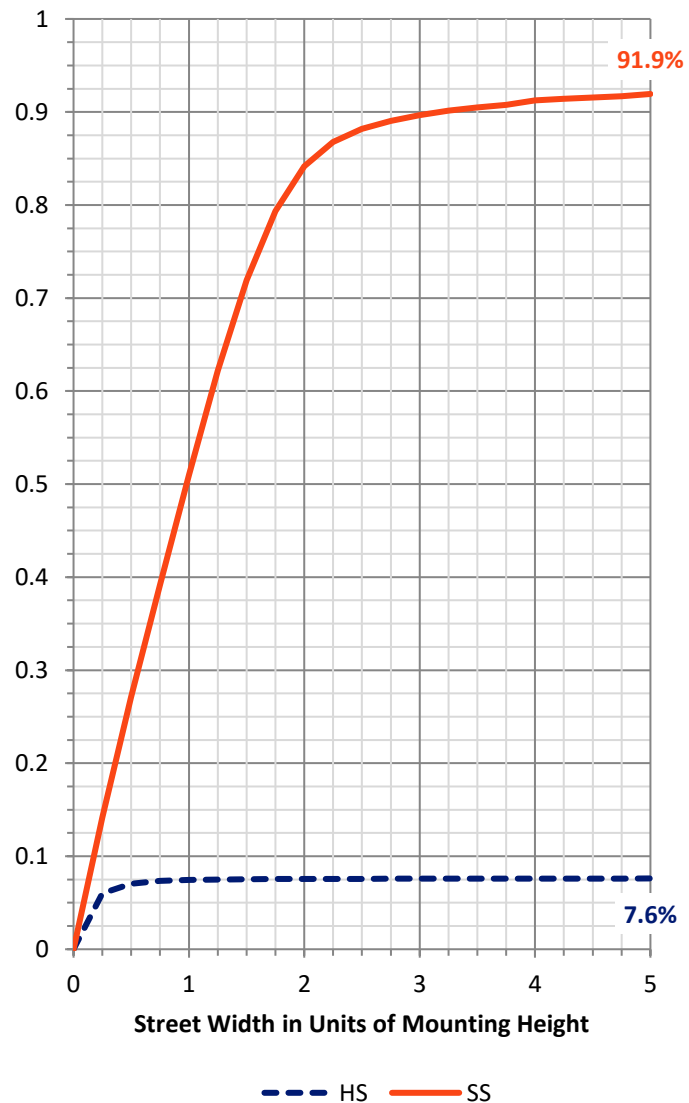
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1870.1 | 0.0 | 1870.1 |
| | % Fixture | 7.7 | 0.0 | 7.7 |
| Street Side | Lumens | 22456.9 | 0.0 | 22456.9 |
| | % Fixture | 92.3 | 0.0 | 92.3 |
| Total | Lumens | 24327.0 | 0.0 | 24327.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 505.8 | 2.1 |
| 10°-20° | 1060.9 | 4.4 |
| 20°-30° | 1436.2 | 5.9 |
| 30°-40° | 2072.6 | 8.5 |
| 40°-50° | 3442.2 | 14.1 |
| 50°-60° | 5265.2 | 21.6 |
| 60°-70° | 6548.7 | 26.9 |
| 70°-80° | 3620.1 | 14.9 |
| 80°-90° | 375.4 | 1.5 |
| 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° | 24327.0 | 100.0 |
| 0°-180° | 24327.0 | 100.0 |



REPORT NUMBER: P270599

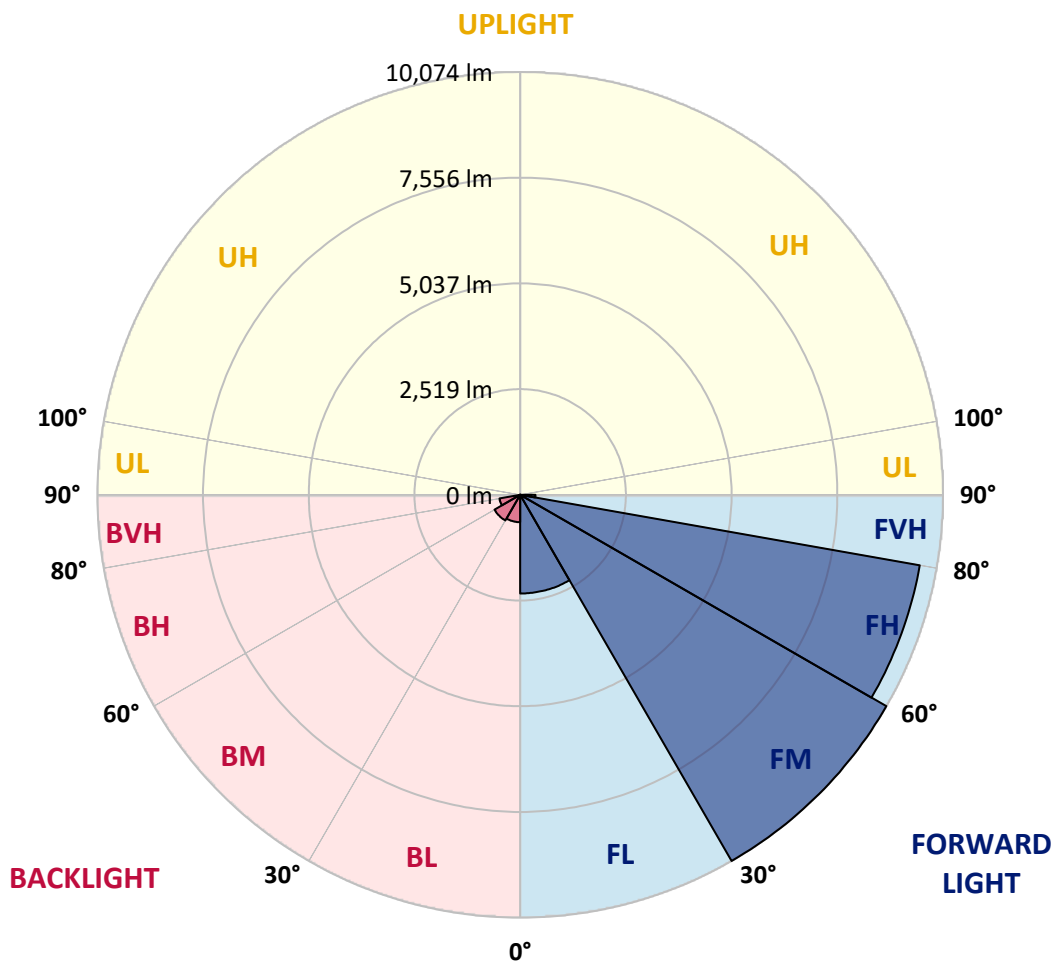
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 2351.3 | 9.7 | | | |
| FM (30°-60°) | 10074.1 | 41.4 | | | |
| FH (60°-80°) | 9667.0 | 39.7 | | | G4/12000 |
| FVH (80°-90°) | 364.5 | 1.5 | | | G3/500 |
| BL (0°-30°) | 651.7 | 2.7 | B2/1000 | | |
| BM (30°-60°) | 705.9 | 2.9 | B1/1000 | | |
| BH (60°-80°) | 501.7 | 2.1 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 10.8 | 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 III Medium





REPORT NUMBER: P270599

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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 |
| 2.5° | 6953.4 | 6942.5 | 6896.5 | 6887.3 | 6835.9 | 6733.2 | 6614.0 | 6566.3 | 6469.0 | 6314.7 | 6144.0 |
| 5° | 7069.0 | 7074.5 | 7078.1 | 7058.1 | 7050.6 | 6966.3 | 6834.0 | 6777.3 | 6646.9 | 6393.6 | 6081.6 |
| 7.5° | 6635.9 | 6650.6 | 6696.4 | 6716.6 | 6804.8 | 6837.8 | 6810.2 | 6773.5 | 6670.8 | 6371.7 | 5933.0 |
| 10° | 6178.9 | 6206.5 | 6256.1 | 6289.0 | 6397.3 | 6485.5 | 6597.3 | 6606.6 | 6584.5 | 6298.2 | 5766.0 |
| 12.5° | 5786.3 | 5811.9 | 5867.0 | 5933.0 | 6043.2 | 6157.0 | 6323.9 | 6382.6 | 6456.1 | 6250.5 | 5646.7 |
| 15° | 5448.6 | 5455.9 | 5509.1 | 5591.7 | 5736.7 | 5892.6 | 6090.9 | 6177.1 | 6320.2 | 6232.3 | 5554.9 |
| 17.5° | 5153.0 | 5155.0 | 5189.8 | 5265.1 | 5441.3 | 5646.7 | 5878.0 | 5991.8 | 6173.4 | 6206.5 | 5474.2 |
| 20° | 4958.6 | 4956.8 | 4958.6 | 4999.0 | 5155.0 | 5399.1 | 5679.9 | 5799.1 | 6032.2 | 6175.3 | 5391.6 |
| 22.5° | 4892.4 | 4883.4 | 4841.1 | 4826.5 | 4925.5 | 5140.2 | 5476.1 | 5632.1 | 5905.5 | 6166.1 | 5331.1 |
| 25° | 4973.2 | 4967.7 | 4877.8 | 4793.4 | 4802.6 | 4936.5 | 5268.6 | 5459.5 | 5806.5 | 6199.2 | 5316.3 |
| 27.5° | 5233.9 | 5222.8 | 5085.1 | 4920.0 | 4815.5 | 4839.3 | 5114.6 | 5314.6 | 5727.6 | 6280.0 | 5336.7 |
| 30° | 5575.2 | 5576.9 | 5430.3 | 5230.2 | 4984.2 | 4848.4 | 5031.9 | 5220.9 | 5674.2 | 6401.1 | 5380.7 |
| 32.5° | 5955.0 | 5953.2 | 5848.7 | 5617.5 | 5303.7 | 5017.4 | 5068.6 | 5228.3 | 5681.6 | 6578.9 | 5465.1 |
| 35° | 6347.9 | 6327.7 | 6292.7 | 6089.0 | 5722.1 | 5312.8 | 5235.7 | 5353.1 | 5758.8 | 6814.0 | 5608.2 |
| 37.5° | 6801.1 | 6793.7 | 6828.6 | 6614.0 | 6239.4 | 5747.6 | 5529.2 | 5608.2 | 5953.2 | 7160.7 | 5839.4 |
| 40° | 7522.2 | 7482.0 | 7498.4 | 7206.7 | 6823.0 | 6333.1 | 5940.4 | 5960.6 | 6263.3 | 7619.6 | 6204.7 |
| 42.5° | 8896.9 | 8733.5 | 8427.0 | 7880.1 | 7465.4 | 6982.7 | 6478.0 | 6443.3 | 6702.0 | 8175.6 | 6685.5 |
| 45° | 10539.3 | 10352.1 | 9579.4 | 8623.4 | 8107.7 | 7680.1 | 7142.5 | 7048.8 | 7241.4 | 8838.1 | 7305.7 |
| 47.5° | 11910.1 | 11708.2 | 10684.3 | 9399.7 | 8761.0 | 8399.5 | 7878.2 | 7768.3 | 7887.5 | 9607.1 | 8050.8 |
| 50° | 12378.0 | 12266.1 | 11367.0 | 10045.7 | 9419.8 | 9207.0 | 8801.4 | 8617.9 | 8647.3 | 10436.5 | 8920.7 |
| 52.5° | 12163.4 | 12124.9 | 11522.9 | 10487.9 | 10029.0 | 10098.8 | 9812.5 | 9619.9 | 9586.8 | 11343.1 | 9882.3 |
| 55° | 11710.0 | 11691.7 | 11398.1 | 10733.8 | 10566.9 | 10915.5 | 11231.1 | 11064.2 | 10752.2 | 12306.5 | 10677.0 |
| 57.5° | 11062.3 | 11132.1 | 11343.1 | 11207.3 | 11227.5 | 11777.9 | 12548.8 | 12635.0 | 12168.9 | 13073.7 | 11266.1 |
| 60° | 9331.8 | 9518.9 | 10486.0 | 11715.5 | 12656.9 | 13213.1 | 13960.0 | 14121.4 | 13369.0 | 13598.5 | 11946.7 |
| 62.5° | 6898.4 | 7166.3 | 8544.5 | 10803.6 | 13444.4 | 15942.0 | 15837.4 | 15765.8 | 14514.3 | 14301.3 | 13185.5 |
| 65° | 4052.1 | 4365.9 | 5531.1 | 8441.7 | 12257.0 | 17696.3 | 19342.5 | 18351.6 | 16259.4 | 15762.1 | 15158.3 |
| 67.5° | 2018.8 | 2020.5 | 2547.1 | 4455.8 | 9058.2 | 16472.3 | 24459.0 | 23886.3 | 19970.1 | 17914.7 | 15936.4 |
| 70° | 1552.5 | 1594.8 | 1884.7 | 2589.5 | 4580.5 | 12829.6 | 25631.6 | 27982.4 | 23699.2 | 17819.3 | 13521.4 |
| 72.5° | 1315.7 | 1343.3 | 1677.3 | 2253.6 | 3424.3 | 7043.3 | 22188.9 | 24734.1 | 22614.6 | 15055.6 | 9966.8 |
| 75° | 947.0 | 968.9 | 1484.5 | 2044.4 | 3152.8 | 3494.1 | 15220.7 | 18344.2 | 16967.7 | 10590.7 | 5485.3 |
| 77.5° | 234.8 | 233.1 | 517.6 | 1659.0 | 2820.6 | 2910.6 | 8733.5 | 11763.3 | 9735.6 | 4336.5 | 1409.4 |
| 80° | 104.7 | 100.9 | 117.5 | 348.7 | 2624.3 | 2747.2 | 3841.0 | 5940.4 | 3734.6 | 702.8 | 431.2 |
| 82.5° | 73.4 | 69.8 | 73.4 | 128.5 | 877.3 | 2549.0 | 2321.5 | 2574.7 | 1367.2 | 240.3 | 183.6 |
| 85° | 23.9 | 22.0 | 40.3 | 108.2 | 245.9 | 1469.9 | 2264.5 | 1923.2 | 1016.7 | 102.8 | 123.0 |
| 87.5° | 3.7 | 3.7 | 14.7 | 58.7 | 71.5 | 489.9 | 1328.7 | 1332.4 | 457.0 | 60.5 | 55.1 |
| 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° | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 | 6151.5 |
| 2.5° | 6057.8 | 5949.6 | 5797.2 | 5644.9 | 5507.2 | 5365.9 | 5252.2 | 5199.0 | 5175.1 | 5142.1 | 5070.6 |
| 5° | 5918.4 | 5722.1 | 5388.0 | 5059.6 | 4753.0 | 4459.5 | 4208.0 | 4064.9 | 3910.7 | 3903.3 | 3828.1 |
| 7.5° | 5694.4 | 5415.5 | 4888.8 | 4378.7 | 3910.7 | 3463.0 | 3077.6 | 2828.0 | 2657.2 | 2550.8 | 2477.4 |
| 10° | 5444.8 | 5087.0 | 4389.7 | 3672.1 | 3035.4 | 2437.1 | 1941.5 | 1618.6 | 1422.2 | 1323.2 | 1266.3 |
| 12.5° | 5246.7 | 4797.0 | 3897.8 | 2994.9 | 2196.6 | 1510.3 | 1049.7 | 814.9 | 710.2 | 669.9 | 651.5 |
| 15° | 5076.1 | 4531.1 | 3437.3 | 2389.3 | 1466.4 | 868.0 | 607.4 | 530.4 | 513.8 | 513.8 | 512.0 |
| 17.5° | 4903.5 | 4274.0 | 2989.5 | 1794.8 | 923.1 | 568.8 | 478.9 | 467.9 | 469.9 | 475.4 | 475.4 |
| 20° | 4740.1 | 4029.9 | 2558.3 | 1279.0 | 605.5 | 455.1 | 434.9 | 431.2 | 436.8 | 444.1 | 442.2 |
| 22.5° | 4608.0 | 3815.3 | 2154.4 | 879.0 | 466.1 | 413.0 | 400.0 | 394.5 | 398.2 | 403.8 | 401.9 |
| 25° | 4514.4 | 3631.8 | 1783.8 | 613.0 | 405.6 | 376.2 | 361.5 | 354.2 | 350.5 | 354.2 | 352.3 |
| 27.5° | 4457.6 | 3477.6 | 1435.1 | 460.7 | 363.4 | 339.5 | 321.1 | 306.5 | 297.2 | 297.2 | 293.7 |
| 30° | 4420.9 | 3332.6 | 1124.9 | 381.7 | 328.5 | 302.8 | 277.0 | 256.9 | 242.3 | 238.6 | 236.8 |
| 32.5° | 4419.0 | 3207.8 | 840.5 | 337.7 | 295.5 | 266.1 | 234.8 | 209.2 | 192.6 | 189.1 | 187.1 |
| 35° | 4464.9 | 3106.9 | 618.5 | 304.6 | 266.1 | 231.3 | 196.4 | 168.8 | 154.1 | 154.1 | 152.4 |
| 37.5° | 4584.2 | 3048.2 | 467.9 | 279.0 | 242.3 | 201.8 | 165.2 | 139.4 | 126.7 | 130.3 | 130.3 |
| 40° | 4806.2 | 3037.2 | 381.7 | 258.7 | 222.1 | 176.2 | 133.9 | 113.7 | 108.2 | 113.7 | 113.7 |
| 42.5° | 5145.9 | 3095.9 | 339.5 | 244.1 | 203.6 | 150.5 | 112.0 | 97.2 | 95.4 | 100.9 | 100.9 |
| 45° | 5588.0 | 3211.5 | 315.7 | 231.3 | 183.6 | 124.8 | 93.7 | 84.4 | 82.6 | 89.9 | 89.9 |
| 47.5° | 6123.8 | 3367.4 | 293.7 | 216.5 | 163.3 | 102.8 | 79.0 | 71.5 | 71.5 | 79.0 | 80.8 |
| 50° | 6758.8 | 3578.6 | 271.6 | 201.8 | 146.9 | 86.2 | 66.0 | 60.5 | 62.4 | 69.8 | 71.5 |
| 52.5° | 7489.3 | 3837.3 | 251.4 | 189.1 | 128.5 | 69.8 | 55.1 | 51.5 | 53.2 | 60.5 | 62.4 |
| 55° | 8118.7 | 4063.0 | 227.6 | 176.2 | 104.7 | 57.0 | 45.9 | 44.0 | 45.9 | 55.1 | 55.1 |
| 57.5° | 8667.3 | 4279.5 | 205.5 | 155.9 | 82.6 | 45.9 | 36.7 | 36.7 | 40.3 | 49.5 | 51.5 |
| 60° | 9396.0 | 4620.9 | 187.1 | 132.1 | 62.4 | 34.9 | 29.4 | 31.3 | 36.7 | 44.0 | 45.9 |
| 62.5° | 10686.1 | 5200.7 | 163.3 | 110.1 | 45.9 | 27.5 | 23.9 | 25.7 | 33.1 | 42.2 | 44.0 |
| 65° | 12301.0 | 5749.5 | 135.9 | 91.7 | 34.9 | 20.2 | 18.3 | 23.9 | 33.1 | 42.2 | 44.0 |
| 67.5° | 12135.8 | 5000.8 | 106.4 | 73.4 | 25.7 | 16.4 | 14.7 | 22.0 | 31.3 | 42.2 | 44.0 |
| 70° | 9841.9 | 3505.1 | 79.0 | 49.5 | 20.2 | 14.7 | 14.7 | 22.0 | 31.3 | 40.3 | 42.2 |
| 72.5° | 6826.8 | 1950.8 | 60.5 | 33.1 | 18.3 | 14.7 | 12.8 | 20.2 | 29.4 | 40.3 | 42.2 |
| 75° | 3248.2 | 598.2 | 47.7 | 23.9 | 16.4 | 12.8 | 11.0 | 20.2 | 29.4 | 40.3 | 42.2 |
| 77.5° | 624.0 | 152.4 | 38.5 | 20.2 | 14.7 | 12.8 | 11.0 | 18.3 | 29.4 | 38.5 | 40.3 |
| 80° | 211.0 | 67.9 | 31.3 | 18.3 | 14.7 | 12.8 | 11.0 | 18.3 | 27.5 | 36.7 | 38.5 |
| 82.5° | 115.6 | 38.5 | 27.5 | 16.4 | 14.7 | 11.0 | 9.2 | 16.4 | 25.7 | 36.7 | 38.5 |
| 85° | 89.9 | 27.5 | 22.0 | 16.4 | 14.7 | 11.0 | 9.2 | 16.4 | 25.7 | 34.9 | 36.7 |
| 87.5° | 45.9 | 20.2 | 18.3 | 16.4 | 14.7 | 11.0 | 9.2 | 14.7 | 23.9 | 33.1 | 36.7 |
| 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)