

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: P196055

Luminaire Tested: **NAV-AF-05-D-UNV-RW-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196055
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-05-D-UNV-RW-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34480.6 lumens
Efficiency: N/A
Efficacy: 107.8 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

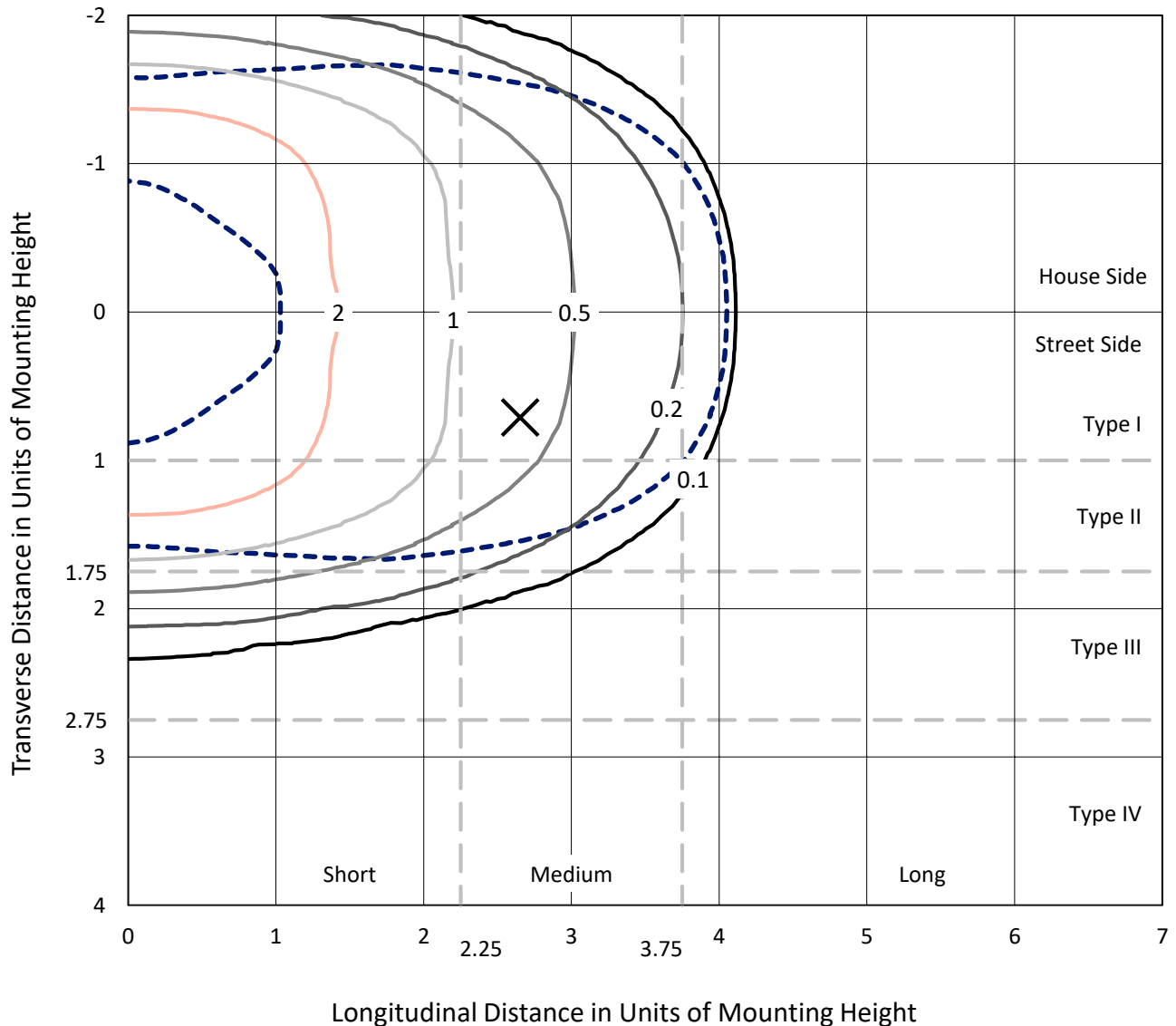
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

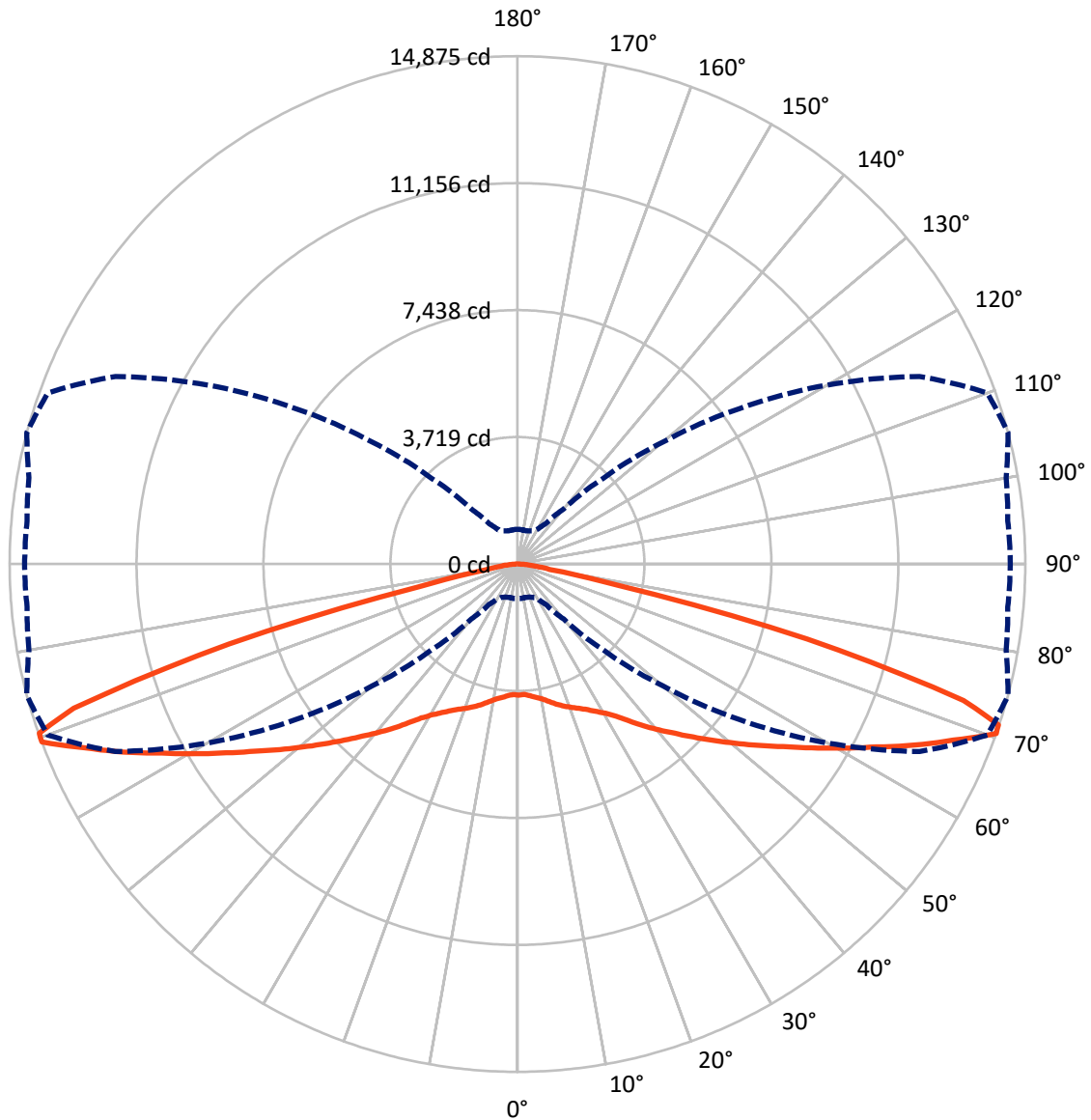
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 4.3 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 | 17240.3 | 0.0 | 17240.3 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 17240.3 | 0.0 | 17240.3 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 34480.6 | 0.0 | 34480.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 368.3 | 1.1 |
| 10°-20° | 1142.2 | 3.3 |
| 20°-30° | 2145.3 | 6.2 |
| 30°-40° | 3779.0 | 11.0 |
| 40°-50° | 6263.0 | 18.2 |
| 50°-60° | 8712.8 | 25.3 |
| 60°-70° | 8225.0 | 23.9 |
| 70°-80° | 3513.0 | 10.2 |
| 80°-90° | 332.0 | 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° | 34480.6 | 100.0 |
| 0°-180° | 34480.6 | 100.0 |



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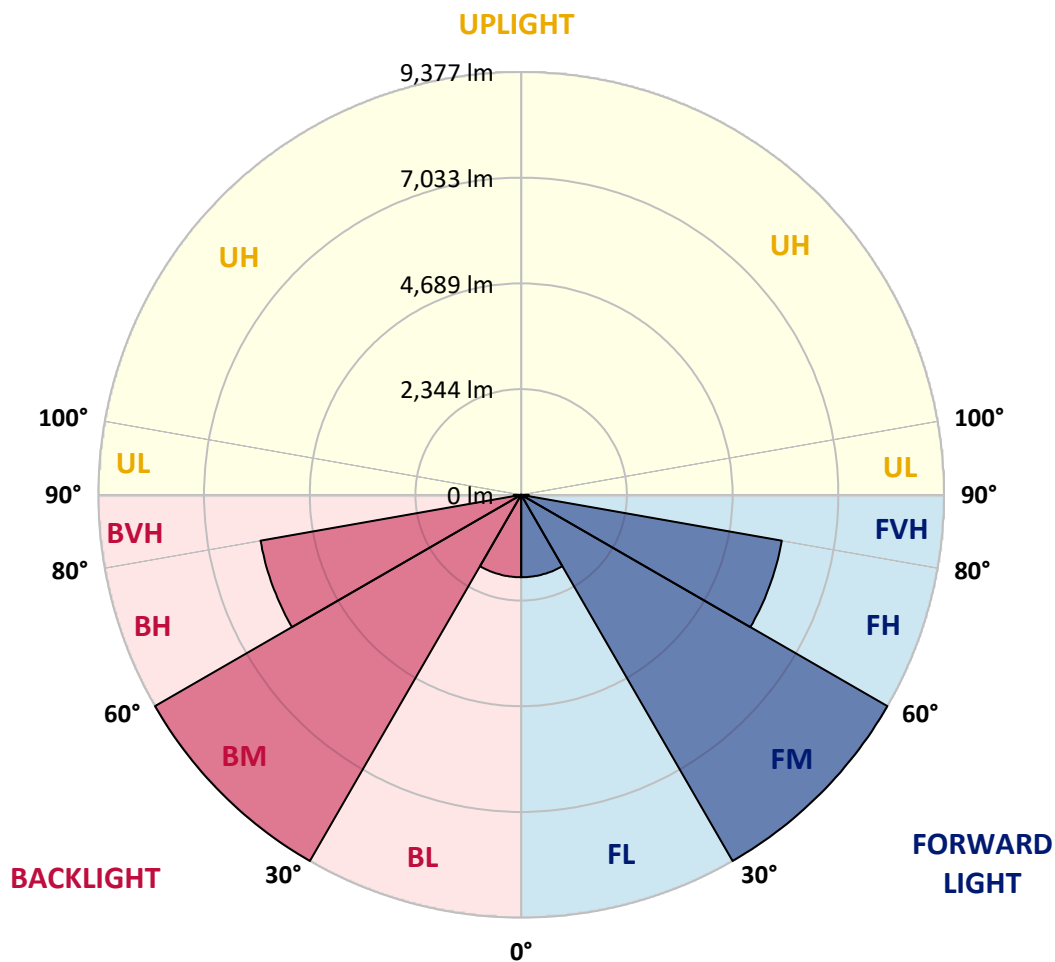
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1827.9 | 5.3 | | | |
| FM | (30°-60°) | 9377.4 | 27.2 | | | |
| FH | (60°-80°) | 5869.0 | 17.0 | | | G3/7500 |
| FVH | (80°-90°) | 166.0 | 0.5 | | | G2/225 |
| BL | (0°-30°) | 1827.9 | 5.3 | B3/2500 | | |
| BM | (30°-60°) | 9377.4 | 27.2 | B5 | | |
| BH | (60°-80°) | 5869.0 | 17.0 | B5 | | G5 |
| BVH | (80°-90°) | 166.0 | 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° | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 |
| 2.5° | 3863.5 | 3861.3 | 3863.5 | 3857.0 | 3859.2 | 3857.0 | 3857.0 | 3848.4 | 3848.4 | 3844.0 | 3837.6 |
| 5° | 3820.3 | 3824.6 | 3824.6 | 3824.6 | 3831.2 | 3831.2 | 3839.7 | 3841.9 | 3848.4 | 3854.9 | 3859.2 |
| 7.5° | 3749.0 | 3751.2 | 3757.6 | 3762.0 | 3774.9 | 3792.2 | 3809.5 | 3828.9 | 3846.2 | 3867.9 | 3891.6 |
| 10° | 3688.5 | 3692.9 | 3703.6 | 3714.4 | 3738.2 | 3759.8 | 3790.0 | 3820.3 | 3850.6 | 3887.3 | 3924.0 |
| 12.5° | 3656.1 | 3662.6 | 3679.9 | 3697.1 | 3733.9 | 3762.0 | 3803.0 | 3850.6 | 3891.6 | 3926.2 | 3967.2 |
| 15° | 3660.4 | 3662.6 | 3686.3 | 3710.1 | 3762.0 | 3800.9 | 3859.2 | 3915.3 | 3965.1 | 4003.9 | 4051.5 |
| 17.5° | 3723.0 | 3727.4 | 3751.2 | 3785.7 | 3835.5 | 3885.2 | 3947.8 | 4006.2 | 4073.1 | 4118.5 | 4174.7 |
| 20° | 3846.2 | 3852.7 | 3878.6 | 3915.3 | 3969.4 | 4021.2 | 4086.1 | 4146.6 | 4215.7 | 4269.8 | 4326.0 |
| 22.5° | 4006.2 | 4016.9 | 4045.1 | 4090.4 | 4144.4 | 4207.1 | 4274.1 | 4336.7 | 4401.6 | 4455.6 | 4503.1 |
| 25° | 4220.1 | 4233.0 | 4263.2 | 4308.7 | 4362.7 | 4429.7 | 4498.8 | 4563.6 | 4630.6 | 4671.6 | 4710.6 |
| 27.5° | 4507.4 | 4529.0 | 4561.4 | 4598.2 | 4645.7 | 4717.0 | 4781.9 | 4835.9 | 4900.8 | 4946.1 | 4972.1 |
| 30° | 4894.2 | 4924.5 | 4950.4 | 4989.3 | 5023.9 | 5099.5 | 5151.4 | 5194.5 | 5244.3 | 5270.2 | 5276.7 |
| 32.5° | 5367.4 | 5395.6 | 5421.4 | 5449.6 | 5497.1 | 5566.3 | 5615.9 | 5639.7 | 5665.6 | 5661.3 | 5637.6 |
| 35° | 5901.2 | 5922.8 | 5937.9 | 5987.6 | 6065.4 | 6110.8 | 6147.5 | 6156.1 | 6160.4 | 6115.1 | 6069.7 |
| 37.5° | 6463.0 | 6488.9 | 6501.9 | 6579.6 | 6653.2 | 6704.9 | 6722.2 | 6741.8 | 6728.8 | 6653.2 | 6571.0 |
| 40° | 7070.1 | 7098.3 | 7137.1 | 7204.1 | 7290.6 | 7340.3 | 7361.9 | 7359.7 | 7348.9 | 7260.3 | 7126.4 |
| 42.5° | 7666.5 | 7701.1 | 7733.5 | 7850.2 | 7921.5 | 8005.8 | 8016.6 | 8014.4 | 7990.7 | 7889.1 | 7733.5 |
| 45° | 8172.1 | 8213.3 | 8280.2 | 8409.9 | 8524.4 | 8625.9 | 8667.0 | 8682.1 | 8658.4 | 8550.3 | 8373.2 |
| 47.5° | 8589.2 | 8617.3 | 8701.5 | 8859.3 | 9006.3 | 9155.3 | 9237.5 | 9295.8 | 9293.6 | 9215.9 | 9027.8 |
| 50° | 8874.4 | 8906.8 | 9010.6 | 9187.7 | 9371.5 | 9546.5 | 9708.5 | 9840.3 | 9903.0 | 9846.8 | 9671.8 |
| 52.5° | 8956.5 | 8997.6 | 9133.7 | 9345.5 | 9559.4 | 9795.0 | 10037.0 | 10270.3 | 10410.8 | 10445.4 | 10309.2 |
| 55° | 8610.8 | 8656.2 | 8855.0 | 9148.9 | 9501.1 | 9849.0 | 10216.3 | 10549.1 | 10838.6 | 10972.6 | 10918.6 |
| 57.5° | 7603.9 | 7636.3 | 7889.1 | 8269.4 | 8772.8 | 9384.3 | 10002.4 | 10611.7 | 11108.7 | 11456.6 | 11517.1 |
| 60° | 6013.5 | 6054.5 | 6331.1 | 6733.1 | 7305.7 | 8079.3 | 8943.6 | 9941.9 | 10916.4 | 11713.7 | 12109.2 |
| 62.5° | 4057.9 | 4086.1 | 4351.8 | 4719.2 | 5345.8 | 6091.3 | 7055.0 | 8319.1 | 9708.5 | 11132.5 | 12247.5 |
| 65° | 2130.6 | 2130.6 | 2309.9 | 2567.0 | 3066.2 | 3733.9 | 4721.3 | 6017.8 | 7670.9 | 9449.2 | 11313.9 |
| 67.5° | 1236.0 | 1233.8 | 1274.9 | 1333.2 | 1491.0 | 1761.0 | 2305.6 | 3258.5 | 4822.9 | 6892.9 | 9014.9 |
| 70° | 1019.9 | 1013.4 | 1006.9 | 1006.9 | 1030.7 | 1071.7 | 1175.5 | 1436.9 | 2102.5 | 3554.5 | 5546.7 |
| 71° | 974.6 | 970.2 | 952.9 | 946.4 | 957.3 | 978.9 | 1024.2 | 1145.2 | 1493.1 | 2424.4 | 4142.2 |
| 72.5° | 920.6 | 909.7 | 883.7 | 873.0 | 875.1 | 883.7 | 896.7 | 944.3 | 1050.2 | 1378.6 | 2361.8 |
| 75° | 838.4 | 812.4 | 780.0 | 765.0 | 758.4 | 756.3 | 756.3 | 769.3 | 793.0 | 831.9 | 968.0 |
| 77.5° | 743.3 | 706.6 | 672.0 | 656.8 | 646.1 | 639.5 | 635.3 | 626.7 | 622.3 | 639.5 | 689.3 |
| 80° | 628.8 | 589.9 | 561.8 | 553.2 | 546.7 | 533.7 | 516.4 | 499.1 | 488.4 | 496.9 | 527.2 |
| 82.5° | 486.2 | 447.3 | 451.6 | 453.8 | 442.9 | 421.4 | 404.1 | 384.6 | 365.2 | 360.9 | 375.9 |
| 85° | 386.8 | 367.3 | 354.4 | 382.5 | 358.6 | 332.8 | 309.0 | 276.6 | 231.2 | 190.2 | 207.5 |
| 87.5° | 166.3 | 168.6 | 242.0 | 365.2 | 319.8 | 257.2 | 213.9 | 172.9 | 110.2 | 82.1 | 84.3 |
| 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):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 | 3839.7 |
| 2.5° | 3835.5 | 3835.5 | 3828.9 | 3824.6 | 3824.6 | 3824.6 | 3820.3 | 3822.5 |
| 5° | 3861.3 | 3865.7 | 3870.0 | 3867.9 | 3874.3 | 3880.8 | 3878.6 | 3876.5 |
| 7.5° | 3904.6 | 3917.5 | 3930.5 | 3937.0 | 3945.6 | 3954.3 | 3956.5 | 3949.9 |
| 10° | 3947.8 | 3973.8 | 3993.2 | 4010.5 | 4021.2 | 4029.9 | 4036.4 | 4034.2 |
| 12.5° | 4001.8 | 4038.5 | 4073.1 | 4107.7 | 4131.5 | 4144.4 | 4157.4 | 4153.1 |
| 15° | 4090.4 | 4131.5 | 4174.7 | 4220.1 | 4256.8 | 4276.2 | 4295.7 | 4291.4 |
| 17.5° | 4211.4 | 4248.1 | 4282.7 | 4328.1 | 4373.4 | 4395.1 | 4416.7 | 4414.5 |
| 20° | 4362.7 | 4390.7 | 4410.2 | 4436.1 | 4479.4 | 4503.1 | 4522.6 | 4516.1 |
| 22.5° | 4535.6 | 4544.2 | 4546.3 | 4555.0 | 4589.6 | 4617.6 | 4643.6 | 4650.0 |
| 25° | 4723.5 | 4717.0 | 4704.0 | 4697.6 | 4721.3 | 4751.6 | 4784.0 | 4792.6 |
| 27.5° | 4956.9 | 4935.3 | 4902.9 | 4876.9 | 4883.5 | 4922.3 | 4959.1 | 4967.7 |
| 30° | 5250.8 | 5201.1 | 5131.9 | 5082.2 | 5073.5 | 5114.7 | 5153.5 | 5166.5 |
| 32.5° | 5585.7 | 5518.7 | 5423.6 | 5348.0 | 5315.6 | 5352.3 | 5386.9 | 5406.3 |
| 35° | 5983.2 | 5909.8 | 5795.3 | 5698.0 | 5646.2 | 5669.9 | 5730.5 | 5752.1 |
| 37.5° | 6454.3 | 6352.7 | 6225.3 | 6102.1 | 6015.7 | 6020.0 | 6084.8 | 6110.8 |
| 40° | 6975.1 | 6828.2 | 6666.1 | 6512.7 | 6387.3 | 6378.7 | 6437.0 | 6456.5 |
| 42.5° | 7517.5 | 7329.4 | 7139.3 | 6938.4 | 6782.8 | 6754.6 | 6830.3 | 6832.5 |
| 45° | 8100.8 | 7858.8 | 7623.3 | 7390.0 | 7227.9 | 7178.1 | 7251.7 | 7260.3 |
| 47.5° | 8723.2 | 8420.6 | 8141.9 | 7889.1 | 7714.1 | 7636.3 | 7707.6 | 7720.5 |
| 50° | 9371.5 | 9058.1 | 8734.0 | 8453.1 | 8247.7 | 8152.7 | 8237.0 | 8245.6 |
| 52.5° | 10013.2 | 9717.1 | 9395.2 | 9073.3 | 8824.7 | 8716.7 | 8816.1 | 8846.4 |
| 55° | 10659.2 | 10374.1 | 10071.6 | 9749.5 | 9436.2 | 9341.2 | 9449.2 | 9481.6 |
| 57.5° | 11331.2 | 11056.9 | 10782.4 | 10458.3 | 10153.6 | 10008.9 | 10125.6 | 10170.9 |
| 60° | 12072.5 | 11830.4 | 11571.1 | 11244.8 | 10944.4 | 10776.0 | 10875.3 | 10927.2 |
| 62.5° | 12800.6 | 12750.9 | 12515.4 | 12176.2 | 11795.9 | 11627.3 | 11711.6 | 11748.3 |
| 65° | 12861.2 | 13667.1 | 13656.3 | 13319.2 | 12787.6 | 12504.6 | 12528.4 | 12545.7 |
| 67.5° | 11225.4 | 13075.1 | 14257.0 | 14362.8 | 13770.9 | 13327.8 | 13276.0 | 13286.8 |
| 70° | 7947.4 | 10486.4 | 12995.1 | 14641.6 | 14875.0 | 14531.4 | 14419.1 | 14436.3 |
| 71° | 6367.9 | 8997.6 | 11759.1 | 13973.9 | 14857.7 | 14758.3 | 14695.6 | 14741.0 |
| 72.5° | 4064.5 | 6629.3 | 9317.3 | 11966.6 | 13662.7 | 14148.9 | 14220.2 | 14248.4 |
| 75° | 1475.8 | 2852.3 | 4827.2 | 6916.8 | 8766.4 | 10039.1 | 10739.2 | 10795.4 |
| 77.5° | 793.0 | 1022.0 | 1579.5 | 2359.6 | 2964.6 | 3288.8 | 3327.7 | 3342.8 |
| 80° | 583.4 | 676.4 | 773.6 | 883.7 | 952.9 | 965.9 | 942.1 | 892.4 |
| 82.5° | 412.8 | 466.8 | 505.6 | 544.5 | 572.6 | 548.8 | 455.9 | 347.9 |
| 85° | 239.9 | 263.6 | 285.2 | 304.6 | 309.0 | 291.7 | 192.3 | 157.7 |
| 87.5° | 95.0 | 103.7 | 101.6 | 114.6 | 110.2 | 101.6 | 75.6 | 64.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)