

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: iO LED

Report Number: P958891

Luminaire Tested: MMG-05W-927-10x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958891
SCALED TEST REPORT
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: iO LED
Catalog Number: MMG-05W-927-10x60-ID-X-X-1F-1-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 10x60 DEGREE OPTICS. INPUT WATTAGE IN IES FILE REPRESENTS CONSUMPTION IN A RUN, INDIVIDUAL FIXTURE MAY VARY.
5 WATTS PER FOOT
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 139.7 lumens
Efficiency: N/A
Efficacy: 31.0 lumens/watt
Spacing Criteria (0/90/45): 0.18 / 0.91 / 0.25
Luminous Opening: Rectangular w/ Sides (W: 0.07' x L: 1' x H: 0.09')
CIE Type: Direct

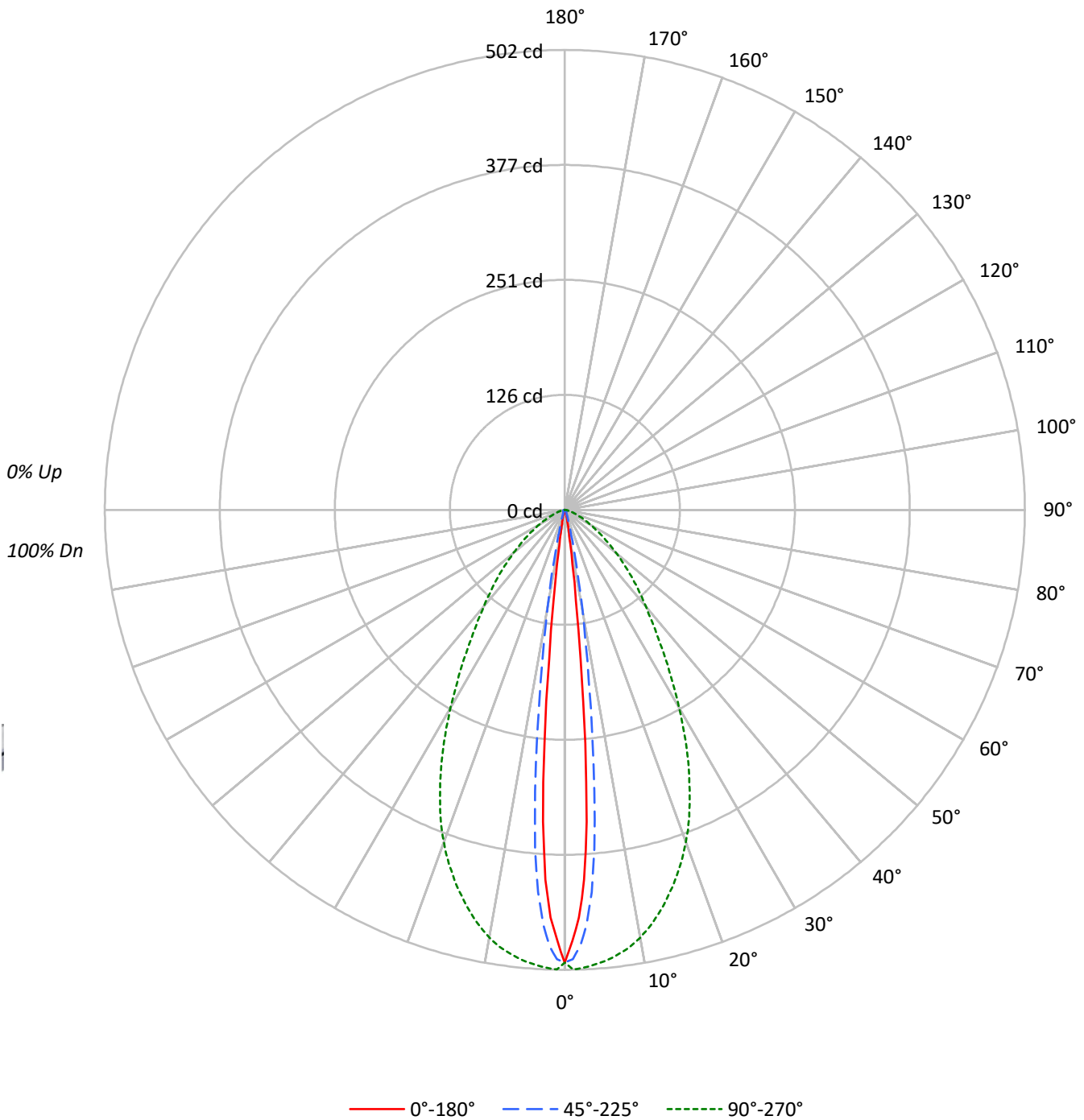
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P958891

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|
| RF | 20 | | | | | 20 | | | | | 20 | | | | | 20 | | | | | 20 | |
| RC | 80 | | | | | 70 | | | | | 50 | | | | | 30 | | | | | 10 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 | |
| RCR | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 |
| 1 | 113 | 110 | 107 | 104 | 110 | 107 | 105 | 103 | 103 | 101 | 99 | 100 | 98 | 96 | 96 | 95 | 94 | 92 | | | | 92 |
| 2 | 106 | 101 | 96 | 93 | 104 | 99 | 95 | 92 | 96 | 93 | 90 | 93 | 90 | 88 | 90 | 88 | 86 | 84 | | | | 84 |
| 3 | 100 | 93 | 88 | 84 | 98 | 92 | 87 | 83 | 89 | 85 | 82 | 87 | 83 | 80 | 85 | 82 | 79 | 77 | | | | 77 |
| 4 | 95 | 87 | 81 | 76 | 93 | 86 | 80 | 76 | 84 | 79 | 75 | 81 | 77 | 74 | 80 | 76 | 73 | 72 | | | | 72 |
| 5 | 90 | 81 | 75 | 70 | 88 | 80 | 74 | 70 | 78 | 73 | 69 | 77 | 72 | 69 | 75 | 71 | 68 | 67 | | | | 67 |
| 6 | 86 | 76 | 70 | 65 | 84 | 75 | 70 | 65 | 74 | 69 | 65 | 73 | 68 | 64 | 71 | 67 | 64 | 62 | | | | 62 |
| 7 | 82 | 72 | 66 | 61 | 80 | 71 | 65 | 61 | 70 | 65 | 61 | 69 | 64 | 60 | 68 | 63 | 60 | 59 | | | | 59 |
| 8 | 78 | 68 | 62 | 58 | 77 | 68 | 62 | 58 | 66 | 61 | 57 | 65 | 61 | 57 | 64 | 60 | 57 | 55 | | | | 55 |
| 9 | 75 | 65 | 59 | 55 | 73 | 64 | 59 | 55 | 63 | 58 | 54 | 62 | 58 | 54 | 62 | 57 | 54 | 53 | | | | 53 |
| 10 | 72 | 62 | 56 | 52 | 71 | 61 | 56 | 52 | 61 | 55 | 52 | 60 | 55 | 52 | 59 | 55 | 52 | 50 | | | | 50 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 77222 | 77222 | 77222 |
| 5° | 39787 | 53851 | 69970 |
| 10° | 3938 | 14829 | 61733 |
| 15° | 1028 | 2910 | 52964 |
| 20° | 516 | 1005 | 44250 |
| 25° | 381 | 516 | 35091 |
| 30° | 378 | 340 | 26237 |
| 35° | 288 | 277 | 18889 |
| 40° | 228 | 251 | 13734 |
| 45° | 224 | 240 | 10129 |
| 50° | 221 | 218 | 7148 |
| 55° | 194 | 187 | 4930 |
| 60° | 191 | 143 | 3190 |
| 65° | 219 | 123 | 1962 |
| 70° | 222 | 102 | 1131 |
| 75° | 229 | 81 | 580 |
| 80° | 243 | 71 | 280 |
| 85° | 272 | 61 | 106 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 10129 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 28.5 | 20.4 |
| 10°-20° | 31.9 | 22.9 |
| 20°-30° | 26.7 | 19.1 |
| 30°-40° | 20.0 | 14.3 |
| 40°-50° | 15.0 | 10.8 |
| 50°-60° | 10.0 | 7.2 |
| 60°-70° | 5.0 | 3.6 |
| 70°-80° | 1.8 | 1.3 |
| 80°-90° | 0.6 | 0.4 |
| 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°-30° | 87.2 | 62.4 |
| 0°-40° | 107.2 | 76.7 |
| 0°-60° | 132.2 | 94.6 |
| 0°-90° | 139.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 139.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 494 | 494 | 494 | 494 | 494 | |
| 5° | 256 | 282 | 372 | 462 | 494 | 15 |
| 15° | 6 | 8 | 22 | 191 | 436 | 2 |
| 25° | 2 | 2 | 4 | 63 | 321 | 1 |
| 35° | 2 | 2 | 2 | 28 | 185 | 1 |
| 45° | 1 | 1 | 2 | 23 | 103 | 1 |
| 55° | 1 | 1 | 2 | 17 | 50 | 1 |
| 65° | 1 | 1 | 1 | 8 | 19 | 1 |
| 75° | 0 | 0 | 1 | 3 | 5 | 0 |
| 85° | 0 | 0 | 0 | 1 | 1 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P958891

CATALOG NUMBER: MMG-05W-927-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-----|-------|-------|-------|-------|-------|
| 0° | 494.3 | 494.3 | 494.3 | 494.3 | 494.3 |
| 1° | 470.6 | 480.8 | 490.6 | 498.0 | 501.7 |
| 2° | 445.1 | 455.7 | 476.7 | 494.7 | 500.7 |
| 3° | 404.3 | 418.3 | 452.9 | 486.7 | 499.2 |
| 4° | 341.3 | 359.2 | 418.3 | 475.4 | 497.0 |
| 5° | 255.6 | 282.2 | 371.5 | 462.3 | 494.5 |
| 6° | 163.7 | 196.2 | 308.9 | 446.5 | 491.8 |
| 7° | 99.9 | 131.7 | 246.6 | 426.3 | 488.1 |
| 8° | 60.2 | 86.6 | 189.2 | 403.9 | 484.2 |
| 9° | 37.7 | 54.2 | 144.0 | 376.1 | 479.7 |
| 10° | 25.2 | 34.5 | 108.9 | 341.1 | 474.1 |
| 11° | 17.8 | 24.2 | 78.2 | 312.1 | 467.7 |
| 12° | 13.3 | 17.5 | 57.5 | 280.4 | 460.7 |
| 13° | 10.0 | 12.9 | 40.5 | 244.3 | 453.0 |
| 14° | 8.0 | 10.0 | 28.7 | 218.5 | 444.9 |
| 15° | 6.5 | 8.1 | 22.5 | 191.4 | 436.1 |
| 16° | 5.4 | 6.8 | 17.4 | 173.0 | 427.2 |
| 17° | 4.4 | 5.7 | 13.6 | 152.7 | 417.5 |
| 18° | 3.9 | 4.7 | 11.2 | 137.2 | 407.8 |
| 19° | 3.4 | 4.2 | 9.4 | 121.0 | 397.2 |
| 20° | 3.2 | 3.6 | 8.1 | 109.4 | 386.1 |
| 21° | 2.9 | 3.3 | 6.9 | 97.7 | 374.5 |
| 22° | 2.7 | 3.0 | 6.2 | 85.9 | 362.1 |
| 23° | 2.5 | 2.8 | 5.4 | 78.1 | 348.4 |
| 24° | 2.4 | 2.7 | 4.7 | 69.6 | 334.7 |
| 25° | 2.3 | 2.5 | 4.3 | 62.8 | 321.1 |
| 26° | 2.2 | 2.4 | 3.9 | 56.6 | 307.3 |
| 27° | 2.1 | 2.3 | 3.6 | 51.5 | 292.9 |
| 28° | 2.1 | 2.2 | 3.3 | 46.8 | 278.2 |
| 29° | 2.1 | 2.1 | 3.1 | 42.5 | 263.7 |
| 30° | 2.2 | 2.1 | 2.9 | 38.9 | 249.4 |
| 31° | 2.1 | 2.1 | 2.8 | 36.3 | 235.1 |
| 32° | 2.0 | 2.1 | 2.6 | 33.8 | 221.7 |
| 33° | 1.9 | 2.1 | 2.6 | 31.6 | 209.3 |
| 34° | 1.7 | 2.1 | 2.5 | 29.9 | 197.1 |
| 35° | 1.6 | 2.0 | 2.4 | 28.5 | 184.9 |
| 36° | 1.5 | 1.9 | 2.3 | 27.2 | 173.6 |
| 37° | 1.4 | 1.8 | 2.3 | 26.5 | 163.8 |
| 38° | 1.3 | 1.6 | 2.3 | 25.7 | 154.5 |
| 39° | 1.3 | 1.6 | 2.2 | 25.1 | 145.3 |
| 40° | 1.2 | 1.5 | 2.2 | 24.6 | 137.3 |
| 41° | 1.2 | 1.4 | 2.2 | 24.1 | 129.9 |
| 42° | 1.2 | 1.4 | 2.1 | 23.7 | 122.4 |
| 43° | 1.2 | 1.3 | 2.1 | 23.4 | 115.7 |
| 44° | 1.1 | 1.3 | 2.1 | 23.0 | 109.4 |



TEST NUMBER: P958891

CATALOG NUMBER: MMG-05W-927-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-----|-----|-------|-----|-------|-------|
| 45° | 1.1 | 1.3 | 2.1 | 22.7 | 102.6 |
| 46° | 1.1 | 1.2 | 2.1 | 22.3 | 96.0 |
| 47° | 1.0 | 1.2 | 2.0 | 22.0 | 89.7 |
| 48° | 1.0 | 1.2 | 1.9 | 21.5 | 83.8 |
| 49° | 1.0 | 1.1 | 1.9 | 21.1 | 78.0 |
| 50° | 1.0 | 1.1 | 1.9 | 20.6 | 72.8 |
| 51° | 1.0 | 1.0 | 1.8 | 20.0 | 67.5 |
| 52° | 0.9 | 1.0 | 1.8 | 19.3 | 62.6 |
| 53° | 0.9 | 1.0 | 1.7 | 18.5 | 58.0 |
| 54° | 0.9 | 1.0 | 1.6 | 17.8 | 53.9 |
| 55° | 0.8 | 0.9 | 1.6 | 16.8 | 50.1 |
| 56° | 0.8 | 0.9 | 1.5 | 16.0 | 45.9 |
| 57° | 0.7 | 0.9 | 1.5 | 15.1 | 41.8 |
| 58° | 0.7 | 0.8 | 1.4 | 14.2 | 38.4 |
| 59° | 0.7 | 0.8 | 1.3 | 13.3 | 35.2 |
| 60° | 0.7 | 0.8 | 1.2 | 12.3 | 32.1 |
| 61° | 0.7 | 0.7 | 1.2 | 11.5 | 29.3 |
| 62° | 0.7 | 0.7 | 1.1 | 10.6 | 26.5 |
| 63° | 0.7 | 0.7 | 1.1 | 9.8 | 23.9 |
| 64° | 0.7 | 0.7 | 1.0 | 9.0 | 21.6 |
| 65° | 0.7 | 0.7 | 1.0 | 8.2 | 19.4 |
| 66° | 0.7 | 0.7 | 0.9 | 7.4 | 17.4 |
| 67° | 0.7 | 0.7 | 0.9 | 6.7 | 15.6 |
| 68° | 0.6 | 0.6 | 0.9 | 6.0 | 13.9 |
| 69° | 0.6 | 0.6 | 0.8 | 5.4 | 12.3 |
| 70° | 0.6 | 0.6 | 0.8 | 4.8 | 10.9 |
| 71° | 0.5 | 0.5 | 0.7 | 4.3 | 9.6 |
| 72° | 0.5 | 0.5 | 0.7 | 3.8 | 8.4 |
| 73° | 0.5 | 0.5 | 0.7 | 3.3 | 7.3 |
| 74° | 0.5 | 0.5 | 0.7 | 2.9 | 6.3 |
| 75° | 0.5 | 0.5 | 0.6 | 2.6 | 5.4 |
| 76° | 0.4 | 0.5 | 0.6 | 2.3 | 4.7 |
| 77° | 0.4 | 0.4 | 0.6 | 1.9 | 4.0 |
| 78° | 0.4 | 0.4 | 0.5 | 1.7 | 3.4 |
| 79° | 0.4 | 0.4 | 0.5 | 1.5 | 2.9 |
| 80° | 0.4 | 0.4 | 0.5 | 1.3 | 2.5 |
| 81° | 0.3 | 0.3 | 0.5 | 1.2 | 2.0 |
| 82° | 0.3 | 0.3 | 0.5 | 1.0 | 1.7 |
| 83° | 0.3 | 0.3 | 0.4 | 0.9 | 1.4 |
| 84° | 0.3 | 0.3 | 0.4 | 0.9 | 1.1 |
| 85° | 0.3 | 0.3 | 0.4 | 0.8 | 0.9 |
| 86° | 0.3 | 0.3 | 0.4 | 0.8 | 0.7 |
| 87° | 0.3 | 0.2 | 0.4 | 0.7 | 0.5 |
| 88° | 0.2 | 0.2 | 0.4 | 0.7 | 0.4 |
| 89° | 0.2 | 0.2 | 0.4 | 0.6 | 0.4 |



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CATALOG NUMBER: MMG-05W-927-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-----|-----|-------|-----|-------|-----|
| 90° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

(END OF REPORT)