

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: P562688

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562688  
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-35-UNV-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

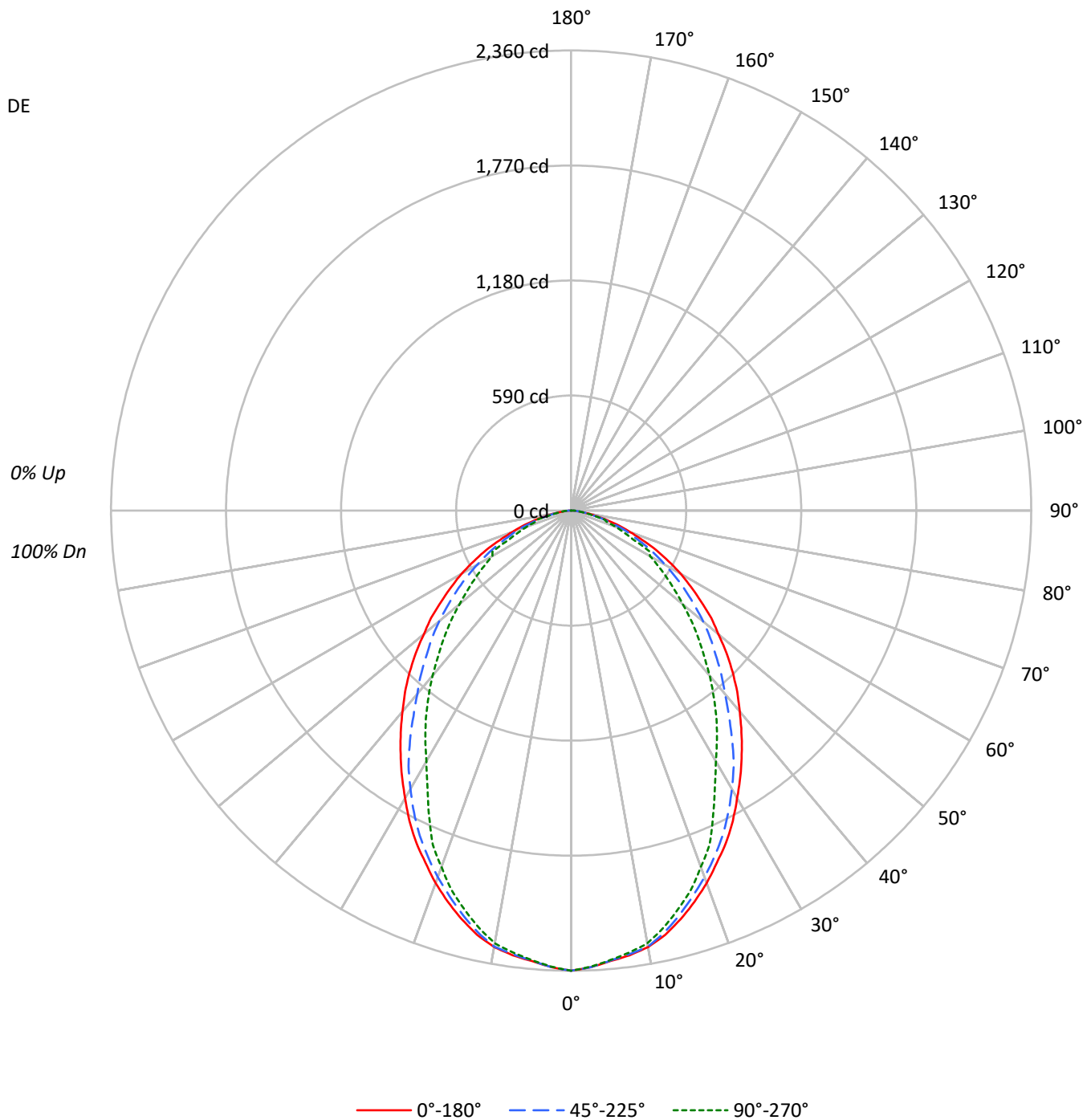
Lumens per Lamp: N/A  
Luminaire Lumens: 4633.0 lumens  
Efficiency: N/A  
Efficacy: 99.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3175	3175	3175
5°	3132	3128	3125
10°	3105	3101	3079
15°	3021	2991	2949
20°	2910	2864	2785
25°	2791	2730	2560
30°	2645	2560	2306
35°	2505	2366	2133
40°	2363	2156	1941
45°	2227	1994	1755
50°	2062	1850	1565
55°	1907	1677	1402
60°	1747	1498	1255
65°	1537	1312	1112
70°	1266	1148	945
75°	1007	880	922
80°	676	634	592
85°	421	505	590

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2227 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.7	4.7
10°-20°	602.9	13.0
20°-30°	834.7	18.0
30°-40°	890.0	19.2
40°-50°	812.0	17.5
50°-60°	636.1	13.7
60°-70°	414.6	8.9
70°-80°	183.7	4.0
80°-90°	39.4	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°	1657.3	35.8
0°-40°	2547.3	55.0
0°-60°	3995.3	86.2
0°-90°	4633.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4633.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2360	2360	2360	2360	2360	
5°	2319	2316	2316	2314	2314	220
15°	2169	2169	2147	2125	2117	610
25°	1880	1869	1839	1773	1724	863
35°	1525	1514	1440	1331	1299	953
45°	1170	1146	1048	960	922	902
55°	813	788	715	630	598	729
65°	483	456	412	420	349	476
75°	194	180	169	161	177	208
85°	27	30	33	36	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2360.0	2360.0	2360.0	2360.0	2360.0
2.5°	2343.6	2343.6	2343.6	2340.9	2340.9
5°	2319.1	2316.3	2316.3	2313.6	2313.6
7.5°	2300.0	2297.2	2294.5	2291.8	2286.3
10°	2272.7	2272.7	2270.0	2256.3	2253.6
12.5°	2229.0	2226.3	2215.4	2196.3	2190.8
15°	2169.0	2169.0	2147.2	2125.4	2117.2
17.5°	2103.5	2100.8	2073.5	2051.7	2040.8
20°	2032.6	2027.1	1999.9	1964.4	1945.3
22.5°	1953.5	1953.5	1920.7	1874.3	1855.3
25°	1879.8	1868.9	1838.9	1773.4	1724.3
27.5°	1795.2	1778.9	1746.1	1653.4	1596.1
30°	1702.5	1694.3	1647.9	1527.9	1484.2
32.5°	1615.2	1601.5	1552.4	1426.9	1391.4
35°	1525.1	1514.2	1440.5	1331.4	1298.7
37.5°	1435.1	1421.4	1328.7	1241.4	1200.5
40°	1345.1	1328.7	1227.7	1148.6	1105.0
42.5°	1260.5	1238.7	1140.4	1055.9	1006.7
45°	1170.4	1145.9	1047.7	960.4	922.2
47.5°	1080.4	1058.6	968.6	878.5	834.9
50°	984.9	965.8	884.0	793.9	747.6
52.5°	905.8	875.8	796.7	706.6	668.4
55°	813.0	788.5	714.8	630.2	597.5
57.5°	728.5	703.9	635.7	556.6	529.3
60°	649.3	613.9	556.6	488.4	466.5
62.5°	562.0	534.7	485.6	428.3	455.6
65°	482.9	455.6	412.0	420.2	349.2
67.5°	395.6	382.0	343.8	305.6	294.7
70°	321.9	305.6	291.9	251.0	240.1
72.5°	256.5	240.1	221.0	199.2	191.0
75°	193.7	180.1	169.2	161.0	177.3
77.5°	133.7	128.2	120.0	111.9	109.1
80°	87.3	84.6	81.8	79.1	76.4
82.5°	51.8	51.8	51.8	51.8	51.8
85°	27.3	30.0	32.7	35.5	38.2
87.5°	16.4	16.4	19.1	21.8	24.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)