

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: P564056

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564056  
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-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**

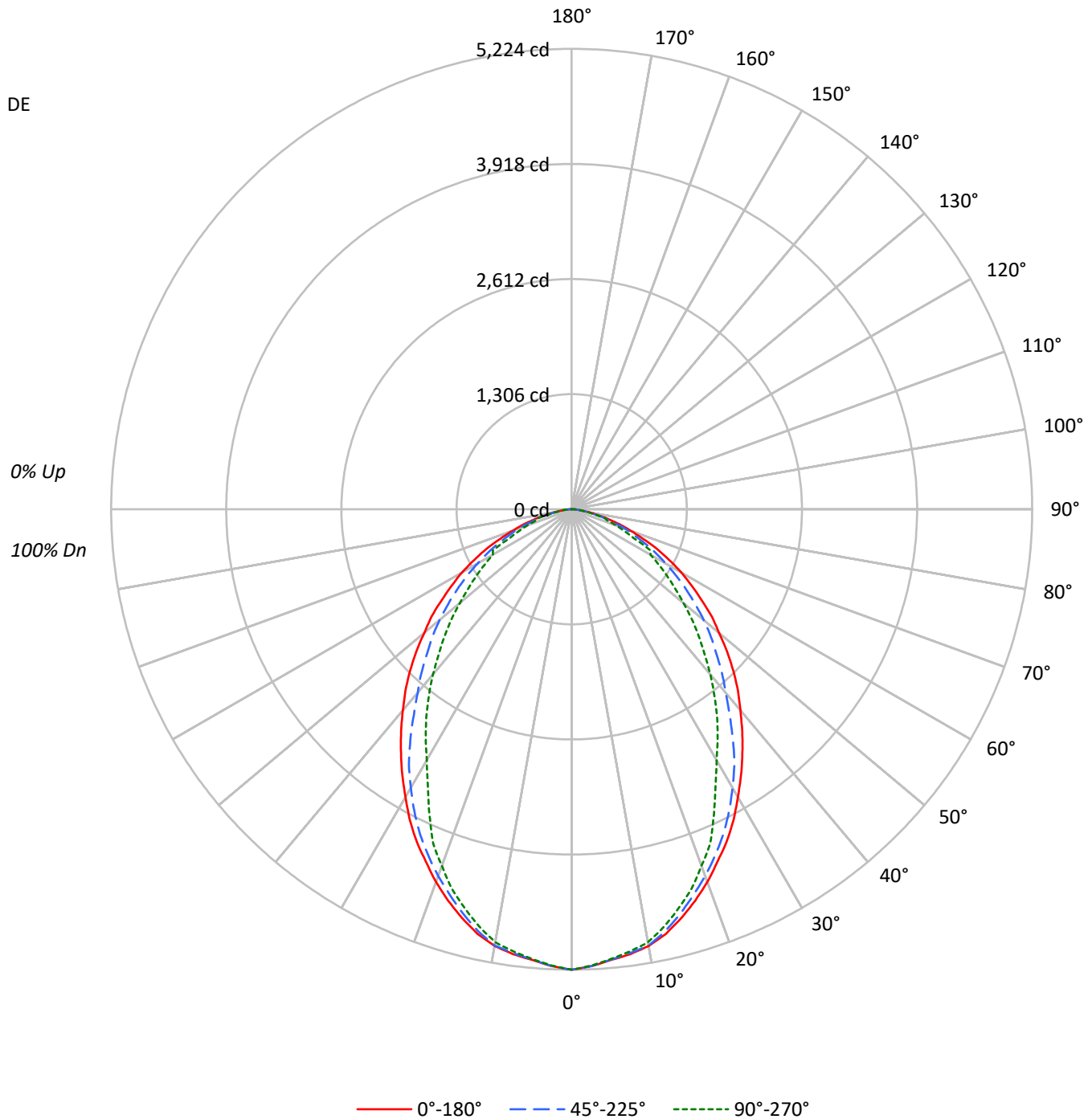
Lumens per Lamp: N/A  
Luminaire Lumens: 10256.0 lumens  
Efficiency: N/A  
Efficacy: 77.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7029	7029	7029
5°	6934	6925	6917
10°	6874	6865	6816
15°	6688	6621	6528
20°	6443	6339	6166
25°	6178	6043	5667
30°	5855	5668	5105
35°	5545	5238	4722
40°	5230	4774	4296
45°	4930	4413	3884
50°	4564	4096	3464
55°	4222	3712	3103
60°	3868	3316	2779
65°	3403	2904	2461
70°	2804	2542	2091
75°	2229	1947	2041
80°	1498	1404	1310
85°	932	1119	1306

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4930 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	486.3	4.7
10°-20°	1334.6	13.0
20°-30°	1847.7	18.0
30°-40°	1970.2	19.2
40°-50°	1797.4	17.5
50°-60°	1408.1	13.7
60°-70°	917.7	8.9
70°-80°	406.6	4.0
80°-90°	87.3	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°	3668.7	35.8
0°-40°	5638.8	55.0
0°-60°	8844.4	86.2
0°-90°	10256.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10256.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5224	5224	5224	5224	5224	
5°	5134	5128	5128	5122	5122	487
15°	4802	4802	4753	4705	4687	1350
25°	4161	4137	4071	3926	3817	1910
35°	3376	3352	3189	2947	2875	2111
45°	2591	2537	2319	2126	2041	1996
55°	1800	1745	1582	1395	1323	1614
65°	1069	1009	912	930	773	1054
75°	429	399	374	356	393	460
85°	60	66	72	78	85	84
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5224.3	5224.3	5224.3	5224.3	5224.3
2.5°	5188.0	5188.0	5188.0	5182.0	5182.0
5°	5133.7	5127.6	5127.6	5121.6	5121.6
7.5°	5091.4	5085.4	5079.3	5073.3	5061.2
10°	5031.0	5031.0	5025.0	4994.8	4988.7
12.5°	4934.4	4928.3	4904.2	4861.9	4849.8
15°	4801.5	4801.5	4753.2	4704.9	4686.7
17.5°	4656.5	4650.5	4590.1	4541.8	4517.6
20°	4499.5	4487.4	4427.0	4348.5	4306.2
22.5°	4324.4	4324.4	4251.9	4149.2	4106.9
25°	4161.3	4137.1	4070.7	3925.8	3817.0
27.5°	3974.1	3937.8	3865.4	3660.0	3533.2
30°	3768.7	3750.6	3647.9	3382.2	3285.6
32.5°	3575.5	3545.3	3436.5	3158.7	3080.2
35°	3376.1	3352.0	3188.9	2947.3	2874.9
37.5°	3176.8	3146.6	2941.3	2748.0	2657.4
40°	2977.5	2941.3	2717.8	2542.7	2446.0
42.5°	2790.3	2742.0	2524.6	2337.3	2228.6
45°	2591.0	2536.6	2319.2	2125.9	2041.4
47.5°	2391.7	2343.4	2144.1	1944.8	1848.1
50°	2180.3	2138.0	1956.8	1757.5	1654.9
52.5°	2005.2	1938.7	1763.6	1564.3	1479.7
55°	1799.8	1745.4	1582.4	1395.2	1322.7
57.5°	1612.6	1558.2	1407.2	1232.1	1171.7
60°	1437.4	1358.9	1232.1	1081.1	1032.8
62.5°	1244.2	1183.8	1075.1	948.2	1008.6
65°	1069.0	1008.6	912.0	930.1	773.1
67.5°	875.7	845.5	761.0	676.4	652.3
70°	712.7	676.4	646.2	555.6	531.5
72.5°	567.7	531.5	489.2	440.9	422.8
75°	428.8	398.6	374.5	356.3	392.6
77.5°	295.9	283.9	265.7	247.6	241.6
80°	193.3	187.2	181.2	175.1	169.1
82.5°	114.8	114.8	114.8	114.8	114.8
85°	60.4	66.4	72.5	78.5	84.6
87.5°	36.2	36.2	42.3	48.3	54.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)