

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: P561601

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561601  
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-LD4-2LO-40-UNV-81-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

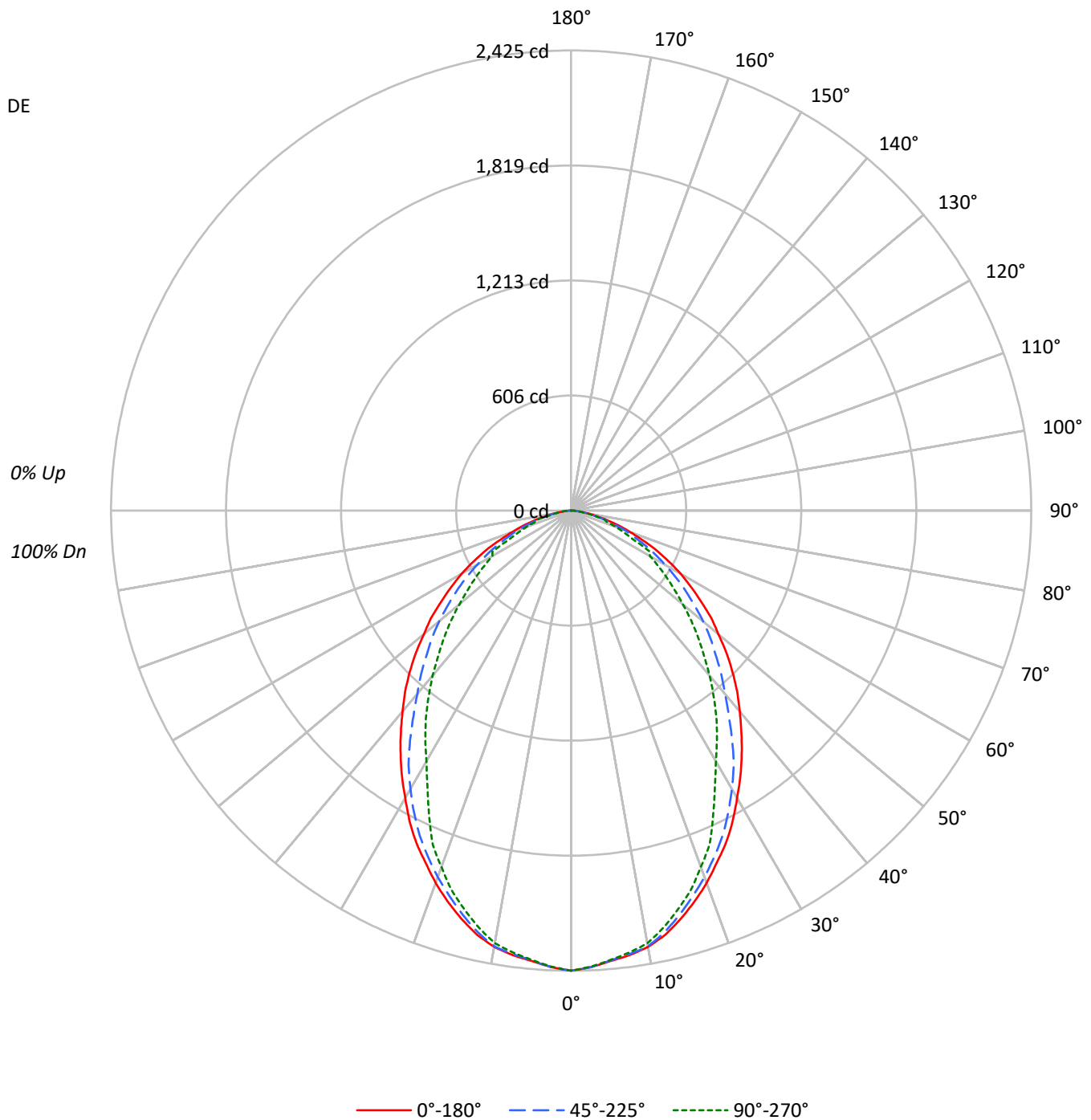
Lumens per Lamp: N/A  
Luminaire Lumens: 4760.0 lumens  
Efficiency: N/A  
Efficacy: 101.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6525	6525	6525
5°	6436	6428	6421
10°	6380	6373	6327
15°	6208	6146	6060
20°	5980	5884	5723
25°	5734	5610	5260
30°	5435	5261	4738
35°	5147	4862	4383
40°	4854	4431	3988
45°	4576	4096	3605
50°	4236	3802	3215
55°	3919	3445	2880
60°	3590	3077	2580
65°	3159	2695	2285
70°	2603	2360	1941
75°	2069	1807	1894
80°	1390	1303	1216
85°	865	1037	1210

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4576 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	225.7	4.7
10°-20°	619.4	13.0
20°-30°	857.6	18.0
30°-40°	914.4	19.2
40°-50°	834.2	17.5
50°-60°	653.5	13.7
60°-70°	425.9	8.9
70°-80°	188.7	4.0
80°-90°	40.5	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°	1702.7	35.8
0°-40°	2617.1	55.0
0°-60°	4104.8	86.2
0°-90°	4760.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4760.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2425	2425	2425	2425	2425	
5°	2383	2380	2380	2377	2377	226
15°	2228	2228	2206	2184	2175	626
25°	1931	1920	1889	1822	1772	887
35°	1567	1556	1480	1368	1334	980
45°	1202	1177	1076	987	947	926
55°	835	810	734	648	614	749
65°	496	468	423	432	359	489
75°	199	185	174	165	182	213
85°	28	31	34	36	39	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2424.7	2424.7	2424.7	2424.7	2424.7
2.5°	2407.9	2407.9	2407.9	2405.1	2405.1
5°	2382.6	2379.8	2379.8	2377.0	2377.0
7.5°	2363.0	2360.2	2357.4	2354.6	2349.0
10°	2335.0	2335.0	2332.2	2318.2	2315.4
12.5°	2290.1	2287.3	2276.1	2256.5	2250.9
15°	2228.5	2228.5	2206.0	2183.6	2175.2
17.5°	2161.2	2158.4	2130.4	2107.9	2096.7
20°	2088.3	2082.7	2054.7	2018.2	1998.6
22.5°	2007.0	2007.0	1973.4	1925.7	1906.1
25°	1931.3	1920.1	1889.3	1822.0	1771.6
27.5°	1844.4	1827.6	1794.0	1698.7	1639.8
30°	1749.1	1740.7	1693.1	1569.7	1524.9
32.5°	1659.4	1645.4	1595.0	1466.0	1429.6
35°	1566.9	1555.7	1480.0	1367.9	1334.3
37.5°	1474.4	1460.4	1365.1	1275.4	1233.4
40°	1381.9	1365.1	1261.4	1180.1	1135.3
42.5°	1295.0	1272.6	1171.7	1084.8	1034.3
45°	1202.5	1177.3	1076.4	986.7	947.4
47.5°	1110.0	1087.6	995.1	902.6	857.7
50°	1011.9	992.3	908.2	815.7	768.0
52.5°	930.6	899.8	818.5	726.0	686.8
55°	835.3	810.1	734.4	647.5	613.9
57.5°	748.4	723.2	653.1	571.8	543.8
60°	667.1	630.7	571.8	501.8	479.3
62.5°	577.4	549.4	499.0	440.1	468.1
65°	496.1	468.1	423.3	431.7	358.8
67.5°	406.4	392.4	353.2	313.9	302.7
70°	330.8	313.9	299.9	257.9	246.7
72.5°	263.5	246.7	227.1	204.6	196.2
75°	199.0	185.0	173.8	165.4	182.2
77.5°	137.4	131.7	123.3	114.9	112.1
80°	89.7	86.9	84.1	81.3	78.5
82.5°	53.3	53.3	53.3	53.3	53.3
85°	28.0	30.8	33.6	36.4	39.2
87.5°	16.8	16.8	19.6	22.4	25.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)