

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: P590879

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590879  
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-LD4-4LO-50-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

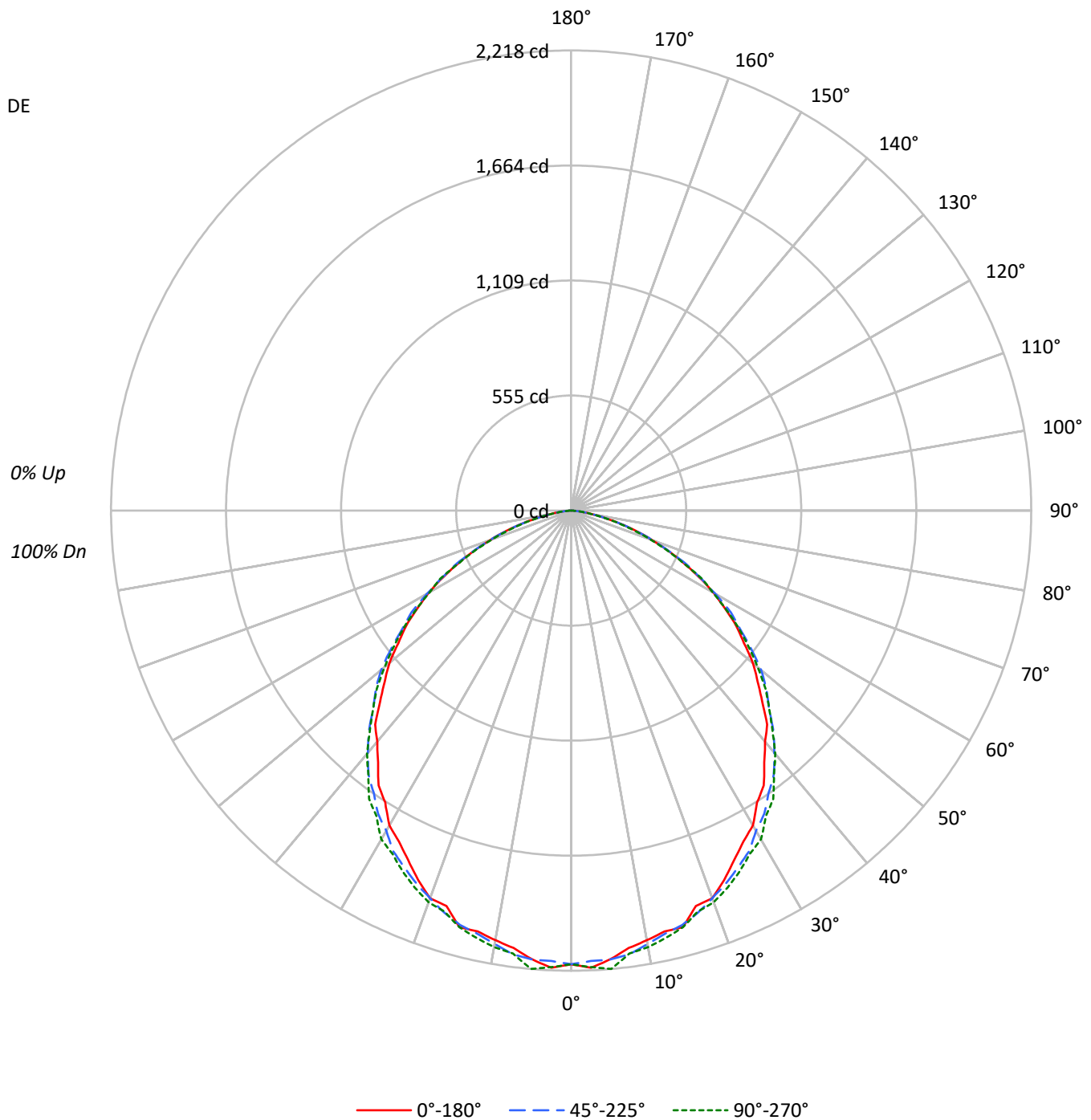
Lumens per Lamp: N/A  
Luminaire Lumens: 5511.0 lumens  
Efficiency: N/A  
Efficacy: 117.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	5884	5884	5884
5°	5865	5867	5991
10°	5746	5796	5837
15°	5791	5760	5792
20°	5693	5693	5754
25°	5518	5639	5701
30°	5443	5538	5686
35°	5314	5454	5576
40°	5108	5354	5377
45°	4953	5129	5137
50°	4791	5007	4911
55°	4564	4653	4620
60°	4268	4311	4233
65°	3806	3903	3779
70°	3265	3276	3186
75°	2586	2581	2481
80°	1733	1684	1619
85°	942	932	871

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5262 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.7	3.7
10°-20°	582.9	10.6
20°-30°	873.4	15.8
30°-40°	1035.1	18.8
40°-50°	1037.0	18.8
50°-60°	880.3	16.0
60°-70°	593.5	10.8
70°-80°	260.8	4.7
80°-90°	42.4	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°	1662.0	30.2
0°-40°	2697.1	48.9
0°-60°	4614.4	83.7
0°-90°	5511.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5511.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2187	2187	2187	2187	2187	
5°	2171	2166	2172	2166	2218	205
15°	2079	2055	2068	2078	2079	579
25°	1859	1869	1899	1924	1920	859
35°	1618	1622	1660	1698	1697	1004
45°	1302	1326	1348	1383	1350	1007
55°	973	966	992	985	985	865
65°	598	590	613	590	594	594
75°	249	244	248	231	239	267
85°	30	30	30	29	28	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2186.6	2186.6	2186.6	2186.6	2186.6
2.5°	2205.5	2188.9	2173.4	2191.4	2202.4
5°	2171.1	2166.0	2171.9	2165.5	2217.7
7.5°	2126.5	2146.0	2157.3	2150.2	2153.3
10°	2102.8	2096.0	2121.1	2138.6	2136.1
12.5°	2077.4	2087.5	2088.9	2107.9	2109.6
15°	2078.8	2054.8	2067.5	2078.2	2079.1
17.5°	1998.0	2024.0	2032.8	2057.3	2026.8
20°	1988.1	1969.2	1988.1	2013.3	2009.3
22.5°	1927.4	1906.3	1946.9	1969.2	1967.8
25°	1858.6	1868.7	1899.2	1924.1	1920.1
27.5°	1798.1	1810.0	1853.5	1887.6	1865.6
30°	1751.6	1745.6	1782.3	1812.8	1829.8
32.5°	1668.3	1689.7	1732.6	1762.9	1746.8
35°	1617.7	1622.5	1660.1	1698.5	1697.4
37.5°	1529.4	1551.7	1604.5	1615.2	1605.3
40°	1454.0	1476.3	1524.0	1535.6	1530.8
42.5°	1398.4	1402.3	1443.3	1456.5	1435.4
45°	1301.5	1325.8	1347.8	1382.6	1349.8
47.5°	1219.1	1230.4	1277.8	1287.1	1269.9
50°	1144.3	1148.2	1195.9	1184.4	1173.1
52.5°	1050.3	1066.9	1093.7	1091.5	1078.2
55°	972.9	966.4	991.8	985.0	984.8
57.5°	880.0	891.3	912.2	901.5	884.2
60°	793.1	793.3	801.0	788.8	786.6
62.5°	696.2	699.6	701.3	686.3	710.6
65°	597.7	589.8	612.9	589.5	593.5
67.5°	507.1	511.0	508.8	494.1	499.7
70°	415.0	420.1	416.4	399.8	404.9
72.5°	330.9	324.7	328.6	307.7	317.3
75°	248.7	243.6	248.2	230.7	238.6
77.5°	169.4	173.3	170.5	161.2	166.6
80°	111.8	108.7	108.7	103.3	104.5
82.5°	65.2	62.1	61.3	59.6	62.1
85°	30.5	29.6	30.2	29.4	28.2
87.5°	11.0	11.3	11.3	10.7	10.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)