

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: P734074

Luminaire Tested: **24FCZ2-30HE-HRP-B2750-W2D-CP187-4000K**

Issue Date: 1/5/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P734074  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P295011)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 1/5/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24FCZ2-30HE-HRP-B2750-W2D-CP187-4000K  
Description: 2X4 3000 LUMEN SEALED CRUZE TROFFER WITH BIO UP LEDS AT 4000K CCT  
AND HRP LENS, WITH, CP187 BOTTOM LENS

Light Source: -  
Ballast/Driver: -

**Summary**

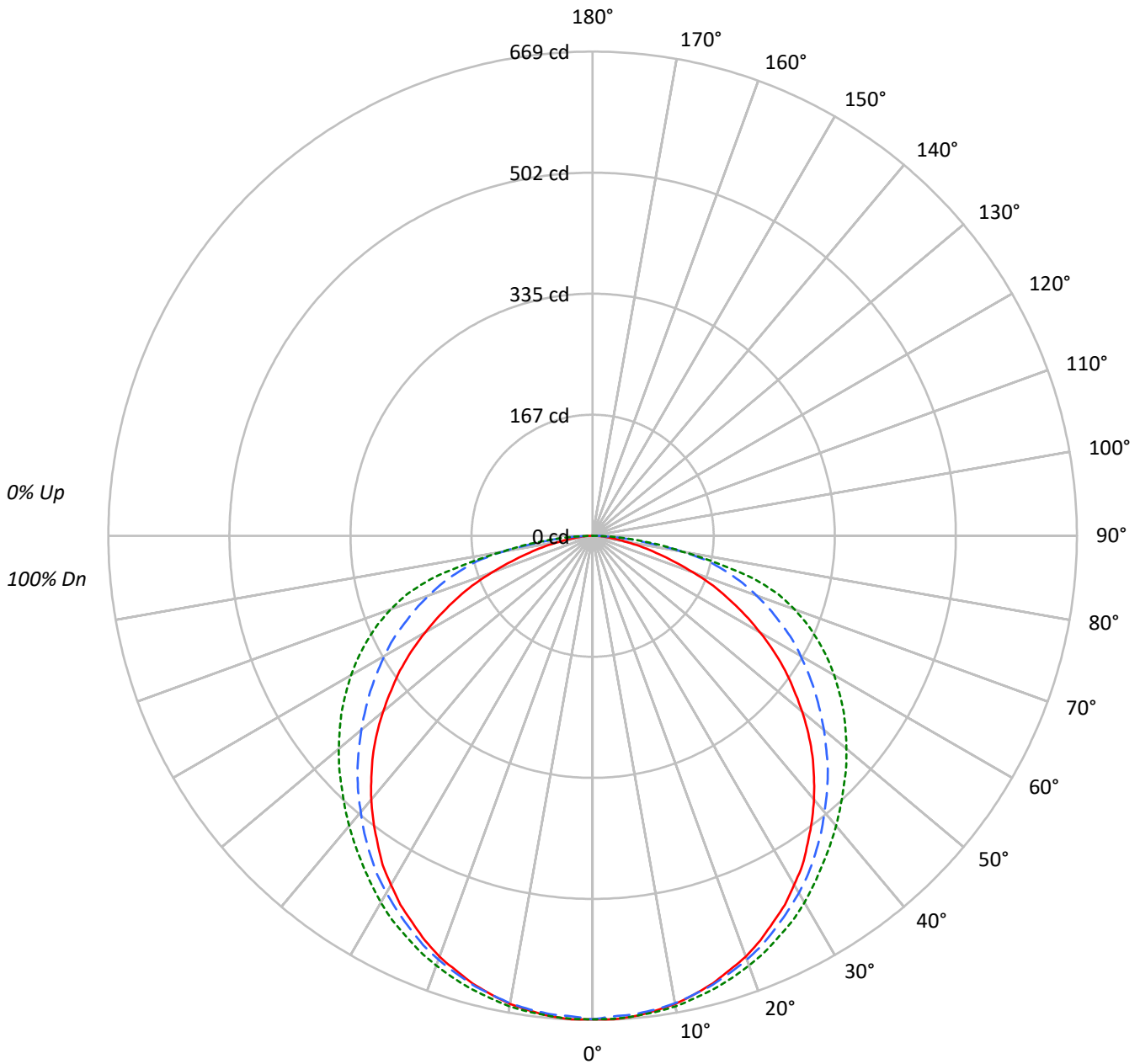
Lumens per Lamp: N/A  
Luminaire Lumens: 2059.0 lumens  
Efficiency: N/A  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 1.92' x L: 3.98' x H: 0')  
CIE Type: Direct

Input Watts (W): 22  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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 |  |  |  |  |  |  |  |  |   |
| RC  | 80  |     |     |     |     |     |     |     |     | 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   | 108 | 103 | 98  | 94  | 105 | 101 | 96  | 93  | 96  | 93  | 90  | 92  | 90  | 87  | 89  | 86  | 84  | 82  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  | 83  | 78  | 73  | 80  | 75  | 71  | 77  | 73  | 70  | 67  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 89  | 78  | 69  | 62  | 86  | 76  | 68  | 62  | 73  | 66  | 61  | 70  | 64  | 59  | 68  | 63  | 58  | 56  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 81  | 68  | 59  | 52  | 79  | 67  | 59  | 52  | 65  | 57  | 51  | 62  | 56  | 50  | 60  | 54  | 50  | 48  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 74  | 61  | 52  | 45  | 72  | 60  | 51  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  | 41  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 69  | 55  | 46  | 39  | 67  | 54  | 45  | 39  | 52  | 44  | 38  | 50  | 43  | 38  | 49  | 42  | 38  | 36  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 63  | 50  | 41  | 34  | 62  | 49  | 40  | 34  | 47  | 39  | 34  | 46  | 39  | 34  | 44  | 38  | 33  | 31  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 36  | 30  | 42  | 35  | 30  | 41  | 34  | 30  | 28  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 55  | 41  | 33  | 27  | 54  | 41  | 33  | 27  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 27  | 25  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 52  | 38  | 30  | 25  | 50  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 24  | 35  | 29  | 24  | 23  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°  | 45°  | 90°  |
|-----|-----|------|------|
| 0°  | 943 | 943  | 943  |
| 5°  | 944 | 940  | 944  |
| 10° | 941 | 940  | 946  |
| 15° | 936 | 938  | 947  |
| 20° | 930 | 936  | 949  |
| 25° | 918 | 932  | 950  |
| 30° | 908 | 929  | 954  |
| 35° | 893 | 924  | 955  |
| 40° | 877 | 918  | 964  |
| 45° | 857 | 917  | 979  |
| 50° | 829 | 916  | 1005 |
| 55° | 799 | 922  | 1041 |
| 60° | 754 | 937  | 1088 |
| 65° | 697 | 959  | 1148 |
| 70° | 608 | 992  | 1224 |
| 75° | 493 | 1043 | 1265 |
| 80° | 364 | 1023 | 1023 |
| 85° | 280 | 755  | 852  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 63.3   | 3.1       |
| 10°-20°   | 181.7  | 8.8       |
| 20°-30°   | 276.7  | 13.4      |
| 30°-40°   | 335.9  | 16.3      |
| 40°-50°   | 354.9  | 17.2      |
| 50°-60°   | 334.9  | 16.3      |
| 60°-70°   | 278.5  | 13.5      |
| 70°-80°   | 183.2  | 8.9       |
| 80°-90°   | 49.9   | 2.4       |
| 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°    | 521.7  | 25.3      |
| 0°-40°    | 857.6  | 41.7      |
| 0°-60°    | 1547.4 | 75.2      |
| 0°-90°    | 2059.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2059.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 668 | 668   | 668 | 668   | 668 |      |
| 5°  | 666 | 666   | 664 | 666   | 666 | 63   |
| 15° | 640 | 641   | 642 | 648   | 648 | 181  |
| 25° | 590 | 593   | 598 | 609   | 610 | 272  |
| 35° | 518 | 524   | 536 | 550   | 554 | 324  |
| 45° | 429 | 438   | 460 | 482   | 490 | 331  |
| 55° | 325 | 339   | 375 | 410   | 423 | 289  |
| 65° | 209 | 233   | 287 | 329   | 344 | 206  |
| 75° | 90  | 132   | 191 | 227   | 232 | 98   |
| 85° | 17  | 38    | 47  | 52    | 53  | 21   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 668.1 | 668.1 | 668.1 | 668.1 | 668.1 |
| 2.5°  | 668.9 | 668.1 | 664.6 | 668.1 | 668.1 |
| 5°    | 666.4 | 666.4 | 663.7 | 666.4 | 666.4 |
| 7.5°  | 662.0 | 662.0 | 660.3 | 663.7 | 663.7 |
| 10°   | 656.9 | 656.9 | 655.9 | 660.3 | 660.3 |
| 12.5° | 649.1 | 649.9 | 649.1 | 654.2 | 654.2 |
| 15°   | 640.5 | 641.3 | 642.2 | 648.2 | 648.2 |
| 17.5° | 629.3 | 631.0 | 632.7 | 639.6 | 640.5 |
| 20°   | 618.9 | 619.8 | 623.2 | 631.0 | 631.8 |
| 22.5° | 605.1 | 607.7 | 612.0 | 619.8 | 622.3 |
| 25°   | 589.6 | 593.0 | 598.2 | 608.6 | 610.3 |
| 27.5° | 574.9 | 577.6 | 584.4 | 595.6 | 599.1 |
| 30°   | 556.9 | 561.1 | 569.8 | 581.0 | 585.2 |
| 32.5° | 539.6 | 543.9 | 554.2 | 566.4 | 569.8 |
| 35°   | 518.1 | 524.1 | 536.2 | 550.0 | 554.2 |
| 37.5° | 497.4 | 503.4 | 518.1 | 533.5 | 538.8 |
| 40°   | 475.8 | 482.7 | 498.3 | 516.4 | 523.2 |
| 42.5° | 452.5 | 462.0 | 479.3 | 499.1 | 506.9 |
| 45°   | 429.3 | 437.9 | 459.5 | 481.8 | 490.5 |
| 47.5° | 404.2 | 414.6 | 437.9 | 464.6 | 474.9 |
| 50°   | 377.6 | 390.5 | 417.2 | 446.6 | 457.7 |
| 52.5° | 350.8 | 365.4 | 395.6 | 428.4 | 440.5 |
| 55°   | 324.9 | 338.8 | 374.9 | 410.3 | 423.2 |
| 57.5° | 296.6 | 313.7 | 353.4 | 391.3 | 404.2 |
| 60°   | 267.2 | 286.2 | 331.8 | 371.5 | 385.3 |
| 62.5° | 237.9 | 259.5 | 311.2 | 350.8 | 365.4 |
| 65°   | 208.6 | 232.7 | 287.1 | 329.3 | 343.9 |
| 67.5° | 180.2 | 206.9 | 264.6 | 306.9 | 321.5 |
| 70°   | 147.4 | 181.0 | 240.5 | 281.9 | 296.6 |
| 72.5° | 117.3 | 156.1 | 217.3 | 256.1 | 269.0 |
| 75°   | 90.5  | 131.9 | 191.3 | 226.7 | 231.9 |
| 77.5° | 66.4  | 107.8 | 164.6 | 176.7 | 177.6 |
| 80°   | 44.8  | 86.2  | 125.9 | 124.1 | 125.9 |
| 82.5° | 29.3  | 64.6  | 79.3  | 88.8  | 89.7  |
| 85°   | 17.3  | 38.0  | 46.6  | 51.7  | 52.6  |
| 87.5° | 8.6   | 12.9  | 16.4  | 17.3  | 19.0  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |



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— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)