

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: P563364

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563364  
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-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**

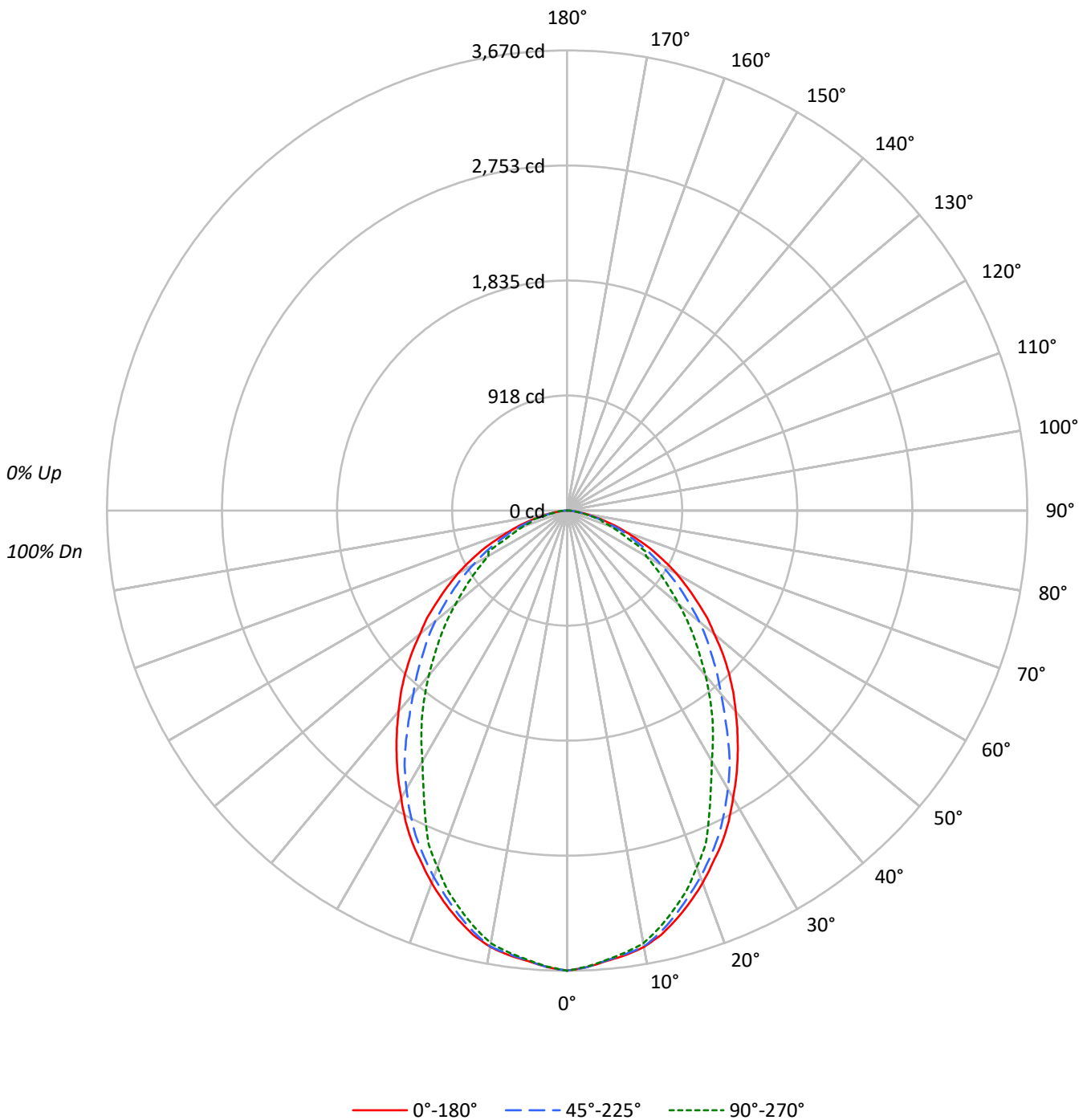
Lumens per Lamp: N/A  
Luminaire Lumens: 7204.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4937	4937	4937
5°	4870	4865	4859
10°	4828	4822	4788
15°	4698	4651	4586
20°	4525	4452	4331
25°	4339	4245	3980
30°	4113	3981	3585
35°	3895	3679	3317
40°	3674	3353	3018
45°	3463	3100	2728
50°	3206	2877	2433
55°	2966	2607	2179
60°	2717	2329	1952
65°	2391	2039	1729
70°	1969	1786	1469
75°	1566	1367	1434
80°	1052	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°	341.6	4.7
10°-20°	937.5	13.0
20°-30°	1297.9	18.0
30°-40°	1383.9	19.2
40°-50°	1262.5	17.5
50°-60°	989.1	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°	2576.9	35.8
0°-40°	3960.8	55.0
0°-60°	6212.5	86.2
0°-90°	7204.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7204.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3670	3670	3670	3670	3670	
5°	3606	3602	3602	3598	3598	342
15°	3373	3373	3339	3305	3292	948
25°	2923	2906	2859	2758	2681	1342
35°	2372	2354	2240	2070	2019	1483
45°	1820	1782	1629	1493	1434	1402
55°	1264	1226	1112	980	929	1134
65°	751	708	641	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°	3669.6	3669.6	3669.6	3669.6	3669.6
2.5°	3644.2	3644.2	3644.2	3639.9	3639.9
5°	3606.0	3601.7	3601.7	3597.5	3597.5
7.5°	3576.3	3572.0	3567.8	3563.6	3555.1
10°	3533.9	3533.9	3529.6	3508.4	3504.2
12.5°	3466.0	3461.7	3444.8	3415.1	3406.6
15°	3372.7	3372.7	3338.7	3304.8	3292.1
17.5°	3270.8	3266.6	3224.2	3190.2	3173.3
20°	3160.5	3152.1	3109.6	3054.5	3024.8
22.5°	3037.5	3037.5	2986.6	2914.5	2884.8
25°	2923.0	2906.0	2859.3	2757.5	2681.2
27.5°	2791.5	2766.0	2715.1	2570.9	2481.8
30°	2647.2	2634.5	2562.4	2375.7	2307.8
32.5°	2511.5	2490.3	2413.9	2218.7	2163.6
35°	2371.5	2354.5	2240.0	2070.3	2019.4
37.5°	2231.5	2210.3	2066.0	1930.3	1866.6
40°	2091.5	2066.0	1909.1	1786.0	1718.1
42.5°	1960.0	1926.0	1773.3	1641.8	1565.4
45°	1820.0	1781.8	1629.1	1493.3	1433.9
47.5°	1680.0	1646.0	1506.0	1366.0	1298.2
50°	1531.5	1501.8	1374.5	1234.5	1162.4
52.5°	1408.5	1361.8	1238.8	1098.8	1039.4
55°	1264.2	1226.0	1111.5	980.0	929.1
57.5°	1132.7	1094.5	988.5	865.4	823.0
60°	1009.7	954.5	865.4	759.4	725.4
62.5°	873.9	831.5	755.1	666.0	708.5
65°	750.9	708.5	640.6	653.3	543.0
67.5°	615.1	593.9	534.5	475.1	458.2
70°	500.6	475.1	453.9	390.3	373.3
72.5°	398.8	373.3	343.6	309.7	297.0
75°	301.2	280.0	263.0	250.3	275.8
77.5°	207.9	199.4	186.7	173.9	169.7
80°	135.8	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	55.2	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)