

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: P560977

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560977  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1LO-35-UNV-82-84-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

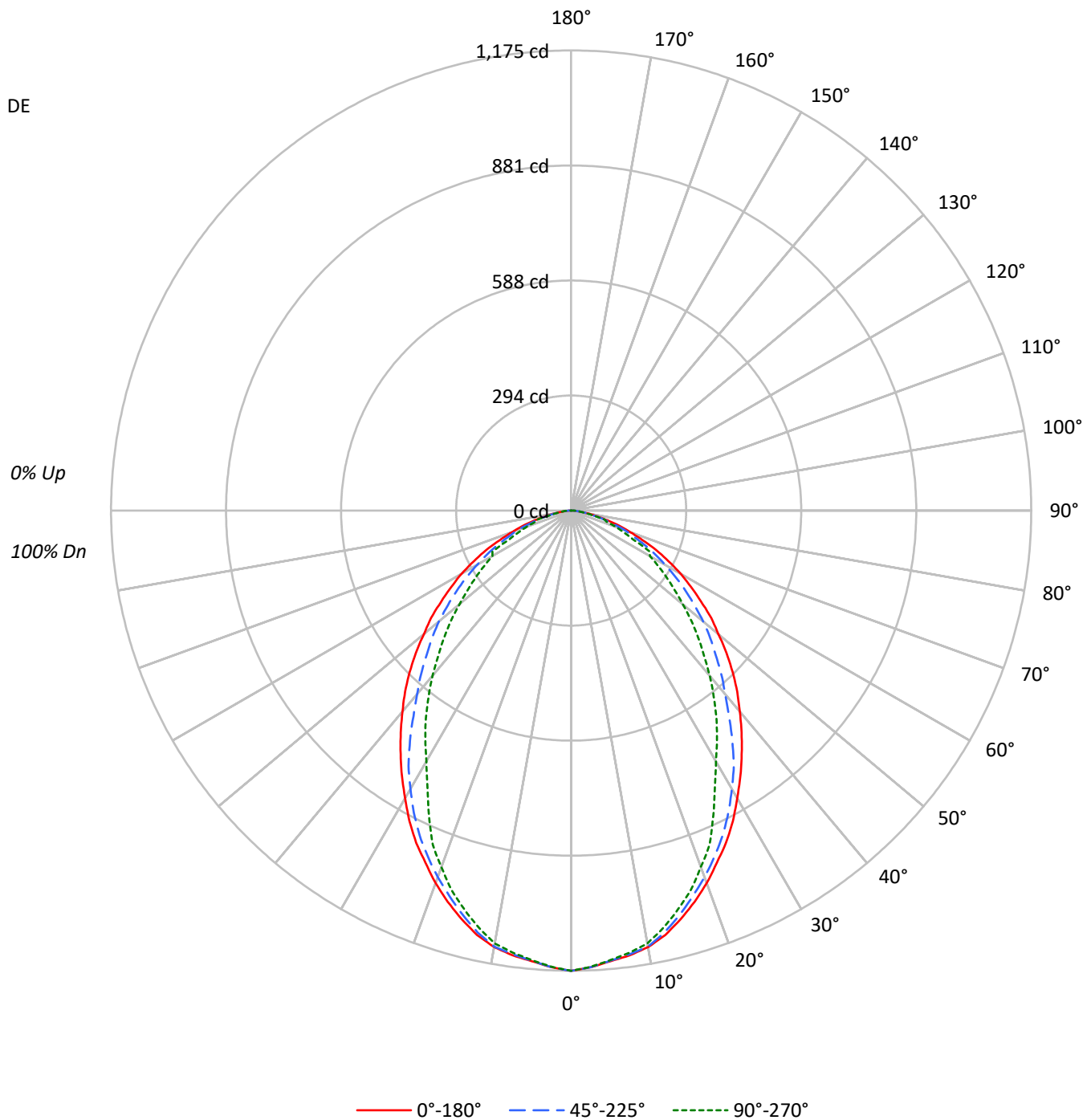
Lumens per Lamp: N/A  
Luminaire Lumens: 2307.0 lumens  
Efficiency: N/A  
Efficacy: 98.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	3162	3162	3162
5°	3119	3116	3112
10°	3092	3089	3066
15°	3009	2979	2937
20°	2898	2852	2774
25°	2779	2719	2549
30°	2634	2550	2297
35°	2495	2356	2124
40°	2353	2148	1933
45°	2218	1985	1748
50°	2053	1843	1558
55°	1900	1670	1396
60°	1740	1491	1250
65°	1531	1306	1107
70°	1261	1144	941
75°	1003	875	918
80°	674	632	589
85°	420	503	587

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2218 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.4	4.7
10°-20°	300.2	13.0
20°-30°	415.6	18.0
30°-40°	443.2	19.2
40°-50°	404.3	17.5
50°-60°	316.7	13.7
60°-70°	206.4	8.9
70°-80°	91.5	4.0
80°-90°	19.6	0.9
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°	825.2	35.8
0°-40°	1268.4	55.0
0°-60°	1989.5	86.2
0°-90°	2307.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2307.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1175	1175	1175	1175	1175	
5°	1155	1153	1153	1152	1152	110
15°	1080	1080	1069	1058	1054	304
25°	936	931	916	883	859	430
35°	759	754	717	663	647	475
45°	583	571	522	478	459	449
55°	405	393	356	314	298	363
65°	240	227	205	209	174	237
75°	96	90	84	80	88	103
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1175.2	1175.2	1175.2	1175.2	1175.2
2.5°	1167.0	1167.0	1167.0	1165.6	1165.6
5°	1154.8	1153.4	1153.4	1152.1	1152.1
7.5°	1145.3	1143.9	1142.5	1141.2	1138.5
10°	1131.7	1131.7	1130.3	1123.5	1122.2
12.5°	1109.9	1108.6	1103.2	1093.6	1090.9
15°	1080.1	1080.1	1069.2	1058.3	1054.2
17.5°	1047.5	1046.1	1032.5	1021.6	1016.2
20°	1012.1	1009.4	995.8	978.2	968.7
22.5°	972.7	972.7	956.4	933.3	923.8
25°	936.0	930.6	915.7	883.1	858.6
27.5°	893.9	885.8	869.5	823.3	794.8
30°	847.7	843.7	820.6	760.8	739.1
32.5°	804.3	797.5	773.0	710.5	692.9
35°	759.4	754.0	717.3	663.0	646.7
37.5°	714.6	707.8	661.6	618.1	597.8
40°	669.8	661.6	611.4	572.0	550.2
42.5°	627.7	616.8	567.9	525.8	501.3
45°	582.8	570.6	521.7	478.2	459.2
47.5°	538.0	527.1	482.3	437.5	415.7
50°	490.4	480.9	440.2	395.3	372.2
52.5°	451.0	436.1	396.7	351.9	332.8
55°	404.9	392.6	355.9	313.8	297.5
57.5°	362.7	350.5	316.5	277.1	263.6
60°	323.3	305.7	277.1	243.2	232.3
62.5°	279.9	266.3	241.8	213.3	226.9
65°	240.5	226.9	205.1	209.2	173.9
67.5°	197.0	190.2	171.2	152.2	146.7
70°	160.3	152.2	145.4	125.0	119.6
72.5°	127.7	119.6	110.0	99.2	95.1
75°	96.5	89.7	84.2	80.2	88.3
77.5°	66.6	63.9	59.8	55.7	54.3
80°	43.5	42.1	40.8	39.4	38.0
82.5°	25.8	25.8	25.8	25.8	25.8
85°	13.6	14.9	16.3	17.7	19.0
87.5°	8.2	8.2	9.5	10.9	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)