

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: P590369

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590369  
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-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**

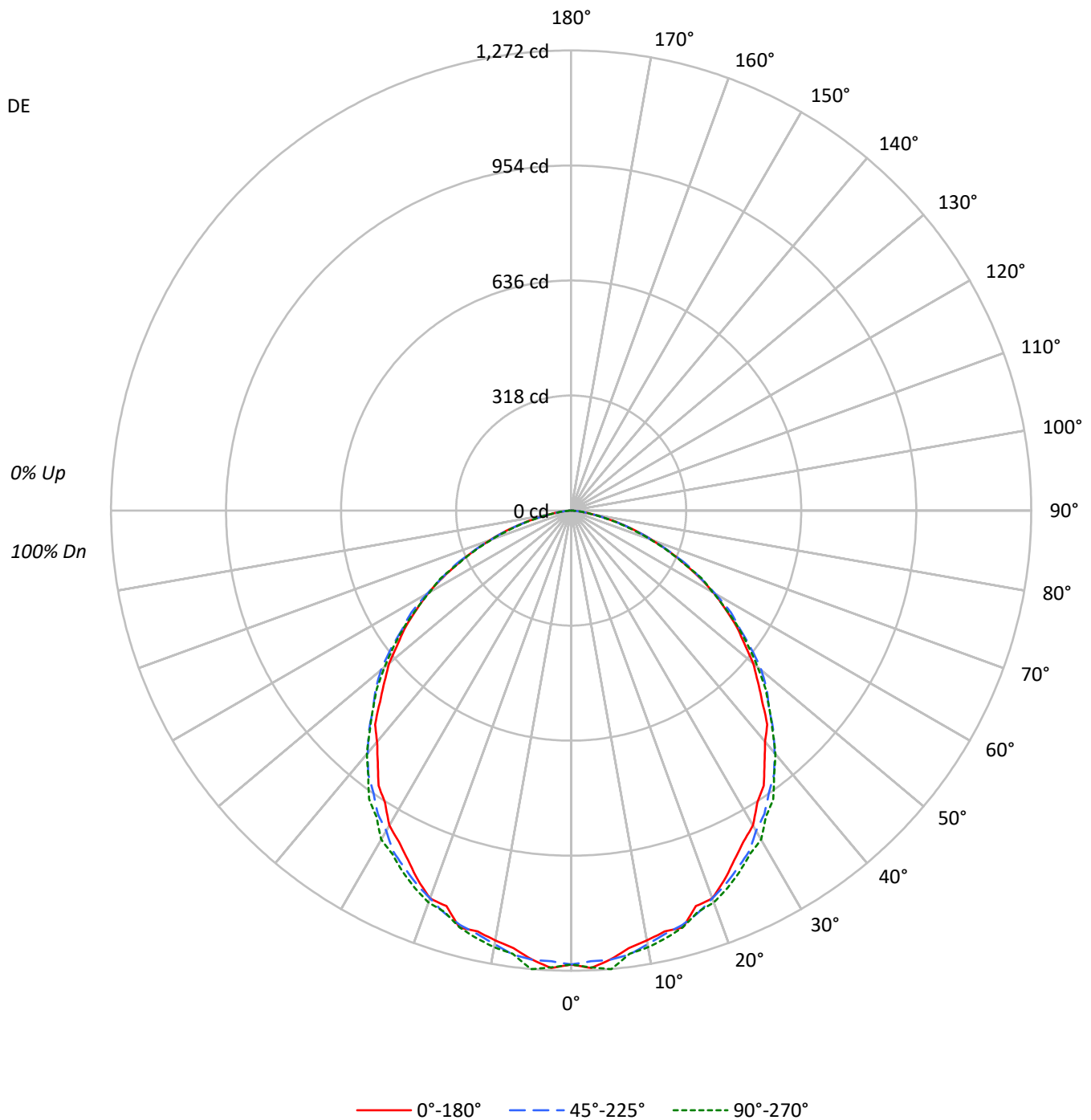
Lumens per Lamp: N/A  
Luminaire Lumens: 3162.0 lumens  
Efficiency: N/A  
Efficacy: 95.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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	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					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	3376	3376	3376
5°	3365	3366	3437
10°	3297	3325	3349
15°	3323	3305	3323
20°	3267	3267	3302
25°	3166	3236	3271
30°	3123	3177	3262
35°	3049	3129	3199
40°	2930	3072	3085
45°	2842	2943	2947
50°	2748	2873	2818
55°	2619	2670	2651
60°	2449	2474	2429
65°	2183	2239	2168
70°	1873	1880	1828
75°	1484	1481	1423
80°	993	967	928
85°	540	534	500

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3019 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.0	3.7
10°-20°	334.5	10.6
20°-30°	501.1	15.8
30°-40°	593.9	18.8
40°-50°	595.0	18.8
50°-60°	505.1	16.0
60°-70°	340.5	10.8
70°-80°	149.6	4.7
80°-90°	24.3	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°	953.6	30.2
0°-40°	1547.5	48.9
0°-60°	2647.6	83.7
0°-90°	3162.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3162.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1255	1255	1255	1255	1255	
5°	1246	1243	1246	1242	1272	117
15°	1193	1179	1186	1192	1193	332
25°	1066	1072	1090	1104	1102	493
35°	928	931	952	974	974	576
45°	747	761	773	793	774	578
55°	558	554	569	565	565	497
65°	343	338	352	338	340	341
75°	143	140	142	132	137	153
85°	18	17	17	17	16	25
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1254.6	1254.6	1254.6	1254.6	1254.6
2.5°	1265.5	1255.9	1247.0	1257.4	1263.7
5°	1245.7	1242.8	1246.2	1242.5	1272.4
7.5°	1220.1	1231.3	1237.8	1233.7	1235.5
10°	1206.5	1202.6	1217.0	1227.1	1225.6
12.5°	1191.9	1197.7	1198.6	1209.4	1210.4
15°	1192.7	1179.0	1186.2	1192.4	1192.9
17.5°	1146.4	1161.3	1166.3	1180.4	1162.9
20°	1140.7	1129.9	1140.7	1155.1	1152.9
22.5°	1105.9	1093.7	1117.1	1129.9	1129.1
25°	1066.4	1072.2	1089.7	1104.0	1101.7
27.5°	1031.7	1038.5	1063.5	1083.1	1070.4
30°	1005.0	1001.6	1022.6	1040.1	1049.8
32.5°	957.2	969.5	994.1	1011.5	1002.2
35°	928.2	930.9	952.5	974.5	973.9
37.5°	877.5	890.3	920.6	926.7	921.1
40°	834.2	847.0	874.4	881.1	878.3
42.5°	802.3	804.6	828.1	835.7	823.6
45°	746.8	760.7	773.3	793.3	774.5
47.5°	699.5	705.9	733.2	738.5	728.6
50°	656.5	658.8	686.2	679.5	673.1
52.5°	602.6	612.2	627.5	626.2	618.6
55°	558.2	554.5	569.1	565.2	565.0
57.5°	504.9	511.4	523.4	517.2	507.3
60°	455.0	455.2	459.6	452.6	451.3
62.5°	399.5	401.4	402.4	393.8	407.7
65°	342.9	338.4	351.7	338.2	340.5
67.5°	290.9	293.2	291.9	283.5	286.7
70°	238.1	241.0	238.9	229.4	232.3
72.5°	189.9	186.3	188.6	176.6	182.1
75°	142.7	139.8	142.4	132.3	136.9
77.5°	97.2	99.5	97.8	92.5	95.6
80°	64.1	62.4	62.4	59.3	59.9
82.5°	37.4	35.6	35.2	34.2	35.6
85°	17.5	17.0	17.3	16.8	16.2
87.5°	6.3	6.5	6.5	6.2	5.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)