

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: P563705

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563705  
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-80-88-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

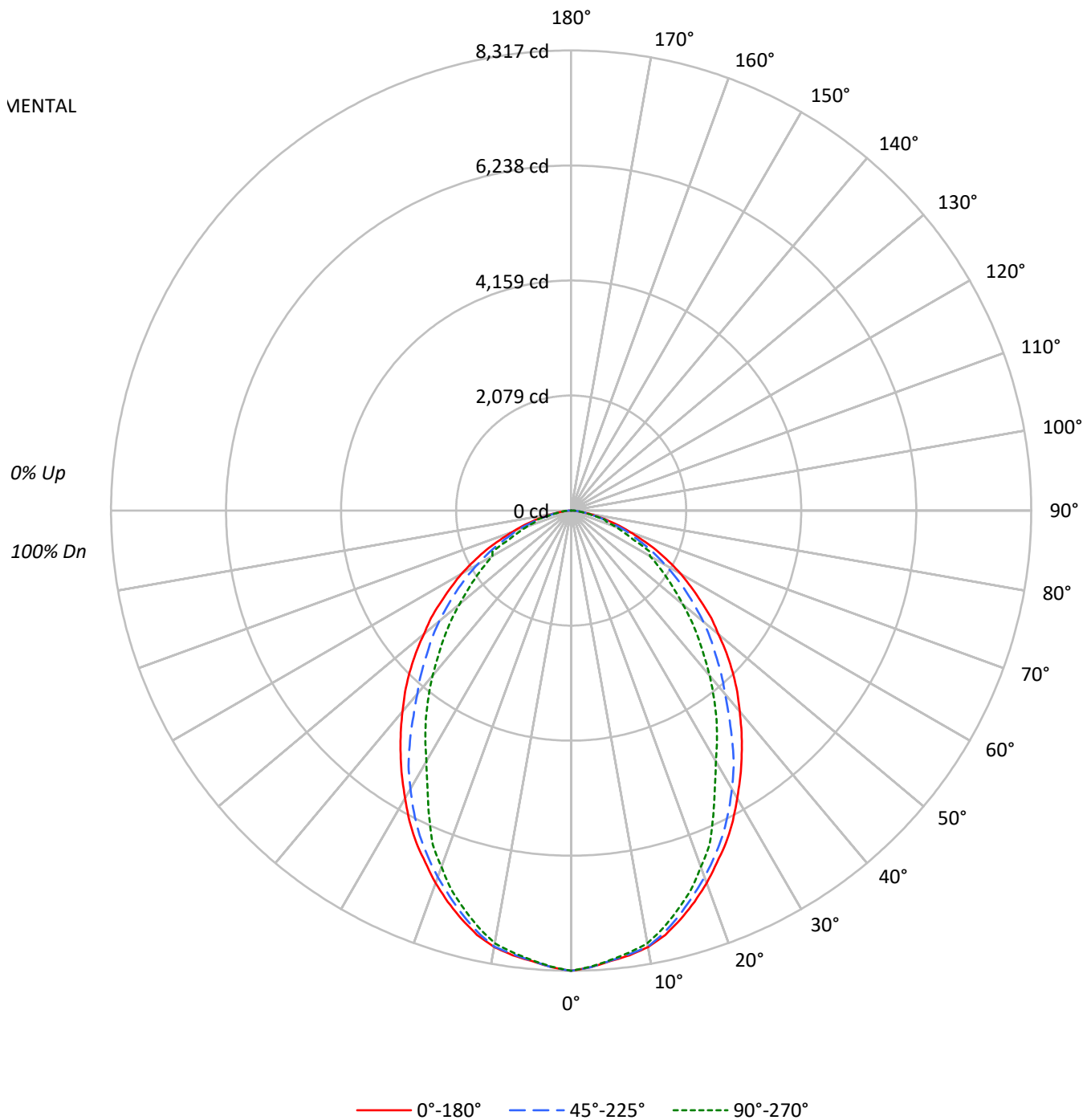
Lumens per Lamp: N/A  
Luminaire Lumens: 16328.0 lumens  
Efficiency: N/A  
Efficacy: 94.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	11191	11191	11191
5°	11039	11026	11013
10°	10943	10930	10851
15°	10648	10541	10394
20°	10257	10092	9816
25°	9835	9621	9022
30°	9322	9023	8127
35°	8829	8339	7518
40°	8326	7600	6840
45°	7849	7026	6184
50°	7266	6521	5515
55°	6722	5910	4940
60°	6158	5278	4425
65°	5418	4622	3918
70°	4463	4047	3329
75°	3549	3099	3249
80°	2384	2235	2086
85°	1485	1782	2078

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7849 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	774.2	4.7
10°-20°	2124.8	13.0
20°-30°	2941.6	18.0
30°-40°	3136.6	19.2
40°-50°	2861.5	17.5
50°-60°	2241.8	13.7
60°-70°	1461.1	8.9
70°-80°	647.3	4.0
80°-90°	139.0	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°	5840.7	35.8
0°-40°	8977.3	55.0
0°-60°	14080.6	86.2
0°-90°	16328.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16328.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8317	8317	8317	8317	8317	
5°	8173	8163	8163	8154	8154	776
15°	7644	7644	7567	7490	7462	2149
25°	6625	6586	6481	6250	6077	3042
35°	5375	5336	5077	4692	4577	3360
45°	4125	4038	3692	3385	3250	3177
55°	2865	2779	2519	2221	2106	2570
65°	1702	1606	1452	1481	1231	1677
75°	683	635	596	567	625	732
85°	96	106	115	125	135	133
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8317.3	8317.3	8317.3	8317.3	8317.3
2.5°	8259.6	8259.6	8259.6	8250.0	8250.0
5°	8173.0	8163.4	8163.4	8153.8	8153.8
7.5°	8105.7	8096.1	8086.5	8076.9	8057.7
10°	8009.6	8009.6	8000.0	7951.9	7942.3
12.5°	7855.7	7846.1	7807.7	7740.3	7721.1
15°	7644.2	7644.2	7567.3	7490.3	7461.5
17.5°	7413.4	7403.8	7307.7	7230.7	7192.3
20°	7163.4	7144.2	7048.0	6923.0	6855.7
22.5°	6884.6	6884.6	6769.2	6605.7	6538.4
25°	6625.0	6586.5	6480.7	6250.0	6076.9
27.5°	6326.9	6269.2	6153.8	5826.9	5625.0
30°	6000.0	5971.1	5807.7	5384.6	5230.7
32.5°	5692.3	5644.2	5471.1	5028.8	4903.8
35°	5375.0	5336.5	5076.9	4692.3	4576.9
37.5°	5057.7	5009.6	4682.7	4375.0	4230.7
40°	4740.4	4682.7	4326.9	4048.1	3894.2
42.5°	4442.3	4365.4	4019.2	3721.1	3548.1
45°	4125.0	4038.4	3692.3	3384.6	3250.0
47.5°	3807.7	3730.8	3413.4	3096.1	2942.3
50°	3471.1	3403.8	3115.4	2798.1	2634.6
52.5°	3192.3	3086.5	2807.7	2490.4	2355.8
55°	2865.4	2778.8	2519.2	2221.1	2105.8
57.5°	2567.3	2480.8	2240.4	1961.5	1865.4
60°	2288.4	2163.5	1961.5	1721.1	1644.2
62.5°	1980.8	1884.6	1711.5	1509.6	1605.8
65°	1701.9	1605.8	1451.9	1480.8	1230.8
67.5°	1394.2	1346.1	1211.5	1076.9	1038.5
70°	1134.6	1076.9	1028.8	884.6	846.1
72.5°	903.8	846.1	778.8	701.9	673.1
75°	682.7	634.6	596.2	567.3	625.0
77.5°	471.2	451.9	423.1	394.2	384.6
80°	307.7	298.1	288.5	278.8	269.2
82.5°	182.7	182.7	182.7	182.7	182.7
85°	96.2	105.8	115.4	125.0	134.6
87.5°	57.7	57.7	67.3	76.9	86.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)