

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: HALO

Report Number: P601409

Luminaire Tested: **ML4DM08LSNFL95FS1E - TIR4D25NFL - TL41R_ TL42S_ 3500K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P601409
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4DM08LSNFL95FS1E - TIR4D25NFL - TL41R_ TL42S_ 3500K
 Description: DIRECT MOUNT, 25D OPTIC, OPEN TRIM
 Light Source: (1) SELECTABLE LUMEN LED 95CRI / 3500K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 1062.5 lumens
 Efficiency: N/A
 Efficacy: 103.2 lumens/watt
 Spacing Criteria (0/90/45): 0.43 / 0.43 / 0.46
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

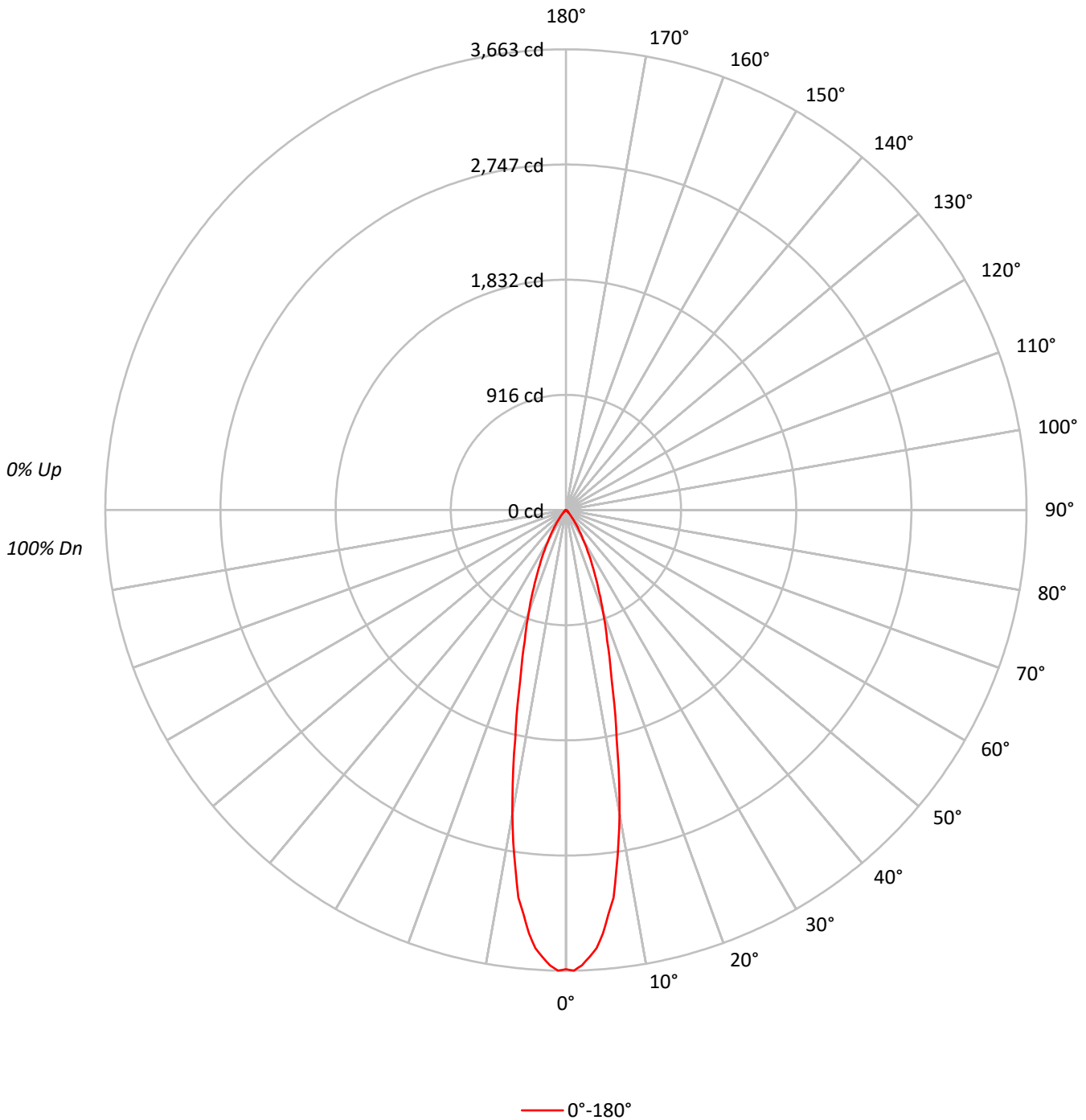
Input Watts (W): 10.3
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



| Meas | | Calibration Due Date | |
|------------------|-----------------------|----------------------|------------|
| Instrument | Identificatio | | |
| Photometer | GONIO 1 11111111 | 4/22/2021 | 10/22/2021 |
| Power Meter | XITRON 2801 IN0197 | 12/1/2020 | 12/1/2021 |
| AC Power Source | CHROMA 61505 IN0196 | 12/1/2020 | 12/1/2021 |
| DC Power Supply | AGILENT E3634A IN0198 | 11/30/2020 | 11/30/2021 |
| Room Thermometer | ONSET IN0143 | 12/1/2020 | 12/1/2021 |

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Luminous Intensity Polar Plot



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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 | 99 | 98 | 97 | 100 |
| 1 | 115 | 112 | 110 | 108 | 112 | 110 | 108 | 107 | 106 | 105 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 | 96 | 94 | 93 | 91 |
| 2 | 110 | 106 | 103 | 100 | 108 | 105 | 102 | 99 | 101 | 99 | 97 | 98 | 97 | 95 | 96 | 94 | 93 | 93 | 90 | 89 | 87 | 87 |
| 3 | 106 | 101 | 97 | 94 | 104 | 100 | 96 | 93 | 97 | 94 | 91 | 95 | 92 | 90 | 93 | 90 | 89 | 87 | 87 | 85 | 84 | 84 |
| 4 | 102 | 96 | 92 | 88 | 101 | 95 | 91 | 88 | 93 | 90 | 87 | 91 | 88 | 86 | 89 | 87 | 85 | 84 | 86 | 84 | 81 | 80 |
| 5 | 98 | 92 | 87 | 84 | 97 | 91 | 87 | 83 | 89 | 86 | 83 | 88 | 84 | 82 | 86 | 84 | 81 | 80 | 83 | 80 | 78 | 77 |
| 6 | 95 | 88 | 83 | 80 | 94 | 87 | 83 | 80 | 86 | 82 | 79 | 85 | 81 | 79 | 83 | 80 | 78 | 77 | 81 | 77 | 75 | 74 |
| 7 | 92 | 84 | 80 | 76 | 91 | 84 | 79 | 76 | 83 | 79 | 76 | 82 | 78 | 75 | 81 | 77 | 75 | 74 | 81 | 77 | 75 | 74 |
| 8 | 89 | 81 | 76 | 73 | 88 | 81 | 76 | 73 | 80 | 76 | 73 | 79 | 75 | 72 | 78 | 75 | 72 | 71 | 78 | 75 | 72 | 71 |
| 9 | 86 | 78 | 74 | 70 | 85 | 78 | 73 | 70 | 77 | 73 | 70 | 76 | 72 | 70 | 75 | 72 | 70 | 69 | 75 | 72 | 70 | 69 |
| 10 | 83 | 75 | 71 | 68 | 82 | 75 | 71 | 68 | 74 | 70 | 68 | 74 | 70 | 67 | 73 | 70 | 67 | 66 | 73 | 70 | 67 | 66 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|---------|
| | 0° |
| 0° | 1152701 |
| 5° | 1070919 |
| 10° | 787355 |
| 15° | 459235 |
| 20° | 289793 |
| 25° | 178420 |
| 30° | 101873 |
| 35° | 55085 |
| 40° | 26051 |
| 45° | 12995 |
| 50° | 7467 |
| 55° | 3468 |
| 60° | 1579 |
| 65° | 971 |
| 70° | 1200 |
| 75° | 0 |
| 80° | 0 |
| 85° | 0 |

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 292.7 | 27.5 |
| 10°-20° | 403.8 | 38.0 |
| 20°-30° | 239.2 | 22.5 |
| 30°-40° | 93.6 | 8.8 |
| 40°-50° | 25.0 | 2.4 |
| 50°-60° | 6.4 | 0.6 |
| 60°-70° | 1.7 | 0.2 |
| 70°-80° | 0.2 | 0.0 |
| 80°-90° | 0.0 | 0.0 |
| 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°-30° | 935.7 | 88.1 |
| 0°-40° | 1029.2 | 96.9 |
| 0°-60° | 1060.6 | 99.8 |
| 0°-90° | 1062.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1062.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|------|------|
| 0° | 3650 | |
| 5° | 3379 | 293 |
| 15° | 1405 | 404 |
| 25° | 512 | 239 |
| 35° | 143 | 94 |
| 45° | 29 | 25 |
| 55° | 6 | 6 |
| 65° | 1 | 2 |
| 75° | 0 | 0 |
| 85° | 0 | 0 |
| 90° | 0 | |

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CANDELA DISTRIBUTION (FULL):

| 0° | |
|-------|--------|
| 0° | 3650.5 |
| 1° | 3663.1 |
| 2° | 3622.7 |
| 3° | 3559.5 |
| 4° | 3492.4 |
| 5° | 3378.6 |
| 6° | 3230.7 |
| 7° | 3105.5 |
| 8° | 2885.5 |
| 9° | 2673.1 |
| 10° | 2455.6 |
| 12.5° | 1865.1 |
| 15° | 1404.8 |
| 17.5° | 1090.0 |
| 20° | 862.4 |
| 22.5° | 668.9 |
| 25° | 512.1 |
| 27.5° | 383.1 |
| 30° | 279.4 |
| 32.5° | 203.6 |
| 35° | 142.9 |
| 37.5° | 94.8 |
| 40° | 63.2 |
| 42.5° | 41.7 |
| 45° | 29.1 |
| 47.5° | 21.5 |
| 50° | 15.2 |
| 52.5° | 10.1 |
| 55° | 6.3 |
| 57.5° | 3.8 |
| 60° | 2.5 |
| 62.5° | 2.5 |
| 65° | 1.3 |
| 67.5° | 1.3 |
| 70° | 1.3 |
| 72.5° | 0.0 |
| 75° | 0.0 |
| 77.5° | 0.0 |
| 80° | 0.0 |
| 82.5° | 0.0 |
| 85° | 0.0 |
| 87.5° | 0.0 |
| 90° | 0.0 |

(END OF REPORT)