

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: P563401

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563401  
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-LD4-3LO-50-UNV-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

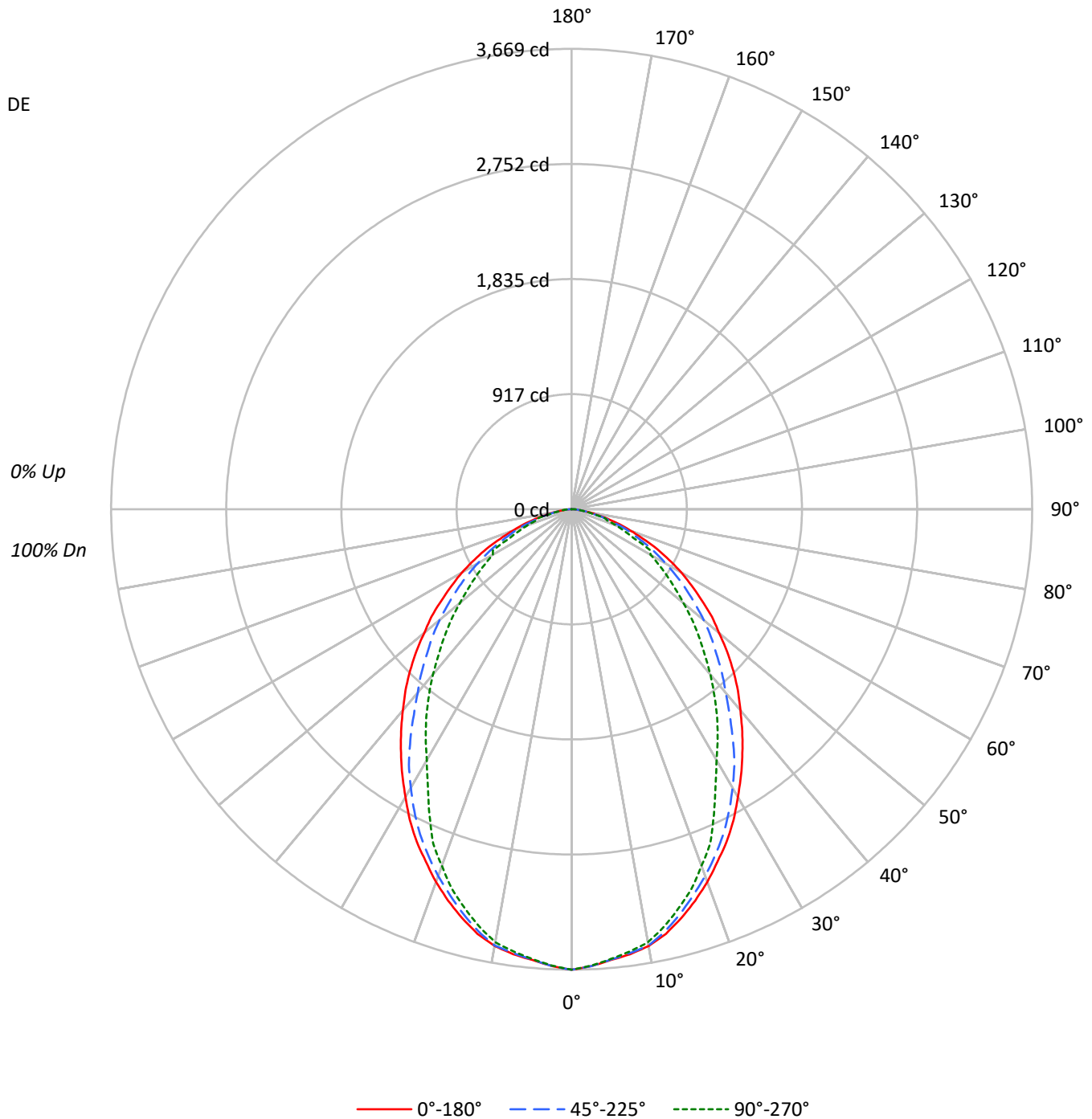
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7203.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 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): 70.2  
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°	4937	4937	4937
5°	4870	4864	4858
10°	4827	4822	4787
15°	4697	4650	4585
20°	4525	4452	4330
25°	4339	4244	3980
30°	4112	3980	3585
35°	3895	3679	3316
40°	3673	3353	3017
45°	3463	3099	2728
50°	3205	2877	2433
55°	2965	2607	2179
60°	2717	2329	1952
65°	2390	2039	1728
70°	1969	1786	1469
75°	1566	1367	1433
80°	1051	986	921
85°	655	786	917

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3463 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	341.5	4.7
10°-20°	937.3	13.0
20°-30°	1297.7	18.0
30°-40°	1383.7	19.2
40°-50°	1262.3	17.5
50°-60°	988.9	13.7
60°-70°	644.6	8.9
70°-80°	285.6	4.0
80°-90°	61.3	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°	2576.6	35.8
0°-40°	3960.3	55.0
0°-60°	6211.6	86.2
0°-90°	7203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7203.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3669	3669	3669	3669	3669	
5°	3606	3601	3601	3597	3597	342
15°	3372	3372	3338	3304	3292	948
25°	2923	2906	2859	2757	2681	1342
35°	2371	2354	2240	2070	2019	1482
45°	1820	1782	1629	1493	1434	1402
55°	1264	1226	1111	980	929	1134
65°	751	708	640	653	543	740
75°	301	280	263	250	276	323
85°	42	47	51	55	59	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3669.1	3669.1	3669.1	3669.1	3669.1
2.5°	3643.7	3643.7	3643.7	3639.4	3639.4
5°	3605.5	3601.2	3601.2	3597.0	3597.0
7.5°	3575.8	3571.6	3567.3	3563.1	3554.6
10°	3533.4	3533.4	3529.1	3507.9	3503.7
12.5°	3465.5	3461.3	3444.3	3414.6	3406.1
15°	3372.2	3372.2	3338.3	3304.3	3291.6
17.5°	3270.4	3266.1	3223.7	3189.8	3172.8
20°	3160.1	3151.6	3109.2	3054.1	3024.4
22.5°	3037.1	3037.1	2986.2	2914.1	2884.4
25°	2922.6	2905.6	2858.9	2757.1	2680.8
27.5°	2791.1	2765.6	2714.7	2570.5	2481.4
30°	2646.9	2634.1	2562.0	2375.4	2307.5
32.5°	2511.1	2489.9	2413.6	2218.4	2163.3
35°	2371.1	2354.2	2239.6	2070.0	2019.1
37.5°	2231.2	2210.0	2065.7	1930.0	1866.4
40°	2091.2	2065.7	1908.8	1785.8	1717.9
42.5°	1959.7	1925.8	1773.1	1641.6	1565.2
45°	1819.7	1781.5	1628.8	1493.1	1433.7
47.5°	1679.7	1645.8	1505.8	1365.8	1298.0
50°	1531.3	1501.6	1374.3	1234.3	1162.2
52.5°	1408.3	1361.6	1238.6	1098.6	1039.2
55°	1264.0	1225.9	1111.3	979.8	928.9
57.5°	1132.5	1094.4	988.3	865.3	822.9
60°	1009.5	954.4	865.3	759.3	725.3
62.5°	873.8	831.4	755.0	666.0	708.4
65°	750.8	708.4	640.5	653.2	542.9
67.5°	615.1	593.8	534.5	475.1	458.1
70°	500.5	475.1	453.9	390.2	373.3
72.5°	398.7	373.3	343.6	309.6	296.9
75°	301.2	280.0	263.0	250.3	275.7
77.5°	207.8	199.4	186.6	173.9	169.7
80°	135.7	131.5	127.3	123.0	118.8
82.5°	80.6	80.6	80.6	80.6	80.6
85°	42.4	46.7	50.9	55.1	59.4
87.5°	25.5	25.5	29.7	33.9	38.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)