

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: METALUX

Report Number: 108P126

Luminaire Tested: **2GC-440A19/156-PAF**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 108P126
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 2GC-440A19/156-PAF
Description: 2 X 4 Recessed Convertible Body Troffer with a
Southern Plastics .156 pattern 19 acrylic lens.
Light Source: Four-F40CW - 3050 Lumens ea. - 40 Watts ea.
Ballast/Driver: -

Summary

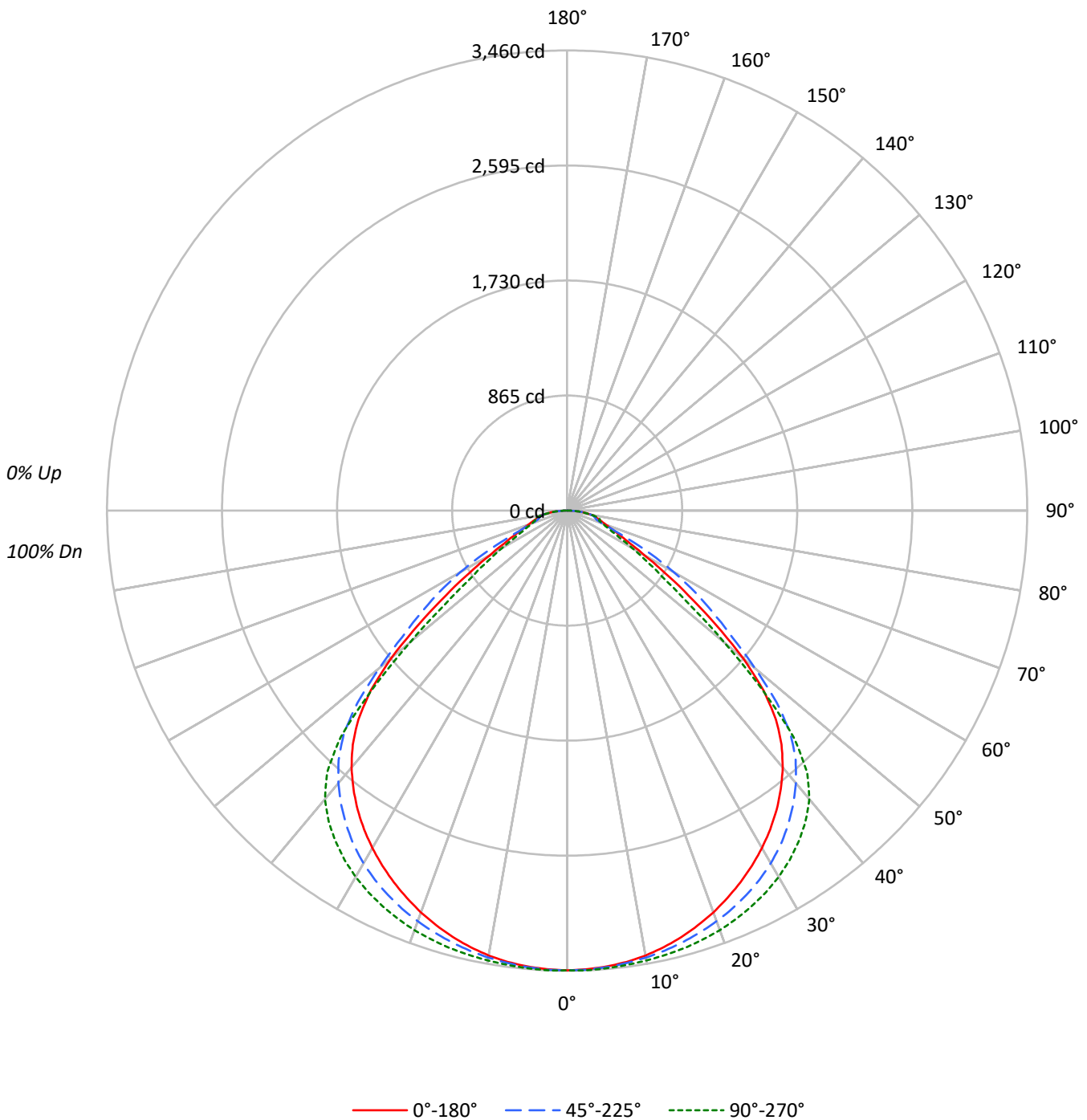
Lumens per Lamp: 3050 (4 lamps)
Luminaire Lumens: 8327.8 lumens
Efficiency: 68.3%
Efficacy: 49.9 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.36 / 1.4
Luminous Opening: Rectangular (W 1.79' x L: 3.81' x H: 0')
CIE Type: Direct

Input Watts (W): 166.9
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

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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 81 | 81 | 81 | 81 | 79 | 79 | 79 | 79 | 76 | 76 | 76 | 73 | 73 | 73 | 70 | 70 | 70 | 68 |
| 1 | 75 | 72 | 70 | 68 | 73 | 71 | 69 | 66 | 68 | 66 | 64 | 65 | 64 | 62 | 63 | 62 | 61 | 59 |
| 2 | 69 | 64 | 60 | 57 | 68 | 63 | 59 | 56 | 61 | 58 | 55 | 59 | 56 | 54 | 57 | 54 | 52 | 51 |
| 3 | 64 | 57 | 52 | 48 | 62 | 56 | 52 | 48 | 54 | 50 | 47 | 53 | 49 | 46 | 51 | 48 | 46 | 44 |
| 4 | 59 | 51 | 46 | 42 | 57 | 51 | 46 | 42 | 49 | 45 | 41 | 47 | 44 | 40 | 46 | 43 | 40 | 39 |
| 5 | 54 | 46 | 41 | 37 | 53 | 46 | 40 | 36 | 44 | 40 | 36 | 43 | 39 | 36 | 42 | 38 | 35 | 34 |
| 6 | 50 | 42 | 36 | 32 | 49 | 41 | 36 | 32 | 40 | 35 | 32 | 39 | 35 | 32 | 38 | 34 | 31 | 30 |
| 7 | 47 | 38 | 33 | 29 | 46 | 38 | 32 | 29 | 37 | 32 | 28 | 36 | 31 | 28 | 35 | 31 | 28 | 27 |
| 8 | 44 | 35 | 30 | 26 | 43 | 35 | 29 | 26 | 34 | 29 | 26 | 33 | 29 | 25 | 32 | 28 | 25 | 24 |
| 9 | 41 | 32 | 27 | 23 | 40 | 32 | 27 | 23 | 31 | 26 | 23 | 30 | 26 | 23 | 30 | 26 | 23 | 22 |
| 10 | 38 | 30 | 25 | 21 | 38 | 29 | 24 | 21 | 29 | 24 | 21 | 28 | 24 | 21 | 28 | 24 | 21 | 20 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5463 | 5463 | 5463 |
| 5° | 5459 | 5467 | 5479 |
| 10° | 5451 | 5477 | 5512 |
| 15° | 5432 | 5497 | 5573 |
| 20° | 5407 | 5526 | 5646 |
| 25° | 5378 | 5561 | 5723 |
| 30° | 5345 | 5588 | 5803 |
| 35° | 5298 | 5581 | 5857 |
| 40° | 5203 | 5519 | 5845 |
| 45° | 4962 | 5308 | 5384 |
| 50° | 4244 | 4529 | 3786 |
| 55° | 3069 | 3695 | 2433 |
| 60° | 2121 | 2933 | 1789 |
| 65° | 1623 | 1926 | 1384 |
| 70° | 1432 | 1275 | 1298 |
| 75° | 1465 | 1337 | 1563 |
| 80° | 1738 | 1693 | 1684 |
| 85° | 1723 | 1850 | 1704 |



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CATALOG NUMBER: 2GC-440A19/156-PAF

ZONAL LUMENS:

CANDELA DISTRIBUTION:

| Zone | Lumens | % Fixture | % Lamp | | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----------|--------|-----------|--------|------|------|-------|------|-------|------|------|
| 0°-10° | 327.8 | 3.9 | 2.7 | 0° | 3457 | 3457 | 3457 | 3457 | 3457 | |
| 10°-20° | 949.2 | 11.4 | 7.8 | 5° | 3441 | 3441 | 3446 | 3446 | 3454 | 327 |
| 20°-30° | 1468.2 | 17.6 | 12.0 | 15° | 3320 | 3330 | 3360 | 3386 | 3406 | 937 |
| 30°-40° | 1805.5 | 21.7 | 14.8 | 25° | 3084 | 3112 | 3189 | 3251 | 3282 | 1421 |
| 40°-50° | 1761.7 | 21.2 | 14.4 | 35° | 2746 | 2792 | 2893 | 2986 | 3036 | 1715 |
| 50°-60° | 1080.1 | 13.0 | 8.9 | 45° | 2220 | 2270 | 2375 | 2404 | 2409 | 1683 |
| 60°-70° | 528.6 | 6.3 | 4.3 | 55° | 1114 | 1287 | 1341 | 1092 | 883 | 1020 |
| 70°-80° | 290.9 | 3.5 | 2.4 | 65° | 434 | 641 | 515 | 491 | 370 | 449 |
| 80°-90° | 115.7 | 1.4 | 0.9 | 75° | 240 | 352 | 219 | 274 | 256 | 258 |
| 90°-100° | 0.0 | 0.0 | 0.0 | 85° | 95 | 125 | 102 | 116 | 94 | 98 |
| 100°-110° | 0.0 | 0.0 | 0.0 | 90° | 0 | 0 | 0 | 0 | 0 | 6 |
| 110°-120° | 0.0 | 0.0 | 0.0 | 95° | 0 | 0 | 0 | 0 | 0 | 0 |
| 120°-130° | 0.0 | 0.0 | 0.0 | 105° | 0 | 0 | 0 | 0 | 0 | 0 |
| 130°-140° | 0.0 | 0.0 | 0.0 | 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 140°-150° | 0.0 | 0.0 | 0.0 | 125° | 0 | 0 | 0 | 0 | 0 | 0 |
| 150°-160° | 0.0 | 0.0 | 0.0 | 135° | 0 | 0 | 0 | 0 | 0 | 0 |
| 160°-170° | 0.0 | 0.0 | 0.0 | 145° | 0 | 0 | 0 | 0 | 0 | 0 |
| 170°-180° | 0.0 | 0.0 | 0.0 | 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-30° | 2745.2 | 33.0 | 22.5 | 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-40° | 4550.7 | 54.6 | 37.3 | 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-60° | 7392.5 | 88.8 | 60.6 | 180° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-90° | 8327.8 | 100.0 | 68.3 | | | | | | | |
| 90°-120° | 0.0 | 0.0 | 0.0 | | | | | | | |
| 90°-150° | 0.0 | 0.0 | 0.0 | | | | | | | |
| 90°-180° | 0.0 | 0.0 | 0.0 | | | | | | | |
| 0°-180° | 8327.8 | 100.0 | 68.3 | | | | | | | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 0° | 3457 | 3457 | 3457 | 3457 | 3457 |
| 2.5° | 3452 | 3452 | 3455 | 3453 | 3460 |
| 5° | 3441 | 3441 | 3446 | 3446 | 3454 |
| 7.5° | 3423 | 3424 | 3431 | 3435 | 3445 |
| 10° | 3397 | 3401 | 3413 | 3422 | 3435 |
| 12.5° | 3362 | 3369 | 3389 | 3405 | 3422 |
| 15° | 3320 | 3330 | 3360 | 3386 | 3406 |
| 17.5° | 3270 | 3284 | 3325 | 3360 | 3383 |
| 20° | 3215 | 3233 | 3286 | 3331 | 3357 |
| 22.5° | 3152 | 3176 | 3241 | 3294 | 3323 |
| 25° | 3084 | 3112 | 3189 | 3251 | 3282 |
| 27.5° | 3009 | 3043 | 3130 | 3199 | 3236 |
| 30° | 2929 | 2968 | 3062 | 3138 | 3180 |
| 32.5° | 2842 | 2884 | 2984 | 3067 | 3115 |
| 35° | 2746 | 2792 | 2893 | 2986 | 3036 |
| 37.5° | 2640 | 2688 | 2790 | 2892 | 2945 |
| 40° | 2522 | 2572 | 2675 | 2782 | 2833 |
| 42.5° | 2386 | 2436 | 2543 | 2636 | 2673 |
| 45° | 2220 | 2270 | 2375 | 2404 | 2409 |
| 47.5° | 2003 | 2056 | 2137 | 2066 | 1986 |
| 50° | 1726 | 1798 | 1842 | 1699 | 1540 |
| 52.5° | 1408 | 1524 | 1565 | 1365 | 1152 |
| 55° | 1114 | 1287 | 1341 | 1092 | 883 |
| 57.5° | 870 | 1088 | 1137 | 871 | 709 |
| 60° | 671 | 915 | 928 | 703 | 566 |
| 62.5° | 531 | 764 | 715 | 583 | 448 |
| 65° | 434 | 641 | 515 | 491 | 370 |
| 67.5° | 362 | 549 | 364 | 421 | 320 |
| 70° | 310 | 475 | 276 | 370 | 281 |
| 72.5° | 272 | 411 | 234 | 319 | 252 |
| 75° | 240 | 352 | 219 | 274 | 256 |
| 77.5° | 216 | 295 | 209 | 241 | 234 |
| 80° | 191 | 236 | 186 | 212 | 185 |
| 82.5° | 146 | 177 | 148 | 175 | 136 |
| 85° | 95 | 125 | 102 | 116 | 94 |
| 87.5° | 44 | 65 | 48 | 53 | 47 |
| 90° | 0 | 0 | 0 | 0 | 0 |
| 92.5° | 0 | 0 | 0 | 0 | 0 |
| 95° | 0 | 0 | 0 | 0 | 0 |
| 97.5° | 0 | 0 | 0 | 0 | 0 |
| 100° | 0 | 0 | 0 | 0 | 0 |
| 102.5° | 0 | 0 | 0 | 0 | 0 |
| 105° | 0 | 0 | 0 | 0 | 0 |
| 107.5° | 0 | 0 | 0 | 0 | 0 |
| 110° | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|----|-------|-----|-------|-----|
| 112.5° | 0 | 0 | 0 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 |
| 117.5° | 0 | 0 | 0 | 0 | 0 |
| 120° | 0 | 0 | 0 | 0 | 0 |
| 122.5° | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 0 | 0 | 0 | 0 |
| 127.5° | 0 | 0 | 0 | 0 | 0 |
| 130° | 0 | 0 | 0 | 0 | 0 |
| 132.5° | 0 | 0 | 0 | 0 | 0 |
| 135° | 0 | 0 | 0 | 0 | 0 |
| 137.5° | 0 | 0 | 0 | 0 | 0 |
| 140° | 0 | 0 | 0 | 0 | 0 |
| 142.5° | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 |
| 147.5° | 0 | 0 | 0 | 0 | 0 |
| 150° | 0 | 0 | 0 | 0 | 0 |
| 152.5° | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 |
| 157.5° | 0 | 0 | 0 | 0 | 0 |
| 160° | 0 | 0 | 0 | 0 | 0 |
| 162.5° | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 |
| 167.5° | 0 | 0 | 0 | 0 | 0 |
| 170° | 0 | 0 | 0 | 0 | 0 |
| 172.5° | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 |
| 177.5° | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)