

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: P196044

Luminaire Tested: **NAV-AF-06-D-UNV-RW-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196044
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24161)
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-RW-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30422.6 lumens
Efficiency: N/A
Efficacy: 122.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B5 - U0 - G5

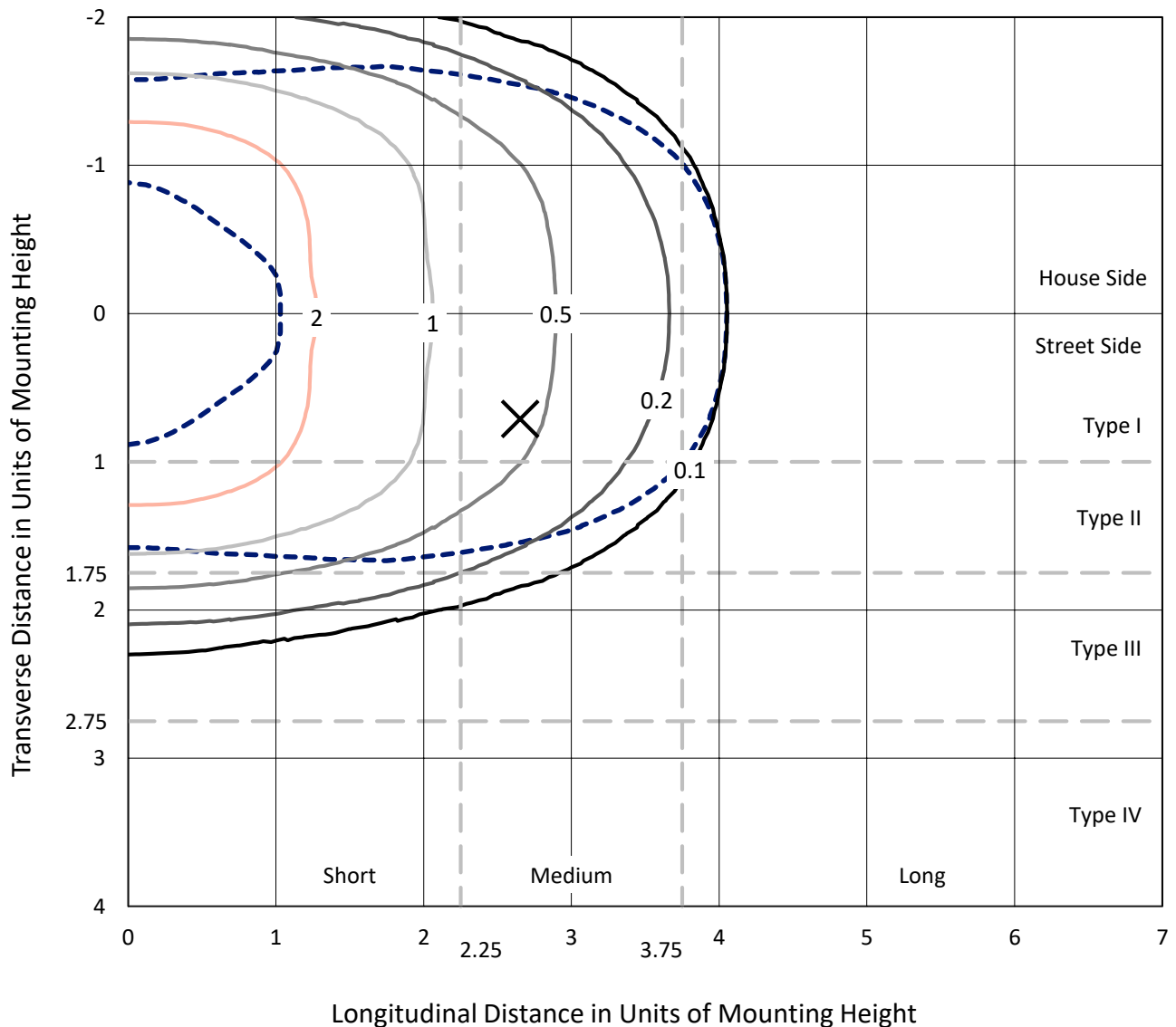
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

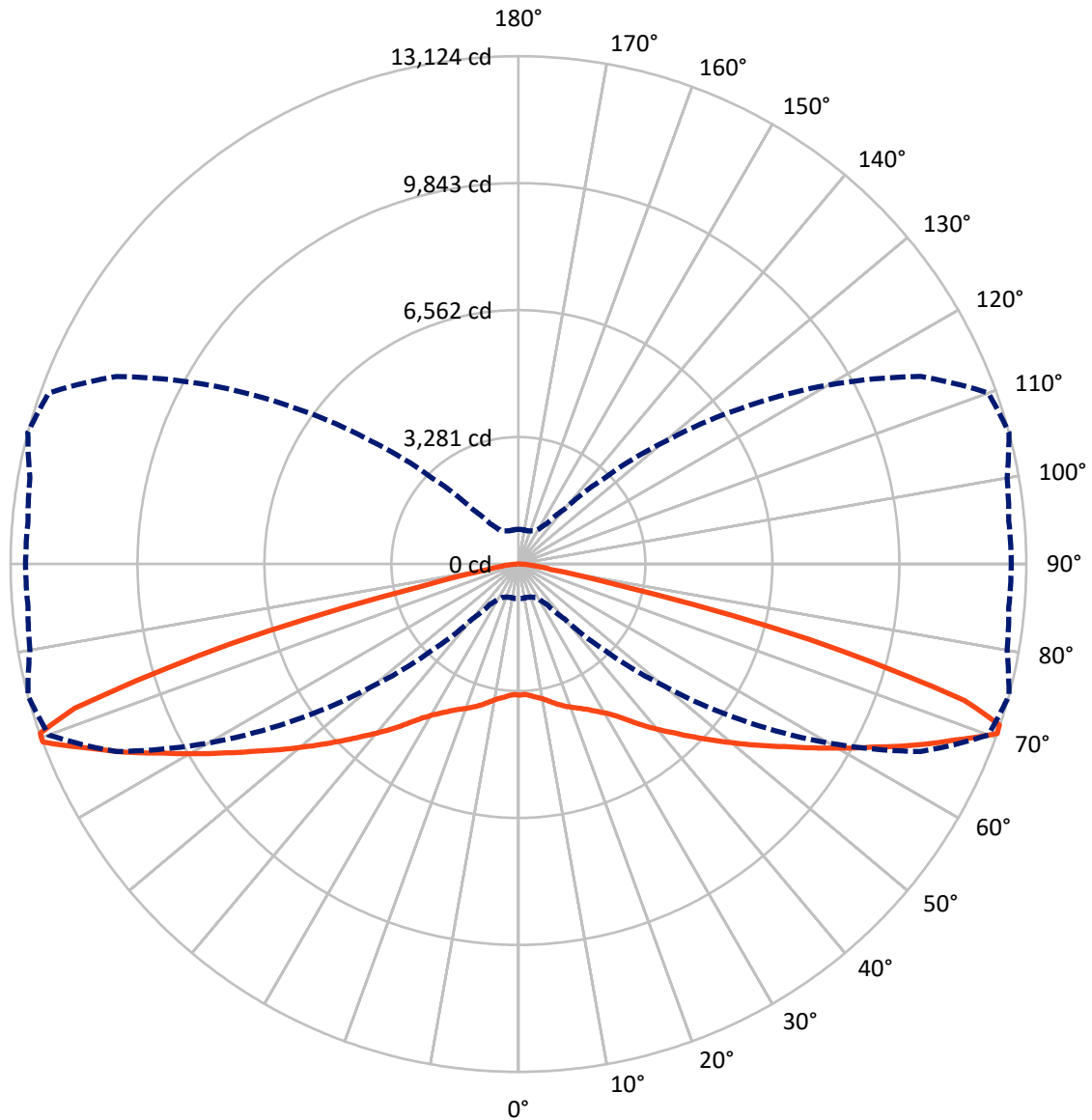
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 3.8 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 15211.3 | 0.0 | 15211.3 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 15211.3 | 0.0 | 15211.3 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 30422.6 | 0.0 | 30422.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 325.0 | 1.1 |
| 10°-20° | 1007.8 | 3.3 |
| 20°-30° | 1892.8 | 6.2 |
| 30°-40° | 3334.2 | 11.0 |
| 40°-50° | 5525.9 | 18.2 |
| 50°-60° | 7687.4 | 25.3 |
| 60°-70° | 7257.0 | 23.9 |
| 70°-80° | 3099.5 | 10.2 |
| 80°-90° | 292.9 | 1.0 |
| 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° | 30422.6 | 100.0 |
| 0°-180° | 30422.6 | 100.0 |



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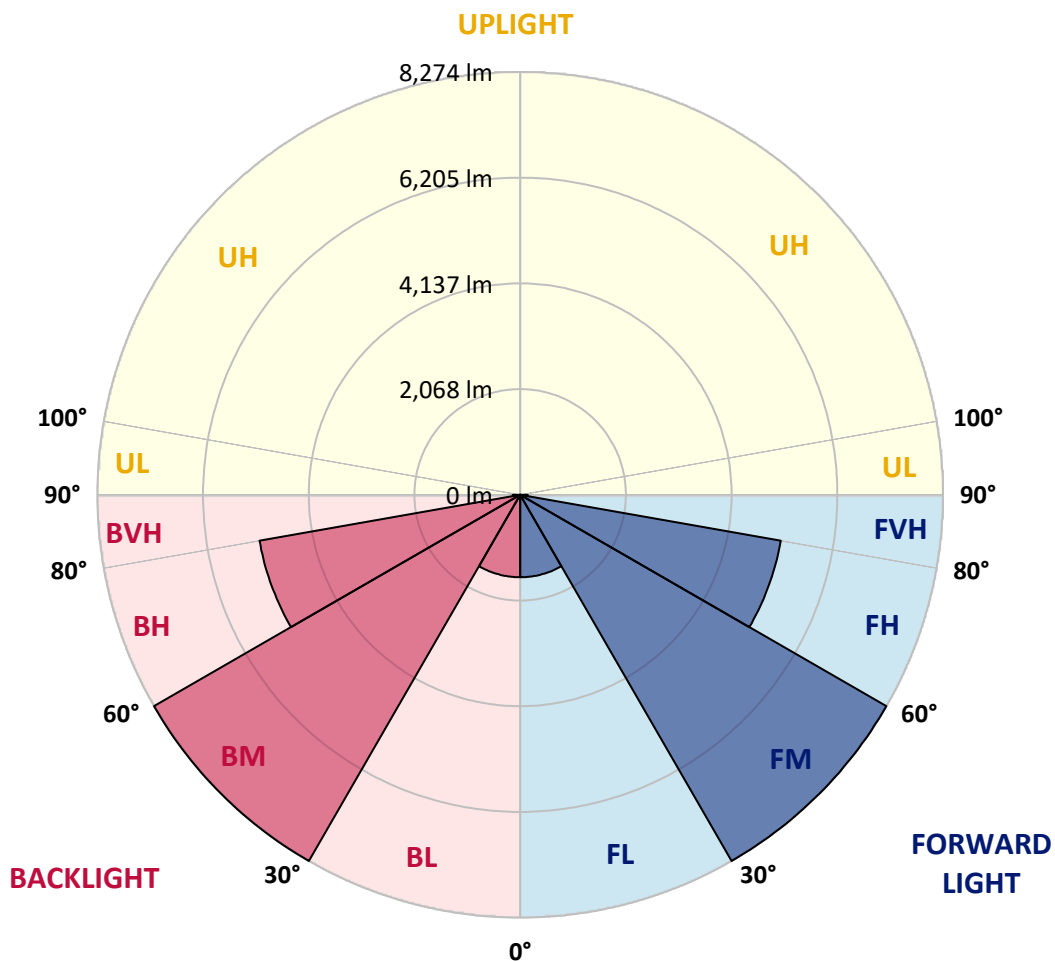
CATALOG NUMBER: NAV-AF-06-D-UNV-RW-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1612.8 | 5.3 | | | |
| FM | (30°-60°) | 8273.8 | 27.2 | | | |
| FH | (60°-80°) | 5178.3 | 17.0 | | | G3/7500 |
| FVH | (80°-90°) | 146.4 | 0.5 | | | G2/225 |
| BL | (0°-30°) | 1612.8 | 5.3 | B3/2500 | | |
| BM | (30°-60°) | 8273.8 | 27.2 | B4/8500 | | |
| BH | (60°-80°) | 5178.3 | 17.0 | B5 | | G5 |
| BVH | (80°-90°) | 146.4 | 0.5 | | | G2/225 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G5

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| 0° | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 |
| 2.5° | 3408.8 | 3406.9 | 3408.8 | 3403.1 | 3405.0 | 3403.1 | 3403.1 | 3395.5 | 3395.5 | 3391.7 | 3386.0 |
| 5° | 3370.7 | 3374.5 | 3374.5 | 3374.5 | 3380.2 | 3380.2 | 3387.8 | 3389.8 | 3395.5 | 3401.2 | 3405.0 |
| 7.5° | 3307.8 | 3309.7 | 3315.4 | 3319.2 | 3330.6 | 3345.9 | 3361.1 | 3378.3 | 3393.5 | 3412.7 | 3433.6 |
| 10° | 3254.4 | 3258.2 | 3267.7 | 3277.2 | 3298.2 | 3317.3 | 3344.0 | 3370.7 | 3397.4 | 3429.7 | 3462.2 |
| 12.5° | 3225.8 | 3231.5 | 3246.7 | 3262.0 | 3294.4 | 3319.2 | 3355.5 | 3397.4 | 3433.6 | 3464.1 | 3500.3 |
| 15° | 3229.6 | 3231.5 | 3252.5 | 3273.4 | 3319.2 | 3353.5 | 3405.0 | 3454.6 | 3498.4 | 3532.8 | 3574.7 |
| 17.5° | 3284.9 | 3288.7 | 3309.7 | 3340.1 | 3384.0 | 3427.9 | 3483.1 | 3534.6 | 3593.7 | 3633.8 | 3683.3 |
| 20° | 3393.5 | 3399.3 | 3422.2 | 3454.6 | 3502.3 | 3548.0 | 3605.2 | 3658.6 | 3719.6 | 3767.2 | 3816.8 |
| 22.5° | 3534.6 | 3544.2 | 3569.0 | 3609.0 | 3656.6 | 3712.0 | 3771.0 | 3826.3 | 3883.5 | 3931.2 | 3973.1 |
| 25° | 3723.4 | 3734.8 | 3761.5 | 3801.6 | 3849.3 | 3908.3 | 3969.4 | 4026.5 | 4085.7 | 4121.9 | 4156.1 |
| 27.5° | 3976.9 | 3996.1 | 4024.6 | 4057.0 | 4099.0 | 4161.9 | 4219.1 | 4266.7 | 4323.9 | 4364.0 | 4386.8 |
| 30° | 4318.2 | 4344.9 | 4367.8 | 4402.1 | 4432.7 | 4499.3 | 4545.1 | 4583.2 | 4627.1 | 4649.9 | 4655.7 |
| 32.5° | 4735.8 | 4760.5 | 4783.4 | 4808.2 | 4850.1 | 4911.2 | 4955.0 | 4975.9 | 4998.9 | 4995.1 | 4974.1 |
| 35° | 5206.6 | 5225.7 | 5239.0 | 5282.9 | 5351.6 | 5391.6 | 5424.0 | 5431.7 | 5435.4 | 5395.3 | 5355.4 |
| 37.5° | 5702.3 | 5725.3 | 5736.6 | 5805.2 | 5870.1 | 5915.8 | 5931.1 | 5948.3 | 5936.8 | 5870.1 | 5797.7 |
| 40° | 6238.1 | 6262.8 | 6297.2 | 6356.3 | 6432.5 | 6476.4 | 6495.4 | 6493.5 | 6484.0 | 6405.8 | 6287.7 |
| 42.5° | 6764.3 | 6794.7 | 6823.4 | 6926.3 | 6989.2 | 7063.6 | 7073.1 | 7071.2 | 7050.3 | 6960.7 | 6823.4 |
| 45° | 7210.4 | 7246.6 | 7305.7 | 7420.1 | 7521.1 | 7610.8 | 7647.0 | 7660.3 | 7639.3 | 7544.1 | 7387.6 |
| 47.5° | 7578.3 | 7603.1 | 7677.5 | 7816.7 | 7946.3 | 8077.8 | 8150.3 | 8201.7 | 8199.9 | 8131.2 | 7965.3 |
| 50° | 7830.0 | 7858.6 | 7950.1 | 8106.5 | 8268.5 | 8422.9 | 8565.9 | 8682.2 | 8737.5 | 8687.9 | 8533.5 |
| 52.5° | 7902.4 | 7938.7 | 8058.8 | 8245.6 | 8434.3 | 8642.2 | 8855.7 | 9061.6 | 9185.5 | 9216.0 | 9095.9 |
| 55° | 7597.4 | 7637.5 | 7812.8 | 8072.1 | 8382.9 | 8689.9 | 9013.9 | 9307.5 | 9563.0 | 9681.2 | 9633.5 |
| 57.5° | 6708.9 | 6737.6 | 6960.7 | 7296.2 | 7740.4 | 8280.0 | 8825.2 | 9362.9 | 9801.3 | 10108.3 | 10161.7 |
| 60° | 5305.7 | 5342.1 | 5586.0 | 5940.7 | 6445.9 | 7128.4 | 7891.0 | 8771.8 | 9631.6 | 10335.2 | 10684.0 |
| 62.5° | 3580.4 | 3605.2 | 3839.6 | 4163.8 | 4716.7 | 5374.4 | 6224.8 | 7340.0 | 8565.9 | 9822.3 | 10806.0 |
| 65° | 1879.8 | 1879.8 | 2038.0 | 2264.9 | 2705.3 | 3294.4 | 4165.7 | 5309.6 | 6768.0 | 8337.2 | 9982.5 |
| 67.5° | 1090.6 | 1088.6 | 1124.8 | 1176.3 | 1315.5 | 1553.8 | 2034.2 | 2875.0 | 4255.3 | 6081.7 | 7954.0 |
| 70° | 899.9 | 894.2 | 888.4 | 888.4 | 909.4 | 945.6 | 1037.2 | 1267.8 | 1855.0 | 3136.2 | 4894.0 |
| 71° | 859.8 | 856.0 | 840.8 | 835.0 | 844.5 | 863.7 | 903.7 | 1010.5 | 1317.4 | 2139.1 | 3654.8 |
| 72.5° | 812.1 | 802.6 | 779.8 | 770.2 | 772.1 | 779.8 | 791.2 | 833.1 | 926.6 | 1216.4 | 2083.9 |
| 75° | 739.7 | 716.9 | 688.2 | 674.9 | 669.2 | 667.3 | 667.3 | 678.7 | 699.7 | 734.0 | 854.1 |
| 77.5° | 655.8 | 623.4 | 592.9 | 579.6 | 570.1 | 564.4 | 560.5 | 552.9 | 549.1 | 564.4 | 608.1 |
| 80° | 554.7 | 520.5 | 495.7 | 488.0 | 482.3 | 470.9 | 455.6 | 440.4 | 430.9 | 438.5 | 465.1 |
| 82.5° | 428.9 | 394.7 | 398.4 | 400.4 | 390.9 | 371.7 | 356.5 | 339.3 | 322.2 | 318.3 | 331.7 |
| 85° | 341.3 | 324.1 | 312.7 | 337.5 | 316.5 | 293.6 | 272.6 | 244.1 | 204.0 | 167.8 | 183.0 |
| 87.5° | 146.8 | 148.7 | 213.5 | 322.2 | 282.1 | 226.9 | 188.7 | 152.5 | 97.2 | 72.4 | 74.4 |
| 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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CATALOG NUMBER: NAV-AF-06-D-UNV-RW-800

CANDELA DISTRIBUTION (continued):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 | 3387.8 |
| 2.5° | 3384.0 | 3384.0 | 3378.3 | 3374.5 | 3374.5 | 3374.5 | 3370.7 | 3372.6 |
| 5° | 3406.9 | 3410.7 | 3414.5 | 3412.7 | 3418.4 | 3424.0 | 3422.2 | 3420.2 |
| 7.5° | 3445.1 | 3456.4 | 3467.9 | 3473.6 | 3481.3 | 3488.9 | 3490.8 | 3485.1 |
| 10° | 3483.1 | 3506.1 | 3523.2 | 3538.5 | 3548.0 | 3555.6 | 3561.3 | 3559.5 |
| 12.5° | 3530.8 | 3563.2 | 3593.7 | 3624.2 | 3645.2 | 3656.6 | 3668.1 | 3664.3 |
| 15° | 3609.0 | 3645.2 | 3683.3 | 3723.4 | 3755.8 | 3772.9 | 3790.1 | 3786.4 |
| 17.5° | 3715.8 | 3748.2 | 3778.7 | 3818.7 | 3858.8 | 3877.8 | 3896.9 | 3895.0 |
| 20° | 3849.3 | 3874.0 | 3891.2 | 3914.0 | 3952.2 | 3973.1 | 3990.3 | 3984.6 |
| 22.5° | 4001.8 | 4009.4 | 4011.3 | 4018.9 | 4049.5 | 4074.2 | 4097.0 | 4102.7 |
| 25° | 4167.6 | 4161.9 | 4150.4 | 4144.7 | 4165.7 | 4192.4 | 4221.0 | 4228.6 |
| 27.5° | 4373.5 | 4354.4 | 4325.9 | 4302.9 | 4308.7 | 4343.0 | 4375.4 | 4383.0 |
| 30° | 4632.8 | 4589.0 | 4527.9 | 4484.1 | 4476.4 | 4512.6 | 4547.0 | 4558.5 |
| 32.5° | 4928.3 | 4869.2 | 4785.3 | 4718.6 | 4690.0 | 4722.4 | 4752.9 | 4770.0 |
| 35° | 5279.1 | 5214.3 | 5113.2 | 5027.4 | 4981.7 | 5002.6 | 5056.0 | 5075.1 |
| 37.5° | 5694.7 | 5605.2 | 5492.6 | 5384.0 | 5307.7 | 5311.5 | 5368.7 | 5391.6 |
| 40° | 6154.2 | 6024.6 | 5881.6 | 5746.2 | 5635.6 | 5628.0 | 5679.4 | 5696.6 |
| 42.5° | 6632.7 | 6466.9 | 6299.0 | 6121.7 | 5984.5 | 5959.7 | 6026.4 | 6028.4 |
| 45° | 7147.5 | 6934.0 | 6726.1 | 6520.2 | 6377.3 | 6333.4 | 6398.3 | 6405.8 |
| 47.5° | 7696.6 | 7429.6 | 7183.7 | 6960.7 | 6806.2 | 6737.6 | 6800.5 | 6811.9 |
| 50° | 8268.5 | 7992.0 | 7706.1 | 7458.2 | 7277.1 | 7193.2 | 7267.6 | 7275.2 |
| 52.5° | 8834.7 | 8573.6 | 8289.5 | 8005.4 | 7786.2 | 7690.9 | 7778.5 | 7805.2 |
| 55° | 9404.8 | 9153.1 | 8886.2 | 8602.1 | 8325.7 | 8241.8 | 8337.2 | 8365.7 |
| 57.5° | 9997.7 | 9755.6 | 9513.4 | 9227.4 | 8958.6 | 8830.9 | 8933.8 | 8973.9 |
| 60° | 10651.6 | 10438.1 | 10209.3 | 9921.4 | 9656.5 | 9507.7 | 9595.4 | 9641.2 |
| 62.5° | 11294.1 | 11250.2 | 11042.4 | 10743.1 | 10407.6 | 10258.9 | 10333.2 | 10365.7 |
| 65° | 11347.5 | 12058.6 | 12049.0 | 11751.7 | 11282.6 | 11032.9 | 11053.9 | 11069.1 |
| 67.5° | 9904.3 | 11536.2 | 12579.1 | 12672.5 | 12150.1 | 11759.3 | 11713.5 | 11723.0 |
| 70° | 7012.1 | 9252.3 | 11465.6 | 12918.4 | 13124.4 | 12821.2 | 12722.0 | 12737.3 |
| 71° | 5618.5 | 7938.7 | 10375.2 | 12329.3 | 13109.1 | 13021.3 | 12966.1 | 13006.1 |
| 72.5° | 3586.2 | 5849.1 | 8220.8 | 10558.2 | 12054.8 | 12483.8 | 12546.7 | 12571.5 |
| 75° | 1302.1 | 2516.6 | 4259.2 | 6102.7 | 7734.6 | 8857.6 | 9475.3 | 9524.9 |
| 77.5° | 699.7 | 901.7 | 1393.7 | 2081.9 | 2615.7 | 2901.7 | 2936.0 | 2949.4 |
| 80° | 514.7 | 596.7 | 682.5 | 779.8 | 840.8 | 852.2 | 831.2 | 787.4 |
| 82.5° | 364.2 | 411.8 | 446.1 | 480.5 | 505.2 | 484.3 | 402.2 | 307.0 |
| 85° | 211.6 | 232.6 | 251.6 | 268.8 | 272.6 | 257.4 | 169.7 | 139.2 |
| 87.5° | 83.9 | 91.6 | 89.6 | 101.1 | 97.2 | 89.6 | 66.7 | 57.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)