

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: P270494

Luminaire Tested: **NAV-AF-04-D-UNV-AFL-7027-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270494  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)  
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-AFL-7027-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 2700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14309 lumens  
Efficiency: N/A  
Efficacy: 110.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B2 - U0 - G2

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

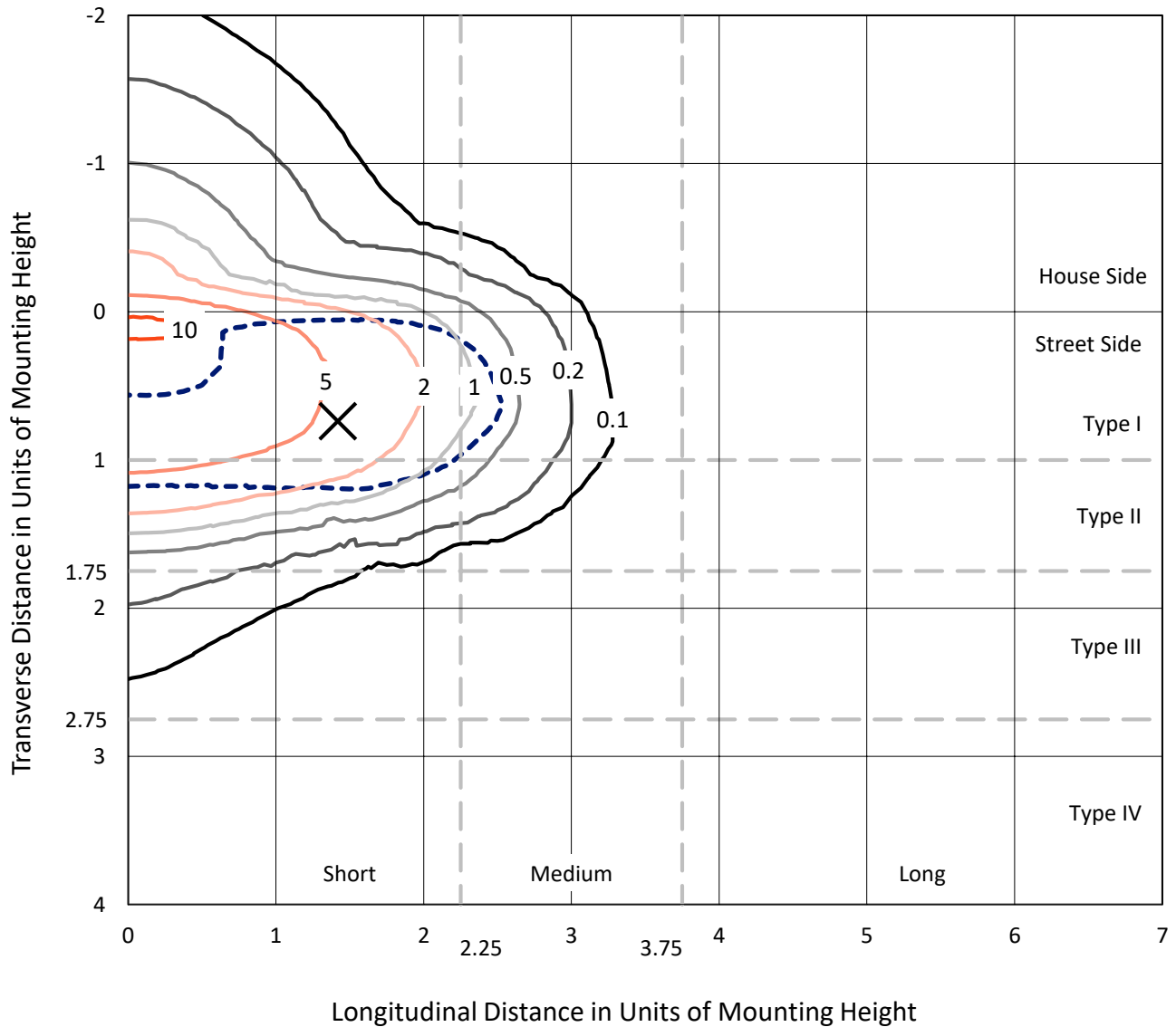


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### Iso-Footcandle Lines of Horizontal Illumination

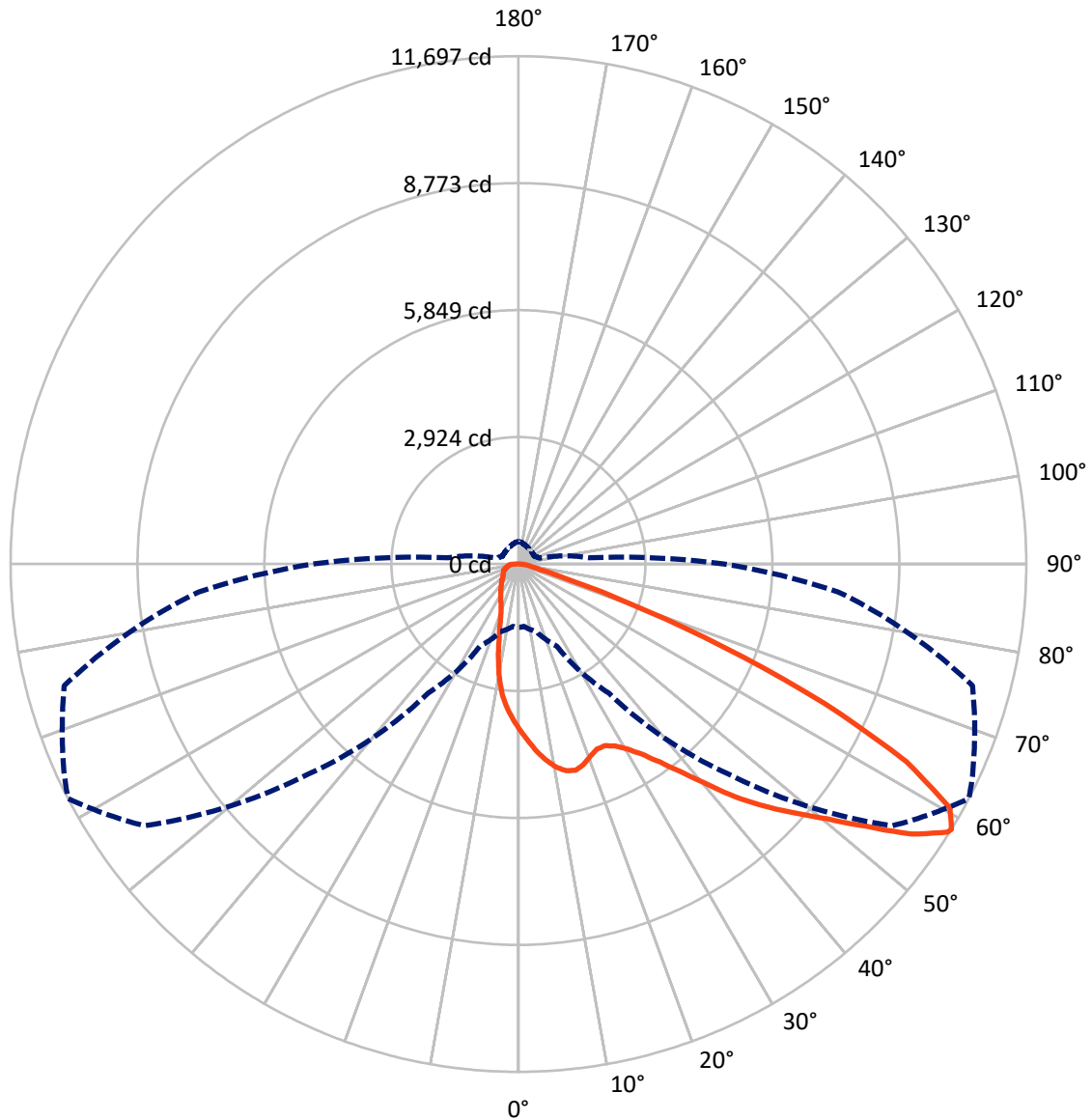
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.2 fc  
 Type II - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral    - - - Horizontal Cone Through 58-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2197.0   | 0.0    | 2197.0  |
|                    | % Fixture | 15.4     | 0.0    | 15.4    |
| <b>Street Side</b> | Lumens    | 12112.0  | 0.0    | 12112.0 |
|                    | % Fixture | 84.6     | 0.0    | 84.6    |
| <b>Total</b>       | Lumens    | 14309.0  | 0.0    | 14309.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 341.5   | 2.4       |
| 10°-20°   | 861.8   | 6.0       |
| 20°-30°   | 1396.7  | 9.8       |
| 30°-40°   | 2229.9  | 15.6      |
| 40°-50°   | 3243.5  | 22.7      |
| 50°-60°   | 3394.0  | 23.7      |
| 60°-70°   | 2069.1  | 14.5      |
| 70°-80°   | 578.6   | 4.0       |
| 80°-90°   | 194.0   | 1.4       |
| 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°    | 14309.0 | 100.0     |
| 0°-180°   | 14309.0 | 100.0     |

**Coefficient of Utilization**



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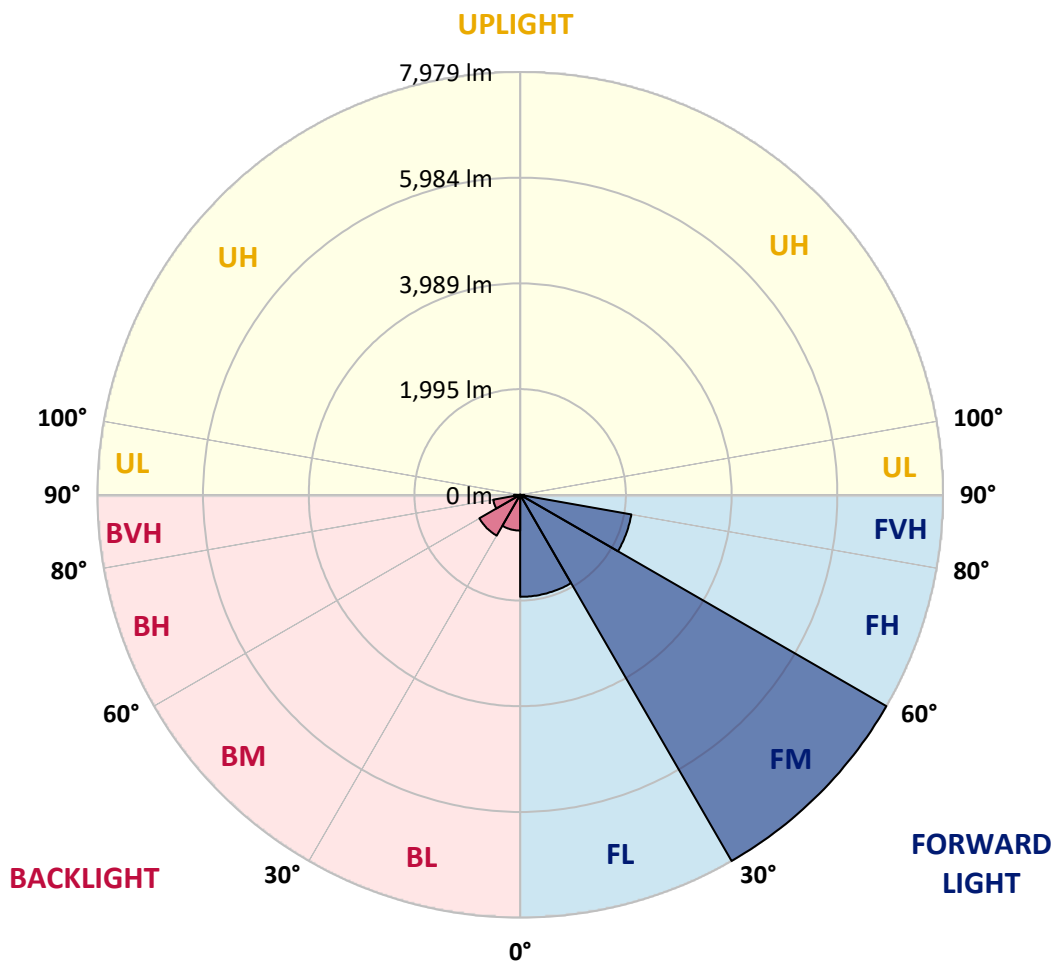
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1924.6 | 13.5      |                         |      |         |
| FM   | (30°-60°)   | 7978.9 | 55.8      |                         |      |         |
| FH   | (60°-80°)   | 2130.5 | 14.9      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 78.0   | 0.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 675.4  | 4.7       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 888.5  | 6.2       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 517.2  | 3.6       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 115.9  | 0.8       |                         |      | G2/225  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 62.5°   | 65°     | 75°     | 85°    |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|--------|
| 0°    | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4  | 3820.4  | 3820.4  | 3820.4  | 3820.4 |
| 2.5°  | 4336.4 | 4333.8 | 4297.0 | 4272.9 | 4244.3 | 4178.1 | 4111.9  | 4062.8  | 4037.7  | 3942.0  | 3849.1 |
| 5°    | 4695.0 | 4684.3 | 4663.7 | 4637.8 | 4600.2 | 4517.0 | 4412.5  | 4322.1  | 4286.4  | 4116.5  | 3945.6 |
| 7.5°  | 4505.4 | 4522.4 | 4585.9 | 4657.4 | 4732.6 | 4738.0 | 4663.7  | 4556.5  | 4517.0  | 4289.9  | 4039.5 |
| 10°   | 3980.5 | 3973.4 | 4053.0 | 4192.4 | 4440.1 | 4685.2 | 4807.6  | 4755.0  | 4713.9  | 4454.4  | 4133.5 |
| 12.5° | 3821.3 | 3819.6 | 3833.0 | 3868.7 | 4024.2 | 4360.6 | 4771.1  | 4885.5  | 4871.1  | 4628.8  | 4233.6 |
| 15°   | 3869.5 | 3871.3 | 3870.4 | 3875.0 | 3917.9 | 4077.9 | 4566.3  | 4929.3  | 4974.1  | 4801.4  | 4335.5 |
| 17.5° | 4024.2 | 4018.1 | 3998.4 | 3976.9 | 3983.2 | 4040.3 | 4345.5  | 4854.3  | 4988.4  | 4955.3  | 4421.4 |
| 20°   | 4263.0 | 4263.0 | 4210.4 | 4150.3 | 4111.1 | 4123.6 | 4253.3  | 4725.4  | 4922.3  | 5085.8  | 4485.7 |
| 22.5° | 4562.8 | 4567.2 | 4489.3 | 4380.2 | 4290.8 | 4256.8 | 4306.0  | 4629.8  | 4841.7  | 5206.5  | 4543.0 |
| 25°   | 4934.7 | 4933.9 | 4820.2 | 4663.7 | 4522.4 | 4441.0 | 4440.1  | 4634.3  | 4816.6  | 5347.9  | 4602.9 |
| 27.5° | 5395.3 | 5353.2 | 5220.9 | 4998.2 | 4798.7 | 4674.5 | 4618.1  | 4747.0  | 4869.4  | 5521.3  | 4683.5 |
| 30°   | 5914.8 | 5872.0 | 5698.4 | 5412.3 | 5142.2 | 4960.6 | 4867.6  | 4941.8  | 5030.4  | 5742.2  | 4805.0 |
| 32.5° | 6429.1 | 6439.0 | 6235.0 | 5912.1 | 5565.2 | 5309.4 | 5171.7  | 5217.3  | 5279.0  | 6012.4  | 4969.6 |
| 35°   | 7182.0 | 7181.2 | 6914.7 | 6511.4 | 6099.0 | 5744.9 | 5570.5  | 5594.6  | 5651.1  | 6393.2  | 5200.3 |
| 37.5° | 7743.7 | 7734.8 | 7563.0 | 7206.3 | 6742.0 | 6317.3 | 6065.0  | 6068.7  | 6117.0  | 6871.8  | 5504.4 |
| 40°   | 7800.9 | 7799.2 | 7798.2 | 7747.3 | 7429.8 | 7029.1 | 6713.5  | 6648.1  | 6667.8  | 7379.7  | 5827.2 |
| 42.5° | 7363.5 | 7428.9 | 7616.6 | 7904.6 | 7993.2 | 7783.0 | 7484.3  | 7338.6  | 7295.7  | 7962.8  | 6168.8 |
| 45°   | 6740.3 | 6773.4 | 7102.4 | 7749.9 | 8276.7 | 8491.3 | 8266.8  | 7959.3  | 7886.0  | 8529.8  | 6447.0 |
| 47.5° | 6450.5 | 6436.3 | 6626.6 | 7332.2 | 8249.0 | 9054.6 | 9070.7  | 8566.4  | 8442.1  | 9019.0  | 6683.8 |
| 50°   | 5829.0 | 5810.1 | 6050.8 | 6718.0 | 7946.6 | 9334.6 | 9896.3  | 9228.2  | 8998.3  | 9483.9  | 6898.5 |
| 52.5° | 4590.3 | 4572.6 | 4895.4 | 5754.7 | 7270.6 | 9229.9 | 10591.9 | 10040.3 | 9648.5  | 9932.0  | 7098.9 |
| 55°   | 2987.0 | 2988.8 | 3296.4 | 4182.6 | 5883.5 | 8620.0 | 10918.4 | 10978.4 | 10539.3 | 10380.0 | 7260.7 |
| 57.5° | 1644.5 | 1629.3 | 1848.5 | 2393.2 | 4047.6 | 7234.8 | 10646.5 | 11654.4 | 11425.5 | 10764.6 | 7377.9 |
| 58°   | 1462.3 | 1444.2 | 1613.3 | 2082.8 | 3629.1 | 6843.9 | 10509.7 | 11697.3 | 11539.1 | 10828.1 | 7394.8 |
| 60°   | 1041.9 | 1011.4 | 985.5  | 1174.3 | 2090.8 | 4934.7 | 9597.5  | 11419.3 | 11572.1 | 10955.1 | 7378.8 |
| 62.5° | 878.3  | 843.2  | 750.4  | 743.2  | 984.6  | 2413.7 | 7589.9  | 10028.6 | 10457.0 | 10662.6 | 7119.4 |
| 65°   | 815.7  | 780.6  | 658.2  | 614.4  | 668.0  | 1041.9 | 4693.3  | 7743.7  | 8316.0  | 9645.8  | 6466.5 |
| 67.5° | 770.8  | 729.8  | 598.4  | 541.0  | 551.7  | 623.3  | 1991.6  | 5064.4  | 5728.0  | 7521.9  | 5187.8 |
| 70°   | 730.6  | 685.0  | 550.9  | 484.7  | 475.7  | 473.9  | 778.0   | 2644.4  | 3283.8  | 4922.3  | 3475.3 |
| 72.5° | 685.0  | 640.3  | 508.9  | 438.3  | 418.5  | 384.6  | 467.7   | 1092.8  | 1498.0  | 2412.8  | 1592.8 |
| 75°   | 618.8  | 582.2  | 462.4  | 399.7  | 365.8  | 312.2  | 345.2   | 524.0   | 645.7   | 923.7   | 739.6  |
| 77.5° | 544.6  | 515.1  | 414.9  | 367.5  | 322.0  | 254.8  | 263.8   | 355.0   | 398.8   | 520.5   | 428.3  |
| 80°   | 385.5  | 396.2  | 362.1  | 323.7  | 283.4  | 205.7  | 202.9   | 260.1   | 286.2   | 349.7   | 287.9  |
| 82.5° | 265.5  | 273.7  | 295.2  | 255.7  | 229.0  | 160.1  | 149.4   | 180.6   | 194.0   | 211.0   | 139.4  |
| 85°   | 189.6  | 184.2  | 204.9  | 183.3  | 168.2  | 102.0  | 95.7    | 114.4   | 122.4   | 128.7   | 67.1   |
| 87.5° | 115.3  | 114.4  | 118.0  | 94.9   | 87.7   | 51.8   | 47.4    | 54.5    | 58.1    | 56.4    | 32.2   |
| 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 | 3820.4 |
| 2.5°  | 3814.2 | 3770.4 | 3674.6 | 3597.7 | 3514.6 | 3451.1 | 3387.6 | 3351.8 | 3312.5 | 3290.1 | 3287.3 |
| 5°    | 3856.2 | 3766.8 | 3562.9 | 3373.2 | 3178.4 | 3003.0 | 2831.3 | 2704.3 | 2600.7 | 2541.6 | 2538.0 |
| 7.5°  | 3902.6 | 3762.3 | 3447.4 | 3119.3 | 2772.3 | 2427.1 | 2122.2 | 1906.7 | 1768.0 | 1703.6 | 1699.1 |
| 10°   | 3938.4 | 3743.4 | 3307.1 | 2796.5 | 2246.4 | 1790.4 | 1513.1 | 1386.2 | 1344.1 | 1333.4 | 1331.6 |
| 12.5° | 3981.4 | 3730.1 | 3130.1 | 2382.3 | 1717.0 | 1362.9 | 1278.8 | 1270.8 | 1279.7 | 1285.0 | 1286.1 |
| 15°   | 4021.6 | 3704.2 | 2891.3 | 1923.6 | 1344.1 | 1218.0 | 1219.8 | 1236.7 | 1254.8 | 1262.7 | 1263.6 |
| 17.5° | 4040.3 | 3640.7 | 2577.3 | 1515.8 | 1176.1 | 1152.7 | 1173.2 | 1195.6 | 1211.8 | 1218.0 | 1218.0 |
| 20°   | 4040.3 | 3538.8 | 2213.3 | 1227.9 | 1088.3 | 1092.8 | 1117.9 | 1134.9 | 1138.4 | 1133.0 | 1130.3 |
| 22.5° | 4023.4 | 3412.7 | 1859.2 | 1071.4 | 1016.8 | 1033.8 | 1053.5 | 1041.9 | 999.9  | 967.7  | 961.4  |
| 25°   | 4008.1 | 3263.3 | 1518.6 | 975.6  | 954.2  | 976.5  | 968.6  | 889.0  | 824.6  | 791.4  | 786.0  |
| 27.5° | 3983.2 | 3082.7 | 1234.1 | 897.0  | 893.5  | 911.3  | 831.7  | 754.8  | 722.5  | 704.7  | 701.1  |
| 30°   | 3976.9 | 2886.8 | 1033.0 | 827.2  | 833.4  | 808.5  | 717.2  | 692.1  | 685.0  | 675.2  | 670.8  |
| 32.5° | 3997.5 | 2691.0 | 906.7  | 769.9  | 776.2  | 694.0  | 659.0  | 662.7  | 661.8  | 649.3  | 644.9  |
| 35°   | 4053.8 | 2500.4 | 826.4  | 718.1  | 700.1  | 621.5  | 625.9  | 636.7  | 636.7  | 621.5  | 616.1  |
| 37.5° | 4152.1 | 2323.3 | 775.3  | 674.3  | 612.6  | 584.0  | 595.5  | 609.9  | 609.9  | 599.2  | 594.7  |
| 40°   | 4256.8 | 2150.8 | 736.9  | 639.5  | 557.2  | 558.0  | 569.6  | 580.3  | 584.8  | 586.7  | 583.1  |
| 42.5° | 4351.6 | 1971.9 | 695.7  | 601.9  | 532.1  | 538.4  | 543.7  | 551.7  | 570.6  | 583.1  | 581.4  |
| 45°   | 4407.1 | 1792.2 | 651.0  | 555.3  | 515.1  | 517.9  | 515.9  | 530.3  | 552.6  | 571.4  | 571.4  |
| 47.5° | 4458.1 | 1644.5 | 614.4  | 508.9  | 498.1  | 498.1  | 492.8  | 507.1  | 527.7  | 550.0  | 551.7  |
| 50°   | 4506.3 | 1548.9 | 588.4  | 473.0  | 476.7  | 473.9  | 472.1  | 485.7  | 513.3  | 540.2  | 544.6  |
| 52.5° | 4555.6 | 1516.7 | 565.3  | 447.1  | 454.4  | 450.7  | 452.4  | 471.3  | 502.6  | 530.3  | 534.9  |
| 55°   | 4624.4 | 1537.3 | 541.0  | 429.3  | 432.9  | 431.9  | 439.1  | 460.7  | 488.3  | 515.9  | 517.9  |
| 57.5° | 4709.4 | 1612.4 | 520.5  | 415.8  | 412.2  | 417.6  | 429.3  | 449.8  | 476.7  | 509.8  | 512.5  |
| 58°   | 4726.3 | 1630.3 | 517.0  | 412.2  | 407.8  | 415.8  | 427.5  | 447.1  | 474.8  | 509.8  | 512.5  |
| 60°   | 4752.3 | 1693.8 | 507.9  | 405.1  | 392.6  | 406.9  | 421.2  | 440.9  | 471.3  | 514.2  | 519.6  |
| 62.5° | 4627.1 | 1706.3 | 505.2  | 397.1  | 376.5  | 394.4  | 411.3  | 433.7  | 467.7  | 529.5  | 541.0  |
| 65°   | 4193.4 | 1577.6 | 486.5  | 383.7  | 363.1  | 384.6  | 402.4  | 428.3  | 478.4  | 575.0  | 580.3  |
| 67.5° | 3366.0 | 1310.2 | 440.9  | 363.1  | 347.9  | 372.9  | 395.3  | 428.3  | 482.8  | 582.2  | 585.8  |
| 70°   | 2314.5 | 984.6  | 383.7  | 340.7  | 329.9  | 358.7  | 392.6  | 438.3  | 467.7  | 550.9  | 540.2  |
| 72.5° | 1209.1 | 685.0  | 336.2  | 314.8  | 308.6  | 346.0  | 418.5  | 428.3  | 449.8  | 514.2  | 503.5  |
| 75°   | 609.1  | 466.0  | 296.0  | 285.3  | 284.5  | 341.6  | 468.6  | 412.2  | 431.0  | 483.7  | 507.1  |
| 77.5° | 359.5  | 364.9  | 263.8  | 257.5  | 262.0  | 333.6  | 469.5  | 396.2  | 409.5  | 445.4  | 470.4  |
| 80°   | 246.0  | 301.4  | 238.8  | 237.1  | 240.6  | 306.7  | 432.9  | 376.5  | 384.6  | 421.2  | 448.1  |
| 82.5° | 138.6  | 166.4  | 209.2  | 221.0  | 219.0  | 251.3  | 373.9  | 342.6  | 352.3  | 498.1  | 526.8  |
| 85°   | 67.1   | 100.3  | 175.3  | 206.6  | 186.8  | 167.3  | 304.0  | 304.0  | 306.7  | 356.8  | 361.3  |
| 87.5° | 25.1   | 44.7   | 118.0  | 163.6  | 130.6  | 100.3  | 206.6  | 215.6  | 239.7  | 246.9  | 252.2  |
| 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)