

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: P590375

Luminaire Tested: FSR-24-2-LD4-2STD-40-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590375  
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-LD4-2STD-40-UNV-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

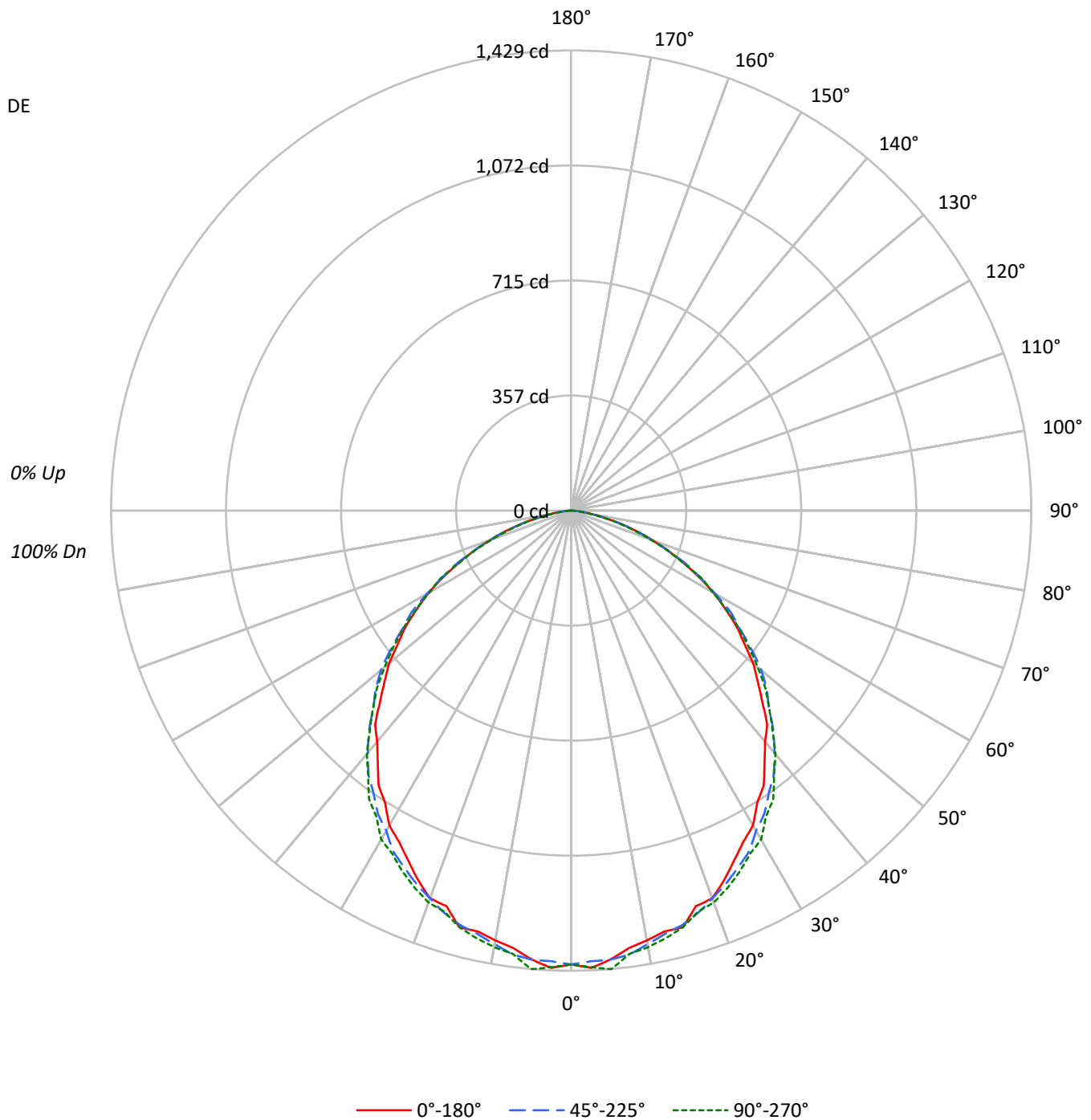
Lumens per Lamp: N/A  
Luminaire Lumens: 3552.0 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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°	3792	3792	3792
5°	3780	3781	3861
10°	3703	3736	3762
15°	3733	3712	3733
20°	3670	3670	3709
25°	3557	3635	3675
30°	3508	3570	3664
35°	3425	3515	3594
40°	3292	3451	3466
45°	3193	3306	3311
50°	3087	3227	3165
55°	2942	2999	2978
60°	2751	2778	2729
65°	2453	2516	2436
70°	2105	2112	2053
75°	1667	1664	1599
80°	1117	1086	1043
85°	608	602	562

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3391 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.6	3.7
10°-20°	375.7	10.6
20°-30°	562.9	15.8
30°-40°	667.2	18.8
40°-50°	668.4	18.8
50°-60°	567.4	16.0
60°-70°	382.5	10.8
70°-80°	168.1	4.7
80°-90°	27.3	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°	1071.2	30.2
0°-40°	1738.3	48.9
0°-60°	2974.1	83.7
0°-90°	3552.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3552.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1409	1409	1409	1409	1409	
5°	1399	1396	1400	1396	1429	132
15°	1340	1324	1333	1340	1340	373
25°	1198	1204	1224	1240	1238	554
35°	1043	1046	1070	1095	1094	647
45°	839	854	869	891	870	649
55°	627	623	639	635	635	558
65°	385	380	395	380	382	383
75°	160	157	160	149	154	172
85°	20	19	20	19	18	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1409.3	1409.3	1409.3	1409.3	1409.3
2.5°	1421.5	1410.8	1400.8	1412.4	1419.5
5°	1399.3	1396.1	1399.9	1395.7	1429.4
7.5°	1370.6	1383.1	1390.4	1385.9	1387.9
10°	1355.3	1350.9	1367.1	1378.4	1376.8
12.5°	1338.9	1345.5	1346.4	1358.6	1359.7
15°	1339.8	1324.4	1332.6	1339.5	1340.0
17.5°	1287.8	1304.5	1310.2	1326.0	1306.3
20°	1281.4	1269.2	1281.4	1297.6	1295.1
22.5°	1242.3	1228.6	1254.9	1269.2	1268.3
25°	1197.9	1204.4	1224.1	1240.1	1237.6
27.5°	1159.0	1166.6	1194.6	1216.6	1202.4
30°	1128.9	1125.1	1148.8	1168.4	1179.3
32.5°	1075.3	1089.1	1116.7	1136.2	1125.8
35°	1042.7	1045.8	1070.0	1094.7	1094.0
37.5°	985.7	1000.1	1034.1	1041.0	1034.7
40°	937.1	951.5	982.3	989.7	986.6
42.5°	901.3	903.8	930.2	938.8	925.1
45°	838.9	854.5	868.7	891.1	870.0
47.5°	785.7	793.0	823.6	829.6	818.5
50°	737.5	740.1	770.8	763.4	756.1
52.5°	676.9	687.7	704.9	703.5	694.9
55°	627.1	622.9	639.3	634.9	634.7
57.5°	567.2	574.5	587.9	581.0	569.9
60°	511.1	511.3	516.2	508.4	507.0
62.5°	448.7	450.9	452.0	442.4	458.0
65°	385.2	380.1	395.1	379.9	382.5
67.5°	326.8	329.4	327.9	318.4	322.1
70°	267.5	270.8	268.4	257.7	260.9
72.5°	213.3	209.3	211.8	198.3	204.5
75°	160.3	157.0	160.0	148.7	153.8
77.5°	109.2	111.7	109.9	103.9	107.4
80°	72.1	70.1	70.1	66.6	67.3
82.5°	42.0	40.0	39.5	38.4	40.0
85°	19.7	19.1	19.5	18.9	18.2
87.5°	7.1	7.3	7.3	6.9	6.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)