

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: P562770

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-82-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562770  
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-82-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

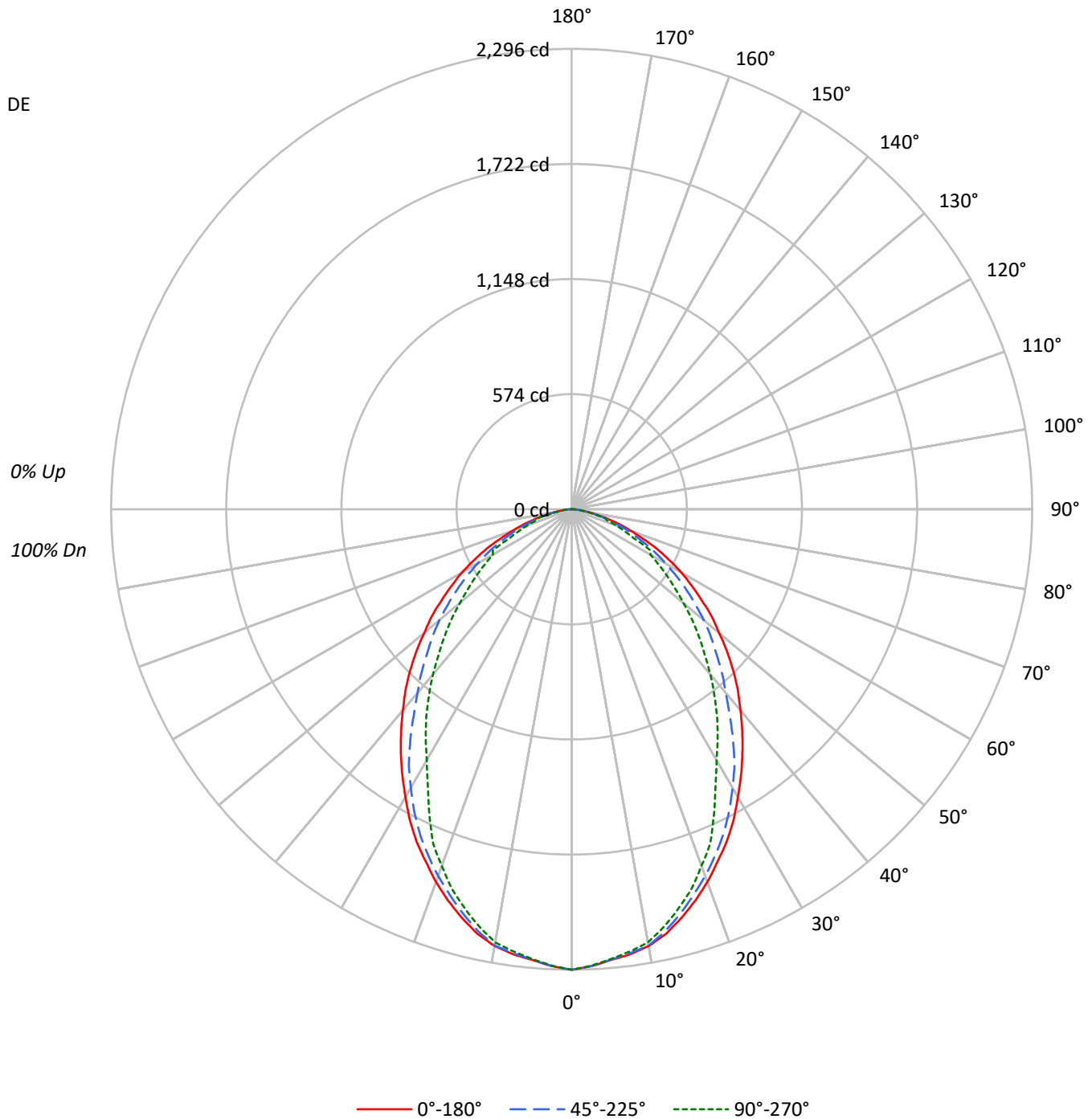
Lumens per Lamp: N/A  
Luminaire Lumens: 4508.0 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3090	3090	3090
5°	3048	3044	3041
10°	3021	3018	2996
15°	2940	2910	2869
20°	2832	2786	2710
25°	2715	2656	2491
30°	2574	2491	2244
35°	2438	2302	2076
40°	2299	2098	1888
45°	2167	1940	1707
50°	2006	1800	1523
55°	1856	1631	1364
60°	1700	1457	1222
65°	1496	1276	1082
70°	1233	1118	919
75°	980	856	897
80°	659	617	576
85°	409	492	574

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2167 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	213.8	4.7
10°-20°	586.6	13.0
20°-30°	812.2	18.0
30°-40°	866.0	19.2
40°-50°	790.0	17.5
50°-60°	618.9	13.7
60°-70°	403.4	8.9
70°-80°	178.7	4.0
80°-90°	38.4	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°	1612.5	35.8
0°-40°	2478.5	55.0
0°-60°	3887.5	86.2
0°-90°	4508.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4508.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2296	2296	2296	2296	2296	
5°	2256	2254	2254	2251	2251	214
15°	2110	2110	2089	2068	2060	593
25°	1829	1818	1789	1726	1678	840
35°	1484	1473	1402	1296	1264	928
45°	1139	1115	1019	934	897	877
55°	791	767	696	613	581	710
65°	470	443	401	409	340	463
75°	188	175	165	157	173	202
85°	26	29	32	34	37	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2296.3	2296.3	2296.3	2296.3	2296.3
2.5°	2280.4	2280.4	2280.4	2277.7	2277.7
5°	2256.5	2253.8	2253.8	2251.2	2251.2
7.5°	2237.9	2235.3	2232.6	2229.9	2224.6
10°	2211.4	2211.4	2208.7	2195.4	2192.8
12.5°	2168.9	2166.2	2155.6	2137.0	2131.7
15°	2110.5	2110.5	2089.2	2068.0	2060.0
17.5°	2046.8	2044.1	2017.6	1996.3	1985.7
20°	1977.8	1972.4	1945.9	1911.4	1892.8
22.5°	1900.8	1900.8	1868.9	1823.8	1805.2
25°	1829.1	1818.5	1789.3	1725.6	1677.8
27.5°	1746.8	1730.9	1699.0	1608.7	1553.0
30°	1656.5	1648.6	1603.4	1486.6	1444.2
32.5°	1571.6	1558.3	1510.5	1388.4	1353.9
35°	1484.0	1473.4	1401.7	1295.5	1263.6
37.5°	1396.4	1383.1	1292.8	1207.9	1168.1
40°	1308.8	1292.8	1194.6	1117.6	1075.2
42.5°	1226.5	1205.2	1109.7	1027.4	979.6
45°	1138.9	1115.0	1019.4	934.5	897.3
47.5°	1051.3	1030.0	942.4	854.8	812.3
50°	958.3	939.8	860.1	772.5	727.4
52.5°	881.4	852.2	775.2	687.6	650.4
55°	791.1	767.2	695.5	613.2	581.4
57.5°	708.8	684.9	618.5	541.6	515.0
60°	631.8	597.3	541.6	475.2	454.0
62.5°	546.9	520.3	472.5	416.8	443.3
65°	469.9	443.3	400.9	408.8	339.8
67.5°	384.9	371.7	334.5	297.3	286.7
70°	313.3	297.3	284.1	244.2	233.6
72.5°	249.5	233.6	215.0	193.8	185.8
75°	188.5	175.2	164.6	156.6	172.6
77.5°	130.1	124.8	116.8	108.8	106.2
80°	85.0	82.3	79.6	77.0	74.3
82.5°	50.4	50.4	50.4	50.4	50.4
85°	26.5	29.2	31.9	34.5	37.2
87.5°	15.9	15.9	18.6	21.2	23.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)