

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: CORELITE

Report Number: P183554

Luminaire Tested: **E2-WS-4L40-1D-UNV-4-STD-DM5**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P183554
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26966)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: CORELITE
Catalog Number: E2-WS-4L40-1D-UNV-4-STD-DM5
Description: CORELITE ELEMENT SUSPENDED DIRECT-INDIRECT LED LUMINAIRE, 4 FOOT.
WaveStream WITH FROSTED LENS. 50% UP / 50% DOWN.
Light Source: (336)4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5907.4 lumens
Efficiency: N/A
Efficacy: 92.7 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.37 / 1.41
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 3.58' x H: 0.21')
CIE Type: General Diffuse

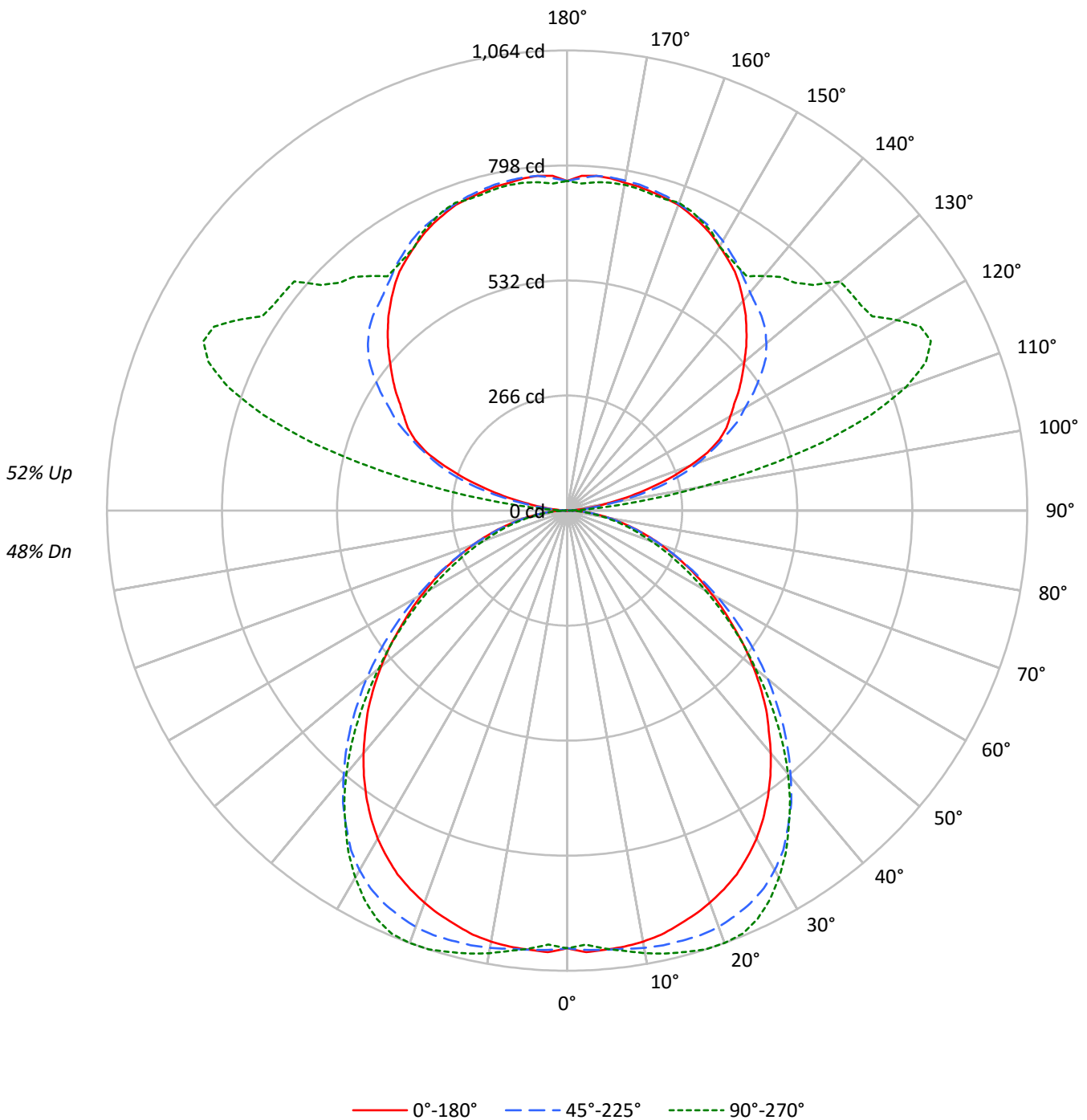
Input Watts (W): 63.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 107 | 107 | 107 | 107 | 98 | 98 | 98 | 98 | 82 | 82 | 82 | 68 | 68 | 68 | 55 | 55 | 55 | 48 |
| 1 | 98 | 93 | 89 | 86 | 90 | 86 | 83 | 80 | 72 | 70 | 68 | 60 | 58 | 57 | 49 | 47 | 46 | 41 |
| 2 | 89 | 82 | 75 | 70 | 82 | 75 | 70 | 66 | 64 | 60 | 56 | 53 | 50 | 48 | 43 | 41 | 39 | 35 |
| 3 | 81 | 72 | 64 | 59 | 74 | 66 | 60 | 55 | 56 | 51 | 48 | 47 | 43 | 40 | 38 | 36 | 33 | 29 |
| 4 | 74 | 64 | 56 | 50 | 68 | 59 | 52 | 47 | 50 | 45 | 41 | 42 | 38 | 35 | 34 | 31 | 29 | 25 |
| 5 | 68 | 57 | 49 | 43 | 63 | 52 | 45 | 40 | 45 | 39 | 35 | 37 | 33 | 30 | 31 | 28 | 25 | 22 |
| 6 | 63 | 51 | 43 | 37 | 58 | 47 | 40 | 35 | 40 | 35 | 30 | 34 | 30 | 26 | 28 | 25 | 22 | 19 |
| 7 | 58 | 46 | 38 | 32 | 53 | 43 | 36 | 30 | 36 | 31 | 27 | 31 | 26 | 23 | 25 | 22 | 20 | 17 |
| 8 | 54 | 42 | 34 | 29 | 49 | 39 | 32 | 27 | 33 | 28 | 24 | 28 | 24 | 21 | 23 | 20 | 18 | 15 |
| 9 | 50 | 38 | 30 | 25 | 46 | 35 | 29 | 24 | 30 | 25 | 21 | 26 | 22 | 19 | 21 | 18 | 16 | 14 |
| 10 | 47 | 35 | 28 | 23 | 43 | 32 | 26 | 22 | 28 | 23 | 19 | 24 | 20 | 17 | 20 | 17 | 14 | 12 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 8107 | 8107 | 8107 |
| 5° | 8156 | 7897 | 7798 |
| 10° | 8148 | 7758 | 7699 |
| 15° | 8102 | 7647 | 7626 |
| 20° | 8056 | 7542 | 7545 |
| 25° | 7985 | 7367 | 7313 |
| 30° | 7839 | 7101 | 6862 |
| 35° | 7603 | 6681 | 6289 |
| 40° | 7302 | 6165 | 5665 |
| 45° | 6966 | 5591 | 4974 |
| 50° | 6546 | 4980 | 4267 |
| 55° | 6062 | 4331 | 3623 |
| 60° | 5618 | 3689 | 3010 |
| 65° | 5171 | 3061 | 2440 |
| 70° | 4647 | 2458 | 1927 |
| 75° | 4090 | 1872 | 1445 |
| 80° | 3435 | 1286 | 963 |
| 85° | 2595 | 686 | 464 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 97.2 | 1.6 |
| 10°-20° | 290.0 | 4.9 |
| 20°-30° | 455.3 | 7.7 |
| 30°-40° | 541.4 | 9.2 |
| 40°-50° | 528.0 | 8.9 |
| 50°-60° | 435.0 | 7.4 |
| 60°-70° | 302.5 | 5.1 |
| 70°-80° | 166.3 | 2.8 |
| 80°-90° | 49.6 | 0.8 |
| 90°-100° | 66.8 | 1.1 |
| 100°-110° | 342.3 | 5.8 |
| 110°-120° | 525.3 | 8.9 |
| 120°-130° | 548.5 | 9.3 |
| 130°-140° | 502.0 | 8.5 |
| 140°-150° | 428.8 | 7.3 |
| 150°-160° | 339.4 | 5.7 |
| 160°-170° | 215.8 | 3.7 |
| 170°-180° | 73.5 | 1.2 |
| 0°-30° | 842.4 | 14.3 |
| 0°-40° | 1383.8 | 23.4 |
| 0°-60° | 2346.7 | 39.7 |
| 0°-90° | 2865.1 | 48.5 |
| 90°-120° | 934.3 | 15.8 |
| 90°-150° | 2413.6 | 40.9 |
| 90°-180° | 3042.0 | 51.5 |
| 0°-180° | 5907.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1012 | 1012 | 1012 | 1012 | 1012 | |
| 5° | 1019 | 1010 | 1019 | 1017 | 1017 | 97 |
| 15° | 992 | 995 | 1029 | 1052 | 1056 | 280 |
| 25° | 928 | 943 | 1002 | 1032 | 1042 | 427 |
| 35° | 809 | 829 | 891 | 896 | 893 | 505 |
| 45° | 651 | 676 | 708 | 693 | 683 | 500 |
| 55° | 470 | 492 | 502 | 480 | 465 | 422 |
| 65° | 307 | 317 | 312 | 294 | 282 | 304 |
| 75° | 161 | 166 | 158 | 148 | 144 | 171 |
| 85° | 47 | 50 | 44 | 40 | 37 | 49 |
| 90° | 0 | 2 | 2 | 2 | 2 | 4 |
| 95° | 25 | 27 | 32 | 69 | 77 | 35 |
| 105° | 193 | 193 | 228 | 500 | 614 | 205 |
| 115° | 388 | 384 | 401 | 703 | 928 | 377 |
| 125° | 485 | 515 | 547 | 732 | 829 | 434 |
| 135° | 586 | 596 | 636 | 695 | 745 | 453 |
| 145° | 676 | 678 | 690 | 683 | 688 | 422 |
| 155° | 732 | 730 | 740 | 740 | 737 | 338 |
| 165° | 762 | 762 | 767 | 760 | 757 | 216 |
| 175° | 777 | 770 | 777 | 772 | 762 | 74 |
| 180° | 762 | 762 | 762 | 762 | 762 | |



TEST NUMBER: P183554

CATALOG NUMBER: E2-WS-4L40-1D-UNV-4-STD-DM5

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 1012.0 | 1012.0 | 1012.0 | 1012.0 | 1012.0 |
| 2.5° | 1021.9 | 1009.5 | 1016.9 | 1014.5 | 1004.6 |
| 5° | 1019.4 | 1009.5 | 1019.4 | 1016.9 | 1016.9 |
| 7.5° | 1016.9 | 1007.1 | 1021.9 | 1026.8 | 1026.8 |
| 10° | 1012.0 | 1004.6 | 1026.8 | 1034.3 | 1039.2 |
| 12.5° | 1004.6 | 999.6 | 1029.3 | 1044.2 | 1049.1 |
| 15° | 992.2 | 994.7 | 1029.3 | 1051.6 | 1056.5 |
| 17.5° | 979.8 | 987.3 | 1029.3 | 1054.1 | 1064.0 |
| 20° | 965.0 | 974.9 | 1024.4 | 1054.1 | 1064.0 |
| 22.5° | 947.7 | 960.0 | 1014.5 | 1046.6 | 1059.0 |
| 25° | 927.9 | 942.7 | 1002.1 | 1031.8 | 1041.7 |
| 27.5° | 903.1 | 920.5 | 984.8 | 1009.5 | 1014.5 |
| 30° | 875.9 | 893.2 | 960.0 | 977.4 | 979.8 |
| 32.5° | 843.7 | 866.0 | 930.3 | 940.2 | 940.2 |
| 35° | 809.1 | 828.9 | 890.8 | 895.7 | 893.2 |
| 37.5° | 772.0 | 794.3 | 851.2 | 848.7 | 846.2 |
| 40° | 732.4 | 754.7 | 804.2 | 799.2 | 794.3 |
| 42.5° | 690.3 | 715.1 | 757.1 | 747.2 | 739.8 |
| 45° | 650.7 | 675.5 | 707.7 | 692.8 | 682.9 |
| 47.5° | 606.2 | 631.0 | 655.7 | 640.9 | 626.0 |
| 50° | 561.7 | 583.9 | 606.2 | 581.5 | 569.1 |
| 52.5° | 517.1 | 539.4 | 554.2 | 532.0 | 517.1 |
| 55° | 470.1 | 492.4 | 502.3 | 480.0 | 465.2 |
| 57.5° | 428.1 | 445.4 | 452.8 | 430.5 | 415.7 |
| 60° | 386.0 | 400.8 | 403.3 | 383.5 | 368.7 |
| 62.5° | 346.4 | 358.8 | 356.3 | 336.5 | 324.1 |
| 65° | 306.8 | 316.7 | 311.8 | 294.4 | 282.1 |
| 67.5° | 267.2 | 274.7 | 269.7 | 254.9 | 245.0 |
| 70° | 230.1 | 237.5 | 230.1 | 215.3 | 207.8 |
| 72.5° | 195.5 | 200.4 | 193.0 | 180.6 | 173.2 |
| 75° | 160.8 | 165.8 | 158.4 | 148.5 | 143.5 |
| 77.5° | 128.7 | 131.1 | 126.2 | 118.8 | 113.8 |
| 80° | 99.0 | 101.4 | 96.5 | 91.6 | 86.6 |
| 82.5° | 71.8 | 74.2 | 69.3 | 66.8 | 61.9 |
| 85° | 47.0 | 49.5 | 44.5 | 39.6 | 37.1 |
| 87.5° | 22.3 | 24.7 | 19.8 | 17.3 | 14.8 |
| 90° | 0.0 | 2.5 | 2.5 | 2.5 | 2.5 |
| 92.5° | 7.4 | 9.9 | 9.9 | 14.8 | 14.8 |
| 95° | 24.7 | 27.2 | 32.2 | 69.3 | 76.7 |
| 97.5° | 54.4 | 56.9 | 69.3 | 163.3 | 180.6 |
| 100° | 91.6 | 96.5 | 116.3 | 277.1 | 314.2 |
| 102.5° | 141.0 | 143.5 | 173.2 | 395.9 | 465.2 |
| 105° | 193.0 | 193.0 | 227.6 | 499.8 | 613.6 |
| 107.5° | 247.4 | 240.0 | 279.6 | 583.9 | 737.4 |
| 110° | 301.9 | 292.0 | 321.7 | 640.9 | 833.8 |



TEST NUMBER: P183554

CATALOG NUMBER: E2-WS-4L40-1D-UNV-4-STD-DM5

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 112.5° | 351.4 | 339.0 | 361.3 | 675.5 | 898.2 |
| 115° | 388.5 | 383.5 | 400.8 | 702.7 | 927.9 |
| 117.5° | 415.7 | 423.1 | 442.9 | 722.5 | 920.5 |
| 120° | 435.5 | 460.2 | 475.1 | 739.8 | 880.9 |
| 122.5° | 457.8 | 492.4 | 512.2 | 734.9 | 836.3 |
| 125° | 485.0 | 514.7 | 546.8 | 732.4 | 828.9 |
| 127.5° | 509.7 | 529.5 | 579.0 | 734.9 | 826.4 |
| 130° | 534.5 | 551.8 | 601.3 | 717.6 | 824.0 |
| 132.5° | 561.7 | 574.0 | 621.1 | 692.8 | 772.0 |
| 135° | 586.4 | 596.3 | 635.9 | 695.3 | 744.8 |
| 137.5° | 611.2 | 616.1 | 645.8 | 697.8 | 732.4 |
| 140° | 633.4 | 635.9 | 658.2 | 680.4 | 707.7 |
| 142.5° | 655.7 | 658.2 | 673.0 | 675.5 | 682.9 |
| 145° | 675.5 | 678.0 | 690.3 | 682.9 | 687.9 |
| 147.5° | 690.3 | 692.8 | 705.2 | 695.3 | 695.3 |
| 150° | 705.2 | 705.2 | 720.0 | 710.1 | 705.2 |
| 152.5° | 720.0 | 717.6 | 732.4 | 725.0 | 725.0 |
| 155° | 732.4 | 729.9 | 739.8 | 739.8 | 737.4 |
| 157.5° | 742.3 | 739.8 | 747.2 | 752.2 | 749.7 |
| 160° | 752.2 | 749.7 | 754.7 | 754.7 | 757.1 |
| 162.5° | 757.1 | 757.1 | 762.1 | 754.7 | 754.7 |
| 165° | 762.1 | 762.1 | 767.0 | 759.6 | 757.1 |
| 167.5° | 767.0 | 767.0 | 772.0 | 764.6 | 762.1 |
| 170° | 769.5 | 769.5 | 774.5 | 767.0 | 764.6 |
| 172.5° | 774.5 | 772.0 | 776.9 | 769.5 | 764.6 |
| 175° | 776.9 | 769.5 | 776.9 | 772.0 | 762.1 |
| 177.5° | 774.5 | 767.0 | 769.5 | 762.1 | 757.1 |
| 180° | 762.1 | 762.1 | 762.1 | 762.1 | 762.1 |

(END OF REPORT)