

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: P562666

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562666  
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-50-UNV-93-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

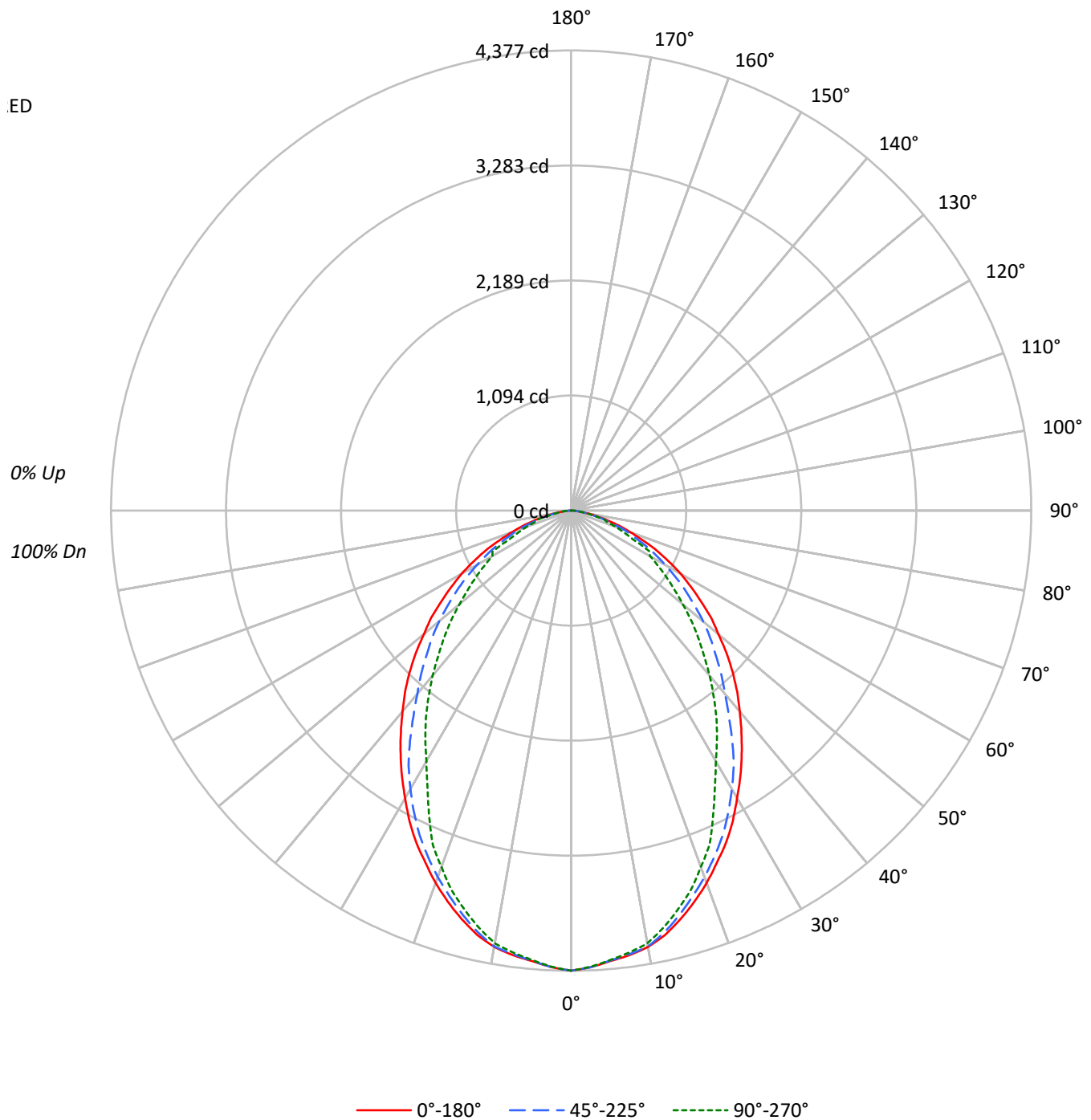
Lumens per Lamp: N/A  
Luminaire Lumens: 8592.0 lumens  
Efficiency: N/A  
Efficacy: 99.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5889	5889	5889
5°	5809	5802	5795
10°	5758	5751	5710
15°	5603	5547	5469
20°	5397	5310	5166
25°	5175	5063	4747
30°	4905	4748	4276
35°	4646	4388	3956
40°	4381	3999	3599
45°	4130	3697	3254
50°	3823	3431	2902
55°	3537	3110	2599
60°	3240	2778	2328
65°	2851	2432	2062
70°	2349	2130	1752
75°	1867	1631	1710
80°	1254	1176	1098
85°	781	937	1093

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4130 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	407.4	4.7
10°-20°	1118.1	13.0
20°-30°	1547.9	18.0
30°-40°	1650.5	19.2
40°-50°	1505.8	17.5
50°-60°	1179.7	13.7
60°-70°	768.8	8.9
70°-80°	340.6	4.0
80°-90°	73.1	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°	3073.4	35.8
0°-40°	4724.0	55.0
0°-60°	7409.4	86.2
0°-90°	8592.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8592.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4377	4377	4377	4377	4377	
5°	4301	4296	4296	4291	4291	408
15°	4022	4022	3982	3942	3926	1131
25°	3486	3466	3410	3289	3198	1600
35°	2828	2808	2672	2469	2408	1768
45°	2171	2125	1943	1781	1710	1672
55°	1508	1462	1326	1169	1108	1352
65°	896	845	764	779	648	883
75°	359	334	314	298	329	385
85°	51	56	61	66	71	70
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4376.7	4376.7	4376.7	4376.7	4376.7
2.5°	4346.3	4346.3	4346.3	4341.2	4341.2
5°	4300.8	4295.7	4295.7	4290.6	4290.6
7.5°	4265.3	4260.3	4255.2	4250.2	4240.0
10°	4214.7	4214.7	4209.7	4184.4	4179.3
12.5°	4133.8	4128.7	4108.5	4073.1	4062.9
15°	4022.5	4022.5	3982.0	3941.5	3926.3
17.5°	3901.0	3896.0	3845.4	3804.9	3784.7
20°	3769.5	3759.4	3708.8	3643.0	3607.6
22.5°	3622.8	3622.8	3562.0	3476.0	3440.6
25°	3486.1	3465.9	3410.2	3288.8	3197.7
27.5°	3329.3	3298.9	3238.2	3066.2	2959.9
30°	3157.3	3142.1	3056.1	2833.4	2752.5
32.5°	2995.3	2970.1	2879.0	2646.2	2580.5
35°	2828.4	2808.1	2671.5	2469.1	2408.4
37.5°	2661.4	2636.1	2464.1	2302.2	2226.3
40°	2494.4	2464.1	2276.9	2130.1	2049.2
42.5°	2337.6	2297.1	2115.0	1958.1	1867.0
45°	2170.6	2125.1	1942.9	1781.0	1710.2
47.5°	2003.6	1963.2	1796.2	1629.2	1548.3
50°	1826.6	1791.1	1639.3	1472.4	1386.4
52.5°	1679.8	1624.2	1477.4	1310.5	1239.6
55°	1507.8	1462.3	1325.6	1168.8	1108.1
57.5°	1350.9	1305.4	1178.9	1032.2	981.6
60°	1204.2	1138.4	1032.2	905.7	865.2
62.5°	1042.3	991.7	900.6	794.4	845.0
65°	895.6	845.0	764.0	779.2	647.6
67.5°	733.7	708.4	637.5	566.7	546.4
70°	597.0	566.7	541.4	465.5	445.3
72.5°	475.6	445.3	409.8	369.4	354.2
75°	359.2	333.9	313.7	298.5	328.9
77.5°	247.9	237.8	222.6	207.4	202.4
80°	161.9	156.9	151.8	146.7	141.7
82.5°	96.1	96.1	96.1	96.1	96.1
85°	50.6	55.7	60.7	65.8	70.8
87.5°	30.4	30.4	35.4	40.5	45.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)