

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: P560490

Luminaire Tested: FSR-12-2-LD4-2LO-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560490  
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-12-2-LD4-2LO-40-UNV-93-94-EDD-90  
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

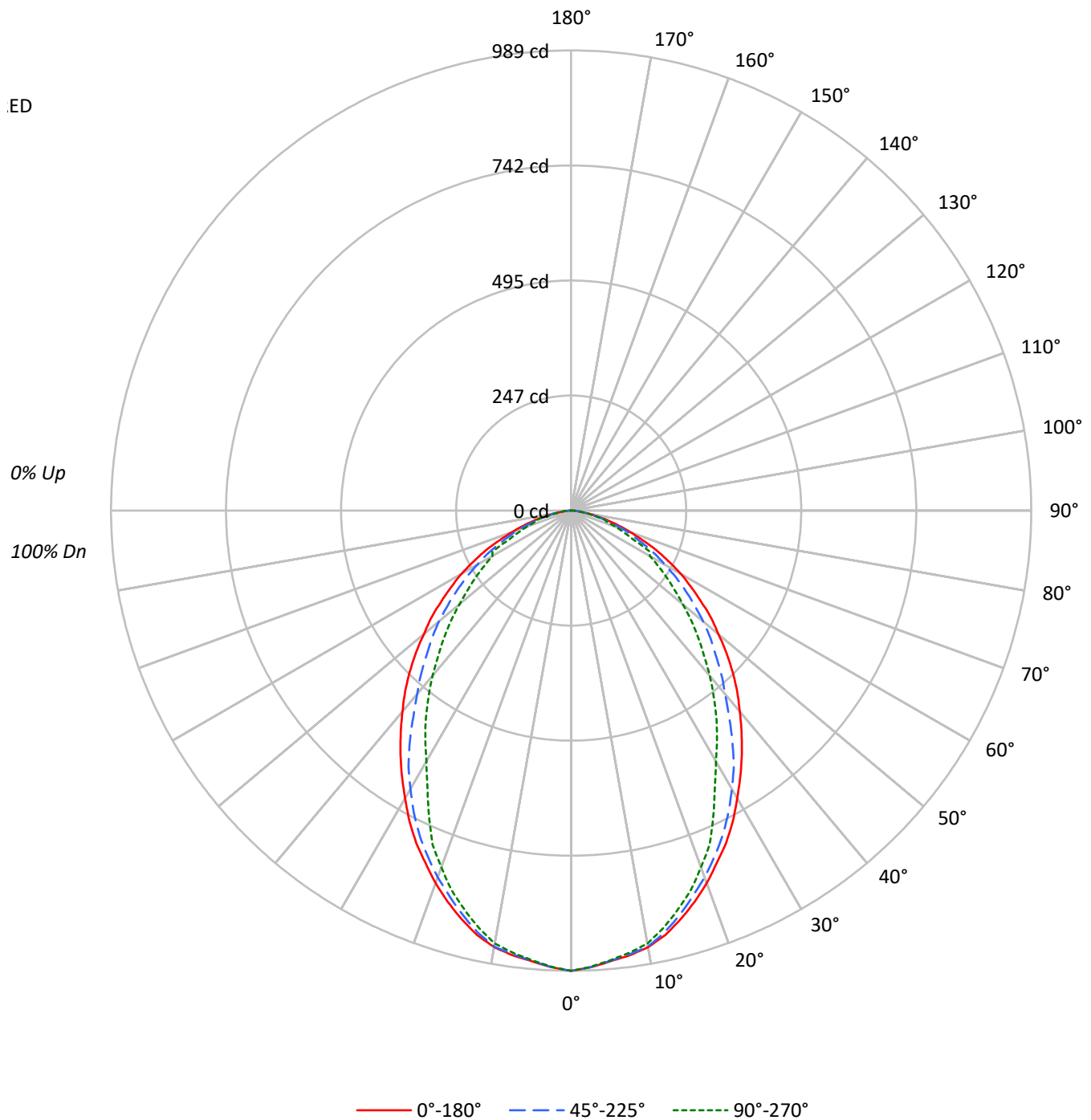
Lumens per Lamp: N/A  
Luminaire Lumens: 1942.0 lumens  
Efficiency: N/A  
Efficacy: 83.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P560490

CATALOG NUMBER: FSR-12-2-LD4-2LO-40-UNV-93-94-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560490

CATALOG NUMBER: FSR-12-2-LD4-2LO-40-UNV-93-94-EDD-90

**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°	5324	5324	5324
5°	5252	5245	5239
10°	5206	5200	5162
15°	5066	5015	4944
20°	4880	4801	4670
25°	4679	4577	4292
30°	4435	4292	3866
35°	4200	3967	3577
40°	3961	3615	3254
45°	3734	3342	2942
50°	3456	3102	2624
55°	3198	2811	2350
60°	2930	2511	2105
65°	2578	2199	1864
70°	2123	1926	1583
75°	1688	1474	1545
80°	1134	1063	992
85°	704	846	988

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3734 cd/sqm



TEST NUMBER: P560490

CATALOG NUMBER: FSR-12-2-LD4-2LO-40-UNV-93-94-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.1	4.7
10°-20°	252.7	13.0
20°-30°	349.9	18.0
30°-40°	373.1	19.2
40°-50°	340.3	17.5
50°-60°	266.6	13.7
60°-70°	173.8	8.9
70°-80°	77.0	4.0
80°-90°	16.5	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°	694.7	35.8
0°-40°	1067.7	55.0
0°-60°	1674.7	86.2
0°-90°	1942.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1942.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	989	989	989	989	989	
5°	972	971	971	970	970	92
15°	909	909	900	891	887	256
25°	788	783	771	743	723	362
35°	639	635	604	558	544	400
45°	491	480	439	403	386	378
55°	341	330	300	264	250	306
65°	202	191	173	176	146	199
75°	81	76	71	68	74	87
85°	11	13	14	15	16	16
90°	0	0	0	0	0	



TEST NUMBER: P560490

CATALOG NUMBER: FSR-12-2-LD4-2LO-40-UNV-93-94-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	989.2	989.2	989.2	989.2	989.2
2.5°	982.4	982.4	982.4	981.2	981.2
5°	972.1	970.9	970.9	969.8	969.8
7.5°	964.1	962.9	961.8	960.6	958.4
10°	952.6	952.6	951.5	945.8	944.6
12.5°	934.3	933.2	928.6	920.6	918.3
15°	909.2	909.2	900.0	890.9	887.4
17.5°	881.7	880.6	869.1	860.0	855.4
20°	852.0	849.7	838.3	823.4	815.4
22.5°	818.8	818.8	805.1	785.7	777.7
25°	788.0	783.4	770.8	743.4	722.8
27.5°	752.5	745.6	731.9	693.0	669.0
30°	713.6	710.2	690.7	640.4	622.1
32.5°	677.0	671.3	650.7	598.1	583.2
35°	639.3	634.7	603.8	558.1	544.4
37.5°	601.5	595.8	556.9	520.3	503.2
40°	563.8	556.9	514.6	481.5	463.2
42.5°	528.4	519.2	478.0	442.6	422.0
45°	490.6	480.3	439.1	402.6	386.5
47.5°	452.9	443.7	406.0	368.2	349.9
50°	412.8	404.8	370.5	332.8	313.4
52.5°	379.7	367.1	333.9	296.2	280.2
55°	340.8	330.5	299.6	264.2	250.5
57.5°	305.3	295.1	266.5	233.3	221.9
60°	272.2	257.3	233.3	204.7	195.6
62.5°	235.6	224.1	203.6	179.5	191.0
65°	202.4	191.0	172.7	176.1	146.4
67.5°	165.8	160.1	144.1	128.1	123.5
70°	134.9	128.1	122.4	105.2	100.6
72.5°	107.5	100.6	92.6	83.5	80.1
75°	81.2	75.5	70.9	67.5	74.3
77.5°	56.0	53.8	50.3	46.9	45.7
80°	36.6	35.5	34.3	33.2	32.0
82.5°	21.7	21.7	21.7	21.7	21.7
85°	11.4	12.6	13.7	14.9	16.0
87.5°	6.9	6.9	8.0	9.1	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)