

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: P560455

Luminaire Tested: FSR-12-2-LD4-2LO-40-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560455  
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-12-2-LD4-2LO-40-UNV-81-87-EDD  
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

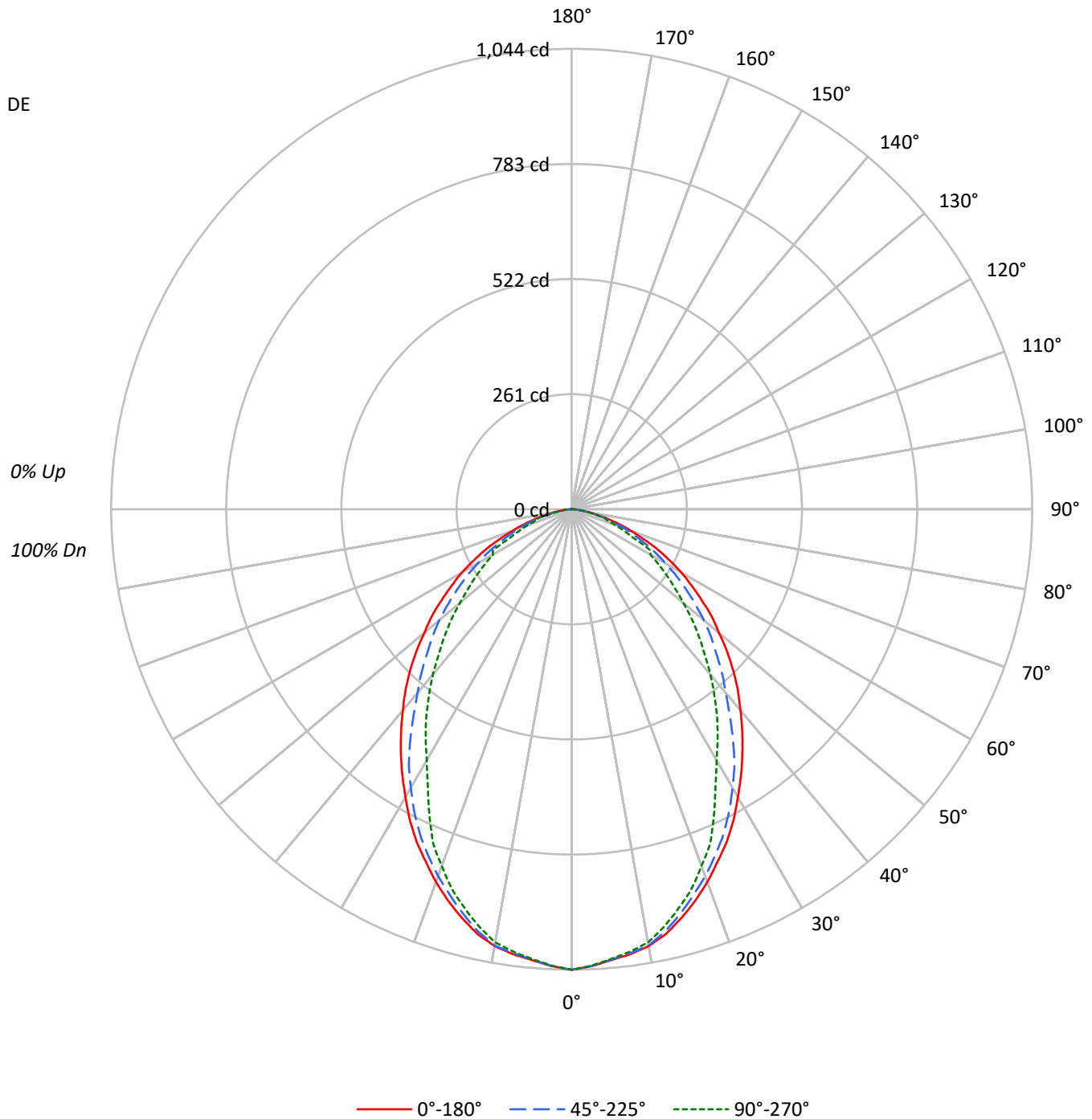
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2050.0 lumens  
Efficiency: N/A  
Efficacy: 87.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
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°	5620	5620	5620
5°	5544	5537	5531
10°	5496	5489	5450
15°	5347	5294	5220
20°	5151	5068	4930
25°	4940	4832	4531
30°	4681	4532	4081
35°	4434	4188	3775
40°	4182	3816	3435
45°	3942	3529	3105
50°	3649	3275	2770
55°	3376	2968	2481
60°	3092	2651	2222
65°	2721	2322	1968
70°	2242	2033	1671
75°	1782	1555	1632
80°	1196	1122	1048
85°	747	895	1044

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3942 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.2	4.7
10°-20°	266.8	13.0
20°-30°	369.3	18.0
30°-40°	393.8	19.2
40°-50°	359.3	17.5
50°-60°	281.5	13.7
60°-70°	183.4	8.9
70°-80°	81.3	4.0
80°-90°	17.4	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°	733.3	35.8
0°-40°	1127.1	55.0
0°-60°	1767.8	86.2
0°-90°	2050.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2050.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1044	1044	1044	1044	1044	
5°	1026	1025	1025	1024	1024	97
15°	960	960	950	940	937	270
25°	832	827	814	785	763	382
35°	675	670	637	589	575	422
45°	518	507	464	425	408	399
55°	360	349	316	279	264	323
65°	214	202	182	186	154	211
75°	86	80	75	71	78	92
85°	12	13	14	16	17	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1044.2	1044.2	1044.2	1044.2	1044.2
2.5°	1037.0	1037.0	1037.0	1035.8	1035.8
5°	1026.1	1024.9	1024.9	1023.7	1023.7
7.5°	1017.7	1016.5	1015.3	1014.1	1011.6
10°	1005.6	1005.6	1004.4	998.4	997.2
12.5°	986.3	985.1	980.3	971.8	969.4
15°	959.7	959.7	950.1	940.4	936.8
17.5°	930.8	929.6	917.5	907.8	903.0
20°	899.4	897.0	884.9	869.2	860.7
22.5°	864.4	864.4	849.9	829.4	820.9
25°	831.8	826.9	813.7	784.7	763.0
27.5°	794.3	787.1	772.6	731.6	706.2
30°	753.3	749.7	729.2	676.0	656.7
32.5°	714.7	708.6	686.9	631.4	615.7
35°	674.8	670.0	637.4	589.1	574.6
37.5°	635.0	629.0	587.9	549.3	531.2
40°	595.2	587.9	543.2	508.2	488.9
42.5°	557.7	548.1	504.6	467.2	445.5
45°	517.9	507.0	463.6	424.9	408.0
47.5°	478.1	468.4	428.6	388.7	369.4
50°	435.8	427.4	391.1	351.3	330.8
52.5°	400.8	387.5	352.5	312.7	295.8
55°	359.8	348.9	316.3	278.9	264.4
57.5°	322.3	311.5	281.3	246.3	234.2
60°	287.3	271.6	246.3	216.1	206.4
62.5°	248.7	236.6	214.9	189.5	201.6
65°	213.7	201.6	182.3	185.9	154.5
67.5°	175.0	169.0	152.1	135.2	130.4
70°	142.5	135.2	129.2	111.1	106.2
72.5°	113.5	106.2	97.8	88.1	84.5
75°	85.7	79.7	74.8	71.2	78.5
77.5°	59.2	56.7	53.1	49.5	48.3
80°	38.6	37.4	36.2	35.0	33.8
82.5°	22.9	22.9	22.9	22.9	22.9
85°	12.1	13.3	14.5	15.7	16.9
87.5°	7.2	7.2	8.5	9.7	10.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)