

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: P560933

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560933  
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-LD4-1HI-50-UNV-93-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

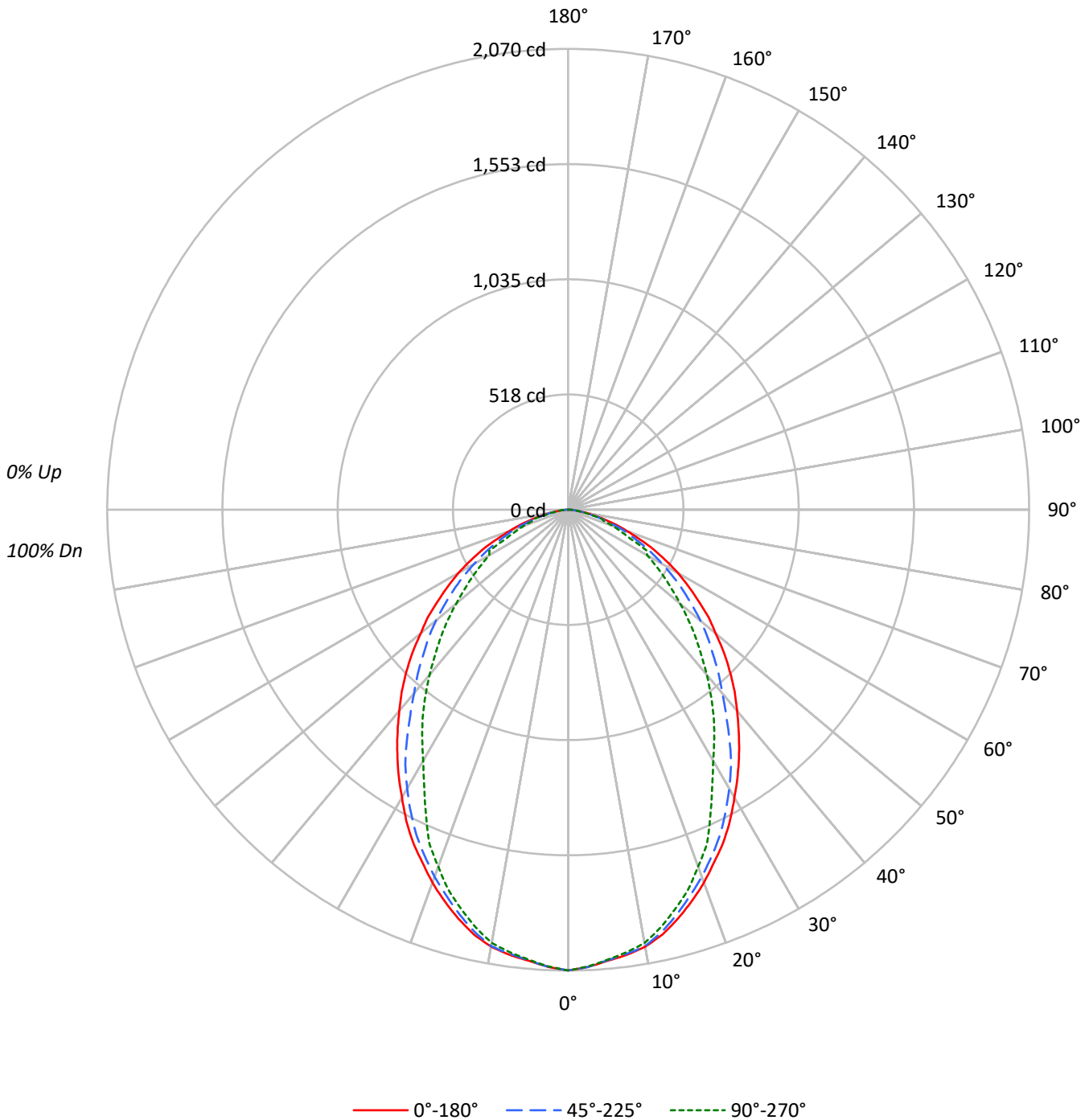
Lumens per Lamp: N/A  
Luminaire Lumens: 4063.0 lumens  
Efficiency: N/A  
Efficacy: 94.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5569	5569	5569
5°	5494	5487	5481
10°	5446	5440	5400
15°	5299	5246	5173
20°	5105	5022	4885
25°	4895	4788	4490
30°	4639	4491	4044
35°	4394	4150	3741
40°	4144	3782	3404
45°	3906	3497	3078
50°	3616	3245	2745
55°	3345	2941	2458
60°	3064	2627	2202
65°	2697	2301	1950
70°	2221	2014	1657
75°	1766	1542	1617
80°	1187	1113	1038
85°	738	886	1034

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3906 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.7	4.7
10°-20°	528.7	13.0
20°-30°	732.0	18.0
30°-40°	780.5	19.2
40°-50°	712.1	17.5
50°-60°	557.8	13.7
60°-70°	363.6	8.9
70°-80°	161.1	4.0
80°-90°	34.6	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°	1453.4	35.8
0°-40°	2233.9	55.0
0°-60°	3503.8	86.2
0°-90°	4063.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4063.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2070	2070	2070	2070	2070	
5°	2034	2031	2031	2029	2029	193
15°	1902	1902	1883	1864	1857	535
25°	1648	1639	1613	1555	1512	757
35°	1338	1328	1263	1168	1139	836
45°	1026	1005	919	842	809	791
55°	713	692	627	553	524	640
65°	424	400	361	368	306	417
75°	170	158	148	141	156	182
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2069.6	2069.6	2069.6	2069.6	2069.6
2.5°	2055.3	2055.3	2055.3	2052.9	2052.9
5°	2033.7	2031.4	2031.4	2029.0	2029.0
7.5°	2017.0	2014.6	2012.2	2009.8	2005.0
10°	1993.1	1993.1	1990.7	1978.7	1976.3
12.5°	1954.8	1952.4	1942.8	1926.1	1921.3
15°	1902.2	1902.2	1883.0	1863.9	1856.7
17.5°	1844.7	1842.3	1818.4	1799.3	1789.7
20°	1782.5	1777.7	1753.8	1722.7	1706.0
22.5°	1713.1	1713.1	1684.4	1643.7	1627.0
25°	1648.5	1639.0	1612.6	1555.2	1512.2
27.5°	1574.4	1560.0	1531.3	1449.9	1399.7
30°	1493.0	1485.8	1445.2	1339.9	1301.6
32.5°	1416.4	1404.5	1361.4	1251.4	1220.2
35°	1337.5	1327.9	1263.3	1167.6	1138.9
37.5°	1258.5	1246.6	1165.2	1088.7	1052.8
40°	1179.6	1165.2	1076.7	1007.3	969.0
42.5°	1105.4	1086.3	1000.1	926.0	882.9
45°	1026.4	1004.9	918.8	842.2	808.7
47.5°	947.5	928.3	849.4	770.4	732.1
50°	863.7	847.0	775.2	696.3	655.6
52.5°	794.4	768.0	698.7	619.7	586.2
55°	713.0	691.5	626.9	552.7	524.0
57.5°	638.8	617.3	557.5	488.1	464.2
60°	569.4	538.3	488.1	428.3	409.1
62.5°	492.9	469.0	425.9	375.6	399.6
65°	423.5	399.6	361.3	368.5	306.3
67.5°	346.9	335.0	301.5	268.0	258.4
70°	282.3	268.0	256.0	220.1	210.6
72.5°	224.9	210.6	193.8	174.7	167.5
75°	169.9	157.9	148.3	141.2	155.5
77.5°	117.2	112.5	105.3	98.1	95.7
80°	76.6	74.2	71.8	69.4	67.0
82.5°	45.5	45.5	45.5	45.5	45.5
85°	23.9	26.3	28.7	31.1	33.5
87.5°	14.4	14.4	16.7	19.1	21.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)