

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: P590596

Luminaire Tested: FSR-24-2-LD4-3LO-50-UNV-81-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590596  
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-50-UNV-81-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

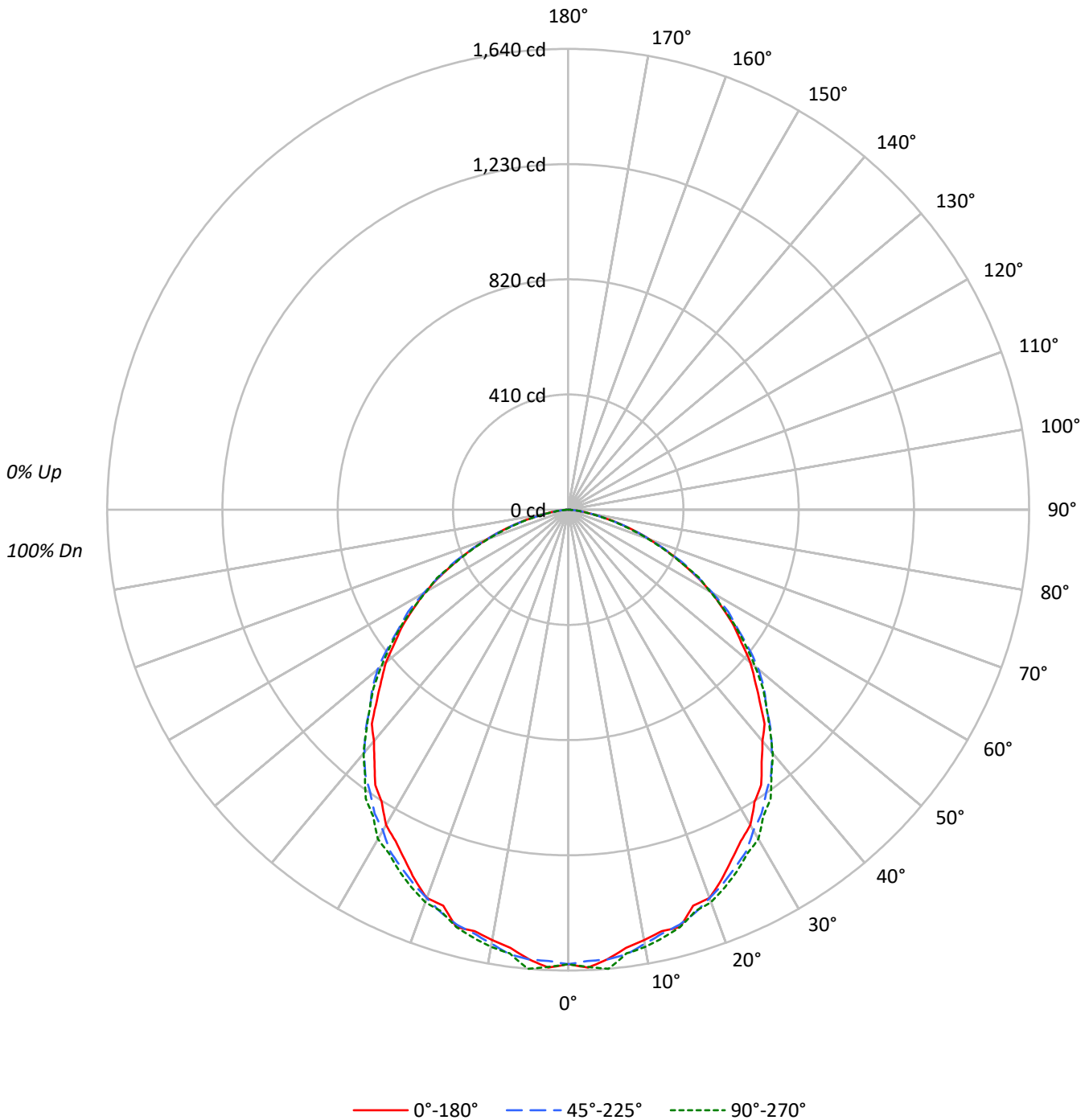
Lumens per Lamp: N/A  
Luminaire Lumens: 4076.0 lumens  
Efficiency: N/A  
Efficacy: 116.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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°	4352	4352	4352
5°	4338	4339	4431
10°	4250	4287	4317
15°	4283	4260	4284
20°	4211	4211	4256
25°	4081	4171	4217
30°	4025	4096	4205
35°	3931	4033	4124
40°	3778	3960	3977
45°	3663	3794	3799
50°	3543	3703	3632
55°	3376	3442	3417
60°	3157	3188	3131
65°	2815	2886	2795
70°	2415	2423	2356
75°	1913	1908	1834
80°	1282	1246	1198
85°	698	689	645

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3892 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.1	3.7
10°-20°	431.1	10.6
20°-30°	646.0	15.8
30°-40°	765.6	18.8
40°-50°	767.0	18.8
50°-60°	651.1	16.0
60°-70°	438.9	10.8
70°-80°	192.9	4.7
80°-90°	31.3	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°	1229.2	30.2
0°-40°	1994.8	48.9
0°-60°	3412.9	83.7
0°-90°	4076.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4076.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1617	1617	1617	1617	1617	
5°	1606	1602	1606	1602	1640	151
15°	1538	1520	1529	1537	1538	428
25°	1375	1382	1405	1423	1420	635
35°	1196	1200	1228	1256	1255	743
45°	963	981	997	1023	998	745
55°	720	715	734	728	728	640
65°	442	436	453	436	439	440
75°	184	180	184	171	176	197
85°	23	22	22	22	21	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1617.3	1617.3	1617.3	1617.3	1617.3
2.5°	1631.2	1618.9	1607.4	1620.8	1628.9
5°	1605.8	1602.0	1606.4	1601.6	1640.2
7.5°	1572.8	1587.2	1595.5	1590.3	1592.6
10°	1555.2	1550.2	1568.8	1581.8	1579.9
12.5°	1536.4	1544.0	1545.0	1559.0	1560.2
15°	1537.5	1519.7	1529.1	1537.1	1537.7
17.5°	1477.8	1497.0	1503.5	1521.6	1499.1
20°	1470.5	1456.5	1470.5	1489.0	1486.1
22.5°	1425.6	1409.9	1440.0	1456.5	1455.4
25°	1374.6	1382.1	1404.7	1423.1	1420.1
27.5°	1329.9	1338.7	1370.9	1396.1	1379.8
30°	1295.5	1291.1	1318.2	1340.8	1353.3
32.5°	1233.9	1249.7	1281.5	1303.8	1291.9
35°	1196.5	1200.0	1227.8	1256.2	1255.4
37.5°	1131.1	1147.6	1186.7	1194.6	1187.3
40°	1075.4	1091.9	1127.2	1135.7	1132.2
42.5°	1034.2	1037.2	1067.5	1077.3	1061.6
45°	962.6	980.6	996.9	1022.6	998.3
47.5°	901.7	910.0	945.1	952.0	939.2
50°	846.3	849.2	884.5	876.0	867.6
52.5°	776.8	789.1	808.9	807.3	797.5
55°	719.6	714.8	733.6	728.5	728.3
57.5°	650.9	659.2	674.7	666.7	654.0
60°	586.6	586.8	592.4	583.4	581.8
62.5°	514.9	517.4	518.7	507.6	525.6
65°	442.1	436.2	453.3	436.0	438.9
67.5°	375.0	378.0	376.3	365.4	369.6
70°	307.0	310.7	308.0	295.7	299.4
72.5°	244.7	240.1	243.1	227.6	234.7
75°	184.0	180.2	183.5	170.6	176.4
77.5°	125.3	128.2	126.1	119.2	123.2
80°	82.7	80.4	80.4	76.4	77.3
82.5°	48.2	45.9	45.3	44.1	45.9
85°	22.6	21.9	22.3	21.7	20.9
87.5°	8.1	8.4	8.4	7.9	7.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)