

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: P564021

Luminaire Tested: FSR-24-4-LD4-4STD-35-UNV-80-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564021  
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-80-86-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

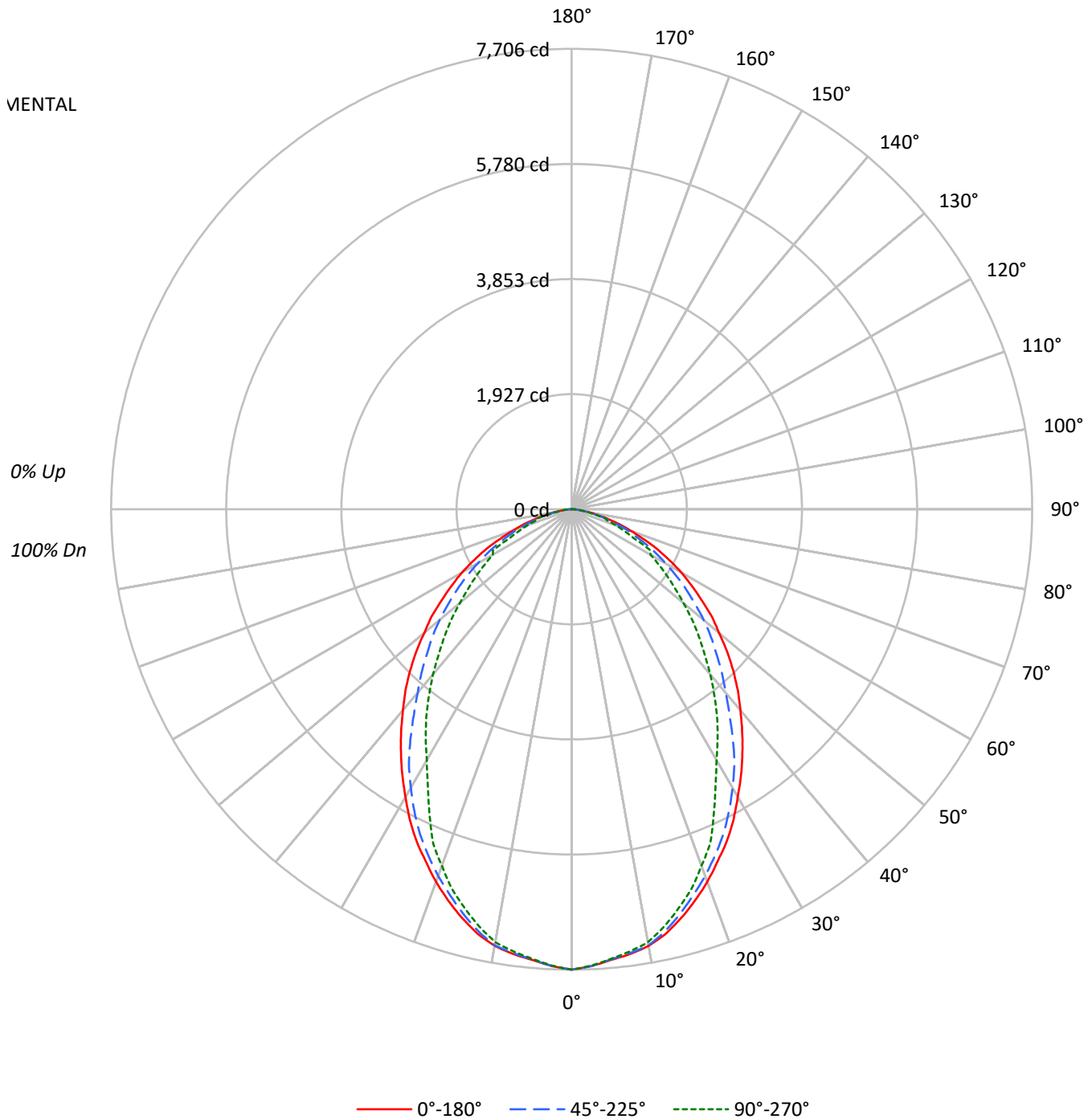
Lumens per Lamp: N/A  
Luminaire Lumens: 15127.0 lumens  
Efficiency: N/A  
Efficacy: 113.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10368	10368	10368
5°	10227	10215	10203
10°	10138	10126	10053
15°	9865	9766	9629
20°	9502	9349	9094
25°	9112	8913	8358
30°	8636	8359	7529
35°	8179	7726	6965
40°	7714	7041	6337
45°	7272	6509	5729
50°	6731	6041	5109
55°	6227	5475	4576
60°	5705	4890	4099
65°	5020	4282	3630
70°	4135	3750	3084
75°	3288	2871	3010
80°	2209	2070	1932
85°	1376	1650	1925

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7272 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	717.3	4.7
10°-20°	1968.5	13.0
20°-30°	2725.3	18.0
30°-40°	2905.9	19.2
40°-50°	2651.1	17.5
50°-60°	2076.9	13.7
60°-70°	1353.6	8.9
70°-80°	599.7	4.0
80°-90°	128.8	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°	5411.1	35.8
0°-40°	8317.0	55.0
0°-60°	13044.9	86.2
0°-90°	15127.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15127.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7706	7706	7706	7706	7706	
5°	7572	7563	7563	7554	7554	719
15°	7082	7082	7011	6939	6913	1991
25°	6138	6102	6004	5790	5630	2818
35°	4980	4944	4704	4347	4240	3113
45°	3822	3741	3421	3136	3011	2944
55°	2655	2574	2334	2058	1951	2381
65°	1577	1488	1345	1372	1140	1554
75°	632	588	552	526	579	678
85°	89	98	107	116	125	124
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7705.5	7705.5	7705.5	7705.5	7705.5
2.5°	7652.0	7652.0	7652.0	7643.1	7643.1
5°	7571.9	7563.0	7563.0	7554.1	7554.1
7.5°	7509.5	7500.6	7491.7	7482.8	7465.0
10°	7420.4	7420.4	7411.5	7367.0	7358.1
12.5°	7277.9	7269.0	7233.4	7171.0	7153.2
15°	7081.9	7081.9	7010.7	6939.4	6912.7
17.5°	6868.1	6859.2	6770.1	6698.9	6663.2
20°	6636.5	6618.7	6529.6	6413.8	6351.5
22.5°	6378.2	6378.2	6271.3	6119.9	6057.5
25°	6137.7	6102.0	6004.0	5790.3	5629.9
27.5°	5861.5	5808.1	5701.2	5398.3	5211.2
30°	5558.6	5531.9	5380.5	4988.5	4846.0
32.5°	5273.6	5229.0	5068.7	4658.9	4543.1
35°	4979.6	4944.0	4703.5	4347.1	4240.2
37.5°	4685.7	4641.1	4338.2	4053.2	3919.6
40°	4391.7	4338.2	4008.6	3750.3	3607.8
42.5°	4115.5	4044.3	3723.6	3447.4	3287.1
45°	3821.6	3741.4	3420.7	3135.6	3010.9
47.5°	3527.6	3456.3	3162.4	2868.4	2725.9
50°	3215.8	3153.5	2886.2	2592.3	2440.8
52.5°	2957.5	2859.5	2601.2	2307.2	2182.5
55°	2654.6	2574.4	2333.9	2057.8	1950.9
57.5°	2378.5	2298.3	2075.6	1817.2	1728.2
60°	2120.1	2004.3	1817.2	1594.5	1523.3
62.5°	1835.1	1746.0	1585.6	1398.6	1487.6
65°	1576.7	1487.6	1345.1	1371.8	1140.2
67.5°	1291.7	1247.1	1122.4	997.7	962.1
70°	1051.2	997.7	953.2	819.5	783.9
72.5°	837.4	783.9	721.6	650.3	623.6
75°	632.5	587.9	552.3	525.6	579.0
77.5°	436.5	418.7	392.0	365.2	356.3
80°	285.1	276.2	267.2	258.3	249.4
82.5°	169.3	169.3	169.3	169.3	169.3
85°	89.1	98.0	106.9	115.8	124.7
87.5°	53.4	53.4	62.4	71.3	80.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)