

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: P590599

Luminaire Tested: FSR-24-2-LD4-3LO-50-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590599  
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-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

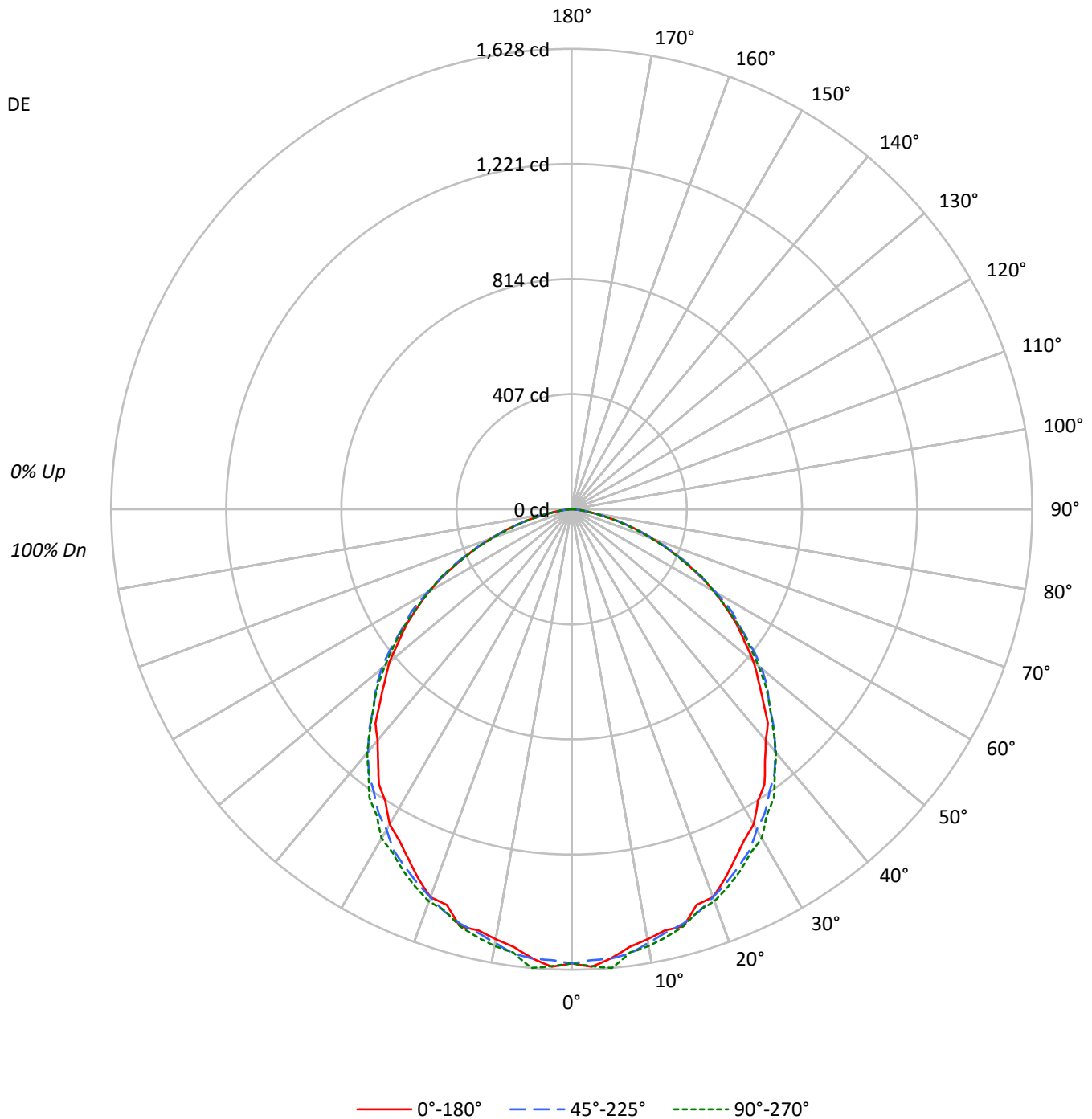
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4046.0 lumens  
Efficiency: N/A  
Efficacy: 115.3 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					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°	4320	4320	4320
5°	4306	4307	4398
10°	4218	4255	4285
15°	4252	4229	4252
20°	4180	4180	4225
25°	4051	4140	4186
30°	3996	4066	4174
35°	3902	4004	4094
40°	3750	3930	3948
45°	3636	3766	3771
50°	3517	3676	3605
55°	3351	3416	3392
60°	3133	3165	3108
65°	2794	2865	2774
70°	2397	2405	2338
75°	1899	1894	1821
80°	1272	1237	1189
85°	692	685	639

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3863 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.0	3.7
10°-20°	428.0	10.6
20°-30°	641.2	15.8
30°-40°	759.9	18.8
40°-50°	761.3	18.8
50°-60°	646.3	16.0
60°-70°	435.7	10.8
70°-80°	191.5	4.7
80°-90°	31.1	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°	1220.2	30.2
0°-40°	1980.1	48.9
0°-60°	3387.7	83.7
0°-90°	4046.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4046.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1605	1605	1605	1605	1605	
5°	1594	1590	1595	1590	1628	150
15°	1526	1509	1518	1526	1526	425
25°	1364	1372	1394	1413	1410	631
35°	1188	1191	1219	1247	1246	737
45°	956	973	990	1015	991	739
55°	714	710	728	723	723	635
65°	439	433	450	433	436	436
75°	183	179	182	169	175	196
85°	22	22	22	22	21	32
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1605.4	1605.4	1605.4	1605.4	1605.4
2.5°	1619.2	1607.0	1595.6	1608.9	1617.0
5°	1594.0	1590.2	1594.6	1589.8	1628.2
7.5°	1561.2	1575.5	1583.8	1578.6	1580.9
10°	1543.8	1538.8	1557.3	1570.1	1568.2
12.5°	1525.1	1532.6	1533.6	1547.5	1548.8
15°	1526.2	1508.6	1517.9	1525.8	1526.4
17.5°	1466.9	1486.0	1492.4	1510.4	1488.0
20°	1459.6	1445.7	1459.6	1478.1	1475.2
22.5°	1415.1	1399.5	1429.4	1445.7	1444.7
25°	1364.5	1372.0	1394.3	1412.6	1409.7
27.5°	1320.1	1328.8	1360.8	1385.8	1369.7
30°	1285.9	1281.6	1308.5	1330.9	1343.4
32.5°	1224.8	1240.5	1272.1	1294.2	1282.4
35°	1187.7	1191.2	1218.8	1247.0	1246.1
37.5°	1122.8	1139.2	1177.9	1185.8	1178.6
40°	1067.5	1083.8	1118.9	1127.4	1123.8
42.5°	1026.6	1029.5	1059.6	1069.3	1053.8
45°	955.5	973.4	989.5	1015.0	991.0
47.5°	895.0	903.3	938.1	945.0	932.3
50°	840.1	843.0	878.0	869.5	861.2
52.5°	771.1	783.3	803.0	801.3	791.6
55°	714.3	709.5	728.2	723.2	723.0
57.5°	646.1	654.4	669.7	661.8	649.2
60°	582.2	582.4	588.0	579.1	577.5
62.5°	511.1	513.6	514.9	503.9	521.7
65°	438.8	433.0	450.0	432.8	435.7
67.5°	372.3	375.2	373.5	362.7	366.9
70°	304.7	308.4	305.7	293.5	297.2
72.5°	242.9	238.4	241.3	225.9	233.0
75°	182.6	178.9	182.2	169.3	175.1
77.5°	124.4	127.3	125.2	118.4	122.3
80°	82.1	79.8	79.8	75.9	76.7
82.5°	47.9	45.6	45.0	43.7	45.6
85°	22.4	21.8	22.2	21.6	20.7
87.5°	8.1	8.3	8.3	7.9	7.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)