

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: P590098

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590098  
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-93-94-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**

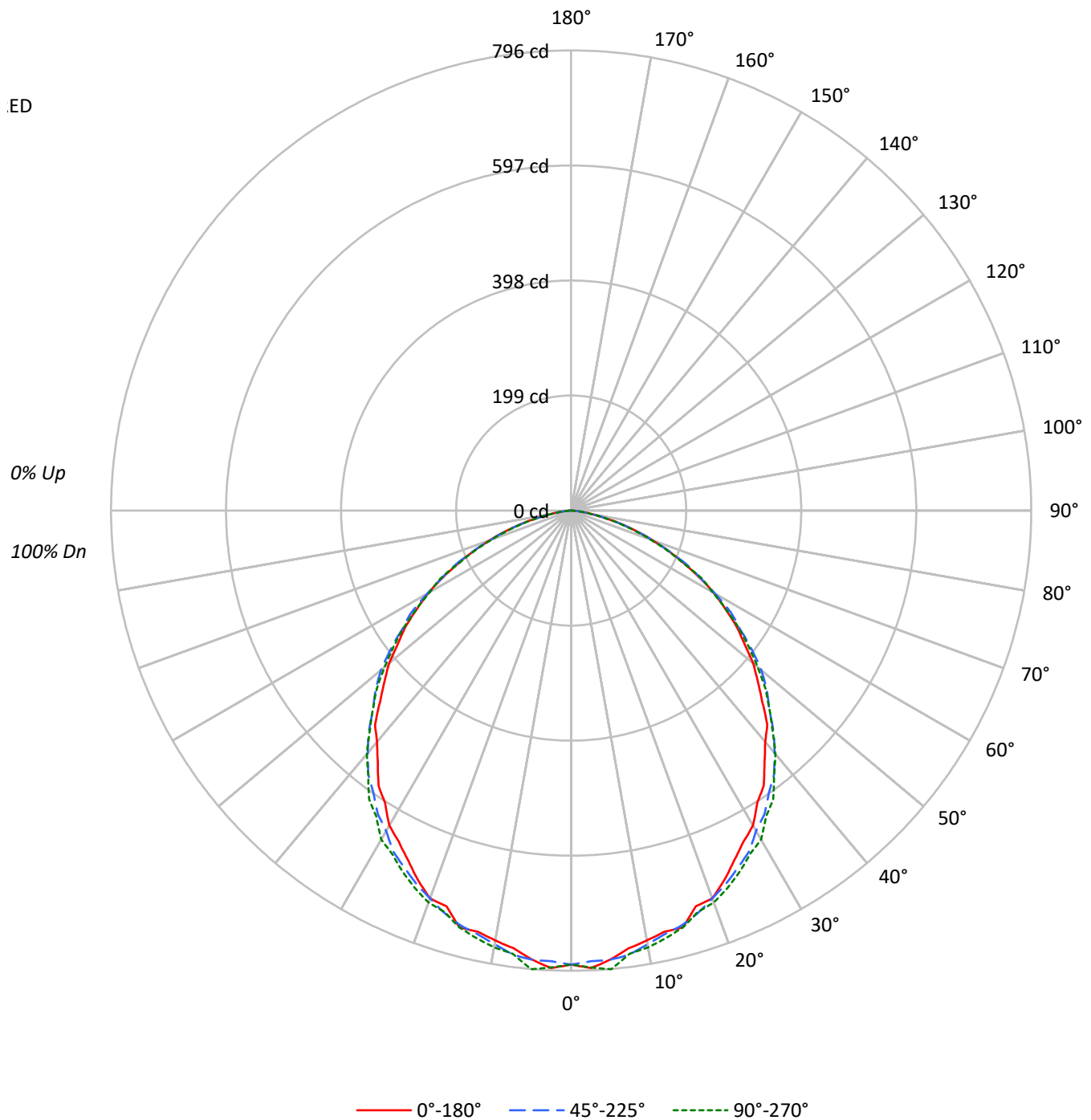
Lumens per Lamp: N/A  
Luminaire Lumens: 1979.0 lumens  
Efficiency: N/A  
Efficacy: 119.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2113	2113	2113
5°	2106	2107	2151
10°	2063	2081	2096
15°	2080	2068	2080
20°	2044	2044	2066
25°	1982	2025	2047
30°	1954	1989	2042
35°	1908	1958	2002
40°	1834	1923	1931
45°	1779	1842	1845
50°	1720	1798	1763
55°	1639	1671	1659
60°	1533	1548	1520
65°	1366	1401	1357
70°	1172	1176	1144
75°	928	926	891
80°	621	604	581
85°	337	333	312

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1889 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.9	3.7
10°-20°	209.3	10.6
20°-30°	313.6	15.8
30°-40°	371.7	18.8
40°-50°	372.4	18.8
50°-60°	316.1	16.0
60°-70°	213.1	10.8
70°-80°	93.6	4.7
80°-90°	15.2	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°	596.8	30.2
0°-40°	968.5	48.9
0°-60°	1657.0	83.7
0°-90°	1979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1979.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	785	785	785	785	785	
5°	780	778	780	778	796	73
15°	746	738	742	746	747	208
25°	667	671	682	691	690	309
35°	581	583	596	610	610	361
45°	467	476	484	496	485	362
55°	349	347	356	354	354	311
65°	215	212	220	212	213	213
75°	89	88	89	83	86	96
85°	11	11	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°	785.2	785.2	785.2	785.2	785.2
2.5°	792.0	786.0	780.5	786.9	790.9
5°	779.6	777.8	779.9	777.6	796.4
7.5°	763.6	770.6	774.7	772.1	773.3
10°	755.1	752.7	761.7	768.0	767.1
12.5°	746.0	749.6	750.1	756.9	757.5
15°	746.5	737.9	742.4	746.3	746.6
17.5°	717.5	726.8	730.0	738.8	727.8
20°	713.9	707.2	713.9	723.0	721.5
22.5°	692.1	684.5	699.1	707.2	706.6
25°	667.4	671.1	682.0	690.9	689.5
27.5°	645.7	650.0	665.6	677.9	669.9
30°	629.0	626.9	640.0	651.0	657.1
32.5°	599.1	606.8	622.2	633.0	627.3
35°	580.9	582.7	596.1	609.9	609.5
37.5°	549.2	557.2	576.2	580.0	576.5
40°	522.1	530.1	547.3	551.4	549.7
42.5°	502.2	503.6	518.3	523.0	515.4
45°	467.4	476.1	484.0	496.5	484.7
47.5°	437.8	441.8	458.9	462.2	456.0
50°	410.9	412.3	429.5	425.3	421.2
52.5°	377.1	383.1	392.8	391.9	387.2
55°	349.4	347.0	356.2	353.7	353.6
57.5°	316.0	320.1	327.6	323.7	317.5
60°	284.8	284.9	287.6	283.3	282.5
62.5°	250.0	251.2	251.8	246.5	255.2
65°	214.6	211.8	220.1	211.7	213.1
67.5°	182.1	183.5	182.7	177.4	179.4
70°	149.0	150.9	149.5	143.6	145.4
72.5°	118.8	116.6	118.0	110.5	114.0
75°	89.3	87.5	89.1	82.8	85.7
77.5°	60.8	62.2	61.2	57.9	59.8
80°	40.1	39.0	39.0	37.1	37.5
82.5°	23.4	22.3	22.0	21.4	22.3
85°	10.9	10.6	10.8	10.5	10.1
87.5°	4.0	4.1	4.1	3.9	3.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)