

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: P564034

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564034  
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-24-4-LD4-4STD-35-UNV-81-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

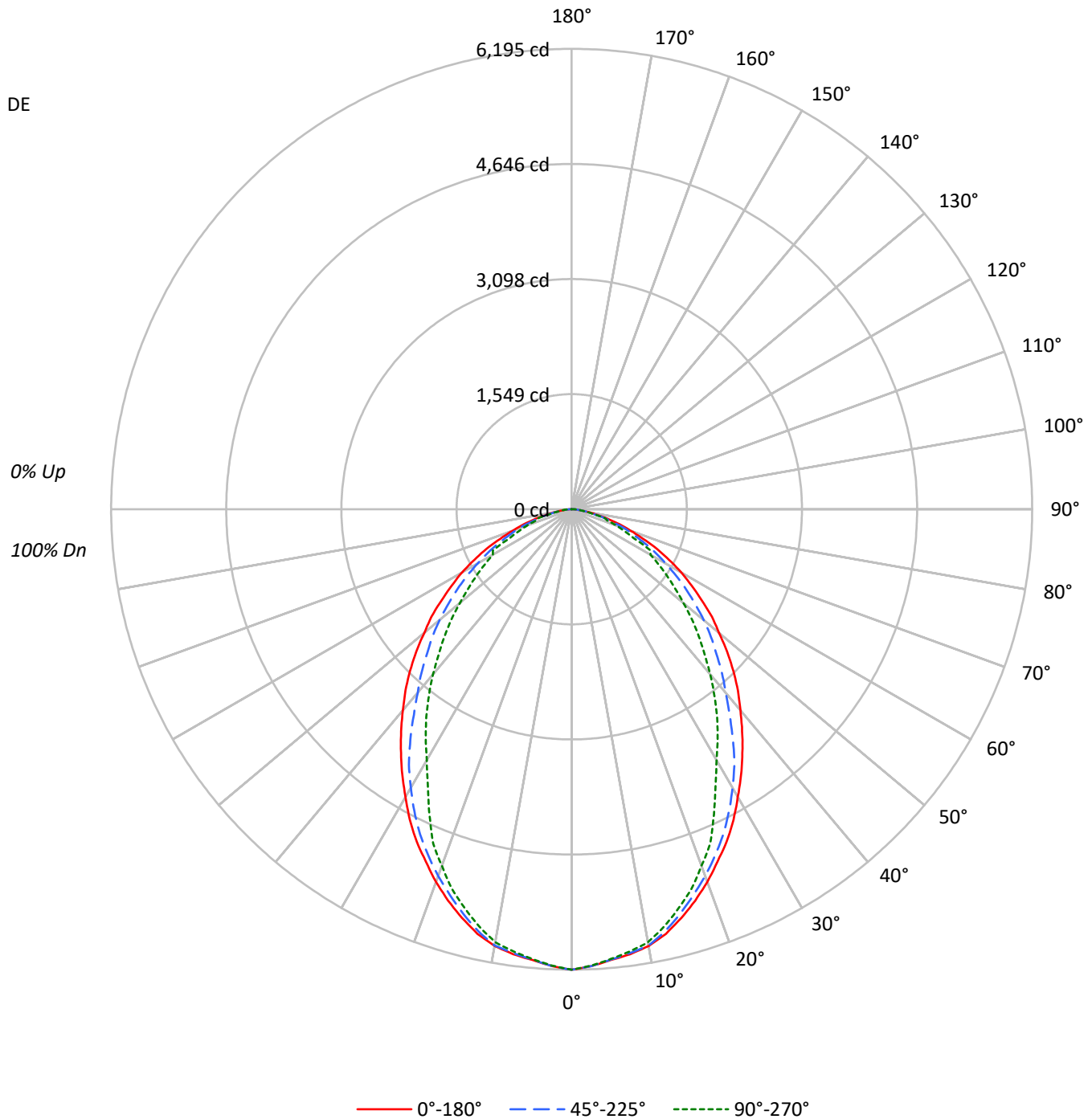
Lumens per Lamp: N/A  
Luminaire Lumens: 12162.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8336	8336	8336
5°	8222	8213	8203
10°	8151	8141	8082
15°	7931	7851	7742
20°	7640	7517	7312
25°	7326	7166	6720
30°	6943	6721	6053
35°	6576	6211	5600
40°	6202	5661	5095
45°	5846	5233	4606
50°	5412	4857	4108
55°	5007	4402	3679
60°	4587	3932	3296
65°	4036	3443	2918
70°	3325	3015	2480
75°	2643	2308	2420
80°	1776	1665	1554
85°	1105	1326	1548

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5846 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	576.7	4.7
10°-20°	1582.7	13.0
20°-30°	2191.1	18.0
30°-40°	2336.3	19.2
40°-50°	2131.4	17.5
50°-60°	1669.8	13.7
60°-70°	1088.3	8.9
70°-80°	482.1	4.0
80°-90°	103.5	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°	4350.4	35.8
0°-40°	6686.8	55.0
0°-60°	10488.0	86.2
0°-90°	12162.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12162.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6195	6195	6195	6195	6195	
5°	6088	6081	6081	6073	6073	578
15°	5694	5694	5636	5579	5558	1601
25°	4935	4906	4827	4655	4526	2265
35°	4004	3975	3782	3495	3409	2503
45°	3072	3008	2750	2521	2421	2367
55°	2134	2070	1876	1654	1568	1914
65°	1268	1196	1082	1103	917	1249
75°	508	473	444	423	466	545
85°	72	79	86	93	100	99
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6195.2	6195.2	6195.2	6195.2	6195.2
2.5°	6152.2	6152.2	6152.2	6145.0	6145.0
5°	6087.7	6080.6	6080.6	6073.4	6073.4
7.5°	6037.6	6030.4	6023.3	6016.1	6001.8
10°	5966.0	5966.0	5958.8	5923.0	5915.8
12.5°	5851.4	5844.2	5815.6	5765.4	5751.1
15°	5693.8	5693.8	5636.5	5579.2	5557.7
17.5°	5521.9	5514.8	5443.1	5385.9	5357.2
20°	5335.7	5321.4	5249.8	5156.7	5106.5
22.5°	5128.0	5128.0	5042.1	4920.3	4870.2
25°	4934.6	4906.0	4827.2	4655.3	4526.4
27.5°	4712.6	4669.6	4583.7	4340.2	4189.8
30°	4469.1	4447.6	4325.9	4010.7	3896.1
32.5°	4239.9	4204.1	4075.2	3745.7	3652.6
35°	4003.6	3974.9	3781.6	3495.1	3409.1
37.5°	3767.2	3731.4	3487.9	3258.7	3151.3
40°	3530.9	3487.9	3222.9	3015.2	2900.6
42.5°	3308.9	3251.6	2993.7	2771.7	2642.8
45°	3072.5	3008.1	2750.2	2521.0	2420.8
47.5°	2836.2	2778.9	2542.5	2306.2	2191.6
50°	2585.5	2535.4	2320.5	2084.2	1962.4
52.5°	2377.8	2299.0	2091.3	1855.0	1754.7
55°	2134.3	2069.8	1876.5	1654.4	1568.5
57.5°	1912.3	1847.8	1668.8	1461.1	1389.4
60°	1704.6	1611.5	1461.1	1282.0	1224.7
62.5°	1475.4	1403.8	1274.8	1124.4	1196.1
65°	1267.7	1196.1	1081.5	1103.0	916.7
67.5°	1038.5	1002.7	902.4	802.1	773.5
70°	845.1	802.1	766.3	658.9	630.3
72.5°	673.2	630.3	580.1	522.8	501.3
75°	508.5	472.7	444.0	422.6	465.5
77.5°	350.9	336.6	315.1	293.6	286.5
80°	229.2	222.0	214.9	207.7	200.5
82.5°	136.1	136.1	136.1	136.1	136.1
85°	71.6	78.8	85.9	93.1	100.3
87.5°	43.0	43.0	50.1	57.3	64.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)