

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: P563480

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563480  
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-LD4-3STD-35-UNV-82-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

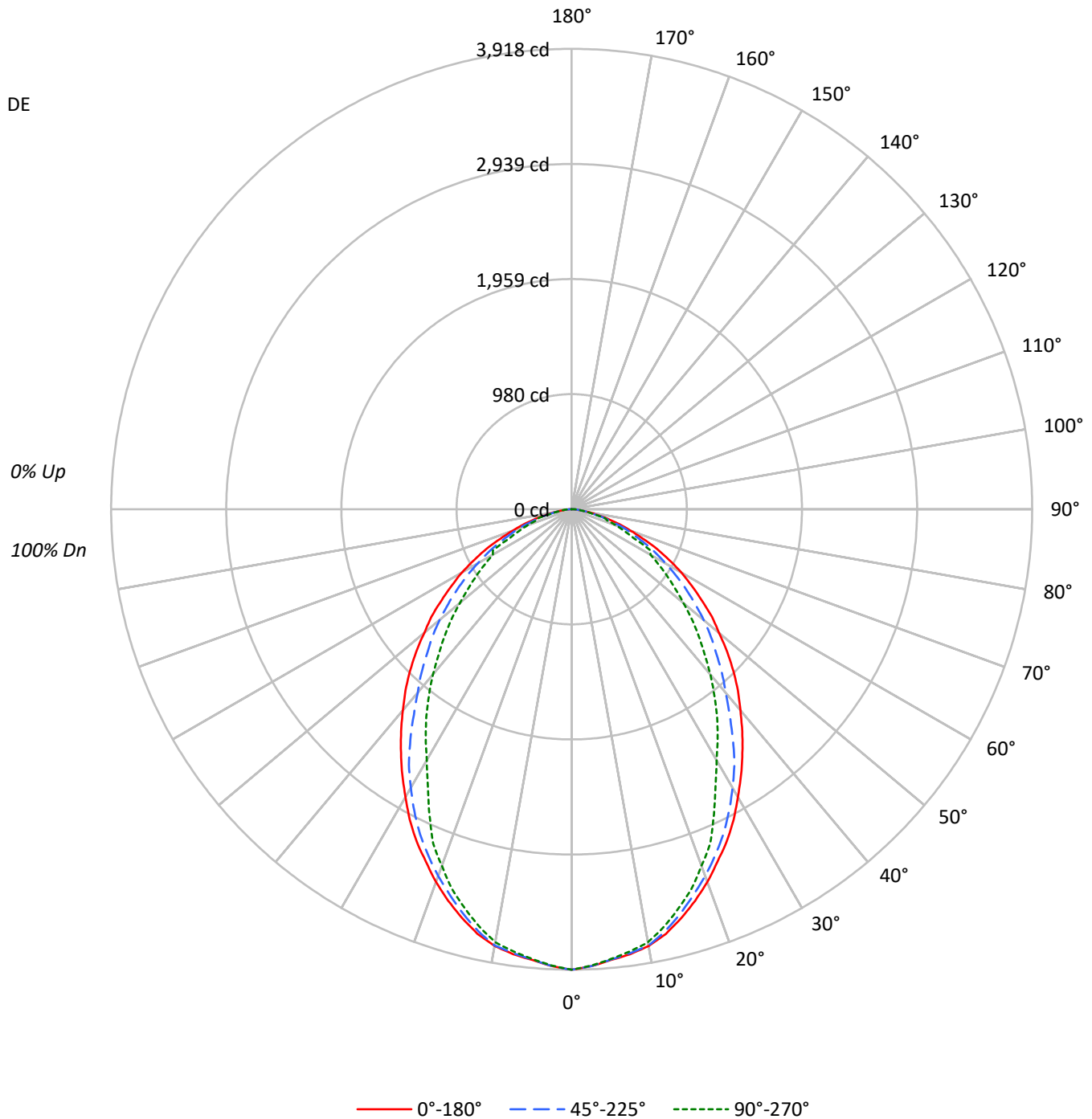
Lumens per Lamp: N/A  
Luminaire Lumens: 7692.0 lumens  
Efficiency: N/A  
Efficacy: 77.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5272	5272	5272
5°	5200	5194	5188
10°	5155	5149	5112
15°	5016	4966	4896
20°	4832	4754	4624
25°	4633	4532	4250
30°	4391	4251	3828
35°	4159	3928	3541
40°	3922	3580	3222
45°	3698	3310	2913
50°	3423	3072	2598
55°	3167	2784	2327
60°	2901	2487	2084
65°	2553	2178	1846
70°	2103	1907	1568
75°	1672	1460	1530
80°	1124	1053	982
85°	699	840	979

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3698 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	364.7	4.7
10°-20°	1001.0	13.0
20°-30°	1385.8	18.0
30°-40°	1477.6	19.2
40°-50°	1348.0	17.5
50°-60°	1056.1	13.7
60°-70°	688.3	8.9
70°-80°	305.0	4.0
80°-90°	65.5	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°	2751.5	35.8
0°-40°	4229.1	55.0
0°-60°	6633.3	86.2
0°-90°	7692.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7692.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3918	3918	3918	3918	3918	
5°	3850	3846	3846	3841	3841	365
15°	3601	3601	3565	3529	3515	1012
25°	3121	3103	3053	2944	2863	1433
35°	2532	2514	2392	2210	2156	1583
45°	1943	1902	1739	1594	1531	1497
55°	1350	1309	1187	1046	992	1211
65°	802	756	684	698	580	790
75°	322	299	281	267	294	345
85°	45	50	54	59	63	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3918.2	3918.2	3918.2	3918.2	3918.2
2.5°	3891.0	3891.0	3891.0	3886.5	3886.5
5°	3850.3	3845.7	3845.7	3841.2	3841.2
7.5°	3818.5	3814.0	3809.5	3805.0	3795.9
10°	3773.3	3773.3	3768.7	3746.1	3741.5
12.5°	3700.8	3696.2	3678.1	3646.4	3637.4
15°	3601.1	3601.1	3564.9	3528.6	3515.1
17.5°	3492.4	3487.9	3442.6	3406.3	3388.2
20°	3374.6	3365.6	3320.3	3261.4	3229.7
22.5°	3243.3	3243.3	3188.9	3111.9	3080.2
25°	3121.0	3102.9	3053.0	2944.3	2862.8
27.5°	2980.6	2953.4	2899.0	2745.0	2649.9
30°	2826.5	2813.0	2735.9	2536.6	2464.2
32.5°	2681.6	2658.9	2577.4	2369.0	2310.2
35°	2532.1	2514.0	2391.7	2210.5	2156.1
37.5°	2382.6	2360.0	2206.0	2061.0	1993.1
40°	2233.1	2206.0	2038.4	1907.0	1834.5
42.5°	2092.7	2056.5	1893.4	1753.0	1671.5
45°	1943.2	1902.5	1739.4	1594.5	1531.0
47.5°	1793.8	1757.5	1608.0	1458.6	1386.1
50°	1635.2	1603.5	1467.6	1318.1	1241.1
52.5°	1503.9	1454.0	1322.7	1173.2	1109.8
55°	1349.9	1309.1	1186.8	1046.4	992.0
57.5°	1209.4	1168.7	1055.4	924.1	878.8
60°	1078.1	1019.2	924.1	810.8	774.6
62.5°	933.1	887.8	806.3	711.2	756.5
65°	801.8	756.5	684.0	697.6	579.8
67.5°	656.8	634.2	570.7	507.3	489.2
70°	534.5	507.3	484.7	416.7	398.6
72.5°	425.8	398.6	366.9	330.7	317.1
75°	321.6	299.0	280.8	267.3	294.4
77.5°	222.0	212.9	199.3	185.7	181.2
80°	145.0	140.4	135.9	131.4	126.8
82.5°	86.1	86.1	86.1	86.1	86.1
85°	45.3	49.8	54.4	58.9	63.4
87.5°	27.2	27.2	31.7	36.2	40.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)