

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: P561172

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561172  
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-LD4-1STD-35-UNV-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

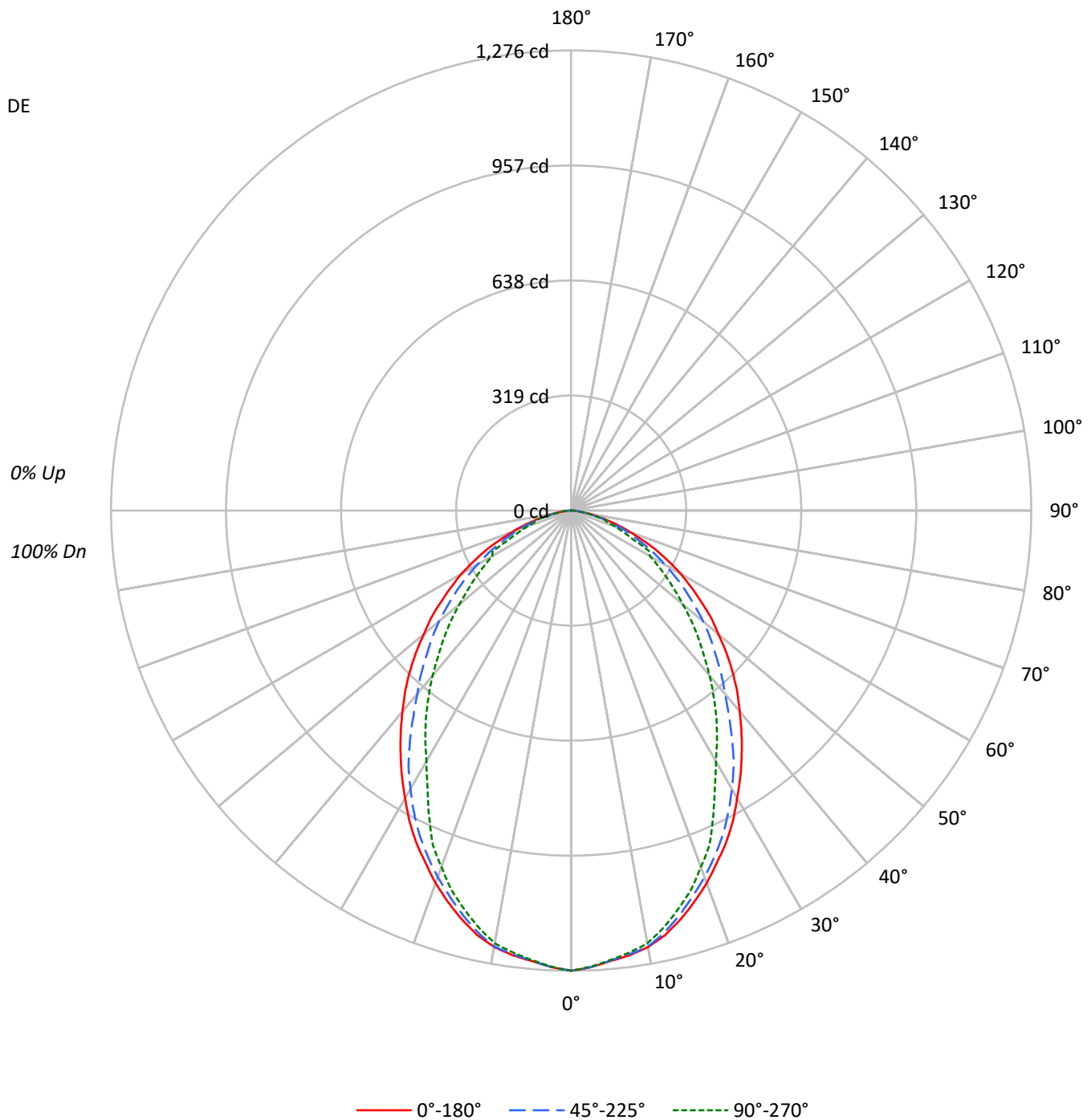
Lumens per Lamp: N/A  
Luminaire Lumens: 2505.0 lumens  
Efficiency: N/A  
Efficacy: 75.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

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

	0°	45°	90°
0°	3434	3434	3434
5°	3387	3383	3379
10°	3358	3354	3330
15°	3267	3234	3189
20°	3147	3096	3012
25°	3018	2952	2768
30°	2860	2769	2494
35°	2709	2559	2307
40°	2555	2332	2099
45°	2408	2156	1897
50°	2229	2001	1692
55°	2062	1813	1516
60°	1890	1619	1358
65°	1663	1418	1202
70°	1370	1242	1021
75°	1089	951	997
80°	731	687	640
85°	457	546	639

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2408 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.8	4.7
10°-20°	326.0	13.0
20°-30°	451.3	18.0
30°-40°	481.2	19.2
40°-50°	439.0	17.5
50°-60°	343.9	13.7
60°-70°	224.2	8.9
70°-80°	99.3	4.0
80°-90°	21.3	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°	896.1	35.8
0°-40°	1377.3	55.0
0°-60°	2160.2	86.2
0°-90°	2505.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2505.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1276	1276	1276	1276	1276	
5°	1254	1252	1252	1251	1251	119
15°	1173	1173	1161	1149	1145	330
25°	1016	1010	994	959	932	467
35°	825	819	779	720	702	516
45°	633	620	566	519	499	487
55°	440	426	386	341	323	394
65°	261	246	223	227	189	257
75°	105	97	92	87	96	112
85°	15	16	18	19	21	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1276.0	1276.0	1276.0	1276.0	1276.0
2.5°	1267.2	1267.2	1267.2	1265.7	1265.7
5°	1253.9	1252.4	1252.4	1250.9	1250.9
7.5°	1243.6	1242.1	1240.6	1239.1	1236.2
10°	1228.8	1228.8	1227.3	1220.0	1218.5
12.5°	1205.2	1203.7	1197.8	1187.5	1184.6
15°	1172.8	1172.8	1161.0	1149.1	1144.7
17.5°	1137.3	1135.9	1121.1	1109.3	1103.4
20°	1099.0	1096.0	1081.3	1062.1	1051.8
22.5°	1056.2	1056.2	1038.5	1013.4	1003.1
25°	1016.4	1010.5	994.3	958.9	932.3
27.5°	970.7	961.8	944.1	893.9	863.0
30°	920.5	916.1	891.0	826.1	802.5
32.5°	873.3	865.9	839.4	771.5	752.3
35°	824.6	818.7	778.9	719.9	702.2
37.5°	775.9	768.6	718.4	671.2	649.1
40°	727.3	718.4	663.8	621.0	597.4
42.5°	681.5	669.7	616.6	570.9	544.3
45°	632.8	619.6	566.5	519.3	498.6
47.5°	584.2	572.4	523.7	475.0	451.4
50°	532.5	522.2	478.0	429.3	404.2
52.5°	489.8	473.5	430.7	382.1	361.4
55°	439.6	426.3	386.5	340.8	323.1
57.5°	393.9	380.6	343.7	300.9	286.2
60°	351.1	331.9	300.9	264.1	252.3
62.5°	303.9	289.1	262.6	231.6	246.4
65°	261.1	246.4	222.7	227.2	188.8
67.5°	213.9	206.5	185.9	165.2	159.3
70°	174.1	165.2	157.8	135.7	129.8
72.5°	138.7	129.8	119.5	107.7	103.3
75°	104.7	97.4	91.5	87.0	95.9
77.5°	72.3	69.3	64.9	60.5	59.0
80°	47.2	45.7	44.3	42.8	41.3
82.5°	28.0	28.0	28.0	28.0	28.0
85°	14.8	16.2	17.7	19.2	20.7
87.5°	8.9	8.9	10.3	11.8	13.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)