

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: P562561

Luminaire Tested: FSR-24-4-LD4-2HI-40-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562561  
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-LD4-2HI-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**

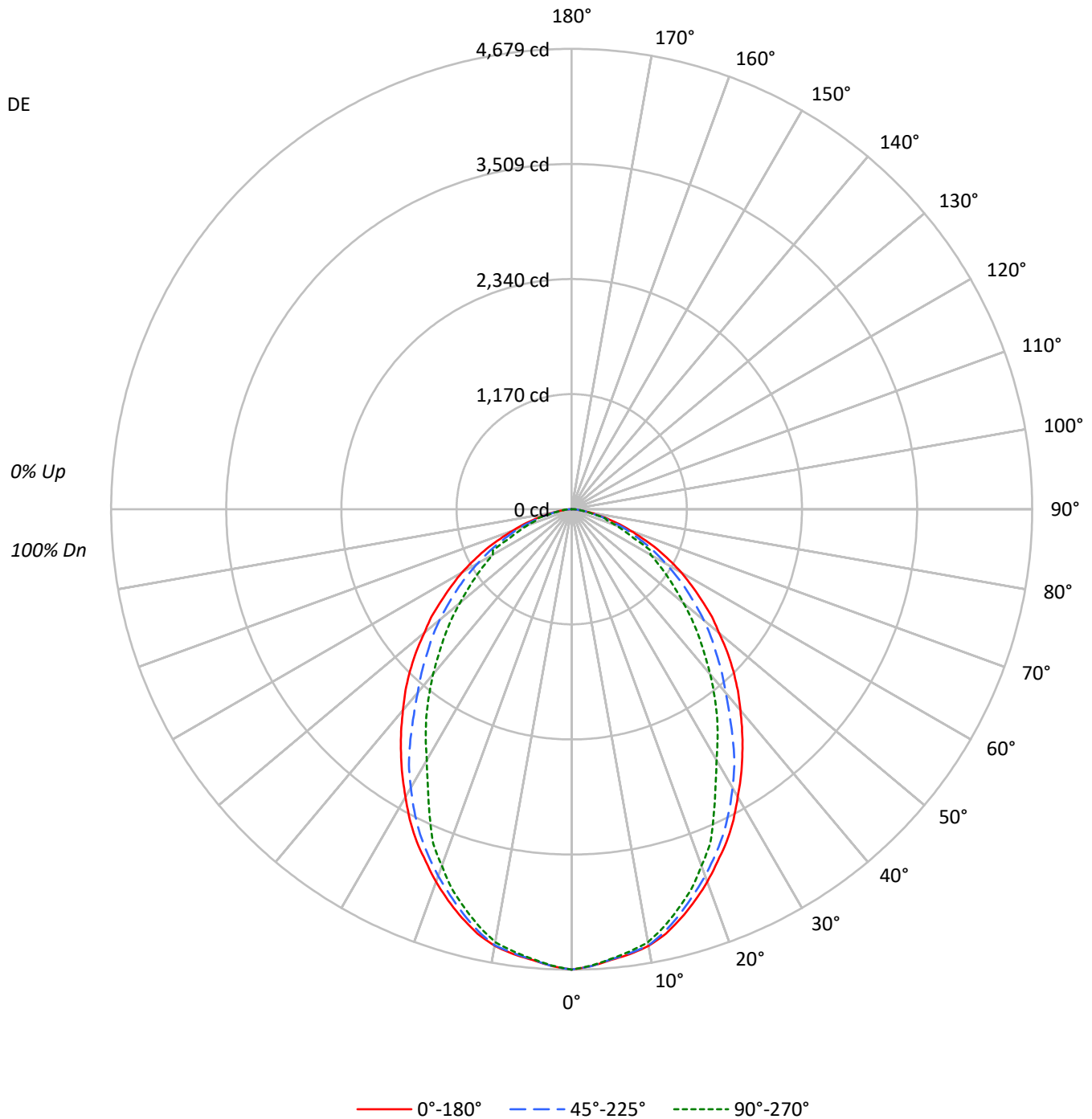
Lumens per Lamp: N/A  
Luminaire Lumens: 9185.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6295	6295	6295
5°	6210	6202	6195
10°	6156	6148	6104
15°	5990	5930	5847
20°	5770	5677	5522
25°	5533	5412	5075
30°	5244	5076	4572
35°	4966	4691	4229
40°	4684	4275	3848
45°	4415	3952	3479
50°	4087	3668	3102
55°	3781	3324	2779
60°	3464	2969	2489
65°	3048	2600	2204
70°	2511	2277	1873
75°	1996	1744	1828
80°	1341	1258	1173
85°	835	1002	1169

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4415 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	435.5	4.7
10°-20°	1195.3	13.0
20°-30°	1654.8	18.0
30°-40°	1764.5	19.2
40°-50°	1609.7	17.5
50°-60°	1261.1	13.7
60°-70°	821.9	8.9
70°-80°	364.1	4.0
80°-90°	78.2	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°	3285.5	35.8
0°-40°	5050.0	55.0
0°-60°	7920.8	86.2
0°-90°	9185.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9185.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4679	4679	4679	4679	4679	
5°	4598	4592	4592	4587	4587	436
15°	4300	4300	4257	4214	4197	1209
25°	3727	3705	3646	3516	3418	1711
35°	3024	3002	2856	2640	2575	1890
45°	2320	2272	2077	1904	1828	1787
55°	1612	1563	1417	1250	1185	1446
65°	957	903	817	833	692	943
75°	384	357	335	319	352	412
85°	54	60	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°	4678.7	4678.7	4678.7	4678.7	4678.7
2.5°	4646.3	4646.3	4646.3	4640.9	4640.9
5°	4597.6	4592.2	4592.2	4586.8	4586.8
7.5°	4559.7	4554.3	4548.9	4543.5	4532.7
10°	4505.6	4505.6	4500.2	4473.2	4467.8
12.5°	4419.1	4413.7	4392.0	4354.2	4343.4
15°	4300.1	4300.1	4256.8	4213.5	4197.3
17.5°	4170.3	4164.9	4110.8	4067.5	4045.9
20°	4029.6	4018.8	3964.7	3894.4	3856.6
22.5°	3872.8	3872.8	3807.9	3715.9	3678.1
25°	3726.7	3705.1	3645.6	3515.8	3418.4
27.5°	3559.1	3526.6	3461.7	3277.8	3164.2
30°	3375.2	3358.9	3267.0	3029.0	2942.5
32.5°	3202.1	3175.0	3077.7	2828.9	2758.5
35°	3023.6	3002.0	2855.9	2639.6	2574.6
37.5°	2845.1	2818.0	2634.1	2461.1	2379.9
40°	2666.6	2634.1	2434.0	2277.2	2190.6
42.5°	2498.9	2455.6	2260.9	2093.3	1995.9
45°	2320.4	2271.7	2077.0	1903.9	1828.2
47.5°	2141.9	2098.7	1920.2	1741.7	1655.1
50°	1952.6	1914.8	1752.5	1574.0	1482.0
52.5°	1795.8	1736.3	1579.4	1400.9	1325.2
55°	1611.9	1563.2	1417.1	1249.5	1184.6
57.5°	1444.2	1395.5	1260.3	1103.4	1049.3
60°	1287.3	1217.0	1103.4	968.2	924.9
62.5°	1114.2	1060.1	962.8	849.2	903.3
65°	957.4	903.3	816.7	833.0	692.3
67.5°	784.3	757.2	681.5	605.8	584.2
70°	638.3	605.8	578.8	497.6	476.0
72.5°	508.4	476.0	438.1	394.9	378.6
75°	384.0	357.0	335.4	319.1	351.6
77.5°	265.0	254.2	238.0	221.8	216.4
80°	173.1	167.7	162.3	156.9	151.4
82.5°	102.8	102.8	102.8	102.8	102.8
85°	54.1	59.5	64.9	70.3	75.7
87.5°	32.5	32.5	37.9	43.3	48.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)