

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: 10895.0

Luminaire Tested: **TRO-C-170MH**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 10895.0
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: TRO-C-170MH
Description: FAIL-SAFE 11"DIA CEILING MNT LUMINAIRE
WHITE FLAT REFLECTOR w/INTERNAL RADIAL RIBBED LENS
Light Source: 1/70W CLEAR ED17 5600 LUMENS
M98SJ70
Ballast/Driver: -

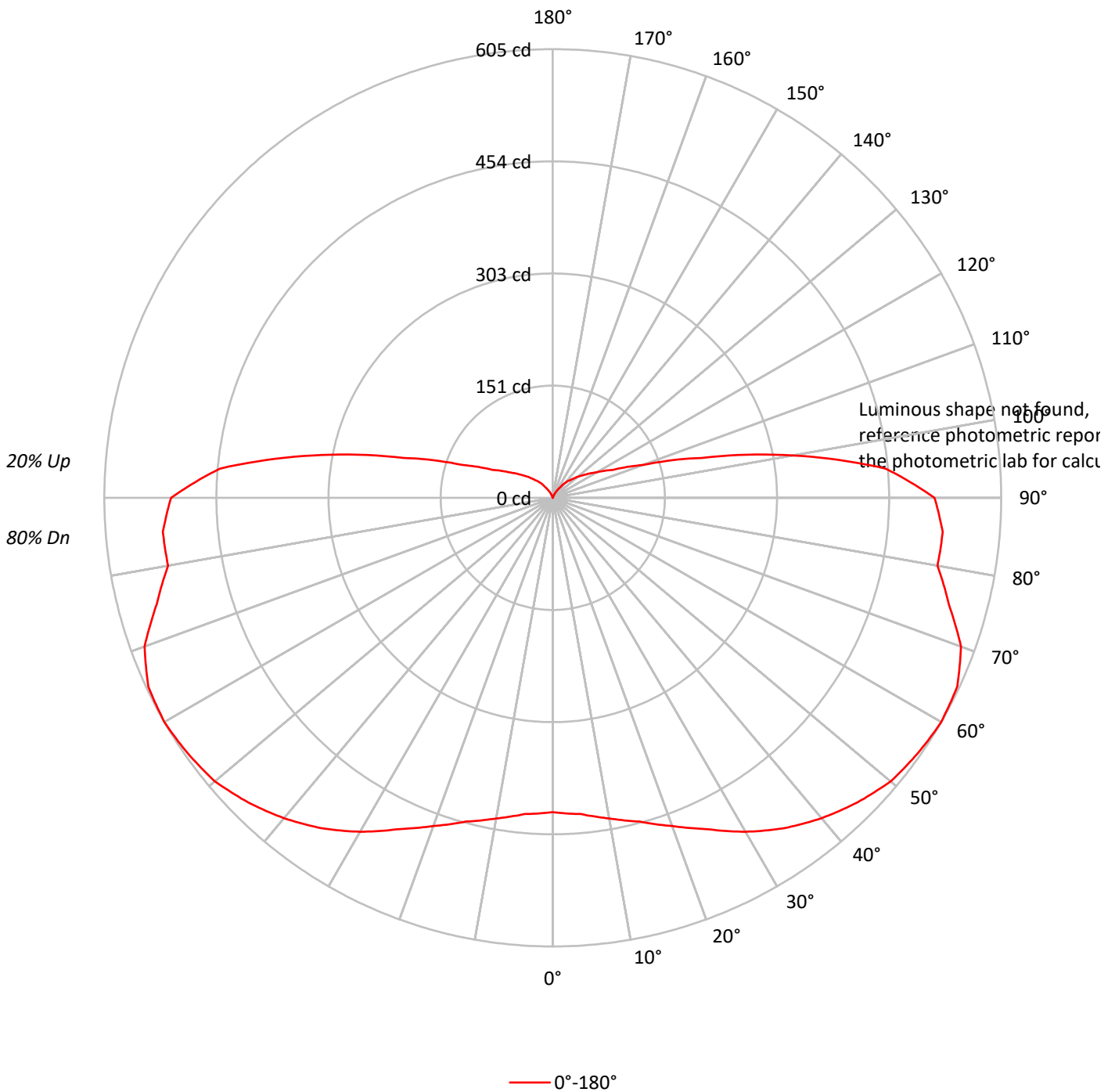
Summary

Lumens per Lamp: 5600 (1 lamp)
Luminaire Lumens: 4376.1 lumens
Efficiency: 78.1%
Efficacy: 62.5 lumens/watt
Spacing Criteria (0/90/45): 1.95 / 1.95 / 2.09
Luminous Opening: (L: 0.92 ' x W: 0 ' x H: 0.31 '
CIE Type: Semi-Direct

Input Watts (W): 70
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



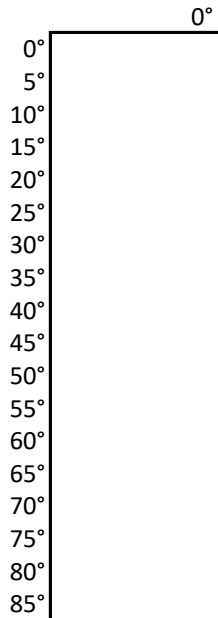


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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 | 89 | 89 | 89 | 89 | 85 | 85 | 85 | 85 | 78 | 78 | 78 | 71 | 71 | 71 | 65 | 65 | 65 | 62 |
| 1 | 76 | 71 | 66 | 61 | 72 | 67 | 63 | 58 | 61 | 57 | 54 | 55 | 52 | 49 | 49 | 47 | 45 | 42 |
| 2 | 68 | 59 | 52 | 46 | 64 | 56 | 49 | 44 | 50 | 45 | 40 | 45 | 41 | 37 | 41 | 37 | 34 | 31 |
| 3 | 60 | 50 | 42 | 36 | 57 | 48 | 40 | 34 | 43 | 37 | 32 | 38 | 33 | 29 | 34 | 30 | 27 | 24 |
| 4 | 55 | 43 | 35 | 29 | 51 | 41 | 34 | 28 | 37 | 31 | 26 | 33 | 28 | 24 | 30 | 25 | 21 | 19 |
| 5 | 50 | 38 | 30 | 24 | 47 | 36 | 29 | 23 | 33 | 26 | 21 | 29 | 24 | 19 | 26 | 22 | 18 | 16 |
| 6 | 46 | 34 | 26 | 20 | 43 | 32 | 25 | 19 | 29 | 23 | 18 | 26 | 21 | 16 | 23 | 19 | 15 | 13 |
| 7 | 42 | 30 | 23 | 17 | 39 | 29 | 22 | 17 | 26 | 20 | 15 | 23 | 18 | 14 | 21 | 16 | 13 | 11 |
| 8 | 39 | 27 | 20 | 15 | 37 | 26 | 19 | 14 | 24 | 18 | 13 | 21 | 16 | 12 | 19 | 15 | 11 | 9 |
| 9 | 36 | 25 | 18 | 13 | 34 | 24 | 17 | 13 | 22 | 16 | 12 | 20 | 14 | 11 | 18 | 13 | 10 | 8 |
| 10 | 34 | 23 | 16 | 12 | 32 | 22 | 15 | 11 | 20 | 14 | 10 | 18 | 13 | 10 | 16 | 12 | 9 | 7 |

AVERAGE LUMINANCE (cd/sqm):





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ZONAL LUMENS:

CANDELA DISTRIBUTION:

| Zone | Lumens | % Fixture | % Lamp | 0° | Flux | |
|-----------|--------|-----------|--------|------|------|-----|
| 0°-10° | 41.2 | 0.9 | 0.7 | 0° | 424 | |
| 10°-20° | 128.9 | 2.9 | 2.3 | 5° | 428 | 41 |
| 20°-30° | 229.3 | 5.2 | 4.1 | 15° | 452 | 129 |
| 30°-40° | 341.5 | 7.8 | 6.1 | 25° | 493 | 229 |
| 40°-50° | 449.6 | 10.3 | 8.0 | 35° | 544 | 342 |
| 50°-60° | 538.8 | 12.3 | 9.6 | 45° | 581 | 450 |
| 60°-70° | 594.2 | 13.6 | 10.6 | 55° | 601 | 539 |
| 70°-80° | 586.7 | 13.4 | 10.5 | 65° | 602 | 594 |
| 80°-90° | 572.3 | 13.1 | 10.2 | 75° | 553 | 587 |
| 90°-100° | 476.4 | 10.9 | 8.5 | 85° | 528 | 430 |
| 100°-110° | 231.8 | 5.3 | 4.1 | 90° | 515 | 275 |
| 110°-120° | 93.6 | 2.1 | 1.7 | 95° | 451 | 332 |
| 120°-130° | 50.2 | 1.1 | 0.9 | 105° | 208 | 232 |
| 130°-140° | 27.1 | 0.6 | 0.5 | 115° | 89 | 94 |
| 140°-150° | 11.5 | 0.3 | 0.2 | 125° | 55 | 50 |
| 150°-160° | 2.9 | 0.1 | 0.1 | 135° | 34 | 27 |
| 160°-170° | 0.1 | 0.0 | 0.0 | 145° | 17 | 11 |
| 170°-180° | 0.0 | 0.0 | 0.0 | 155° | 6 | 3 |
| 0°-30° | 399.4 | 9.1 | 7.1 | 165° | 0 | 0 |
| 0°-40° | 741.0 | 16.9 | 13.2 | 175° | 0 | 0 |
| 0°-60° | 1729.4 | 39.5 | 30.9 | 180° | 0 | 0 |
| 0°-90° | 3482.6 | 79.6 | 62.2 | | | |
| 90°-120° | 801.8 | 18.3 | 14.3 | | | |
| 90°-150° | 890.5 | 20.3 | 15.9 | | | |
| 90°-180° | 894.0 | 20.4 | 16.0 | | | |
| 0°-180° | 4376.1 | 100.0 | 78.1 | | | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|------|-----|
| 0° | 424 |
| 5° | 428 |
| 10° | 439 |
| 15° | 452 |
| 20° | 471 |
| 25° | 493 |
| 30° | 520 |
| 35° | 544 |
| 40° | 564 |
| 45° | 581 |
| 50° | 595 |
| 55° | 601 |
| 60° | 605 |
| 65° | 602 |
| 70° | 586 |
| 75° | 553 |
| 80° | 527 |
| 85° | 528 |
| 90° | 515 |
| 95° | 451 |
| 100° | 329 |
| 105° | 208 |
| 110° | 129 |
| 115° | 89 |
| 120° | 69 |
| 125° | 55 |
| 130° | 44 |
| 135° | 34 |
| 140° | 27 |
| 145° | 17 |
| 150° | 11 |
| 155° | 6 |
| 160° | 1 |
| 165° | 0 |
| 170° | 0 |
| 175° | 0 |
| 180° | 0 |

(END OF REPORT)