

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: P590441

Luminaire Tested: FSR-24-2-LD4-3HI-35-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590441  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-3HI-35-UNV-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

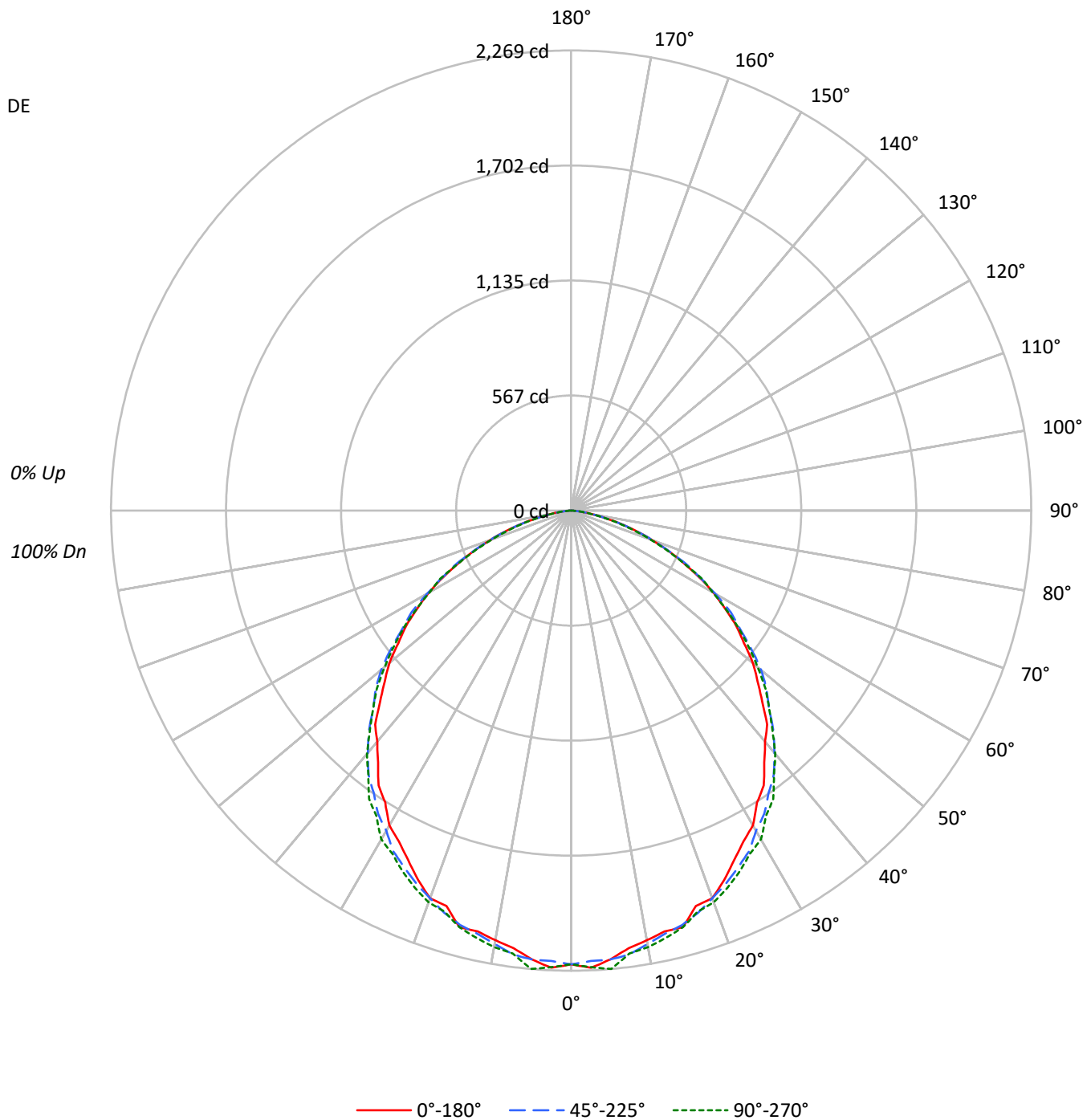
Lumens per Lamp: N/A  
Luminaire Lumens: 5638.0 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6020	6020	6020
5°	6000	6002	6129
10°	5878	5930	5971
15°	5925	5892	5926
20°	5825	5825	5887
25°	5646	5769	5833
30°	5568	5666	5817
35°	5437	5579	5705
40°	5225	5477	5501
45°	5067	5248	5255
50°	4901	5122	5024
55°	4670	4761	4727
60°	4366	4410	4331
65°	3894	3993	3866
70°	3341	3352	3259
75°	2646	2640	2538
80°	1773	1723	1657
85°	963	954	892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5383 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.4	3.7
10°-20°	596.4	10.6
20°-30°	893.5	15.8
30°-40°	1059.0	18.8
40°-50°	1060.9	18.8
50°-60°	900.5	16.0
60°-70°	607.2	10.8
70°-80°	266.8	4.7
80°-90°	43.4	0.8
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°	1700.3	30.2
0°-40°	2759.2	48.9
0°-60°	4720.7	83.7
0°-90°	5638.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5638.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2237	2237	2237	2237	2237	
5°	2221	2216	2222	2215	2269	209
15°	2127	2102	2115	2126	2127	593
25°	1901	1912	1943	1968	1964	879
35°	1655	1660	1698	1738	1736	1028
45°	1332	1356	1379	1414	1381	1030
55°	995	989	1015	1008	1008	885
65°	612	603	627	603	607	608
75°	254	249	254	236	244	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2237.0	2237.0	2237.0	2237.0	2237.0
2.5°	2256.4	2239.3	2223.4	2241.9	2253.2
5°	2221.1	2215.9	2222.0	2215.4	2268.8
7.5°	2175.5	2195.4	2207.0	2199.8	2202.9
10°	2151.2	2144.3	2170.0	2187.9	2185.3
12.5°	2125.2	2135.6	2137.1	2156.4	2158.2
15°	2126.7	2102.1	2115.1	2126.1	2127.0
17.5°	2044.1	2070.6	2079.6	2104.7	2073.5
20°	2034.0	2014.6	2034.0	2059.7	2055.6
22.5°	1971.9	1950.2	1991.8	2014.6	2013.2
25°	1901.4	1911.8	1943.0	1968.4	1964.4
27.5°	1839.6	1851.7	1896.2	1931.1	1908.6
30°	1791.9	1785.9	1823.4	1854.6	1871.9
32.5°	1706.7	1728.7	1772.6	1803.5	1787.0
35°	1655.0	1659.9	1698.3	1737.6	1736.5
37.5°	1564.6	1587.4	1641.4	1652.4	1642.3
40°	1487.5	1510.3	1559.1	1571.0	1566.1
42.5°	1430.6	1434.6	1476.5	1490.1	1468.4
45°	1331.5	1356.4	1378.9	1414.4	1380.9
47.5°	1247.2	1258.7	1307.3	1316.8	1299.2
50°	1170.6	1174.7	1223.5	1211.7	1200.1
52.5°	1074.5	1091.5	1118.9	1116.6	1103.1
55°	995.3	988.7	1014.7	1007.7	1007.5
57.5°	900.3	911.8	933.2	922.2	904.6
60°	811.3	811.6	819.4	807.0	804.7
62.5°	712.3	715.7	717.5	702.2	727.0
65°	611.5	603.4	627.1	603.1	607.1
67.5°	518.7	522.8	520.5	505.5	511.2
70°	424.6	429.8	426.0	409.0	414.2
72.5°	338.5	332.2	336.2	314.8	324.6
75°	254.5	249.3	253.9	236.0	244.1
77.5°	173.3	177.3	174.5	164.9	170.4
80°	114.4	111.2	111.2	105.7	106.9
82.5°	66.7	63.5	62.7	60.9	63.5
85°	31.2	30.3	30.9	30.0	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)