

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: P590472

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590472  
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-LD4-3HI-40-UNV-82-87-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

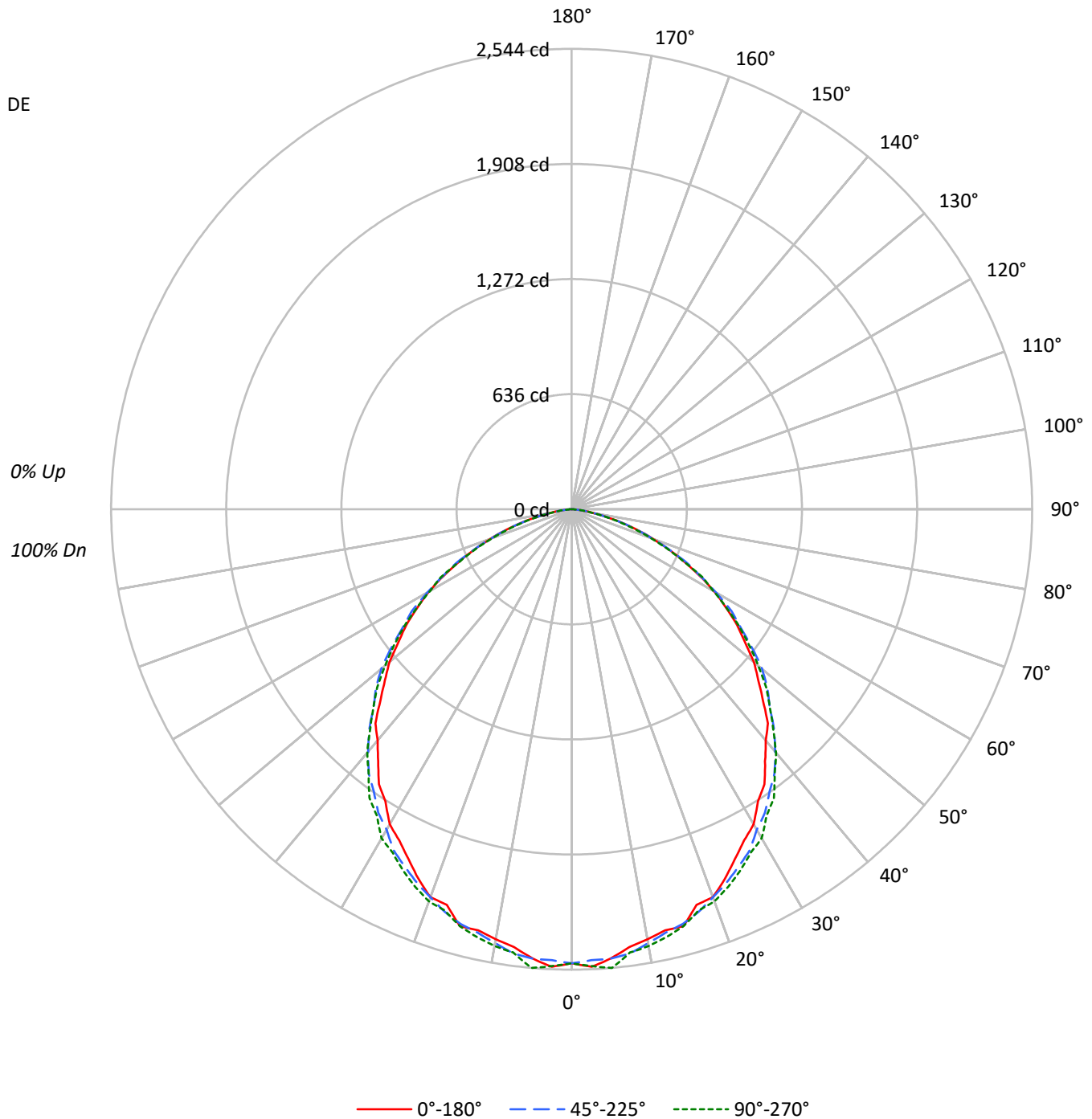
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6323.0 lumens  
Efficiency: N/A  
Efficacy: 97.6 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): 64.8  
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: P590472  
CATALOG NUMBER: FSR-24-2-LD4-3HI-40-UNV-82-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590472

CATALOG NUMBER: FSR-24-2-LD4-3HI-40-UNV-82-87-EDD

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

RF	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									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°	6751	6751	6751
5°	6729	6732	6873
10°	6592	6650	6697
15°	6645	6608	6646
20°	6532	6532	6602
25°	6331	6470	6541
30°	6244	6354	6523
35°	6097	6257	6397
40°	5860	6143	6170
45°	5683	5885	5894
50°	5496	5745	5635
55°	5237	5339	5301
60°	4897	4946	4857
65°	4367	4478	4336
70°	3747	3759	3655
75°	2967	2960	2846
80°	1988	1932	1858
85°	1081	1071	1000

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6037 cd/sqm



TEST NUMBER: P590472

CATALOG NUMBER: FSR-24-2-LD4-3HI-40-UNV-82-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	236.0	3.7
10°-20°	668.8	10.6
20°-30°	1002.0	15.8
30°-40°	1187.6	18.8
40°-50°	1189.8	18.8
50°-60°	1010.0	16.0
60°-70°	680.9	10.8
70°-80°	299.2	4.7
80°-90°	48.6	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°	1906.9	30.2
0°-40°	3094.5	48.9
0°-60°	5294.3	83.7
0°-90°	6323.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6323.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2509	2509	2509	2509	2509	
5°	2491	2485	2492	2484	2544	235
15°	2385	2358	2372	2384	2385	665
25°	2132	2144	2179	2208	2203	986
35°	1856	1862	1905	1949	1947	1152
45°	1493	1521	1546	1586	1549	1155
55°	1116	1109	1138	1130	1130	993
65°	686	677	703	676	681	682
75°	285	280	285	265	274	306
85°	35	34	35	34	32	51
90°	0	0	0	0	0	



TEST NUMBER: P590472

CATALOG NUMBER: FSR-24-2-LD4-3HI-40-UNV-82-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2508.8	2508.8	2508.8	2508.8	2508.8
2.5°	2530.5	2511.4	2493.6	2514.3	2526.9
5°	2491.0	2485.2	2492.0	2484.5	2544.4
7.5°	2439.8	2462.2	2475.1	2467.0	2470.6
10°	2412.6	2404.8	2433.7	2453.7	2450.8
12.5°	2383.4	2395.1	2396.7	2418.4	2420.4
15°	2385.1	2357.5	2372.1	2384.4	2385.4
17.5°	2292.4	2322.2	2332.3	2360.4	2325.5
20°	2281.1	2259.4	2281.1	2309.9	2305.4
22.5°	2211.4	2187.1	2233.8	2259.4	2257.8
25°	2132.4	2144.1	2179.1	2207.6	2203.0
27.5°	2063.1	2076.7	2126.6	2165.8	2140.5
30°	2009.6	2002.8	2044.9	2079.9	2099.4
32.5°	1914.1	1938.7	1987.9	2022.6	2004.1
35°	1856.1	1861.6	1904.7	1948.7	1947.4
37.5°	1754.7	1780.3	1840.9	1853.2	1841.8
40°	1668.2	1693.8	1748.6	1761.8	1756.3
42.5°	1604.4	1608.9	1655.9	1671.1	1646.8
45°	1493.3	1521.2	1546.4	1586.3	1548.7
47.5°	1398.7	1411.7	1466.1	1476.8	1457.0
50°	1312.9	1317.4	1372.2	1358.9	1345.9
52.5°	1205.0	1224.1	1254.9	1252.3	1237.1
55°	1116.2	1108.8	1138.0	1130.2	1129.9
57.5°	1009.7	1022.6	1046.6	1034.3	1014.5
60°	909.9	910.2	919.0	905.0	902.5
62.5°	798.8	802.7	804.6	787.5	815.3
65°	685.8	676.7	703.2	676.4	680.9
67.5°	581.8	586.3	583.7	566.9	573.3
70°	476.2	482.0	477.8	458.7	464.5
72.5°	379.6	372.5	377.0	353.1	364.1
75°	285.4	279.5	284.7	264.6	273.7
77.5°	194.4	198.9	195.7	185.0	191.1
80°	128.3	124.7	124.7	118.6	119.9
82.5°	74.8	71.3	70.3	68.3	71.3
85°	35.0	34.0	34.7	33.7	32.4
87.5°	12.6	13.0	13.0	12.3	11.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)