

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: P564100

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564100  
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-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

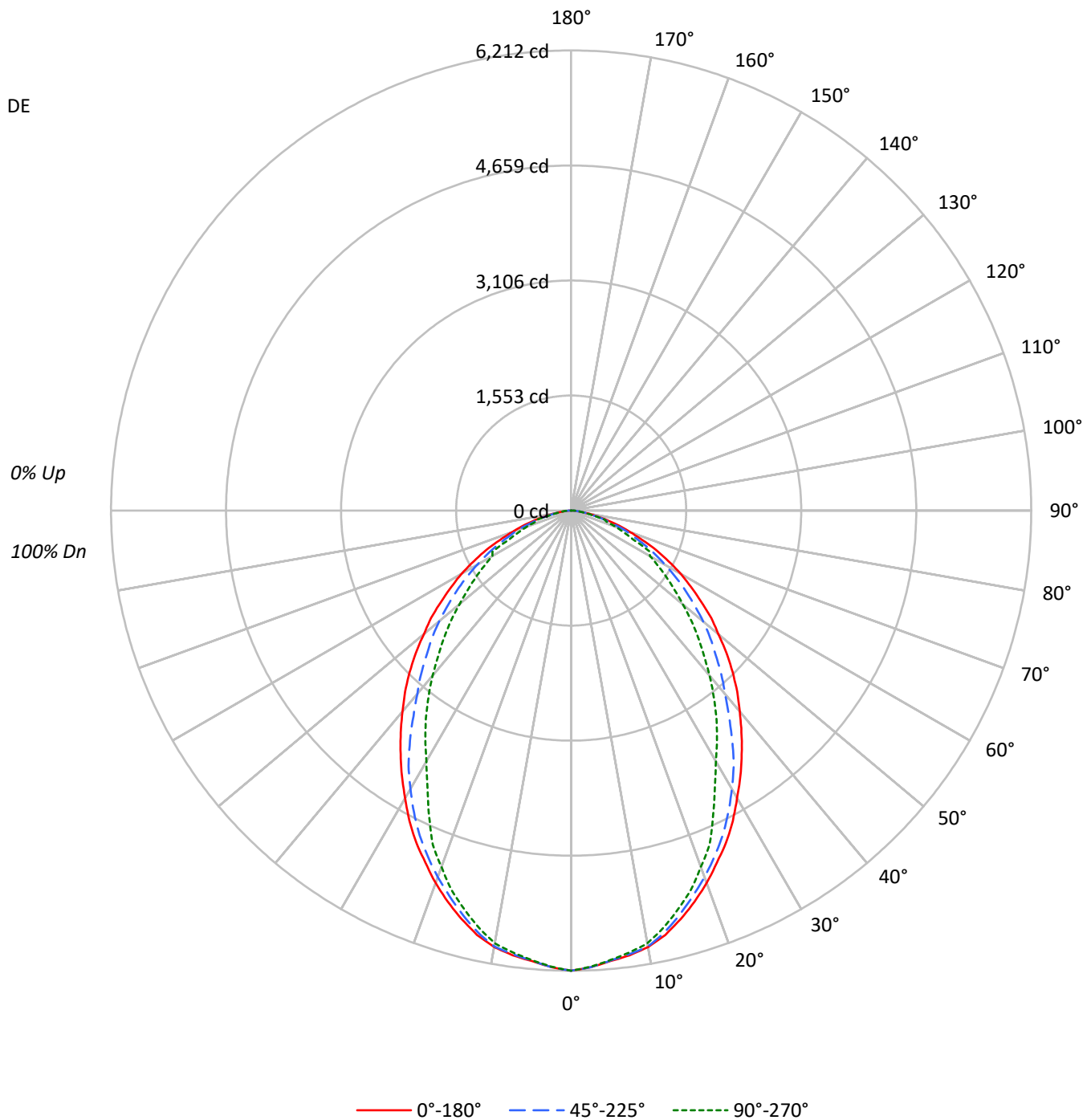
Lumens per Lamp: N/A  
Luminaire Lumens: 12195.0 lumens  
Efficiency: N/A  
Efficacy: 91.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8358	8358	8358
5°	8245	8235	8225
10°	8173	8163	8104
15°	7953	7873	7763
20°	7661	7537	7332
25°	7346	7186	6738
30°	6962	6739	6070
35°	6594	6228	5615
40°	6219	5676	5109
45°	5862	5247	4619
50°	5427	4870	4119
55°	5020	4414	3689
60°	4599	3942	3305
65°	4047	3452	2926
70°	3334	3023	2486
75°	2651	2315	2427
80°	1781	1669	1558
85°	1108	1331	1551

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5862 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	578.3	4.7
10°-20°	1587.0	13.0
20°-30°	2197.0	18.0
30°-40°	2342.7	19.2
40°-50°	2137.2	17.5
50°-60°	1674.3	13.7
60°-70°	1091.2	8.9
70°-80°	483.5	4.0
80°-90°	103.8	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°	4362.3	35.8
0°-40°	6704.9	55.0
0°-60°	10516.5	86.2
0°-90°	12195.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12195.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6212	6212	6212	6212	6212	
5°	6104	6097	6097	6090	6090	579
15°	5709	5709	5652	5594	5573	1605
25°	4948	4919	4840	4668	4539	2272
35°	4014	3986	3792	3505	3418	2510
45°	3081	3016	2758	2528	2427	2373
55°	2140	2075	1882	1659	1573	1920
65°	1271	1199	1084	1106	919	1253
75°	510	474	445	424	467	546
85°	72	79	86	93	100	100
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6212.0	6212.0	6212.0	6212.0	6212.0
2.5°	6168.9	6168.9	6168.9	6161.7	6161.7
5°	6104.2	6097.1	6097.1	6089.9	6089.9
7.5°	6054.0	6046.8	6039.6	6032.4	6018.1
10°	5982.2	5982.2	5975.0	5939.1	5931.9
12.5°	5867.3	5860.1	5831.4	5781.1	5766.7
15°	5709.3	5709.3	5651.8	5594.4	5572.8
17.5°	5536.9	5529.7	5457.9	5400.5	5371.7
20°	5350.2	5335.8	5264.0	5170.7	5120.4
22.5°	5141.9	5141.9	5055.8	4933.7	4883.4
25°	4948.0	4919.3	4840.3	4668.0	4538.7
27.5°	4725.4	4682.3	4596.1	4352.0	4201.2
30°	4481.2	4459.7	4337.6	4021.6	3906.7
32.5°	4251.4	4215.5	4086.3	3755.9	3662.5
35°	4014.4	3985.7	3791.8	3504.6	3418.4
37.5°	3777.5	3741.5	3497.4	3267.6	3159.8
40°	3540.5	3497.4	3231.7	3023.4	2908.5
42.5°	3317.8	3260.4	3001.9	2779.2	2650.0
45°	3080.8	3016.2	2757.7	2527.9	2427.3
47.5°	2843.9	2786.4	2549.4	2312.4	2197.5
50°	2592.5	2542.2	2326.8	2089.8	1967.7
52.5°	2384.2	2305.3	2097.0	1860.0	1759.5
55°	2140.1	2075.4	1881.5	1658.9	1572.7
57.5°	1917.5	1852.8	1673.3	1465.0	1393.2
60°	1709.2	1615.8	1465.0	1285.5	1228.0
62.5°	1479.4	1407.6	1278.3	1127.5	1199.3
65°	1271.1	1199.3	1084.4	1105.9	919.2
67.5°	1041.3	1005.4	904.9	804.3	775.6
70°	847.4	804.3	768.4	660.7	632.0
72.5°	675.1	632.0	581.7	524.2	502.7
75°	509.9	474.0	445.3	423.7	466.8
77.5°	351.9	337.5	316.0	294.4	287.3
80°	229.8	222.6	215.4	208.3	201.1
82.5°	136.4	136.4	136.4	136.4	136.4
85°	71.8	79.0	86.2	93.4	100.5
87.5°	43.1	43.1	50.3	57.5	64.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)