

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: P561989

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561989  
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-LD4-1HI-35-UNV-81-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

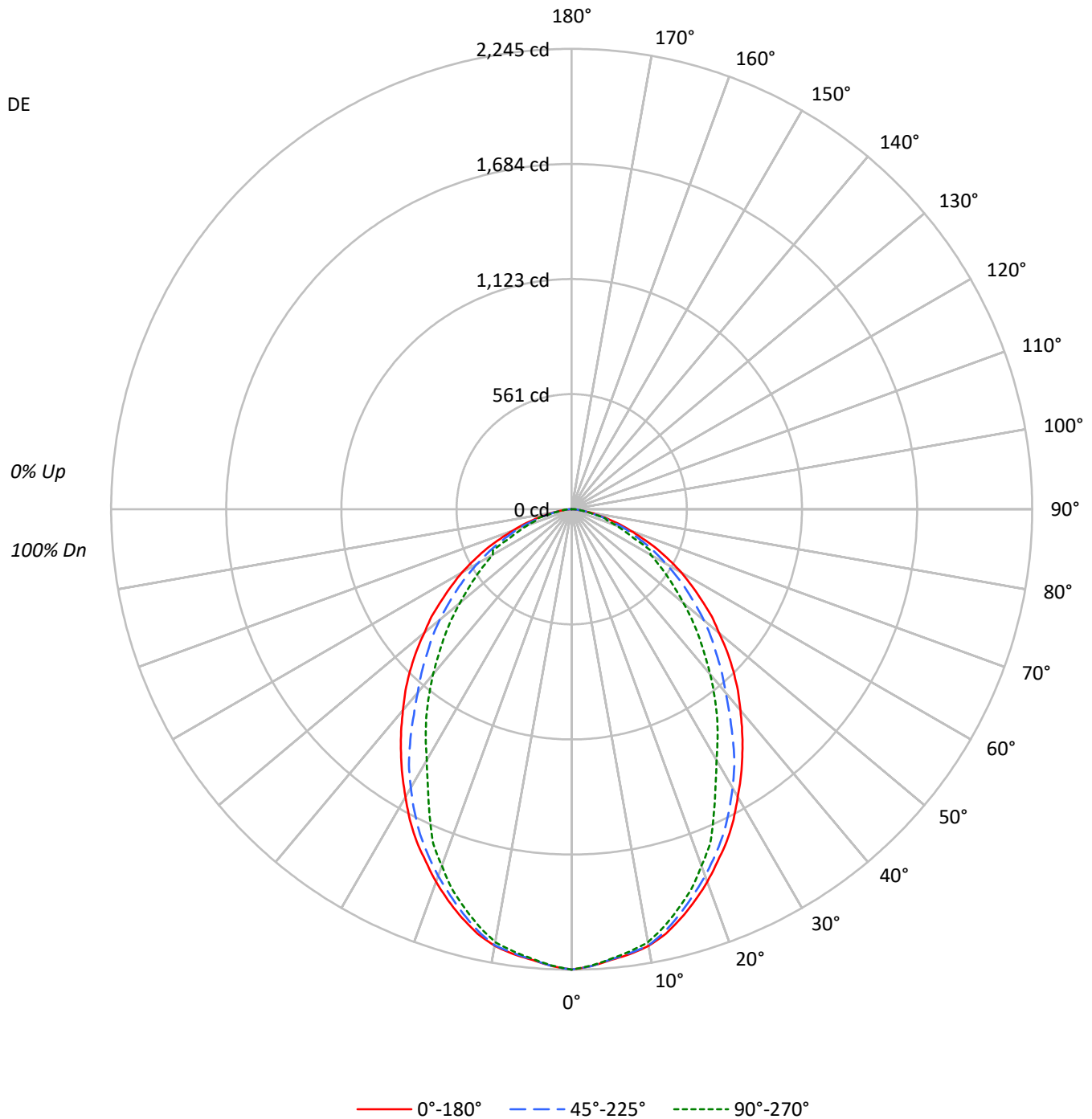
Lumens per Lamp: N/A  
Luminaire Lumens: 4407.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3020	3020	3020
5°	2979	2976	2972
10°	2954	2950	2929
15°	2874	2845	2805
20°	2768	2724	2649
25°	2655	2597	2435
30°	2516	2435	2193
35°	2383	2251	2029
40°	2247	2051	1846
45°	2119	1896	1669
50°	1961	1760	1488
55°	1814	1595	1333
60°	1662	1425	1194
65°	1463	1248	1058
70°	1205	1092	899
75°	958	836	877
80°	643	604	563
85°	401	480	560

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2119 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.0	4.7
10°-20°	573.5	13.0
20°-30°	794.0	18.0
30°-40°	846.6	19.2
40°-50°	772.3	17.5
50°-60°	605.1	13.7
60°-70°	394.4	8.9
70°-80°	174.7	4.0
80°-90°	37.5	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°	1576.4	35.8
0°-40°	2423.0	55.0
0°-60°	3800.4	86.2
0°-90°	4407.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4407.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2245	2245	2245	2245	2245	
5°	2206	2203	2203	2201	2201	209
15°	2063	2063	2042	2022	2014	580
25°	1788	1778	1749	1687	1640	821
35°	1451	1440	1370	1266	1235	907
45°	1113	1090	997	914	877	858
55°	773	750	680	600	568	694
65°	459	433	392	400	332	453
75°	184	171	161	153	169	198
85°	26	28	31	34	36	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2244.9	2244.9	2244.9	2244.9	2244.9
2.5°	2229.3	2229.3	2229.3	2226.7	2226.7
5°	2205.9	2203.3	2203.3	2200.7	2200.7
7.5°	2187.8	2185.2	2182.6	2180.0	2174.8
10°	2161.8	2161.8	2159.2	2146.2	2143.7
12.5°	2120.3	2117.7	2107.3	2089.2	2084.0
15°	2063.2	2063.2	2042.4	2021.7	2013.9
17.5°	2000.9	1998.3	1972.4	1951.6	1941.2
20°	1933.4	1928.2	1902.3	1868.6	1850.4
22.5°	1858.2	1858.2	1827.0	1782.9	1764.8
25°	1788.1	1777.7	1749.2	1686.9	1640.2
27.5°	1707.7	1692.1	1660.9	1572.7	1518.2
30°	1619.4	1611.6	1567.5	1453.3	1411.8
32.5°	1536.4	1523.4	1476.7	1357.3	1323.6
35°	1450.7	1440.3	1370.3	1266.5	1235.3
37.5°	1365.1	1352.1	1263.9	1180.8	1141.9
40°	1279.4	1263.9	1167.8	1092.6	1051.1
42.5°	1199.0	1178.2	1084.8	1004.4	957.6
45°	1113.4	1090.0	996.6	913.5	877.2
47.5°	1027.7	1006.9	921.3	835.7	794.1
50°	936.9	918.7	840.9	755.2	711.1
52.5°	861.6	833.1	757.8	672.2	635.8
55°	773.4	750.0	679.9	599.5	568.4
57.5°	692.9	669.6	604.7	529.4	503.5
60°	617.7	583.9	529.4	464.5	443.8
62.5°	534.6	508.7	461.9	407.4	433.4
65°	459.4	433.4	391.9	399.7	332.2
67.5°	376.3	363.3	327.0	290.7	280.3
70°	306.2	290.7	277.7	238.8	228.4
72.5°	244.0	228.4	210.2	189.5	181.7
75°	184.3	171.3	160.9	153.1	168.7
77.5°	127.2	122.0	114.2	106.4	103.8
80°	83.0	80.5	77.9	75.3	72.7
82.5°	49.3	49.3	49.3	49.3	49.3
85°	26.0	28.5	31.1	33.7	36.3
87.5°	15.6	15.6	18.2	20.8	23.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)