

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: P590743

Luminaire Tested: FSR-24-2-LD4-4HI-40-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590743  
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-LD4-4HI-40-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

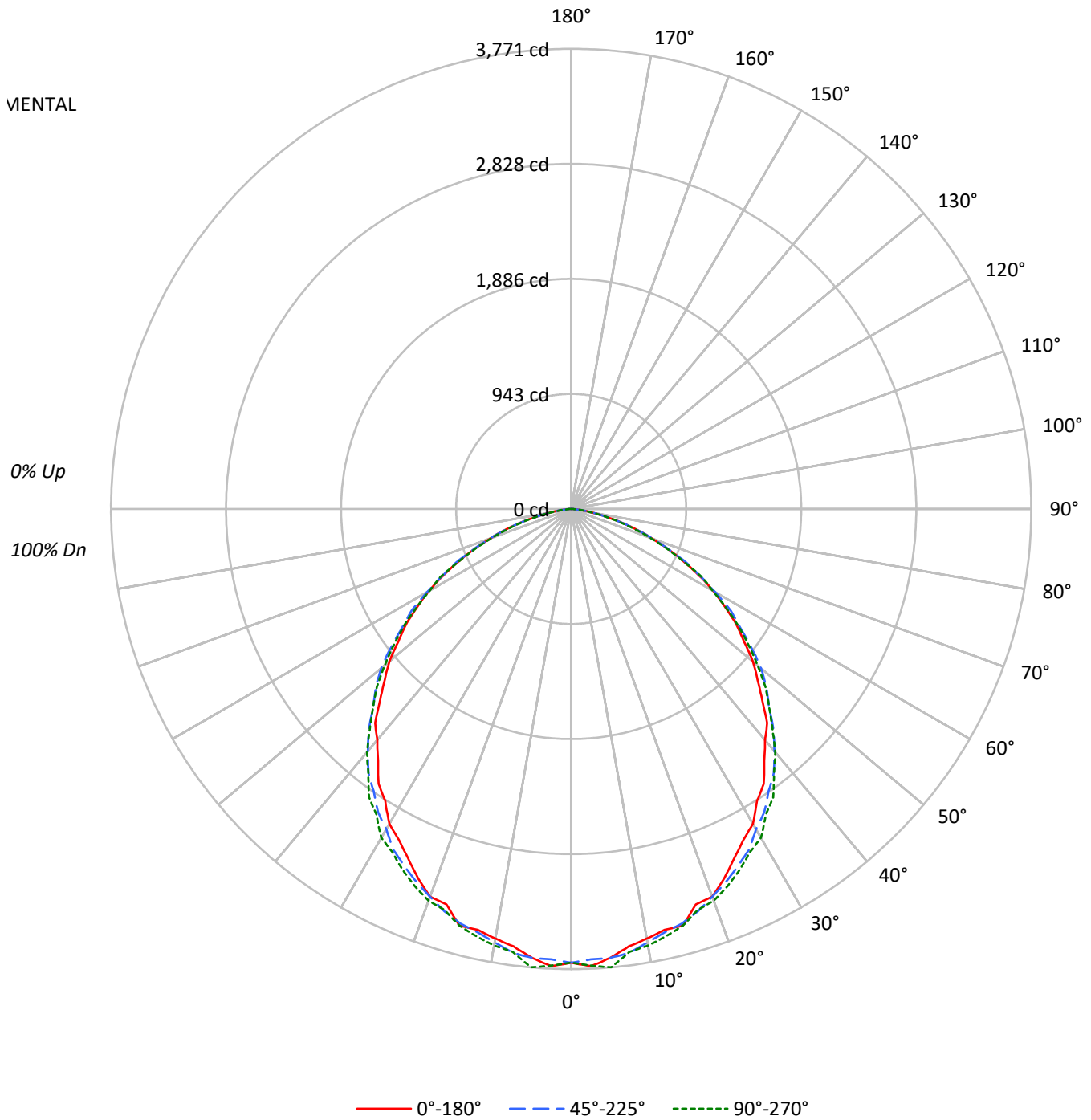
Lumens per Lamp: N/A  
Luminaire Lumens: 9370.0 lumens  
Efficiency: N/A  
Efficacy: 108.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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: P590743

CATALOG NUMBER: FSR-24-2-LD4-4HI-40-UNV-80-86-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590743

CATALOG NUMBER: FSR-24-2-LD4-4HI-40-UNV-80-86-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									70									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						86													
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73						73													
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62						62													
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53						53													
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46						46													
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41						41													
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36						36													
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32						32													
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29						29													
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26						26													

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10005	10005	10005
5°	9971	9975	10185
10°	9769	9854	9924
15°	9847	9793	9848
20°	9680	9680	9783
25°	9383	9588	9693
30°	9254	9416	9667
35°	9036	9272	9480
40°	8684	9102	9143
45°	8421	8721	8734
50°	8145	8513	8350
55°	7761	7911	7855
60°	7257	7329	7197
65°	6471	6635	6425
70°	5552	5570	5416
75°	4397	4387	4217
80°	2946	2864	2752
85°	1599	1587	1482

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 8946 cd/sqm



TEST NUMBER: P590743

CATALOG NUMBER: FSR-24-2-LD4-4HI-40-UNV-80-86-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	349.7	3.7
10°-20°	991.1	10.6
20°-30°	1484.9	15.8
30°-40°	1759.9	18.8
40°-50°	1763.2	18.8
50°-60°	1496.7	16.0
60°-70°	1009.0	10.8
70°-80°	443.4	4.7
80°-90°	72.0	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°	2825.8	30.2
0°-40°	4585.7	48.9
0°-60°	7845.5	83.7
0°-90°	9370.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9370.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3718	3718	3718	3718	3718	
5°	3691	3683	3693	3682	3771	348
15°	3534	3494	3515	3534	3535	985
25°	3160	3177	3229	3271	3265	1461
35°	2750	2759	2822	2888	2886	1708
45°	2213	2254	2292	2351	2295	1712
55°	1654	1643	1686	1675	1674	1471
65°	1016	1003	1042	1002	1009	1011
75°	423	414	422	392	406	453
85°	52	50	51	50	48	75
90°	0	0	0	0	0	



TEST NUMBER: P590743

CATALOG NUMBER: FSR-24-2-LD4-4HI-40-UNV-80-86-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3717.8	3717.8	3717.8	3717.8	3717.8
2.5°	3749.9	3721.6	3695.2	3725.9	3744.7
5°	3691.4	3682.7	3692.8	3681.8	3770.6
7.5°	3615.5	3648.7	3667.9	3655.9	3661.1
10°	3575.2	3563.7	3606.4	3636.2	3631.9
12.5°	3532.0	3549.3	3551.7	3583.9	3586.7
15°	3534.4	3493.6	3515.2	3533.5	3534.9
17.5°	3397.1	3441.3	3456.2	3497.9	3446.1
20°	3380.3	3348.2	3380.3	3423.0	3416.3
22.5°	3277.1	3241.1	3310.2	3348.2	3345.8
25°	3160.0	3177.3	3229.1	3271.4	3264.6
27.5°	3057.3	3077.4	3151.4	3209.4	3172.0
30°	2978.1	2968.0	3030.4	3082.2	3111.0
32.5°	2836.5	2872.9	2945.9	2997.3	2969.9
35°	2750.5	2758.7	2822.5	2887.8	2885.9
37.5°	2600.3	2638.2	2728.0	2746.2	2729.4
40°	2472.1	2510.0	2591.2	2610.8	2602.7
42.5°	2377.6	2384.3	2453.9	2476.4	2440.4
45°	2212.9	2254.2	2291.6	2350.7	2295.0
47.5°	2072.7	2091.9	2172.6	2188.4	2159.1
50°	1945.5	1952.3	2033.4	2013.7	1994.5
52.5°	1785.7	1814.0	1859.6	1855.8	1833.2
55°	1654.2	1643.1	1686.3	1674.8	1674.3
57.5°	1496.2	1515.4	1551.0	1532.7	1503.4
60°	1348.4	1348.9	1361.8	1341.2	1337.3
62.5°	1183.7	1189.5	1192.4	1166.9	1208.2
65°	1016.2	1002.8	1042.1	1002.3	1009.0
67.5°	862.1	868.8	865.0	840.0	849.6
70°	705.6	714.3	708.0	679.7	688.4
72.5°	562.6	552.0	558.7	523.2	539.5
75°	422.9	414.3	421.9	392.2	405.6
77.5°	288.0	294.7	289.9	274.1	283.2
80°	190.1	184.8	184.8	175.7	177.6
82.5°	110.9	105.6	104.2	101.3	105.6
85°	51.8	50.4	51.4	49.9	48.0
87.5°	18.7	19.2	19.2	18.2	17.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)