

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: P590580

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-93-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590580  
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-LD4-3LO-40-UNV-93-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

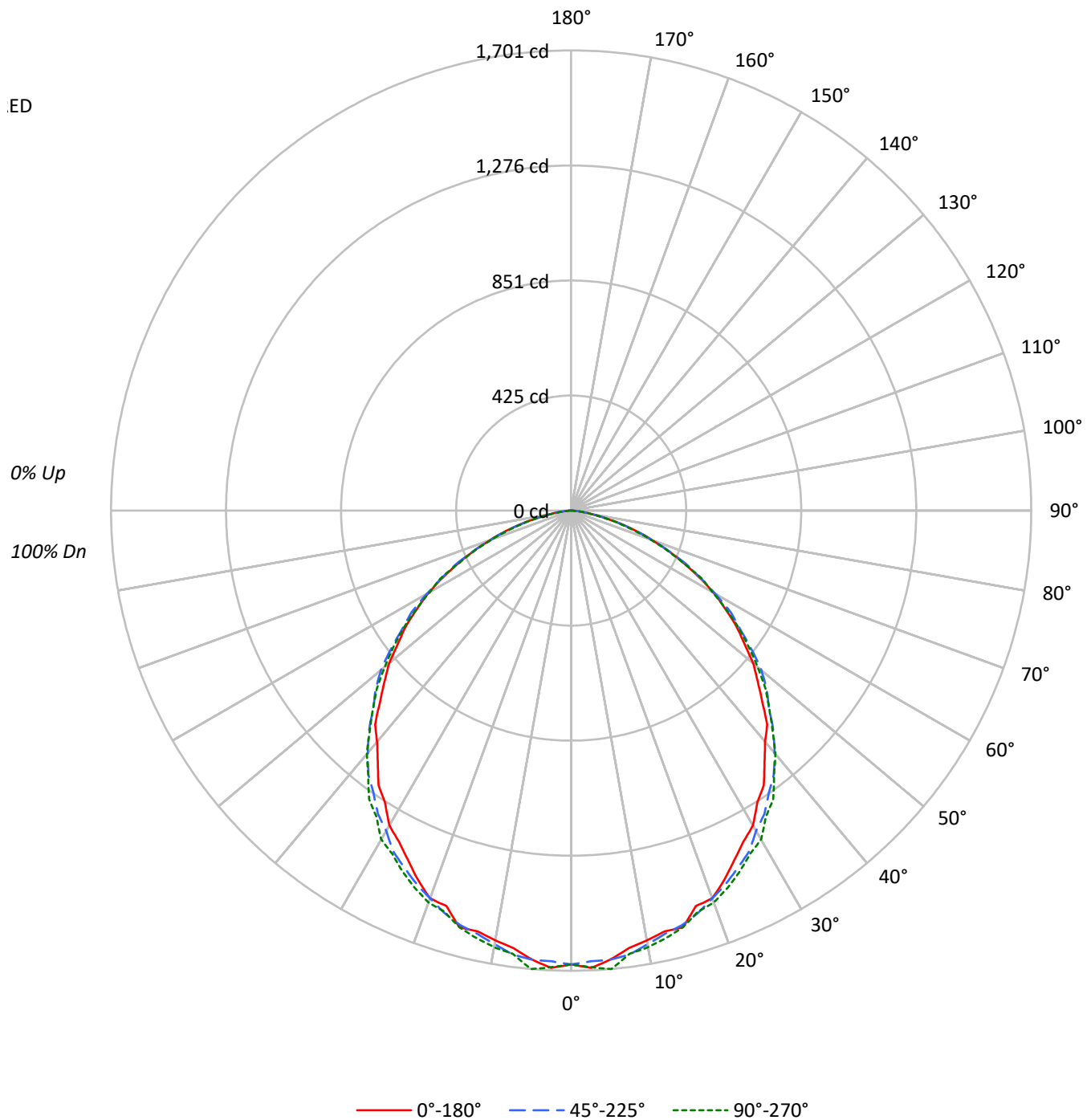
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4228.0 lumens  
Efficiency: N/A  
Efficacy: 120.5 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): 35.1  
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					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°	4514	4514	4514
5°	4499	4501	4596
10°	4408	4447	4478
15°	4443	4419	4444
20°	4368	4368	4414
25°	4234	4326	4374
30°	4176	4249	4362
35°	4077	4184	4278
40°	3919	4107	4125
45°	3800	3935	3941
50°	3675	3841	3768
55°	3502	3570	3544
60°	3274	3307	3247
65°	2919	2994	2899
70°	2505	2514	2444
75°	1984	1980	1903
80°	1330	1292	1241
85°	722	716	670

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4037 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.8	3.7
10°-20°	447.2	10.6
20°-30°	670.0	15.8
30°-40°	794.1	18.8
40°-50°	795.6	18.8
50°-60°	675.3	16.0
60°-70°	455.3	10.8
70°-80°	200.1	4.7
80°-90°	32.5	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°	1275.1	30.2
0°-40°	2069.2	48.9
0°-60°	3540.1	83.7
0°-90°	4228.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4228.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1678	1678	1678	1678	1678	
5°	1666	1662	1666	1661	1701	157
15°	1595	1576	1586	1594	1595	444
25°	1426	1434	1457	1476	1473	659
35°	1241	1245	1274	1303	1302	771
45°	998	1017	1034	1061	1036	772
55°	746	741	761	756	756	664
65°	458	452	470	452	455	456
75°	191	187	190	177	183	205
85°	23	23	23	22	22	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1677.6	1677.6	1677.6	1677.6	1677.6
2.5°	1692.1	1679.3	1667.4	1681.2	1689.7
5°	1665.7	1661.8	1666.3	1661.3	1701.4
7.5°	1631.4	1646.4	1655.0	1649.6	1652.0
10°	1613.2	1608.0	1627.3	1640.7	1638.8
12.5°	1593.7	1601.5	1602.6	1617.1	1618.4
15°	1594.8	1576.4	1586.2	1594.4	1595.0
17.5°	1532.9	1552.8	1559.5	1578.4	1555.0
20°	1525.3	1510.8	1525.3	1544.6	1541.5
22.5°	1478.7	1462.5	1493.7	1510.8	1509.7
25°	1425.9	1433.7	1457.1	1476.1	1473.1
27.5°	1379.5	1388.6	1422.0	1448.2	1431.3
30°	1343.8	1339.2	1367.4	1390.8	1403.8
32.5°	1279.9	1296.3	1329.3	1352.4	1340.1
35°	1241.1	1244.8	1273.6	1303.1	1302.2
37.5°	1173.3	1190.4	1230.9	1239.2	1231.6
40°	1115.5	1132.6	1169.2	1178.1	1174.4
42.5°	1072.8	1075.9	1107.3	1117.4	1101.2
45°	998.5	1017.2	1034.0	1060.7	1035.6
47.5°	935.3	943.9	980.3	987.5	974.3
50°	877.9	880.9	917.5	908.6	900.0
52.5°	805.8	818.5	839.1	837.4	827.2
55°	746.4	741.4	760.9	755.7	755.5
57.5°	675.1	683.8	699.8	691.6	678.4
60°	608.4	608.6	614.5	605.2	603.4
62.5°	534.1	536.7	538.0	526.6	545.2
65°	458.5	452.5	470.2	452.3	455.3
67.5°	389.0	392.0	390.3	379.0	383.4
70°	318.4	322.3	319.5	306.7	310.6
72.5°	253.9	249.1	252.1	236.1	243.5
75°	190.8	186.9	190.4	177.0	183.0
77.5°	130.0	133.0	130.8	123.7	127.8
80°	85.8	83.4	83.4	79.3	80.1
82.5°	50.0	47.7	47.0	45.7	47.7
85°	23.4	22.7	23.2	22.5	21.7
87.5°	8.4	8.7	8.7	8.2	7.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)