

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: P589906

Luminaire Tested: FSR-24-2-LD4-1HI-40-UNV-93-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589906  
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-93-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

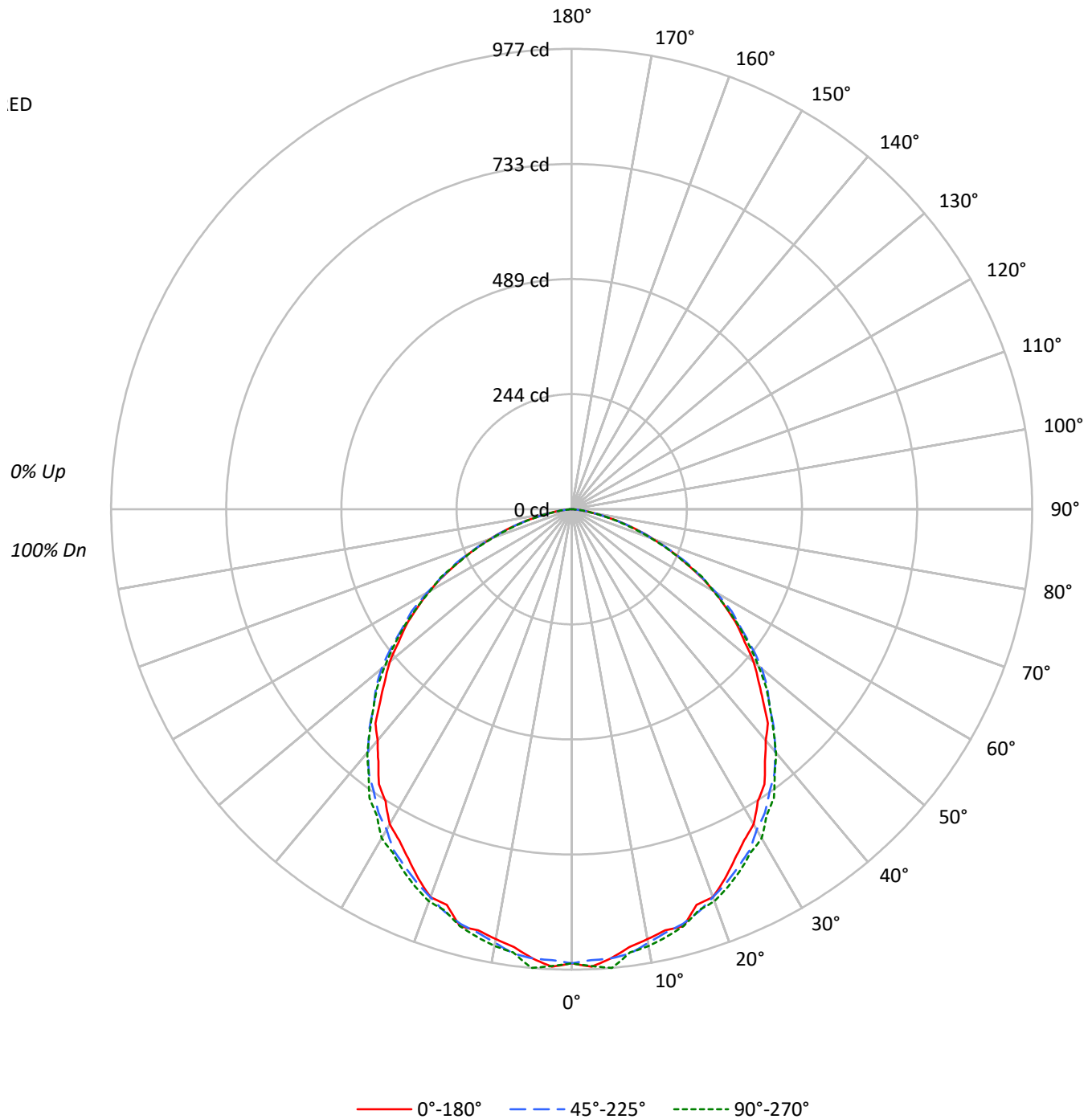
Lumens per Lamp: N/A  
Luminaire Lumens: 2428.0 lumens  
Efficiency: N/A  
Efficacy: 112.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	2592	2592	2592
5°	2584	2585	2639
10°	2531	2554	2572
15°	2552	2538	2552
20°	2508	2508	2535
25°	2431	2484	2512
30°	2398	2440	2505
35°	2341	2403	2457
40°	2250	2359	2369
45°	2182	2260	2263
50°	2110	2206	2164
55°	2011	2050	2036
60°	1880	1899	1865
65°	1677	1719	1665
70°	1438	1444	1404
75°	1140	1136	1093
80°	764	742	713
85°	414	411	383

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2318 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	90.6	3.7
10°-20°	256.8	10.6
20°-30°	384.8	15.8
30°-40°	456.0	18.8
40°-50°	456.9	18.8
50°-60°	387.8	16.0
60°-70°	261.5	10.8
70°-80°	114.9	4.7
80°-90°	18.7	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°	732.2	30.2
0°-40°	1188.3	48.9
0°-60°	2033.0	83.7
0°-90°	2428.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2428.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	963	963	963	963	963	
5°	956	954	957	954	977	90
15°	916	905	911	916	916	255
25°	819	823	837	848	846	379
35°	713	715	731	748	748	443
45°	573	584	594	609	595	444
55°	429	426	437	434	434	381
65°	263	260	270	260	262	262
75°	110	107	109	102	105	117
85°	13	13	13	13	12	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	963.4	963.4	963.4	963.4	963.4
2.5°	971.7	964.4	957.5	965.5	970.3
5°	956.5	954.3	956.9	954.0	977.1
7.5°	936.9	945.5	950.4	947.3	948.7
10°	926.4	923.4	934.5	942.2	941.1
12.5°	915.2	919.7	920.3	928.7	929.4
15°	915.9	905.3	910.9	915.6	916.0
17.5°	880.3	891.7	895.6	906.4	893.0
20°	875.9	867.6	875.9	887.0	885.3
22.5°	849.2	839.9	857.8	867.6	867.0
25°	818.8	823.3	836.7	847.7	845.9
27.5°	792.2	797.4	816.6	831.6	821.9
30°	771.7	769.1	785.2	798.7	806.1
32.5°	735.0	744.4	763.4	776.7	769.6
35°	712.7	714.8	731.4	748.3	747.8
37.5°	673.8	683.6	706.9	711.6	707.3
40°	640.6	650.4	671.4	676.5	674.4
42.5°	616.1	617.8	635.9	641.7	632.4
45°	573.4	584.1	593.8	609.1	594.7
47.5°	537.1	542.1	563.0	567.1	559.5
50°	504.1	505.9	526.9	521.8	516.8
52.5°	462.7	470.1	481.9	480.9	475.0
55°	428.6	425.8	437.0	434.0	433.9
57.5°	387.7	392.7	401.9	397.2	389.6
60°	349.4	349.5	352.9	347.5	346.5
62.5°	306.7	308.2	309.0	302.4	313.1
65°	263.3	259.8	270.0	259.7	261.5
67.5°	223.4	225.1	224.1	217.7	220.2
70°	182.8	185.1	183.5	176.1	178.4
72.5°	145.8	143.0	144.8	135.6	139.8
75°	109.6	107.3	109.3	101.6	105.1
77.5°	74.6	76.4	75.1	71.0	73.4
80°	49.3	47.9	47.9	45.5	46.0
82.5°	28.7	27.4	27.0	26.2	27.4
85°	13.4	13.1	13.3	12.9	12.4
87.5°	4.9	5.0	5.0	4.7	4.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)