

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: P884156

Luminaire Tested: **NAV-SB4D-830-U-T2-HSS**

Issue Date: 10/7/2024

Test Information

Test Method: LM-79-08
Report Number: P884156
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-4)
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-SB4D-830-U-T2-HSS
Description: NAVION ROADWAY AND AREA HIGH DENSITY LED LUMINAIRE
(4) 80 CRI, 3000K, 900mA LIGHTSQUARES WITH 26 LEDS EACH AND TYPE II
OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 26350 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B3 - U0 - G3

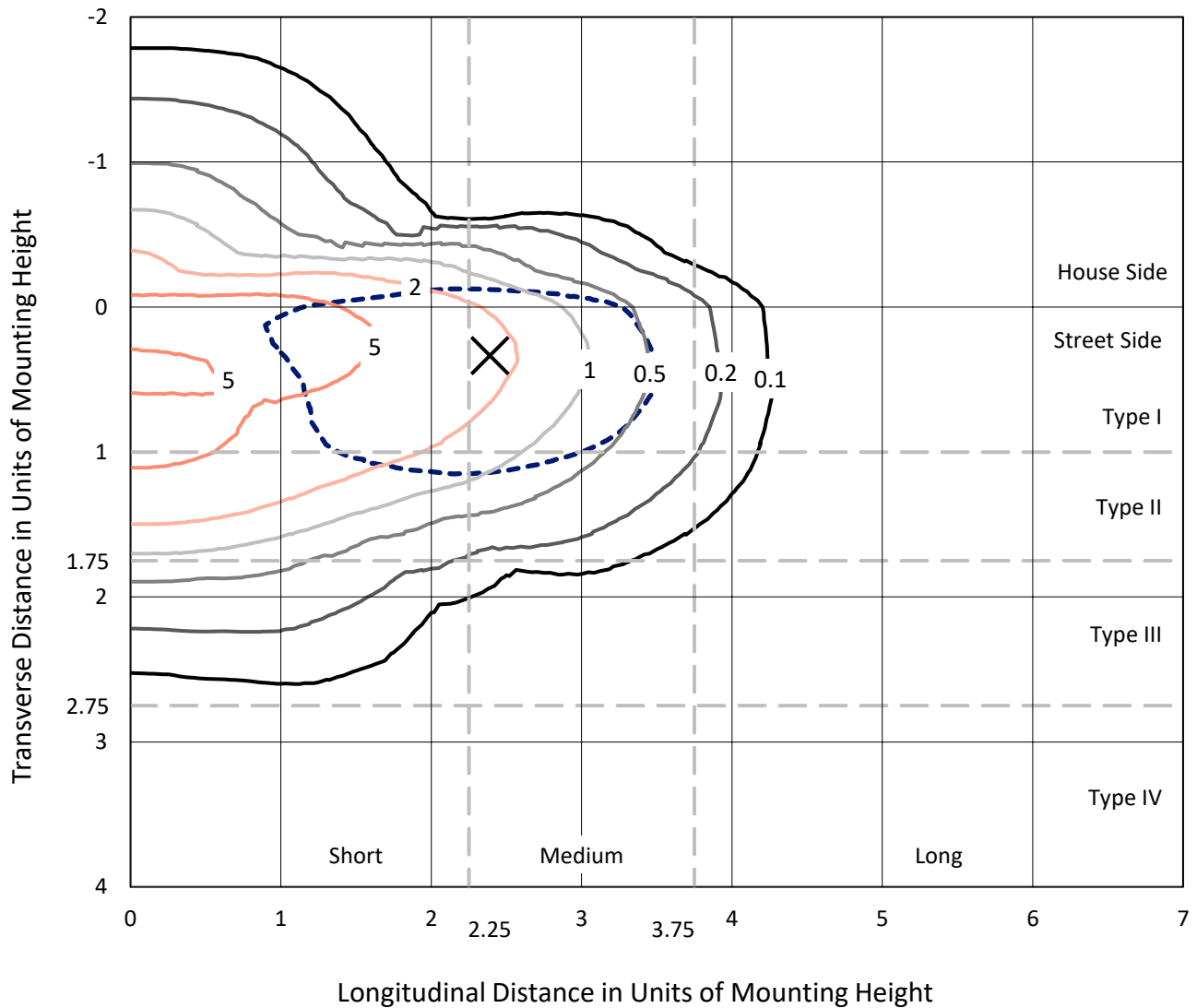
Input Watts (W): 293.6
Input Voltage (V): 120.0
Input Current (Ain): 2.469
Voltage Rise (V): NR
Power Factor: 0.999
Total Harmonic Distortion (THDi): 3.108
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

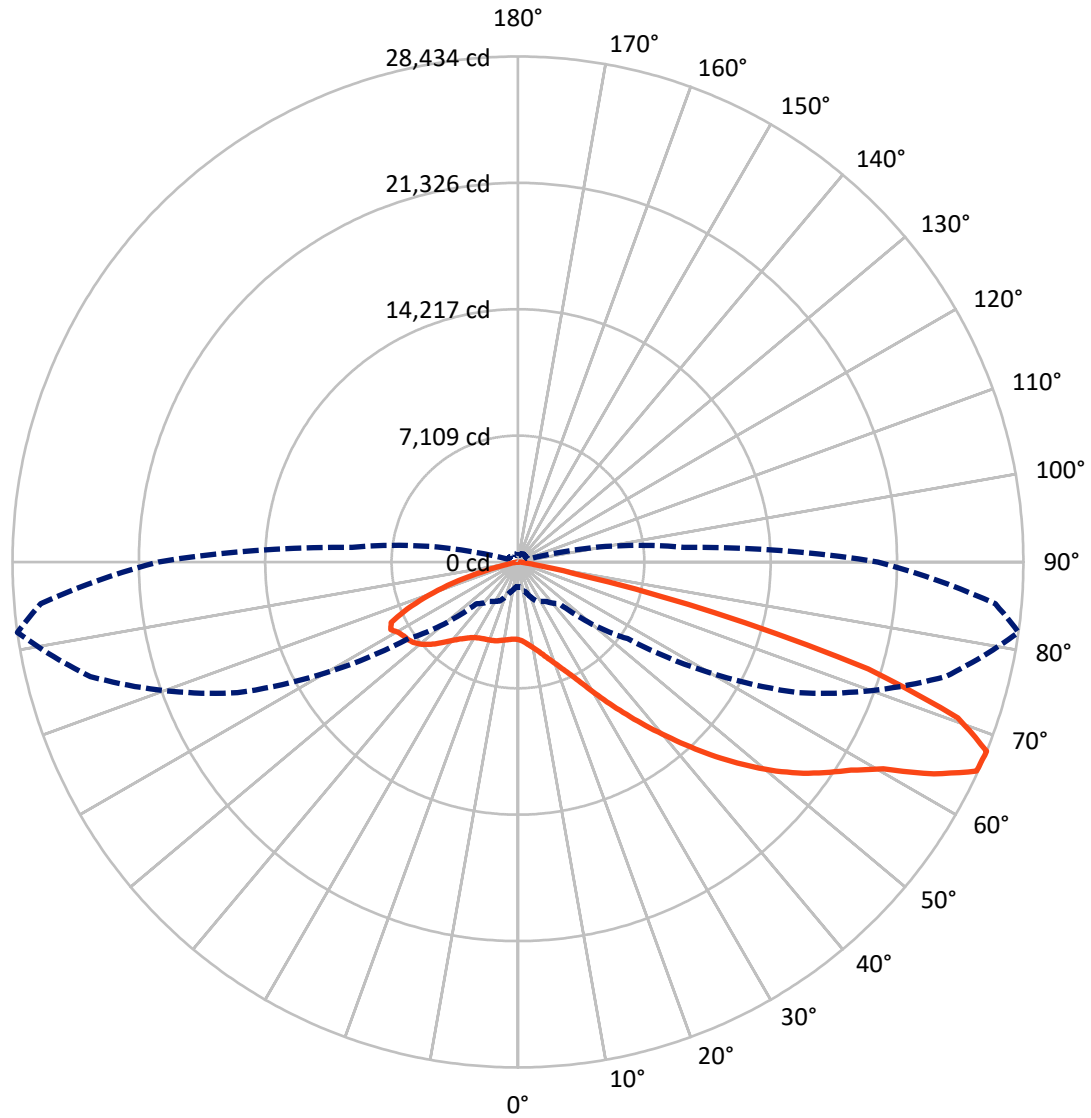
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.2 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 82-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4773.1 | 0.0 | 4773.1 |
| | % Fixture | 18.1 | 0.0 | 18.1 |
| Street Side | Lumens | 21576.9 | 0.0 | 21576.9 |
| | % Fixture | 81.9 | 0.0 | 81.9 |
| Total | Lumens | 26350.0 | 0.0 | 26350.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 388.9 | 1.5 |
| 10°-20° | 1010.6 | 3.8 |
| 20°-30° | 1618.7 | 6.1 |
| 30°-40° | 2862.4 | 10.9 |
| 40°-50° | 5015.2 | 19.0 |
| 50°-60° | 6688.8 | 25.4 |
| 60°-70° | 6227.0 | 23.6 |
| 70°-80° | 2389.9 | 9.1 |
| 80°-90° | 148.4 | 0.6 |
| 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° | 26350.0 | 100.0 |
| 0°-180° | 26350.0 | 100.0 |

Coefficient of Utilization



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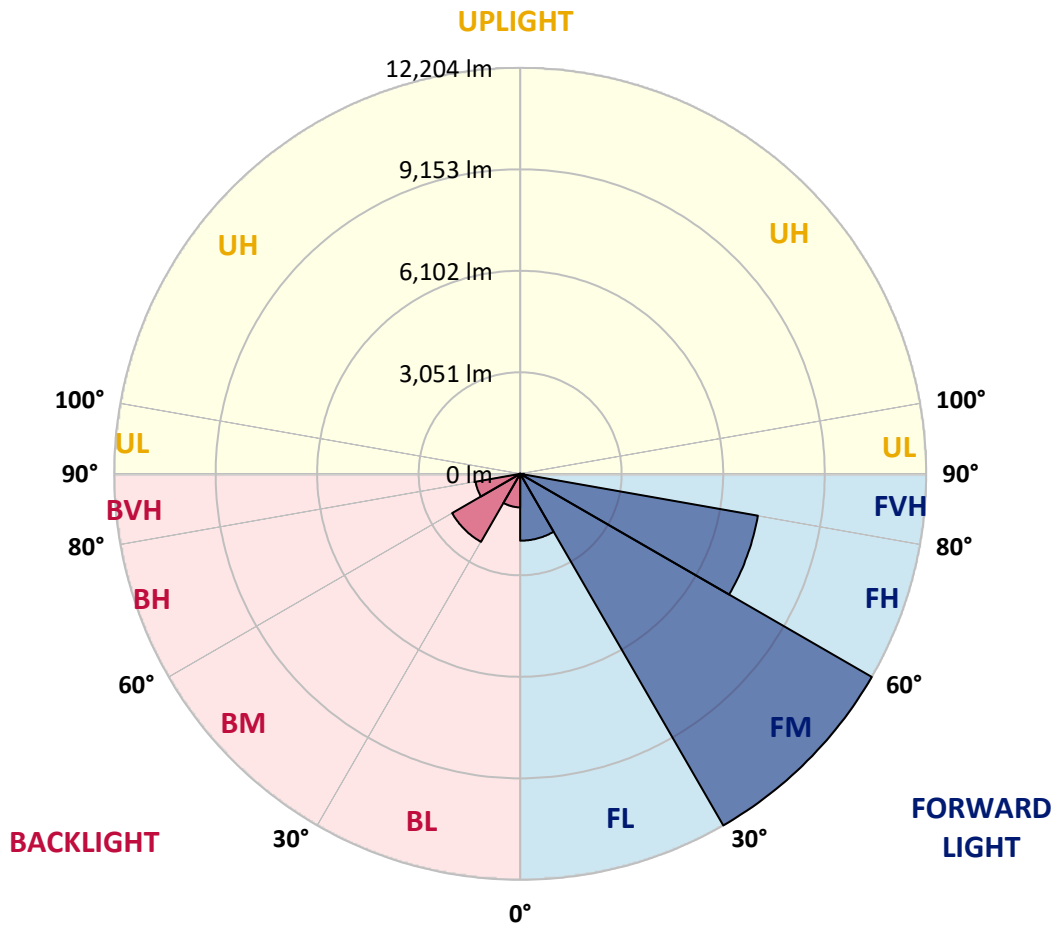
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2010.2 | 7.6 | | | |
| FM (30°-60°) | 12204.2 | 46.3 | | | |
| FH (60°-80°) | 7254.6 | 27.5 | | | G3/7500 |
| FVH (80°-90°) | 107.9 | 0.4 | | | G2/225 |
| BL (0°-30°) | 1008.1 | 3.8 | B3/2500 | | |
| BM (30°-60°) | 2362.2 | 9.0 | B2/2500 | | |
| BH (60°-80°) | 1362.3 | 5.2 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 40.5 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Medium



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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 82° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 |
| 2.5° | 4613.8 | 4640.4 | 4625.2 | 4617.6 | 4604.3 | 4585.4 | 4570.2 | 4522.8 | 4473.4 | 4441.2 | 4429.8 |
| 5° | 4706.8 | 4733.3 | 4731.4 | 4739.0 | 4748.5 | 4754.2 | 4750.4 | 4697.3 | 4627.1 | 4572.1 | 4539.8 |
| 7.5° | 4627.1 | 4657.5 | 4682.1 | 4720.1 | 4786.5 | 4856.7 | 4890.8 | 4879.4 | 4807.3 | 4731.4 | 4691.6 |
| 10° | 4401.3 | 4433.6 | 4492.4 | 4581.6 | 4722.0 | 4873.7 | 5000.8 | 5059.7 | 5014.1 | 4930.6 | 4875.6 |
| 12.5° | 3987.8 | 4020.0 | 4135.8 | 4329.3 | 4564.5 | 4828.2 | 5071.0 | 5228.5 | 5239.9 | 5156.4 | 5091.9 |
| 15° | 3523.0 | 3555.2 | 3678.5 | 3921.4 | 4279.9 | 4703.0 | 5109.0 | 5406.8 | 5507.4 | 5435.3 | 5357.5 |
| 17.5° | 3234.6 | 3263.1 | 3356.0 | 3551.4 | 3925.2 | 4452.6 | 5095.7 | 5596.5 | 5826.1 | 5769.2 | 5676.2 |
| 20° | 3147.3 | 3172.0 | 3215.6 | 3352.2 | 3663.4 | 4192.7 | 5008.4 | 5774.9 | 6169.5 | 6137.2 | 6032.9 |
| 22.5° | 3240.3 | 3263.1 | 3276.3 | 3337.1 | 3532.5 | 4021.9 | 4898.4 | 5957.0 | 6567.9 | 6571.7 | 6444.6 |
| 25° | 3454.7 | 3477.4 | 3462.3 | 3500.2 | 3585.6 | 3968.8 | 4856.7 | 6171.4 | 7068.7 | 7110.5 | 6966.3 |
| 27.5° | 3807.5 | 3809.4 | 3773.4 | 3771.5 | 3784.8 | 4048.5 | 4900.3 | 6400.9 | 7700.5 | 7778.2 | 7599.9 |
| 30° | 4515.2 | 4486.7 | 4348.2 | 4198.4 | 4130.1 | 4287.5 | 5021.7 | 6672.2 | 8446.0 | 8584.5 | 8360.7 |
| 32.5° | 5606.0 | 5564.3 | 5310.1 | 4951.5 | 4591.1 | 4672.6 | 5239.9 | 6981.4 | 9258.0 | 9508.4 | 9235.2 |
| 35° | 6789.8 | 6778.5 | 6512.9 | 5979.8 | 5349.9 | 5220.9 | 5594.6 | 7387.4 | 10144.0 | 10542.4 | 10218.0 |
| 37.5° | 7890.2 | 7884.5 | 7732.7 | 7104.8 | 6338.3 | 5985.5 | 6163.8 | 7918.6 | 11092.5 | 11669.3 | 11286.0 |
| 40° | 8895.7 | 8912.7 | 8761.0 | 8199.4 | 7427.3 | 6966.3 | 6937.8 | 8575.0 | 12147.3 | 12896.7 | 12441.4 |
| 42.5° | 9764.5 | 9783.5 | 9629.8 | 9214.4 | 8503.0 | 8051.4 | 7888.3 | 9379.4 | 13177.5 | 14215.2 | 13676.4 |
| 45° | 10354.6 | 10472.2 | 10449.4 | 10117.4 | 9607.1 | 9138.5 | 9030.4 | 10388.7 | 14351.8 | 15613.4 | 14981.7 |
| 47.5° | 10521.5 | 10629.6 | 10800.4 | 10845.9 | 10534.8 | 10073.8 | 10202.8 | 11604.8 | 15539.4 | 17013.5 | 16294.5 |
| 50° | 10109.8 | 10210.4 | 10565.1 | 11037.5 | 11253.8 | 11111.5 | 11343.0 | 12908.1 | 16755.5 | 18409.8 | 17582.6 |
| 52.5° | 9297.8 | 9400.3 | 9848.0 | 10595.5 | 11477.7 | 11925.4 | 12486.9 | 14192.5 | 17933.6 | 19732.1 | 18802.5 |
| 55° | 8123.5 | 8231.7 | 8806.5 | 9652.6 | 11050.8 | 12261.2 | 13441.2 | 15474.9 | 19013.1 | 20921.6 | 19902.8 |
| 57.5° | 6526.1 | 6605.8 | 7203.4 | 8387.2 | 9977.0 | 11927.3 | 14145.0 | 16875.0 | 20029.9 | 22090.2 | 20993.7 |
| 60° | 4253.4 | 4323.6 | 5017.9 | 6338.3 | 8197.5 | 10811.8 | 14285.4 | 18436.3 | 21380.7 | 23609.8 | 22464.0 |
| 62.5° | 2828.6 | 2876.1 | 3287.7 | 4257.2 | 5773.0 | 8669.9 | 13464.0 | 19682.8 | 23361.3 | 26254.4 | 24985.2 |
| 65° | 1940.8 | 1988.2 | 2399.9 | 3075.3 | 3729.8 | 5735.0 | 11102.0 | 19517.7 | 25156.0 | 28354.6 | 26853.9 |
| 67.5° | 1384.9 | 1424.7 | 1773.8 | 2411.3 | 2699.6 | 3331.4 | 7525.9 | 17408.1 | 24898.0 | 28434.2 | 26954.5 |
| 70° | 992.2 | 1015.0 | 1303.3 | 1878.2 | 2145.7 | 2001.5 | 4185.1 | 13314.1 | 21800.0 | 26256.3 | 24901.8 |
| 72.5° | 694.4 | 701.9 | 904.9 | 1430.4 | 1728.3 | 1460.8 | 1992.0 | 8876.7 | 16488.0 | 20608.6 | 19305.2 |
| 75° | 470.5 | 480.0 | 609.0 | 1049.1 | 1386.8 | 1115.5 | 1054.8 | 4759.9 | 9679.2 | 11407.5 | 10225.5 |
| 77.5° | 288.4 | 292.2 | 392.7 | 717.1 | 1037.7 | 849.9 | 679.2 | 2016.7 | 3744.9 | 3676.6 | 3134.1 |
| 80° | 163.2 | 163.2 | 250.4 | 445.8 | 707.6 | 548.3 | 476.2 | 857.5 | 1185.7 | 1041.5 | 918.2 |
| 82.5° | 91.1 | 93.0 | 182.1 | 277.0 | 468.6 | 324.4 | 261.8 | 396.5 | 512.2 | 453.4 | 394.6 |
| 85° | 37.9 | 41.7 | 111.9 | 130.9 | 223.9 | 161.3 | 106.2 | 166.9 | 189.7 | 168.8 | 123.3 |
| 87.5° | 3.8 | 5.7 | 34.1 | 24.7 | 26.6 | 32.3 | 15.2 | 32.3 | 26.6 | 26.6 | 19.0 |
| 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° | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 | 4365.3 |
| 2.5° | 4393.8 | 4365.3 | 4293.2 | 4209.7 | 4099.7 | 4046.6 | 3974.5 | 3925.2 | 3883.4 | 3887.2 | 3849.3 |
| 5° | 4479.1 | 4407.0 | 4245.8 | 4044.7 | 3794.3 | 3615.9 | 3426.2 | 3295.3 | 3189.1 | 3166.3 | 3115.1 |
| 7.5° | 4596.8 | 4482.9 | 4200.3 | 3837.9 | 3414.8 | 3094.2 | 2807.8 | 2623.7 | 2492.8 | 2451.1 | 2409.4 |
| 10° | 4748.5 | 4583.5 | 4141.4 | 3578.0 | 2969.0 | 2561.1 | 2253.8 | 2109.6 | 2020.4 | 1990.1 | 1967.3 |
| 12.5° | 4925.0 | 4699.2 | 4063.7 | 3261.2 | 2509.9 | 2117.2 | 1921.8 | 1849.7 | 1821.2 | 1811.8 | 1806.1 |
| 15° | 5146.9 | 4843.4 | 3946.0 | 2885.5 | 2121.0 | 1845.9 | 1762.4 | 1753.0 | 1756.7 | 1753.0 | 1751.1 |
| 17.5° | 5410.6 | 5000.8 | 3754.4 | 2498.5 | 1859.2 | 1707.4 | 1677.1 | 1684.7 | 1694.1 | 1692.2 | 1688.4 |
| 20° | 5699.0 | 5156.4 | 3509.7 | 2155.1 | 1680.9 | 1608.8 | 1591.7 | 1599.3 | 1606.9 | 1603.1 | 1601.2 |
| 22.5° | 6027.2 | 5323.4 | 3238.4 | 1887.6 | 1561.3 | 1517.7 | 1498.7 | 1500.6 | 1500.6 | 1493.0 | 1489.2 |
| 25° | 6419.9 | 5507.4 | 2953.8 | 1697.9 | 1470.3 | 1436.1 | 1413.4 | 1405.8 | 1394.4 | 1371.6 | 1367.8 |
| 27.5° | 6888.5 | 5702.8 | 2680.6 | 1565.1 | 1398.2 | 1365.9 | 1339.4 | 1320.4 | 1291.9 | 1254.0 | 1250.2 |
| 30° | 7415.9 | 5939.9 | 2449.2 | 1481.7 | 1341.3 | 1309.0 | 1278.7 | 1250.2 | 1208.5 | 1161.0 | 1157.3 |
| 32.5° | 8036.3 | 6194.1 | 2280.4 | 1426.6 | 1290.1 | 1255.9 | 1219.9 | 1185.7 | 1140.2 | 1092.7 | 1094.6 |
| 35° | 8776.1 | 6501.5 | 2181.7 | 1388.7 | 1250.2 | 1204.7 | 1164.8 | 1126.9 | 1092.7 | 1051.0 | 1047.2 |
| 37.5° | 9578.6 | 6827.8 | 2151.3 | 1369.7 | 1223.7 | 1153.5 | 1107.9 | 1081.4 | 1077.6 | 1052.9 | 1051.0 |
| 40° | 10457.0 | 7214.8 | 2174.1 | 1358.3 | 1195.2 | 1104.1 | 1054.8 | 1049.1 | 1058.6 | 1015.0 | 1016.9 |
| 42.5° | 11386.6 | 7673.9 | 2212.1 | 1345.1 | 1155.4 | 1054.8 | 1007.4 | 1007.4 | 999.8 | 939.1 | 939.1 |
| 45° | 12392.1 | 8203.2 | 2250.0 | 1312.8 | 1107.9 | 1005.5 | 969.4 | 956.2 | 923.9 | 865.1 | 863.2 |
| 47.5° | 13405.1 | 8742.0 | 2278.5 | 1254.0 | 1051.0 | 963.7 | 931.5 | 901.1 | 853.7 | 800.6 | 798.7 |
| 50° | 14367.0 | 9225.8 | 2248.1 | 1166.7 | 986.5 | 923.9 | 889.8 | 848.0 | 796.8 | 760.8 | 755.1 |
| 52.5° | 15226.4 | 9645.0 | 2119.1 | 1064.3 | 918.2 | 882.2 | 851.8 | 808.2 | 766.4 | 728.5 | 724.7 |
| 55° | 15973.9 | 9984.6 | 1891.4 | 967.5 | 857.5 | 846.1 | 815.8 | 760.8 | 703.8 | 671.6 | 667.8 |
| 57.5° | 16691.0 | 10242.6 | 1606.9 | 887.9 | 802.5 | 806.3 | 760.8 | 711.4 | 658.3 | 624.2 | 620.4 |
| 60° | 17645.2 | 10587.9 | 1318.5 | 813.9 | 743.7 | 755.1 | 705.7 | 669.7 | 603.3 | 559.7 | 554.0 |
| 62.5° | 19170.5 | 11124.8 | 1047.2 | 722.8 | 675.4 | 679.2 | 658.3 | 614.7 | 535.0 | 483.8 | 480.0 |
| 65° | 20380.9 | 10927.5 | 825.3 | 624.2 | 597.6 | 603.3 | 603.3 | 555.9 | 470.5 | 411.7 | 406.0 |
| 67.5° | 20244.3 | 9356.7 | 658.3 | 527.4 | 523.6 | 527.4 | 540.7 | 500.8 | 417.4 | 369.9 | 362.4 |
| 70° | 18648.8 | 7442.5 | 527.4 | 438.2 | 455.3 | 445.8 | 483.8 | 457.2 | 375.6 | 328.2 | 322.5 |
| 72.5° | 15216.9 | 5361.3 | 402.2 | 362.4 | 349.1 | 364.2 | 436.3 | 411.7 | 313.0 | 259.9 | 254.2 |
| 75° | 8891.9 | 2860.9 | 299.7 | 286.5 | 252.3 | 303.5 | 387.0 | 351.0 | 239.0 | 191.6 | 185.9 |
| 77.5° | 2895.0 | 997.9 | 220.1 | 210.6 | 187.8 | 244.7 | 330.1 | 296.0 | 195.4 | 151.8 | 146.1 |
| 80° | 775.9 | 301.6 | 149.9 | 138.5 | 121.4 | 182.1 | 261.8 | 235.2 | 140.4 | 98.7 | 96.8 |
| 82.5° | 311.1 | 127.1 | 87.3 | 77.8 | 66.4 | 125.2 | 206.8 | 189.7 | 104.3 | 62.6 | 62.6 |
| 85° | 100.5 | 41.7 | 32.3 | 24.7 | 30.4 | 77.8 | 123.3 | 129.0 | 74.0 | 32.3 | 24.7 |
| 87.5° | 13.3 | 5.7 | 5.7 | 7.6 | 5.7 | 13.3 | 37.9 | 36.0 | 20.9 | 3.8 | 0.0 |
| 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)