

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: P563710

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563710  
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-80-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

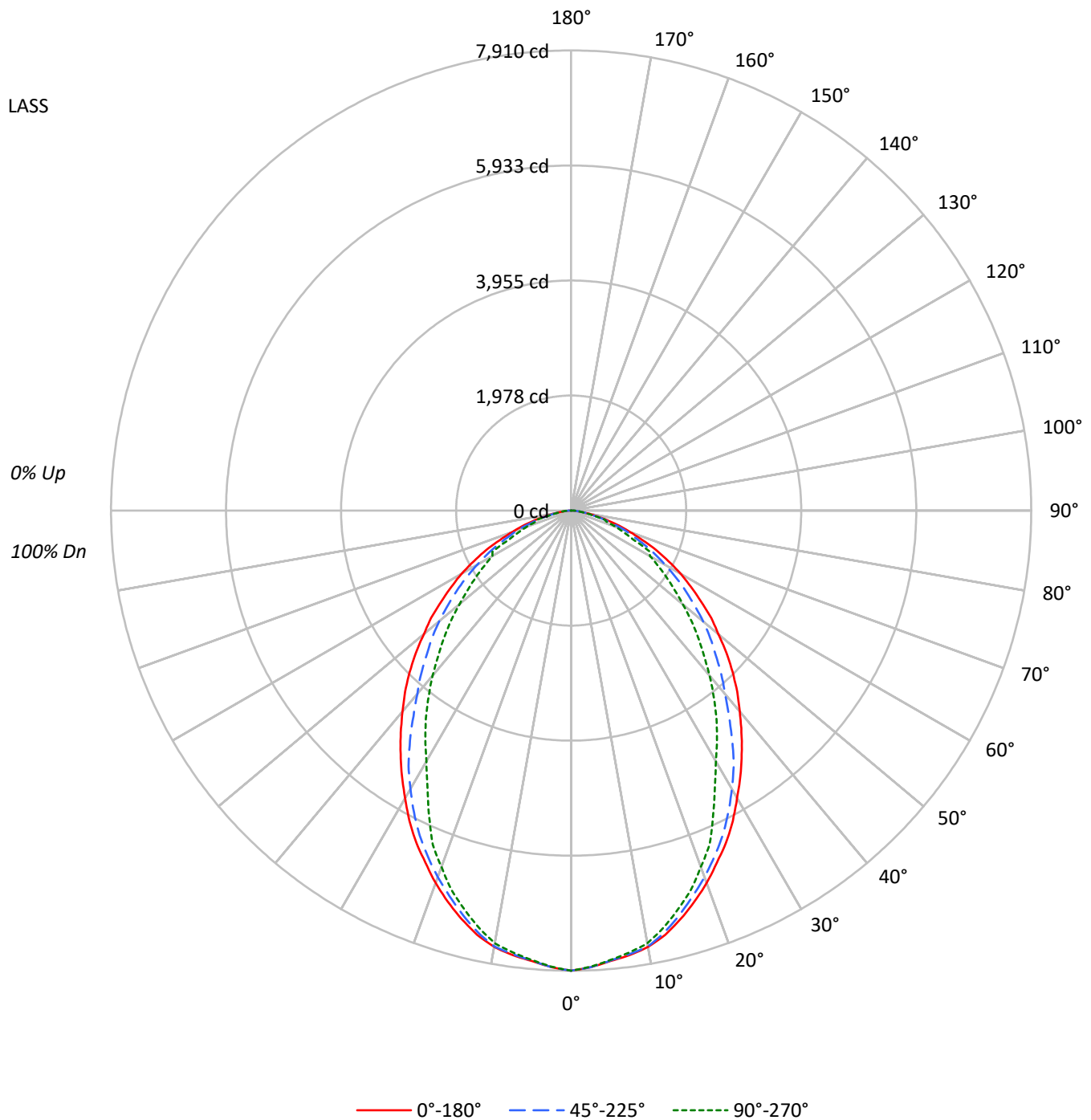
Lumens per Lamp: N/A  
Luminaire Lumens: 15528.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	10643	10643	10643
5°	10498	10485	10473
10°	10407	10394	10319
15°	10126	10024	9884
20°	9754	9597	9335
25°	9353	9150	8580
30°	8865	8581	7729
35°	8396	7931	7149
40°	7918	7227	6505
45°	7465	6682	5881
50°	6910	6202	5245
55°	6392	5620	4698
60°	5856	5020	4208
65°	5153	4396	3727
70°	4245	3849	3166
75°	3375	2947	3090
80°	2267	2125	1984
85°	1411	1694	1976

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7465 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	736.3	4.7
10°-20°	2020.7	13.0
20°-30°	2797.5	18.0
30°-40°	2983.0	19.2
40°-50°	2721.3	17.5
50°-60°	2131.9	13.7
60°-70°	1389.5	8.9
70°-80°	615.6	4.0
80°-90°	132.2	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°	5554.5	35.8
0°-40°	8537.5	55.0
0°-60°	13390.7	86.2
0°-90°	15528.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15528.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7910	7910	7910	7910	7910	
5°	7773	7763	7763	7754	7754	738
15°	7270	7270	7196	7123	7096	2044
25°	6300	6264	6163	5944	5779	2892
35°	5112	5075	4828	4462	4353	3196
45°	3923	3841	3511	3219	3091	3022
55°	2725	2643	2396	2112	2003	2444
65°	1618	1527	1381	1408	1170	1595
75°	649	604	567	540	594	696
85°	91	101	110	119	128	127
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7909.8	7909.8	7909.8	7909.8	7909.8
2.5°	7854.9	7854.9	7854.9	7845.7	7845.7
5°	7772.6	7763.4	7763.4	7754.3	7754.3
7.5°	7708.6	7699.4	7690.3	7681.2	7662.9
10°	7617.1	7617.1	7608.0	7562.3	7553.1
12.5°	7470.8	7461.7	7425.1	7361.1	7342.8
15°	7269.7	7269.7	7196.5	7123.4	7095.9
17.5°	7050.2	7041.1	6949.6	6876.5	6839.9
20°	6812.4	6794.2	6702.7	6583.8	6519.8
22.5°	6547.3	6547.3	6437.5	6282.1	6218.1
25°	6300.4	6263.8	6163.2	5943.7	5779.2
27.5°	6016.9	5962.0	5852.3	5541.4	5349.4
30°	5706.0	5678.6	5523.1	5120.8	4974.5
32.5°	5413.4	5367.7	5203.1	4782.4	4663.6
35°	5111.6	5075.0	4828.2	4462.4	4352.7
37.5°	4809.9	4764.1	4453.2	4160.6	4023.5
40°	4508.1	4453.2	4114.9	3849.7	3703.4
42.5°	4224.6	4151.5	3822.3	3538.8	3374.2
45°	3922.9	3840.6	3511.4	3218.8	3090.7
47.5°	3621.1	3548.0	3246.2	2944.4	2798.1
50°	3301.1	3237.1	2962.7	2661.0	2505.5
52.5°	3035.9	2935.3	2670.1	2368.4	2240.3
55°	2725.0	2642.7	2395.8	2112.3	2002.6
57.5°	2441.5	2359.2	2130.6	1865.4	1774.0
60°	2176.3	2057.5	1865.4	1636.8	1563.7
62.5°	1883.7	1792.3	1627.7	1435.6	1527.1
65°	1618.5	1527.1	1380.8	1408.2	1170.5
67.5°	1325.9	1280.2	1152.2	1024.2	987.6
70°	1079.0	1024.2	978.4	841.3	804.7
72.5°	859.6	804.7	740.7	667.5	640.1
75°	649.2	603.5	566.9	539.5	594.4
77.5°	448.1	429.8	402.3	374.9	365.8
80°	292.6	283.5	274.3	265.2	256.0
82.5°	173.7	173.7	173.7	173.7	173.7
85°	91.4	100.6	109.7	118.9	128.0
87.5°	54.9	54.9	64.0	73.2	82.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)