

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: P590839

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590839  
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-40-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

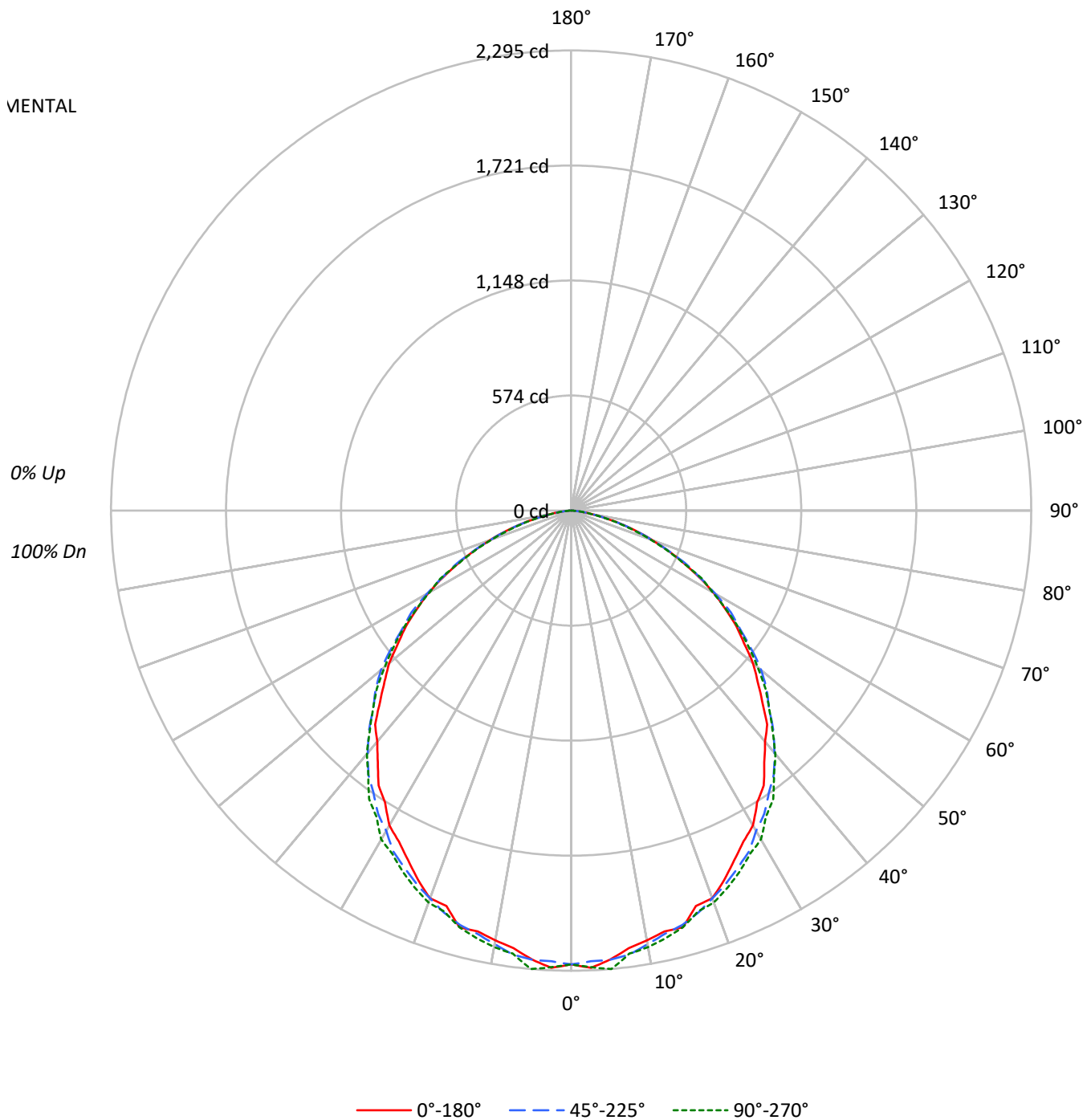
Lumens per Lamp: N/A  
Luminaire Lumens: 5704.0 lumens  
Efficiency: N/A  
Efficacy: 121.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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				
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°	6090	6090	6090
5°	6070	6072	6200
10°	5947	5999	6041
15°	5994	5962	5995
20°	5893	5893	5956
25°	5711	5836	5901
30°	5633	5732	5885
35°	5501	5644	5771
40°	5286	5541	5566
45°	5127	5309	5317
50°	4958	5182	5083
55°	4724	4816	4782
60°	4418	4462	4381
65°	3939	4039	3911
70°	3380	3391	3297
75°	2676	2671	2567
80°	1793	1743	1675
85°	976	966	902

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5446 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.9	3.7
10°-20°	603.4	10.6
20°-30°	903.9	15.8
30°-40°	1071.4	18.8
40°-50°	1073.3	18.8
50°-60°	911.1	16.0
60°-70°	614.3	10.8
70°-80°	269.9	4.7
80°-90°	43.9	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°	1720.2	30.2
0°-40°	2791.5	48.9
0°-60°	4776.0	83.7
0°-90°	5704.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5704.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2263	2263	2263	2263	2263	
5°	2247	2242	2248	2241	2295	212
15°	2152	2127	2140	2151	2152	599
25°	1924	1934	1966	1991	1987	889
35°	1674	1679	1718	1758	1757	1040
45°	1347	1372	1395	1431	1397	1042
55°	1007	1000	1027	1020	1019	896
65°	619	610	634	610	614	615
75°	257	252	257	239	247	276
85°	32	31	31	30	29	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2263.2	2263.2	2263.2	2263.2	2263.2
2.5°	2282.8	2265.5	2249.5	2268.2	2279.6
5°	2247.1	2241.9	2248.0	2241.3	2295.3
7.5°	2201.0	2221.1	2232.8	2225.5	2228.7
10°	2176.4	2169.4	2195.4	2213.5	2210.9
12.5°	2150.1	2160.6	2162.1	2181.7	2183.4
15°	2151.6	2126.7	2139.9	2151.0	2151.9
17.5°	2068.0	2094.9	2103.9	2129.4	2097.8
20°	2057.8	2038.2	2057.8	2083.8	2079.7
22.5°	1994.9	1973.0	2015.1	2038.2	2036.7
25°	1923.6	1934.2	1965.7	1991.4	1987.4
27.5°	1861.1	1873.4	1918.4	1953.7	1931.0
30°	1812.9	1806.8	1844.8	1876.3	1893.8
32.5°	1726.7	1748.9	1793.3	1824.6	1807.9
35°	1674.4	1679.4	1718.2	1758.0	1756.8
37.5°	1582.9	1606.0	1660.7	1671.8	1661.5
40°	1504.9	1528.0	1577.4	1589.4	1584.4
42.5°	1447.3	1451.4	1493.8	1507.5	1485.6
45°	1347.1	1372.2	1395.0	1431.0	1397.1
47.5°	1261.8	1273.5	1322.6	1332.2	1314.4
50°	1184.3	1188.4	1237.8	1225.8	1214.2
52.5°	1087.0	1104.3	1132.0	1129.7	1116.0
55°	1007.0	1000.3	1026.6	1019.5	1019.2
57.5°	910.8	922.5	944.1	933.0	915.2
60°	820.8	821.1	829.0	816.4	814.1
62.5°	720.6	724.1	725.9	710.4	735.5
65°	618.6	610.4	634.4	610.1	614.2
67.5°	524.8	528.9	526.6	511.4	517.2
70°	429.6	434.8	431.0	413.8	419.0
72.5°	342.5	336.0	340.1	318.5	328.4
75°	257.4	252.2	256.9	238.7	246.9
77.5°	175.3	179.4	176.5	166.9	172.4
80°	115.7	112.5	112.5	107.0	108.1
82.5°	67.5	64.3	63.4	61.7	64.3
85°	31.6	30.7	31.3	30.4	29.2
87.5°	11.4	11.7	11.7	11.1	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)