

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: P563399

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563399  
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-81-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

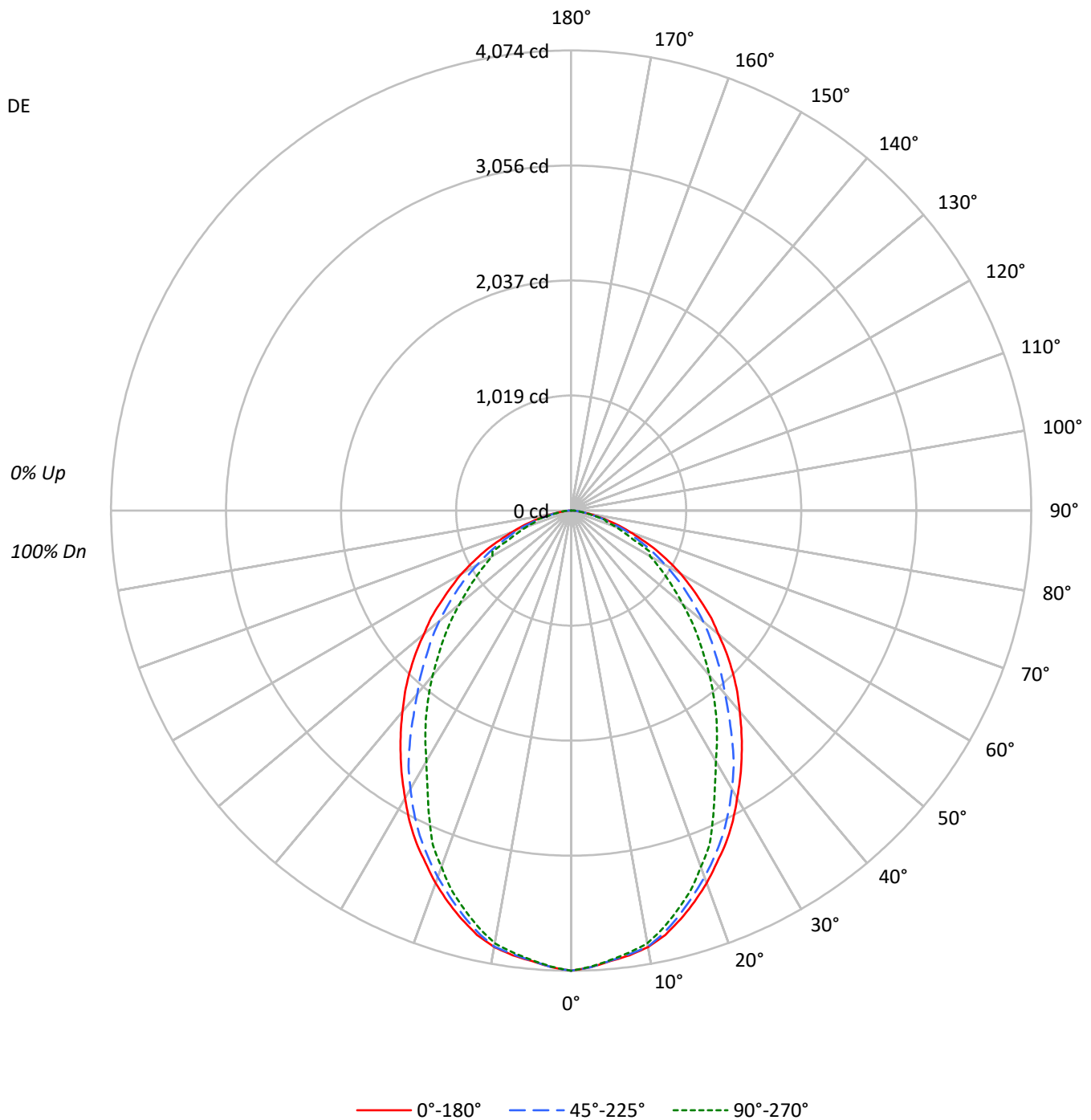
Lumens per Lamp: N/A  
Luminaire Lumens: 7998.0 lumens  
Efficiency: N/A  
Efficacy: 113.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5482	5482	5482
5°	5407	5401	5394
10°	5360	5354	5315
15°	5216	5163	5091
20°	5024	4943	4808
25°	4818	4713	4419
30°	4566	4420	3981
35°	4324	4085	3682
40°	4078	3723	3350
45°	3845	3441	3029
50°	3559	3194	2701
55°	3293	2895	2420
60°	3017	2585	2167
65°	2654	2264	1919
70°	2186	1983	1631
75°	1738	1518	1591
80°	1168	1095	1022
85°	727	872	1017

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3845 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	379.2	4.7
10°-20°	1040.8	13.0
20°-30°	1440.9	18.0
30°-40°	1536.4	19.2
40°-50°	1401.7	17.5
50°-60°	1098.1	13.7
60°-70°	715.7	8.9
70°-80°	317.1	4.0
80°-90°	68.1	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°	2861.0	35.8
0°-40°	4397.4	55.0
0°-60°	6897.2	86.2
0°-90°	7998.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7998.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4074	4074	4074	4074	4074	
5°	4003	3999	3999	3994	3994	380
15°	3744	3744	3707	3669	3655	1053
25°	3245	3226	3174	3061	2977	1490
35°	2633	2614	2487	2298	2242	1646
45°	2021	1978	1809	1658	1592	1556
55°	1404	1361	1234	1088	1032	1259
65°	834	787	711	725	603	822
75°	334	311	292	278	306	358
85°	47	52	56	61	66	65
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4074.1	4074.1	4074.1	4074.1	4074.1
2.5°	4045.8	4045.8	4045.8	4041.1	4041.1
5°	4003.4	3998.7	3998.7	3994.0	3994.0
7.5°	3970.5	3965.7	3961.0	3956.3	3946.9
10°	3923.4	3923.4	3918.6	3895.1	3890.4
12.5°	3848.0	3843.3	3824.4	3791.5	3782.1
15°	3744.4	3744.4	3706.7	3669.0	3654.9
17.5°	3631.3	3626.6	3579.5	3541.9	3523.0
20°	3508.9	3499.5	3452.4	3391.1	3358.2
22.5°	3372.3	3372.3	3315.8	3235.7	3202.7
25°	3245.1	3226.3	3174.5	3061.4	2976.7
27.5°	3099.1	3070.9	3014.3	2854.2	2755.3
30°	2939.0	2924.9	2844.8	2637.6	2562.2
32.5°	2788.3	2764.7	2679.9	2463.3	2402.1
35°	2632.8	2614.0	2486.8	2298.4	2241.9
37.5°	2477.4	2453.9	2293.7	2143.0	2072.4
40°	2322.0	2293.7	2119.5	1982.9	1907.5
42.5°	2176.0	2138.3	1968.7	1822.7	1738.0
45°	2020.6	1978.2	1808.6	1657.9	1592.0
47.5°	1865.1	1827.4	1672.0	1516.6	1441.2
50°	1700.3	1667.3	1526.0	1370.6	1290.5
52.5°	1563.7	1511.9	1375.3	1219.9	1153.9
55°	1403.6	1361.2	1234.0	1088.0	1031.5
57.5°	1257.5	1215.2	1097.4	960.8	913.7
60°	1121.0	1059.7	960.8	843.1	805.4
62.5°	970.2	923.1	838.4	739.5	786.6
65°	833.7	786.6	711.2	725.3	602.9
67.5°	682.9	659.4	593.4	527.5	508.7
70°	555.8	527.5	504.0	433.3	414.5
72.5°	442.7	414.5	381.5	343.8	329.7
75°	334.4	310.9	292.0	277.9	306.1
77.5°	230.8	221.4	207.2	193.1	188.4
80°	150.7	146.0	141.3	136.6	131.9
82.5°	89.5	89.5	89.5	89.5	89.5
85°	47.1	51.8	56.5	61.2	65.9
87.5°	28.3	28.3	33.0	37.7	42.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)