

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: P563861

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563861  
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-LD4-4LO-35-UNV-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

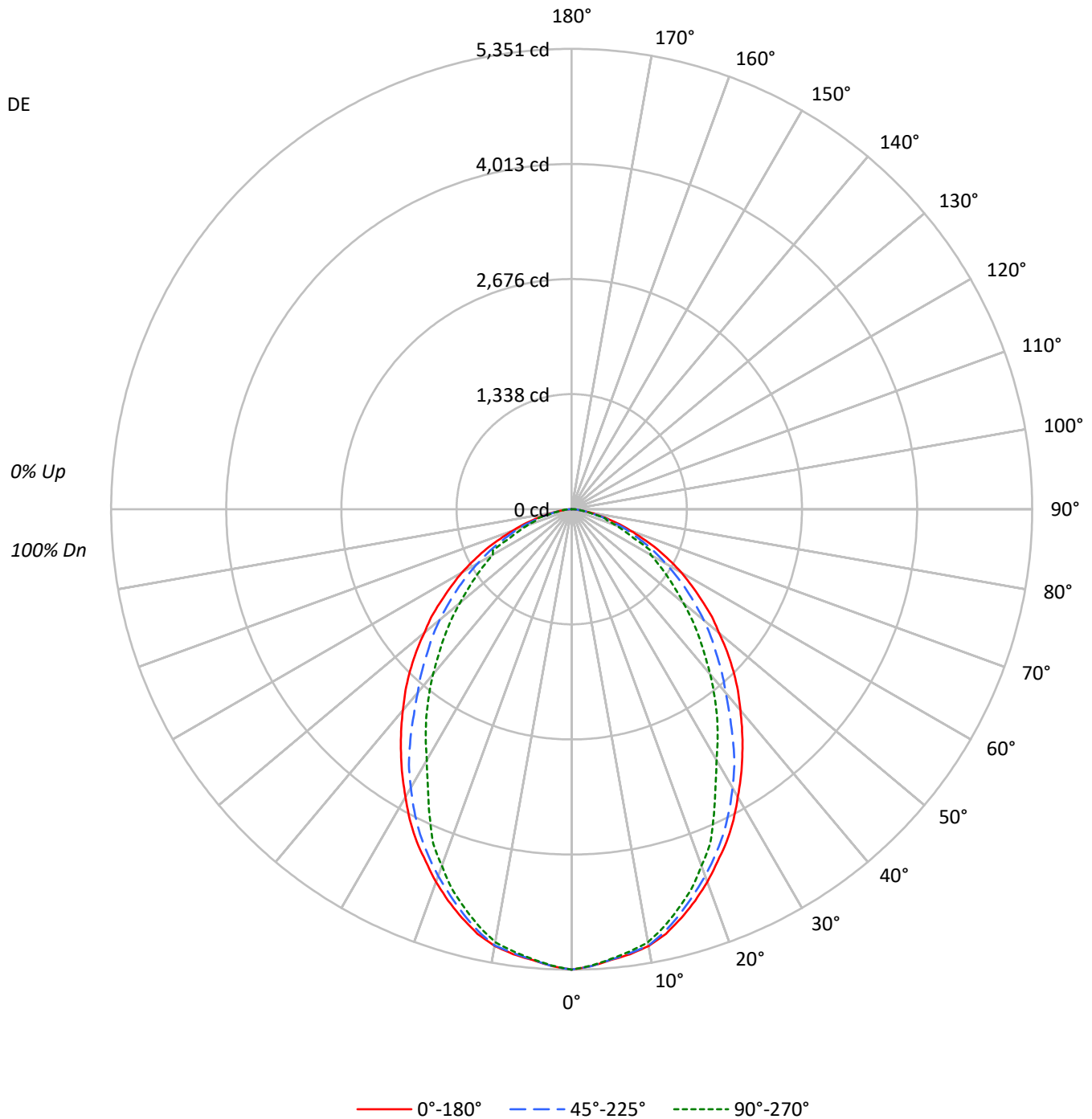
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10505.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 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): 93.6  
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	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°	7200	7200	7200
5°	7102	7094	7085
10°	7040	7032	6981
15°	6851	6782	6687
20°	6599	6493	6316
25°	6328	6190	5804
30°	5997	5805	5228
35°	5680	5365	4837
40°	5357	4889	4401
45°	5050	4520	3979
50°	4675	4195	3548
55°	4324	3802	3178
60°	3962	3396	2847
65°	3486	2974	2521
70°	2872	2604	2142
75°	2283	1994	2090
80°	1534	1438	1342
85°	956	1145	1337

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5050 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	498.1	4.7
10°-20°	1367.0	13.0
20°-30°	1892.6	18.0
30°-40°	2018.0	19.2
40°-50°	1841.0	17.5
50°-60°	1442.3	13.7
60°-70°	940.0	8.9
70°-80°	416.5	4.0
80°-90°	89.4	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°	3757.7	35.8
0°-40°	5775.8	55.0
0°-60°	9059.1	86.2
0°-90°	10505.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10505.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5351	5351	5351	5351	5351	
5°	5258	5252	5252	5246	5246	499
15°	4918	4918	4869	4819	4800	1383
25°	4262	4238	4170	4021	3910	1957
35°	3458	3433	3266	3019	2945	2162
45°	2654	2598	2376	2178	2091	2044
55°	1844	1788	1621	1429	1355	1653
65°	1095	1033	934	953	792	1079
75°	439	408	384	365	402	471
85°	62	68	74	80	87	86
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5351.1	5351.1	5351.1	5351.1	5351.1
2.5°	5314.0	5314.0	5314.0	5307.8	5307.8
5°	5258.3	5252.1	5252.1	5245.9	5245.9
7.5°	5215.0	5208.8	5202.6	5196.5	5184.1
10°	5153.1	5153.1	5147.0	5116.0	5109.8
12.5°	5054.2	5048.0	5023.2	4979.9	4967.6
15°	4918.1	4918.1	4868.6	4819.1	4800.5
17.5°	4769.6	4763.4	4701.6	4652.1	4627.3
20°	4608.8	4596.4	4534.5	4454.1	4410.8
22.5°	4429.4	4429.4	4355.1	4250.0	4206.7
25°	4262.3	4237.6	4169.5	4021.1	3909.7
27.5°	4070.6	4033.4	3959.2	3748.9	3619.0
30°	3860.2	3841.7	3736.5	3464.3	3365.3
32.5°	3662.3	3631.3	3520.0	3235.4	3155.0
35°	3458.1	3433.4	3266.3	3018.9	2944.7
37.5°	3254.0	3223.0	3012.7	2814.7	2722.0
40°	3049.8	3012.7	2783.8	2604.4	2505.4
42.5°	2858.0	2808.6	2585.9	2394.1	2282.7
45°	2653.9	2598.2	2375.5	2177.6	2091.0
47.5°	2449.8	2400.3	2196.1	1992.0	1893.0
50°	2233.2	2189.9	2004.3	1800.2	1695.0
52.5°	2053.8	1985.8	1806.4	1602.2	1515.6
55°	1843.5	1787.8	1620.8	1429.0	1354.8
57.5°	1651.7	1596.1	1441.4	1262.0	1200.1
60°	1472.3	1391.9	1262.0	1107.3	1057.8
62.5°	1274.4	1212.5	1101.2	971.2	1033.1
65°	1095.0	1033.1	934.1	952.7	791.8
67.5°	897.0	866.1	779.5	692.9	668.1
70°	730.0	692.9	661.9	569.1	544.4
72.5°	581.5	544.4	501.1	451.6	433.0
75°	439.2	408.3	383.5	365.0	402.1
77.5°	303.1	290.8	272.2	253.6	247.5
80°	198.0	191.8	185.6	179.4	173.2
82.5°	117.5	117.5	117.5	117.5	117.5
85°	61.9	68.0	74.2	80.4	86.6
87.5°	37.1	37.1	43.3	49.5	55.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)