

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: P211511

Luminaire Tested: **LSR4B20D010BZ EC4B10209027 4LBNMW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P211511
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: LSR4B20D010BZ EC4B10209027 4LBNMW1
Description: PORTFOLIO 4 INCH CYLINDER
NARROW DISTRIBUTION WITH MATTE WHITE 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: 1186.4 lumens
Efficiency: N/A
Efficacy: 57.0 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.95
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

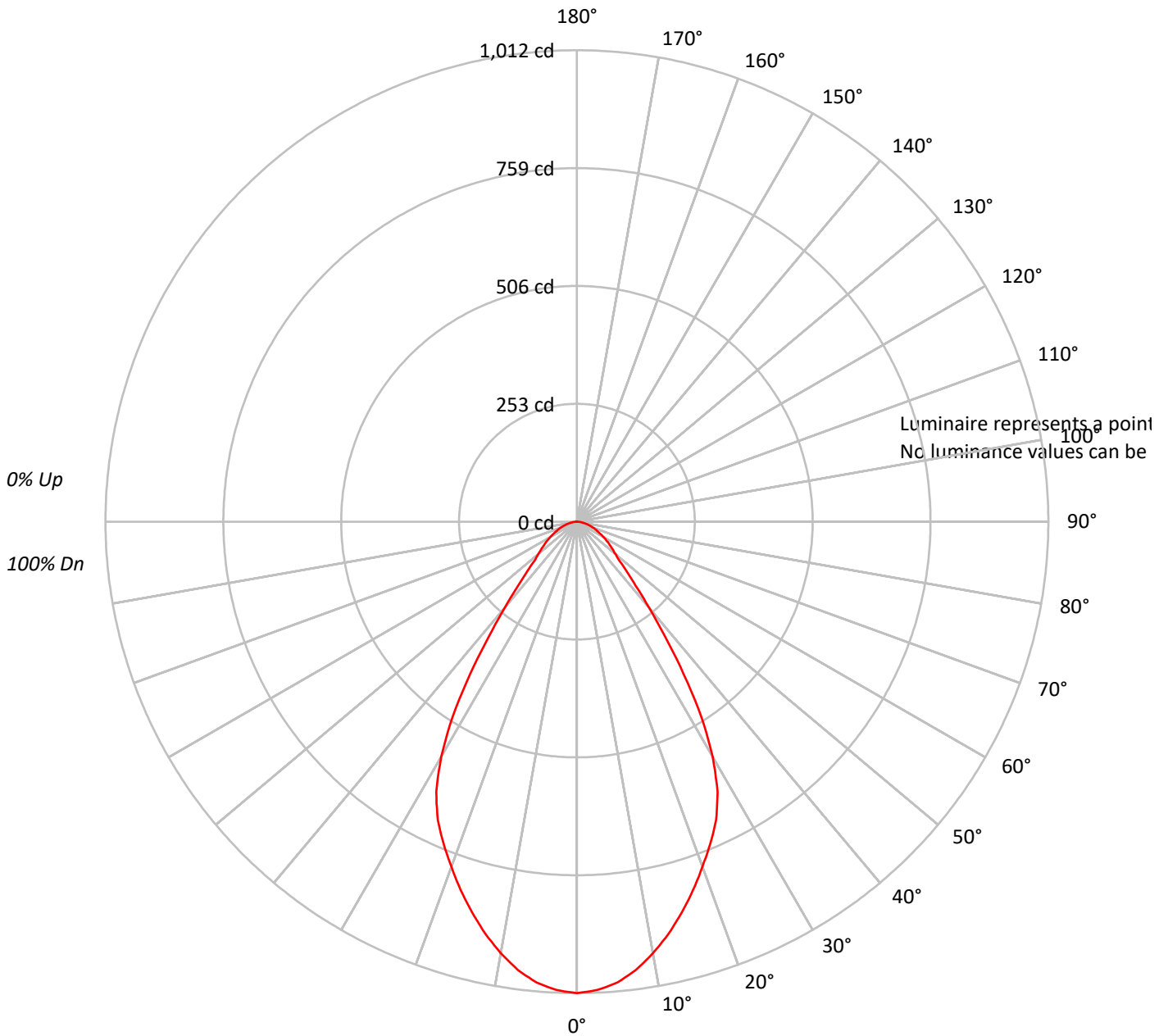
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | | | |
| 1 | 112 | 109 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98 | 98 | 97 | 95 | 95 | 94 | 92 | 90 | | | |
| 2 | 105 | 99 | 94 | 90 | 103 | 97 | 93 | 89 | 94 | 90 | 87 | 91 | 88 | 85 | 88 | 85 | 83 | 81 | | | |
| 3 | 98 | 90 | 84 | 80 | 96 | 89 | 83 | 79 | 86 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | | | |
| 4 | 92 | 83 | 76 | 71 | 90 | 82 | 76 | 71 | 80 | 74 | 70 | 78 | 73 | 69 | 76 | 72 | 68 | 67 | | | |
| 5 | 87 | 77 | 70 | 65 | 85 | 76 | 69 | 64 | 74 | 68 | 64 | 72 | 67 | 63 | 70 | 66 | 63 | 61 | | | |
| 6 | 82 | 71 | 64 | 59 | 80 | 70 | 64 | 59 | 69 | 63 | 58 | 67 | 62 | 58 | 66 | 61 | 58 | 56 | | | |
| 7 | 77 | 66 | 59 | 54 | 75 | 65 | 59 | 54 | 64 | 58 | 54 | 63 | 57 | 53 | 62 | 57 | 53 | 52 | | | |
| 8 | 73 | 62 | 55 | 50 | 71 | 61 | 55 | 50 | 60 | 54 | 50 | 59 | 53 | 49 | 58 | 53 | 49 | 48 | | | |
| 9 | 69 | 58 | 51 | 46 | 68 | 57 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | 54 | 49 | 46 | 44 | | | |
| 10 | 65 | 54 | 48 | 43 | 64 | 54 | 47 | 43 | 53 | 47 | 43 | 52 | 47 | 43 | 51 | 46 | 43 | 41 | | | |

AVERAGE LUMINANCE (cd/sqm):





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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 93.1 | 7.8 |
| 10°-20° | 243.6 | 20.5 |
| 20°-30° | 320.6 | 27.0 |
| 30°-40° | 249.6 | 21.0 |
| 40°-50° | 121.2 | 10.2 |
| 50°-60° | 76.6 | 6.5 |
| 60°-70° | 49.4 | 4.2 |
| 70°-80° | 25.8 | 2.2 |
| 80°-90° | 6.4 | 0.5 |
| 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° | 657.4 | 55.4 |
| 0°-40° | 907.0 | 76.4 |
| 0°-60° | 1104.8 | 93.1 |
| 0°-90° | 1186.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1186.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|------|------|
| 0° | 1012 | |
| 5° | 993 | 93 |
| 15° | 869 | 244 |
| 25° | 707 | 321 |
| 35° | 400 | 250 |
| 45° | 151 | 121 |
| 55° | 85 | 77 |
| 65° | 49 | 49 |
| 75° | 24 | 26 |
| 85° | 6 | 6 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|--------|
| 0° | 1012.1 |
| 2.5° | 1006.4 |
| 5° | 993.3 |
| 7.5° | 970.6 |
| 10° | 940.5 |
| 12.5° | 906.6 |
| 15° | 868.9 |
| 17.5° | 829.3 |
| 20° | 787.8 |
| 22.5° | 748.2 |
| 25° | 706.8 |
| 27.5° | 654.0 |
| 30° | 582.4 |
| 32.5° | 497.6 |
| 35° | 399.6 |
| 37.5° | 309.1 |
| 40° | 239.4 |
| 42.5° | 186.6 |
| 45° | 150.8 |
| 47.5° | 122.5 |
| 50° | 107.4 |
| 52.5° | 96.1 |
| 55° | 84.8 |
| 57.5° | 75.4 |
| 60° | 66.0 |
| 62.5° | 56.5 |
| 65° | 49.0 |
| 67.5° | 43.3 |
| 70° | 35.8 |
| 72.5° | 30.2 |
| 75° | 24.5 |
| 77.5° | 18.8 |
| 80° | 13.2 |
| 82.5° | 9.4 |
| 85° | 5.7 |
| 87.5° | 1.9 |
| 90° | 0.0 |



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— 0°-180°







(END OF REPORT)