

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: P196684

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196684
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-SLL-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13730.6 lumens
Efficiency: N/A
Efficacy: 106.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 129
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

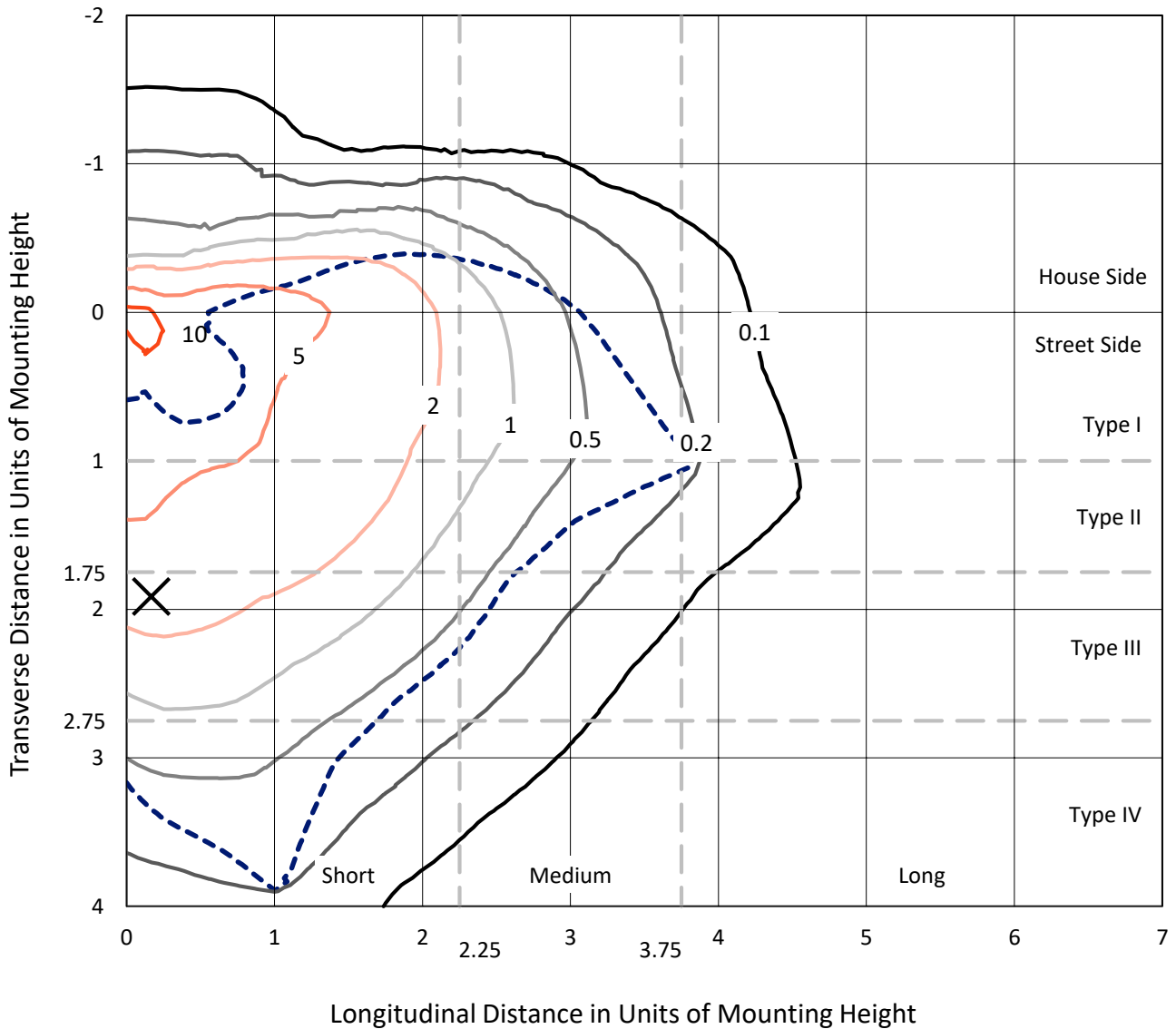


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Iso-Footcandle Lines of Horizontal Illumination

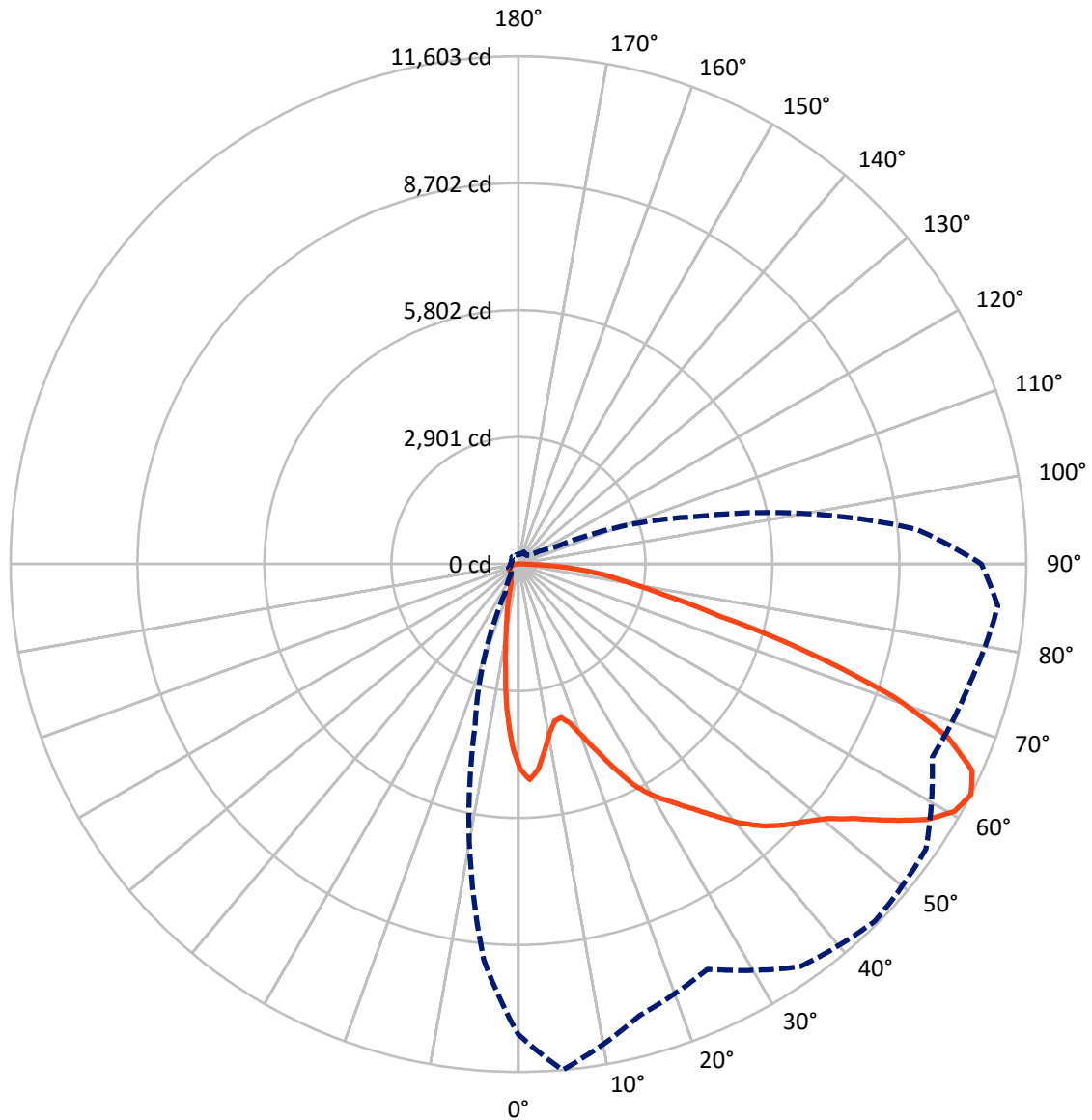
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 13.4 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2432.4 | 0.0 | 2432.4 |
| | % Fixture | 17.7 | 0.0 | 17.7 |
| Street Side | Lumens | 11298.2 | 0.0 | 11298.2 |
| | % Fixture | 82.3 | 0.0 | 82.3 |
| Total | Lumens | 13730.6 | 0.0 | 13730.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 340.4 | 2.5 |
| 10°-20° | 621.8 | 4.5 |
| 20°-30° | 894.3 | 6.5 |
| 30°-40° | 1369.7 | 10.0 |
| 40°-50° | 2002.5 | 14.6 |
| 50°-60° | 2913.7 | 21.2 |
| 60°-70° | 3375.9 | 24.6 |
| 70°-80° | 1759.8 | 12.8 |
| 80°-90° | 452.4 | 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° | 13730.6 | 100.0 |
| 0°-180° | 13730.6 | 100.0 |



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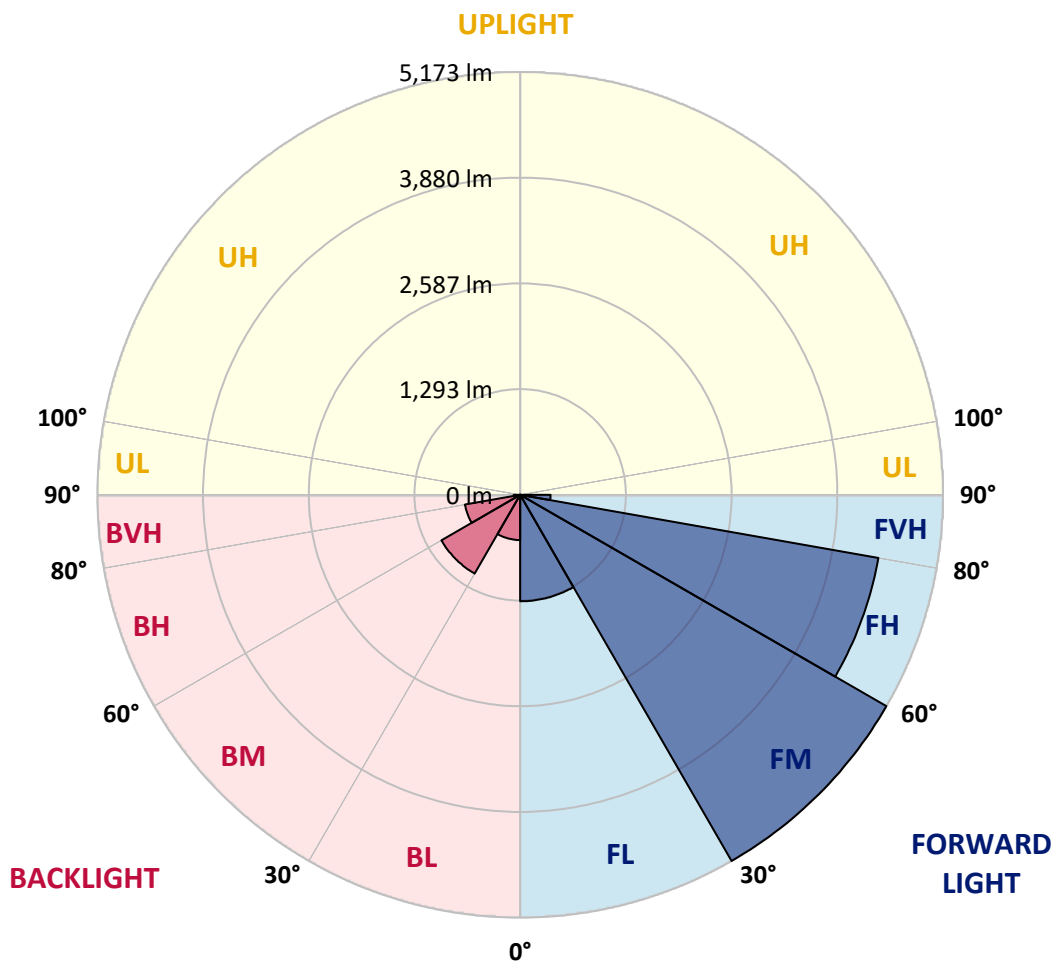
CATALOG NUMBER: NAV-AF-04-D-UNV-SLL-7030-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1303.1 | 9.5 | | | |
| FM | (30°-60°) | 5173.1 | 37.7 | | | |
| FH | (60°-80°) | 4449.9 | 32.4 | | | G2/5000 |
| FVH | (80°-90°) | 372.2 | 2.7 | | | G3/500 |
| BL | (0°-30°) | 553.4 | 4.0 | B2/1000 | | |
| BM | (30°-60°) | 1112.9 | 8.1 | B2/2500 | | |
| BH | (60°-80°) | 685.9 | 5.0 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 80.2 | 0.6 | | | 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 IV Short





REPORT NUMBER: P196684

CATALOG NUMBER: NAV-AF-04-D-UNV-SLL-7030-600

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 |
| 2.5° | 4832.3 | 4934.9 | 5052.3 | 5205.6 | 5310.2 | 5352.1 | 5386.9 | 5328.1 | 5271.4 | 5164.9 | 5127.0 |
| 5° | 4513.8 | 4710.9 | 5034.4 | 5342.1 | 5612.8 | 5768.2 | 5816.0 | 5707.4 | 5514.4 | 5235.6 | 5088.2 |
| 7.5° | 4041.0 | 4300.8 | 4755.7 | 5208.7 | 5597.0 | 5855.8 | 5874.7 | 5659.6 | 5279.4 | 4822.3 | 4583.4 |
| 10° | 3627.7 | 3921.5 | 4448.1 | 4954.8 | 5365.9 | 5630.7 | 5579.0 | 5277.3 | 4818.5 | 4298.7 | 4028.9 |
| 12.5° | 3387.8 | 3681.5 | 4218.1 | 4732.8 | 5120.1 | 5220.6 | 5115.1 | 4861.3 | 4426.2 | 3905.5 | 3633.8 |
| 15° | 3337.1 | 3639.8 | 4136.4 | 4570.6 | 4810.4 | 4745.7 | 4641.3 | 4512.9 | 4203.2 | 3777.1 | 3514.3 |
| 17.5° | 3490.4 | 3828.9 | 4244.9 | 4482.9 | 4473.0 | 4317.7 | 4230.1 | 4255.0 | 4202.2 | 3916.5 | 3641.7 |
| 20° | 3805.9 | 4206.2 | 4520.7 | 4459.0 | 4204.2 | 3986.1 | 3935.4 | 4130.5 | 4374.4 | 4265.9 | 3964.3 |
| 22.5° | 4221.1 | 4677.1 | 4897.1 | 4527.7 | 4063.8 | 3828.9 | 3818.9 | 4123.6 | 4688.0 | 4794.6 | 4427.1 |
| 25° | 4690.0 | 5221.6 | 5276.3 | 4649.2 | 4048.8 | 3814.9 | 3805.9 | 4231.1 | 5065.4 | 5318.2 | 4945.8 |
| 27.5° | 5263.4 | 5771.2 | 5593.0 | 4811.4 | 4114.6 | 3855.8 | 3861.7 | 4414.2 | 5458.6 | 5835.9 | 5530.2 |
| 30° | 5695.4 | 6161.4 | 5788.1 | 4970.8 | 4220.1 | 3927.5 | 3942.3 | 4612.4 | 5670.5 | 6195.2 | 5997.1 |
| 32.5° | 6099.7 | 6494.9 | 5975.3 | 5128.1 | 4374.4 | 4034.0 | 4085.7 | 4859.2 | 5925.4 | 6503.8 | 6438.2 |
| 35° | 6546.7 | 6868.2 | 6183.3 | 5296.3 | 4595.5 | 4221.1 | 4295.7 | 5094.2 | 6178.3 | 6812.6 | 6875.2 |
| 37.5° | 7053.4 | 7295.4 | 6409.2 | 5534.2 | 4914.1 | 4567.6 | 4609.3 | 5334.1 | 6354.5 | 7154.0 | 7344.1 |
| 40° | 7581.1 | 7774.3 | 6656.2 | 5851.8 | 5376.9 | 5035.4 | 5055.3 | 5641.7 | 6492.9 | 7507.4 | 7799.0 |
| 42.5° | 8034.1 | 8184.4 | 6904.1 | 6246.1 | 5908.5 | 5512.3 | 5529.3 | 5973.2 | 6625.4 | 7812.0 | 8163.5 |
| 45° | 8396.3 | 8506.9 | 7138.0 | 6661.2 | 6476.1 | 6107.7 | 6103.7 | 6310.7 | 6802.6 | 8068.9 | 8443.2 |
| 47.5° | 8733.8 | 8792.6 | 7398.8 | 7065.4 | 7064.3 | 6874.3 | 6731.9 | 6708.9 | 7038.5 | 8284.9 | 8687.1 |
| 50° | 9120.2 | 9142.0 | 7743.3 | 7473.6 | 7783.2 | 7753.2 | 7490.5 | 7214.7 | 7344.1 | 8527.8 | 8943.0 |
| 52.5° | 9657.8 | 9658.7 | 8170.4 | 7871.8 | 8576.7 | 8671.2 | 8365.6 | 7787.1 | 7796.0 | 9000.7 | 9385.0 |
| 55° | 10289.9 | 10333.7 | 8727.0 | 8348.6 | 9406.9 | 9568.2 | 9280.5 | 8467.0 | 8445.2 | 9763.3 | 10101.8 |
| 57.5° | 10778.8 | 11010.7 | 9375.0 | 8944.9 | 10182.4 | 10392.4 | 10160.4 | 9171.9 | 9242.6 | 10549.7 | 10693.1 |
| 60° | 10916.1 | 11458.7 | 10021.1 | 9613.9 | 10838.5 | 11154.1 | 10918.1 | 9933.6 | 10023.1 | 11060.5 | 10863.3 |
| 62.5° | 10751.8 | 11603.0 | 10679.2 | 10213.2 | 11227.7 | 11530.3 | 11361.1 | 10432.3 | 10659.3 | 10994.8 | 10575.6 |
| 65° | 10265.0 | 11394.0 | 11250.7 | 10468.1 | 11003.7 | 11111.2 | 11066.5 | 10458.2 | 11004.7 | 10373.5 | 9780.3 |
| 67.5° | 9128.2 | 10587.6 | 10995.8 | 9923.6 | 9957.5 | 9842.0 | 9783.2 | 9747.3 | 10616.5 | 9371.0 | 8525.8 |
| 70° | 7423.7 | 9097.3 | 9780.3 | 8304.8 | 8053.9 | 7942.4 | 7749.3 | 8227.1 | 9542.2 | 7984.2 | 7016.6 |
| 72.5° | 5718.4 | 6959.9 | 8022.1 | 6295.8 | 5774.2 | 5811.9 | 5593.0 | 6290.8 | 7904.6 | 6172.4 | 5357.0 |
| 75° | 4060.8 | 4745.7 | 6403.3 | 4523.8 | 3832.9 | 3830.8 | 3813.9 | 4527.7 | 6237.1 | 4430.1 | 3919.4 |
| 77.5° | 2926.9 | 3416.6 | 5016.5 | 3027.5 | 2719.8 | 2754.7 | 2698.9 | 3077.2 | 4862.2 | 3186.8 | 2904.0 |
| 80° | 2334.6 | 2529.7 | 3242.5 | 2019.0 | 2024.9 | 2106.5 | 2094.6 | 2104.6 | 3198.7 | 2307.7 | 2171.3 |
| 82.5° | 1677.4 | 1920.4 | 2478.9 | 1547.1 | 1339.0 | 1425.7 | 1442.5 | 1561.0 | 2256.9 | 1631.7 | 1431.7 |
| 85° | 860.2 | 1170.7 | 2280.8 | 1339.9 | 837.3 | 693.9 | 798.4 | 1231.5 | 1960.2 | 977.7 | 697.8 |
| 87.5° | 167.2 | 324.5 | 1671.5 | 744.7 | 376.3 | 190.1 | 313.6 | 521.7 | 1139.9 | 177.2 | 86.7 |
| 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-SLL-7030-600

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° | 185° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 |
| 2.5° | 5062.3 | 4934.9 | 4815.4 | 4692.0 | 4596.4 | 4479.9 | 4365.5 | 4265.9 | 4169.4 | 4105.6 | 4125.5 |
| 5° | 4938.8 | 4628.2 | 4349.5 | 4090.6 | 3939.4 | 3757.2 | 3594.8 | 3458.5 | 3352.9 | 3285.3 | 3326.1 |
| 7.5° | 4376.4 | 3956.3 | 3588.9 | 3247.4 | 3032.4 | 2796.5 | 2607.4 | 2473.9 | 2392.3 | 2346.5 | 2413.2 |
| 10° | 3801.0 | 3329.1 | 2916.9 | 2561.6 | 2349.5 | 2149.3 | 1978.1 | 1836.7 | 1727.3 | 1675.5 | 1702.4 |
| 12.5° | 3388.7 | 2864.1 | 2432.1 | 2193.2 | 2011.0 | 1831.8 | 1654.6 | 1489.3 | 1350.0 | 1286.2 | 1273.3 |
| 15° | 3234.5 | 2614.2 | 2173.2 | 1906.5 | 1725.3 | 1530.1 | 1339.0 | 1161.8 | 1029.4 | 974.6 | 962.7 |
| 17.5° | 3302.3 | 2560.5 | 2019.9 | 1704.3 | 1441.5 | 1204.6 | 989.6 | 822.2 | 724.7 | 693.9 | 696.8 |
| 20° | 3540.1 | 2580.4 | 1896.5 | 1496.3 | 1171.8 | 891.0 | 676.0 | 560.5 | 518.7 | 511.7 | 519.6 |
| 22.5° | 3866.6 | 2662.1 | 1806.9 | 1317.1 | 933.8 | 648.1 | 502.7 | 448.0 | 437.0 | 436.1 | 444.0 |
| 25° | 4297.7 | 2821.4 | 1747.2 | 1157.8 | 737.7 | 513.7 | 438.0 | 407.2 | 398.2 | 400.2 | 408.2 |
| 27.5° | 4805.4 | 3023.4 | 1708.4 | 1020.5 | 606.3 | 457.9 | 409.1 | 382.3 | 373.3 | 375.3 | 381.4 |
| 30° | 5269.3 | 3200.6 | 1650.6 | 916.9 | 544.5 | 438.0 | 393.3 | 366.3 | 354.4 | 354.4 | 358.4 |
| 32.5° | 5684.5 | 3353.9 | 1582.9 | 839.2 | 487.9 | 393.3 | 356.4 | 335.5 | 326.5 | 329.5 | 331.5 |
| 35° | 6052.9 | 3434.7 | 1530.1 | 793.4 | 442.1 | 362.4 | 325.6 | 303.6 | 291.7 | 293.7 | 296.6 |
| 37.5° | 6415.2 | 3465.4 | 1495.3 | 768.5 | 409.1 | 343.5 | 309.6 | 291.7 | 278.7 | 276.8 | 275.8 |
| 40° | 6759.8 | 3458.5 | 1462.4 | 761.5 | 387.3 | 329.5 | 299.7 | 283.7 | 270.8 | 267.8 | 266.8 |
| 42.5° | 7057.4 | 3435.6 | 1431.7 | 742.6 | 372.3 | 319.6 | 291.7 | 277.7 | 264.9 | 260.8 | 258.8 |
| 45° | 7329.2 | 3421.7 | 1397.8 | 707.8 | 380.3 | 315.5 | 287.7 | 272.8 | 260.8 | 255.8 | 253.8 |
| 47.5° | 7630.7 | 3471.5 | 1360.0 | 670.0 | 378.2 | 316.7 | 287.7 | 270.8 | 258.8 | 253.8 | 251.9 |
| 50° | 7990.2 | 3639.8 | 1313.1 | 618.2 | 360.3 | 338.4 | 286.7 | 267.8 | 256.9 | 253.8 | 249.8 |
| 52.5° | 8497.9 | 3912.5 | 1248.4 | 551.5 | 346.5 | 361.4 | 285.7 | 262.8 | 253.8 | 248.9 | 243.8 |
| 55° | 9193.8 | 4185.2 | 1164.8 | 480.8 | 324.5 | 345.5 | 287.7 | 256.9 | 246.9 | 241.9 | 235.9 |
| 57.5° | 9764.3 | 4392.3 | 1059.3 | 422.1 | 304.7 | 326.5 | 284.7 | 249.8 | 239.0 | 234.0 | 229.0 |
| 60° | 9727.5 | 4412.2 | 958.7 | 384.3 | 292.7 | 293.7 | 291.7 | 244.8 | 231.9 | 228.1 | 224.0 |
| 62.5° | 9125.2 | 4166.4 | 865.2 | 365.4 | 283.7 | 267.8 | 297.6 | 239.0 | 225.0 | 221.0 | 218.0 |
| 65° | 8122.7 | 3593.9 | 815.4 | 365.4 | 275.8 | 253.8 | 259.8 | 231.0 | 218.0 | 214.0 | 212.1 |
| 67.5° | 6851.3 | 2888.0 | 768.5 | 373.3 | 264.9 | 243.8 | 235.9 | 223.0 | 211.1 | 207.0 | 205.1 |
| 70° | 5491.4 | 2272.8 | 735.8 | 369.3 | 254.9 | 232.9 | 223.0 | 212.1 | 200.1 | 199.1 | 197.1 |
| 72.5° | 4307.8 | 1825.8 | 720.8 | 369.3 | 240.0 | 220.0 | 210.1 | 202.1 | 190.1 | 189.1 | 186.2 |
| 75° | 3451.5 | 1370.8 | 659.1 | 362.4 | 225.0 | 203.1 | 194.2 | 187.2 | 175.3 | 176.2 | 174.3 |
| 77.5° | 2673.0 | 969.6 | 550.5 | 326.5 | 206.1 | 184.2 | 177.2 | 172.2 | 158.3 | 159.3 | 159.3 |
| 80° | 2090.6 | 631.2 | 427.1 | 270.8 | 184.2 | 162.2 | 157.4 | 153.3 | 138.4 | 140.4 | 140.4 |
| 82.5° | 1432.6 | 375.3 | 309.6 | 218.0 | 158.3 | 138.4 | 137.3 | 131.4 | 115.5 | 116.5 | 118.4 |
| 85° | 782.6 | 246.9 | 206.1 | 161.2 | 124.4 | 112.5 | 110.5 | 107.5 | 92.6 | 92.6 | 93.6 |
| 87.5° | 144.3 | 132.4 | 121.5 | 106.5 | 83.6 | 80.7 | 77.7 | 80.7 | 69.7 | 67.7 | 67.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P196684

CATALOG NUMBER: NAV-AF-04-D-UNV-SLL-7030-600

CANDELA DISTRIBUTION (continued):

| | 195° | 205° | 215° | 225° | 235° | 245° | 255° | 265° | 270° | 275° | 285° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 | 4681.0 |
| 2.5° | 4078.7 | 4010.1 | 3962.3 | 3920.4 | 3819.9 | 3827.0 | 3840.8 | 3860.6 | 3798.0 | 3830.8 | 3871.7 |
| 5° | 3285.3 | 3228.5 | 3185.8 | 3119.1 | 2978.6 | 2928.9 | 2897.0 | 2883.2 | 2789.5 | 2809.4 | 2853.2 |
| 7.5° | 2422.2 | 2421.1 | 2406.2 | 2331.6 | 2162.3 | 2059.7 | 1992.2 | 1971.1 | 1913.4 | 1935.3 | 2002.0 |
| 10° | 1705.3 | 1723.2 | 1716.4 | 1649.6 | 1498.3 | 1424.6 | 1409.7 | 1451.5 | 1452.5 | 1495.3 | 1609.8 |
| 12.5° | 1232.5 | 1222.5 | 1213.6 | 1158.8 | 1045.3 | 1033.4 | 1067.3 | 1125.0 | 1138.9 | 1184.7 | 1304.1 |
| 15° | 919.9 | 896.0 | 891.0 | 848.2 | 773.5 | 784.5 | 809.4 | 839.2 | 840.2 | 872.1 | 970.7 |
| 17.5° | 689.9 | 689.9 | 697.8 | 670.0 | 616.2 | 611.3 | 598.3 | 590.3 | 578.4 | 591.3 | 645.0 |
| 20° | 535.6 | 560.5 | 580.3 | 564.5 | 515.7 | 491.7 | 466.9 | 451.0 | 442.1 | 443.0 | 459.0 |
| 22.5° | 459.0 | 478.9 | 504.8 | 496.8 | 455.9 | 425.1 | 409.1 | 398.2 | 391.2 | 391.2 | 400.2 |
| 25° | 420.1 | 433.1 | 456.9 | 453.0 | 418.1 | 393.3 | 380.3 | 369.3 | 361.4 | 360.3 | 369.3 |
| 27.5° | 389.3 | 397.2 | 413.1 | 411.2 | 375.3 | 359.4 | 351.4 | 344.5 | 339.5 | 338.4 | 347.5 |
| 30° | 361.4 | 365.4 | 373.3 | 370.4 | 343.5 | 327.6 | 324.5 | 321.6 | 318.6 | 319.6 | 332.4 |
| 32.5° | 336.5 | 339.5 | 344.5 | 340.5 | 314.5 | 300.7 | 295.6 | 291.7 | 288.7 | 291.7 | 306.6 |
| 35° | 308.6 | 317.6 | 323.5 | 321.6 | 293.7 | 276.8 | 265.8 | 255.8 | 251.9 | 254.9 | 271.8 |
| 37.5° | 284.7 | 299.7 | 307.7 | 305.6 | 276.8 | 256.9 | 242.9 | 240.9 | 240.9 | 244.8 | 261.7 |
| 40° | 275.8 | 286.7 | 293.7 | 290.7 | 261.7 | 241.9 | 234.0 | 231.0 | 231.9 | 235.9 | 253.8 |
| 42.5° | 267.8 | 277.7 | 279.7 | 273.8 | 244.8 | 231.9 | 226.9 | 223.0 | 225.0 | 230.0 | 247.9 |
| 45° | 260.8 | 268.8 | 267.8 | 258.8 | 231.0 | 222.1 | 222.1 | 219.1 | 220.0 | 224.0 | 242.9 |
| 47.5° | 255.8 | 259.8 | 257.9 | 248.9 | 221.0 | 214.0 | 217.0 | 217.0 | 219.1 | 222.1 | 240.9 |
| 50° | 247.9 | 250.9 | 248.9 | 240.9 | 213.0 | 207.0 | 210.1 | 214.0 | 216.0 | 219.1 | 235.9 |
| 52.5° | 240.0 | 241.9 | 240.9 | 232.9 | 205.1 | 201.1 | 201.1 | 205.1 | 209.0 | 213.0 | 228.1 |
| 55° | 231.9 | 234.0 | 234.9 | 229.0 | 199.1 | 195.1 | 194.2 | 194.2 | 198.1 | 204.1 | 220.0 |
| 57.5° | 225.9 | 225.9 | 228.1 | 224.0 | 193.2 | 188.2 | 183.2 | 184.2 | 189.1 | 194.2 | 210.1 |
| 60° | 219.1 | 220.0 | 223.0 | 219.1 | 185.2 | 177.2 | 173.1 | 178.2 | 180.2 | 185.2 | 202.1 |
| 62.5° | 213.0 | 213.0 | 215.0 | 212.1 | 178.2 | 170.2 | 167.2 | 172.2 | 172.2 | 177.2 | 194.2 |
| 65° | 208.0 | 207.0 | 207.0 | 206.1 | 171.2 | 163.3 | 161.2 | 163.3 | 164.2 | 169.3 | 186.2 |
| 67.5° | 204.1 | 199.1 | 199.1 | 201.1 | 164.2 | 156.3 | 155.2 | 155.2 | 156.3 | 162.2 | 177.2 |
| 70° | 195.1 | 191.1 | 190.1 | 197.1 | 157.4 | 147.4 | 147.4 | 145.4 | 147.4 | 150.3 | 166.3 |
| 72.5° | 185.2 | 182.1 | 181.2 | 191.1 | 150.3 | 137.3 | 135.4 | 134.4 | 135.4 | 138.4 | 153.3 |
| 75° | 172.2 | 170.2 | 172.2 | 187.2 | 143.3 | 126.4 | 123.5 | 122.5 | 122.5 | 123.5 | 139.5 |
| 77.5° | 157.4 | 155.2 | 170.2 | 174.3 | 139.5 | 113.5 | 110.5 | 108.5 | 106.5 | 106.5 | 124.4 |
| 80° | 139.5 | 138.4 | 164.2 | 147.4 | 133.4 | 99.5 | 94.6 | 91.6 | 89.6 | 88.6 | 106.5 |
| 82.5° | 121.5 | 119.4 | 140.4 | 115.5 | 110.5 | 81.6 | 74.7 | 68.8 | 65.7 | 65.7 | 81.6 |
| 85° | 99.5 | 98.6 | 110.5 | 84.5 | 76.7 | 59.8 | 49.8 | 44.8 | 40.9 | 40.9 | 52.8 |
| 87.5° | 72.6 | 70.7 | 68.8 | 50.8 | 38.8 | 26.9 | 18.9 | 17.9 | 16.0 | 15.0 | 21.9 |
| 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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| 35° | 289.7 | 318.6 | 360.3 | 605.3 | 1215.5 | 2794.6 | 5507.3 | 6546.7 |
| 37.5° | 276.8 | 304.7 | 335.5 | 591.3 | 1227.5 | 2826.3 | 5916.5 | 7053.4 |
| 40° | 268.8 | 293.7 | 318.6 | 589.4 | 1237.5 | 2851.2 | 6316.8 | 7581.1 |
| 42.5° | 261.7 | 286.7 | 315.5 | 575.5 | 1233.4 | 2885.1 | 6671.2 | 8034.1 |
| 45° | 259.8 | 284.7 | 322.6 | 554.5 | 1232.5 | 2937.9 | 6952.8 | 8396.3 |
| 47.5° | 257.9 | 295.6 | 320.5 | 531.6 | 1228.5 | 3049.3 | 7270.4 | 8733.8 |
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| 57.5° | 241.9 | 269.8 | 250.9 | 341.4 | 955.7 | 4036.9 | 9487.5 | 10778.8 |
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| 62.5° | 251.9 | 211.1 | 231.0 | 302.6 | 728.8 | 3827.9 | 9074.4 | 10751.8 |
| 65° | 201.1 | 200.1 | 222.1 | 312.6 | 714.8 | 3275.4 | 8339.6 | 10265.0 |
| 67.5° | 183.2 | 192.2 | 213.0 | 324.5 | 723.8 | 2580.4 | 7258.5 | 9128.2 |
| 70° | 171.2 | 182.1 | 201.1 | 335.5 | 739.6 | 2032.9 | 5843.8 | 7423.7 |
| 72.5° | 159.3 | 168.3 | 189.1 | 346.5 | 728.8 | 1603.8 | 4677.1 | 5718.4 |
| 75° | 144.3 | 152.3 | 172.2 | 317.6 | 625.2 | 1178.7 | 3716.4 | 4060.8 |
| 77.5° | 127.4 | 134.4 | 151.4 | 250.9 | 470.0 | 820.3 | 2783.5 | 2926.9 |
| 80° | 109.5 | 112.5 | 125.4 | 183.2 | 306.6 | 490.8 | 2118.5 | 2334.6 |
| 82.5° | 86.7 | 87.6 | 95.6 | 134.4 | 191.1 | 313.6 | 1469.4 | 1677.4 |
| 85° | 55.7 | 57.7 | 61.7 | 94.6 | 128.4 | 201.1 | 750.6 | 860.2 |
| 87.5° | 18.9 | 21.9 | 21.9 | 45.8 | 62.8 | 111.6 | 230.0 | 167.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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