

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: P590181

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-82-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590181  
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-40-UNV-82-84-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

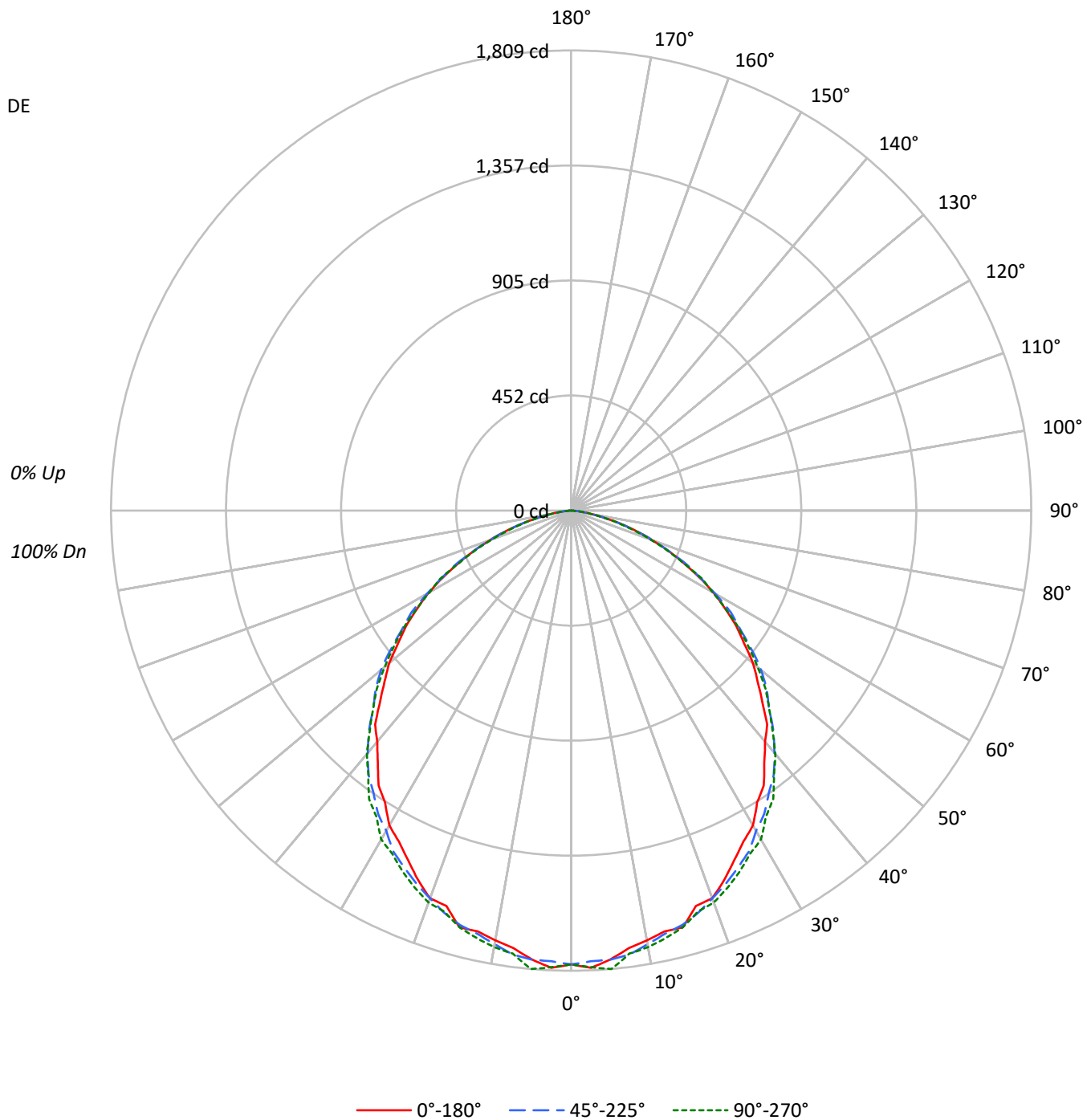
Lumens per Lamp: N/A  
Luminaire Lumens: 4496.0 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	4800	4800	4800
5°	4784	4786	4887
10°	4688	4729	4762
15°	4725	4699	4725
20°	4645	4645	4694
25°	4502	4600	4651
30°	4440	4518	4639
35°	4336	4449	4549
40°	4167	4367	4387
45°	4041	4185	4191
50°	3908	4085	4006
55°	3724	3796	3769
60°	3482	3517	3454
65°	3105	3184	3083
70°	2664	2673	2599
75°	2110	2105	2023
80°	1413	1375	1320
85°	769	760	710

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4292 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.8	3.7
10°-20°	475.6	10.6
20°-30°	712.5	15.8
30°-40°	844.5	18.8
40°-50°	846.0	18.8
50°-60°	718.1	16.0
60°-70°	484.2	10.8
70°-80°	212.7	4.7
80°-90°	34.6	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°	1355.9	30.2
0°-40°	2200.3	48.9
0°-60°	3764.5	83.7
0°-90°	4496.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4496.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1784	1784	1784	1784	1784	
5°	1771	1767	1772	1767	1809	167
15°	1696	1676	1687	1696	1696	473
25°	1516	1524	1549	1570	1566	701
35°	1320	1324	1354	1386	1385	819
45°	1062	1082	1100	1128	1101	821
55°	794	788	809	804	803	706
65°	488	481	500	481	484	485
75°	203	199	202	188	195	217
85°	25	24	25	24	23	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1783.9	1783.9	1783.9	1783.9	1783.9
2.5°	1799.3	1785.7	1773.1	1787.8	1796.8
5°	1771.2	1767.1	1771.9	1766.6	1809.2
7.5°	1734.8	1750.7	1759.9	1754.2	1756.7
10°	1715.5	1710.0	1730.5	1744.7	1742.7
12.5°	1694.8	1703.1	1704.2	1719.6	1721.0
15°	1695.9	1676.3	1686.7	1695.5	1696.1
17.5°	1630.0	1651.2	1658.4	1678.4	1653.5
20°	1622.0	1606.5	1622.0	1642.5	1639.3
22.5°	1572.5	1555.2	1588.3	1606.5	1605.4
25°	1516.3	1524.5	1549.4	1569.7	1566.5
27.5°	1467.0	1476.6	1512.1	1540.0	1522.0
30°	1429.0	1424.1	1454.1	1478.9	1492.8
32.5°	1361.0	1378.5	1413.5	1438.2	1425.0
35°	1319.8	1323.7	1354.3	1385.7	1384.7
37.5°	1247.7	1265.9	1309.0	1317.7	1309.7
40°	1186.2	1204.4	1243.3	1252.8	1248.8
42.5°	1140.8	1144.0	1177.4	1188.3	1171.0
45°	1061.8	1081.6	1099.6	1127.9	1101.2
47.5°	994.6	1003.8	1042.5	1050.1	1036.0
50°	933.5	936.7	975.7	966.2	957.0
52.5°	856.8	870.4	892.3	890.5	879.6
55°	793.7	788.4	809.1	803.6	803.4
57.5°	717.9	727.1	744.2	735.4	721.4
60°	647.0	647.2	653.4	643.5	641.7
62.5°	568.0	570.8	572.1	559.9	579.7
65°	487.6	481.2	500.0	480.9	484.2
67.5°	413.7	416.9	415.1	403.1	407.7
70°	338.6	342.7	339.7	326.1	330.3
72.5°	269.9	264.9	268.1	251.1	258.9
75°	202.9	198.8	202.5	188.2	194.6
77.5°	138.2	141.4	139.1	131.5	135.9
80°	91.2	88.7	88.7	84.3	85.2
82.5°	53.2	50.7	50.0	48.6	50.7
85°	24.9	24.2	24.6	24.0	23.0
87.5°	9.0	9.2	9.2	8.8	8.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)