

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: P561654

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-80-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561654  
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-LD4-2LO-50-UNV-80-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

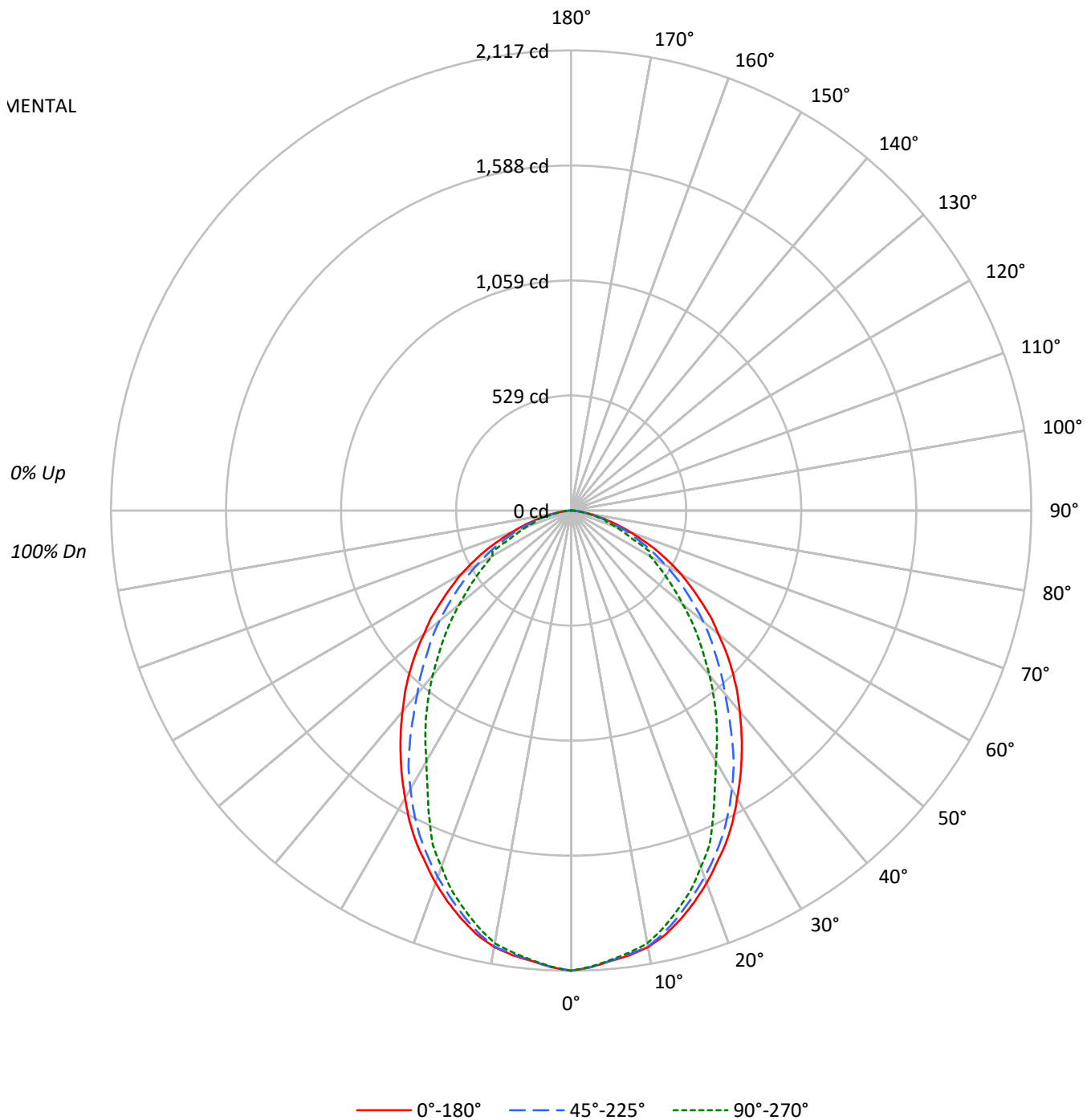
Lumens per Lamp: N/A  
Luminaire Lumens: 4156.0 lumens  
Efficiency: N/A  
Efficacy: 88.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5697	5697	5697
5°	5619	5613	5606
10°	5571	5564	5524
15°	5421	5366	5291
20°	5221	5137	4997
25°	5007	4898	4593
30°	4745	4593	4137
35°	4494	4245	3827
40°	4239	3869	3482
45°	3996	3577	3148
50°	3699	3320	2807
55°	3422	3008	2515
60°	3135	2687	2252
65°	2758	2353	1995
70°	2272	2061	1695
75°	1807	1577	1654
80°	1213	1137	1062
85°	756	908	1059

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3996 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.1	4.7
10°-20°	540.8	13.0
20°-30°	748.7	18.0
30°-40°	798.4	19.2
40°-50°	728.3	17.5
50°-60°	570.6	13.7
60°-70°	371.9	8.9
70°-80°	164.8	4.0
80°-90°	35.4	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°	1486.6	35.8
0°-40°	2285.0	55.0
0°-60°	3584.0	86.2
0°-90°	4156.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4156.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2117	2117	2117	2117	2117	
5°	2080	2078	2078	2075	2075	197
15°	1946	1946	1926	1906	1899	547
25°	1686	1676	1650	1591	1547	774
35°	1368	1358	1292	1194	1165	855
45°	1050	1028	940	862	827	809
55°	729	707	641	565	536	654
65°	433	409	370	377	313	427
75°	174	162	152	144	159	186
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2117.0	2117.0	2117.0	2117.0	2117.0
2.5°	2102.3	2102.3	2102.3	2099.9	2099.9
5°	2080.3	2077.9	2077.9	2075.4	2075.4
7.5°	2063.2	2060.7	2058.3	2055.8	2050.9
10°	2038.7	2038.7	2036.2	2024.0	2021.6
12.5°	1999.5	1997.1	1987.3	1970.2	1965.3
15°	1945.7	1945.7	1926.1	1906.5	1899.2
17.5°	1887.0	1884.5	1860.0	1840.5	1830.7
20°	1823.3	1818.4	1794.0	1762.1	1745.0
22.5°	1752.3	1752.3	1723.0	1681.4	1664.2
25°	1686.3	1676.5	1649.6	1590.8	1546.8
27.5°	1610.4	1595.7	1566.3	1483.1	1431.7
30°	1527.2	1519.8	1478.2	1370.6	1331.4
32.5°	1448.9	1436.6	1392.6	1280.0	1248.2
35°	1368.1	1358.3	1292.2	1194.3	1165.0
37.5°	1287.3	1275.1	1191.9	1113.6	1076.9
40°	1206.6	1191.9	1101.3	1030.4	991.2
42.5°	1130.7	1111.1	1023.0	947.1	903.1
45°	1049.9	1027.9	939.8	861.5	827.2
47.5°	969.2	949.6	868.8	788.1	748.9
50°	883.5	866.4	793.0	712.2	670.6
52.5°	812.5	785.6	714.6	633.9	599.6
55°	729.3	707.3	641.2	565.4	536.0
57.5°	653.5	631.4	570.2	499.3	474.8
60°	582.5	550.7	499.3	438.1	418.5
62.5°	504.2	479.7	435.6	384.2	408.7
65°	433.2	408.7	369.6	376.9	313.3
67.5°	354.9	342.6	308.4	274.1	264.3
70°	288.8	274.1	261.9	225.2	215.4
72.5°	230.1	215.4	198.2	178.7	171.3
75°	173.8	161.5	151.7	144.4	159.1
77.5°	119.9	115.0	107.7	100.3	97.9
80°	78.3	75.9	73.4	71.0	68.5
82.5°	46.5	46.5	46.5	46.5	46.5
85°	24.5	26.9	29.4	31.8	34.3
87.5°	14.7	14.7	17.1	19.6	22.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)