

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: P563713

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563713  
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-LD4-4HI-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**

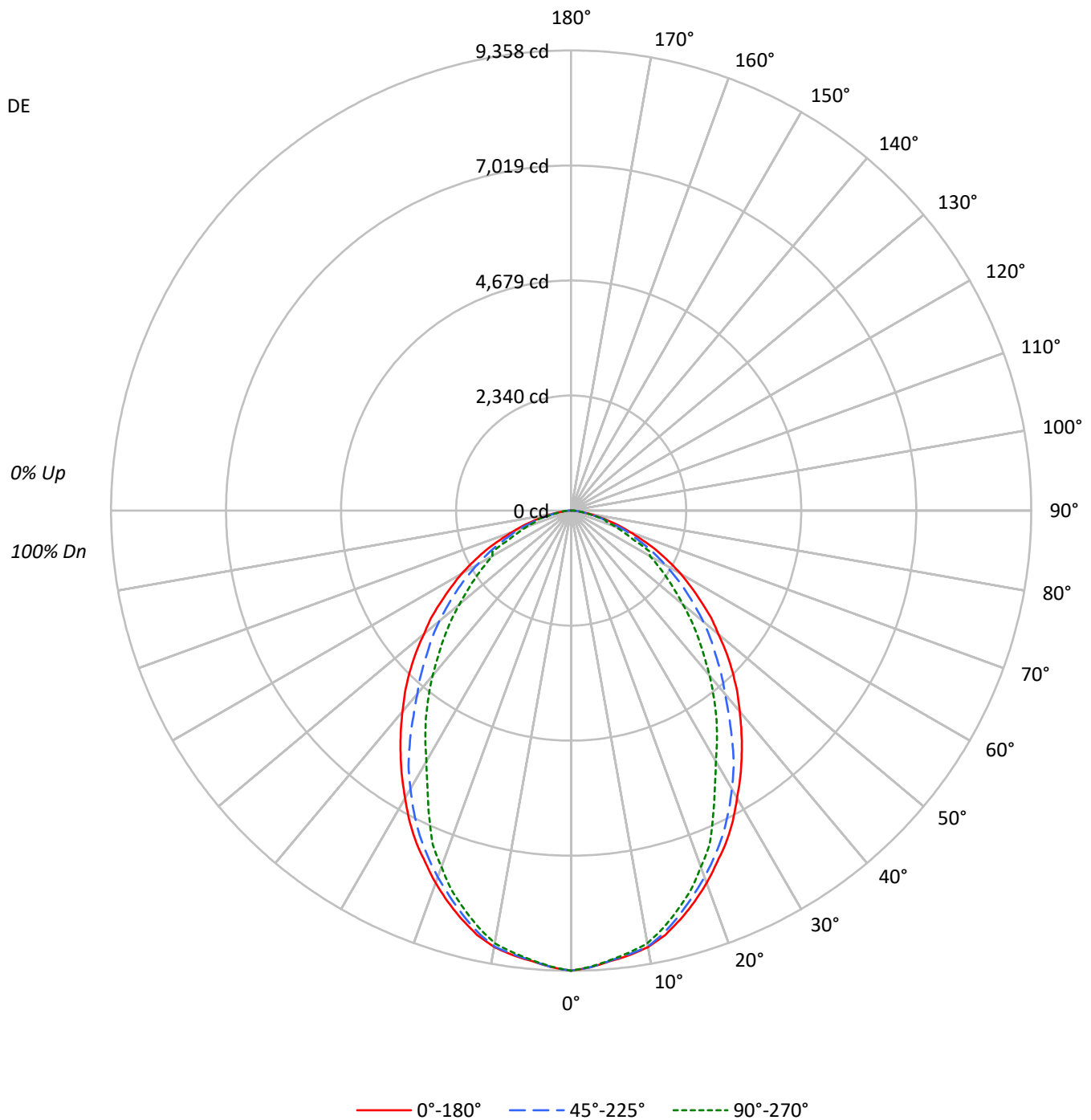
Lumens per Lamp: N/A  
Luminaire Lumens: 18371.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	12591	12591	12591
5°	12420	12405	12391
10°	12312	12297	12209
15°	11980	11860	11694
20°	11540	11354	11044
25°	11066	10825	10150
30°	10488	10152	9143
35°	9933	9382	8458
40°	9368	8551	7696
45°	8831	7905	6958
50°	8175	7337	6205
55°	7563	6649	5558
60°	6929	5939	4978
65°	6096	5201	4409
70°	5022	4554	3745
75°	3993	3487	3656
80°	2682	2515	2347
85°	1670	2004	2339

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8831 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	871.1	4.7
10°-20°	2390.7	13.0
20°-30°	3309.7	18.0
30°-40°	3529.1	19.2
40°-50°	3219.6	17.5
50°-60°	2522.3	13.7
60°-70°	1643.9	8.9
70°-80°	728.3	4.0
80°-90°	156.4	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°	6571.5	35.8
0°-40°	10100.6	55.0
0°-60°	15842.4	86.2
0°-90°	18371.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	18371.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9358	9358	9358	9358	9358	
5°	9196	9185	9185	9174	9174	873
15°	8601	8601	8514	8428	8395	2418
25°	7454	7411	7292	7032	6837	3422
35°	6048	6004	5712	5279	5150	3781
45°	4641	4544	4154	3808	3657	3575
55°	3224	3126	2834	2499	2369	2892
65°	1915	1807	1634	1666	1385	1887
75°	768	714	671	638	703	823
85°	108	119	130	141	152	150
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9357.9	9357.9	9357.9	9357.9	9357.9
2.5°	9293.0	9293.0	9293.0	9282.2	9282.2
5°	9195.7	9184.8	9184.8	9174.0	9174.0
7.5°	9119.9	9109.1	9098.3	9087.5	9065.8
10°	9011.8	9011.8	9000.9	8946.8	8936.0
12.5°	8838.7	8827.8	8784.6	8708.8	8687.2
15°	8600.7	8600.7	8514.1	8427.6	8395.1
17.5°	8341.0	8330.2	8222.0	8135.5	8092.2
20°	8059.7	8038.1	7929.9	7789.3	7713.5
22.5°	7746.0	7746.0	7616.2	7432.3	7356.5
25°	7453.9	7410.6	7291.6	7032.0	6837.2
27.5°	7118.5	7053.6	6923.8	6556.0	6328.8
30°	6750.7	6718.2	6534.3	6058.3	5885.2
32.5°	6404.5	6350.4	6155.7	5658.0	5517.4
35°	6047.5	6004.2	5712.1	5279.4	5149.6
37.5°	5690.5	5636.4	5268.6	4922.4	4760.1
40°	5333.5	5268.6	4868.3	4554.6	4381.5
42.5°	4998.1	4911.6	4522.1	4186.7	3992.0
45°	4641.1	4543.7	4154.3	3808.1	3656.6
47.5°	4284.1	4197.6	3840.5	3483.5	3310.4
50°	3905.5	3829.7	3505.2	3148.2	2964.2
52.5°	3591.7	3472.7	3159.0	2802.0	2650.5
55°	3223.9	3126.5	2834.4	2499.1	2369.2
57.5°	2888.5	2791.2	2520.7	2207.0	2098.8
60°	2574.8	2434.1	2207.0	1936.5	1850.0
62.5°	2228.6	2120.4	1925.7	1698.5	1806.7
65°	1914.9	1806.7	1633.6	1666.0	1384.8
67.5°	1568.7	1514.6	1363.1	1211.7	1168.4
70°	1276.6	1211.7	1157.6	995.3	952.0
72.5°	1016.9	952.0	876.3	789.7	757.3
75°	768.1	714.0	670.7	638.3	703.2
77.5°	530.1	508.5	476.0	443.6	432.7
80°	346.2	335.4	324.6	313.7	302.9
82.5°	205.6	205.6	205.6	205.6	205.6
85°	108.2	119.0	129.8	140.6	151.5
87.5°	64.9	64.9	75.7	86.5	97.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)