

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: P563409

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563409  
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-LD4-3LO-50-UNV-82-84-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

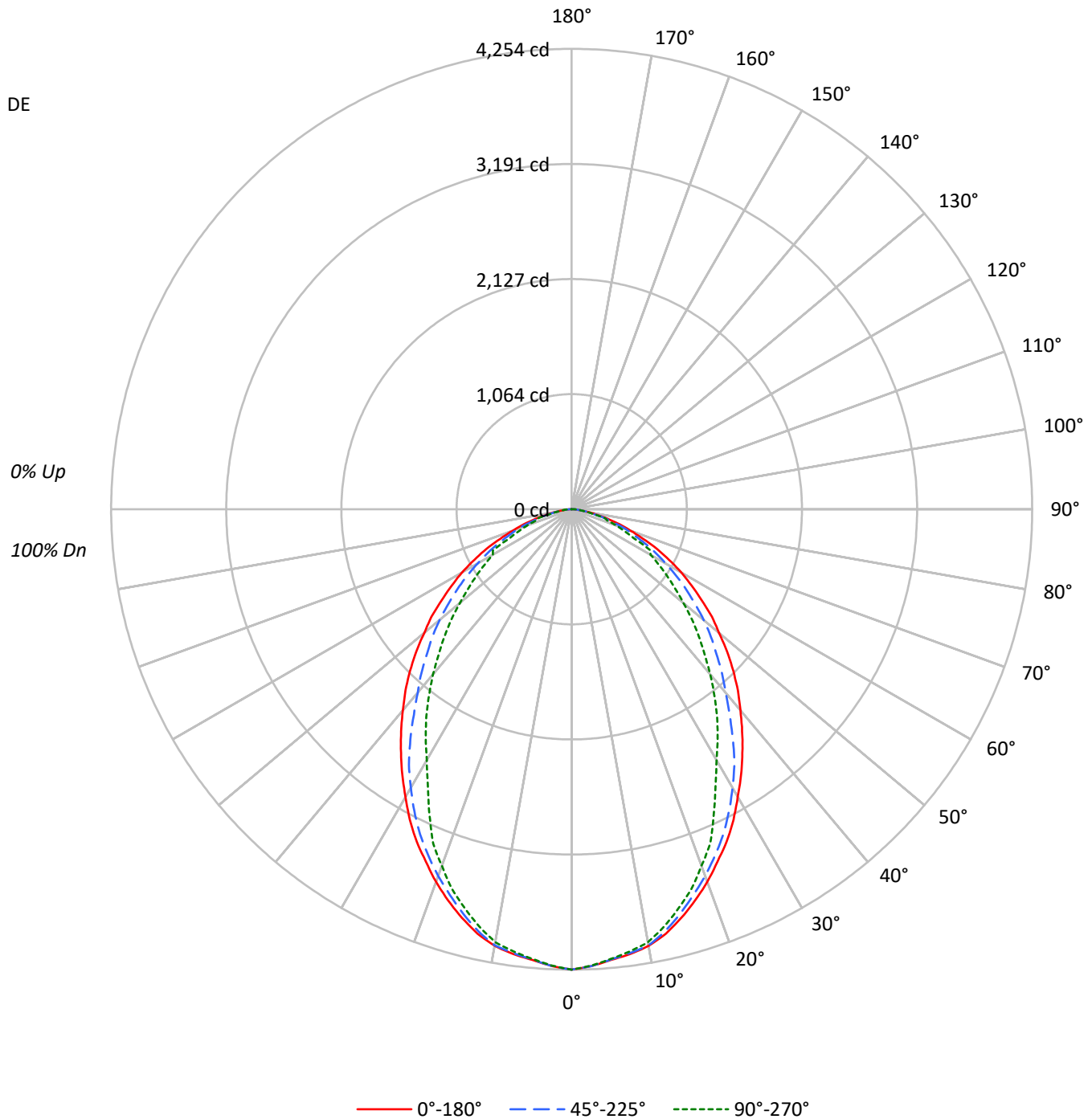
Lumens per Lamp: N/A  
Luminaire Lumens: 8351.0 lumens  
Efficiency: N/A  
Efficacy: 119.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5724	5724	5724
5°	5646	5639	5633
10°	5597	5590	5550
15°	5446	5391	5316
20°	5246	5161	5021
25°	5030	4921	4614
30°	4768	4615	4156
35°	4515	4265	3845
40°	4258	3887	3498
45°	4014	3593	3163
50°	3716	3335	2821
55°	3438	3023	2526
60°	3150	2700	2263
65°	2771	2364	2004
70°	2283	2070	1703
75°	1815	1585	1662
80°	1220	1143	1067
85°	760	911	1062

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4014 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	396.0	4.7
10°-20°	1086.7	13.0
20°-30°	1504.5	18.0
30°-40°	1604.2	19.2
40°-50°	1463.5	17.5
50°-60°	1146.6	13.7
60°-70°	747.3	8.9
70°-80°	331.1	4.0
80°-90°	71.1	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°	2987.2	35.8
0°-40°	4591.5	55.0
0°-60°	7201.6	86.2
0°-90°	8351.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8351.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4254	4254	4254	4254	4254	
5°	4180	4175	4175	4170	4170	397
15°	3910	3910	3870	3831	3816	1099
25°	3388	3369	3315	3197	3108	1556
35°	2749	2729	2597	2400	2341	1719
45°	2110	2066	1888	1731	1662	1625
55°	1466	1421	1288	1136	1077	1314
65°	870	821	743	757	630	858
75°	349	325	305	290	320	374
85°	49	54	59	64	69	68
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4253.9	4253.9	4253.9	4253.9	4253.9
2.5°	4224.4	4224.4	4224.4	4219.5	4219.5
5°	4180.1	4175.2	4175.2	4170.3	4170.3
7.5°	4145.7	4140.8	4135.9	4130.9	4121.1
10°	4096.5	4096.5	4091.6	4067.0	4062.1
12.5°	4017.8	4012.9	3993.2	3958.8	3949.0
15°	3909.6	3909.6	3870.3	3831.0	3816.2
17.5°	3791.6	3786.7	3737.5	3698.2	3678.5
20°	3663.8	3653.9	3604.7	3540.8	3506.4
22.5°	3521.1	3521.1	3462.1	3378.5	3344.1
25°	3388.4	3368.7	3314.6	3196.6	3108.0
27.5°	3235.9	3206.4	3147.4	2980.2	2876.9
30°	3068.7	3053.9	2970.3	2754.0	2675.3
32.5°	2911.3	2886.7	2798.2	2572.0	2508.1
35°	2749.0	2729.4	2596.6	2399.9	2340.9
37.5°	2586.8	2562.2	2395.0	2237.6	2163.8
40°	2424.5	2395.0	2213.0	2070.4	1991.7
42.5°	2272.0	2232.7	2055.6	1903.2	1814.7
45°	2109.7	2065.5	1888.4	1731.1	1662.2
47.5°	1947.4	1908.1	1745.8	1583.5	1504.8
50°	1775.3	1740.9	1593.4	1431.1	1347.5
52.5°	1632.7	1578.6	1436.0	1273.7	1204.9
55°	1465.5	1421.2	1288.5	1136.0	1077.0
57.5°	1313.0	1268.8	1145.8	1003.2	954.1
60°	1170.4	1106.5	1003.2	880.3	840.9
62.5°	1013.1	963.9	875.4	772.1	821.3
65°	870.4	821.3	742.6	757.3	629.5
67.5°	713.1	688.5	619.6	550.8	531.1
70°	580.3	550.8	526.2	452.4	432.8
72.5°	462.3	432.8	398.3	359.0	344.2
75°	349.2	324.6	304.9	290.1	319.7
77.5°	241.0	231.1	216.4	201.6	196.7
80°	157.4	152.5	147.5	142.6	137.7
82.5°	93.4	93.4	93.4	93.4	93.4
85°	49.2	54.1	59.0	63.9	68.8
87.5°	29.5	29.5	34.4	39.3	44.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)