

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: P590400

Luminaire Tested: FSR-24-2-LD4-2STD-50-UNV-81-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590400  
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-81-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

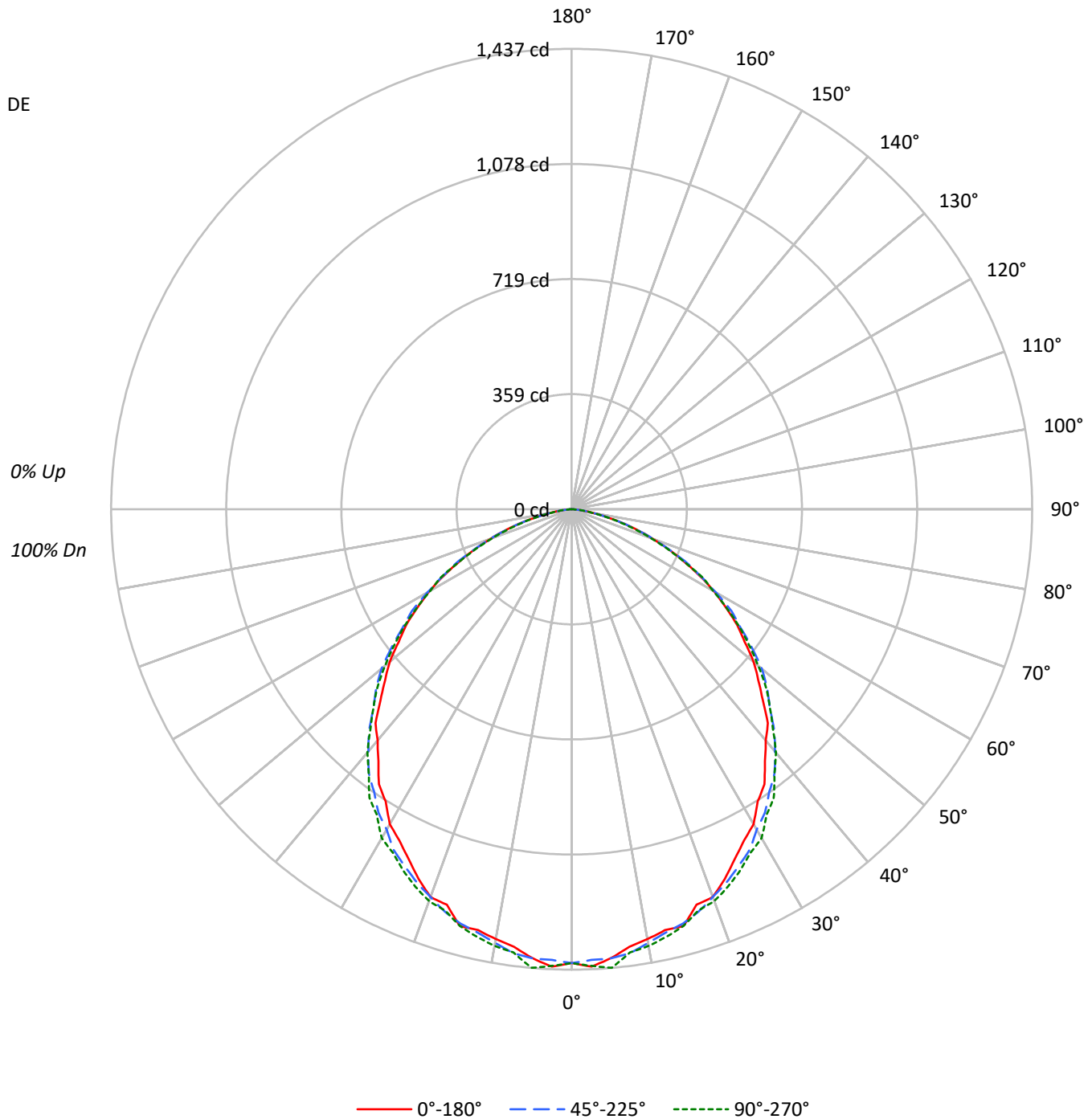
Lumens per Lamp: N/A  
Luminaire Lumens: 3570.0 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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°	3812	3812	3812
5°	3799	3801	3881
10°	3722	3755	3781
15°	3752	3731	3752
20°	3688	3688	3727
25°	3575	3653	3693
30°	3526	3588	3683
35°	3443	3533	3612
40°	3309	3468	3483
45°	3209	3323	3328
50°	3103	3243	3181
55°	2957	3014	2993
60°	2765	2793	2742
65°	2465	2528	2448
70°	2115	2123	2064
75°	1675	1672	1606
80°	1122	1091	1049
85°	611	605	565

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3408 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.2	3.7
10°-20°	377.6	10.6
20°-30°	565.8	15.8
30°-40°	670.5	18.8
40°-50°	671.8	18.8
50°-60°	570.2	16.0
60°-70°	384.5	10.8
70°-80°	168.9	4.7
80°-90°	27.4	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°	1076.6	30.2
0°-40°	1747.2	48.9
0°-60°	2989.2	83.7
0°-90°	3570.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3570.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1416	1416	1416	1416	1416	
5°	1406	1403	1407	1403	1437	133
15°	1347	1331	1339	1346	1347	375
25°	1204	1211	1230	1246	1244	557
35°	1048	1051	1075	1100	1100	651
45°	843	859	873	896	874	652
55°	630	626	642	638	638	561
65°	387	382	397	382	384	385
75°	161	158	161	149	154	173
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°	1416.5	1416.5	1416.5	1416.5	1416.5
2.5°	1428.7	1417.9	1407.9	1419.6	1426.7
5°	1406.4	1403.1	1407.0	1402.8	1436.6
7.5°	1377.5	1390.1	1397.5	1392.9	1394.9
10°	1362.2	1357.8	1374.1	1385.4	1383.7
12.5°	1345.7	1352.3	1353.2	1365.5	1366.6
15°	1346.6	1331.1	1339.3	1346.3	1346.8
17.5°	1294.3	1311.1	1316.8	1332.7	1313.0
20°	1287.9	1275.7	1287.9	1304.2	1301.6
22.5°	1248.6	1234.9	1261.2	1275.7	1274.7
25°	1204.0	1210.6	1230.3	1246.4	1243.8
27.5°	1164.8	1172.5	1200.7	1222.8	1208.5
30°	1134.7	1130.8	1154.6	1174.3	1185.3
32.5°	1080.7	1094.6	1122.4	1142.0	1131.5
35°	1048.0	1051.1	1075.4	1100.3	1099.5
37.5°	990.7	1005.2	1039.4	1046.3	1039.9
40°	941.9	956.3	987.2	994.7	991.6
42.5°	905.9	908.4	934.9	943.5	929.8
45°	843.1	858.9	873.1	895.6	874.4
47.5°	789.7	797.0	827.8	833.8	822.6
50°	741.3	743.8	774.7	767.2	759.9
52.5°	680.4	691.1	708.5	707.1	698.5
55°	630.2	626.0	642.5	638.1	637.9
57.5°	570.1	577.4	590.9	584.0	572.8
60°	513.7	513.9	518.9	511.0	509.5
62.5°	451.0	453.2	454.3	444.6	460.3
65°	387.2	382.1	397.1	381.9	384.4
67.5°	328.5	331.0	329.6	320.1	323.7
70°	268.8	272.1	269.8	259.0	262.3
72.5°	214.3	210.3	212.9	199.4	205.6
75°	161.1	157.8	160.8	149.4	154.5
77.5°	109.7	112.3	110.5	104.4	107.9
80°	72.4	70.4	70.4	66.9	67.7
82.5°	42.2	40.2	39.7	38.6	40.2
85°	19.8	19.2	19.6	19.0	18.3
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)