

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: P302558

Luminaire Tested: **FSP-22-32-40-CP250**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P302558
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1905-304-12)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FSP-22-32-40-CP250
Description: 2x2 Fail Safe Flat Panel Clear Polycarbonate Lens .25"
Light Source: (168) 4000 CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

| <u>Sample No.</u> | <u>Condition</u> | <u>Description</u> |
|-------------------|------------------|---------------------------|
| AS-5443-1 | Good | WHITE TWIN R-EVOLVE FLOOD |
| AS-5443-2 | Good | REFLECTOR |
| AS-5443-3 | Good | DRIVER |
| AS-5443-4 | Good | UPPER MODULE |
| AS-5443-5 | Good | LENS |
| AS-5443-6 | Good | DRIVER 2 |
| AS-5443-7 | Good | TRIM RING |

Summary

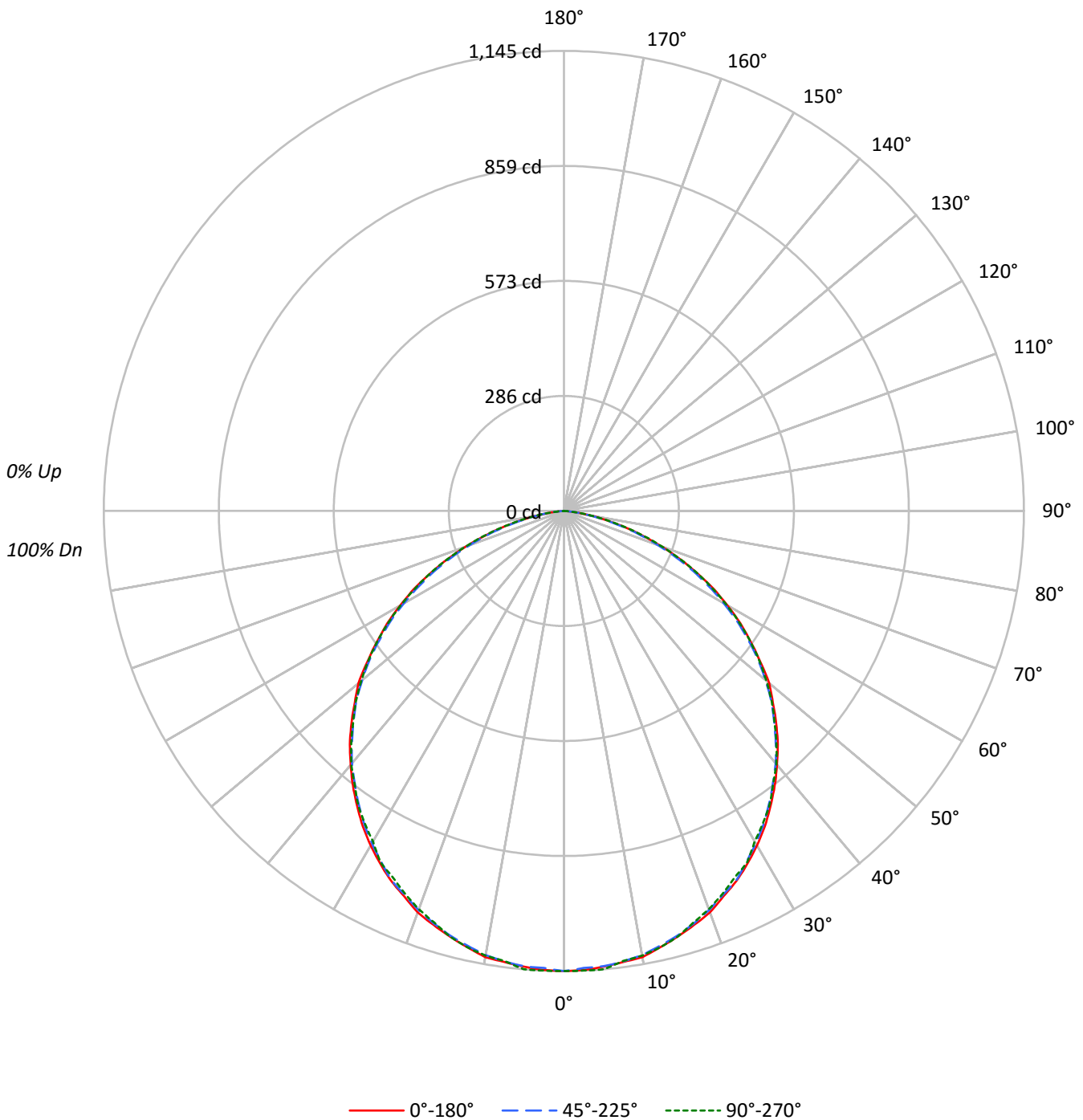
Lumens per Lamp: N/A
Luminaire Lumens: 3068.3 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.24 / 1.35
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 29.2
Input Voltage (V): NR
Input Current (A_{in}): 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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CATALOG NUMBER: FSP-22-32-40-CP250

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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 105 | 101 | 97 | 107 | 103 | 99 | 96 | 98 | 95 | 93 | 95 | 92 | 90 | 91 | 89 | 87 | 85 |
| 2 | 100 | 92 | 85 | 80 | 97 | 90 | 84 | 79 | 87 | 81 | 77 | 83 | 79 | 75 | 80 | 77 | 74 | 72 |
| 3 | 91 | 81 | 73 | 67 | 89 | 79 | 72 | 66 | 76 | 70 | 65 | 74 | 68 | 64 | 71 | 67 | 63 | 61 |
| 4 | 84 | 72 | 63 | 57 | 81 | 71 | 62 | 56 | 68 | 61 | 56 | 66 | 60 | 55 | 64 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 41 | 39 |
| 7 | 66 | 52 | 44 | 38 | 64 | 52 | 43 | 38 | 50 | 43 | 37 | 49 | 42 | 37 | 47 | 41 | 37 | 35 |
| 8 | 61 | 48 | 39 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 33 | 45 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 52 | 40 | 33 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3081 | 3081 | 3081 |
| 5° | 3076 | 3072 | 3093 |
| 10° | 3080 | 3066 | 3070 |
| 15° | 3055 | 3048 | 3055 |
| 20° | 3046 | 3027 | 3020 |
| 25° | 3018 | 3014 | 2988 |
| 30° | 2988 | 2968 | 2952 |
| 35° | 2945 | 2925 | 2933 |
| 40° | 2899 | 2881 | 2890 |
| 45° | 2845 | 2816 | 2821 |
| 50° | 2794 | 2741 | 2757 |
| 55° | 2665 | 2629 | 2659 |
| 60° | 2530 | 2475 | 2516 |
| 65° | 2327 | 2271 | 2336 |
| 70° | 2044 | 1974 | 2054 |
| 75° | 1655 | 1563 | 1682 |
| 80° | 1125 | 1066 | 1164 |
| 85° | 513 | 472 | 513 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 108.2 | 3.5 |
| 10°-20° | 309.0 | 10.1 |
| 20°-30° | 466.2 | 15.2 |
| 30°-40° | 558.5 | 18.2 |
| 40°-50° | 573.2 | 18.7 |
| 50°-60° | 504.0 | 16.4 |
| 60°-70° | 356.3 | 11.6 |
| 70°-80° | 166.7 | 5.4 |
| 80°-90° | 26.1 | 0.9 |
| 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° | 883.5 | 28.8 |
| 0°-40° | 1442.0 | 47.0 |
| 0°-60° | 2519.1 | 82.1 |
| 0°-90° | 3068.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3068.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1145 | 1145 | 1145 | 1145 | 1145 | |
| 5° | 1139 | 1140 | 1137 | 1139 | 1145 | 108 |
| 15° | 1097 | 1097 | 1094 | 1093 | 1097 | 310 |
| 25° | 1016 | 1014 | 1015 | 1009 | 1006 | 468 |
| 35° | 897 | 897 | 890 | 890 | 893 | 561 |
| 45° | 748 | 745 | 740 | 741 | 741 | 577 |
| 55° | 568 | 564 | 560 | 566 | 567 | 508 |
| 65° | 366 | 360 | 357 | 362 | 367 | 362 |
| 75° | 159 | 153 | 150 | 158 | 162 | 170 |
| 85° | 17 | 17 | 15 | 18 | 17 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P302558

CATALOG NUMBER: FSP-22-32-40-CP250

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1145.0 | 1145.0 | 1145.0 | 1145.0 | 1145.0 |
| 2.5° | 1143.7 | 1142.5 | 1138.6 | 1142.5 | 1145.0 |
| 5° | 1138.6 | 1139.9 | 1137.4 | 1138.6 | 1145.0 |
| 7.5° | 1132.3 | 1133.5 | 1131.0 | 1131.0 | 1129.7 |
| 10° | 1127.2 | 1127.2 | 1122.1 | 1122.1 | 1123.4 |
| 12.5° | 1111.9 | 1114.4 | 1108.1 | 1110.6 | 1111.9 |
| 15° | 1096.6 | 1096.6 | 1094.1 | 1092.8 | 1096.6 |
| 17.5° | 1080.1 | 1080.1 | 1076.2 | 1076.2 | 1073.7 |
| 20° | 1063.5 | 1061.0 | 1057.1 | 1053.3 | 1054.6 |
| 22.5° | 1038.0 | 1039.3 | 1034.2 | 1034.2 | 1031.7 |
| 25° | 1016.4 | 1013.8 | 1015.1 | 1008.7 | 1006.2 |
| 27.5° | 989.6 | 988.4 | 984.5 | 984.5 | 987.1 |
| 30° | 961.6 | 957.8 | 955.2 | 952.7 | 950.1 |
| 32.5° | 931.0 | 928.5 | 924.7 | 923.4 | 922.1 |
| 35° | 896.6 | 896.6 | 890.3 | 890.3 | 892.8 |
| 37.5° | 862.3 | 864.8 | 854.6 | 855.9 | 855.9 |
| 40° | 825.3 | 826.6 | 820.2 | 821.5 | 822.8 |
| 42.5° | 788.4 | 785.8 | 780.7 | 784.6 | 783.3 |
| 45° | 747.6 | 745.1 | 740.0 | 741.3 | 741.3 |
| 47.5° | 705.6 | 703.1 | 700.5 | 700.5 | 701.8 |
| 50° | 667.4 | 659.8 | 654.7 | 655.9 | 658.5 |
| 52.5° | 616.4 | 615.2 | 610.1 | 611.4 | 613.9 |
| 55° | 568.0 | 564.2 | 560.4 | 565.5 | 566.8 |
| 57.5° | 520.9 | 517.1 | 512.0 | 514.6 | 518.4 |
| 60° | 470.0 | 463.6 | 459.8 | 463.6 | 467.4 |
| 62.5° | 420.3 | 411.4 | 407.6 | 412.7 | 416.5 |
| 65° | 365.5 | 360.4 | 356.6 | 361.7 | 366.8 |
| 67.5° | 313.3 | 304.4 | 303.1 | 310.8 | 314.6 |
| 70° | 259.8 | 250.9 | 250.9 | 257.3 | 261.1 |
| 72.5° | 207.6 | 198.7 | 200.0 | 207.6 | 211.4 |
| 75° | 159.2 | 152.8 | 150.3 | 157.9 | 161.8 |
| 77.5° | 113.4 | 107.0 | 107.0 | 114.6 | 114.6 |
| 80° | 72.6 | 68.8 | 68.8 | 73.9 | 75.1 |
| 82.5° | 40.8 | 39.5 | 38.2 | 40.8 | 42.0 |
| 85° | 16.6 | 16.6 | 15.3 | 17.8 | 16.6 |
| 87.5° | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)