

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: P590407

Luminaire Tested: FSR-24-2-LD4-2STD-50-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590407  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

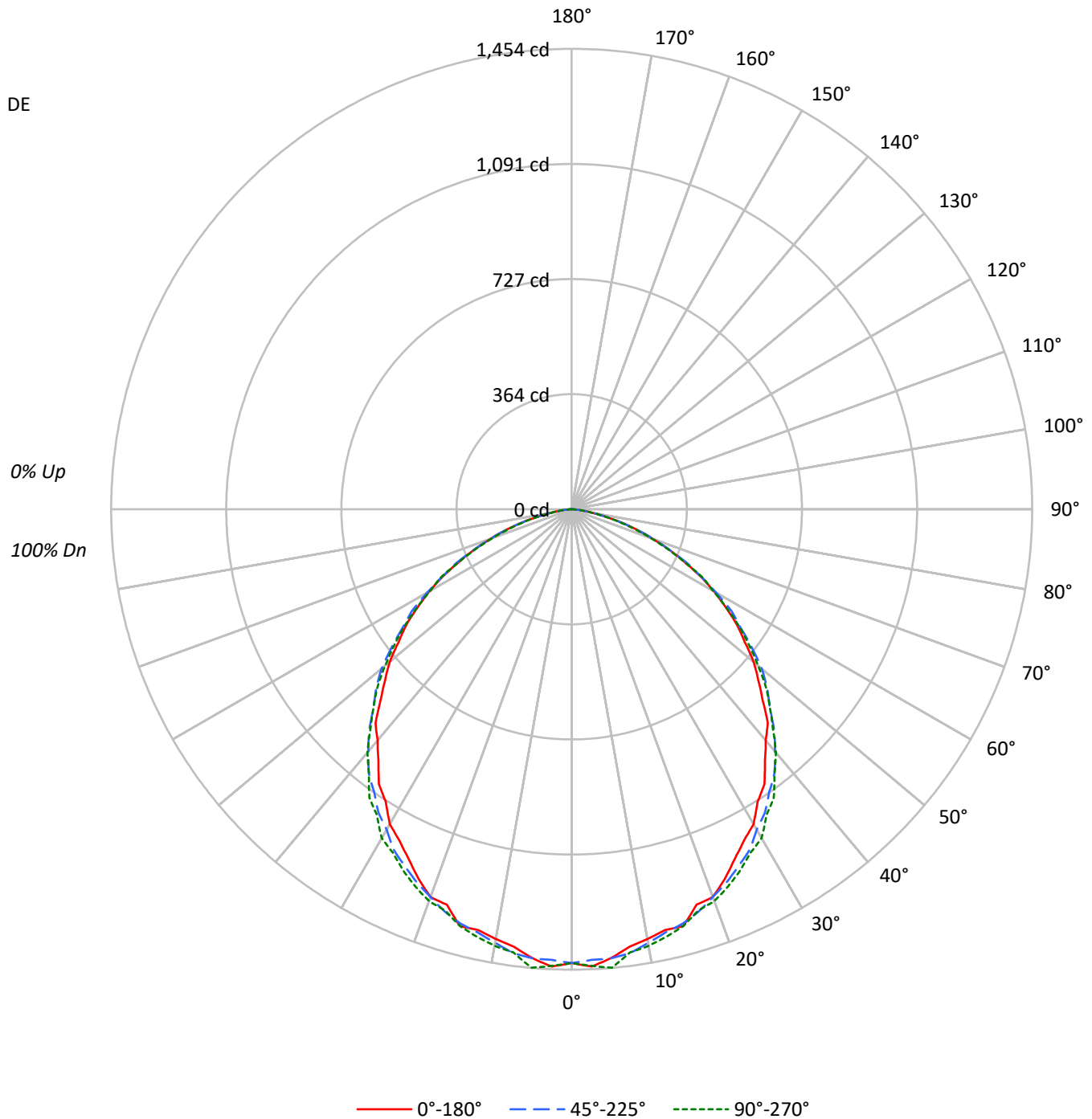
Lumens per Lamp: N/A  
Luminaire Lumens: 3612.0 lumens  
Efficiency: N/A  
Efficacy: 108.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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°	3857	3857	3857
5°	3844	3845	3926
10°	3766	3799	3825
15°	3796	3775	3796
20°	3732	3732	3771
25°	3617	3696	3737
30°	3567	3630	3727
35°	3483	3574	3655
40°	3348	3509	3524
45°	3246	3362	3367
50°	3140	3281	3219
55°	2992	3050	3028
60°	2798	2826	2774
65°	2494	2558	2477
70°	2140	2147	2088
75°	1695	1692	1626
80°	1136	1103	1062
85°	618	611	571

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3449 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.8	3.7
10°-20°	382.1	10.6
20°-30°	572.4	15.8
30°-40°	678.4	18.8
40°-50°	679.7	18.8
50°-60°	577.0	16.0
60°-70°	389.0	10.8
70°-80°	170.9	4.7
80°-90°	27.8	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°	1089.3	30.2
0°-40°	1767.7	48.9
0°-60°	3024.4	83.7
0°-90°	3612.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3612.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1433	1433	1433	1433	1433	
5°	1423	1420	1424	1419	1454	134
15°	1362	1347	1355	1362	1363	380
25°	1218	1225	1245	1261	1258	563
35°	1060	1063	1088	1113	1112	658
45°	853	869	883	906	885	660
55°	638	633	650	646	645	567
65°	392	387	402	386	389	390
75°	163	160	163	151	156	175
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°	1433.2	1433.2	1433.2	1433.2	1433.2
2.5°	1445.5	1434.6	1424.5	1436.3	1443.5
5°	1423.0	1419.6	1423.5	1419.3	1453.5
7.5°	1393.7	1406.5	1413.9	1409.3	1411.3
10°	1378.2	1373.8	1390.2	1401.7	1400.0
12.5°	1361.5	1368.2	1369.1	1381.5	1382.6
15°	1362.5	1346.7	1355.1	1362.1	1362.6
17.5°	1309.5	1326.6	1332.3	1348.4	1328.4
20°	1303.1	1290.7	1303.1	1319.5	1316.9
22.5°	1263.3	1249.4	1276.0	1290.7	1289.7
25°	1218.1	1224.8	1244.8	1261.1	1258.5
27.5°	1178.5	1186.3	1214.8	1237.2	1222.8
30°	1148.0	1144.1	1168.2	1188.2	1199.3
32.5°	1093.4	1107.5	1135.6	1155.4	1144.9
35°	1060.3	1063.4	1088.0	1113.2	1112.5
37.5°	1002.4	1017.0	1051.6	1058.6	1052.1
40°	953.0	967.6	998.9	1006.4	1003.3
42.5°	916.5	919.1	945.9	954.6	940.8
45°	853.0	869.0	883.4	906.2	884.7
47.5°	799.0	806.4	837.5	843.6	832.3
50°	750.0	752.6	783.8	776.3	768.8
52.5°	688.4	699.3	716.9	715.4	706.7
55°	637.7	633.4	650.1	645.6	645.4
57.5°	576.8	584.2	597.9	590.8	579.6
60°	519.8	520.0	525.0	517.0	515.5
62.5°	456.3	458.5	459.6	449.8	465.8
65°	391.7	386.6	401.7	386.4	389.0
67.5°	332.3	334.9	333.4	323.8	327.5
70°	272.0	275.3	272.9	262.0	265.4
72.5°	216.9	212.8	215.4	201.7	208.0
75°	163.0	159.7	162.7	151.2	156.4
77.5°	111.0	113.6	111.8	105.7	109.2
80°	73.3	71.2	71.2	67.7	68.5
82.5°	42.7	40.7	40.2	39.0	40.7
85°	20.0	19.4	19.8	19.2	18.5
87.5°	7.2	7.4	7.4	7.0	6.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)