

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: P563072

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563072  
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-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**

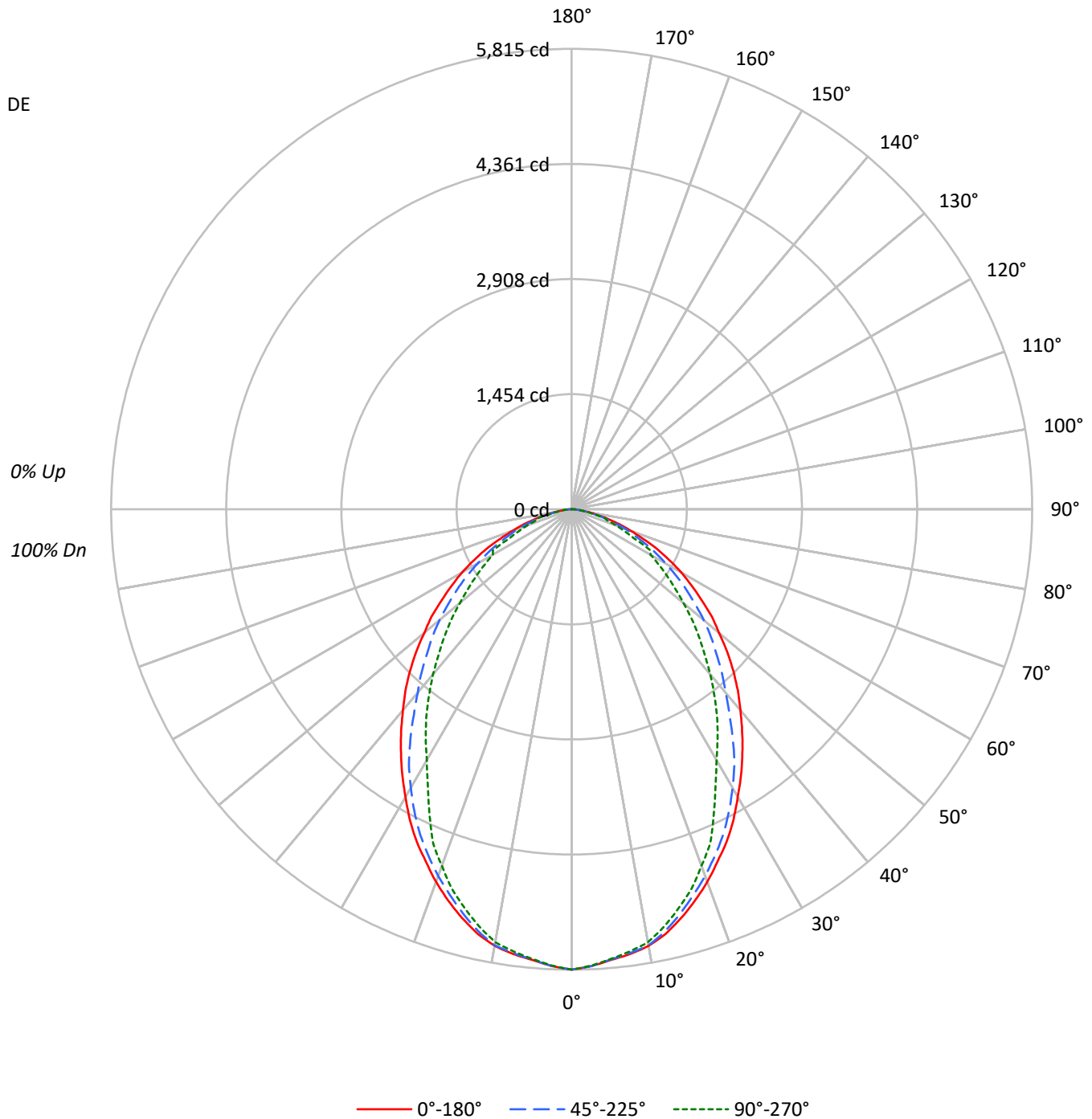
Lumens per Lamp: N/A  
Luminaire Lumens: 11415.0 lumens  
Efficiency: N/A  
Efficacy: 88.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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°	7823	7823	7823
5°	7717	7708	7699
10°	7650	7641	7586
15°	7444	7369	7266
20°	7171	7055	6863
25°	6876	6726	6307
30°	6517	6308	5681
35°	6172	5830	5256
40°	5821	5313	4782
45°	5487	4912	4323
50°	5080	4559	3855
55°	4699	4131	3453
60°	4305	3690	3093
65°	3788	3231	2739
70°	3120	2830	2327
75°	2481	2167	2271
80°	1667	1563	1458
85°	1037	1246	1453

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5487 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	541.3	4.7
10°-20°	1485.5	13.0
20°-30°	2056.5	18.0
30°-40°	2192.8	19.2
40°-50°	2000.5	17.5
50°-60°	1567.2	13.7
60°-70°	1021.4	8.9
70°-80°	452.5	4.0
80°-90°	97.2	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°	4083.2	35.8
0°-40°	6276.1	55.0
0°-60°	9843.8	86.2
0°-90°	11415.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11415.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5815	5815	5815	5815	5815	
5°	5714	5707	5707	5700	5700	542
15°	5344	5344	5290	5236	5216	1502
25°	4632	4605	4531	4369	4248	2126
35°	3758	3731	3549	3280	3200	2349
45°	2884	2823	2581	2366	2272	2221
55°	2003	1943	1761	1553	1472	1797
65°	1190	1123	1015	1035	860	1173
75°	477	444	417	397	437	512
85°	67	74	81	87	94	93
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5814.6	5814.6	5814.6	5814.6	5814.6
2.5°	5774.3	5774.3	5774.3	5767.6	5767.6
5°	5713.8	5707.1	5707.1	5700.4	5700.4
7.5°	5666.8	5660.0	5653.3	5646.6	5633.2
10°	5599.5	5599.5	5592.8	5559.2	5552.5
12.5°	5492.0	5485.3	5458.4	5411.3	5397.9
15°	5344.1	5344.1	5290.3	5236.5	5216.4
17.5°	5182.8	5176.0	5108.8	5055.0	5028.2
20°	5008.0	4994.5	4927.3	4839.9	4792.9
22.5°	4813.1	4813.1	4732.4	4618.1	4571.1
25°	4631.6	4604.7	4530.7	4369.4	4248.4
27.5°	4423.2	4382.8	4302.2	4073.6	3932.5
30°	4194.6	4174.4	4060.2	3764.4	3656.8
32.5°	3979.5	3945.9	3824.9	3515.7	3428.3
35°	3757.7	3730.8	3549.3	3280.4	3199.7
37.5°	3535.8	3502.2	3273.7	3058.6	2957.7
40°	3314.0	3273.7	3025.0	2830.0	2722.5
42.5°	3105.6	3051.9	2809.9	2601.5	2480.5
45°	2883.8	2823.3	2581.3	2366.2	2272.1
47.5°	2662.0	2608.2	2386.4	2164.5	2057.0
50°	2426.7	2379.6	2178.0	1956.1	1841.9
52.5°	2231.7	2157.8	1962.9	1741.0	1646.9
55°	2003.2	1942.7	1761.2	1552.8	1472.1
57.5°	1794.8	1734.3	1566.3	1371.3	1304.1
60°	1599.9	1512.5	1371.3	1203.3	1149.5
62.5°	1384.8	1317.5	1196.5	1055.4	1122.6
65°	1189.8	1122.6	1015.0	1035.2	860.4
67.5°	974.7	941.1	847.0	752.9	726.0
70°	793.2	752.9	719.3	618.4	591.5
72.5°	631.9	591.5	544.5	490.7	470.5
75°	477.3	443.7	416.8	396.6	436.9
77.5°	329.4	315.9	295.8	275.6	268.9
80°	215.1	208.4	201.7	194.9	188.2
82.5°	127.7	127.7	127.7	127.7	127.7
85°	67.2	73.9	80.7	87.4	94.1
87.5°	40.3	40.3	47.1	53.8	60.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)