

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: P590099

Luminaire Tested: FSR-24-2-LD4-1STD-40-UNV-93-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590099  
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-LD4-1STD-40-UNV-93-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

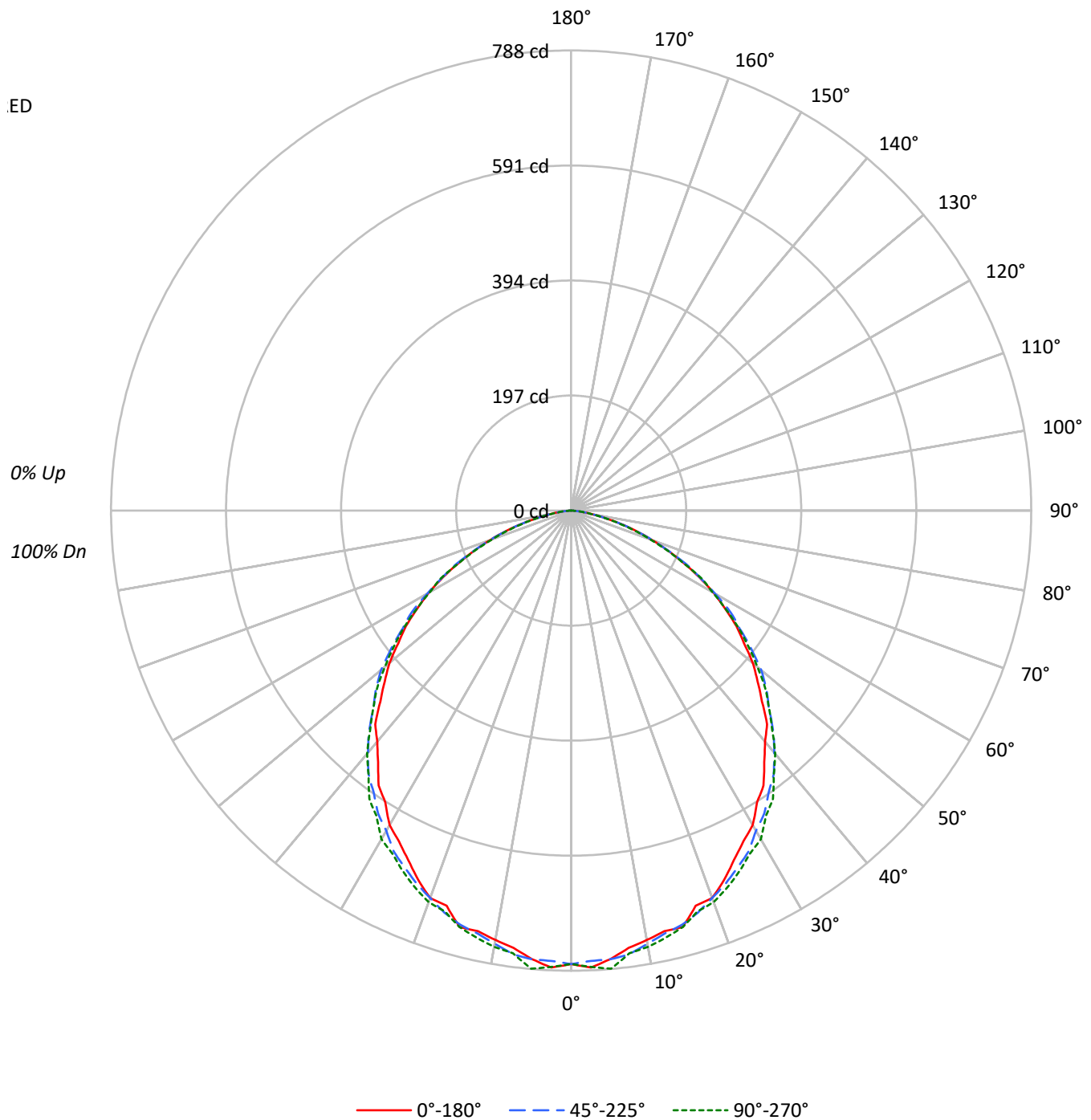
Lumens per Lamp: N/A  
Luminaire Lumens: 1957.0 lumens  
Efficiency: N/A  
Efficacy: 117.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	2090	2090	2090
5°	2083	2083	2127
10°	2040	2058	2073
15°	2057	2045	2057
20°	2022	2022	2043
25°	1960	2002	2024
30°	1933	1967	2019
35°	1887	1937	1980
40°	1814	1901	1910
45°	1759	1821	1824
50°	1701	1778	1744
55°	1621	1652	1641
60°	1516	1531	1503
65°	1351	1386	1342
70°	1160	1164	1131
75°	918	916	881
80°	615	598	575
85°	333	330	309

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1869 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.0	3.7
10°-20°	207.0	10.6
20°-30°	310.1	15.8
30°-40°	367.6	18.8
40°-50°	368.3	18.8
50°-60°	312.6	16.0
60°-70°	210.7	10.8
70°-80°	92.6	4.7
80°-90°	15.1	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°	590.2	30.2
0°-40°	957.8	48.9
0°-60°	1638.6	83.7
0°-90°	1957.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1957.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	776	776	776	776	776	
5°	771	769	771	769	788	73
15°	738	730	734	738	738	206
25°	660	664	674	683	682	305
35°	574	576	590	603	603	357
45°	462	471	479	491	479	358
55°	346	343	352	350	350	307
65°	212	209	218	209	211	211
75°	88	86	88	82	85	95
85°	11	10	11	10	10	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	776.5	776.5	776.5	776.5	776.5
2.5°	783.2	777.3	771.8	778.2	782.1
5°	771.0	769.2	771.3	769.0	787.5
7.5°	755.1	762.1	766.1	763.6	764.7
10°	746.7	744.3	753.2	759.4	758.5
12.5°	737.7	741.3	741.8	748.5	749.1
15°	738.2	729.7	734.2	738.0	738.3
17.5°	709.5	718.7	721.8	730.6	719.7
20°	706.0	699.3	706.0	714.9	713.5
22.5°	684.5	676.9	691.4	699.3	698.8
25°	660.0	663.6	674.4	683.2	681.8
27.5°	638.5	642.7	658.2	670.3	662.5
30°	622.0	619.9	632.9	643.7	649.8
32.5°	592.4	600.0	615.3	626.0	620.3
35°	574.5	576.2	589.5	603.1	602.7
37.5°	543.1	551.0	569.8	573.6	570.1
40°	516.3	524.2	541.2	545.3	543.6
42.5°	496.6	498.0	512.5	517.2	509.7
45°	462.2	470.8	478.6	491.0	479.3
47.5°	432.9	436.9	453.8	457.1	451.0
50°	406.3	407.7	424.7	420.6	416.6
52.5°	373.0	378.9	388.4	387.6	382.9
55°	345.5	343.2	352.2	349.8	349.7
57.5°	312.5	316.5	323.9	320.1	314.0
60°	281.6	281.7	284.4	280.1	279.3
62.5°	247.2	248.4	249.0	243.7	252.3
65°	212.2	209.4	217.7	209.3	210.7
67.5°	180.1	181.5	180.7	175.4	177.5
70°	147.4	149.2	147.9	142.0	143.8
72.5°	117.5	115.3	116.7	109.3	112.7
75°	88.3	86.5	88.1	81.9	84.7
77.5°	60.2	61.6	60.6	57.2	59.2
80°	39.7	38.6	38.6	36.7	37.1
82.5°	23.2	22.1	21.8	21.2	22.1
85°	10.8	10.5	10.7	10.4	10.0
87.5°	3.9	4.0	4.0	3.8	3.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)