

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: P563865

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563865  
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-82-88-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

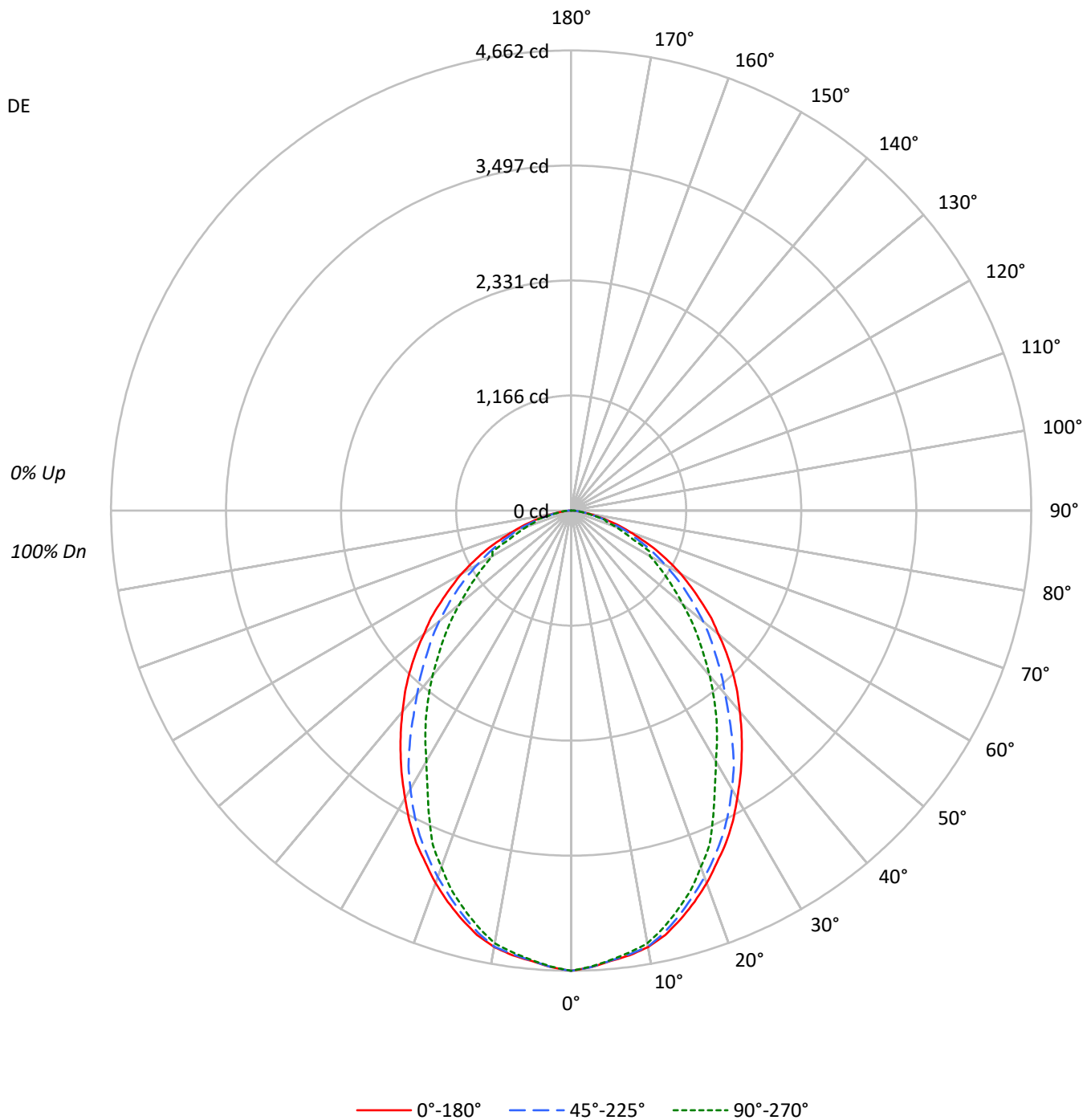
Lumens per Lamp: N/A  
Luminaire Lumens: 9153.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6273	6273	6273
5°	6188	6181	6173
10°	6134	6127	6083
15°	5969	5909	5826
20°	5750	5657	5503
25°	5513	5393	5057
30°	5226	5058	4556
35°	4949	4675	4214
40°	4667	4260	3834
45°	4400	3938	3467
50°	4073	3656	3091
55°	3768	3313	2769
60°	3452	2959	2480
65°	3037	2591	2196
70°	2502	2269	1866
75°	1989	1737	1822
80°	1337	1253	1169
85°	832	999	1166

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4400 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	434.0	4.7
10°-20°	1191.1	13.0
20°-30°	1649.0	18.0
30°-40°	1758.3	19.2
40°-50°	1604.1	17.5
50°-60°	1256.7	13.7
60°-70°	819.0	8.9
70°-80°	362.9	4.0
80°-90°	77.9	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°	3274.1	35.8
0°-40°	5032.4	55.0
0°-60°	7893.2	86.2
0°-90°	9153.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9153.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4662	4662	4662	4662	4662	
5°	4582	4576	4576	4571	4571	435
15°	4285	4285	4242	4199	4183	1205
25°	3714	3692	3633	3504	3406	1705
35°	3013	2992	2846	2630	2566	1884
45°	2312	2264	2070	1897	1822	1781
55°	1606	1558	1412	1245	1180	1441
65°	954	900	814	830	690	940
75°	383	356	334	318	350	410
85°	54	59	65	70	76	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4662.4	4662.4	4662.4	4662.4	4662.4
2.5°	4630.1	4630.1	4630.1	4624.7	4624.7
5°	4581.6	4576.2	4576.2	4570.8	4570.8
7.5°	4543.8	4538.4	4533.1	4527.7	4516.9
10°	4489.9	4489.9	4484.5	4457.6	4452.2
12.5°	4403.7	4398.3	4376.7	4339.0	4328.2
15°	4285.1	4285.1	4242.0	4198.9	4182.7
17.5°	4155.7	4150.4	4096.5	4053.3	4031.8
20°	4015.6	4004.8	3950.9	3880.9	3843.1
22.5°	3859.3	3859.3	3794.6	3703.0	3665.3
25°	3713.8	3692.2	3632.9	3503.5	3406.5
27.5°	3546.7	3514.3	3449.6	3266.4	3153.2
30°	3363.4	3347.2	3255.6	3018.4	2932.2
32.5°	3190.9	3164.0	3067.0	2819.0	2748.9
35°	3013.1	2991.5	2846.0	2630.4	2565.7
37.5°	2835.2	2808.2	2625.0	2452.5	2371.6
40°	2657.3	2625.0	2425.5	2269.2	2183.0
42.5°	2490.2	2447.1	2253.1	2086.0	1988.9
45°	2312.3	2263.8	2069.8	1897.3	1821.8
47.5°	2134.5	2091.3	1913.5	1735.6	1649.4
50°	1945.8	1908.1	1746.4	1568.5	1476.9
52.5°	1789.5	1730.2	1573.9	1396.0	1320.6
55°	1606.2	1557.7	1412.2	1245.1	1180.4
57.5°	1439.2	1390.6	1255.9	1099.6	1045.7
60°	1282.8	1212.8	1099.6	964.8	921.7
62.5°	1110.4	1056.5	959.4	846.2	900.1
65°	954.0	900.1	813.9	830.1	689.9
67.5°	781.6	754.6	679.1	603.7	582.1
70°	636.0	603.7	576.7	495.9	474.3
72.5°	506.7	474.3	436.6	393.5	377.3
75°	382.7	355.7	334.2	318.0	350.4
77.5°	264.1	253.3	237.2	221.0	215.6
80°	172.5	167.1	161.7	156.3	150.9
82.5°	102.4	102.4	102.4	102.4	102.4
85°	53.9	59.3	64.7	70.1	75.5
87.5°	32.3	32.3	37.7	43.1	48.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)