

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: P561615

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561615  
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-40-UNV-81-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

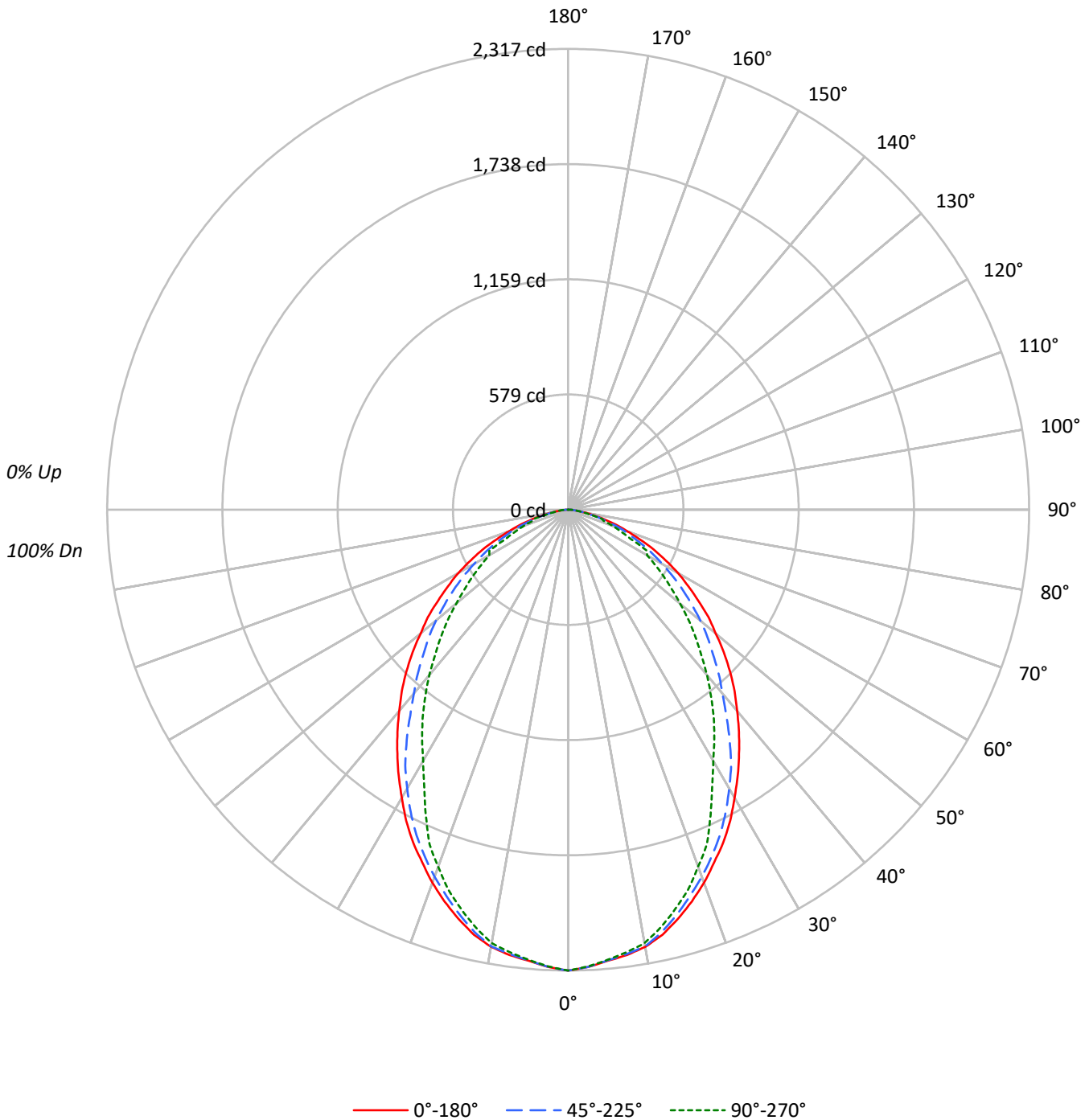
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4549.0 lumens  
Efficiency: N/A  
Efficacy: 97.2 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°	6236	6236	6236
5°	6151	6143	6136
10°	6098	6090	6046
15°	5933	5874	5791
20°	5715	5623	5470
25°	5480	5361	5027
30°	5194	5028	4528
35°	4919	4646	4189
40°	4639	4235	3811
45°	4373	3915	3446
50°	4049	3633	3073
55°	3745	3293	2753
60°	3432	2941	2465
65°	3019	2576	2183
70°	2487	2255	1854
75°	1978	1727	1810
80°	1328	1246	1162
85°	827	991	1158

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4373 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.7	4.7
10°-20°	592.0	13.0
20°-30°	819.5	18.0
30°-40°	873.9	19.2
40°-50°	797.2	17.5
50°-60°	624.6	13.7
60°-70°	407.1	8.9
70°-80°	180.3	4.0
80°-90°	38.7	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°	1627.2	35.8
0°-40°	2501.1	55.0
0°-60°	3922.9	86.2
0°-90°	4549.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4549.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2317	2317	2317	2317	2317	
5°	2277	2274	2274	2272	2272	216
15°	2130	2130	2108	2087	2079	599
25°	1846	1835	1806	1741	1693	847
35°	1498	1487	1414	1307	1275	936
45°	1149	1125	1029	943	905	885
55°	798	774	702	619	587	716
65°	474	447	404	412	343	467
75°	190	177	166	158	174	204
85°	27	30	32	35	38	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2317.2	2317.2	2317.2	2317.2	2317.2
2.5°	2301.1	2301.1	2301.1	2298.4	2298.4
5°	2277.0	2274.3	2274.3	2271.7	2271.7
7.5°	2258.3	2255.6	2252.9	2250.2	2244.9
10°	2231.5	2231.5	2228.8	2215.4	2212.7
12.5°	2188.6	2185.9	2175.2	2156.5	2151.1
15°	2129.7	2129.7	2108.3	2086.8	2078.8
17.5°	2065.4	2062.7	2035.9	2014.5	2003.8
20°	1995.7	1990.4	1963.6	1928.8	1910.0
22.5°	1918.1	1918.1	1885.9	1840.4	1821.6
25°	1845.7	1835.0	1805.5	1741.2	1693.0
27.5°	1762.7	1746.6	1714.5	1623.4	1567.1
30°	1671.6	1663.6	1618.0	1500.2	1457.3
32.5°	1585.9	1572.5	1524.3	1401.0	1366.2
35°	1497.5	1486.8	1414.4	1307.3	1275.1
37.5°	1409.1	1395.7	1304.6	1218.9	1178.7
40°	1320.7	1304.6	1205.5	1127.8	1084.9
42.5°	1237.6	1216.2	1119.8	1036.7	988.5
45°	1149.2	1125.1	1028.7	943.0	905.4
47.5°	1060.8	1039.4	951.0	862.6	819.7
50°	967.1	948.3	867.9	779.5	734.0
52.5°	889.4	859.9	782.2	693.8	656.3
55°	798.3	774.2	701.9	618.8	586.7
57.5°	715.3	691.1	624.2	546.5	519.7
60°	637.6	602.7	546.5	479.5	458.1
62.5°	551.8	525.1	476.8	420.6	447.4
65°	474.2	447.4	404.5	412.5	342.9
67.5°	388.4	375.0	337.5	300.0	289.3
70°	316.1	300.0	286.6	246.5	235.7
72.5°	251.8	235.7	217.0	195.6	187.5
75°	190.2	176.8	166.1	158.1	174.1
77.5°	131.3	125.9	117.9	109.8	107.2
80°	85.7	83.0	80.4	77.7	75.0
82.5°	50.9	50.9	50.9	50.9	50.9
85°	26.8	29.5	32.1	34.8	37.5
87.5°	16.1	16.1	18.8	21.4	24.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)