

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: P589981

Luminaire Tested: FSR-24-2-LD4-1LO-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589981  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1LO-40-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

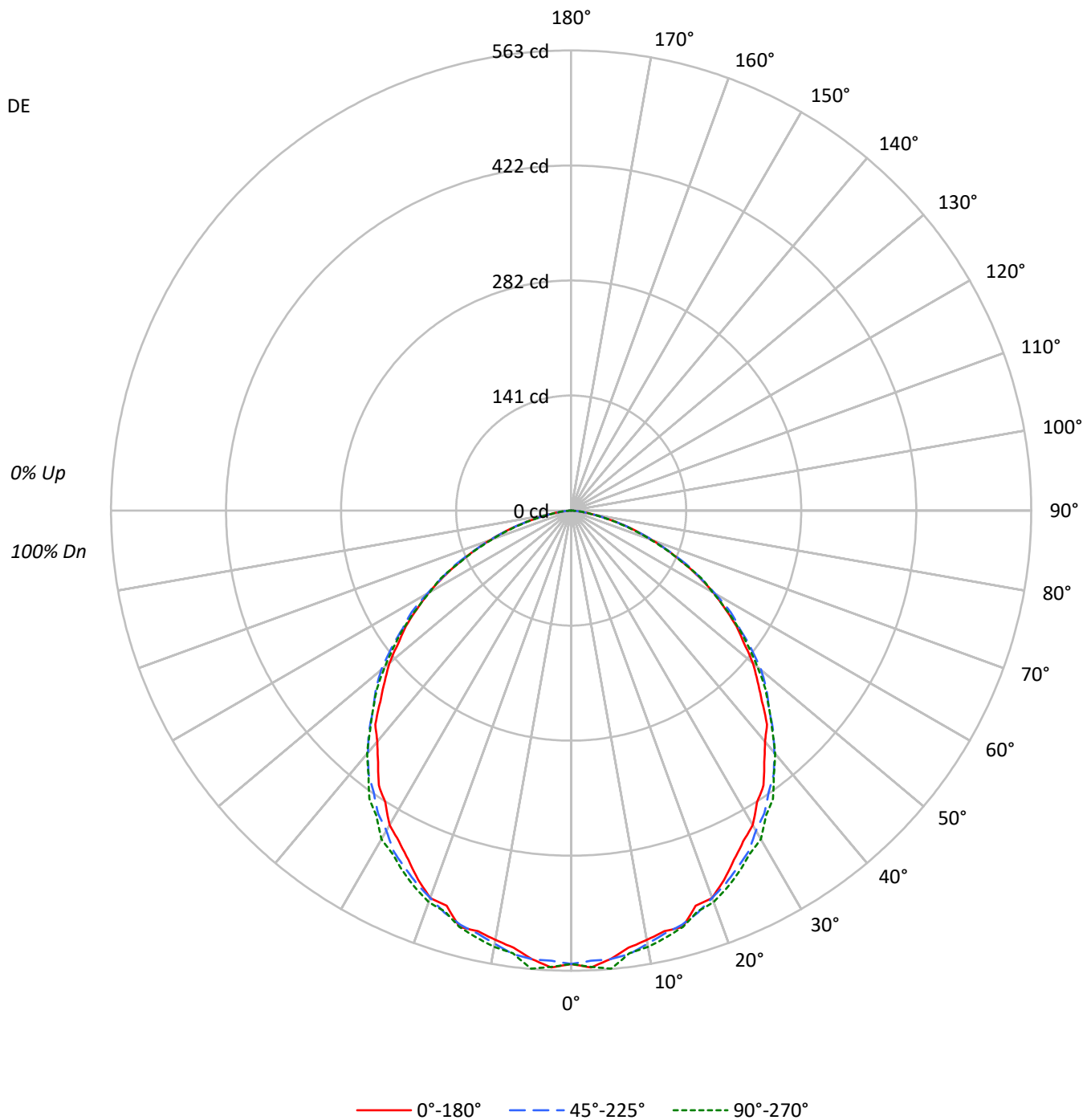
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1398.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1493	1493	1493
5°	1488	1488	1520
10°	1458	1470	1481
15°	1469	1461	1469
20°	1444	1444	1460
25°	1400	1431	1446
30°	1381	1405	1442
35°	1348	1383	1415
40°	1296	1358	1364
45°	1257	1301	1303
50°	1215	1270	1246
55°	1158	1180	1172
60°	1083	1094	1074
65°	965	990	958
70°	828	831	808
75°	656	655	629
80°	440	428	411
85°	238	238	222

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1335 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.2	3.7
10°-20°	147.9	10.6
20°-30°	221.5	15.8
30°-40°	262.6	18.8
40°-50°	263.1	18.8
50°-60°	223.3	16.0
60°-70°	150.5	10.8
70°-80°	66.2	4.7
80°-90°	10.8	0.8
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°	421.6	30.2
0°-40°	684.2	48.9
0°-60°	1170.5	83.7
0°-90°	1398.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1398.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	555	555	555	555	555	
5°	551	550	551	549	563	52
15°	527	521	524	527	527	147
25°	472	474	482	488	487	218
35°	410	412	421	431	431	255
45°	330	336	342	351	342	255
55°	247	245	252	250	250	220
65°	152	150	156	150	150	151
75°	63	62	63	58	60	68
85°	8	8	8	7	7	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	554.7	554.7	554.7	554.7	554.7
2.5°	559.5	555.3	551.3	555.9	558.7
5°	550.8	549.5	551.0	549.3	562.6
7.5°	539.4	544.4	547.2	545.5	546.2
10°	533.4	531.7	538.1	542.5	541.9
12.5°	527.0	529.6	529.9	534.7	535.1
15°	527.3	521.2	524.5	527.2	527.4
17.5°	506.8	513.4	515.7	521.9	514.2
20°	504.3	499.5	504.3	510.7	509.7
22.5°	488.9	483.6	493.9	499.5	499.2
25°	471.5	474.0	481.8	488.1	487.1
27.5°	456.1	459.2	470.2	478.8	473.3
30°	444.3	442.8	452.1	459.9	464.2
32.5°	423.2	428.6	439.5	447.2	443.1
35°	410.4	411.6	421.1	430.9	430.6
37.5°	388.0	393.6	407.0	409.7	407.2
40°	368.8	374.5	386.6	389.5	388.3
42.5°	354.7	355.7	366.1	369.5	364.1
45°	330.2	336.3	341.9	350.7	342.4
47.5°	309.3	312.1	324.1	326.5	322.1
50°	290.3	291.3	303.4	300.4	297.6
52.5°	266.4	270.6	277.5	276.9	273.5
55°	246.8	245.2	251.6	249.9	249.8
57.5°	223.2	226.1	231.4	228.7	224.3
60°	201.2	201.3	203.2	200.1	199.5
62.5°	176.6	177.5	177.9	174.1	180.3
65°	151.6	149.6	155.5	149.5	150.5
67.5°	128.6	129.6	129.1	125.3	126.8
70°	105.3	106.6	105.6	101.4	102.7
72.5°	83.9	82.4	83.4	78.1	80.5
75°	63.1	61.8	63.0	58.5	60.5
77.5°	43.0	44.0	43.3	40.9	42.3
80°	28.4	27.6	27.6	26.2	26.5
82.5°	16.5	15.8	15.5	15.1	15.8
85°	7.7	7.5	7.7	7.4	7.2
87.5°	2.8	2.9	2.9	2.7	2.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)