

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: P589918

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589918  
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-50-UNV-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

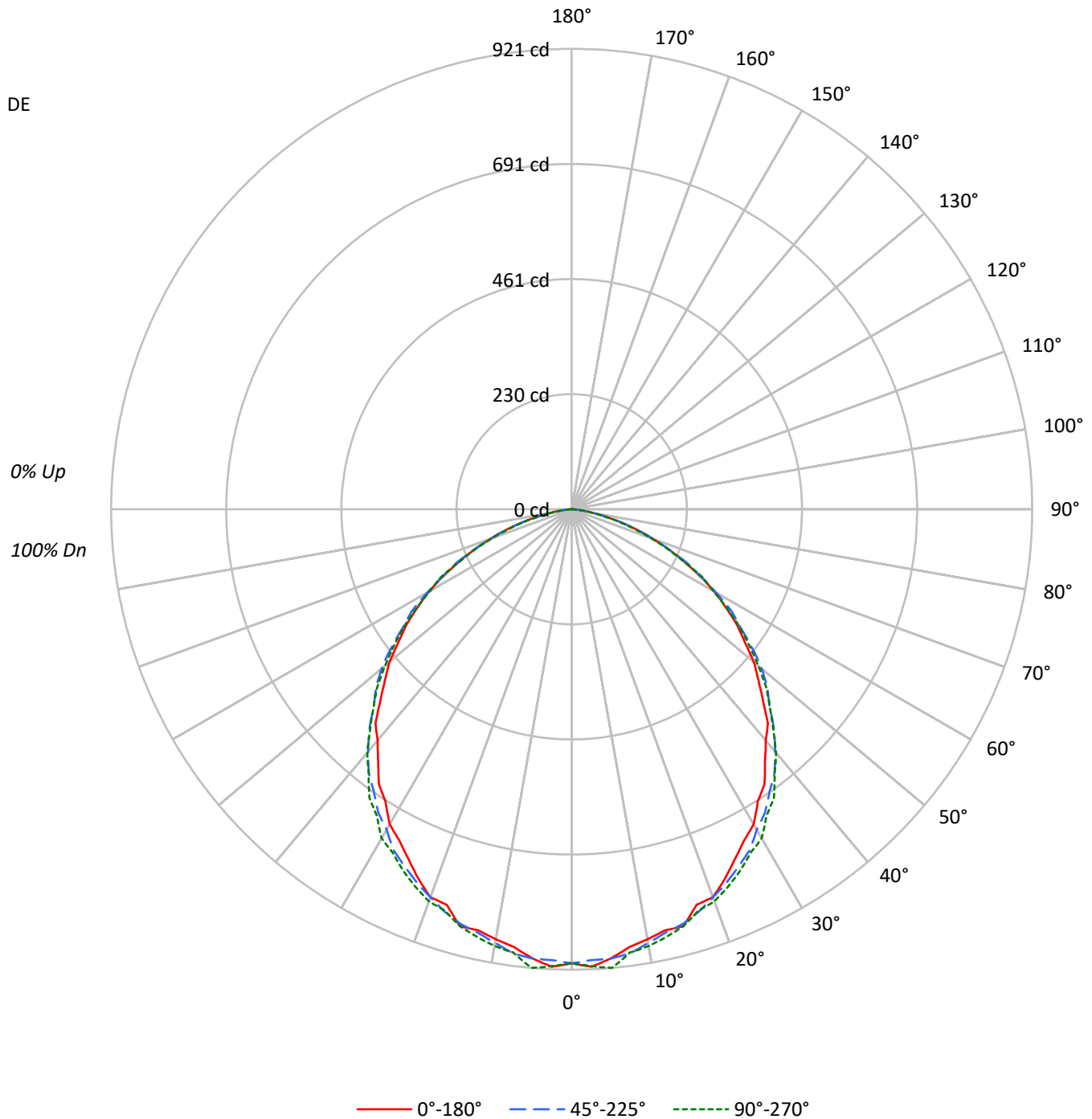
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2289.0 lumens  
Efficiency: N/A  
Efficacy: 106.0 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°	2444	2444	2444
5°	2436	2437	2488
10°	2387	2407	2424
15°	2405	2392	2406
20°	2365	2365	2390
25°	2292	2342	2368
30°	2261	2300	2362
35°	2207	2265	2316
40°	2121	2224	2233
45°	2057	2130	2133
50°	1990	2079	2040
55°	1896	1933	1919
60°	1773	1791	1758
65°	1580	1621	1570
70°	1356	1361	1323
75°	1074	1072	1030
80°	719	699	673
85°	392	386	361

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2185 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.4	3.7
10°-20°	242.1	10.6
20°-30°	362.8	15.8
30°-40°	429.9	18.8
40°-50°	430.7	18.8
50°-60°	365.6	16.0
60°-70°	246.5	10.8
70°-80°	108.3	4.7
80°-90°	17.6	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°	690.3	30.2
0°-40°	1120.2	48.9
0°-60°	1916.6	83.7
0°-90°	2289.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2289.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	908	908	908	908	908	
5°	902	900	902	899	921	85
15°	863	854	859	863	864	241
25°	772	776	789	799	798	357
35°	672	674	690	706	705	417
45°	541	551	560	574	561	418
55°	404	401	412	409	409	359
65°	248	245	255	245	246	247
75°	103	101	103	96	99	111
85°	13	12	12	12	12	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	908.2	908.2	908.2	908.2	908.2
2.5°	916.1	909.2	902.7	910.2	914.8
5°	901.8	899.7	902.1	899.4	921.1
7.5°	883.2	891.3	896.0	893.1	894.4
10°	873.4	870.6	881.0	888.3	887.2
12.5°	862.8	867.1	867.6	875.5	876.2
15°	863.4	853.5	858.7	863.2	863.5
17.5°	829.9	840.7	844.3	854.5	841.8
20°	825.8	817.9	825.8	836.2	834.6
22.5°	800.6	791.8	808.7	817.9	817.3
25°	772.0	776.2	788.8	799.2	797.5
27.5°	746.9	751.8	769.8	784.0	774.9
30°	727.5	725.0	740.3	753.0	760.0
32.5°	692.9	701.8	719.7	732.2	725.5
35°	671.9	673.9	689.5	705.5	705.0
37.5°	635.2	644.5	666.4	670.9	666.8
40°	603.9	613.2	633.0	637.8	635.8
42.5°	580.8	582.5	599.5	605.0	596.2
45°	540.6	550.7	559.8	574.2	560.6
47.5°	506.4	511.0	530.7	534.6	527.5
50°	475.3	476.9	496.7	491.9	487.2
52.5°	436.2	443.1	454.3	453.3	447.8
55°	404.1	401.4	412.0	409.1	409.0
57.5°	365.5	370.2	378.9	374.4	367.3
60°	329.4	329.5	332.7	327.6	326.7
62.5°	289.2	290.6	291.3	285.1	295.2
65°	248.2	245.0	254.6	244.8	246.5
67.5°	210.6	212.2	211.3	205.2	207.6
70°	172.4	174.5	173.0	166.0	168.2
72.5°	137.4	134.9	136.5	127.8	131.8
75°	103.3	101.2	103.1	95.8	99.1
77.5°	70.4	72.0	70.8	67.0	69.2
80°	46.4	45.1	45.1	42.9	43.4
82.5°	27.1	25.8	25.4	24.7	25.8
85°	12.7	12.3	12.5	12.2	11.7
87.5°	4.6	4.7	4.7	4.5	4.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)