

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: P563521

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563521  
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-40-UNV-81-84-EDD  
Description: 2X4 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**

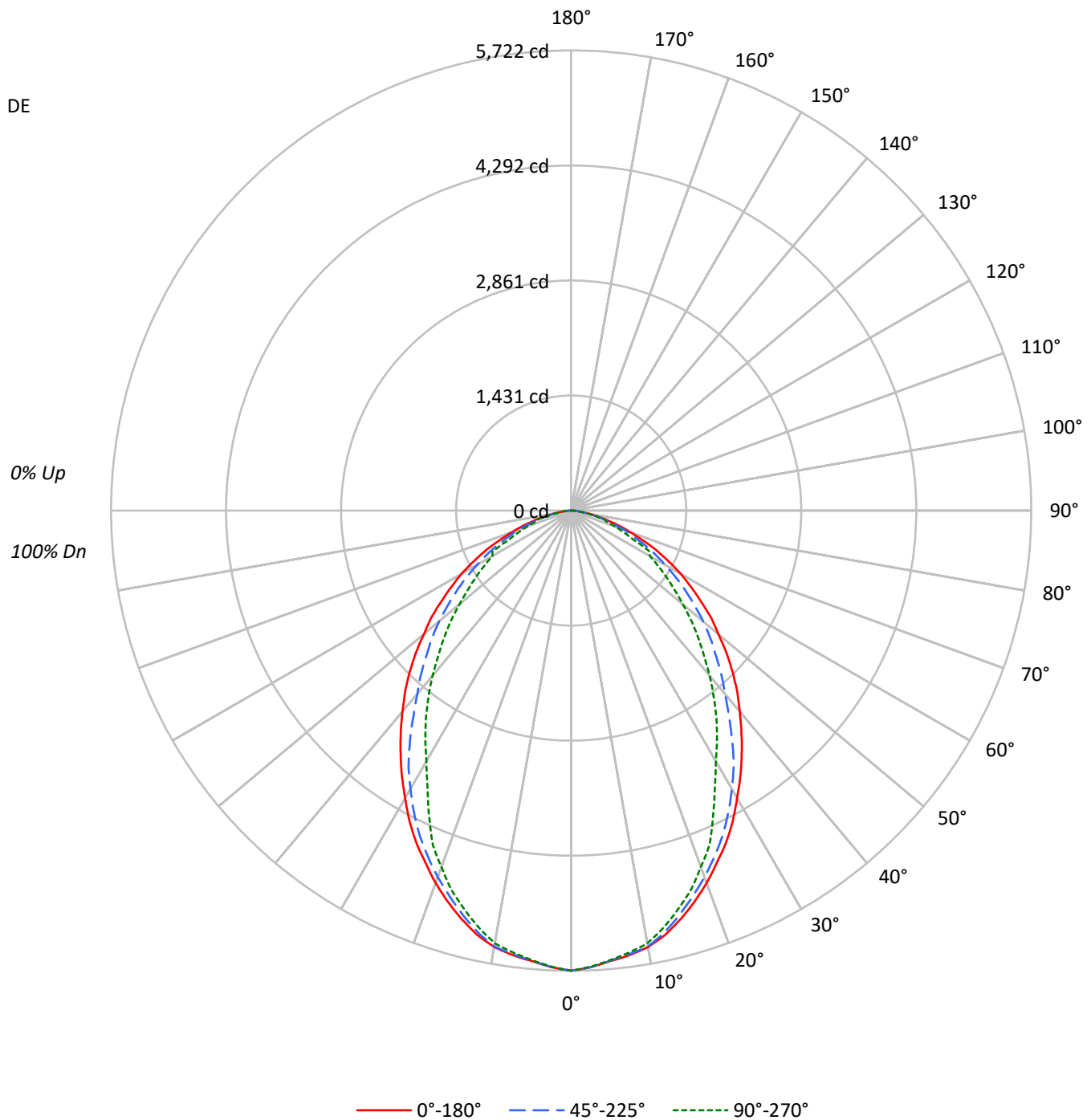
Lumens per Lamp: N/A  
Luminaire Lumens: 11233.0 lumens  
Efficiency: N/A  
Efficacy: 112.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7699	7699	7699
5°	7594	7585	7576
10°	7528	7519	7465
15°	7325	7252	7150
20°	7056	6943	6753
25°	6766	6619	6207
30°	6413	6207	5591
35°	6074	5737	5172
40°	5728	5228	4706
45°	5400	4833	4254
50°	4999	4486	3794
55°	4624	4065	3398
60°	4237	3631	3044
65°	3727	3180	2696
70°	3071	2784	2290
75°	2442	2132	2235
80°	1640	1537	1435
85°	1020	1226	1430

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5400 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	532.6	4.7
10°-20°	1461.8	13.0
20°-30°	2023.7	18.0
30°-40°	2157.9	19.2
40°-50°	1968.6	17.5
50°-60°	1542.3	13.7
60°-70°	1005.2	8.9
70°-80°	445.3	4.0
80°-90°	95.6	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°	4018.1	35.8
0°-40°	6176.0	55.0
0°-60°	9686.9	86.2
0°-90°	11233.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11233.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5722	5722	5722	5722	5722	
5°	5623	5616	5616	5610	5610	534
15°	5259	5259	5206	5153	5133	1478
25°	4558	4531	4458	4300	4181	2092
35°	3698	3671	3493	3228	3149	2312
45°	2838	2778	2540	2328	2236	2186
55°	1971	1912	1733	1528	1449	1768
65°	1171	1105	999	1019	847	1154
75°	470	437	410	390	430	503
85°	66	73	79	86	93	92
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5721.9	5721.9	5721.9	5721.9	5721.9
2.5°	5682.3	5682.3	5682.3	5675.6	5675.6
5°	5622.7	5616.1	5616.1	5609.5	5609.5
7.5°	5576.4	5569.8	5563.2	5556.6	5543.3
10°	5510.3	5510.3	5503.6	5470.6	5464.0
12.5°	5404.4	5397.8	5371.3	5325.0	5311.8
15°	5258.9	5258.9	5206.0	5153.1	5133.2
17.5°	5100.1	5093.5	5027.4	4974.4	4948.0
20°	4928.1	4914.9	4848.8	4762.8	4716.5
22.5°	4736.3	4736.3	4656.9	4544.5	4498.2
25°	4557.7	4531.2	4458.5	4299.7	4180.7
27.5°	4352.6	4313.0	4233.6	4008.7	3869.8
30°	4127.7	4107.9	3995.4	3704.4	3598.5
32.5°	3916.1	3883.0	3763.9	3459.6	3373.6
35°	3697.8	3671.3	3492.7	3228.1	3148.7
37.5°	3479.5	3446.4	3221.5	3009.8	2910.6
40°	3261.2	3221.5	2976.7	2784.9	2679.1
42.5°	3056.1	3003.2	2765.1	2560.0	2440.9
45°	2837.8	2778.3	2540.1	2328.5	2235.9
47.5°	2619.5	2566.6	2348.3	2130.0	2024.2
50°	2388.0	2341.7	2143.2	1925.0	1812.5
52.5°	2196.2	2123.4	1931.6	1713.3	1620.7
55°	1971.3	1911.7	1733.1	1528.1	1448.7
57.5°	1766.2	1706.7	1541.3	1349.5	1283.3
60°	1574.4	1488.4	1349.5	1184.1	1131.2
62.5°	1362.7	1296.5	1177.5	1038.5	1104.7
65°	1170.8	1104.7	998.9	1018.7	846.7
67.5°	959.2	926.1	833.5	740.9	714.4
70°	780.6	740.9	707.8	608.6	582.1
72.5°	621.8	582.1	535.8	482.9	463.0
75°	469.7	436.6	410.1	390.3	430.0
77.5°	324.1	310.9	291.1	271.2	264.6
80°	211.7	205.1	198.4	191.8	185.2
82.5°	125.7	125.7	125.7	125.7	125.7
85°	66.1	72.8	79.4	86.0	92.6
87.5°	39.7	39.7	46.3	52.9	59.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)