

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: P563172

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563172  
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-LD4-3HI-40-UNV-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

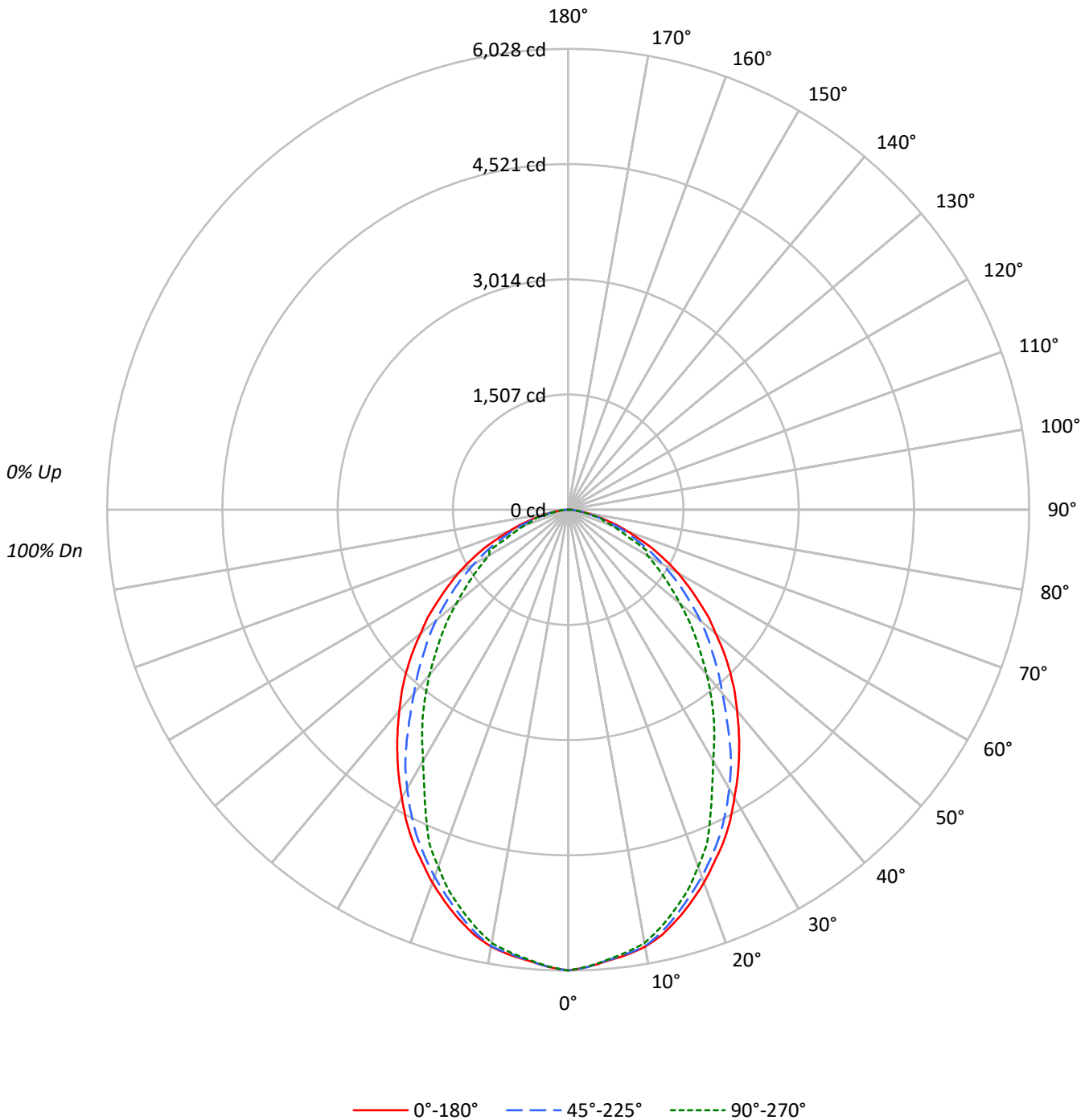
Lumens per Lamp: N/A  
Luminaire Lumens: 11833.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8110	8110	8110
5°	8000	7990	7981
10°	7931	7921	7864
15°	7717	7639	7532
20°	7433	7314	7114
25°	7128	6972	6538
30°	6756	6539	5890
35°	6398	6043	5448
40°	6034	5508	4957
45°	5688	5092	4482
50°	5266	4726	3997
55°	4871	4283	3580
60°	4463	3825	3207
65°	3927	3350	2840
70°	3235	2933	2412
75°	2572	2246	2354
80°	1728	1619	1512
85°	1076	1291	1507

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5688 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	561.1	4.7
10°-20°	1539.9	13.0
20°-30°	2131.8	18.0
30°-40°	2273.1	19.2
40°-50°	2073.8	17.5
50°-60°	1624.6	13.7
60°-70°	1058.9	8.9
70°-80°	469.1	4.0
80°-90°	100.7	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°	4232.8	35.8
0°-40°	6505.9	55.0
0°-60°	10204.3	86.2
0°-90°	11833.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11833.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6028	6028	6028	6028	6028	
5°	5923	5916	5916	5909	5909	562
15°	5540	5540	5484	5428	5407	1557
25°	4801	4773	4697	4529	4404	2204
35°	3895	3867	3679	3400	3317	2435
45°	2989	2927	2676	2453	2355	2303
55°	2077	2014	1826	1610	1526	1863
65°	1233	1164	1052	1073	892	1216
75°	495	460	432	411	453	530
85°	70	77	84	91	98	97
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6027.6	6027.6	6027.6	6027.6	6027.6
2.5°	5985.8	5985.8	5985.8	5978.8	5978.8
5°	5923.0	5916.1	5916.1	5909.1	5909.1
7.5°	5874.3	5867.3	5860.3	5853.4	5839.4
10°	5804.6	5804.6	5797.6	5762.8	5755.8
12.5°	5693.1	5686.1	5658.3	5609.5	5595.5
15°	5539.8	5539.8	5484.0	5428.3	5407.4
17.5°	5372.6	5365.6	5295.9	5240.2	5212.3
20°	5191.4	5177.4	5107.8	5017.2	4968.4
22.5°	4989.3	4989.3	4905.7	4787.2	4738.4
25°	4801.2	4773.3	4696.6	4529.4	4404.0
27.5°	4585.1	4543.3	4459.7	4222.8	4076.5
30°	4348.2	4327.3	4208.8	3902.2	3790.8
32.5°	4125.2	4090.4	3965.0	3644.4	3553.8
35°	3895.3	3867.4	3679.3	3400.5	3316.9
37.5°	3665.3	3630.5	3393.6	3170.6	3066.0
40°	3435.4	3393.6	3135.7	2933.7	2822.2
42.5°	3219.4	3163.6	2912.7	2696.7	2571.3
45°	2989.4	2926.7	2675.8	2452.8	2355.3
47.5°	2759.4	2703.7	2473.7	2243.8	2132.3
50°	2515.6	2466.8	2257.7	2027.8	1909.3
52.5°	2313.5	2236.8	2034.7	1804.8	1707.2
55°	2076.6	2013.8	1825.7	1609.7	1526.1
57.5°	1860.5	1797.8	1623.6	1421.5	1351.8
60°	1658.5	1567.9	1421.5	1247.3	1191.6
62.5°	1435.5	1365.8	1240.4	1094.0	1163.7
65°	1233.4	1163.7	1052.2	1073.1	891.9
67.5°	1010.4	975.6	878.0	780.4	752.6
70°	822.3	780.4	745.6	641.1	613.2
72.5°	655.0	613.2	564.4	508.7	487.8
75°	494.7	459.9	432.0	411.1	452.9
77.5°	341.4	327.5	306.6	285.7	278.7
80°	223.0	216.0	209.0	202.1	195.1
82.5°	132.4	132.4	132.4	132.4	132.4
85°	69.7	76.7	83.6	90.6	97.6
87.5°	41.8	41.8	48.8	55.7	62.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)