

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: P590557

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590557  
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-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

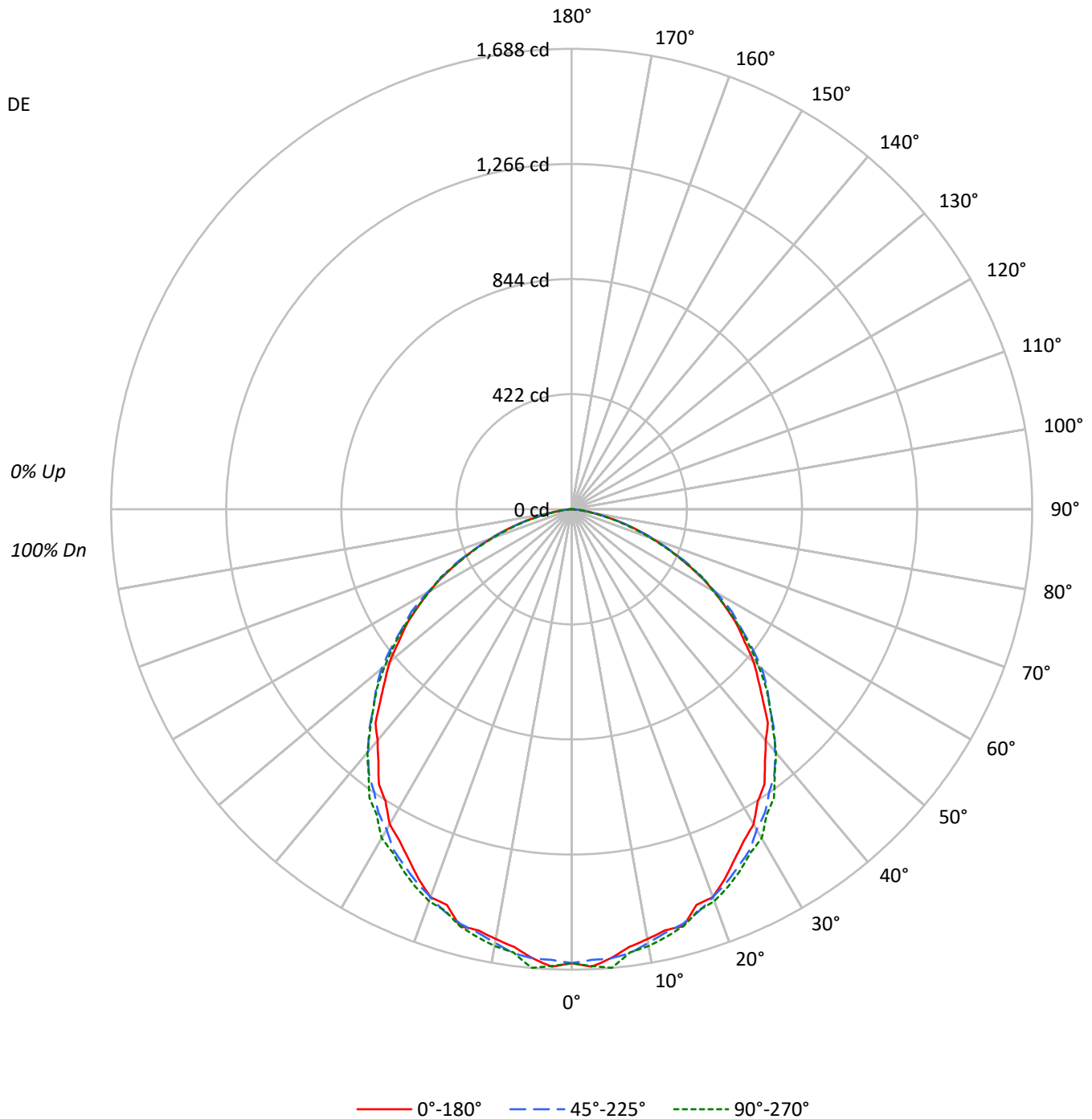
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4194.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 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				
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°	4478	4478	4478
5°	4463	4465	4559
10°	4373	4411	4442
15°	4407	4383	4408
20°	4333	4333	4379
25°	4200	4291	4339
30°	4142	4215	4327
35°	4044	4150	4243
40°	3887	4074	4092
45°	3769	3903	3909
50°	3646	3810	3737
55°	3474	3541	3516
60°	3248	3281	3222
65°	2897	2970	2876
70°	2485	2493	2424
75°	1968	1964	1888
80°	1319	1282	1232
85°	716	710	664

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4004 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.5	3.7
10°-20°	443.6	10.6
20°-30°	664.6	15.8
30°-40°	787.7	18.8
40°-50°	789.2	18.8
50°-60°	669.9	16.0
60°-70°	451.6	10.8
70°-80°	198.5	4.7
80°-90°	32.2	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°	1264.8	30.2
0°-40°	2052.5	48.9
0°-60°	3511.6	83.7
0°-90°	4194.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4194.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1664	1664	1664	1664	1664	
5°	1652	1648	1653	1648	1688	156
15°	1582	1564	1573	1582	1582	441
25°	1414	1422	1445	1464	1461	654
35°	1231	1235	1263	1293	1292	764
45°	990	1009	1026	1052	1027	766
55°	740	736	755	750	749	659
65°	455	449	466	449	452	452
75°	189	185	189	176	182	203
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°	1664.1	1664.1	1664.1	1664.1	1664.1
2.5°	1678.5	1665.8	1654.0	1667.7	1676.1
5°	1652.3	1648.4	1652.9	1648.0	1687.7
7.5°	1618.3	1633.1	1641.7	1636.4	1638.7
10°	1600.3	1595.1	1614.2	1627.5	1625.6
12.5°	1580.9	1588.7	1589.7	1604.1	1605.4
15°	1582.0	1563.7	1573.4	1581.6	1582.2
17.5°	1520.5	1540.3	1547.0	1565.7	1542.5
20°	1513.0	1498.6	1513.0	1532.2	1529.1
22.5°	1466.8	1450.7	1481.7	1498.6	1497.6
25°	1414.4	1422.1	1445.3	1464.3	1461.2
27.5°	1368.4	1377.5	1410.5	1436.5	1419.8
30°	1333.0	1328.5	1356.4	1379.6	1392.5
32.5°	1269.6	1285.9	1318.6	1341.6	1329.3
35°	1231.1	1234.8	1263.4	1292.6	1291.7
37.5°	1163.9	1180.9	1221.0	1229.2	1221.7
40°	1106.5	1123.5	1159.8	1168.6	1165.0
42.5°	1064.2	1067.2	1098.4	1108.5	1092.3
45°	990.5	1009.0	1025.7	1052.2	1027.2
47.5°	927.8	936.4	972.4	979.5	966.4
50°	870.8	873.8	910.1	901.3	892.7
52.5°	799.3	811.9	832.4	830.6	820.5
55°	740.4	735.5	754.8	749.6	749.4
57.5°	669.7	678.3	694.2	686.0	672.9
60°	603.5	603.8	609.6	600.3	598.6
62.5°	529.8	532.4	533.7	522.3	540.8
65°	454.9	448.8	466.5	448.6	451.6
67.5°	385.9	388.9	387.2	376.0	380.3
70°	315.8	319.7	316.9	304.2	308.1
72.5°	251.8	247.1	250.1	234.2	241.5
75°	189.3	185.4	188.9	175.5	181.6
77.5°	128.9	131.9	129.8	122.7	126.8
80°	85.1	82.7	82.7	78.6	79.5
82.5°	49.6	47.3	46.6	45.3	47.3
85°	23.2	22.6	23.0	22.3	21.5
87.5°	8.4	8.6	8.6	8.2	7.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)