

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: P196240

Luminaire Tested: **NAV-AF-04-D-UNV-SLR**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196240
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-SLR
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22042.5 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

Input Watts (W): 225
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

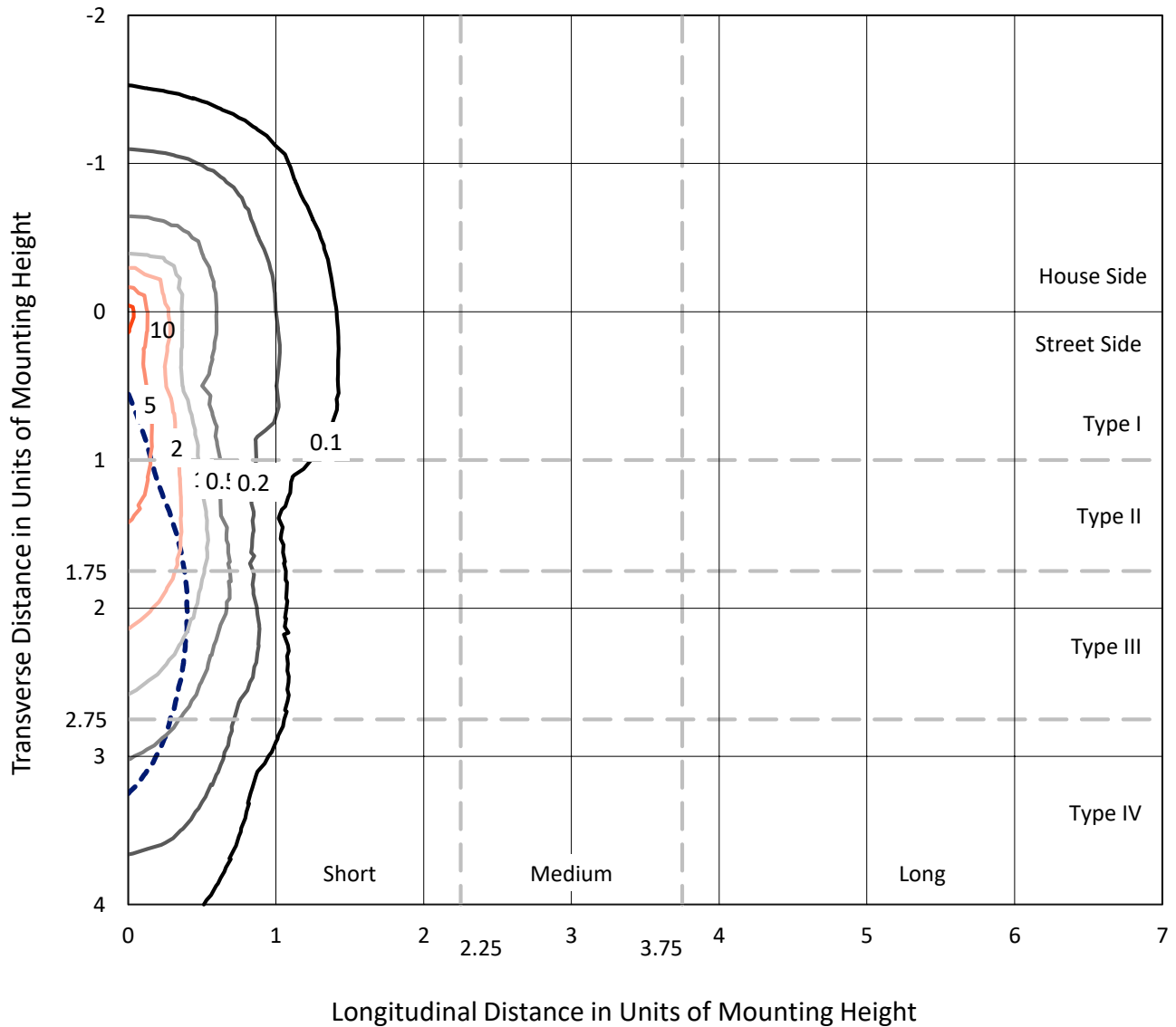


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Iso-Footcandle Lines of Horizontal Illumination

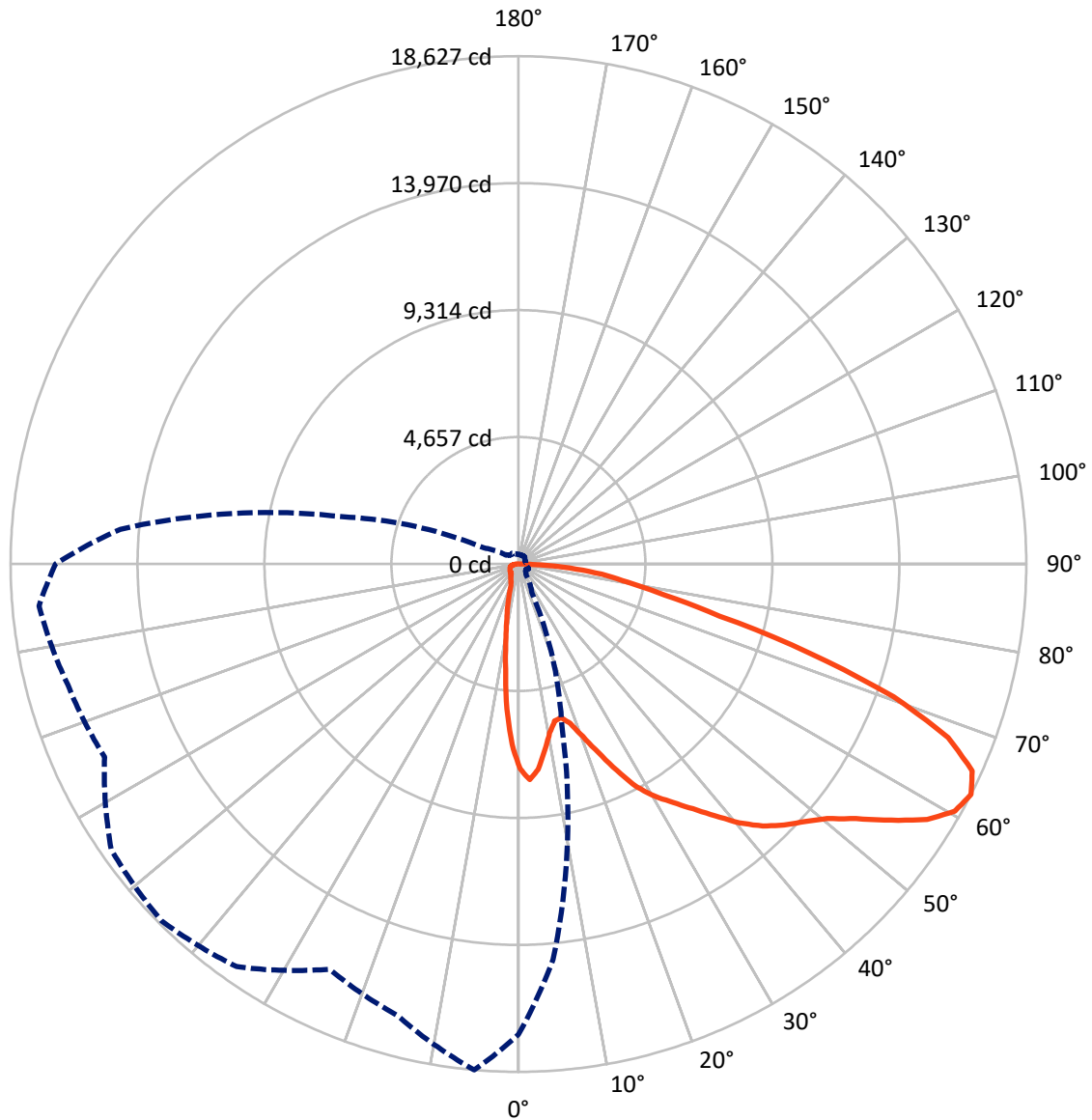
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 12 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3904.9 | 0.0 | 3904.9 |
| | % Fixture | 17.7 | 0.0 | 17.7 |
| Street Side | Lumens | 18137.7 | 0.0 | 18137.7 |
| | % Fixture | 82.3 | 0.0 | 82.3 |
| Total | Lumens | 22042.5 | 0.0 | 22042.5 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 546.5 | 2.5 |
| 10°-20° | 998.2 | 4.5 |
| 20°-30° | 1435.7 | 6.5 |
| 30°-40° | 2198.9 | 10.0 |
| 40°-50° | 3214.8 | 14.6 |
| 50°-60° | 4677.6 | 21.2 |
| 60°-70° | 5419.6 | 24.6 |
| 70°-80° | 2825.1 | 12.8 |
| 80°-90° | 726.2 | 3.3 |
| 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° | 22042.5 | 100.0 |
| 0°-180° | 22042.5 | 100.0 |



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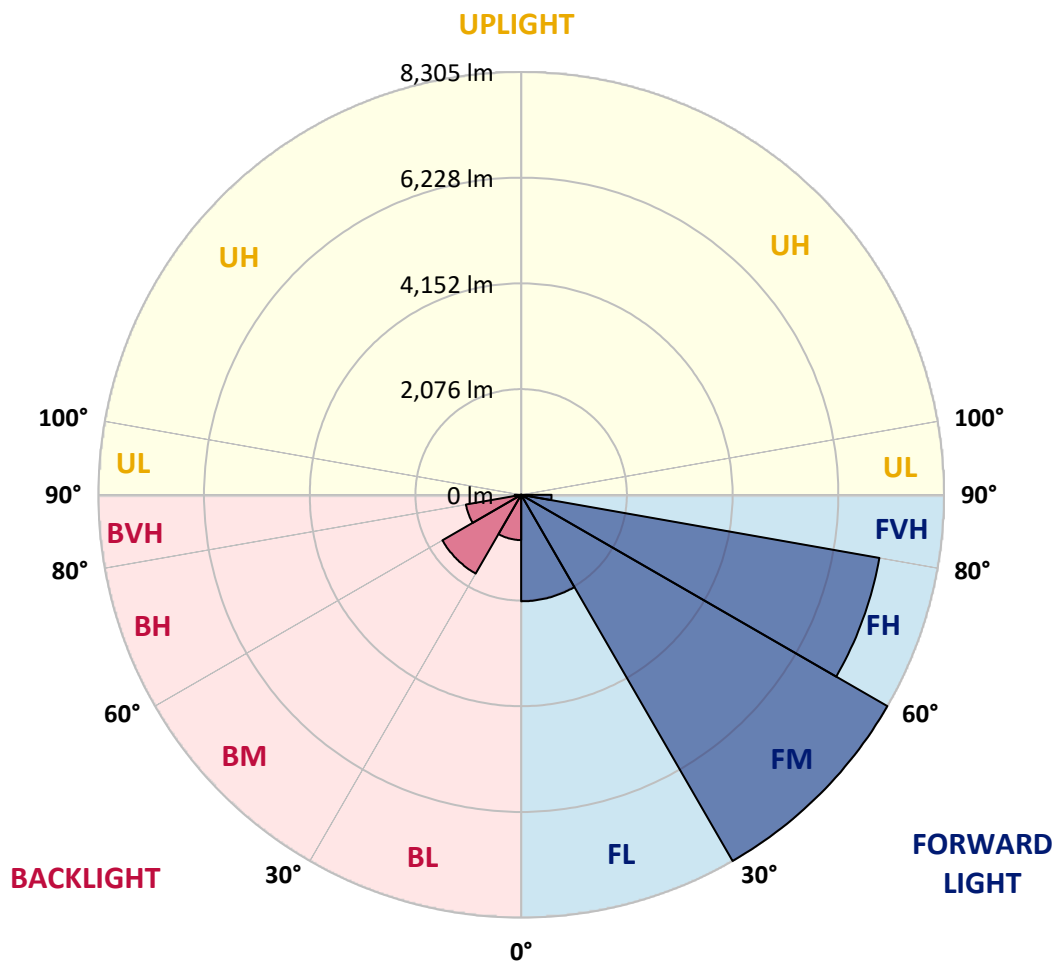
CATALOG NUMBER: NAV-AF-04-D-UNV-SLR

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2091.9 | 9.5 | | | |
| FM (30°-60°) | 8304.6 | 37.7 | | | |
| FH (60°-80°) | 7143.7 | 32.4 | | | G3/7500 |
| FVH (80°-90°) | 597.4 | 2.7 | | | G4/750 |
| BL (0°-30°) | 888.4 | 4.0 | B2/1000 | | |
| BM (30°-60°) | 1786.6 | 8.1 | B2/2500 | | |
| BH (60°-80°) | 1101.1 | 5.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 128.8 | 0.6 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 |
| 2.5° | 7757.6 | 7649.0 | 7398.1 | 7177.5 | 6902.7 | 6696.4 | 6445.5 | 6312.9 | 6215.4 | 6149.9 | 6097.1 |
| 5° | 7246.3 | 6984.1 | 6504.6 | 6084.3 | 5630.4 | 5302.9 | 4919.3 | 4709.9 | 4580.5 | 4510.1 | 4478.2 |
| 7.5° | 6487.1 | 6140.3 | 5520.1 | 4956.0 | 4388.7 | 3979.5 | 3688.7 | 3378.6 | 3214.0 | 3106.9 | 3071.7 |
| 10° | 5823.9 | 5432.3 | 4692.3 | 4057.8 | 3619.9 | 3329.1 | 3079.7 | 2795.2 | 2584.3 | 2400.5 | 2331.8 |
| 12.5° | 5438.7 | 4983.2 | 4139.4 | 3565.6 | 3198.1 | 2886.4 | 2622.6 | 2315.8 | 2093.7 | 1901.9 | 1828.3 |
| 15° | 5357.2 | 4849.0 | 3907.6 | 3252.4 | 2801.7 | 2426.0 | 2109.6 | 1775.6 | 1558.3 | 1400.0 | 1348.9 |
| 17.5° | 5603.3 | 4976.8 | 3810.1 | 2966.3 | 2422.9 | 1964.2 | 1574.2 | 1216.2 | 1035.6 | 949.3 | 928.5 |
| 20° | 6109.9 | 5258.1 | 3763.7 | 2709.0 | 2055.3 | 1511.9 | 1088.4 | 826.2 | 736.7 | 711.2 | 709.6 |
| 22.5° | 6776.3 | 5715.1 | 3814.9 | 2497.9 | 1710.1 | 1115.5 | 797.5 | 679.2 | 642.5 | 628.1 | 628.1 |
| 25° | 7529.1 | 6333.7 | 3950.7 | 2336.5 | 1406.5 | 867.9 | 687.2 | 623.3 | 592.9 | 578.6 | 580.1 |
| 27.5° | 8449.7 | 7086.4 | 4136.1 | 2187.9 | 1189.1 | 760.8 | 642.5 | 588.1 | 557.8 | 543.4 | 545.0 |
| 30° | 9143.3 | 7733.7 | 4296.0 | 2052.0 | 1077.2 | 717.6 | 618.5 | 567.3 | 533.8 | 513.0 | 511.5 |
| 32.5° | 9792.2 | 8304.2 | 4425.4 | 1954.6 | 1013.2 | 640.9 | 559.3 | 521.0 | 492.2 | 468.3 | 463.5 |
| 35° | 10509.8 | 8841.3 | 4486.2 | 1951.4 | 971.7 | 578.6 | 511.5 | 465.0 | 436.3 | 409.2 | 404.4 |
| 37.5° | 11323.2 | 9498.1 | 4537.3 | 1970.6 | 949.3 | 538.6 | 489.1 | 444.3 | 420.3 | 393.1 | 386.8 |
| 40° | 12170.4 | 10140.6 | 4577.3 | 1986.6 | 946.1 | 511.5 | 471.5 | 431.5 | 407.5 | 378.8 | 372.4 |
| 42.5° | 12897.5 | 10709.6 | 4631.6 | 1980.1 | 923.7 | 506.7 | 460.3 | 420.3 | 397.9 | 369.2 | 361.2 |
| 45° | 13479.2 | 11161.8 | 4716.3 | 1978.6 | 890.2 | 517.8 | 457.1 | 417.2 | 389.9 | 359.6 | 353.2 |
| 47.5° | 14021.0 | 11671.7 | 4895.3 | 1972.1 | 853.4 | 514.6 | 474.6 | 413.9 | 386.8 | 356.4 | 351.6 |
| 50° | 14641.1 | 12357.2 | 5200.6 | 1924.3 | 802.3 | 492.2 | 506.7 | 410.7 | 378.8 | 351.6 | 346.8 |
| 52.5° | 15504.1 | 13361.0 | 5652.8 | 1837.9 | 732.0 | 468.3 | 511.5 | 409.2 | 366.0 | 342.0 | 335.6 |
| 55° | 16519.0 | 14436.6 | 6140.3 | 1713.2 | 639.2 | 426.7 | 485.9 | 402.7 | 353.2 | 327.7 | 318.0 |
| 57.5° | 17303.7 | 15230.8 | 6480.7 | 1534.3 | 548.2 | 402.7 | 433.1 | 388.3 | 337.3 | 311.7 | 303.6 |
| 60° | 17524.3 | 15266.0 | 6541.5 | 1320.1 | 501.9 | 386.8 | 372.4 | 423.5 | 324.5 | 297.3 | 289.3 |
| 62.5° | 17260.6 | 14567.6 | 6145.1 | 1169.8 | 485.9 | 370.8 | 338.8 | 404.4 | 311.7 | 284.5 | 276.5 |
| 65° | 16479.0 | 13388.2 | 5258.1 | 1147.5 | 501.9 | 356.4 | 321.2 | 322.8 | 298.9 | 271.7 | 263.7 |
| 67.5° | 14653.9 | 11652.5 | 4142.5 | 1161.9 | 521.0 | 342.0 | 308.4 | 294.1 | 284.5 | 260.5 | 250.9 |
| 70° | 11917.8 | 9381.5 | 3263.5 | 1187.4 | 538.6 | 322.8 | 292.5 | 274.9 | 266.9 | 241.3 | 236.5 |
| 72.5° | 9180.1 | 7508.4 | 2574.7 | 1169.8 | 556.2 | 303.6 | 270.1 | 255.7 | 246.1 | 222.2 | 217.4 |
| 75° | 6519.1 | 5966.1 | 1892.3 | 1003.7 | 509.8 | 276.5 | 244.5 | 231.7 | 223.7 | 198.1 | 196.6 |
| 77.5° | 4698.7 | 4468.6 | 1316.9 | 754.3 | 402.7 | 243.0 | 215.7 | 204.6 | 199.8 | 171.0 | 171.0 |
| 80° | 3747.8 | 3401.0 | 787.9 | 492.2 | 294.1 | 201.4 | 180.6 | 175.8 | 171.0 | 142.2 | 143.8 |
| 82.5° | 2692.9 | 2358.9 | 503.4 | 306.9 | 215.7 | 153.4 | 140.7 | 139.0 | 131.0 | 105.5 | 105.5 |
| 85° | 1380.9 | 1205.0 | 322.8 | 206.1 | 151.8 | 99.1 | 92.7 | 89.5 | 84.7 | 65.6 | 65.6 |
| 87.5° | 268.5 | 369.2 | 179.0 | 100.7 | 73.6 | 35.2 | 35.2 | 30.4 | 35.2 | 23.9 | 25.6 |
| 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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CATALOG NUMBER: NAV-AF-04-D-UNV-SLR

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° | 185° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 |
| 2.5° | 6197.9 | 6165.8 | 6143.5 | 6132.3 | 6293.7 | 6360.8 | 6437.5 | 6547.8 | 6623.0 | 6591.0 | 6693.3 |
| 5° | 4628.3 | 4650.7 | 4701.9 | 4781.8 | 5007.1 | 5114.2 | 5183.0 | 5274.0 | 5339.6 | 5274.0 | 5382.8 |
| 7.5° | 3164.4 | 3198.1 | 3306.7 | 3471.3 | 3743.0 | 3862.9 | 3886.8 | 3888.4 | 3874.0 | 3766.9 | 3840.5 |
| 10° | 2330.2 | 2263.1 | 2287.0 | 2405.3 | 2648.2 | 2755.3 | 2766.5 | 2737.7 | 2732.9 | 2689.7 | 2772.9 |
| 12.5° | 1805.9 | 1713.2 | 1658.9 | 1678.2 | 1860.3 | 1948.2 | 1962.6 | 1978.6 | 2044.1 | 2064.8 | 2167.1 |
| 15° | 1347.3 | 1299.4 | 1259.4 | 1241.8 | 1361.6 | 1430.4 | 1438.4 | 1476.7 | 1545.5 | 1564.6 | 1652.6 |
| 17.5° | 947.8 | 960.6 | 981.3 | 989.3 | 1075.6 | 1120.3 | 1107.5 | 1107.5 | 1118.7 | 1114.0 | 1163.5 |
| 20° | 723.9 | 749.5 | 789.5 | 827.9 | 906.1 | 931.7 | 899.8 | 859.8 | 834.2 | 821.4 | 832.7 |
| 22.5° | 639.2 | 656.8 | 682.4 | 732.0 | 797.5 | 810.3 | 768.7 | 736.7 | 712.8 | 700.0 | 701.6 |
| 25° | 592.9 | 610.5 | 631.3 | 671.3 | 727.2 | 733.6 | 695.2 | 674.4 | 655.3 | 642.5 | 639.2 |
| 27.5° | 553.0 | 564.2 | 576.9 | 602.5 | 660.0 | 663.3 | 637.7 | 624.9 | 612.1 | 602.5 | 599.3 |
| 30° | 516.2 | 521.0 | 525.8 | 551.4 | 594.5 | 599.3 | 586.6 | 580.1 | 575.3 | 569.0 | 569.0 |
| 32.5° | 468.3 | 474.6 | 482.6 | 505.0 | 546.6 | 553.0 | 545.0 | 540.2 | 532.2 | 529.0 | 524.2 |
| 35° | 410.7 | 426.7 | 444.3 | 471.5 | 516.2 | 519.5 | 509.8 | 495.4 | 476.3 | 471.5 | 468.3 |
| 37.5° | 386.8 | 389.9 | 412.4 | 444.3 | 490.6 | 493.9 | 481.1 | 457.1 | 442.7 | 444.3 | 447.5 |
| 40° | 370.8 | 375.6 | 388.3 | 420.3 | 466.7 | 471.5 | 460.3 | 442.7 | 428.3 | 429.9 | 434.8 |
| 42.5° | 358.0 | 364.4 | 372.4 | 393.1 | 439.5 | 449.1 | 445.9 | 429.9 | 415.5 | 418.7 | 425.1 |
| 45° | 351.6 | 356.4 | 356.4 | 370.8 | 415.5 | 429.9 | 431.5 | 418.7 | 407.5 | 410.7 | 418.7 |
| 47.5° | 348.4 | 348.4 | 343.6 | 354.8 | 399.6 | 413.9 | 417.2 | 410.7 | 404.4 | 407.5 | 415.5 |
| 50° | 343.6 | 337.3 | 332.5 | 342.0 | 386.8 | 399.6 | 402.7 | 397.9 | 401.1 | 407.5 | 412.4 |
| 52.5° | 329.2 | 322.8 | 322.8 | 329.2 | 374.0 | 386.8 | 388.3 | 385.1 | 391.6 | 399.6 | 407.5 |
| 55° | 311.7 | 311.7 | 313.2 | 319.7 | 367.5 | 377.2 | 375.6 | 372.4 | 378.8 | 388.3 | 396.4 |
| 57.5° | 295.6 | 294.1 | 302.1 | 310.1 | 359.6 | 366.0 | 362.8 | 362.8 | 367.5 | 375.6 | 383.6 |
| 60° | 286.1 | 278.0 | 284.5 | 297.3 | 351.6 | 358.0 | 353.2 | 351.6 | 359.6 | 366.0 | 372.4 |
| 62.5° | 276.5 | 268.5 | 273.3 | 286.1 | 340.4 | 345.2 | 342.0 | 342.0 | 350.1 | 354.8 | 361.2 |
| 65° | 262.1 | 258.9 | 262.1 | 274.9 | 330.8 | 332.5 | 332.5 | 334.0 | 340.4 | 343.6 | 350.1 |
| 67.5° | 249.3 | 249.3 | 250.9 | 263.7 | 322.8 | 319.7 | 319.7 | 327.7 | 329.2 | 332.5 | 338.8 |
| 70° | 233.3 | 236.5 | 236.5 | 252.6 | 316.4 | 305.2 | 306.9 | 313.2 | 316.4 | 319.7 | 321.2 |
| 72.5° | 215.7 | 217.4 | 220.5 | 241.3 | 306.9 | 290.8 | 292.5 | 297.3 | 298.9 | 303.6 | 305.2 |
| 75° | 196.6 | 198.1 | 203.0 | 230.2 | 300.4 | 276.5 | 273.3 | 276.5 | 279.7 | 282.8 | 281.3 |
| 77.5° | 174.2 | 177.4 | 182.2 | 223.7 | 279.7 | 273.3 | 249.3 | 252.6 | 255.7 | 255.7 | 254.1 |
| 80° | 147.0 | 151.8 | 159.8 | 214.2 | 236.5 | 263.7 | 222.2 | 223.7 | 225.4 | 225.4 | 222.2 |
| 82.5° | 110.3 | 119.9 | 131.0 | 177.4 | 185.4 | 225.4 | 191.8 | 195.0 | 190.2 | 187.0 | 185.4 |
| 85° | 71.9 | 79.9 | 95.9 | 123.1 | 135.8 | 177.4 | 158.3 | 159.8 | 150.3 | 148.6 | 148.6 |
| 87.5° | 28.7 | 30.4 | 43.2 | 62.3 | 81.5 | 110.3 | 113.4 | 116.7 | 108.6 | 108.6 | 111.9 |
| 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):

| | 195° | 205° | 215° | 225° | 235° | 245° | 255° | 265° | 270° | 275° | 285° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 | 7514.7 |
| 2.5° | 6848.2 | 7008.1 | 7191.9 | 7378.9 | 7532.3 | 7730.5 | 7922.2 | 8126.8 | 8230.8 | 8291.4 | 8462.5 |
| 5° | 5552.2 | 5771.1 | 6031.6 | 6324.1 | 6567.0 | 6982.6 | 7430.0 | 7928.7 | 8168.4 | 8405.0 | 8852.4 |
| 7.5° | 3971.5 | 4185.7 | 4489.3 | 4868.1 | 5213.4 | 5761.6 | 6351.3 | 7025.7 | 7358.1 | 7741.7 | 8475.2 |
| 10° | 2948.7 | 3175.6 | 3450.5 | 3771.7 | 4112.2 | 4682.8 | 5344.4 | 6101.9 | 6467.9 | 6901.0 | 7735.2 |
| 12.5° | 2390.9 | 2656.2 | 2940.7 | 3228.3 | 3520.8 | 3904.4 | 4598.1 | 5440.3 | 5833.5 | 6269.8 | 7105.6 |
| 15° | 1865.1 | 2149.6 | 2456.4 | 2769.6 | 3060.6 | 3488.9 | 4196.9 | 5192.6 | 5641.7 | 6063.5 | 6747.6 |
| 17.5° | 1320.1 | 1588.6 | 1933.8 | 2314.2 | 2736.1 | 3242.8 | 4110.5 | 5301.2 | 5846.3 | 6287.4 | 6746.1 |
| 20° | 899.8 | 1085.1 | 1430.4 | 1881.1 | 2402.1 | 3044.6 | 4142.5 | 5683.2 | 6364.1 | 6848.2 | 7022.5 |
| 22.5° | 719.2 | 807.1 | 1040.4 | 1499.1 | 2114.4 | 2900.8 | 4273.6 | 6207.4 | 7107.2 | 7696.9 | 7526.0 |
| 25° | 653.7 | 703.2 | 824.7 | 1184.3 | 1858.7 | 2804.8 | 4529.3 | 6899.4 | 7939.8 | 8537.5 | 8131.6 |
| 27.5° | 613.7 | 656.8 | 735.2 | 973.3 | 1638.2 | 2742.5 | 4853.7 | 7714.5 | 8878.0 | 9368.7 | 8762.9 |
| 30° | 588.1 | 631.3 | 703.2 | 874.2 | 1471.9 | 2649.9 | 5138.2 | 8459.3 | 9627.6 | 9945.6 | 9103.3 |
| 32.5° | 538.6 | 572.1 | 631.3 | 783.1 | 1347.3 | 2541.1 | 5384.3 | 9125.7 | 10335.6 | 10441.1 | 9512.5 |
| 35° | 487.4 | 522.6 | 581.8 | 709.6 | 1273.8 | 2456.4 | 5513.8 | 9717.1 | 11037.1 | 10936.5 | 9918.4 |
| 37.5° | 468.3 | 497.1 | 551.4 | 656.8 | 1233.8 | 2400.5 | 5563.3 | 10298.8 | 11789.9 | 11484.7 | 10201.3 |
| 40° | 455.5 | 481.1 | 529.0 | 621.7 | 1222.6 | 2347.8 | 5552.2 | 10851.8 | 12520.3 | 12052.0 | 10423.5 |
| 42.5° | 445.9 | 468.3 | 513.0 | 597.7 | 1192.2 | 2298.3 | 5515.3 | 11329.7 | 13105.2 | 12541.1 | 10636.0 |
| 45° | 437.9 | 461.9 | 506.7 | 610.5 | 1136.3 | 2243.8 | 5493.0 | 11766.0 | 13554.3 | 12953.4 | 10920.5 |
| 47.5° | 434.8 | 461.9 | 508.2 | 607.3 | 1075.6 | 2183.2 | 5572.9 | 12250.2 | 13945.9 | 13300.2 | 11299.3 |
| 50° | 429.9 | 460.3 | 543.4 | 578.6 | 992.5 | 2108.0 | 5843.0 | 12827.2 | 14356.6 | 13690.2 | 11789.9 |
| 52.5° | 422.0 | 458.7 | 580.1 | 556.2 | 885.4 | 2004.2 | 6280.9 | 13642.3 | 15066.2 | 14449.4 | 12515.5 |
| 55° | 412.4 | 461.9 | 554.5 | 521.0 | 771.9 | 1869.9 | 6718.8 | 14759.3 | 16216.9 | 15673.6 | 13557.6 |
| 57.5° | 401.1 | 457.1 | 524.2 | 489.1 | 677.6 | 1700.5 | 7051.3 | 15675.2 | 17166.2 | 16936.2 | 14837.7 |
| 60° | 393.1 | 468.3 | 471.5 | 469.8 | 616.9 | 1539.0 | 7083.2 | 15616.1 | 17439.6 | 17756.0 | 16090.7 |
| 62.5° | 383.6 | 477.8 | 429.9 | 455.5 | 586.6 | 1388.9 | 6688.5 | 14649.1 | 16977.7 | 17650.5 | 17111.9 |
| 65° | 370.8 | 417.2 | 407.5 | 442.7 | 586.6 | 1309.0 | 5769.5 | 13039.8 | 15700.8 | 16653.2 | 17666.6 |
| 67.5° | 358.0 | 378.8 | 391.6 | 425.1 | 599.3 | 1233.8 | 4636.4 | 10998.9 | 13687.0 | 15043.8 | 17043.2 |
| 70° | 340.4 | 358.0 | 374.0 | 409.2 | 592.9 | 1181.1 | 3648.7 | 8815.7 | 11264.1 | 12817.6 | 15318.8 |
| 72.5° | 324.5 | 337.3 | 353.2 | 385.1 | 592.9 | 1157.1 | 2931.1 | 6915.5 | 8599.9 | 9908.8 | 12689.7 |
| 75° | 300.4 | 311.7 | 326.0 | 361.2 | 581.8 | 1058.0 | 2200.7 | 5540.9 | 6292.1 | 7112.0 | 10012.7 |
| 77.5° | 276.5 | 284.5 | 295.6 | 330.8 | 524.2 | 883.8 | 1556.6 | 4291.2 | 4662.0 | 5115.9 | 7805.6 |
| 80° | 246.1 | 252.6 | 260.5 | 295.6 | 434.8 | 685.6 | 1013.2 | 3356.2 | 3485.7 | 3704.6 | 5135.0 |
| 82.5° | 210.9 | 220.5 | 222.2 | 254.1 | 350.1 | 497.1 | 602.5 | 2299.8 | 2298.3 | 2619.5 | 3623.1 |
| 85° | 172.6 | 177.4 | 180.6 | 199.8 | 258.9 | 330.8 | 396.4 | 1256.2 | 1120.3 | 1569.4 | 3146.9 |
| 87.5° | 129.4 | 124.7 | 129.4 | 134.2 | 171.0 | 195.0 | 212.6 | 231.7 | 139.0 | 284.5 | 1830.0 |
| 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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| 2.5° | 8553.6 | 8647.8 | 8592.0 | 8524.8 | 8357.0 | 8110.9 | 7922.2 | 7757.6 |
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| 32.5° | 7800.8 | 6559.1 | 6475.9 | 7022.5 | 8232.3 | 9592.4 | 10426.6 | 9792.2 |
| 35° | 8178.0 | 6896.2 | 6776.3 | 7377.3 | 8502.5 | 9926.4 | 11026.0 | 10509.8 |
| 37.5° | 8563.1 | 7399.7 | 7332.5 | 7888.7 | 8884.4 | 10289.2 | 11711.7 | 11323.2 |
| 40° | 9057.0 | 8115.7 | 8083.7 | 8631.9 | 9394.3 | 10685.5 | 12480.3 | 12170.4 |
| 42.5° | 9589.2 | 8876.5 | 8849.2 | 9485.3 | 10027.1 | 11083.6 | 13138.8 | 12897.5 |
| 45° | 10131.0 | 9798.5 | 9805.0 | 10396.2 | 10693.5 | 11459.1 | 13656.6 | 13479.2 |
| 47.5° | 10770.2 | 10807.1 | 11035.6 | 11340.8 | 11342.5 | 11877.8 | 14115.3 | 14021.0 |
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| 55° | 13592.7 | 14898.5 | 15360.3 | 15101.4 | 13402.5 | 14009.8 | 16589.3 | 16519.0 |
| 57.5° | 14724.3 | 16311.3 | 16683.6 | 16346.4 | 14359.9 | 15050.3 | 17676.1 | 17303.7 |
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| 62.5° | 16747.5 | 18238.7 | 18510.4 | 18024.5 | 16396.0 | 17143.9 | 18627.0 | 17260.6 |
| 65° | 16789.1 | 17765.6 | 17837.5 | 17664.9 | 16805.0 | 18061.3 | 18291.4 | 16479.0 |
| 67.5° | 15648.0 | 15705.6 | 15799.8 | 15985.2 | 15930.8 | 17652.1 | 16996.8 | 14653.9 |
| 70° | 13207.5 | 12440.4 | 12750.5 | 12929.5 | 13332.2 | 15700.8 | 14604.4 | 11917.8 |
| 72.5° | 10099.1 | 8978.6 | 9330.3 | 9269.6 | 10107.1 | 12878.3 | 11173.0 | 9180.1 |
| 75° | 7268.6 | 6122.7 | 6149.9 | 6153.0 | 7262.2 | 10279.6 | 7618.6 | 6519.1 |
| 77.5° | 4940.0 | 4332.7 | 4422.2 | 4366.3 | 4860.1 | 8053.4 | 5485.1 | 4698.7 |
| 80° | 3378.6 | 3362.6 | 3381.8 | 3250.7 | 3241.1 | 5205.4 | 4061.0 | 3747.8 |
| 82.5° | 2506.0 | 2315.8 | 2288.6 | 2149.6 | 2483.6 | 3979.5 | 3083.0 | 2692.9 |
| 85° | 1977.0 | 1281.8 | 1114.0 | 1344.1 | 2151.2 | 3661.4 | 1879.5 | 1380.9 |
| 87.5° | 837.5 | 503.4 | 305.2 | 604.2 | 1195.4 | 2683.4 | 521.0 | 268.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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