

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: P561619

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561619  
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-82-85-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

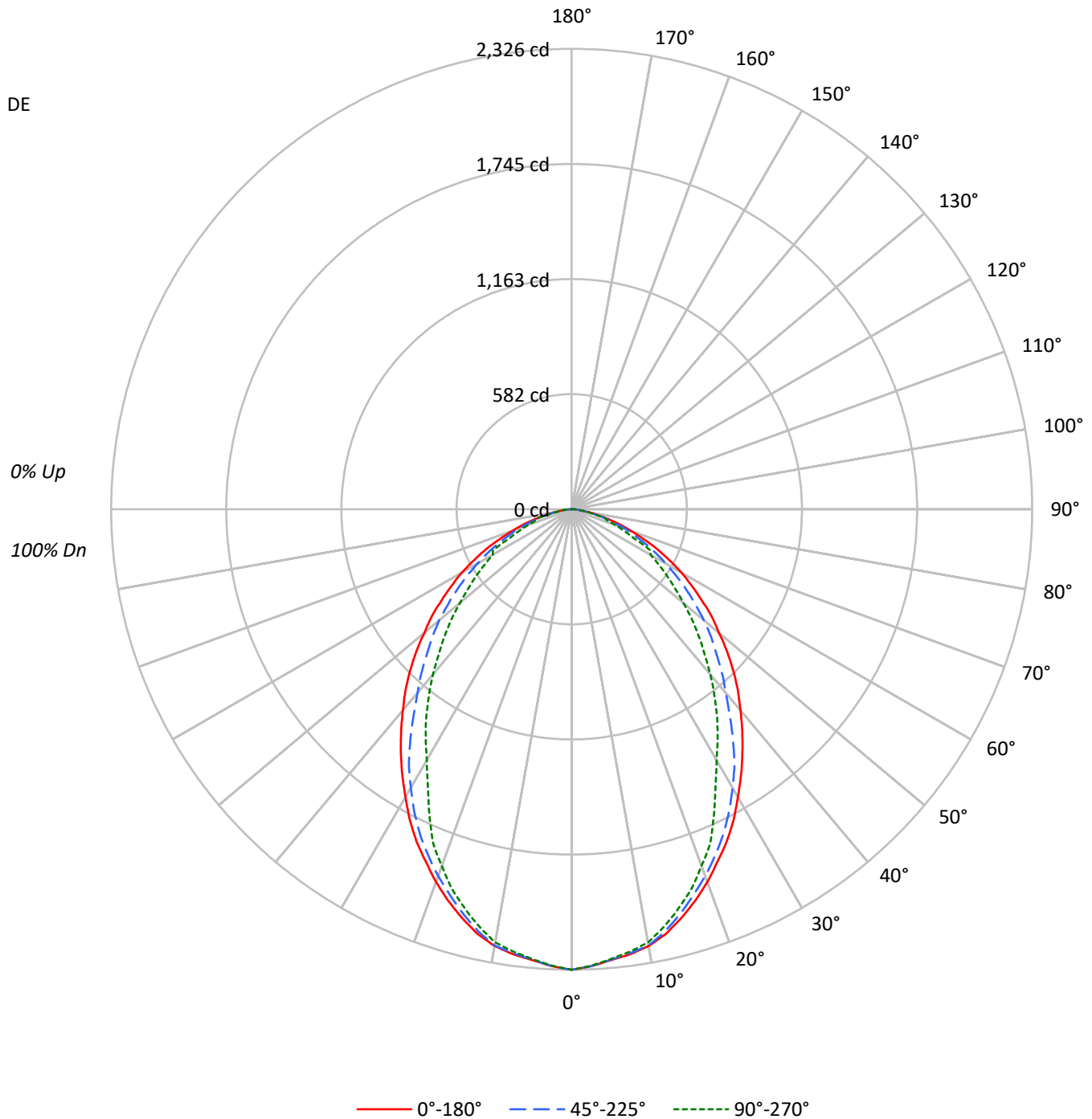
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4567.0 lumens  
Efficiency: N/A  
Efficacy: 97.6 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	6260	6260	6260
5°	6175	6168	6160
10°	6122	6114	6070
15°	5957	5897	5814
20°	5738	5645	5491
25°	5502	5382	5047
30°	5215	5047	4546
35°	4939	4665	4206
40°	4658	4251	3826
45°	4391	3930	3459
50°	4065	3648	3085
55°	3760	3306	2763
60°	3445	2953	2475
65°	3031	2586	2192
70°	2497	2264	1862
75°	1986	1733	1817
80°	1334	1251	1167
85°	831	997	1164

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4391 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.6	4.7
10°-20°	594.3	13.0
20°-30°	822.8	18.0
30°-40°	877.3	19.2
40°-50°	800.4	17.5
50°-60°	627.0	13.7
60°-70°	408.7	8.9
70°-80°	181.1	4.0
80°-90°	38.9	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°	1633.7	35.8
0°-40°	2511.0	55.0
0°-60°	3938.4	86.2
0°-90°	4567.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4567.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2326	2326	2326	2326	2326	
5°	2286	2283	2283	2281	2281	217
15°	2138	2138	2117	2095	2087	601
25°	1853	1842	1813	1748	1700	851
35°	1503	1493	1420	1312	1280	940
45°	1154	1130	1033	947	909	889
55°	802	777	705	621	589	719
65°	476	449	406	414	344	469
75°	191	178	167	159	175	205
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°	2326.4	2326.4	2326.4	2326.4	2326.4
2.5°	2310.2	2310.2	2310.2	2307.5	2307.5
5°	2286.0	2283.3	2283.3	2280.6	2280.6
7.5°	2267.2	2264.5	2261.8	2259.1	2253.8
10°	2240.3	2240.3	2237.6	2224.2	2221.5
12.5°	2197.3	2194.6	2183.8	2165.0	2159.6
15°	2138.1	2138.1	2116.6	2095.1	2087.0
17.5°	2073.6	2070.9	2044.0	2022.5	2011.7
20°	2003.6	1998.3	1971.4	1936.4	1917.6
22.5°	1925.6	1925.6	1893.4	1847.6	1828.8
25°	1853.0	1842.3	1812.7	1748.1	1699.7
27.5°	1769.7	1753.5	1721.2	1629.8	1573.3
30°	1678.2	1670.1	1624.4	1506.1	1463.1
32.5°	1592.2	1578.7	1530.3	1406.6	1371.6
35°	1503.4	1492.6	1420.0	1312.4	1280.2
37.5°	1414.6	1401.2	1309.8	1223.7	1183.4
40°	1325.9	1309.8	1210.2	1132.3	1089.2
42.5°	1242.5	1221.0	1124.2	1040.8	992.4
45°	1153.8	1129.6	1032.7	946.7	909.0
47.5°	1065.0	1043.5	954.8	866.0	823.0
50°	970.9	952.1	871.4	782.6	736.9
52.5°	892.9	863.3	785.3	696.6	658.9
55°	801.5	777.2	704.6	621.3	589.0
57.5°	718.1	693.9	626.6	548.6	521.8
60°	640.1	605.1	548.6	481.4	459.9
62.5°	554.0	527.1	478.7	422.2	449.1
65°	476.0	449.1	406.1	414.2	344.2
67.5°	390.0	376.5	338.9	301.2	290.5
70°	317.4	301.2	287.8	247.4	236.7
72.5°	252.8	236.7	217.8	196.3	188.3
75°	191.0	177.5	166.7	158.7	174.8
77.5°	131.8	126.4	118.3	110.3	107.6
80°	86.1	83.4	80.7	78.0	75.3
82.5°	51.1	51.1	51.1	51.1	51.1
85°	26.9	29.6	32.3	35.0	37.7
87.5°	16.1	16.1	18.8	21.5	24.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)