

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: FAIL-SAFE

Report Number: P589365

Luminaire Tested: **FMR-24-2-LD4-3LO-35-UNV-80-84-EDD**

Issue Date: 12/8/2021



Test Information

Test Method: LM-79-08
Report Number: P589365
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMR-24-2-LD4-3LO-35-UNV-80-84-EDD
Description: 2X2 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

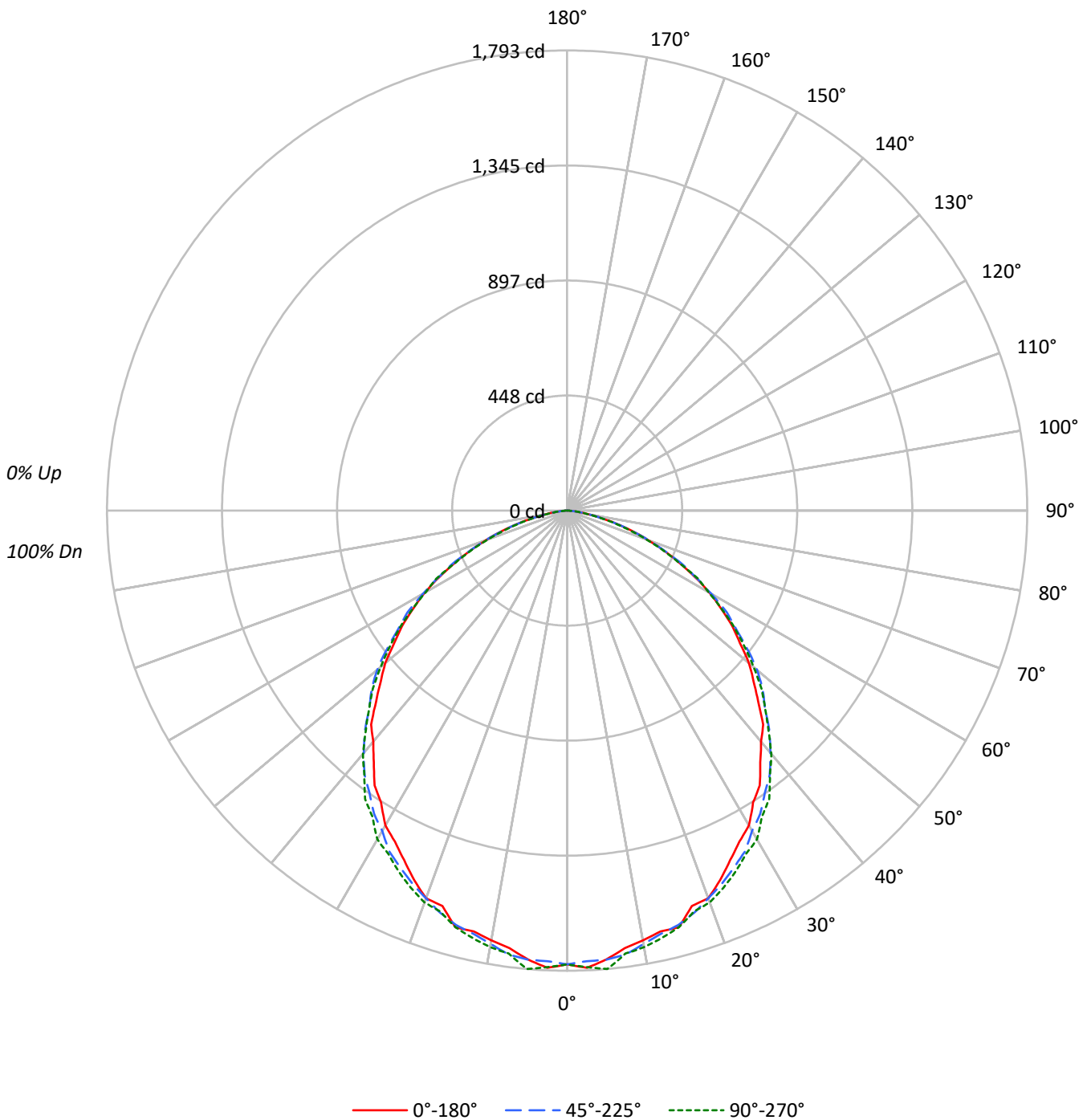
Lumens per Lamp: N/A
Luminaire Lumens: 4456.0 lumens
Efficiency: N/A
Efficacy: 127.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 35.1
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

TEST NUMBER: P589365

CATALOG NUMBER: FMR-24-2-LD4-3LO-35-UNV-80-84-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P589365

CATALOG NUMBER: FMR-24-2-LD4-3LO-35-UNV-80-84-EDD

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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4758 | 4758 | 4758 |
| 5° | 4742 | 4744 | 4844 |
| 10° | 4646 | 4686 | 4720 |
| 15° | 4683 | 4657 | 4683 |
| 20° | 4603 | 4603 | 4653 |
| 25° | 4462 | 4559 | 4610 |
| 30° | 4401 | 4478 | 4597 |
| 35° | 4297 | 4410 | 4508 |
| 40° | 4130 | 4329 | 4348 |
| 45° | 4005 | 4147 | 4153 |
| 50° | 3873 | 4048 | 3971 |
| 55° | 3691 | 3762 | 3735 |
| 60° | 3451 | 3485 | 3423 |
| 65° | 3077 | 3156 | 3055 |
| 70° | 2640 | 2649 | 2576 |
| 75° | 2091 | 2087 | 2006 |
| 80° | 1401 | 1362 | 1309 |
| 85° | 763 | 753 | 704 |



TEST NUMBER: P589365

CATALOG NUMBER: FMR-24-2-LD4-3LO-35-UNV-80-84-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 166.3 | 3.7 |
| 10°-20° | 471.3 | 10.6 |
| 20°-30° | 706.2 | 15.8 |
| 30°-40° | 837.0 | 18.8 |
| 40°-50° | 838.5 | 18.8 |
| 50°-60° | 711.8 | 16.0 |
| 60°-70° | 479.9 | 10.8 |
| 70°-80° | 210.9 | 4.7 |
| 80°-90° | 34.3 | 0.8 |
| 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° | 1343.8 | 30.2 |
| 0°-40° | 2180.8 | 48.9 |
| 0°-60° | 3731.0 | 83.7 |
| 0°-90° | 4456.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4456.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1768 | 1768 | 1768 | 1768 | 1768 | |
| 5° | 1756 | 1751 | 1756 | 1751 | 1793 | 165 |
| 15° | 1681 | 1661 | 1672 | 1680 | 1681 | 468 |
| 25° | 1503 | 1511 | 1536 | 1556 | 1552 | 695 |
| 35° | 1308 | 1312 | 1342 | 1373 | 1372 | 812 |
| 45° | 1052 | 1072 | 1090 | 1118 | 1091 | 814 |
| 55° | 787 | 781 | 802 | 796 | 796 | 700 |
| 65° | 483 | 477 | 496 | 477 | 480 | 481 |
| 75° | 201 | 197 | 201 | 186 | 193 | 216 |
| 85° | 25 | 24 | 24 | 24 | 23 | 36 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589365

CATALOG NUMBER: FMR-24-2-LD4-3LO-35-UNV-80-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1768.0 | 1768.0 | 1768.0 | 1768.0 | 1768.0 |
| 2.5° | 1783.3 | 1769.9 | 1757.3 | 1771.9 | 1780.8 |
| 5° | 1755.5 | 1751.4 | 1756.2 | 1750.9 | 1793.1 |
| 7.5° | 1719.4 | 1735.2 | 1744.3 | 1738.6 | 1741.1 |
| 10° | 1700.2 | 1694.8 | 1715.1 | 1729.2 | 1727.2 |
| 12.5° | 1679.7 | 1687.9 | 1689.0 | 1704.3 | 1705.7 |
| 15° | 1680.8 | 1661.4 | 1671.7 | 1680.4 | 1681.1 |
| 17.5° | 1615.5 | 1636.5 | 1643.6 | 1663.5 | 1638.8 |
| 20° | 1607.5 | 1592.3 | 1607.5 | 1627.9 | 1624.7 |
| 22.5° | 1558.5 | 1541.3 | 1574.2 | 1592.3 | 1591.1 |
| 25° | 1502.8 | 1511.0 | 1535.6 | 1555.7 | 1552.5 |
| 27.5° | 1453.9 | 1463.5 | 1498.7 | 1526.3 | 1508.5 |
| 30° | 1416.2 | 1411.5 | 1441.1 | 1465.8 | 1479.5 |
| 32.5° | 1348.9 | 1366.3 | 1401.0 | 1425.4 | 1412.4 |
| 35° | 1308.0 | 1311.9 | 1342.3 | 1373.3 | 1372.4 |
| 37.5° | 1236.6 | 1254.6 | 1297.3 | 1306.0 | 1298.0 |
| 40° | 1175.6 | 1193.7 | 1232.3 | 1241.6 | 1237.7 |
| 42.5° | 1130.7 | 1133.9 | 1167.0 | 1177.7 | 1160.6 |
| 45° | 1052.4 | 1072.0 | 1089.8 | 1117.9 | 1091.4 |
| 47.5° | 985.7 | 994.8 | 1033.2 | 1040.7 | 1026.8 |
| 50° | 925.2 | 928.4 | 967.0 | 957.6 | 948.5 |
| 52.5° | 849.2 | 862.7 | 884.4 | 882.5 | 871.8 |
| 55° | 786.7 | 781.4 | 801.9 | 796.5 | 796.2 |
| 57.5° | 711.5 | 720.7 | 737.6 | 728.9 | 715.0 |
| 60° | 641.2 | 641.5 | 647.6 | 637.8 | 636.0 |
| 62.5° | 562.9 | 565.7 | 567.0 | 554.9 | 574.6 |
| 65° | 483.3 | 476.9 | 495.6 | 476.6 | 479.8 |
| 67.5° | 410.0 | 413.2 | 411.4 | 399.5 | 404.1 |
| 70° | 335.6 | 339.7 | 336.7 | 323.2 | 327.4 |
| 72.5° | 267.5 | 262.5 | 265.7 | 248.8 | 256.6 |
| 75° | 201.1 | 197.0 | 200.7 | 186.5 | 192.9 |
| 77.5° | 137.0 | 140.2 | 137.9 | 130.3 | 134.7 |
| 80° | 90.4 | 87.9 | 87.9 | 83.6 | 84.5 |
| 82.5° | 52.7 | 50.2 | 49.5 | 48.2 | 50.2 |
| 85° | 24.7 | 24.0 | 24.4 | 23.7 | 22.8 |
| 87.5° | 8.9 | 9.1 | 9.1 | 8.7 | 8.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)