

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: P590145

Luminaire Tested: FSR-24-2-LD4-2HI-35-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590145  
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-LD4-2HI-35-UNV-81-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

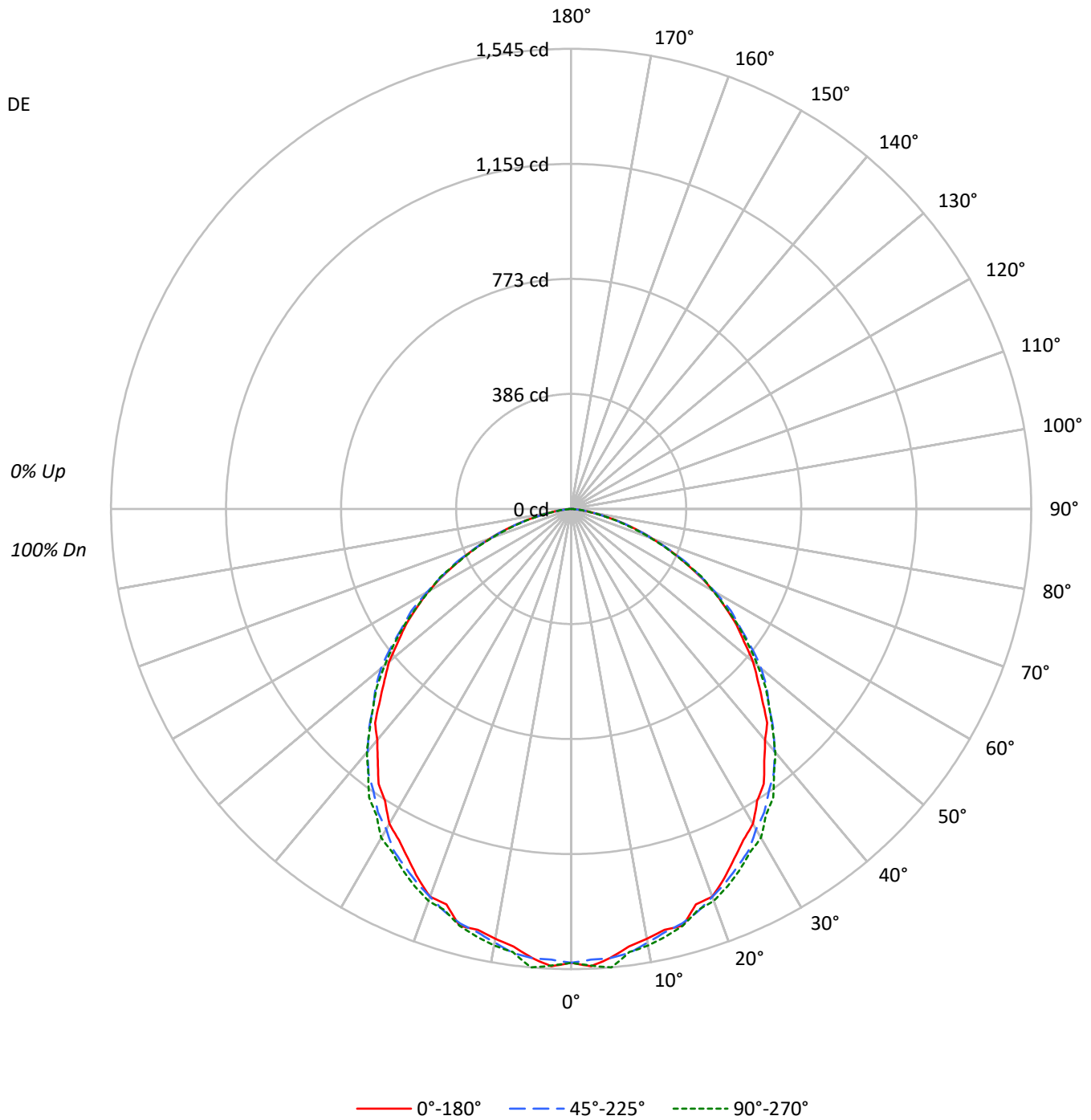
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3840.0 lumens  
Efficiency: N/A  
Efficacy: 88.9 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): 43.2  
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°	4100	4100	4100
5°	4086	4088	4174
10°	4004	4039	4067
15°	4035	4013	4036
20°	3967	3967	4009
25°	3845	3929	3972
30°	3792	3859	3962
35°	3703	3800	3885
40°	3559	3730	3747
45°	3451	3574	3579
50°	3338	3489	3422
55°	3180	3242	3219
60°	2974	3004	2950
65°	2652	2720	2633
70°	2275	2283	2220
75°	1802	1798	1728
80°	1207	1173	1128
85°	655	648	608

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3666 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	143.3	3.7
10°-20°	406.2	10.6
20°-30°	608.6	15.8
30°-40°	721.3	18.8
40°-50°	722.6	18.8
50°-60°	613.4	16.0
60°-70°	413.5	10.8
70°-80°	181.7	4.7
80°-90°	29.5	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°	1158.1	30.2
0°-40°	1879.3	48.9
0°-60°	3215.3	83.7
0°-90°	3840.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3840.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1524	1524	1524	1524	1524	
5°	1513	1509	1513	1509	1545	143
15°	1448	1432	1441	1448	1449	404
25°	1295	1302	1323	1341	1338	599
35°	1127	1131	1157	1184	1183	700
45°	907	924	939	963	940	702
55°	678	673	691	686	686	603
65°	416	411	427	411	414	414
75°	173	170	173	161	166	186
85°	21	21	21	20	20	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1523.6	1523.6	1523.6	1523.6	1523.6
2.5°	1536.8	1525.2	1514.4	1527.0	1534.6
5°	1512.8	1509.3	1513.4	1508.9	1545.3
7.5°	1481.7	1495.3	1503.2	1498.2	1500.4
10°	1465.2	1460.5	1478.0	1490.2	1488.4
12.5°	1447.5	1454.6	1455.5	1468.7	1469.9
15°	1448.5	1431.7	1440.6	1448.1	1448.7
17.5°	1392.2	1410.3	1416.4	1433.5	1412.3
20°	1385.3	1372.1	1385.3	1402.8	1400.1
22.5°	1343.0	1328.3	1356.6	1372.1	1371.2
25°	1295.0	1302.1	1323.4	1340.7	1337.9
27.5°	1252.9	1261.2	1291.5	1315.3	1299.9
30°	1220.5	1216.3	1241.9	1263.2	1275.0
32.5°	1162.4	1177.4	1207.3	1228.3	1217.1
35°	1127.2	1130.6	1156.7	1183.5	1182.7
37.5°	1065.6	1081.2	1118.0	1125.4	1118.6
40°	1013.1	1028.7	1061.9	1070.0	1066.6
42.5°	974.4	977.1	1005.6	1014.9	1000.1
45°	906.9	923.8	939.2	963.3	940.5
47.5°	849.4	857.3	890.4	896.9	884.9
50°	797.3	800.1	833.3	825.3	817.4
52.5°	731.8	743.4	762.1	760.5	751.3
55°	677.9	673.4	691.1	686.4	686.2
57.5°	613.2	621.1	635.6	628.1	616.1
60°	552.6	552.8	558.1	549.6	548.1
62.5°	485.1	487.5	488.7	478.2	495.2
65°	416.5	411.0	427.1	410.8	413.5
67.5°	353.3	356.1	354.5	344.3	348.2
70°	289.2	292.7	290.2	278.6	282.1
72.5°	230.6	226.2	229.0	214.4	221.1
75°	173.3	169.8	172.9	160.7	166.2
77.5°	118.0	120.8	118.8	112.3	116.1
80°	77.9	75.7	75.7	72.0	72.8
82.5°	45.4	43.3	42.7	41.5	43.3
85°	21.2	20.7	21.0	20.5	19.7
87.5°	7.7	7.9	7.9	7.5	7.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)