

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: P589879

Luminaire Tested: FSR-24-2-LD4-1HI-40-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589879  
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-LD4-1HI-40-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

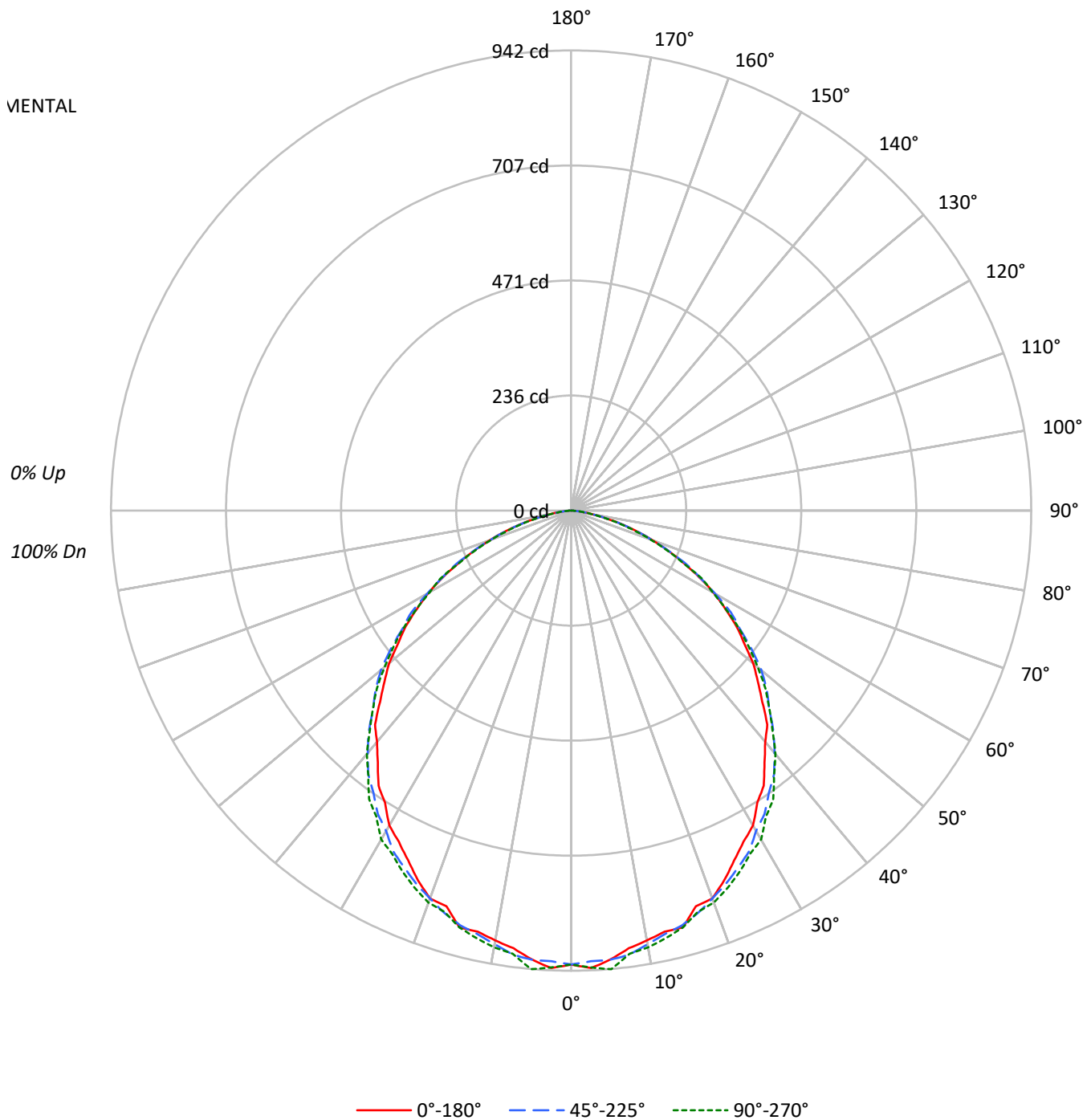
Lumens per Lamp: N/A  
Luminaire Lumens: 2342.0 lumens  
Efficiency: N/A  
Efficacy: 108.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

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

	0°	45°	90°
0°	2500	2500	2500
5°	2492	2493	2546
10°	2442	2463	2481
15°	2461	2448	2461
20°	2420	2420	2445
25°	2345	2396	2423
30°	2313	2353	2416
35°	2258	2318	2370
40°	2171	2275	2285
45°	2105	2180	2183
50°	2036	2128	2087
55°	1940	1978	1963
60°	1814	1832	1799
65°	1617	1659	1606
70°	1388	1393	1354
75°	1099	1097	1054
80°	736	716	688
85°	401	395	371

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2236 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.4	3.7
10°-20°	247.7	10.6
20°-30°	371.2	15.8
30°-40°	439.9	18.8
40°-50°	440.7	18.8
50°-60°	374.1	16.0
60°-70°	252.2	10.8
70°-80°	110.8	4.7
80°-90°	18.0	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°	706.3	30.2
0°-40°	1146.2	48.9
0°-60°	1961.0	83.7
0°-90°	2342.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2342.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	929	929	929	929	929	
5°	923	920	923	920	942	87
15°	883	873	879	883	884	246
25°	790	794	807	818	816	365
35°	688	690	706	722	721	427
45°	553	563	573	588	574	428
55°	414	411	422	419	418	368
65°	254	251	260	250	252	253
75°	106	104	106	98	101	113
85°	13	13	13	12	12	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	929.2	929.2	929.2	929.2	929.2
2.5°	937.3	930.2	923.6	931.3	936.0
5°	922.6	920.5	923.0	920.2	942.4
7.5°	903.7	912.0	916.8	913.8	915.1
10°	893.6	890.7	901.4	908.8	907.8
12.5°	882.8	887.1	887.7	895.8	896.5
15°	883.4	873.2	878.6	883.2	883.5
17.5°	849.1	860.1	863.9	874.3	861.3
20°	844.9	836.9	844.9	855.6	853.9
22.5°	819.1	810.1	827.4	836.9	836.3
25°	789.8	794.1	807.1	817.7	816.0
27.5°	764.2	769.2	787.7	802.2	792.8
30°	744.4	741.8	757.4	770.4	777.6
32.5°	709.0	718.1	736.3	749.2	742.3
35°	687.5	689.5	705.5	721.8	721.3
37.5°	649.9	659.4	681.8	686.4	682.2
40°	617.9	627.4	647.7	652.6	650.5
42.5°	594.3	595.9	613.3	619.0	610.0
45°	553.1	563.4	572.8	587.5	573.6
47.5°	518.1	522.9	543.0	547.0	539.7
50°	486.3	488.0	508.2	503.3	498.5
52.5°	446.3	453.4	464.8	463.8	458.2
55°	413.5	410.7	421.5	418.6	418.5
57.5°	374.0	378.8	387.7	383.1	375.8
60°	337.0	337.1	340.4	335.2	334.3
62.5°	295.9	297.3	298.0	291.7	302.0
65°	254.0	250.6	260.5	250.5	252.2
67.5°	215.5	217.2	216.2	210.0	212.4
70°	176.4	178.5	177.0	169.9	172.1
72.5°	140.6	138.0	139.7	130.8	134.9
75°	105.7	103.5	105.5	98.0	101.4
77.5°	72.0	73.7	72.5	68.5	70.8
80°	47.5	46.2	46.2	43.9	44.4
82.5°	27.7	26.4	26.0	25.3	26.4
85°	13.0	12.6	12.8	12.5	12.0
87.5°	4.7	4.8	4.8	4.6	4.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)