

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: P195858

Luminaire Tested: **NAV-AF-06-D-UNV-T3R-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195858
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 36639 lumens
Efficiency: N/A
Efficacy: 110.0 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

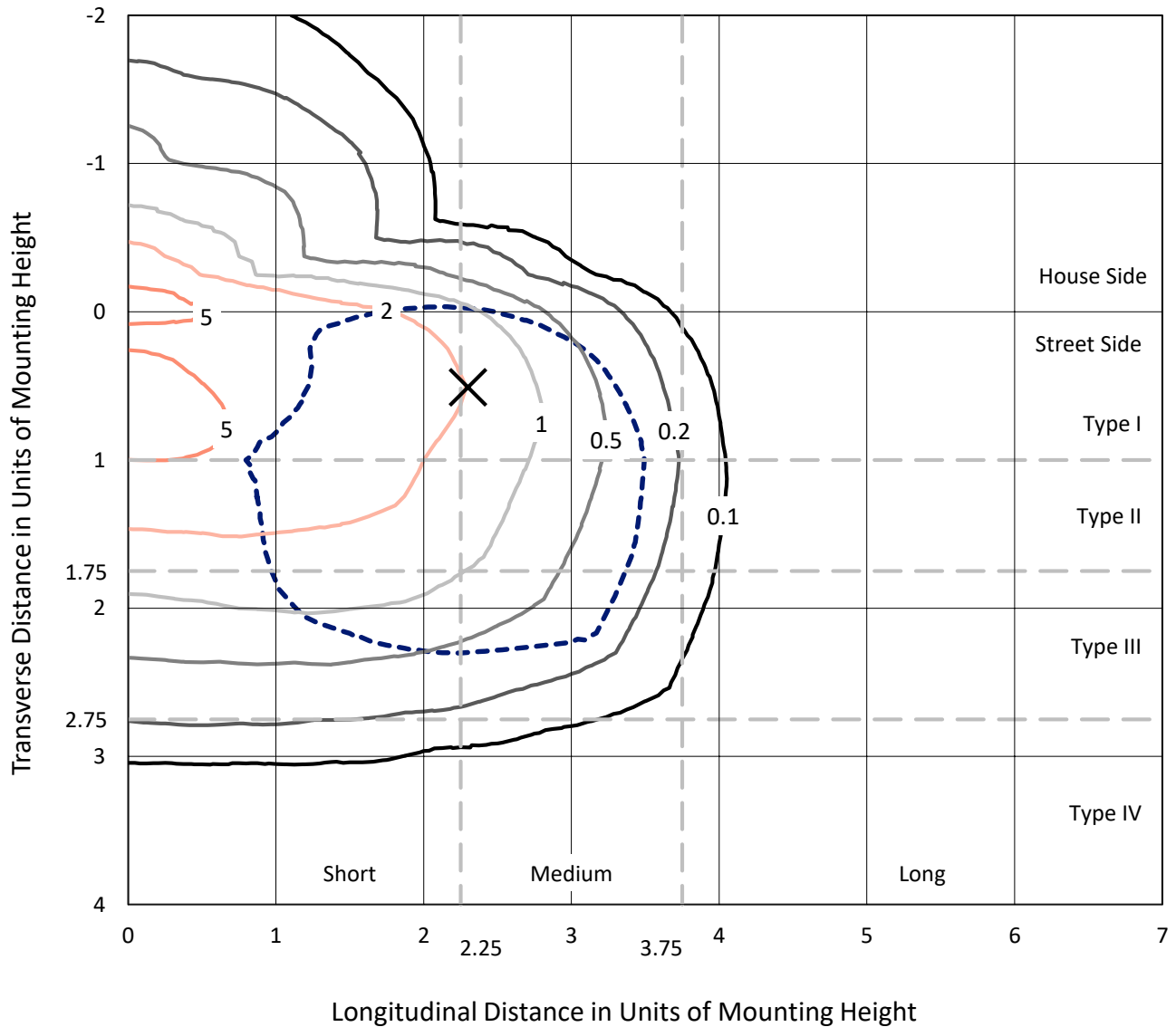
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

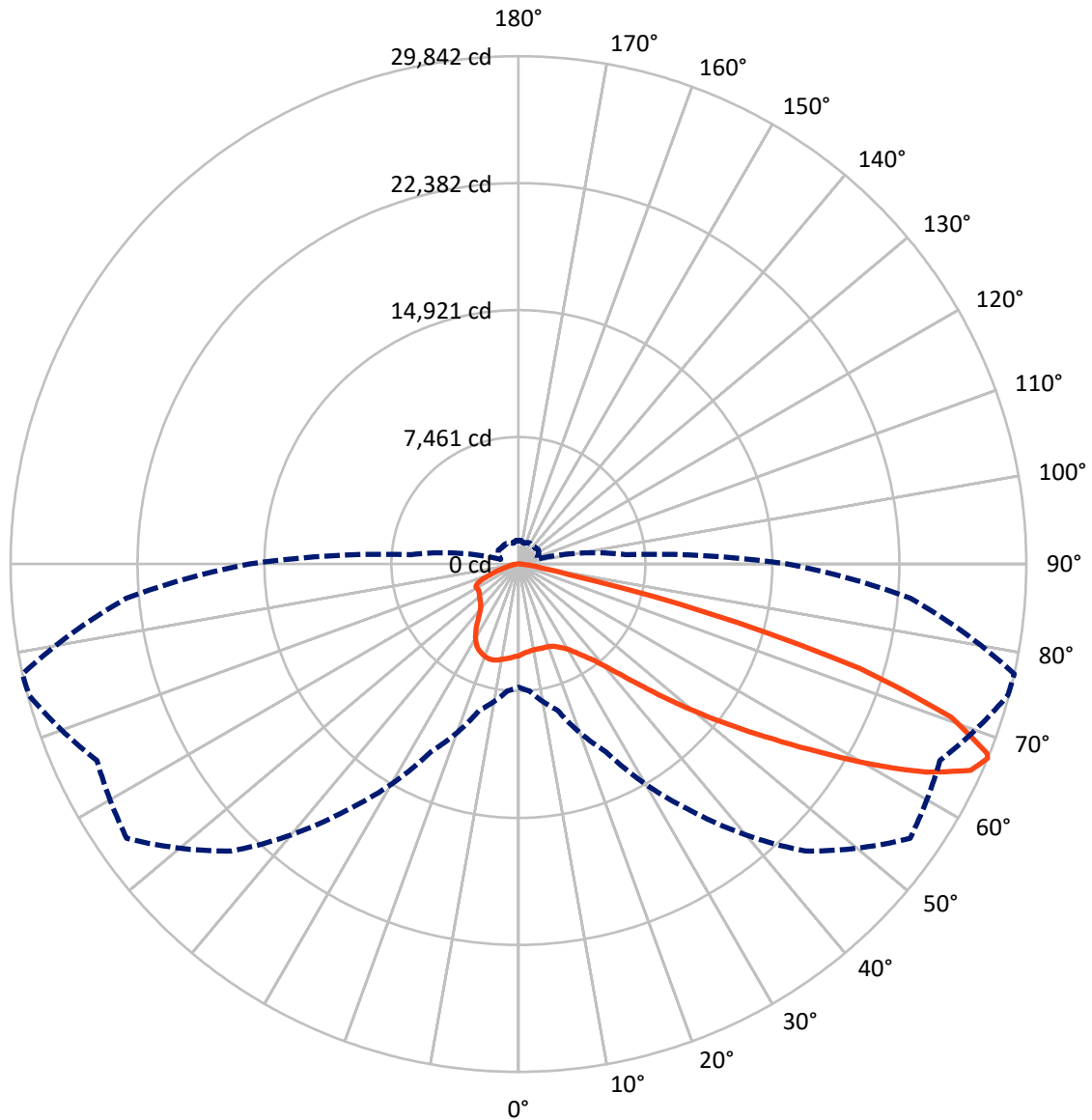
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7.2 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 | 6296.4 | 0.0 | 6296.4 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 30342.6 | 0.0 | 30342.6 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 36639.0 | 0.0 | 36639.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 480.3 | 1.3 |
| 10°-20° | 1330.0 | 3.6 |
| 20°-30° | 2259.8 | 6.2 |
| 30°-40° | 3615.2 | 9.9 |
| 40°-50° | 5565.6 | 15.2 |
| 50°-60° | 7721.8 | 21.1 |
| 60°-70° | 10300.3 | 28.1 |
| 70°-80° | 4901.9 | 13.4 |
| 80°-90° | 464.1 | 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° | 36639.0 | 100.0 |
| 0°-180° | 36639.0 | 100.0 |



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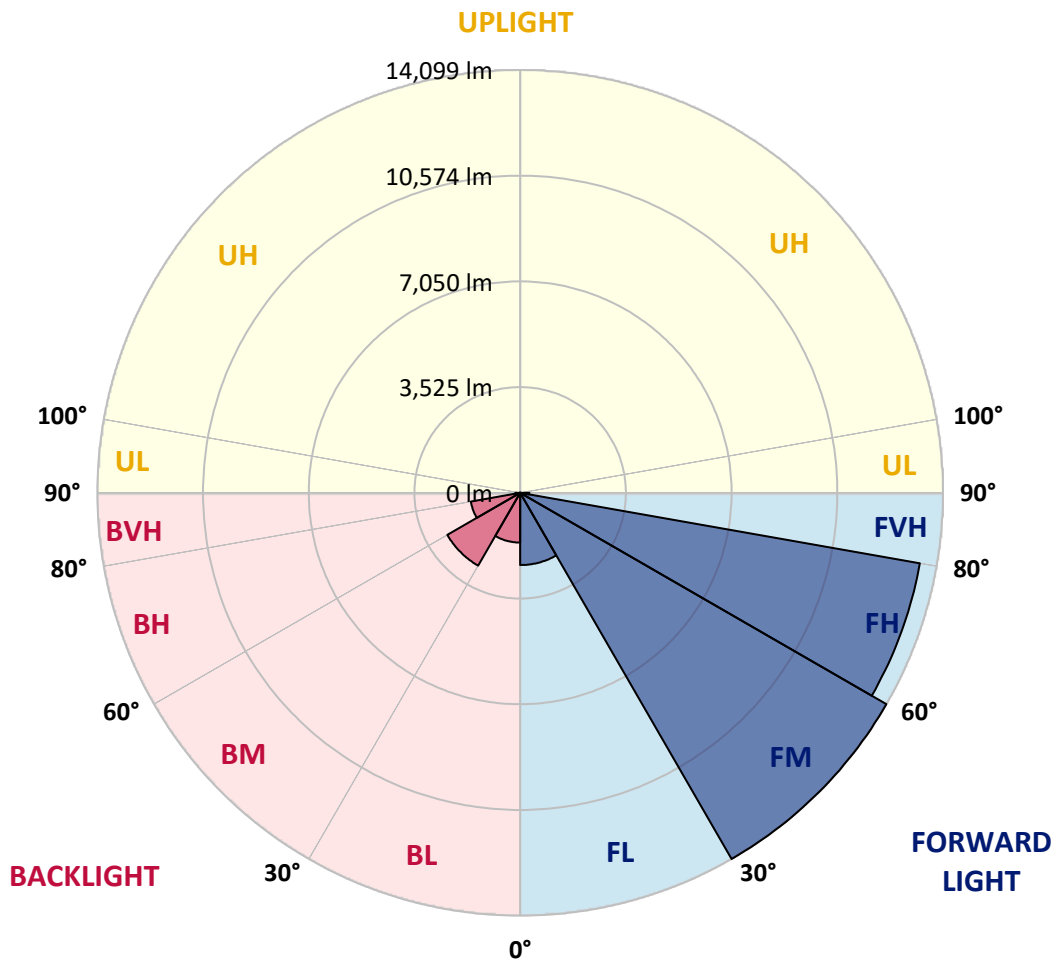
CATALOG NUMBER: NAV-AF-06-D-UNV-T3R-7050

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 2409.4 | 6.6 | | | |
| FM | (30°-60°) | 14099.1 | 38.5 | | | |
| FH | (60°-80°) | 13532.7 | 36.9 | | | G5 |
| FVH | (80°-90°) | 301.4 | 0.8 | | | G3/500 |
| BL | (0°-30°) | 1660.7 | 4.5 | B3/2500 | | |
| BM | (30°-60°) | 2803.5 | 7.7 | B3/5000 | | |
| BH | (60°-80°) | 1669.5 | 4.6 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 162.7 | 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° | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 |
| 2.5° | 4835.2 | 4857.8 | 4860.1 | 4925.8 | 4955.2 | 5029.9 | 5111.5 | 5183.9 | 5247.4 | 5270.0 | 5310.8 |
| 5° | 4350.5 | 4350.5 | 4357.3 | 4400.4 | 4484.1 | 4604.2 | 4774.0 | 4959.7 | 5154.5 | 5202.1 | 5322.1 |
| 7.5° | 4096.9 | 4101.4 | 4105.9 | 4149.0 | 4214.6 | 4321.1 | 4490.9 | 4744.6 | 5068.4 | 5147.7 | 5358.3 |
| 10° | 4119.5 | 4112.7 | 4090.1 | 4081.0 | 4108.2 | 4176.1 | 4323.4 | 4583.8 | 4996.0 | 5118.3 | 5424.0 |
| 12.5° | 4475.1 | 4461.5 | 4386.8 | 4278.1 | 4178.4 | 4153.5 | 4255.4 | 4502.3 | 4962.0 | 5118.3 | 5535.0 |
| 15° | 5084.3 | 5093.4 | 4946.1 | 4719.7 | 4459.2 | 4282.6 | 4269.0 | 4472.8 | 4950.7 | 5131.9 | 5664.1 |
| 17.5° | 5876.9 | 5881.5 | 5677.7 | 5349.3 | 4916.7 | 4552.1 | 4361.9 | 4472.8 | 4950.7 | 5145.4 | 5788.6 |
| 20° | 6719.4 | 6687.7 | 6456.7 | 6044.5 | 5482.9 | 4925.8 | 4531.7 | 4500.0 | 4964.3 | 5165.8 | 5906.4 |
| 22.5° | 7441.9 | 7412.4 | 7170.1 | 6737.5 | 6094.4 | 5367.4 | 4760.4 | 4590.6 | 5039.0 | 5249.6 | 6071.7 |
| 25° | 8073.7 | 8091.8 | 7856.3 | 7369.4 | 6703.6 | 5865.6 | 5102.4 | 4798.9 | 5195.3 | 5401.4 | 6275.5 |
| 27.5° | 8841.5 | 8807.5 | 8535.7 | 8071.5 | 7330.9 | 6382.0 | 5530.4 | 5061.6 | 5381.0 | 5584.8 | 6524.7 |
| 30° | 9729.2 | 9713.4 | 9346.5 | 8868.6 | 8021.6 | 6959.5 | 5953.9 | 5344.7 | 5623.3 | 5836.2 | 6837.2 |
| 32.5° | 10807.2 | 10805.0 | 10410.9 | 9824.4 | 8798.4 | 7611.7 | 6454.5 | 5732.0 | 5976.6 | 6191.7 | 7251.6 |
| 35° | 12027.9 | 12025.7 | 11618.0 | 10843.5 | 9693.0 | 8334.2 | 7043.3 | 6203.1 | 6413.7 | 6640.2 | 7745.3 |
| 37.5° | 12874.9 | 12861.3 | 12648.5 | 11896.6 | 10682.7 | 9174.4 | 7779.3 | 6837.2 | 6909.7 | 7163.3 | 8341.0 |
| 40° | 13038.0 | 13119.5 | 13303.0 | 12859.1 | 11763.0 | 10107.4 | 8517.6 | 7518.9 | 7586.8 | 7912.9 | 9090.6 |
| 42.5° | 12861.3 | 12967.8 | 13577.0 | 13701.6 | 12843.2 | 11237.5 | 9441.6 | 8463.3 | 8549.3 | 8954.7 | 9971.6 |
| 45° | 12707.3 | 12800.2 | 13563.4 | 14168.1 | 13909.9 | 12469.5 | 10594.4 | 9616.0 | 9779.1 | 10281.8 | 10977.1 |
| 47.5° | 12444.6 | 12530.7 | 13296.2 | 14251.9 | 14519.1 | 13656.3 | 11982.6 | 11002.0 | 11282.8 | 11892.0 | 12123.0 |
| 50° | 12431.0 | 12469.5 | 12931.6 | 13971.1 | 14729.7 | 14557.6 | 13520.4 | 12623.5 | 13053.8 | 13755.9 | 13391.3 |
| 52.5° | 12086.8 | 12356.3 | 12775.3 | 13522.6 | 14734.3 | 15083.0 | 15035.5 | 14401.4 | 15064.9 | 15841.7 | 14781.8 |
| 55° | 9980.6 | 10290.9 | 12254.4 | 13303.0 | 14707.1 | 15533.7 | 16419.2 | 16292.4 | 17329.6 | 18147.2 | 16340.0 |
| 57.5° | 9319.3 | 9450.7 | 10750.6 | 13368.6 | 14933.6 | 16278.8 | 17803.0 | 18323.8 | 19920.5 | 20812.8 | 18208.3 |
| 60° | 9138.1 | 9276.3 | 10449.4 | 13400.3 | 15547.3 | 17635.4 | 19680.4 | 20618.0 | 22966.5 | 23913.2 | 20330.4 |
| 62.5° | 8936.6 | 9115.5 | 10472.1 | 13429.8 | 16625.3 | 19641.9 | 22171.6 | 23106.9 | 26094.1 | 26938.8 | 22318.8 |
| 65° | 8347.8 | 8585.6 | 10053.1 | 13244.1 | 17805.2 | 22160.3 | 25464.5 | 25702.3 | 28678.1 | 29214.9 | 23519.1 |
| 67° | 7231.3 | 7491.7 | 8902.6 | 12170.6 | 17696.5 | 23856.6 | 28098.4 | 27326.1 | 29776.5 | 29842.2 | 23129.6 |
| 67.5° | 6878.0 | 7147.5 | 8513.1 | 11724.5 | 17386.3 | 24078.5 | 28564.9 | 27550.3 | 29767.5 | 29695.0 | 22767.2 |
| 70° | 4631.4 | 4934.8 | 6028.7 | 8608.2 | 13946.1 | 22409.4 | 28451.7 | 26859.6 | 27815.3 | 26984.1 | 19560.4 |
| 72.5° | 2298.7 | 2307.7 | 3007.5 | 4715.1 | 8449.7 | 16072.7 | 23734.3 | 22977.8 | 22547.6 | 20978.1 | 14353.8 |
| 75° | 1107.4 | 1127.8 | 1420.0 | 2083.5 | 3562.4 | 8297.9 | 16186.0 | 15504.3 | 13201.1 | 11430.0 | 7183.7 |
| 77.5° | 844.7 | 865.1 | 1102.9 | 1356.6 | 1485.7 | 2706.3 | 8017.1 | 6479.4 | 3825.1 | 3055.1 | 2024.7 |
| 80° | 652.2 | 690.7 | 930.8 | 1041.8 | 982.9 | 1084.8 | 2520.6 | 1983.9 | 1487.9 | 1365.6 | 1003.3 |
| 82.5° | 509.6 | 532.2 | 790.4 | 790.4 | 679.4 | 727.0 | 1173.1 | 1145.9 | 924.0 | 833.4 | 539.0 |
| 85° | 360.1 | 405.4 | 636.4 | 588.8 | 446.1 | 450.7 | 702.1 | 672.6 | 475.6 | 382.7 | 210.6 |
| 87.5° | 160.8 | 206.1 | 452.9 | 385.0 | 237.8 | 183.4 | 287.6 | 246.9 | 188.0 | 144.9 | 97.4 |
| 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° | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 | 5392.3 |
| 2.5° | 5356.1 | 5392.3 | 5448.9 | 5482.9 | 5528.2 | 5546.3 | 5564.4 | 5596.1 | 5621.0 | 5614.2 | 5602.9 |
| 5° | 5405.9 | 5467.0 | 5537.2 | 5559.9 | 5559.9 | 5537.2 | 5523.7 | 5525.9 | 5519.1 | 5514.6 | 5501.0 |
| 7.5° | 5478.4 | 5562.2 | 5612.0 | 5589.3 | 5519.1 | 5430.8 | 5347.0 | 5297.2 | 5249.6 | 5220.2 | 5229.2 |
| 10° | 5580.3 | 5673.1 | 5675.4 | 5575.7 | 5408.2 | 5215.6 | 5050.3 | 4943.9 | 4842.0 | 4796.7 | 4810.3 |
| 12.5° | 5727.5 | 5820.3 | 5741.1 | 5525.9 | 5231.5 | 4930.3 | 4626.8 | 4407.1 | 4210.1 | 4162.6 | 4149.0 |
| 15° | 5886.0 | 5958.5 | 5781.8 | 5419.5 | 4977.9 | 4481.9 | 3972.3 | 3643.9 | 3424.3 | 3385.8 | 3372.2 |
| 17.5° | 6024.2 | 6064.9 | 5761.4 | 5229.2 | 4577.0 | 3795.7 | 3202.3 | 2980.4 | 2935.1 | 2957.7 | 2957.7 |
| 20° | 6146.4 | 6132.9 | 5673.1 | 4934.8 | 3945.1 | 3034.7 | 2690.5 | 2688.2 | 2749.4 | 2806.0 | 2810.5 |
| 22.5° | 6300.5 | 6194.0 | 5532.7 | 4497.7 | 3191.0 | 2532.0 | 2473.1 | 2532.0 | 2599.9 | 2663.3 | 2670.1 |
| 25° | 6483.9 | 6262.0 | 5344.7 | 3874.9 | 2565.9 | 2298.7 | 2323.6 | 2373.4 | 2416.5 | 2466.3 | 2468.5 |
| 27.5° | 6667.3 | 6314.0 | 5079.8 | 3143.4 | 2226.2 | 2149.2 | 2176.4 | 2196.8 | 2208.1 | 2239.8 | 2239.8 |
| 30° | 6880.2 | 6354.8 | 4697.0 | 2518.4 | 2070.0 | 2017.9 | 2002.0 | 1993.0 | 2002.0 | 2045.0 | 2047.3 |
| 32.5° | 7147.5 | 6427.3 | 4173.9 | 2160.5 | 1997.5 | 1925.0 | 1843.5 | 1798.2 | 1829.9 | 1906.9 | 1920.5 |
| 35° | 7450.9 | 6513.3 | 3546.6 | 2017.9 | 1972.6 | 1879.7 | 1730.2 | 1660.0 | 1671.4 | 1741.6 | 1752.9 |
| 37.5° | 7831.4 | 6624.3 | 2928.3 | 1983.9 | 1997.5 | 1875.2 | 1678.2 | 1578.5 | 1528.7 | 1531.0 | 1528.7 |
| 40° | 8318.3 | 6735.3 | 2439.1 | 1993.0 | 2051.8 | 1886.5 | 1653.2 | 1497.0 | 1392.8 | 1397.3 | 1406.4 |
| 42.5° | 8827.9 | 6807.7 | 2128.8 | 2020.1 | 2117.5 | 1902.4 | 1644.2 | 1417.7 | 1327.1 | 1404.1 | 1474.3 |
| 45° | 9423.5 | 6787.4 | 1968.0 | 2045.0 | 2167.3 | 1909.2 | 1610.2 | 1408.7 | 1333.9 | 1564.9 | 1696.3 |
| 47.5° | 10107.4 | 6699.0 | 1877.5 | 2056.4 | 2180.9 | 1906.9 | 1585.3 | 1438.1 | 1390.5 | 1791.4 | 1940.9 |
| 50° | 10850.3 | 6560.9 | 1805.0 | 2038.2 | 2174.1 | 1897.8 | 1612.5 | 1474.3 | 1413.2 | 1841.2 | 1956.7 |
| 52.5° | 11663.3 | 6434.1 | 1730.2 | 1997.5 | 2140.2 | 1870.7 | 1646.5 | 1458.5 | 1349.8 | 1696.3 | 1784.6 |
| 55° | 12625.8 | 6404.6 | 1646.5 | 1927.3 | 2083.5 | 1841.2 | 1628.3 | 1408.7 | 1279.6 | 1503.8 | 1558.1 |
| 57.5° | 13726.5 | 6588.1 | 1537.7 | 1841.2 | 2006.5 | 1782.3 | 1585.3 | 1381.5 | 1254.7 | 1367.9 | 1397.3 |
| 60° | 15123.8 | 6993.5 | 1422.2 | 1750.6 | 1911.4 | 1694.0 | 1546.8 | 1388.3 | 1261.4 | 1347.5 | 1354.3 |
| 62.5° | 16215.4 | 7358.1 | 1318.1 | 1639.7 | 1784.6 | 1587.6 | 1506.0 | 1395.1 | 1281.8 | 1374.7 | 1363.4 |
| 65° | 16611.7 | 7179.2 | 1189.0 | 1474.3 | 1605.7 | 1469.8 | 1449.4 | 1399.6 | 1281.8 | 1390.5 | 1365.6 |
| 67° | 15798.7 | 6325.4 | 1066.7 | 1309.0 | 1435.8 | 1365.6 | 1395.1 | 1381.5 | 1259.2 | 1388.3 | 1345.2 |
| 67.5° | 15411.4 | 6024.2 | 1035.0 | 1281.8 | 1390.5 | 1333.9 | 1381.5 | 1372.4 | 1252.4 | 1383.7 | 1333.9 |
| 70° | 12709.6 | 4321.1 | 874.2 | 1075.7 | 1164.1 | 1175.4 | 1297.7 | 1313.5 | 1198.0 | 1299.9 | 1209.4 |
| 72.5° | 9043.0 | 2704.1 | 754.2 | 833.4 | 939.9 | 1005.5 | 1184.4 | 1234.3 | 1125.6 | 1130.1 | 1055.4 |
| 75° | 4475.1 | 1451.7 | 672.6 | 643.2 | 731.5 | 837.9 | 1032.7 | 1125.6 | 1019.1 | 942.1 | 917.2 |
| 77.5° | 1510.6 | 822.1 | 568.4 | 518.6 | 568.4 | 672.6 | 856.1 | 982.9 | 899.1 | 797.2 | 781.3 |
| 80° | 781.3 | 597.9 | 443.9 | 416.7 | 448.4 | 520.9 | 670.4 | 817.6 | 767.7 | 772.3 | 636.4 |
| 82.5° | 486.9 | 364.6 | 319.3 | 317.1 | 339.7 | 398.6 | 493.7 | 663.6 | 659.0 | 563.9 | 409.9 |
| 85° | 226.5 | 210.6 | 203.8 | 210.6 | 217.4 | 226.5 | 321.6 | 473.3 | 500.5 | 303.5 | 269.5 |
| 87.5° | 95.1 | 92.9 | 81.5 | 88.3 | 97.4 | 95.1 | 129.1 | 201.6 | 280.8 | 190.2 | 174.4 |
| 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)