

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: P562756

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562756  
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-24-4-LD4-2LO-40-UNV-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

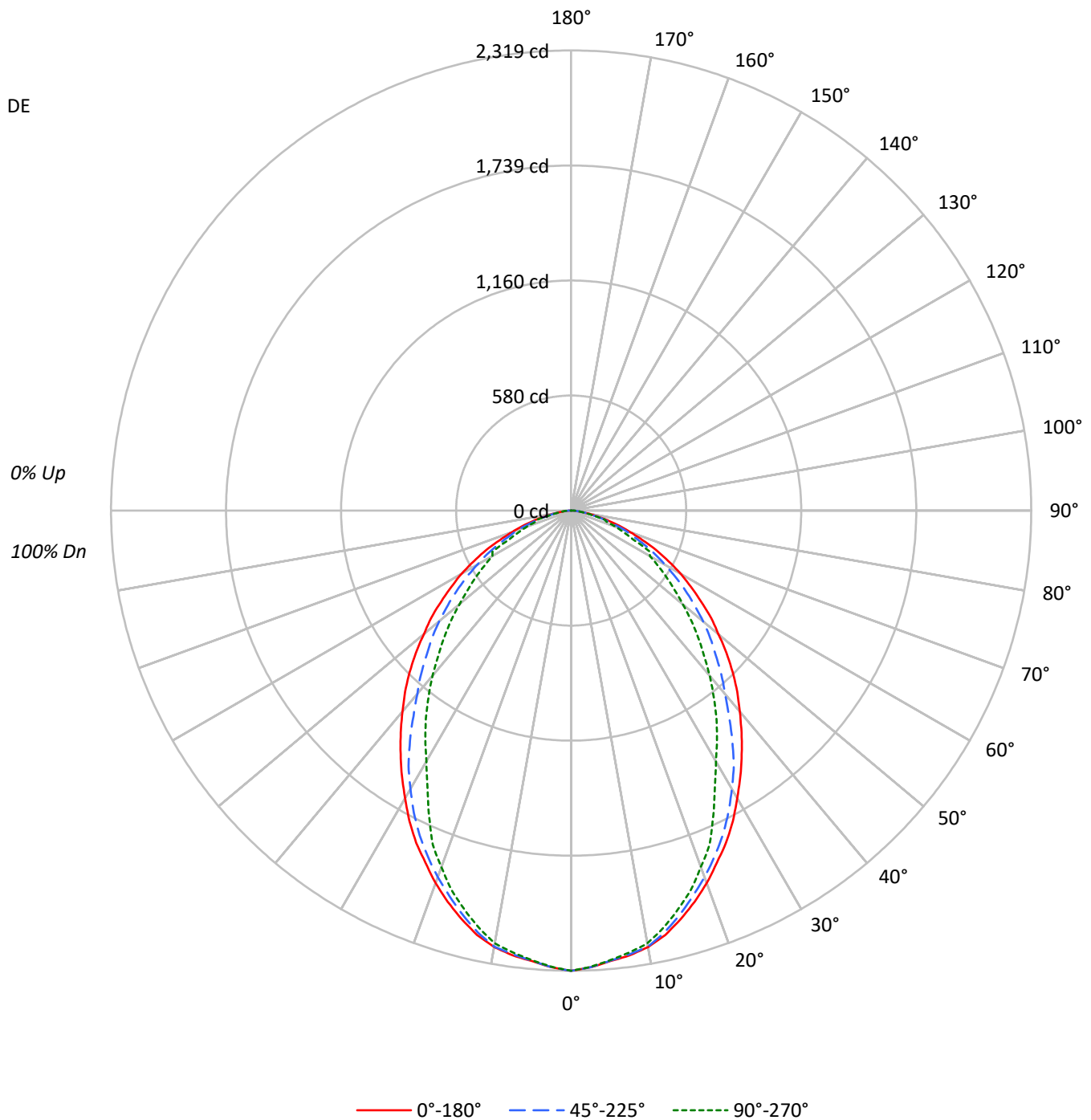
Lumens per Lamp: N/A  
Luminaire Lumens: 4553.0 lumens  
Efficiency: N/A  
Efficacy: 97.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3120	3120	3120
5°	3078	3074	3071
10°	3051	3048	3026
15°	2969	2939	2898
20°	2860	2814	2737
25°	2742	2683	2516
30°	2599	2516	2266
35°	2462	2325	2096
40°	2322	2119	1907
45°	2189	1959	1724
50°	2026	1818	1538
55°	1874	1648	1377
60°	1717	1472	1234
65°	1511	1289	1093
70°	1245	1129	928
75°	990	864	906
80°	665	623	582
85°	414	497	579

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2189 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.9	4.7
10°-20°	592.5	13.0
20°-30°	820.3	18.0
30°-40°	874.6	19.2
40°-50°	797.9	17.5
50°-60°	625.1	13.7
60°-70°	407.4	8.9
70°-80°	180.5	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°	1628.6	35.8
0°-40°	2503.3	55.0
0°-60°	3926.3	86.2
0°-90°	4553.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4553.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2319	2319	2319	2319	2319	
5°	2279	2276	2276	2274	2274	216
15°	2132	2132	2110	2089	2081	599
25°	1847	1837	1807	1743	1694	848
35°	1499	1488	1416	1308	1276	937
45°	1150	1126	1030	944	906	886
55°	799	775	702	619	587	717
65°	475	448	405	413	343	468
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°	2319.2	2319.2	2319.2	2319.2	2319.2
2.5°	2303.2	2303.2	2303.2	2300.5	2300.5
5°	2279.0	2276.3	2276.3	2273.7	2273.7
7.5°	2260.3	2257.6	2254.9	2252.2	2246.8
10°	2233.4	2233.4	2230.8	2217.4	2214.7
12.5°	2190.5	2187.9	2177.1	2158.4	2153.0
15°	2131.6	2131.6	2110.1	2088.7	2080.6
17.5°	2067.2	2064.5	2037.7	2016.3	2005.5
20°	1997.5	1992.1	1965.3	1930.5	1911.7
22.5°	1919.7	1919.7	1887.6	1842.0	1823.2
25°	1847.3	1836.6	1807.1	1742.8	1694.5
27.5°	1764.2	1748.1	1716.0	1624.8	1568.5
30°	1673.1	1665.0	1619.4	1501.5	1458.6
32.5°	1587.3	1573.9	1525.6	1402.3	1367.4
35°	1498.8	1488.1	1415.7	1308.4	1276.3
37.5°	1410.3	1396.9	1305.7	1219.9	1179.7
40°	1321.8	1305.7	1206.5	1128.8	1085.9
42.5°	1238.7	1217.3	1120.7	1037.6	989.4
45°	1150.2	1126.1	1029.6	943.8	906.2
47.5°	1061.8	1040.3	951.8	863.3	820.4
50°	967.9	949.1	868.7	780.2	734.6
52.5°	890.2	860.7	782.9	694.4	656.9
55°	799.0	774.9	702.5	619.4	587.2
57.5°	715.9	691.7	624.7	547.0	520.2
60°	638.1	603.3	547.0	479.9	458.5
62.5°	552.3	525.5	477.3	420.9	447.8
65°	474.6	447.8	404.9	412.9	343.2
67.5°	388.8	375.4	337.8	300.3	289.6
70°	316.4	300.3	286.9	246.7	235.9
72.5°	252.0	235.9	217.2	195.7	187.7
75°	190.4	177.0	166.2	158.2	174.3
77.5°	131.4	126.0	118.0	109.9	107.2
80°	85.8	83.1	80.4	77.8	75.1
82.5°	50.9	50.9	50.9	50.9	50.9
85°	26.8	29.5	32.2	34.9	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)