

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: P561537

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561537  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

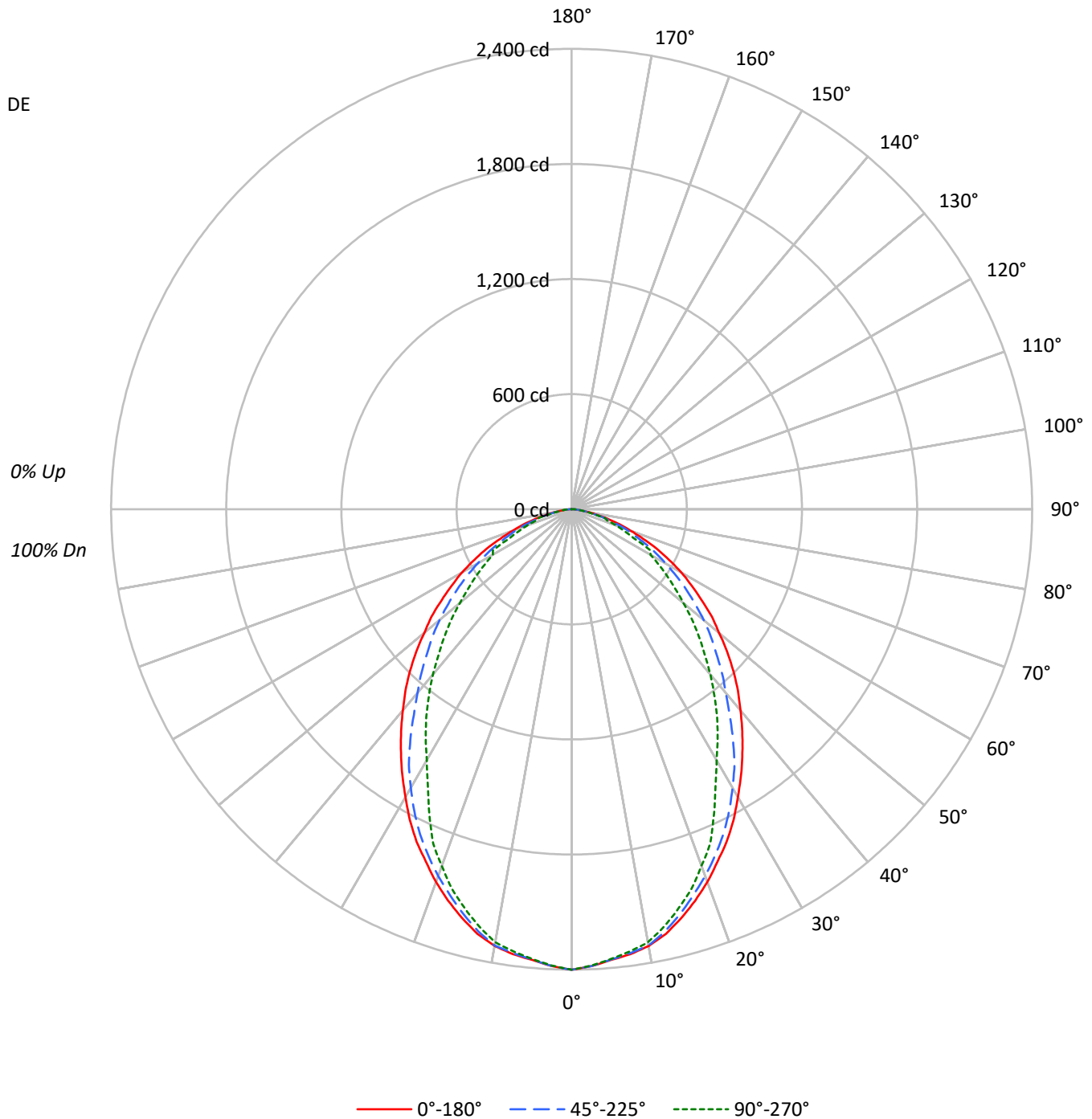
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4712.0 lumens  
Efficiency: N/A  
Efficacy: 100.7 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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	6459	6459	6459
5°	6371	6364	6356
10°	6316	6309	6263
15°	6146	6084	5999
20°	5920	5825	5666
25°	5677	5553	5207
30°	5380	5208	4690
35°	5095	4813	4339
40°	4806	4386	3948
45°	4530	4055	3569
50°	4194	3764	3183
55°	3879	3411	2851
60°	3554	3047	2554
65°	3127	2668	2262
70°	2576	2336	1921
75°	2048	1788	1876
80°	1376	1289	1204
85°	855	1028	1198

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4530 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	223.4	4.7
10°-20°	613.2	13.0
20°-30°	848.9	18.0
30°-40°	905.2	19.2
40°-50°	825.8	17.5
50°-60°	646.9	13.7
60°-70°	421.6	8.9
70°-80°	186.8	4.0
80°-90°	40.1	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°	1685.5	35.8
0°-40°	2590.7	55.0
0°-60°	4063.4	86.2
0°-90°	4712.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4712.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2400	2400	2400	2400	2400	
5°	2359	2356	2356	2353	2353	224
15°	2206	2206	2184	2162	2153	620
25°	1912	1901	1870	1804	1754	878
35°	1551	1540	1465	1354	1321	970
45°	1190	1165	1066	977	938	917
55°	827	802	727	641	608	742
65°	491	463	419	427	355	484
75°	197	183	172	164	180	211
85°	28	30	33	36	39	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2400.2	2400.2	2400.2	2400.2	2400.2
2.5°	2383.6	2383.6	2383.6	2380.8	2380.8
5°	2358.6	2355.8	2355.8	2353.1	2353.1
7.5°	2339.2	2336.4	2333.6	2330.9	2325.3
10°	2311.4	2311.4	2308.7	2294.8	2292.0
12.5°	2267.0	2264.3	2253.2	2233.7	2228.2
15°	2206.0	2206.0	2183.8	2161.6	2153.3
17.5°	2139.4	2136.6	2108.9	2086.7	2075.6
20°	2067.2	2061.7	2034.0	1997.9	1978.5
22.5°	1986.8	1986.8	1953.5	1906.3	1886.9
25°	1911.9	1900.8	1870.2	1803.6	1753.7
27.5°	1825.8	1809.2	1775.9	1681.5	1623.3
30°	1731.5	1723.2	1676.0	1553.9	1509.5
32.5°	1642.7	1628.8	1578.9	1451.2	1415.2
35°	1551.1	1540.0	1465.1	1354.1	1320.8
37.5°	1459.6	1445.7	1351.3	1262.5	1220.9
40°	1368.0	1351.3	1248.7	1168.2	1123.8
42.5°	1282.0	1259.8	1159.9	1073.9	1023.9
45°	1190.4	1165.4	1065.5	976.7	937.9
47.5°	1098.8	1076.6	985.1	893.5	849.1
50°	1001.7	982.3	899.0	807.5	760.3
52.5°	921.2	890.7	810.3	718.7	679.8
55°	826.9	801.9	727.0	641.0	607.7
57.5°	740.9	715.9	646.5	566.1	538.3
60°	660.4	624.3	566.1	496.7	474.5
62.5°	571.6	543.9	493.9	435.6	463.4
65°	491.1	463.4	419.0	427.3	355.2
67.5°	402.4	388.5	349.6	310.8	299.7
70°	327.4	310.8	296.9	255.3	244.2
72.5°	260.8	244.2	224.8	202.6	194.2
75°	197.0	183.1	172.0	163.7	180.4
77.5°	136.0	130.4	122.1	113.8	111.0
80°	88.8	86.0	83.2	80.5	77.7
82.5°	52.7	52.7	52.7	52.7	52.7
85°	27.7	30.5	33.3	36.1	38.8
87.5°	16.6	16.6	19.4	22.2	25.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)