

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: P561419

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561419  
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-12-4-LD4-2HI-40-UNV-81-94-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

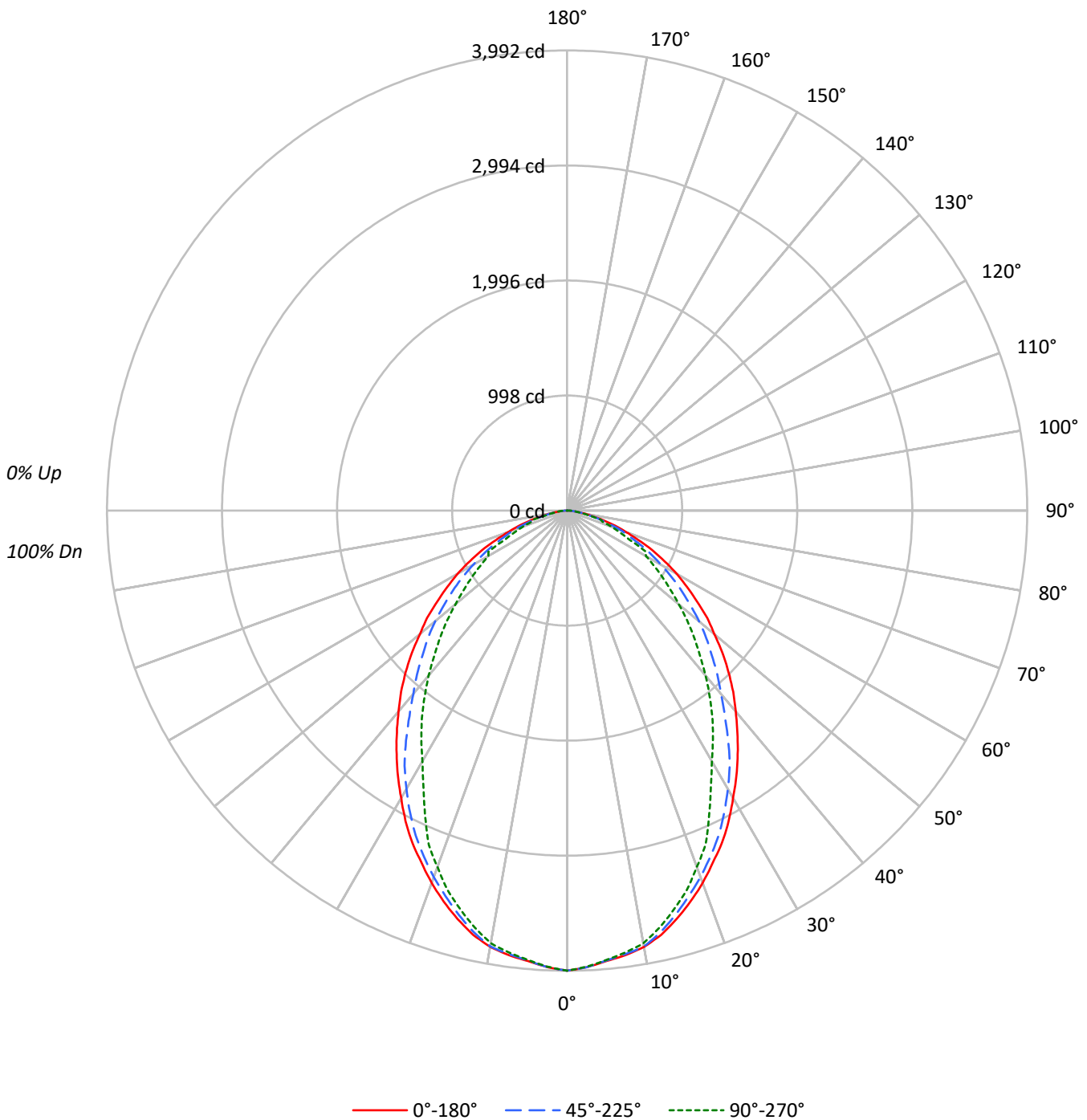
Lumens per Lamp: N/A  
Luminaire Lumens: 7836.0 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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				
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°	10741	10741	10741
5°	10595	10583	10570
10°	10503	10491	10415
15°	10220	10117	9976
20°	9845	9686	9422
25°	9440	9235	8659
30°	8947	8661	7800
35°	8474	8004	7216
40°	7992	7294	6565
45°	7534	6744	5936
50°	6974	6259	5293
55°	6451	5672	4741
60°	5911	5067	4247
65°	5201	4437	3761
70°	4284	3885	3195
75°	3406	2975	3118
80°	2289	2145	2002
85°	1423	1711	1995

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7534 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	371.6	4.7
10°-20°	1019.7	13.0
20°-30°	1411.7	18.0
30°-40°	1505.3	19.2
40°-50°	1373.3	17.5
50°-60°	1075.9	13.7
60°-70°	701.2	8.9
70°-80°	310.7	4.0
80°-90°	66.7	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°	2803.0	35.8
0°-40°	4308.3	55.0
0°-60°	6757.5	86.2
0°-90°	7836.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7836.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3992	3992	3992	3992	3992	
5°	3922	3918	3918	3913	3913	372
15°	3668	3668	3632	3595	3581	1031
25°	3179	3161	3110	2999	2916	1460
35°	2580	2561	2436	2252	2196	1613
45°	1980	1938	1772	1624	1560	1525
55°	1375	1334	1209	1066	1011	1233
65°	817	771	697	711	591	805
75°	328	305	286	272	300	351
85°	46	51	55	60	65	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3991.6	3991.6	3991.6	3991.6	3991.6
2.5°	3963.9	3963.9	3963.9	3959.3	3959.3
5°	3922.3	3917.7	3917.7	3913.1	3913.1
7.5°	3890.0	3885.4	3880.8	3876.2	3867.0
10°	3843.9	3843.9	3839.3	3816.2	3811.6
12.5°	3770.1	3765.4	3747.0	3714.7	3705.5
15°	3668.5	3668.5	3631.6	3594.7	3580.9
17.5°	3557.8	3553.2	3507.0	3470.1	3451.7
20°	3437.8	3428.6	3382.4	3322.4	3290.1
22.5°	3304.0	3304.0	3248.6	3170.2	3137.9
25°	3179.4	3160.9	3110.2	2999.4	2916.4
27.5°	3036.3	3008.7	2953.3	2796.4	2699.5
30°	2879.5	2865.6	2787.2	2584.1	2510.3
32.5°	2731.8	2708.7	2625.7	2413.4	2353.4
35°	2579.5	2561.1	2436.5	2251.9	2196.5
37.5°	2427.2	2404.2	2247.3	2099.6	2030.4
40°	2275.0	2247.3	2076.5	1942.7	1868.9
42.5°	2131.9	2095.0	1928.9	1785.8	1702.8
45°	1979.6	1938.1	1772.0	1624.3	1559.7
47.5°	1827.3	1790.4	1638.2	1485.9	1412.0
50°	1665.8	1633.5	1495.1	1342.8	1264.4
52.5°	1532.0	1481.3	1347.4	1195.2	1130.6
55°	1375.1	1333.6	1209.0	1066.0	1010.6
57.5°	1232.1	1190.5	1075.2	941.4	895.2
60°	1098.3	1038.3	941.4	826.0	789.1
62.5°	950.6	904.4	821.4	724.5	770.6
65°	816.8	770.6	696.8	710.6	590.7
67.5°	669.1	646.0	581.4	516.8	498.4
70°	544.5	516.8	493.8	424.5	406.1
72.5°	433.8	406.1	373.8	336.9	323.0
75°	327.6	304.6	286.1	272.3	299.9
77.5°	226.1	216.9	203.0	189.2	184.6
80°	147.7	143.0	138.4	133.8	129.2
82.5°	87.7	87.7	87.7	87.7	87.7
85°	46.1	50.8	55.4	60.0	64.6
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)