

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: P564117

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564117  
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-40-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

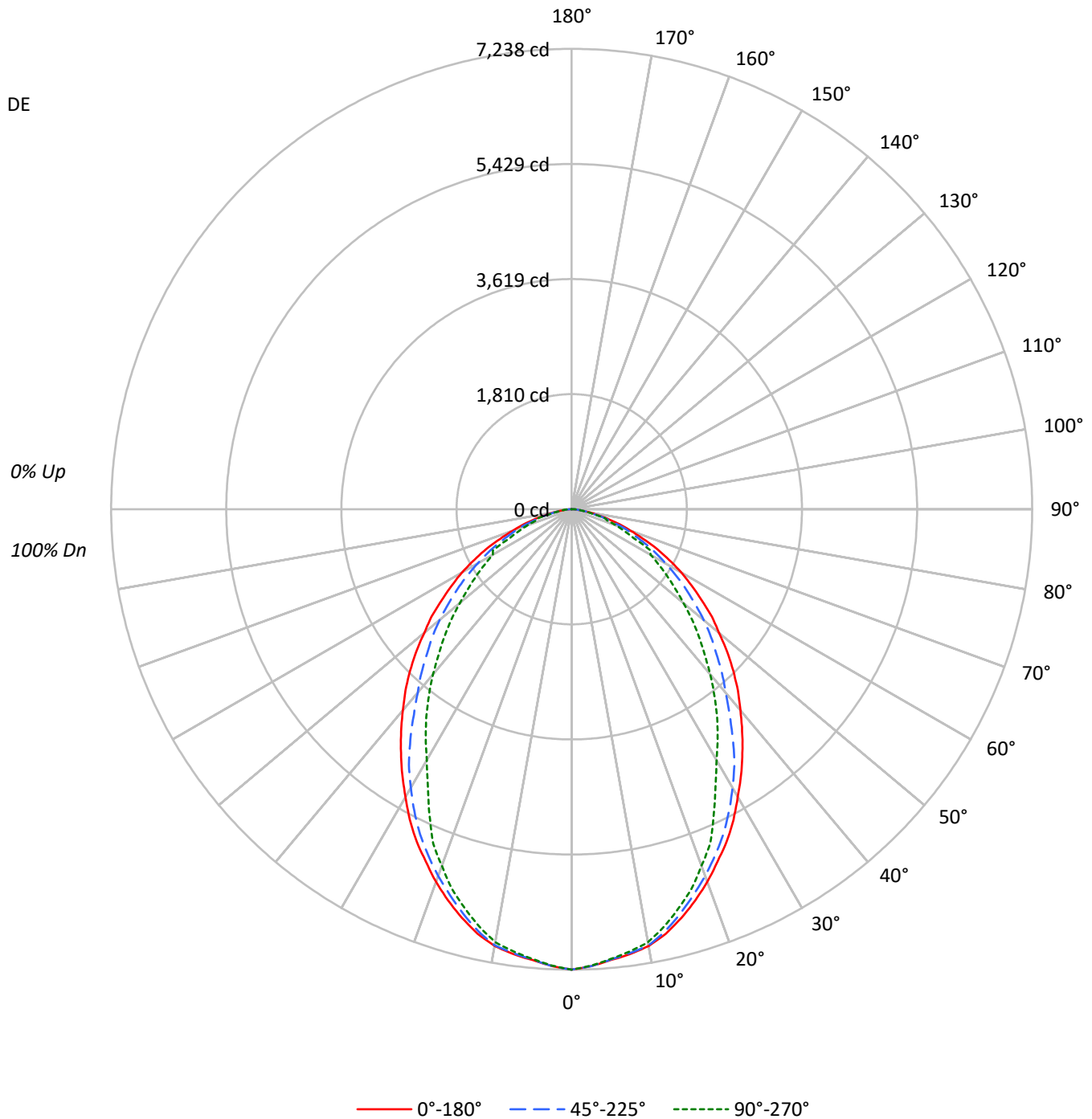
Lumens per Lamp: N/A  
Luminaire Lumens: 14209.0 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	9739	9739	9739
5°	9606	9595	9584
10°	9523	9511	9443
15°	9266	9173	9045
20°	8926	8782	8542
25°	8559	8373	7851
30°	8112	7852	7072
35°	7683	7257	6542
40°	7246	6614	5952
45°	6831	6114	5382
50°	6323	5675	4799
55°	5849	5143	4299
60°	5359	4594	3850
65°	4715	4023	3410
70°	3884	3522	2897
75°	3088	2697	2828
80°	2075	1945	1815
85°	1292	1550	1808

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6831 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	673.7	4.7
10°-20°	1849.0	13.0
20°-30°	2559.9	18.0
30°-40°	2729.6	19.2
40°-50°	2490.2	17.5
50°-60°	1950.9	13.7
60°-70°	1271.5	8.9
70°-80°	563.3	4.0
80°-90°	120.9	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°	5082.7	35.8
0°-40°	7812.3	55.0
0°-60°	12253.3	86.2
0°-90°	14209.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14209.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7238	7238	7238	7238	7238	
5°	7112	7104	7104	7096	7096	675
15°	6652	6652	6585	6518	6493	1870
25°	5765	5732	5640	5439	5288	2647
35°	4677	4644	4418	4083	3983	2924
45°	3590	3514	3213	2945	2828	2765
55°	2494	2418	2192	1933	1832	2237
65°	1481	1397	1264	1289	1071	1460
75°	594	552	519	494	544	637
85°	84	92	100	109	117	116
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7237.9	7237.9	7237.9	7237.9	7237.9
2.5°	7187.7	7187.7	7187.7	7179.3	7179.3
5°	7112.4	7104.0	7104.0	7095.6	7095.6
7.5°	7053.8	7045.4	7037.1	7028.7	7012.0
10°	6970.1	6970.1	6961.7	6919.9	6911.5
12.5°	6836.2	6827.9	6794.4	6735.8	6719.1
15°	6652.2	6652.2	6585.2	6518.3	6493.2
17.5°	6451.3	6443.0	6359.3	6292.3	6258.9
20°	6233.8	6217.0	6133.4	6024.6	5966.0
22.5°	5991.1	5991.1	5890.7	5748.5	5689.9
25°	5765.2	5731.7	5639.7	5438.9	5288.3
27.5°	5505.8	5455.6	5355.2	5070.7	4895.0
30°	5221.3	5196.2	5054.0	4685.8	4551.9
32.5°	4953.6	4911.7	4761.1	4376.2	4267.4
35°	4677.4	4644.0	4418.0	4083.3	3982.9
37.5°	4401.3	4359.5	4075.0	3807.2	3681.7
40°	4125.2	4075.0	3765.4	3522.7	3388.8
42.5°	3865.8	3798.8	3497.6	3238.2	3087.6
45°	3589.7	3514.3	3213.1	2945.4	2828.2
47.5°	3313.5	3246.6	2970.5	2694.3	2560.5
50°	3020.7	2962.1	2711.1	2434.9	2292.7
52.5°	2778.0	2686.0	2443.3	2167.2	2050.0
55°	2493.5	2418.2	2192.3	1932.9	1832.5
57.5°	2234.1	2158.8	1949.6	1707.0	1623.3
60°	1991.5	1882.7	1707.0	1497.8	1430.8
62.5°	1723.7	1640.0	1489.4	1313.7	1397.4
65°	1481.0	1397.4	1263.5	1288.6	1071.0
67.5°	1213.3	1171.4	1054.3	937.2	903.7
70°	987.4	937.2	895.3	769.8	736.3
72.5°	786.5	736.3	677.8	610.8	585.7
75°	594.1	552.3	518.8	493.7	543.9
77.5°	410.0	393.3	368.2	343.1	334.7
80°	267.8	259.4	251.0	242.7	234.3
82.5°	159.0	159.0	159.0	159.0	159.0
85°	83.7	92.0	100.4	108.8	117.1
87.5°	50.2	50.2	58.6	66.9	75.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)