

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: P196623

Luminaire Tested: **NAV-AF-03-D-UNV-SL3-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196623
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-SL3-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17495.7 lumens
Efficiency: N/A
Efficacy: 105.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G3

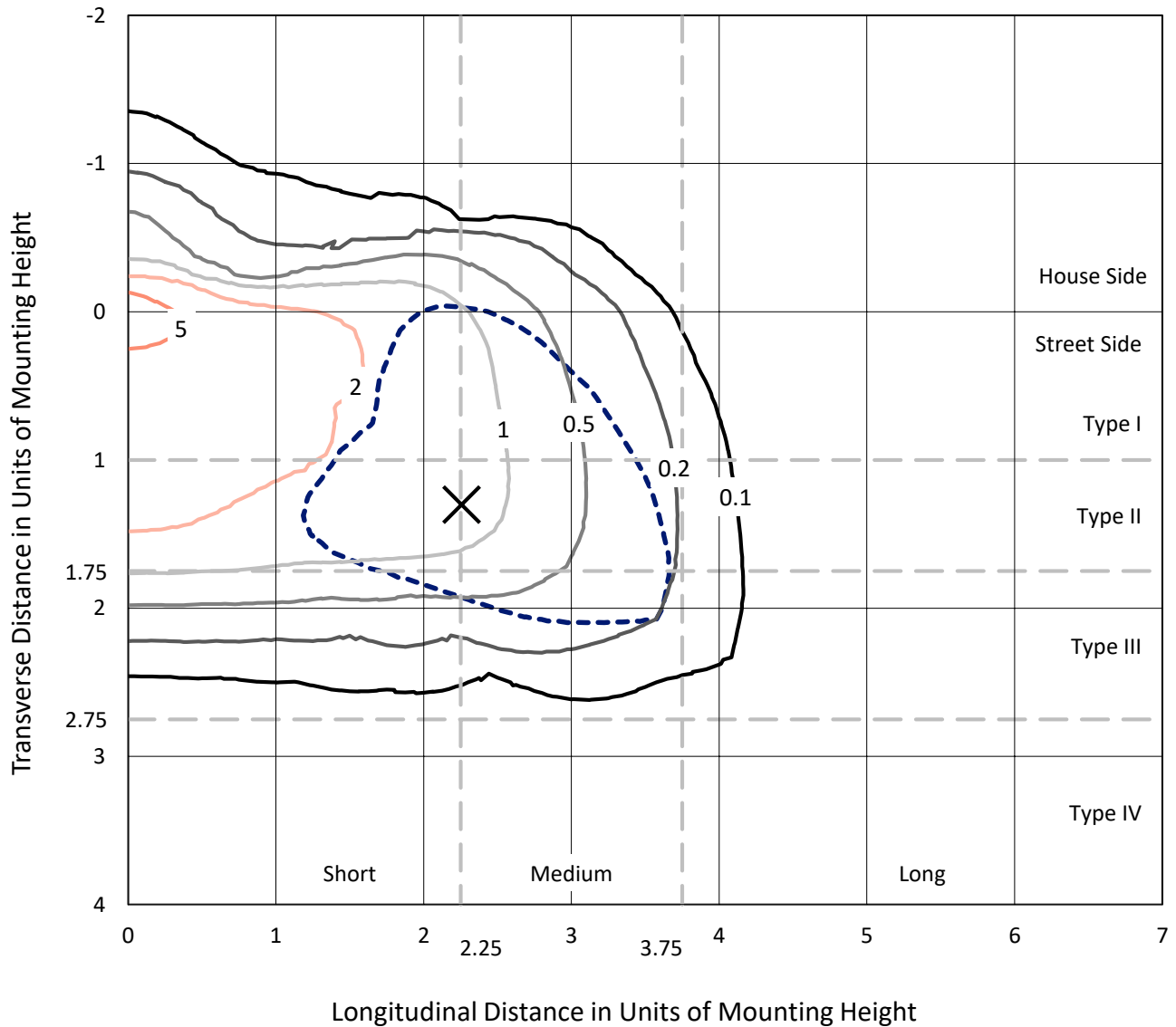
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

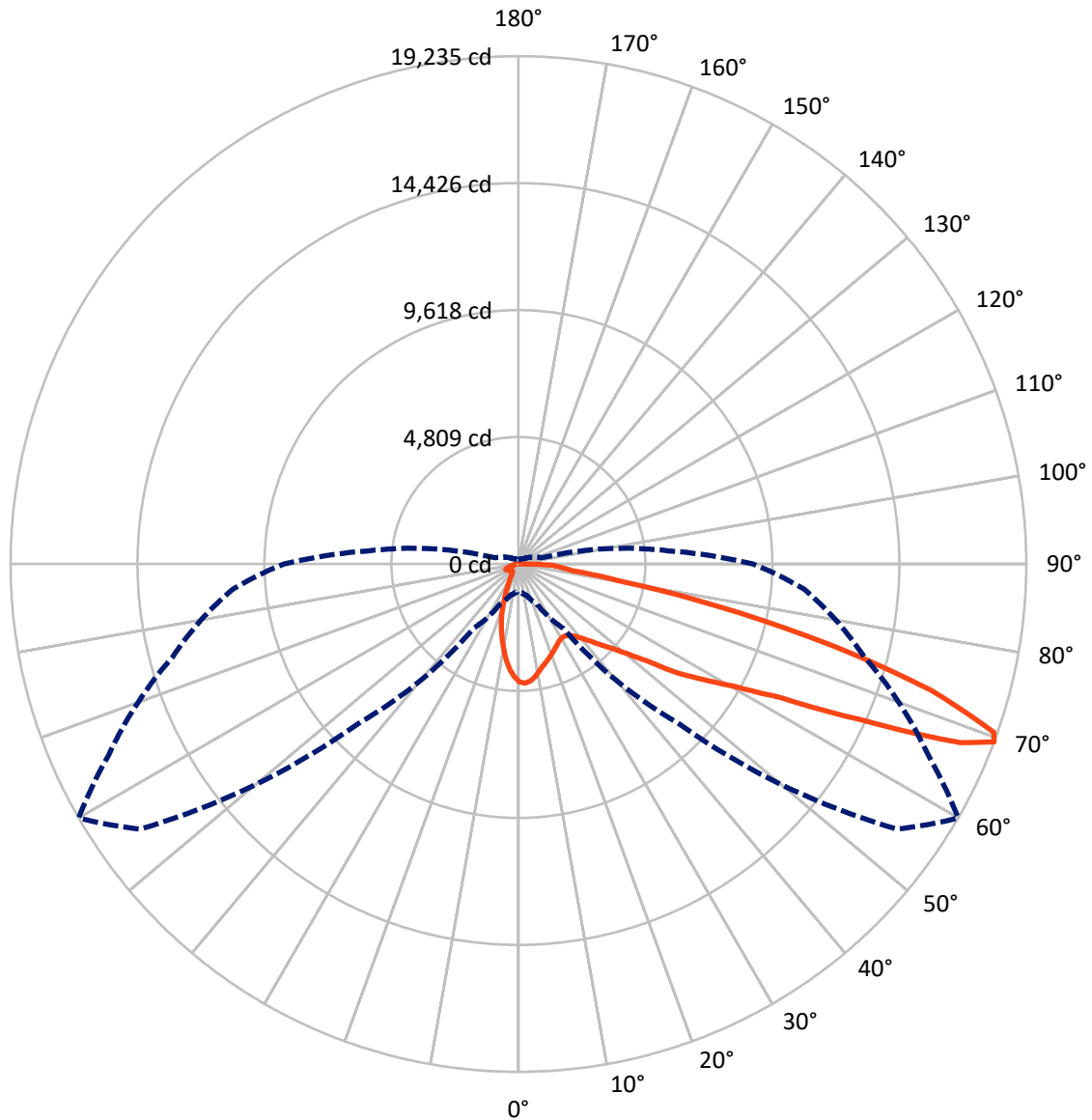
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.1 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2495.5 | 0.0 | 2495.5 |
| | % Fixture | 14.3 | 0.0 | 14.3 |
| Street Side | Lumens | 15000.2 | 0.0 | 15000.2 |
| | % Fixture | 85.7 | 0.0 | 85.7 |
| Total | Lumens | 17495.7 | 0.0 | 17495.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 378.7 | 2.2 |
| 10°-20° | 810.9 | 4.6 |
| 20°-30° | 1034.4 | 5.9 |
| 30°-40° | 1423.4 | 8.1 |
| 40°-50° | 2305.7 | 13.2 |
| 50°-60° | 3618.7 | 20.7 |
| 60°-70° | 4824.3 | 27.6 |
| 70°-80° | 2683.4 | 15.3 |
| 80°-90° | 416.2 | 2.4 |
| 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° | 17495.7 | 100.0 |
| 0°-180° | 17495.7 | 100.0 |

Coefficient of Utilization



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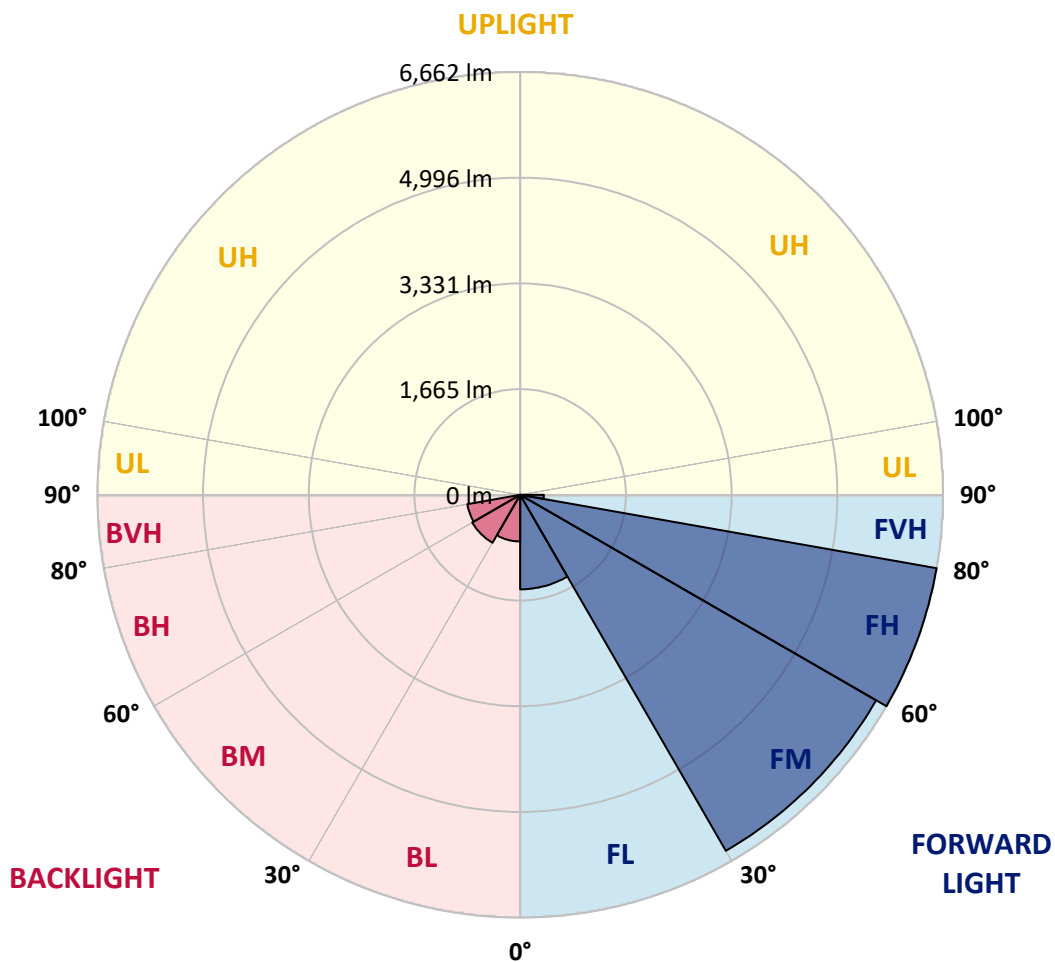
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1488.5 | 8.5 | | | |
| FM | (30°-60°) | 6476.0 | 37.0 | | | |
| FH | (60°-80°) | 6661.7 | 38.1 | | | G3/7500 |
| FVH | (80°-90°) | 374.0 | 2.1 | | | G3/500 |
| BL | (0°-30°) | 735.4 | 4.2 | B2/1000 | | |
| BM | (30°-60°) | 871.8 | 5.0 | B1/1000 | | |
| BH | (60°-80°) | 846.1 | 4.8 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 42.2 | 0.2 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 60° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 |
| 2.5° | 4583.0 | 4595.3 | 4595.3 | 4585.3 | 4579.6 | 4547.2 | 4528.0 | 4514.6 | 4491.0 | 4447.3 | 4407.9 |
| 5° | 4419.2 | 4442.8 | 4452.9 | 4457.3 | 4486.5 | 4476.5 | 4477.6 | 4468.6 | 4448.4 | 4401.3 | 4337.3 |
| 7.5° | 4118.5 | 4123.0 | 4140.9 | 4171.3 | 4242.0 | 4291.2 | 4331.7 | 4339.6 | 4335.1 | 4300.3 | 4210.6 |
| 10° | 3822.3 | 3830.2 | 3851.5 | 3903.2 | 3970.5 | 4041.2 | 4128.6 | 4164.5 | 4191.4 | 4180.3 | 4066.9 |
| 12.5° | 3576.6 | 3577.8 | 3601.3 | 3660.8 | 3736.0 | 3824.6 | 3943.5 | 3999.7 | 4063.6 | 4089.3 | 3962.7 |
| 15° | 3339.9 | 3355.7 | 3378.1 | 3449.9 | 3543.0 | 3655.2 | 3792.1 | 3869.4 | 3953.6 | 4027.7 | 3881.8 |
| 17.5° | 3160.5 | 3172.8 | 3186.2 | 3245.6 | 3353.3 | 3493.7 | 3663.0 | 3746.1 | 3857.2 | 3970.5 | 3798.8 |
| 20° | 3061.7 | 3066.2 | 3056.1 | 3085.3 | 3176.1 | 3327.6 | 3523.9 | 3623.8 | 3756.2 | 3915.5 | 3713.5 |
| 22.5° | 3041.4 | 3041.4 | 3004.5 | 2998.8 | 3039.3 | 3167.1 | 3380.3 | 3502.7 | 3664.1 | 3877.3 | 3637.2 |
| 25° | 3135.7 | 3128.9 | 3059.5 | 2995.5 | 2980.9 | 3046.0 | 3243.5 | 3393.8 | 3585.7 | 3876.2 | 3580.0 |
| 27.5° | 3314.2 | 3305.1 | 3218.8 | 3111.0 | 3018.0 | 2989.9 | 3138.0 | 3291.7 | 3523.9 | 3914.3 | 3550.8 |
| 30° | 3536.2 | 3532.9 | 3445.4 | 3310.8 | 3157.0 | 3012.3 | 3096.5 | 3239.0 | 3482.4 | 3985.0 | 3549.8 |
| 32.5° | 3779.8 | 3764.0 | 3710.1 | 3575.5 | 3375.8 | 3136.9 | 3121.1 | 3241.1 | 3471.1 | 4088.3 | 3575.5 |
| 35° | 4038.9 | 4027.7 | 4014.1 | 3878.4 | 3654.0 | 3356.8 | 3230.0 | 3318.6 | 3526.2 | 4231.8 | 3648.5 |
| 37.5° | 4368.7 | 4356.3 | 4378.8 | 4230.7 | 3985.0 | 3645.1 | 3414.1 | 3473.5 | 3638.4 | 4440.6 | 3784.2 |
| 40° | 4955.5 | 4919.6 | 4856.8 | 4629.0 | 4370.9 | 3998.5 | 3679.9 | 3688.8 | 3830.2 | 4719.9 | 4001.8 |
| 42.5° | 5919.2 | 5803.7 | 5492.9 | 5074.4 | 4778.2 | 4409.1 | 4026.5 | 3983.9 | 4094.9 | 5089.0 | 4318.3 |
| 45° | 6885.2 | 6755.1 | 6230.0 | 5560.2 | 5200.0 | 4850.0 | 4455.1 | 4353.0 | 4424.8 | 5518.6 | 4725.5 |
| 47.5° | 7509.0 | 7445.0 | 6852.6 | 6046.0 | 5642.0 | 5330.2 | 4945.4 | 4777.2 | 4828.7 | 6005.6 | 5228.0 |
| 50° | 7691.9 | 7636.9 | 7171.2 | 6426.3 | 6059.4 | 5910.3 | 5552.3 | 5329.1 | 5338.1 | 6574.3 | 5830.6 |
| 52.5° | 7554.9 | 7532.6 | 7224.0 | 6661.9 | 6443.1 | 6521.6 | 6392.6 | 6081.9 | 6007.8 | 7198.2 | 6483.6 |
| 55° | 7372.0 | 7379.9 | 7261.1 | 6898.6 | 6833.5 | 7091.6 | 7492.1 | 7241.9 | 6927.8 | 7847.8 | 7163.4 |
| 57.5° | 6796.6 | 6802.2 | 7114.0 | 7349.7 | 7578.6 | 7890.3 | 8348.2 | 8242.6 | 7876.9 | 8549.0 | 7925.1 |
| 60° | 5472.7 | 5516.4 | 6210.9 | 7256.6 | 8430.0 | 9464.5 | 9576.6 | 9394.8 | 8886.6 | 9356.8 | 8915.8 |
| 62.5° | 3909.9 | 3949.1 | 4753.6 | 6299.6 | 8330.2 | 11246.0 | 11845.2 | 11122.6 | 10256.5 | 10565.1 | 10309.2 |
| 65° | 2054.2 | 2047.5 | 2670.2 | 4353.0 | 7016.4 | 11658.8 | 15419.5 | 14189.9 | 12564.3 | 12226.5 | 11655.6 |
| 67.5° | 1147.7 | 1184.7 | 1426.0 | 2195.6 | 4572.9 | 10261.0 | 17702.6 | 18065.0 | 15772.8 | 13544.9 | 11597.3 |
| 69° | 1061.4 | 1073.7 | 1235.1 | 1697.5 | 2980.9 | 8466.0 | 17506.3 | 19235.1 | 17126.0 | 13550.5 | 10850.0 |
| 70° | 1031.1 | 1044.5 | 1191.5 | 1563.9 | 2504.1 | 6936.8 | 16791.6 | 19098.3 | 17454.7 | 13249.8 | 10170.1 |
| 72.5° | 924.5 | 942.4 | 1084.8 | 1405.7 | 2110.4 | 3575.5 | 13525.7 | 16346.3 | 15811.1 | 11580.4 | 7885.9 |
| 75° | 788.8 | 819.0 | 1034.3 | 1395.7 | 1999.2 | 2273.0 | 9020.1 | 12178.4 | 11767.7 | 8282.0 | 4474.1 |
| 77.5° | 326.4 | 329.9 | 452.2 | 1022.0 | 2098.0 | 2175.4 | 4847.8 | 7714.2 | 6829.0 | 3631.7 | 1347.3 |
| 80° | 227.7 | 223.2 | 225.5 | 298.4 | 1693.0 | 2190.0 | 2487.3 | 3923.3 | 3049.3 | 958.1 | 630.5 |
| 82.5° | 191.9 | 189.6 | 198.6 | 187.4 | 573.3 | 2485.0 | 2080.0 | 2045.3 | 1436.0 | 516.0 | 300.7 |
| 85° | 126.7 | 123.5 | 162.7 | 170.6 | 272.6 | 1973.4 | 2237.1 | 1607.7 | 1070.3 | 276.0 | 128.0 |
| 87.5° | 61.7 | 62.9 | 93.1 | 115.6 | 144.8 | 624.9 | 2142.9 | 1271.1 | 826.9 | 120.0 | 51.6 |
| 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-03-D-UNV-SL3-7030

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 | 4464.2 |
| 2.5° | 4392.3 | 4358.6 | 4328.3 | 4290.2 | 4261.0 | 4236.3 | 4202.6 | 4201.6 | 4196.0 | 4203.8 | 4206.1 |
| 5° | 4294.7 | 4238.6 | 4153.3 | 4058.0 | 3990.5 | 3901.9 | 3815.7 | 3786.5 | 3753.9 | 3750.6 | 3760.6 |
| 7.5° | 4147.7 | 4060.2 | 3914.3 | 3768.5 | 3622.6 | 3473.5 | 3332.1 | 3260.3 | 3190.7 | 3169.4 | 3179.5 |
| 10° | 3983.9 | 3872.8 | 3649.6 | 3411.7 | 3206.4 | 2984.3 | 2768.8 | 2629.8 | 2503.0 | 2449.1 | 2462.6 |
| 12.5° | 3856.0 | 3714.6 | 3400.4 | 3092.0 | 2784.6 | 2466.0 | 2182.1 | 1907.2 | 1699.7 | 1606.5 | 1612.2 |
| 15° | 3746.1 | 3565.4 | 3167.1 | 2756.5 | 2371.7 | 1935.3 | 1541.5 | 1222.8 | 1041.1 | 973.8 | 971.6 |
| 17.5° | 3627.2 | 3408.4 | 2923.7 | 2444.6 | 1945.4 | 1405.7 | 1032.2 | 843.7 | 771.9 | 749.4 | 749.4 |
| 20° | 3500.3 | 3246.8 | 2668.9 | 2104.7 | 1496.7 | 981.7 | 776.4 | 703.4 | 676.6 | 669.8 | 668.6 |
| 22.5° | 3382.5 | 3088.6 | 2413.2 | 1742.3 | 1082.6 | 744.9 | 660.8 | 632.7 | 628.2 | 633.9 | 633.9 |
| 25° | 3289.5 | 2949.5 | 2154.0 | 1360.9 | 787.5 | 623.8 | 588.0 | 584.5 | 601.4 | 621.5 | 624.9 |
| 27.5° | 3219.9 | 2825.0 | 1898.3 | 994.0 | 619.3 | 543.0 | 530.7 | 545.2 | 584.5 | 624.9 | 632.7 |
| 30° | 3171.7 | 2718.4 | 1592.0 | 714.7 | 516.0 | 475.8 | 481.3 | 507.1 | 566.6 | 628.2 | 645.0 |
| 32.5° | 3150.3 | 2631.9 | 1283.5 | 548.6 | 440.9 | 418.5 | 433.1 | 466.7 | 528.4 | 590.1 | 610.3 |
| 35° | 3170.4 | 2569.1 | 998.5 | 455.5 | 385.9 | 369.1 | 385.9 | 420.7 | 461.1 | 491.4 | 503.6 |
| 37.5° | 3243.5 | 2546.8 | 751.7 | 403.9 | 350.0 | 333.2 | 346.7 | 370.3 | 388.2 | 399.5 | 405.1 |
| 40° | 3397.1 | 2570.4 | 589.0 | 377.0 | 329.9 | 310.8 | 314.1 | 325.4 | 337.7 | 346.7 | 347.8 |
| 42.5° | 3641.7 | 2647.7 | 523.9 | 366.9 | 317.5 | 292.9 | 287.3 | 295.1 | 308.5 | 320.9 | 323.1 |
| 45° | 3967.1 | 2776.8 | 517.3 | 370.3 | 311.9 | 278.3 | 267.0 | 274.9 | 292.9 | 313.0 | 316.5 |
| 47.5° | 4387.8 | 2980.9 | 548.6 | 388.2 | 315.2 | 270.4 | 253.6 | 261.4 | 284.9 | 311.9 | 316.5 |
| 50° | 4886.0 | 3263.7 | 606.9 | 415.0 | 330.9 | 270.4 | 247.9 | 254.7 | 279.3 | 309.6 | 314.1 |
| 52.5° | 5472.7 | 3657.5 | 667.6 | 442.1 | 353.5 | 280.5 | 250.2 | 249.1 | 271.5 | 299.6 | 305.2 |
| 55° | 6120.0 | 4146.6 | 725.9 | 465.6 | 365.7 | 293.9 | 255.7 | 242.3 | 260.2 | 282.8 | 287.3 |
| 57.5° | 6881.8 | 4816.3 | 827.9 | 488.1 | 372.5 | 304.1 | 262.6 | 235.6 | 245.8 | 261.4 | 264.7 |
| 60° | 7915.1 | 5800.2 | 1026.6 | 526.2 | 384.8 | 308.5 | 263.7 | 228.9 | 227.7 | 239.0 | 240.1 |
| 62.5° | 9262.5 | 6952.5 | 1216.2 | 571.1 | 409.5 | 309.6 | 259.2 | 224.4 | 213.2 | 216.6 | 216.6 |
| 65° | 10220.5 | 7376.5 | 1161.2 | 609.2 | 431.9 | 308.5 | 254.7 | 221.0 | 201.9 | 196.3 | 196.3 |
| 67.5° | 9675.4 | 6516.0 | 986.2 | 619.3 | 434.2 | 296.2 | 244.5 | 213.2 | 191.9 | 178.4 | 178.4 |
| 69° | 8874.2 | 5711.6 | 905.4 | 601.4 | 416.3 | 281.6 | 233.4 | 205.3 | 185.0 | 169.5 | 169.5 |
| 70° | 8221.3 | 5102.4 | 856.0 | 580.0 | 394.9 | 269.3 | 223.2 | 197.4 | 178.4 | 164.9 | 163.8 |
| 72.5° | 6137.9 | 3404.9 | 731.5 | 500.4 | 324.3 | 227.7 | 195.2 | 176.1 | 160.4 | 151.5 | 151.5 |
| 75° | 3239.0 | 1706.4 | 599.1 | 408.4 | 250.2 | 181.7 | 160.4 | 148.0 | 139.1 | 138.0 | 136.9 |
| 77.5° | 1061.4 | 771.9 | 430.8 | 307.4 | 184.0 | 141.4 | 128.0 | 120.0 | 118.9 | 123.5 | 123.5 |
| 80° | 573.3 | 461.1 | 277.1 | 207.6 | 128.0 | 105.4 | 98.8 | 97.6 | 100.9 | 107.7 | 107.7 |
| 82.5° | 278.3 | 227.7 | 164.9 | 128.0 | 87.5 | 77.5 | 77.5 | 78.5 | 83.0 | 90.9 | 90.9 |
| 85° | 120.0 | 107.7 | 95.4 | 71.8 | 53.9 | 48.3 | 54.9 | 60.5 | 63.9 | 69.6 | 71.8 |
| 87.5° | 57.3 | 50.5 | 43.7 | 28.1 | 23.6 | 24.7 | 29.2 | 35.9 | 42.6 | 47.1 | 48.3 |
| 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)