

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: P590563

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-81-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590563  
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-81-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

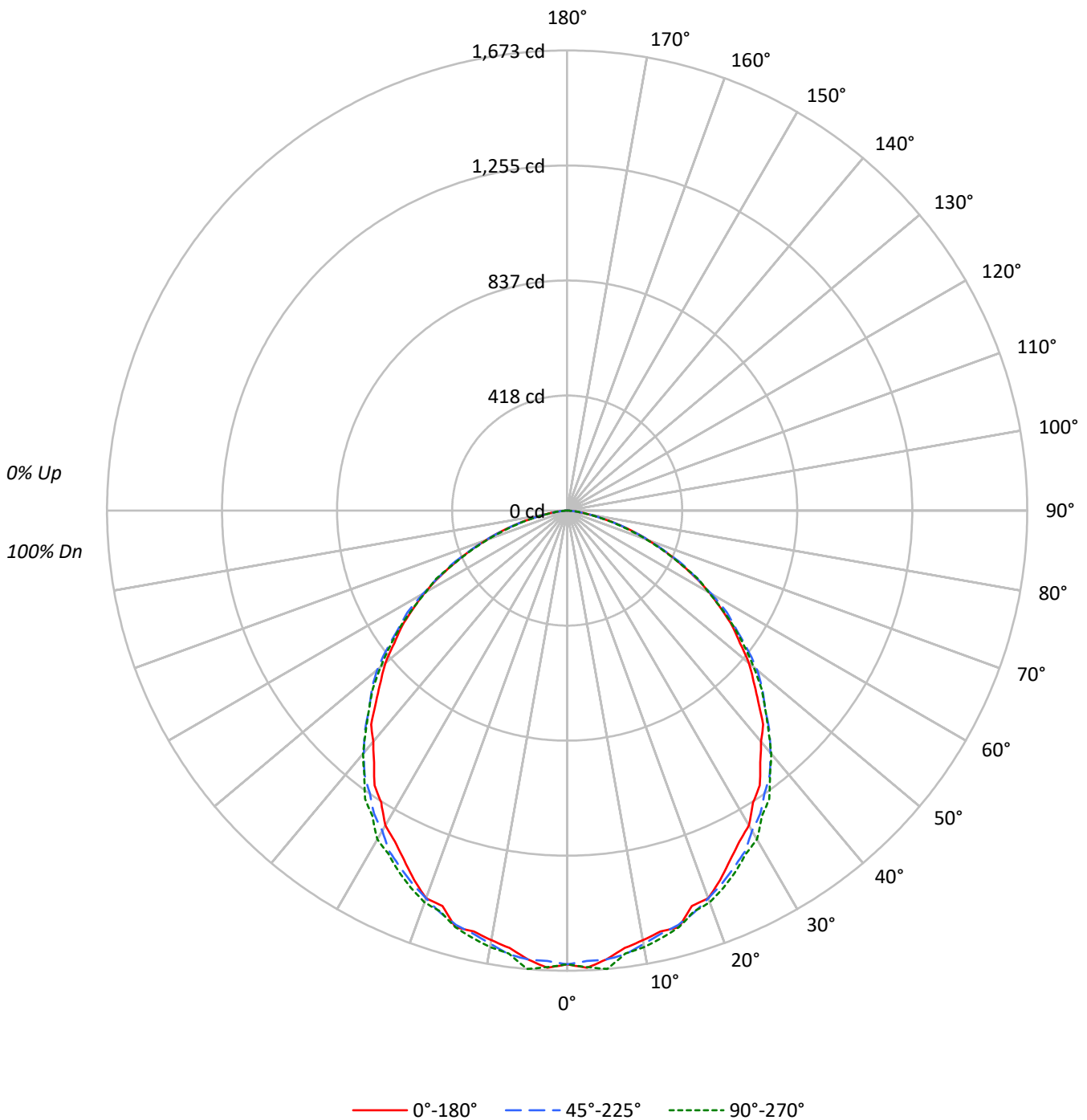
Lumens per Lamp: N/A  
Luminaire Lumens: 4157.0 lumens  
Efficiency: N/A  
Efficacy: 118.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	4439	4439	4439
5°	4424	4425	4519
10°	4334	4372	4403
15°	4368	4345	4369
20°	4295	4295	4340
25°	4162	4254	4301
30°	4105	4177	4289
35°	4009	4114	4206
40°	3853	4038	4056
45°	3736	3869	3875
50°	3613	3777	3705
55°	3443	3510	3485
60°	3219	3252	3193
65°	2870	2944	2850
70°	2463	2471	2403
75°	1951	1946	1871
80°	1306	1271	1221
85°	710	704	658

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3969 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	155.1	3.7
10°-20°	439.7	10.6
20°-30°	658.8	15.8
30°-40°	780.8	18.8
40°-50°	782.3	18.8
50°-60°	664.0	16.0
60°-70°	447.7	10.8
70°-80°	196.7	4.7
80°-90°	32.0	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°	1253.6	30.2
0°-40°	2034.4	48.9
0°-60°	3480.7	83.7
0°-90°	4157.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4157.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1649	1649	1649	1649	1649	
5°	1638	1634	1638	1633	1673	154
15°	1568	1550	1560	1568	1568	437
25°	1402	1410	1433	1451	1448	648
35°	1220	1224	1252	1281	1280	758
45°	982	1000	1017	1043	1018	759
55°	734	729	748	743	743	653
65°	451	445	462	445	448	448
75°	188	184	187	174	180	201
85°	23	22	23	22	21	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1649.4	1649.4	1649.4	1649.4	1649.4
2.5°	1663.7	1651.1	1639.4	1653.0	1661.3
5°	1637.7	1633.8	1638.3	1633.4	1672.8
7.5°	1604.0	1618.7	1627.2	1621.9	1624.3
10°	1586.1	1581.0	1600.0	1613.2	1611.3
12.5°	1567.0	1574.6	1575.7	1590.0	1591.3
15°	1568.0	1549.9	1559.5	1567.6	1568.3
17.5°	1507.1	1526.7	1533.3	1551.9	1528.9
20°	1499.7	1485.4	1499.7	1518.6	1515.7
22.5°	1453.9	1437.9	1468.6	1485.4	1484.3
25°	1401.9	1409.6	1432.6	1451.3	1448.4
27.5°	1356.4	1365.3	1398.1	1423.9	1407.3
30°	1321.2	1316.7	1344.4	1367.4	1380.2
32.5°	1258.4	1274.6	1306.9	1329.7	1317.6
35°	1220.3	1223.9	1252.2	1281.2	1280.3
37.5°	1153.6	1170.4	1210.3	1218.4	1210.9
40°	1096.8	1113.6	1149.6	1158.3	1154.7
42.5°	1054.8	1057.8	1088.7	1098.7	1082.7
45°	981.8	1000.1	1016.7	1042.9	1018.2
47.5°	919.6	928.1	963.9	970.9	957.9
50°	863.1	866.1	902.1	893.4	884.9
52.5°	792.2	804.8	825.0	823.3	813.3
55°	733.9	729.0	748.1	743.0	742.8
57.5°	663.8	672.3	688.1	680.0	667.0
60°	598.2	598.4	604.2	595.0	593.3
62.5°	525.2	527.7	529.0	517.7	536.0
65°	450.8	444.9	462.3	444.7	447.6
67.5°	382.5	385.5	383.8	372.7	376.9
70°	313.1	316.9	314.1	301.6	305.4
72.5°	249.6	244.9	247.9	232.1	239.4
75°	187.6	183.8	187.2	174.0	180.0
77.5°	127.8	130.8	128.6	121.6	125.6
80°	84.3	82.0	82.0	77.9	78.8
82.5°	49.2	46.9	46.2	44.9	46.9
85°	23.0	22.4	22.8	22.1	21.3
87.5°	8.3	8.5	8.5	8.1	7.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)