

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: P590525

Luminaire Tested: FSR-24-2-LD4-3LO-35-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590525  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

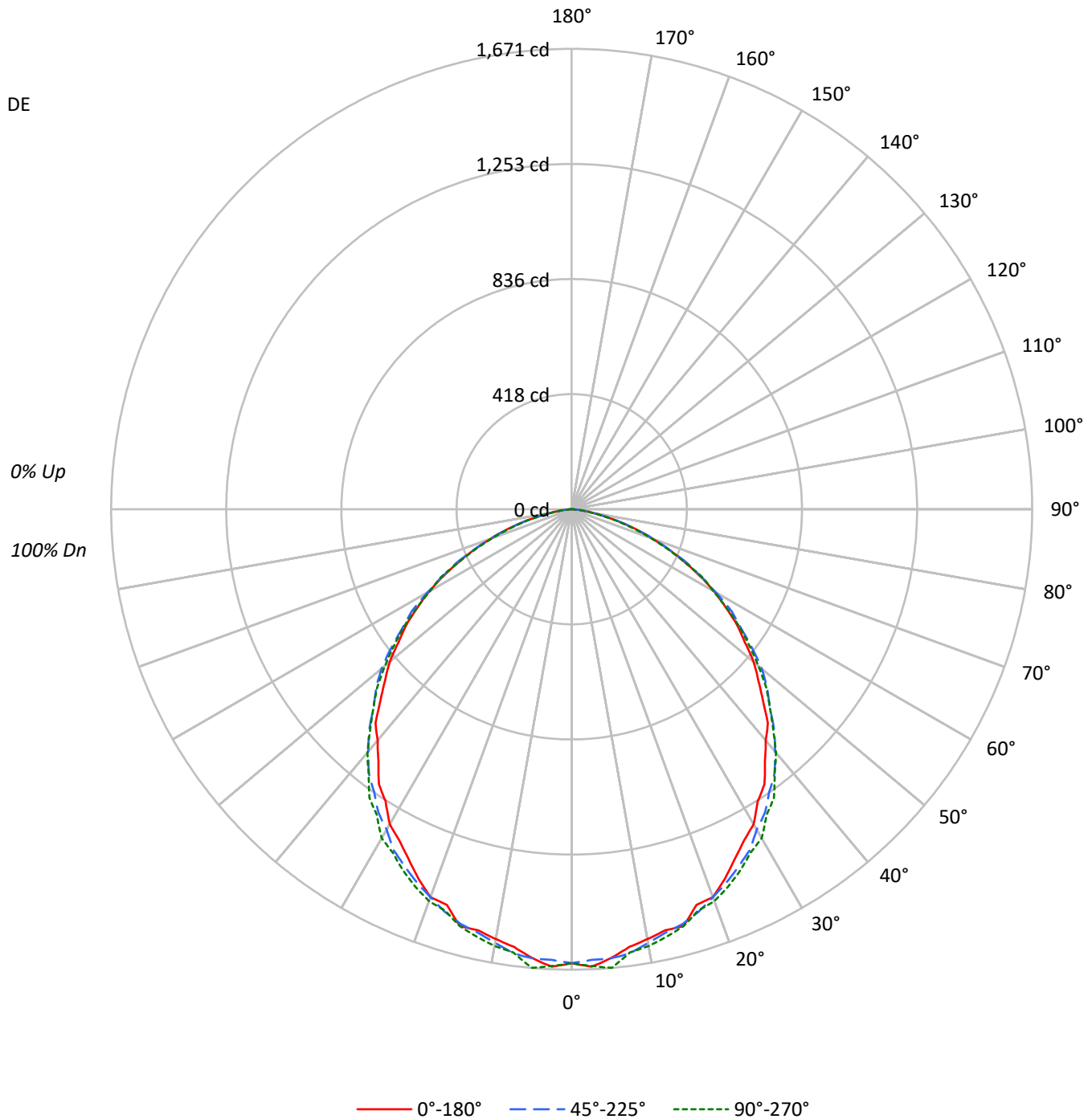
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4152.0 lumens  
Efficiency: N/A  
Efficacy: 118.3 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																		
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°	4433	4433	4433
5°	4418	4420	4513
10°	4329	4367	4397
15°	4363	4339	4364
20°	4290	4290	4335
25°	4157	4249	4295
30°	4100	4172	4283
35°	4004	4109	4201
40°	3848	4033	4051
45°	3732	3865	3870
50°	3609	3772	3700
55°	3439	3506	3481
60°	3216	3247	3189
65°	2867	2940	2847
70°	2460	2468	2400
75°	1948	1944	1868
80°	1305	1269	1220
85°	710	704	658

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3964 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	155.0	3.7
10°-20°	439.2	10.6
20°-30°	658.0	15.8
30°-40°	779.8	18.8
40°-50°	781.3	18.8
50°-60°	663.2	16.0
60°-70°	447.1	10.8
70°-80°	196.5	4.7
80°-90°	31.9	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°	1252.1	30.2
0°-40°	2032.0	48.9
0°-60°	3476.5	83.7
0°-90°	4152.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4152.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1647	1647	1647	1647	1647	
5°	1636	1632	1636	1632	1671	154
15°	1566	1548	1558	1566	1566	436
25°	1400	1408	1431	1450	1447	647
35°	1219	1222	1251	1280	1279	757
45°	981	999	1016	1042	1017	759
55°	733	728	747	742	742	652
65°	450	444	462	444	447	448
75°	187	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°	1647.4	1647.4	1647.4	1647.4	1647.4
2.5°	1661.7	1649.1	1637.4	1651.0	1659.3
5°	1635.7	1631.9	1636.3	1631.5	1670.8
7.5°	1602.1	1616.8	1625.3	1620.0	1622.3
10°	1584.2	1579.1	1598.1	1611.2	1609.3
12.5°	1565.1	1572.7	1573.8	1588.1	1589.3
15°	1566.2	1548.1	1557.6	1565.7	1566.4
17.5°	1505.3	1524.9	1531.5	1550.0	1527.0
20°	1497.9	1483.6	1497.9	1516.8	1513.8
22.5°	1452.1	1436.2	1466.8	1483.6	1482.6
25°	1400.2	1407.9	1430.9	1449.6	1446.6
27.5°	1354.7	1363.7	1396.4	1422.2	1405.6
30°	1319.6	1315.2	1342.8	1365.8	1378.5
32.5°	1256.9	1273.0	1305.4	1328.1	1316.0
35°	1218.8	1222.4	1250.7	1279.6	1278.8
37.5°	1152.2	1169.0	1208.8	1216.9	1209.4
40°	1095.4	1112.2	1148.2	1156.9	1153.3
42.5°	1053.5	1056.5	1087.4	1097.4	1081.4
45°	980.6	998.9	1015.5	1041.6	1016.9
47.5°	918.5	927.0	962.7	969.7	956.8
50°	862.1	865.1	901.0	892.3	883.8
52.5°	791.3	803.8	824.0	822.3	812.3
55°	733.0	728.1	747.2	742.1	741.9
57.5°	663.0	671.5	687.3	679.2	666.2
60°	597.5	597.7	603.4	594.3	592.6
62.5°	524.5	527.1	528.4	517.1	535.4
65°	450.3	444.3	461.8	444.1	447.1
67.5°	382.0	385.0	383.3	372.2	376.5
70°	312.7	316.5	313.7	301.2	305.0
72.5°	249.3	244.6	247.6	231.8	239.1
75°	187.4	183.6	187.0	173.8	179.7
77.5°	127.6	130.6	128.5	121.5	125.5
80°	84.2	81.9	81.9	77.9	78.7
82.5°	49.1	46.8	46.2	44.9	46.8
85°	23.0	22.3	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)