

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P590177

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590177  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-2HI-40-UNV-81-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

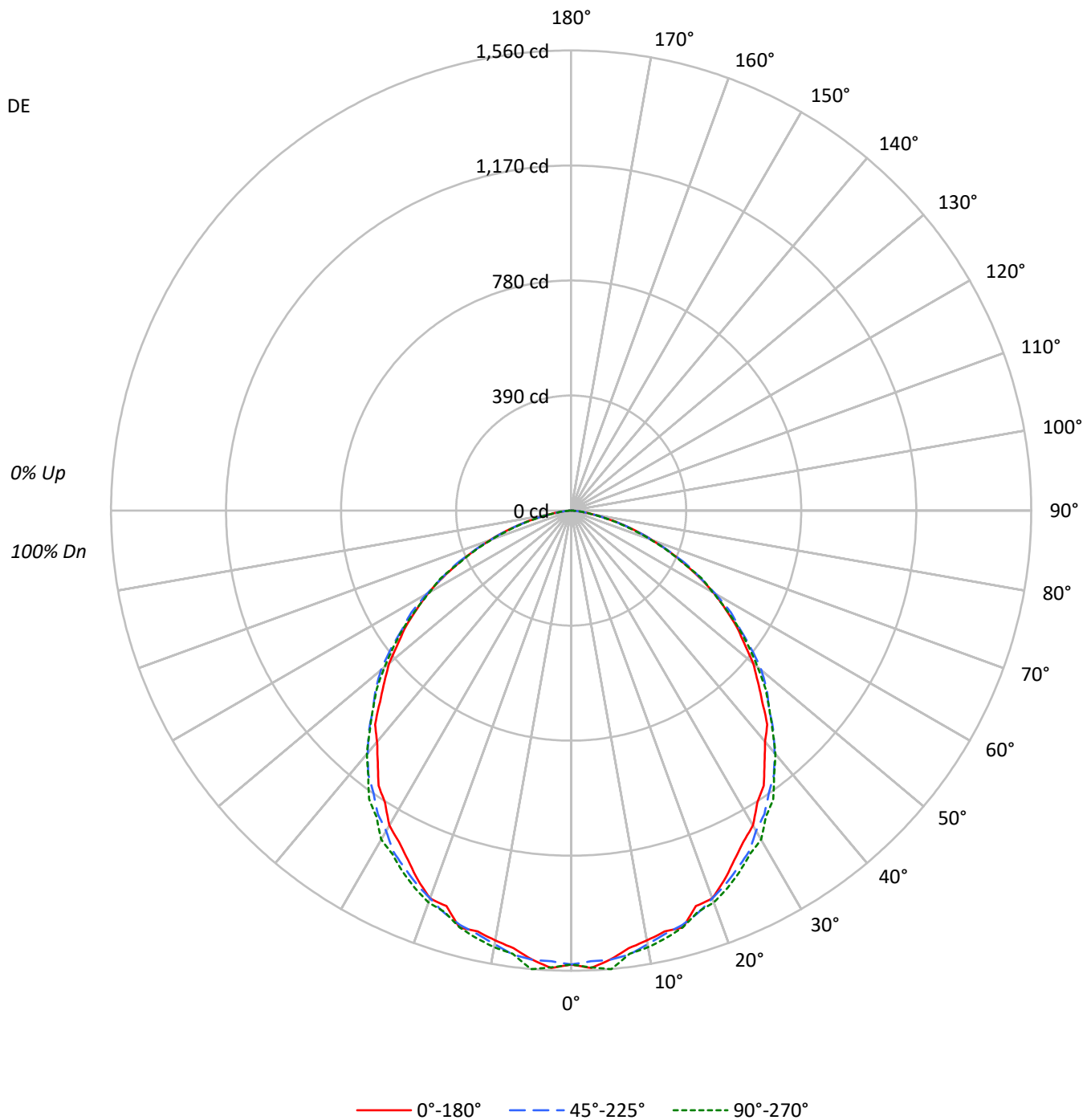
Lumens per Lamp: N/A  
Luminaire Lumens: 3878.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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: 24 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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4141	4141	4141
5°	4127	4129	4215
10°	4043	4079	4107
15°	4075	4053	4076
20°	4006	4006	4049
25°	3883	3968	4012
30°	3830	3897	4001
35°	3740	3838	3924
40°	3594	3767	3784
45°	3486	3609	3615
50°	3371	3523	3456
55°	3212	3274	3251
60°	3004	3033	2979
65°	2678	2746	2659
70°	2297	2305	2242
75°	1820	1815	1746
80°	1220	1185	1139
85°	664	658	614

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3702 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.7	3.7
10°-20°	410.2	10.6
20°-30°	614.6	15.8
30°-40°	728.4	18.8
40°-50°	729.7	18.8
50°-60°	619.4	16.0
60°-70°	417.6	10.8
70°-80°	183.5	4.7
80°-90°	29.8	0.8
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°	1169.5	30.2
0°-40°	1897.9	48.9
0°-60°	3247.1	83.7
0°-90°	3878.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3878.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1539	1539	1539	1539	1539	
5°	1528	1524	1528	1524	1560	144
15°	1463	1446	1455	1462	1463	408
25°	1308	1315	1336	1354	1351	605
35°	1138	1142	1168	1195	1194	707
45°	916	933	948	973	950	708
55°	685	680	698	693	693	609
65°	421	415	431	415	418	418
75°	175	172	175	162	168	188
85°	22	21	21	21	20	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1538.7	1538.7	1538.7	1538.7	1538.7
2.5°	1552.0	1540.3	1529.4	1542.1	1549.8
5°	1527.8	1524.2	1528.4	1523.8	1560.5
7.5°	1496.4	1510.1	1518.0	1513.1	1515.2
10°	1479.7	1474.9	1492.6	1504.9	1503.1
12.5°	1461.8	1469.0	1470.0	1483.3	1484.5
15°	1462.8	1445.9	1454.9	1462.4	1463.0
17.5°	1406.0	1424.3	1430.4	1447.7	1426.2
20°	1399.0	1385.7	1399.0	1416.7	1413.9
22.5°	1356.3	1341.4	1370.0	1385.7	1384.7
25°	1307.8	1315.0	1336.4	1353.9	1351.1
27.5°	1265.3	1273.7	1304.3	1328.3	1312.8
30°	1232.5	1228.4	1254.2	1275.7	1287.6
32.5°	1173.9	1189.0	1219.2	1240.5	1229.2
35°	1138.4	1141.8	1168.2	1195.2	1194.4
37.5°	1076.2	1091.9	1129.0	1136.6	1129.6
40°	1023.1	1038.8	1072.4	1080.6	1077.2
42.5°	984.0	986.8	1015.6	1024.9	1010.0
45°	915.9	933.0	948.4	972.9	949.8
47.5°	857.9	865.8	899.2	905.7	893.6
50°	805.2	808.0	841.6	833.4	825.5
52.5°	739.0	750.8	769.6	768.1	758.7
55°	684.6	680.0	697.9	693.2	693.0
57.5°	619.3	627.2	641.9	634.4	622.2
60°	558.1	558.3	563.6	555.1	553.5
62.5°	489.9	492.3	493.5	483.0	500.1
65°	420.6	415.0	431.3	414.8	417.6
67.5°	356.8	359.6	358.0	347.7	351.6
70°	292.0	295.6	293.0	281.3	284.9
72.5°	232.8	228.5	231.3	216.5	223.3
75°	175.0	171.5	174.6	162.3	167.9
77.5°	119.2	122.0	120.0	113.4	117.2
80°	78.7	76.5	76.5	72.7	73.5
82.5°	45.9	43.7	43.1	41.9	43.7
85°	21.5	20.9	21.3	20.7	19.9
87.5°	7.7	7.9	7.9	7.5	7.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)