

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: P589929

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-82-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589929  
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-82-88-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

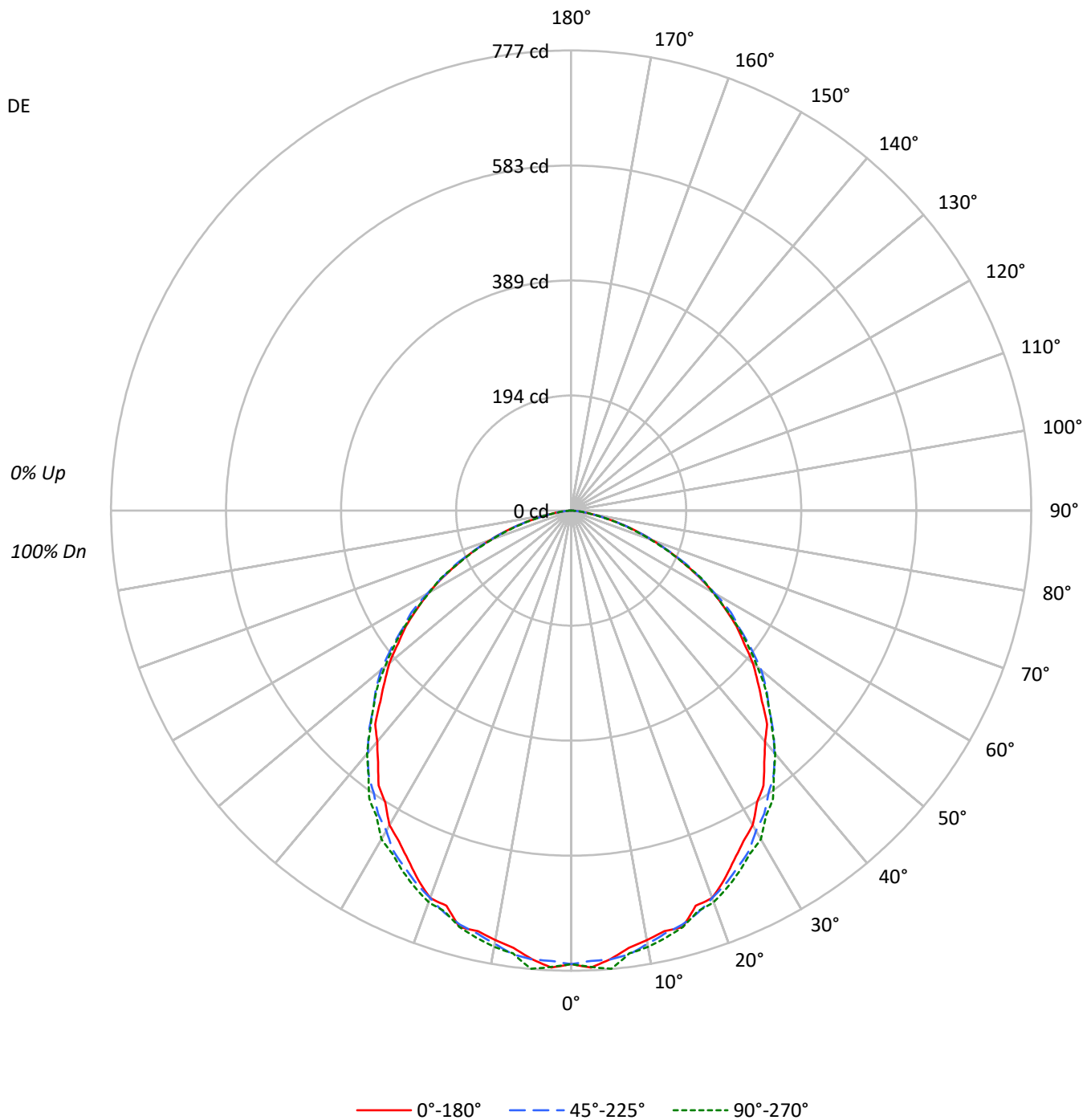
Lumens per Lamp: N/A  
Luminaire Lumens: 1930.0 lumens  
Efficiency: N/A  
Efficacy: 89.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P589929

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-82-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P589929

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-82-88-EDD

**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°	2061	2061	2061
5°	2054	2055	2098
10°	2012	2030	2044
15°	2028	2017	2028
20°	1994	1994	2015
25°	1933	1975	1996
30°	1906	1940	1991
35°	1861	1910	1953
40°	1789	1875	1883
45°	1735	1796	1799
50°	1677	1753	1720
55°	1598	1629	1618
60°	1495	1510	1483
65°	1333	1367	1323
70°	1143	1147	1116
75°	906	904	868
80°	607	590	567
85°	330	327	306

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1843 cd/sqm



TEST NUMBER: P589929

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-82-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.0	3.7
10°-20°	204.2	10.6
20°-30°	305.9	15.8
30°-40°	362.5	18.8
40°-50°	363.2	18.8
50°-60°	308.3	16.0
60°-70°	207.8	10.8
70°-80°	91.3	4.7
80°-90°	14.9	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°	582.0	30.2
0°-40°	944.5	48.9
0°-60°	1616.0	83.7
0°-90°	1930.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1930.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	766	766	766	766	766	
5°	760	759	761	758	777	72
15°	728	720	724	728	728	203
25°	651	654	665	674	672	301
35°	566	568	581	595	594	352
45°	456	464	472	484	473	353
55°	341	338	347	345	345	303
65°	209	206	215	206	208	208
75°	87	85	87	81	84	93
85°	11	10	11	10	10	15
90°	0	0	0	0	0	



TEST NUMBER: P589929

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-82-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	765.8	765.8	765.8	765.8	765.8
2.5°	772.4	766.6	761.1	767.5	771.3
5°	760.3	758.6	760.6	758.4	776.7
7.5°	744.7	751.5	755.5	753.0	754.1
10°	736.4	734.0	742.8	749.0	748.1
12.5°	727.5	731.1	731.6	738.2	738.8
15°	728.0	719.6	724.1	727.8	728.1
17.5°	699.7	708.8	711.9	720.5	709.8
20°	696.3	689.6	696.3	705.1	703.7
22.5°	675.0	667.6	681.8	689.6	689.1
25°	650.9	654.4	665.1	673.8	672.4
27.5°	629.7	633.9	649.1	661.1	653.4
30°	613.4	611.3	624.2	634.9	640.8
32.5°	584.2	591.8	606.8	617.4	611.7
35°	566.5	568.2	581.4	594.8	594.4
37.5°	535.6	543.4	561.9	565.7	562.2
40°	509.2	517.0	533.7	537.8	536.1
42.5°	489.7	491.1	505.4	510.1	502.7
45°	455.8	464.3	472.0	484.2	472.7
47.5°	426.9	430.9	447.5	450.8	444.7
50°	400.7	402.1	418.8	414.8	410.8
52.5°	367.8	373.6	383.0	382.2	377.6
55°	340.7	338.4	347.3	345.0	344.9
57.5°	308.2	312.1	319.5	315.7	309.7
60°	277.7	277.8	280.5	276.3	275.5
62.5°	243.8	245.0	245.6	240.4	248.9
65°	209.3	206.5	214.7	206.4	207.8
67.5°	177.6	179.0	178.2	173.0	175.0
70°	145.3	147.1	145.8	140.0	141.8
72.5°	115.9	113.7	115.1	107.8	111.1
75°	87.1	85.3	86.9	80.8	83.5
77.5°	59.3	60.7	59.7	56.5	58.3
80°	39.2	38.1	38.1	36.2	36.6
82.5°	22.8	21.8	21.5	20.9	21.8
85°	10.7	10.4	10.6	10.3	9.9
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)