

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: P562989

Luminaire Tested: FSR-24-4-LD4-2STD-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562989  
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-LD4-2STD-40-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

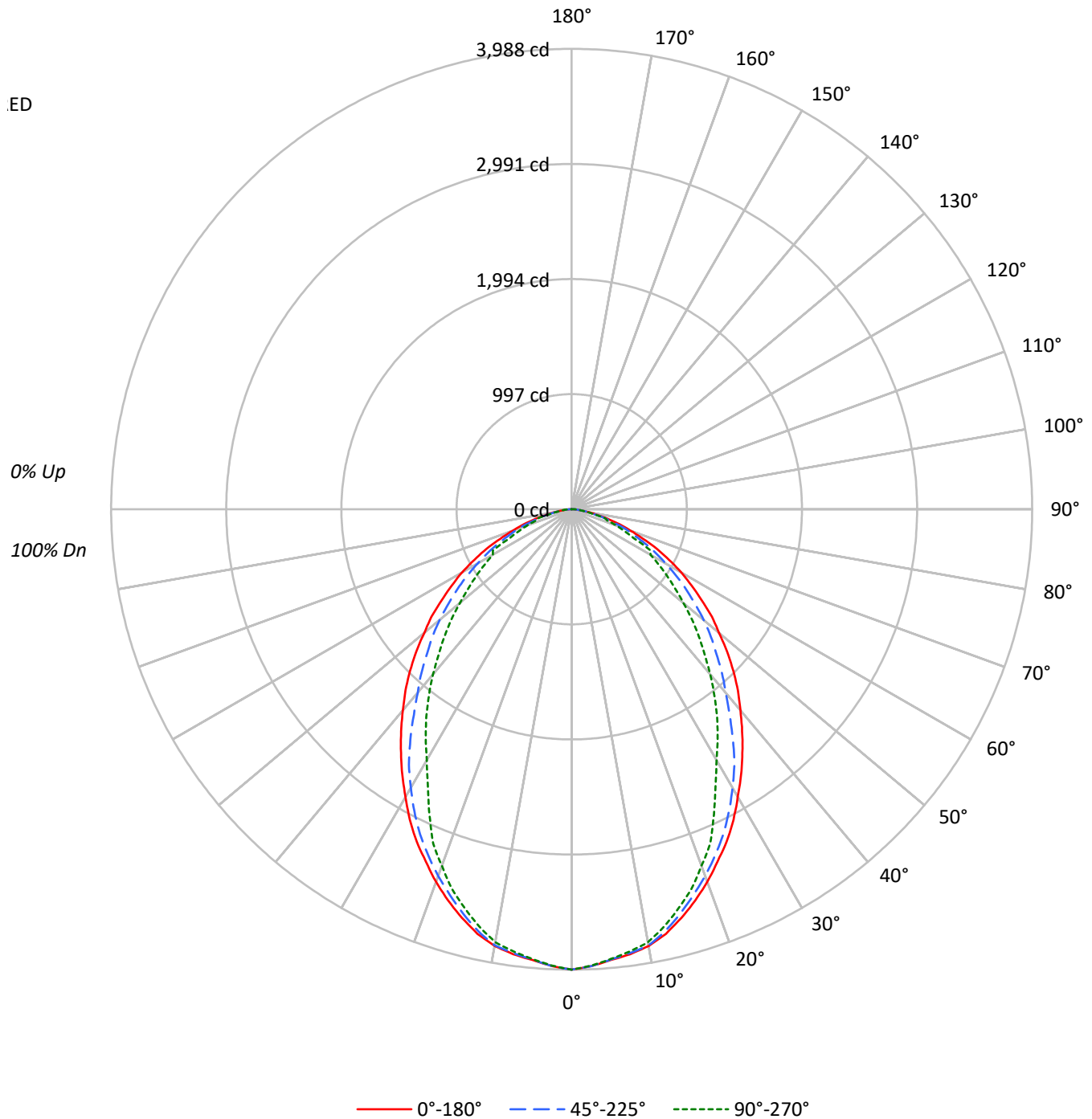
Lumens per Lamp: N/A  
Luminaire Lumens: 7829.0 lumens  
Efficiency: N/A  
Efficacy: 117.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5366	5366	5366
5°	5293	5287	5280
10°	5247	5241	5203
15°	5106	5054	4984
20°	4918	4839	4707
25°	4716	4613	4326
30°	4470	4326	3897
35°	4233	3998	3605
40°	3992	3644	3280
45°	3764	3369	2965
50°	3484	3127	2644
55°	3223	2833	2369
60°	2953	2531	2122
65°	2598	2216	1879
70°	2140	1941	1596
75°	1701	1486	1558
80°	1143	1072	1000
85°	712	854	996

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3764 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	371.2	4.7
10°-20°	1018.8	13.0
20°-30°	1410.5	18.0
30°-40°	1504.0	19.2
40°-50°	1372.1	17.5
50°-60°	1074.9	13.7
60°-70°	700.6	8.9
70°-80°	310.4	4.0
80°-90°	66.6	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°	2800.5	35.8
0°-40°	4304.5	55.0
0°-60°	6751.4	86.2
0°-90°	7829.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7829.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3988	3988	3988	3988	3988	
5°	3919	3914	3914	3910	3910	372
15°	3665	3665	3628	3592	3578	1030
25°	3177	3158	3107	2997	2914	1458
35°	2577	2559	2434	2250	2194	1611
45°	1978	1936	1770	1623	1558	1524
55°	1374	1332	1208	1065	1010	1232
65°	816	770	696	710	590	804
75°	327	304	286	272	300	351
85°	46	51	55	60	64	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3988.0	3988.0	3988.0	3988.0	3988.0
2.5°	3960.3	3960.3	3960.3	3955.7	3955.7
5°	3918.8	3914.2	3914.2	3909.6	3909.6
7.5°	3886.6	3881.9	3877.3	3872.7	3863.5
10°	3840.5	3840.5	3835.8	3812.8	3808.2
12.5°	3766.7	3762.1	3743.6	3711.4	3702.1
15°	3665.3	3665.3	3628.4	3591.5	3577.7
17.5°	3554.6	3550.0	3503.9	3467.0	3448.6
20°	3434.7	3425.5	3379.4	3319.5	3287.2
22.5°	3301.0	3301.0	3245.7	3167.3	3135.1
25°	3176.6	3158.1	3107.4	2996.8	2913.8
27.5°	3033.6	3006.0	2950.7	2793.9	2697.1
30°	2876.9	2863.1	2784.7	2581.8	2508.1
32.5°	2729.4	2706.3	2623.3	2411.2	2351.3
35°	2577.2	2558.8	2434.3	2249.9	2194.5
37.5°	2425.1	2402.0	2245.3	2097.7	2028.6
40°	2272.9	2245.3	2074.7	1941.0	1867.2
42.5°	2130.0	2093.1	1927.1	1784.2	1701.2
45°	1977.9	1936.4	1770.4	1622.9	1558.3
47.5°	1825.7	1788.8	1636.7	1484.5	1410.8
50°	1664.4	1632.1	1493.8	1341.6	1263.2
52.5°	1530.6	1479.9	1346.2	1194.1	1129.5
55°	1373.9	1332.4	1207.9	1065.0	1009.7
57.5°	1231.0	1189.5	1074.2	940.5	894.4
60°	1097.3	1037.3	940.5	825.3	788.4
62.5°	949.7	903.6	820.6	723.8	769.9
65°	816.0	769.9	696.2	710.0	590.1
67.5°	668.5	645.5	580.9	516.4	497.9
70°	544.0	516.4	493.3	424.2	405.7
72.5°	433.4	405.7	373.4	336.6	322.7
75°	327.3	304.3	285.8	272.0	299.7
77.5°	225.9	216.7	202.9	189.0	184.4
80°	147.5	142.9	138.3	133.7	129.1
82.5°	87.6	87.6	87.6	87.6	87.6
85°	46.1	50.7	55.3	59.9	64.5
87.5°	27.7	27.7	32.3	36.9	41.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)