

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: P563142

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563142  
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-LD4-3HI-40-UNV-81-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

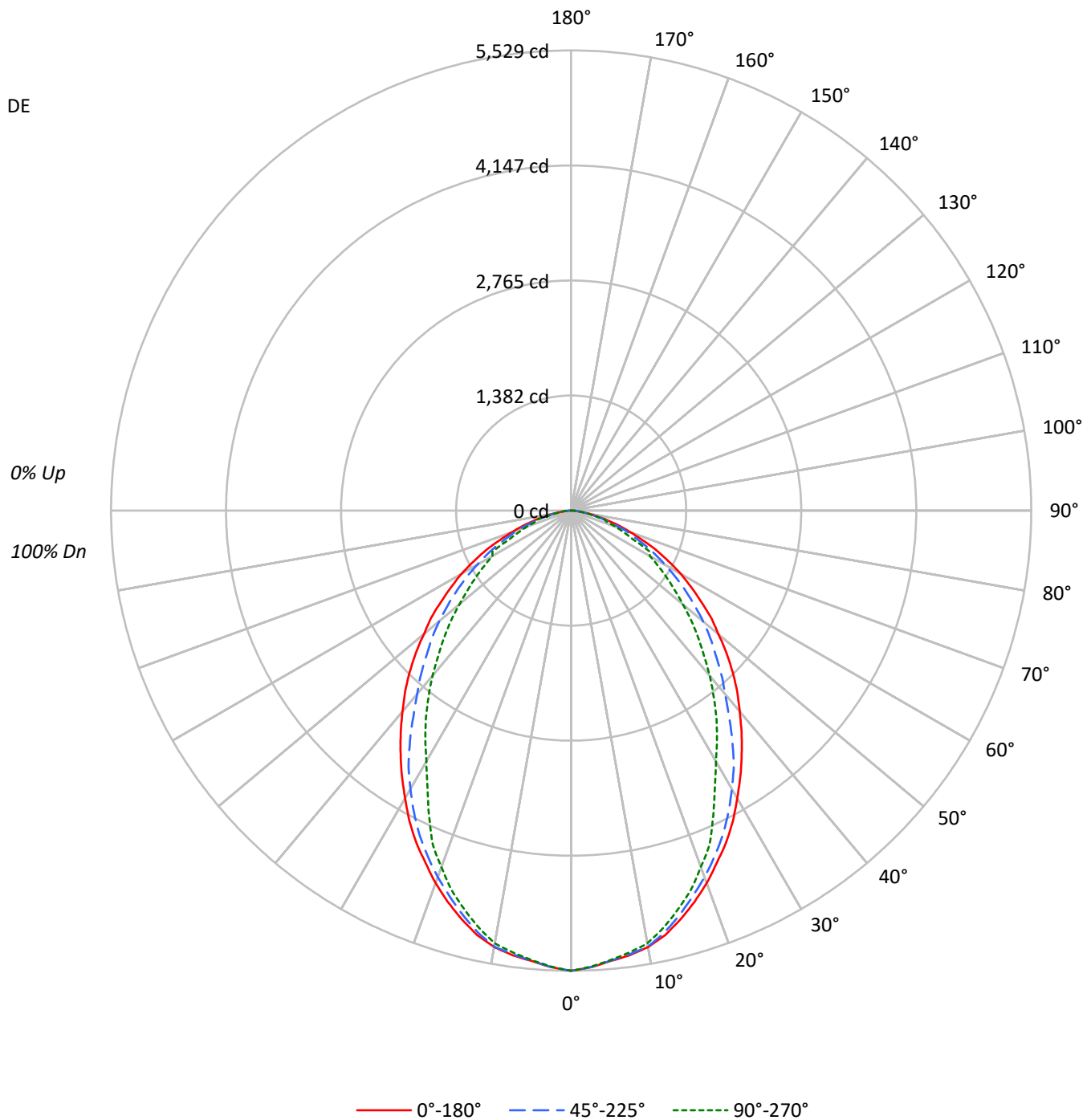
Lumens per Lamp: N/A  
Luminaire Lumens: 10855.0 lumens  
Efficiency: N/A  
Efficacy: 83.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P563142

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563142

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-87-EDD-90

**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°	7440	7440	7440
5°	7339	7330	7321
10°	7275	7266	7214
15°	7079	7008	6910
20°	6819	6709	6526
25°	6539	6396	5998
30°	6197	5999	5403
35°	5869	5544	4998
40°	5535	5052	4547
45°	5218	4671	4111
50°	4830	4335	3666
55°	4468	3929	3284
60°	4094	3509	2942
65°	3602	3073	2605
70°	2967	2691	2213
75°	2360	2060	2160
80°	1585	1486	1387
85°	986	1184	1382

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5218 cd/sqm

TEST NUMBER: P563142

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	514.7	4.7
10°-20°	1412.6	13.0
20°-30°	1955.6	18.0
30°-40°	2085.3	19.2
40°-50°	1902.4	17.5
50°-60°	1490.3	13.7
60°-70°	971.3	8.9
70°-80°	430.3	4.0
80°-90°	92.4	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°	3882.9	35.8
0°-40°	5968.2	55.0
0°-60°	9360.9	86.2
0°-90°	10855.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10855.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5529	5529	5529	5529	5529	
5°	5434	5427	5427	5421	5421	516
15°	5082	5082	5031	4980	4960	1429
25°	4404	4379	4308	4155	4040	2022
35°	3573	3548	3375	3120	3043	2234
45°	2742	2685	2455	2250	2161	2112
55°	1905	1847	1675	1477	1400	1709
65°	1131	1068	965	984	818	1115
75°	454	422	396	377	416	486
85°	64	70	77	83	90	89
90°	0	0	0	0	0	



TEST NUMBER: P563142

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5529.4	5529.4	5529.4	5529.4	5529.4
2.5°	5491.0	5491.0	5491.0	5484.6	5484.6
5°	5433.5	5427.1	5427.1	5420.7	5420.7
7.5°	5388.8	5382.4	5376.0	5369.6	5356.8
10°	5324.8	5324.8	5318.4	5286.5	5280.1
12.5°	5222.6	5216.2	5190.6	5145.9	5133.1
15°	5081.9	5081.9	5030.8	4979.6	4960.5
17.5°	4928.5	4922.1	4858.2	4807.1	4781.5
20°	4762.3	4749.5	4685.6	4602.5	4557.8
22.5°	4576.9	4576.9	4500.2	4391.6	4346.8
25°	4404.3	4378.8	4308.5	4155.0	4040.0
27.5°	4206.2	4167.8	4091.1	3873.8	3739.5
30°	3988.8	3969.7	3861.0	3579.7	3477.4
32.5°	3784.3	3752.3	3637.3	3343.2	3260.1
35°	3573.3	3547.8	3375.2	3119.5	3042.8
37.5°	3362.4	3330.4	3113.1	2908.5	2812.6
40°	3151.4	3113.1	2876.6	2691.2	2588.9
42.5°	2953.3	2902.1	2672.0	2473.8	2358.8
45°	2742.3	2684.8	2454.7	2250.1	2160.6
47.5°	2531.4	2480.2	2269.3	2058.3	1956.1
50°	2307.6	2262.9	2071.1	1860.2	1751.5
52.5°	2122.3	2051.9	1866.6	1655.6	1566.1
55°	1904.9	1847.4	1674.8	1476.6	1399.9
57.5°	1706.8	1649.2	1489.4	1304.0	1240.1
60°	1521.4	1438.3	1304.0	1144.2	1093.1
62.5°	1316.8	1252.9	1137.8	1003.6	1067.5
65°	1131.4	1067.5	965.2	984.4	818.2
67.5°	926.9	894.9	805.4	715.9	690.4
70°	754.3	715.9	684.0	588.1	562.5
72.5°	600.9	562.5	517.8	466.6	447.5
75°	453.9	421.9	396.3	377.1	415.5
77.5°	313.2	300.4	281.3	262.1	255.7
80°	204.6	198.2	191.8	185.4	179.0
82.5°	121.5	121.5	121.5	121.5	121.5
85°	63.9	70.3	76.7	83.1	89.5
87.5°	38.4	38.4	44.7	51.1	57.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)