

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P211789

Luminaire Tested: **LE_4B20D010 EC4B10209050 4LBCS1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P211789
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35319)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LE_4B20D010 EC4B10209050 4LBCS1MMS
Description: PORTFOLIO 4 INCH CYLINDER
SHALLOW DISTRIBUTION WITH CAST MATTE BLACK TRIM
WATTAGE D010TR-21.86W DE010-20.46W D5LT-21.24W DMX-20.89W DL2-22.5W
DL3-21.8 6W DLE-22.46W
Light Source: HIGH LUMEN LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1804.9 lumens
Efficiency: N/A
Efficacy: 86.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.27
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

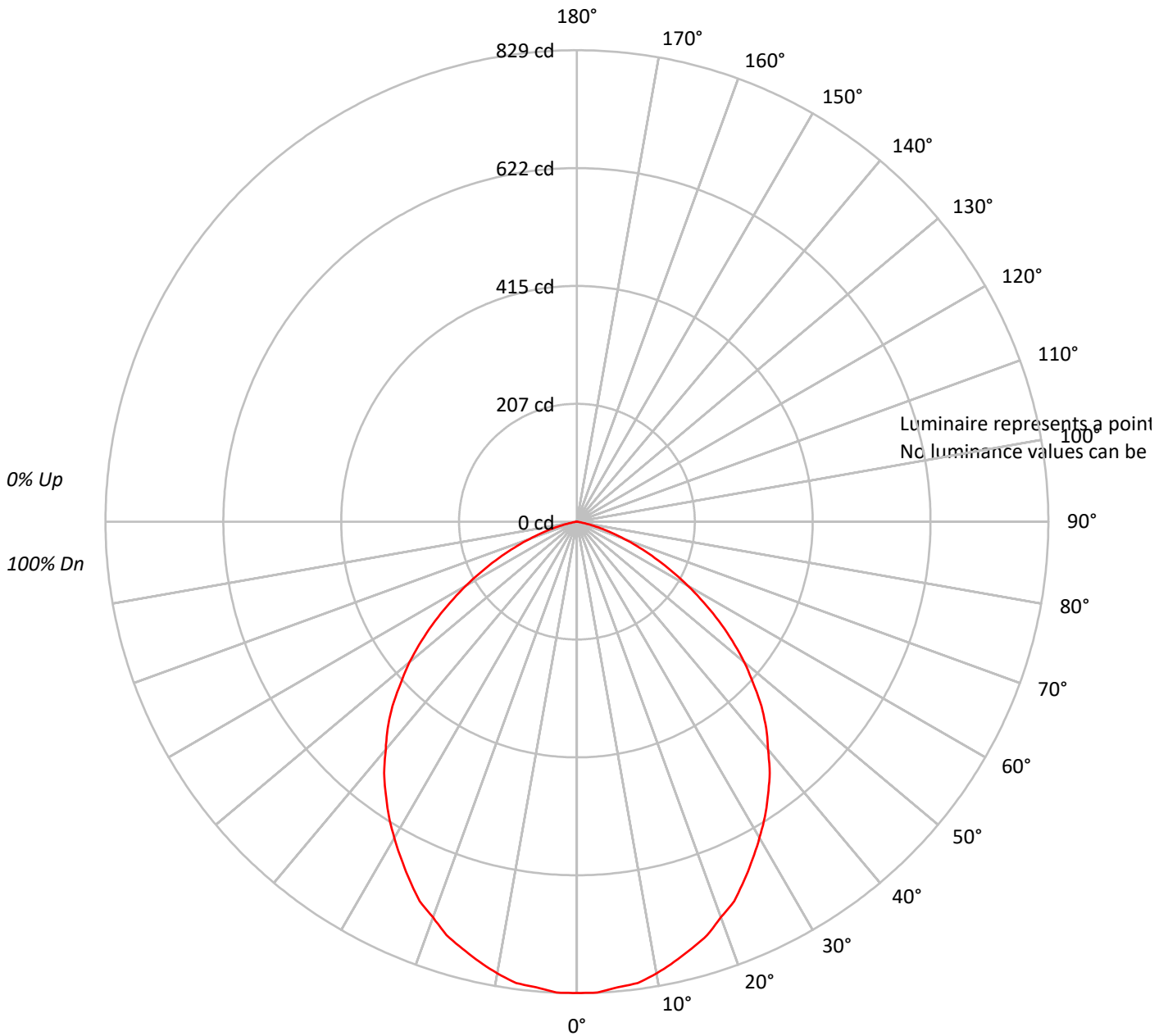
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | 100 |
| 1 | 111 | 107 | 103 | 100 | 108 | 105 | 101 | 98 | 100 | 98 | 95 | 97 | 94 | 92 | 93 | 91 | 90 | 88 | | | 88 |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 86 | 83 | 79 | 83 | 80 | 78 | 76 | | | 76 |
| 3 | 94 | 85 | 77 | 72 | 92 | 83 | 76 | 71 | 80 | 74 | 70 | 77 | 73 | 69 | 75 | 71 | 67 | 65 | | | 65 |
| 4 | 87 | 76 | 68 | 62 | 84 | 74 | 67 | 61 | 72 | 66 | 61 | 70 | 64 | 60 | 68 | 63 | 59 | 57 | | | 57 |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 54 | 65 | 58 | 53 | 63 | 57 | 53 | 61 | 56 | 52 | 50 | | | 50 |
| 6 | 74 | 62 | 54 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 58 | 51 | 47 | 56 | 51 | 46 | 44 | | | 44 |
| 7 | 69 | 56 | 48 | 42 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 41 | 40 | | | 40 |
| 8 | 64 | 52 | 44 | 38 | 63 | 51 | 43 | 38 | 50 | 43 | 38 | 48 | 42 | 38 | 47 | 42 | 37 | 36 | | | 36 |
| 9 | 60 | 48 | 40 | 35 | 59 | 47 | 40 | 34 | 46 | 39 | 34 | 45 | 39 | 34 | 44 | 38 | 34 | 32 | | | 32 |
| 10 | 57 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 41 | 35 | 31 | 29 | | | 29 |

AVERAGE LUMINANCE (cd/sqm):





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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 78.1 | 4.3 |
| 10°-20° | 219.2 | 12.1 |
| 20°-30° | 320.2 | 17.7 |
| 30°-40° | 366.2 | 20.3 |
| 40°-50° | 351.9 | 19.5 |
| 50°-60° | 271.7 | 15.1 |
| 60°-70° | 151.7 | 8.4 |
| 70°-80° | 44.1 | 2.4 |
| 80°-90° | 1.9 | 0.1 |
| 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° | 617.5 | 34.2 |
| 0°-40° | 983.6 | 54.5 |
| 0°-60° | 1607.3 | 89.0 |
| 0°-90° | 1804.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1804.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|-----|------|
| 0° | 829 | |
| 5° | 822 | 78 |
| 15° | 778 | 219 |
| 25° | 696 | 320 |
| 35° | 586 | 366 |
| 45° | 459 | 352 |
| 55° | 305 | 272 |
| 65° | 152 | 152 |
| 75° | 38 | 44 |
| 85° | 1 | 2 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|-------|
| 0° | 828.8 |
| 2.5° | 828.8 |
| 5° | 821.9 |
| 7.5° | 818.4 |
| 10° | 806.7 |
| 12.5° | 792.6 |
| 15° | 777.5 |
| 17.5° | 762.4 |
| 20° | 740.2 |
| 22.5° | 722.7 |
| 25° | 695.8 |
| 27.5° | 669.0 |
| 30° | 642.1 |
| 32.5° | 615.3 |
| 35° | 586.0 |
| 37.5° | 556.9 |
| 40° | 523.0 |
| 42.5° | 492.7 |
| 45° | 458.8 |
| 47.5° | 420.3 |
| 50° | 384.1 |
| 52.5° | 344.4 |
| 55° | 304.7 |
| 57.5° | 263.8 |
| 60° | 225.3 |
| 62.5° | 186.8 |
| 65° | 151.7 |
| 67.5° | 119.1 |
| 70° | 88.7 |
| 72.5° | 61.8 |
| 75° | 38.5 |
| 77.5° | 19.8 |
| 80° | 7.0 |
| 82.5° | 2.3 |
| 85° | 1.2 |
| 87.5° | 0.0 |
| 90° | 0.0 |



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— 0°-180°







(END OF REPORT)