

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: P195384

Luminaire Tested: **NAV-AF-06-D-UNV-T3R-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195384
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 40192 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full 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

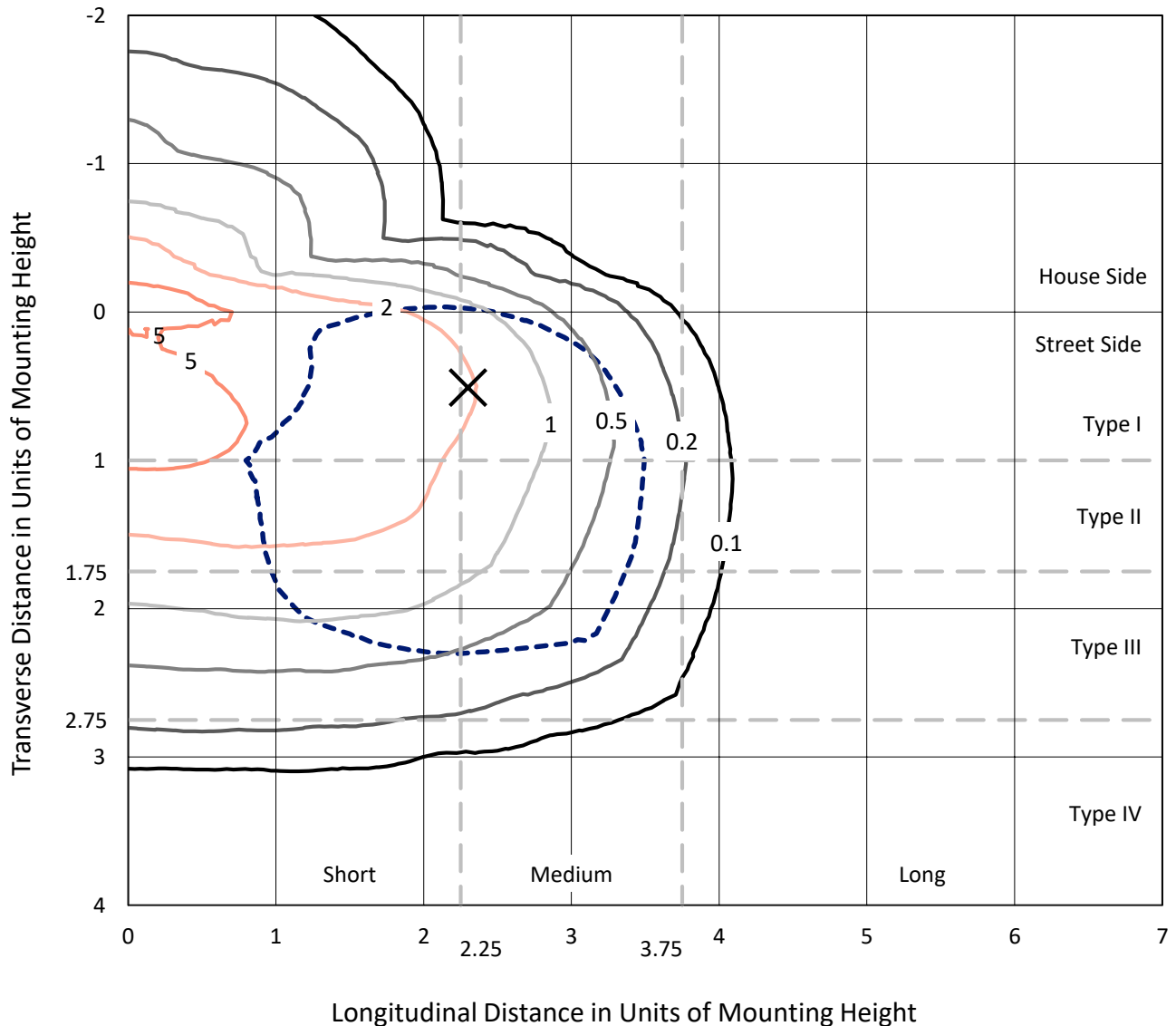


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Iso-Footcandle Lines of Horizontal Illumination

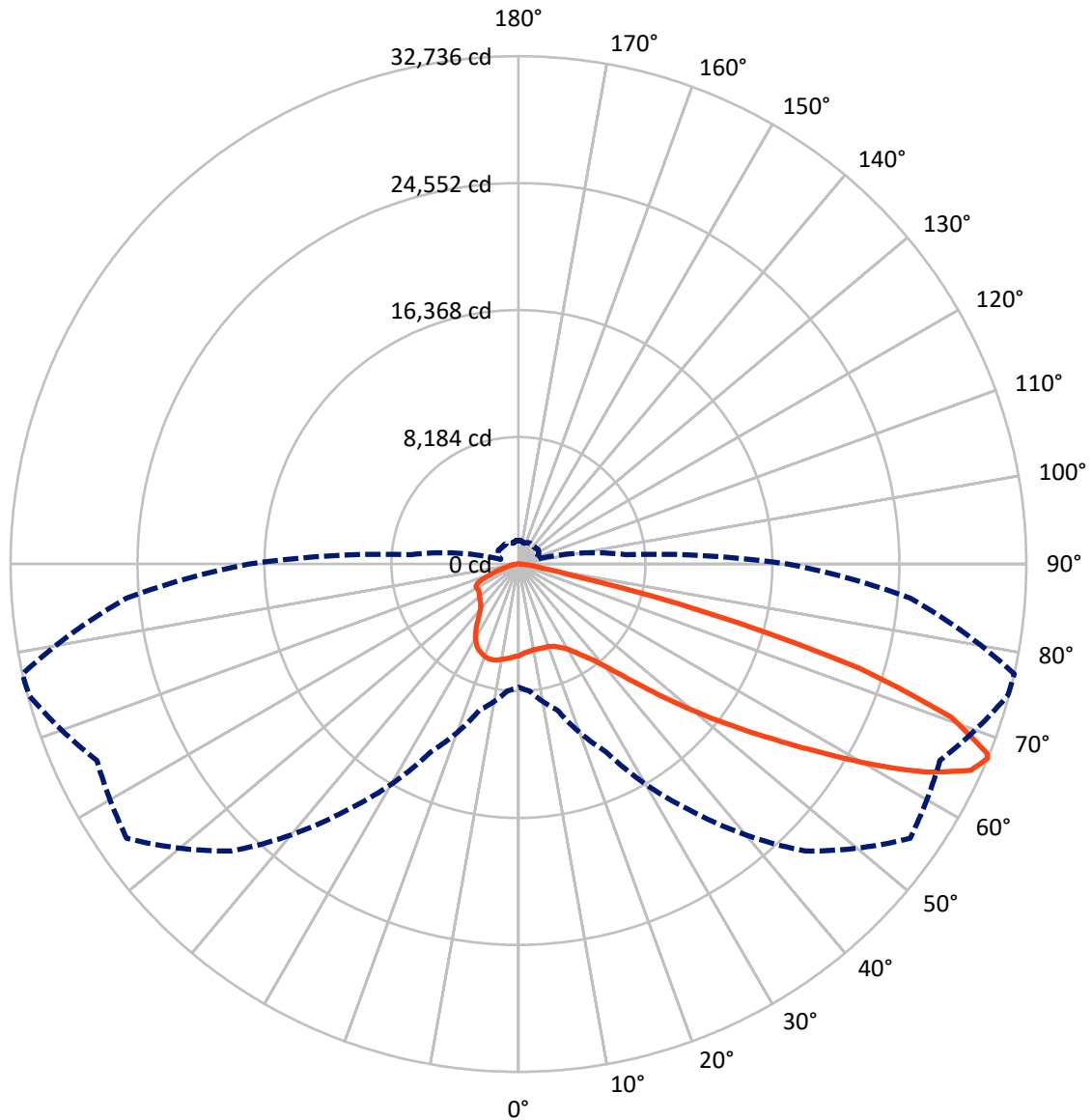
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7.9 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6907.0 | 0.0 | 6907.0 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 33285.0 | 0.0 | 33285.0 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 40192.0 | 0.0 | 40192.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 526.8 | 1.3 |
| 10°-20° | 1459.0 | 3.6 |
| 20°-30° | 2479.0 | 6.2 |
| 30°-40° | 3965.8 | 9.9 |
| 40°-50° | 6105.3 | 15.2 |
| 50°-60° | 8470.6 | 21.1 |
| 60°-70° | 11299.1 | 28.1 |
| 70°-80° | 5377.3 | 13.4 |
| 80°-90° | 509.1 | 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° | 40192.0 | 100.0 |
| 0°-180° | 40192.0 | 100.0 |



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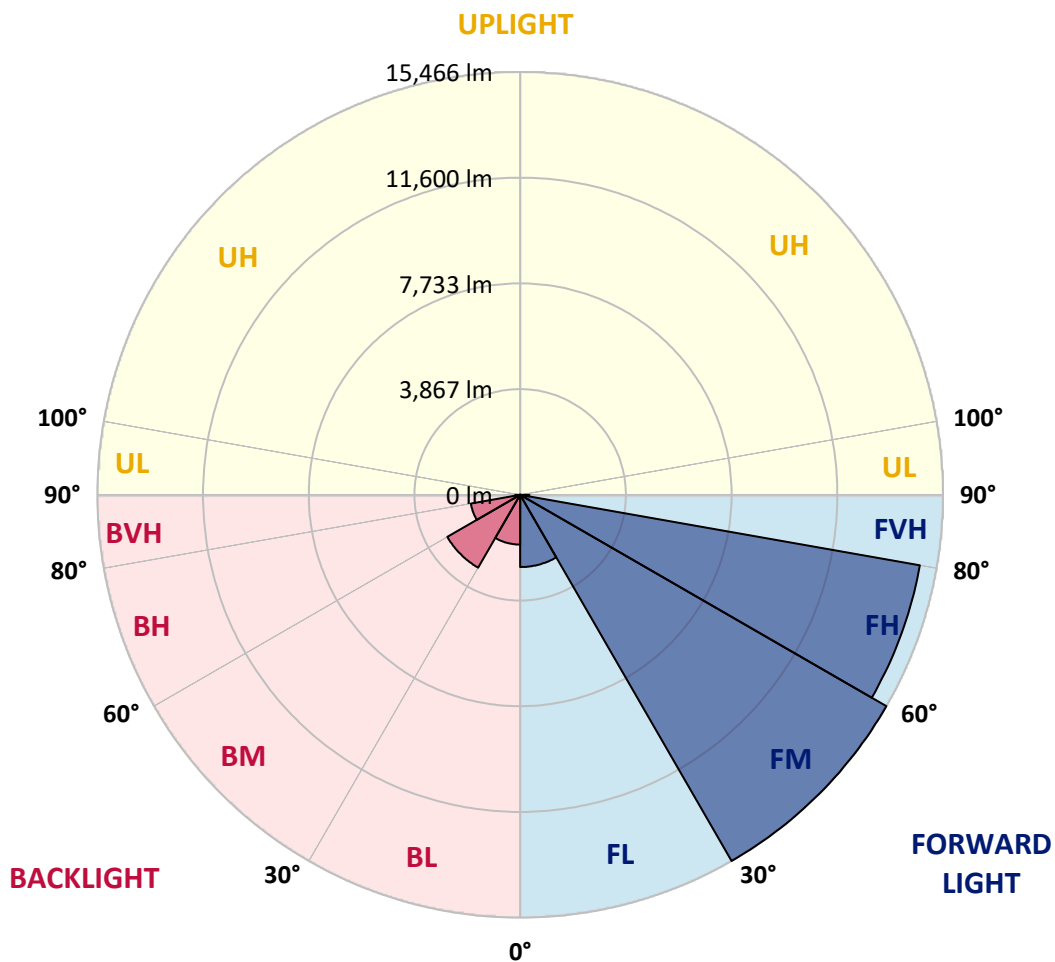
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 2643.0 | 6.6 | | | |
| FM | (30°-60°) | 15466.3 | 38.5 | | | |
| FH | (60°-80°) | 14845.0 | 36.9 | | | G5 |
| FVH | (80°-90°) | 330.7 | 0.8 | | | G3/500 |
| BL | (0°-30°) | 1821.8 | 4.5 | B3/2500 | | |
| BM | (30°-60°) | 3075.4 | 7.7 | B3/5000 | | |
| BH | (60°-80°) | 1831.4 | 4.6 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 178.5 | 0.4 | | | 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 III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77.5° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 |
| 2.5° | 5304.1 | 5328.9 | 5331.4 | 5403.4 | 5435.7 | 5517.7 | 5607.1 | 5686.6 | 5756.2 | 5781.1 | 5825.8 |
| 5° | 4772.4 | 4772.4 | 4779.9 | 4827.1 | 4919.0 | 5050.7 | 5237.0 | 5440.7 | 5654.4 | 5706.5 | 5838.2 |
| 7.5° | 4494.2 | 4499.1 | 4504.1 | 4551.3 | 4623.4 | 4740.1 | 4926.4 | 5204.7 | 5559.9 | 5646.9 | 5877.9 |
| 10° | 4519.0 | 4511.6 | 4486.7 | 4476.8 | 4506.6 | 4581.1 | 4742.6 | 5028.3 | 5480.4 | 5614.6 | 5950.0 |
| 12.5° | 4909.0 | 4894.1 | 4812.2 | 4692.9 | 4583.6 | 4556.3 | 4668.1 | 4938.9 | 5443.2 | 5614.6 | 6071.7 |
| 15° | 5577.3 | 5587.3 | 5425.8 | 5177.4 | 4891.7 | 4697.9 | 4683.0 | 4906.6 | 5430.8 | 5629.5 | 6213.3 |
| 17.5° | 6446.9 | 6451.8 | 6228.2 | 5868.0 | 5393.5 | 4993.5 | 4784.8 | 4906.6 | 5430.8 | 5644.4 | 6350.0 |
| 20° | 7371.0 | 7336.2 | 7082.8 | 6630.7 | 6014.6 | 5403.4 | 4971.2 | 4936.4 | 5445.7 | 5666.8 | 6479.2 |
| 22.5° | 8163.5 | 8131.2 | 7865.4 | 7390.9 | 6685.4 | 5887.9 | 5222.1 | 5035.8 | 5527.6 | 5758.7 | 6660.5 |
| 25° | 8856.7 | 8876.5 | 8618.2 | 8084.0 | 7353.6 | 6434.4 | 5597.2 | 5264.3 | 5699.1 | 5925.1 | 6884.1 |
| 27.5° | 9698.9 | 9661.6 | 9363.5 | 8854.2 | 8041.8 | 7000.9 | 6066.8 | 5552.5 | 5902.8 | 6126.4 | 7157.4 |
| 30° | 10672.7 | 10655.3 | 10252.9 | 9728.7 | 8799.5 | 7634.4 | 6531.3 | 5863.0 | 6168.6 | 6402.1 | 7500.2 |
| 32.5° | 11855.3 | 11852.8 | 11420.5 | 10777.1 | 9651.6 | 8349.9 | 7080.4 | 6287.9 | 6556.2 | 6792.2 | 7954.8 |
| 35° | 13194.3 | 13191.8 | 12744.6 | 11895.0 | 10633.0 | 9142.4 | 7726.3 | 6804.6 | 7035.6 | 7284.1 | 8496.4 |
| 37.5° | 14123.5 | 14108.5 | 13875.0 | 13050.2 | 11718.6 | 10064.0 | 8533.7 | 7500.2 | 7579.7 | 7858.0 | 9149.8 |
| 40° | 14302.3 | 14391.8 | 14593.0 | 14106.1 | 12903.6 | 11087.6 | 9343.6 | 8248.0 | 8322.5 | 8680.3 | 9972.1 |
| 42.5° | 14108.5 | 14225.3 | 14893.6 | 15030.2 | 14088.7 | 12327.3 | 10357.2 | 9284.0 | 9378.4 | 9823.1 | 10938.5 |
| 45° | 13939.6 | 14041.5 | 14878.7 | 15542.0 | 15258.8 | 13678.8 | 11621.7 | 10548.5 | 10727.4 | 11278.9 | 12041.6 |
| 47.5° | 13651.4 | 13745.8 | 14585.5 | 15633.9 | 15927.1 | 14980.6 | 13144.6 | 12068.9 | 12377.0 | 13045.3 | 13298.7 |
| 50° | 13636.5 | 13678.8 | 14185.6 | 15325.9 | 16158.1 | 15969.3 | 14831.5 | 13847.7 | 14319.7 | 15089.9 | 14689.9 |
| 52.5° | 13258.9 | 13554.5 | 14014.1 | 14834.0 | 16163.1 | 16545.7 | 16493.5 | 15797.9 | 16525.8 | 17377.9 | 16215.3 |
| 55° | 10948.5 | 11288.8 | 13442.7 | 14593.0 | 16133.3 | 17040.1 | 18011.4 | 17872.3 | 19010.1 | 19907.0 | 17924.5 |
| 57.5° | 10223.0 | 10367.1 | 11793.1 | 14665.0 | 16381.7 | 17857.4 | 19529.4 | 20100.8 | 21852.2 | 22831.1 | 19974.1 |
| 60° | 10024.3 | 10175.8 | 11462.7 | 14699.8 | 17055.0 | 19345.5 | 21588.9 | 22617.4 | 25193.7 | 26232.1 | 22301.9 |
| 62.5° | 9803.2 | 9999.5 | 11487.6 | 14732.1 | 18237.5 | 21546.7 | 24321.7 | 25347.7 | 28624.5 | 29551.2 | 24483.1 |
| 65° | 9157.3 | 9418.1 | 11028.0 | 14528.4 | 19531.9 | 24309.2 | 27933.9 | 28194.7 | 31459.2 | 32047.9 | 25799.8 |
| 67° | 7932.5 | 8218.2 | 9765.9 | 13350.8 | 19412.6 | 26170.0 | 30823.2 | 29976.0 | 32664.1 | 32736.1 | 25372.5 |
| 67.5° | 7544.9 | 7840.6 | 9338.6 | 12861.4 | 19072.3 | 26413.5 | 31334.9 | 30222.0 | 32654.1 | 32574.6 | 24975.0 |
| 70° | 5080.5 | 5413.4 | 6613.3 | 9443.0 | 15298.5 | 24582.5 | 31210.7 | 29464.2 | 30512.6 | 29600.9 | 21457.2 |
| 72.5° | 2521.6 | 2531.5 | 3299.2 | 5172.4 | 9269.1 | 17631.3 | 26035.9 | 25206.1 | 24734.1 | 23012.4 | 15745.7 |
| 75° | 1214.8 | 1237.2 | 1557.7 | 2285.6 | 3907.9 | 9102.6 | 17755.6 | 17007.8 | 14481.2 | 12538.4 | 7880.3 |
| 77.5° | 926.7 | 949.0 | 1209.9 | 1488.1 | 1629.7 | 2968.8 | 8794.6 | 7107.7 | 4196.0 | 3351.4 | 2221.0 |
| 80° | 715.5 | 757.7 | 1021.1 | 1142.8 | 1078.2 | 1190.0 | 2765.1 | 2176.3 | 1632.2 | 1498.1 | 1100.6 |
| 82.5° | 559.0 | 583.8 | 867.0 | 867.0 | 745.3 | 797.5 | 1286.9 | 1257.1 | 1013.6 | 914.2 | 591.3 |
| 85° | 395.0 | 444.7 | 698.1 | 645.9 | 489.4 | 494.4 | 770.1 | 737.8 | 521.7 | 419.9 | 231.0 |
| 87.5° | 176.4 | 226.1 | 496.9 | 422.3 | 260.9 | 201.2 | 315.5 | 270.8 | 206.2 | 159.0 | 106.8 |
| 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° | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 | 5915.2 |
| 2.5° | 5875.5 | 5915.2 | 5977.3 | 6014.6 | 6064.3 | 6084.1 | 6104.0 | 6138.8 | 6166.1 | 6158.7 | 6146.2 |
| 5° | 5930.1 | 5997.2 | 6074.2 | 6099.0 | 6099.0 | 6074.2 | 6059.3 | 6061.8 | 6054.3 | 6049.4 | 6034.5 |
| 7.5° | 6009.6 | 6101.5 | 6156.2 | 6131.3 | 6054.3 | 5957.4 | 5865.5 | 5810.9 | 5758.7 | 5726.4 | 5736.3 |
| 10° | 6121.4 | 6223.3 | 6225.7 | 6116.4 | 5932.6 | 5721.4 | 5540.1 | 5423.3 | 5311.5 | 5261.8 | 5276.7 |
| 12.5° | 6282.9 | 6384.7 | 6297.8 | 6061.8 | 5738.8 | 5408.4 | 5075.5 | 4834.5 | 4618.4 | 4566.2 | 4551.3 |
| 15° | 6456.8 | 6536.3 | 6342.5 | 5945.0 | 5460.6 | 4916.5 | 4357.5 | 3997.3 | 3756.3 | 3714.1 | 3699.2 |
| 17.5° | 6608.3 | 6653.1 | 6320.2 | 5736.3 | 5020.8 | 4163.7 | 3512.9 | 3269.4 | 3219.7 | 3244.5 | 3244.5 |
| 20° | 6742.5 | 6727.6 | 6223.3 | 5413.4 | 4327.7 | 3329.0 | 2951.4 | 2948.9 | 3016.0 | 3078.1 | 3083.1 |
| 22.5° | 6911.4 | 6794.7 | 6069.2 | 4933.9 | 3500.4 | 2777.5 | 2712.9 | 2777.5 | 2852.0 | 2921.6 | 2929.0 |
| 25° | 7112.7 | 6869.2 | 5863.0 | 4250.7 | 2814.8 | 2521.6 | 2548.9 | 2603.6 | 2650.8 | 2705.4 | 2707.9 |
| 27.5° | 7313.9 | 6926.3 | 5572.4 | 3448.3 | 2442.1 | 2357.6 | 2387.4 | 2409.8 | 2422.2 | 2457.0 | 2457.0 |
| 30° | 7547.4 | 6971.0 | 5152.5 | 2762.6 | 2270.7 | 2213.5 | 2196.2 | 2186.2 | 2196.2 | 2243.4 | 2245.8 |
| 32.5° | 7840.6 | 7050.5 | 4578.6 | 2370.1 | 2191.2 | 2111.7 | 2022.3 | 1972.6 | 2007.3 | 2091.8 | 2106.7 |
| 35° | 8173.5 | 7145.0 | 3890.5 | 2213.5 | 2163.9 | 2062.0 | 1898.0 | 1821.0 | 1833.4 | 1910.5 | 1922.9 |
| 37.5° | 8590.8 | 7266.7 | 3212.2 | 2176.3 | 2191.2 | 2057.0 | 1840.9 | 1731.6 | 1676.9 | 1679.4 | 1676.9 |
| 40° | 9125.0 | 7388.4 | 2675.6 | 2186.2 | 2250.8 | 2069.5 | 1813.6 | 1642.1 | 1527.9 | 1532.8 | 1542.8 |
| 42.5° | 9683.9 | 7467.9 | 2335.3 | 2216.0 | 2322.9 | 2086.8 | 1803.6 | 1555.2 | 1455.8 | 1540.3 | 1617.3 |
| 45° | 10337.3 | 7445.6 | 2158.9 | 2243.4 | 2377.5 | 2094.3 | 1766.4 | 1545.3 | 1463.3 | 1716.7 | 1860.8 |
| 47.5° | 11087.6 | 7348.7 | 2059.5 | 2255.8 | 2392.4 | 2091.8 | 1739.0 | 1577.6 | 1525.4 | 1965.1 | 2129.1 |
| 50° | 11902.5 | 7197.1 | 1980.0 | 2235.9 | 2385.0 | 2081.9 | 1768.8 | 1617.3 | 1550.2 | 2019.8 | 2146.5 |
| 52.5° | 12794.3 | 7058.0 | 1898.0 | 2191.2 | 2347.7 | 2052.1 | 1806.1 | 1599.9 | 1480.7 | 1860.8 | 1957.7 |
| 55° | 13850.2 | 7025.7 | 1806.1 | 2114.2 | 2285.6 | 2019.8 | 1786.2 | 1545.3 | 1403.7 | 1649.6 | 1709.2 |
| 57.5° | 15057.6 | 7226.9 | 1686.9 | 2019.8 | 2201.1 | 1955.2 | 1739.0 | 1515.4 | 1376.3 | 1500.5 | 1532.8 |
| 60° | 16590.4 | 7671.6 | 1560.2 | 1920.4 | 2096.8 | 1858.3 | 1696.8 | 1522.9 | 1383.8 | 1478.2 | 1485.6 |
| 62.5° | 17787.9 | 8071.6 | 1445.9 | 1798.7 | 1957.7 | 1741.5 | 1652.1 | 1530.4 | 1406.1 | 1508.0 | 1495.6 |
| 65° | 18222.6 | 7875.3 | 1304.3 | 1617.3 | 1761.4 | 1612.3 | 1590.0 | 1535.3 | 1406.1 | 1525.4 | 1498.1 |
| 67° | 17330.7 | 6938.8 | 1170.1 | 1435.9 | 1575.1 | 1498.1 | 1530.4 | 1515.4 | 1381.3 | 1522.9 | 1475.7 |
| 67.5° | 16905.9 | 6608.3 | 1135.3 | 1406.1 | 1525.4 | 1463.3 | 1515.4 | 1505.5 | 1373.8 | 1517.9 | 1463.3 |
| 70° | 13942.1 | 4740.1 | 959.0 | 1180.1 | 1276.9 | 1289.4 | 1423.5 | 1440.9 | 1314.2 | 1426.0 | 1326.6 |
| 72.5° | 9920.0 | 2966.3 | 827.3 | 914.2 | 1031.0 | 1103.0 | 1299.3 | 1354.0 | 1234.7 | 1239.7 | 1157.7 |
| 75° | 4909.0 | 1592.5 | 737.8 | 705.6 | 802.4 | 919.2 | 1132.9 | 1234.7 | 1118.0 | 1033.5 | 1006.2 |
| 77.5° | 1657.1 | 901.8 | 623.6 | 568.9 | 623.6 | 737.8 | 939.1 | 1078.2 | 986.3 | 874.5 | 857.1 |
| 80° | 857.1 | 655.9 | 486.9 | 457.1 | 491.9 | 571.4 | 735.4 | 896.8 | 842.2 | 847.2 | 698.1 |
| 82.5° | 534.1 | 400.0 | 350.3 | 347.8 | 372.7 | 437.2 | 541.6 | 727.9 | 722.9 | 618.6 | 449.7 |
| 85° | 248.4 | 231.0 | 223.6 | 231.0 | 238.5 | 248.4 | 352.8 | 519.2 | 549.0 | 332.9 | 295.6 |
| 87.5° | 104.3 | 101.9 | 89.4 | 96.9 | 106.8 | 104.3 | 141.6 | 221.1 | 308.1 | 208.7 | 191.3 |
| 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)