

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: METALUX

Report Number: P231794

Luminaire Tested: **24GR-LD5-180-F1-UNV-L940-CD2-U**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P231794
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33304)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24GR-LD5-180-F1-UNV-L940-CD2-U
Description: METALUX 2X4 GRLED TROFFER
WITH F1 LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15523.0 lumens
Efficiency: N/A
Efficacy: 107.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.27
Luminous Opening: Rectangular (W 1.83' x L: 3.83' x H: 0')
CIE Type: Direct

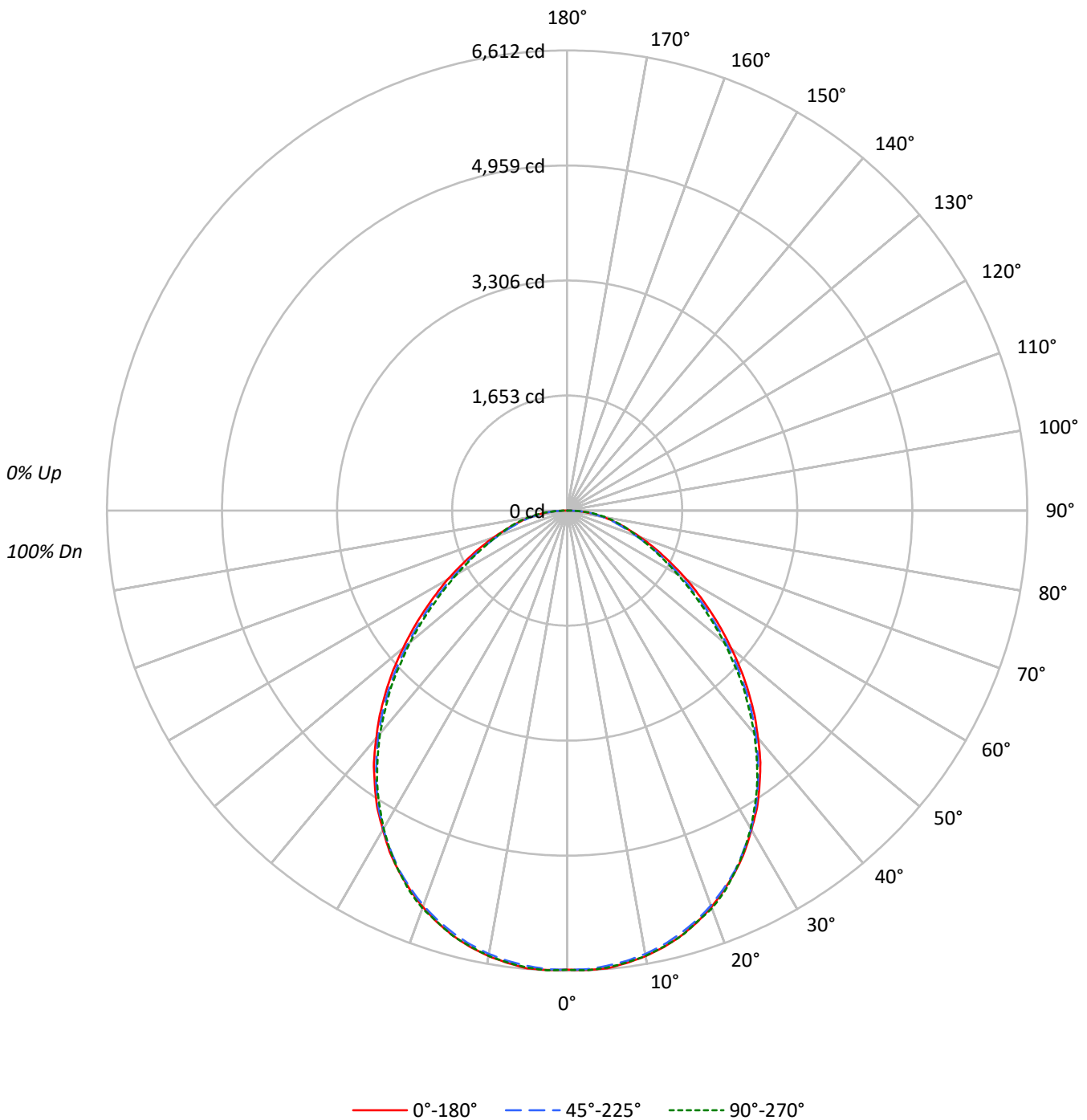
Input Watts (W): 144.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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 | | | | | 100 | | | |
| 1 | 109 | 105 | 101 | 97 | 107 | 103 | 99 | 96 | 98 | 95 | 93 | 95 | 92 | 90 | 91 | 89 | 87 | 85 | | | | | 85 | | | |
| 2 | 100 | 92 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 77 | 74 | 72 | | | | | 72 | | | |
| 3 | 92 | 82 | 74 | 68 | 90 | 80 | 73 | 68 | 78 | 71 | 66 | 75 | 70 | 65 | 72 | 68 | 64 | 62 | | | | | 62 | | | |
| 4 | 85 | 73 | 65 | 59 | 82 | 72 | 64 | 58 | 70 | 63 | 57 | 67 | 61 | 57 | 65 | 60 | 56 | 54 | | | | | 54 | | | |
| 5 | 78 | 66 | 57 | 51 | 76 | 65 | 57 | 51 | 63 | 56 | 50 | 61 | 55 | 50 | 59 | 54 | 49 | 47 | | | | | 47 | | | |
| 6 | 73 | 60 | 51 | 45 | 71 | 59 | 51 | 45 | 57 | 50 | 44 | 55 | 49 | 44 | 54 | 48 | 44 | 42 | | | | | 42 | | | |
| 7 | 67 | 54 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 44 | 39 | 49 | 44 | 39 | 37 | | | | | 37 | | | |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 41 | 36 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 33 | | | | | 33 | | | |
| 9 | 59 | 46 | 38 | 33 | 58 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 | | | | | 30 | | | |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 29 | 39 | 33 | 29 | 28 | | | | | 28 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 10104 | 10104 | 10104 |
| 5° | 10151 | 10095 | 10136 |
| 10° | 10109 | 10060 | 10106 |
| 15° | 10030 | 9976 | 10038 |
| 20° | 9883 | 9843 | 9915 |
| 25° | 9669 | 9644 | 9665 |
| 30° | 9363 | 9346 | 9325 |
| 35° | 9010 | 8942 | 8906 |
| 40° | 8528 | 8431 | 8363 |
| 45° | 7978 | 7831 | 7736 |
| 50° | 7331 | 7134 | 7013 |
| 55° | 6686 | 6440 | 6252 |
| 60° | 6072 | 5745 | 5597 |
| 65° | 5470 | 5161 | 5074 |
| 70° | 5009 | 4683 | 4814 |
| 75° | 4681 | 4466 | 4796 |
| 80° | 4644 | 4558 | 5008 |
| 85° | 4734 | 4776 | 5457 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 624.4 | 4.0 |
| 10°-20° | 1775.1 | 11.4 |
| 20°-30° | 2622.4 | 16.9 |
| 30°-40° | 2981.4 | 19.2 |
| 40°-50° | 2784.2 | 17.9 |
| 50°-60° | 2165.2 | 13.9 |
| 60°-70° | 1436.7 | 9.3 |
| 70°-80° | 831.4 | 5.4 |
| 80°-90° | 302.3 | 1.9 |
| 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° | 5021.8 | 32.4 |
| 0°-40° | 8003.2 | 51.6 |
| 0°-60° | 12952.6 | 83.4 |
| 0°-90° | 15523.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 15523.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 6597 | 6597 | 6597 | 6597 | 6597 | |
| 5° | 6602 | 6568 | 6566 | 6578 | 6592 | 626 |
| 15° | 6326 | 6294 | 6292 | 6289 | 6330 | 1782 |
| 25° | 5721 | 5697 | 5707 | 5695 | 5719 | 2631 |
| 35° | 4819 | 4794 | 4782 | 4748 | 4763 | 3008 |
| 45° | 3683 | 3654 | 3615 | 3569 | 3572 | 2838 |
| 55° | 2504 | 2468 | 2412 | 2349 | 2341 | 2245 |
| 65° | 1509 | 1463 | 1424 | 1398 | 1400 | 1508 |
| 75° | 791 | 772 | 755 | 788 | 810 | 846 |
| 85° | 269 | 264 | 272 | 308 | 310 | 293 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P231794

CATALOG NUMBER: 24GR-LD5-180-F1-UNV-L940-CD2-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 6597.2 | 6597.2 | 6597.2 | 6597.2 | 6597.2 |
| 2.5° | 6607.0 | 6587.6 | 6597.2 | 6590.0 | 6611.9 |
| 5° | 6602.1 | 6568.2 | 6565.8 | 6577.9 | 6592.4 |
| 7.5° | 6556.0 | 6519.7 | 6526.9 | 6526.9 | 6551.1 |
| 10° | 6500.2 | 6463.8 | 6468.7 | 6471.1 | 6497.8 |
| 12.5° | 6425.0 | 6388.6 | 6391.0 | 6388.6 | 6415.3 |
| 15° | 6325.6 | 6294.0 | 6291.6 | 6289.1 | 6330.4 |
| 17.5° | 6204.2 | 6160.5 | 6175.1 | 6177.6 | 6199.3 |
| 20° | 6063.5 | 6029.5 | 6039.2 | 6036.8 | 6082.9 |
| 22.5° | 5896.1 | 5871.8 | 5879.0 | 5874.2 | 5917.9 |
| 25° | 5721.3 | 5697.1 | 5706.8 | 5694.7 | 5718.9 |
| 27.5° | 5524.8 | 5507.9 | 5498.2 | 5490.8 | 5507.9 |
| 30° | 5294.3 | 5284.6 | 5284.6 | 5253.1 | 5272.5 |
| 32.5° | 5076.0 | 5044.4 | 5044.4 | 5032.3 | 5020.2 |
| 35° | 4818.8 | 4794.5 | 4782.4 | 4748.4 | 4762.9 |
| 37.5° | 4561.5 | 4505.7 | 4500.9 | 4474.2 | 4474.2 |
| 40° | 4265.5 | 4234.0 | 4217.0 | 4187.9 | 4183.0 |
| 42.5° | 3984.1 | 3952.6 | 3923.4 | 3874.9 | 3865.2 |
| 45° | 3683.2 | 3654.1 | 3615.3 | 3569.2 | 3571.6 |
| 47.5° | 3384.8 | 3343.5 | 3307.1 | 3251.3 | 3244.0 |
| 50° | 3076.6 | 3047.5 | 2994.1 | 2945.6 | 2943.2 |
| 52.5° | 2787.9 | 2741.8 | 2693.3 | 2635.0 | 2635.0 |
| 55° | 2504.0 | 2467.6 | 2411.8 | 2348.7 | 2341.4 |
| 57.5° | 2232.2 | 2198.2 | 2135.2 | 2089.1 | 2077.0 |
| 60° | 1982.3 | 1933.8 | 1875.6 | 1836.8 | 1827.1 |
| 62.5° | 1732.4 | 1688.8 | 1645.1 | 1606.2 | 1603.8 |
| 65° | 1509.2 | 1463.1 | 1424.2 | 1397.6 | 1400.0 |
| 67.5° | 1307.8 | 1269.0 | 1225.3 | 1218.0 | 1220.4 |
| 70° | 1118.5 | 1077.3 | 1045.8 | 1062.8 | 1074.9 |
| 72.5° | 939.0 | 917.2 | 895.3 | 919.6 | 936.5 |
| 75° | 791.0 | 771.6 | 754.6 | 788.5 | 810.4 |
| 77.5° | 655.1 | 640.5 | 638.1 | 667.3 | 686.6 |
| 80° | 526.5 | 509.6 | 516.8 | 550.7 | 567.8 |
| 82.5° | 400.3 | 388.2 | 390.6 | 431.9 | 444.0 |
| 85° | 269.4 | 264.4 | 271.8 | 308.1 | 310.5 |
| 87.5° | 143.2 | 143.2 | 148.0 | 169.8 | 162.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)