

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: P590652

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-80-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590652  
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-LD4-3STD-40-UNV-80-97-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5650.0 lumens  
Efficiency: N/A  
Efficacy: 113.0 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

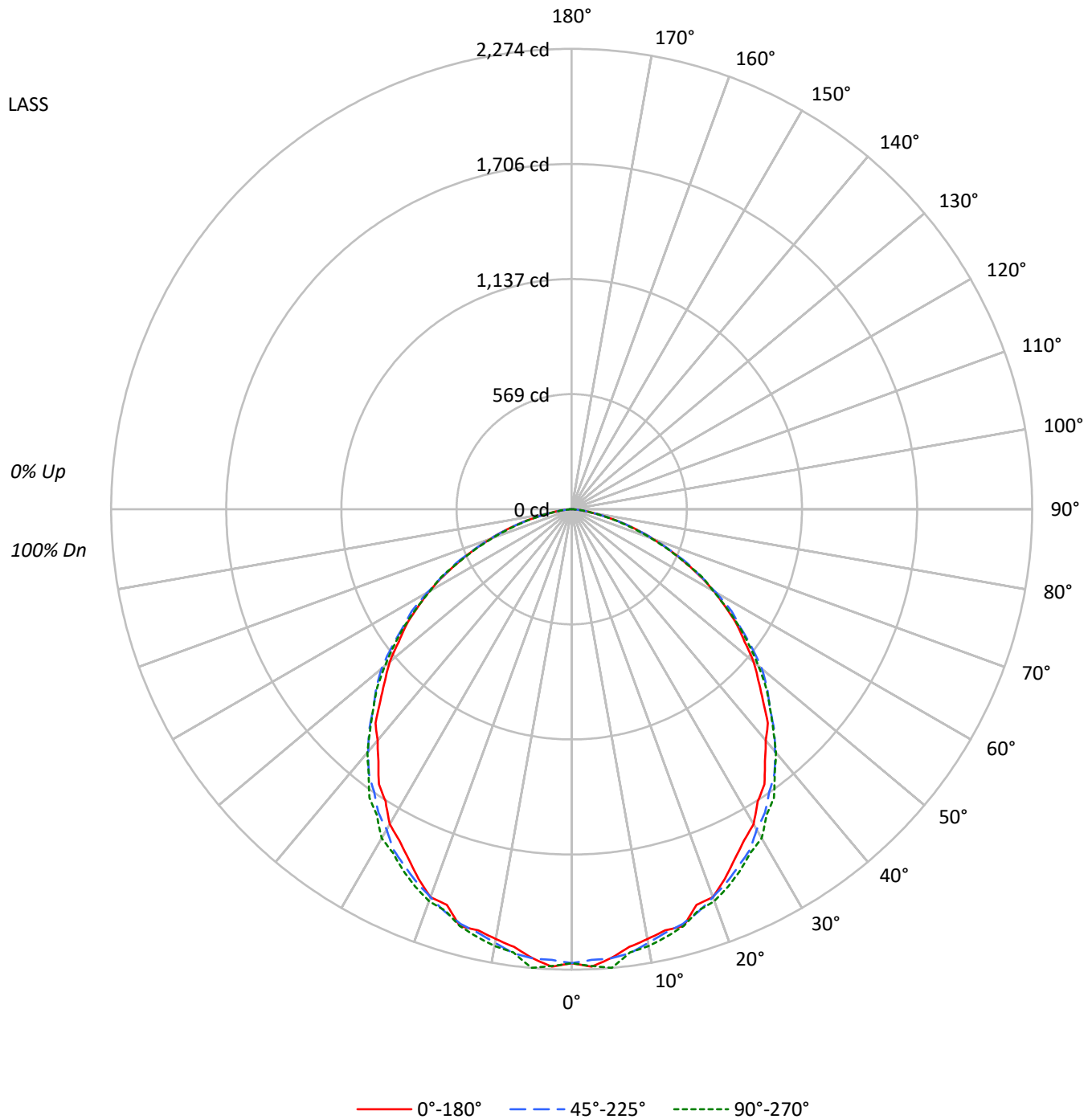
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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				
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°	6033	6033	6033
5°	6013	6015	6142
10°	5891	5942	5984
15°	5937	5905	5938
20°	5837	5837	5899
25°	5657	5781	5845
30°	5580	5678	5829
35°	5448	5591	5717
40°	5237	5488	5513
45°	5078	5259	5267
50°	4911	5133	5035
55°	4679	4770	4737
60°	4376	4420	4340
65°	3902	4001	3874
70°	3348	3359	3266
75°	2651	2645	2543
80°	1776	1726	1660
85°	966	957	892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5394 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.9	3.7
10°-20°	597.6	10.6
20°-30°	895.4	15.8
30°-40°	1061.2	18.8
40°-50°	1063.2	18.8
50°-60°	902.5	16.0
60°-70°	608.4	10.8
70°-80°	267.3	4.7
80°-90°	43.5	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°	1703.9	30.2
0°-40°	2765.1	48.9
0°-60°	4730.7	83.7
0°-90°	5650.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5650.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2242	2242	2242	2242	2242	
5°	2226	2221	2227	2220	2274	210
15°	2131	2107	2120	2131	2132	594
25°	1905	1916	1947	1973	1968	881
35°	1658	1664	1702	1741	1740	1030
45°	1334	1359	1382	1417	1384	1032
55°	997	991	1017	1010	1010	887
65°	613	605	628	604	608	609
75°	255	250	254	236	245	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2241.8	2241.8	2241.8	2241.8	2241.8
2.5°	2261.2	2244.1	2228.2	2246.7	2258.0
5°	2225.9	2220.6	2226.7	2220.1	2273.6
7.5°	2180.1	2200.1	2211.7	2204.4	2207.6
10°	2155.8	2148.9	2174.6	2192.6	2190.0
12.5°	2129.8	2140.2	2141.6	2161.0	2162.8
15°	2131.2	2106.6	2119.6	2130.6	2131.5
17.5°	2048.4	2075.1	2084.0	2109.2	2077.9
20°	2038.3	2018.9	2038.3	2064.1	2060.0
22.5°	1976.1	1954.4	1996.0	2018.9	2017.5
25°	1905.4	1915.9	1947.1	1972.6	1968.5
27.5°	1843.5	1855.7	1900.2	1935.3	1912.7
30°	1795.7	1789.7	1827.3	1858.5	1875.9
32.5°	1710.4	1732.3	1776.3	1807.3	1790.8
35°	1658.5	1663.5	1702.0	1741.3	1740.2
37.5°	1567.9	1590.8	1644.9	1655.9	1645.8
40°	1490.7	1513.5	1562.4	1574.3	1569.4
42.5°	1433.6	1437.7	1479.7	1493.3	1471.6
45°	1334.4	1359.2	1381.8	1417.4	1383.9
47.5°	1249.8	1261.4	1310.0	1319.6	1301.9
50°	1173.1	1177.2	1226.1	1214.2	1202.7
52.5°	1076.7	1093.8	1121.3	1119.0	1105.4
55°	997.4	990.8	1016.8	1009.9	1009.6
57.5°	902.2	913.8	935.2	924.2	906.6
60°	813.1	813.3	821.2	808.7	806.4
62.5°	713.8	717.3	719.0	703.6	728.5
65°	612.8	604.7	628.4	604.4	608.4
67.5°	519.8	523.9	521.6	506.5	512.3
70°	425.5	430.7	426.9	409.9	415.1
72.5°	339.2	332.9	336.9	315.5	325.3
75°	255.0	249.8	254.4	236.5	244.6
77.5°	173.7	177.7	174.8	165.3	170.8
80°	114.6	111.4	111.4	105.9	107.1
82.5°	66.9	63.7	62.8	61.1	63.7
85°	31.3	30.4	31.0	30.1	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)