

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: P590173

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590173  
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-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

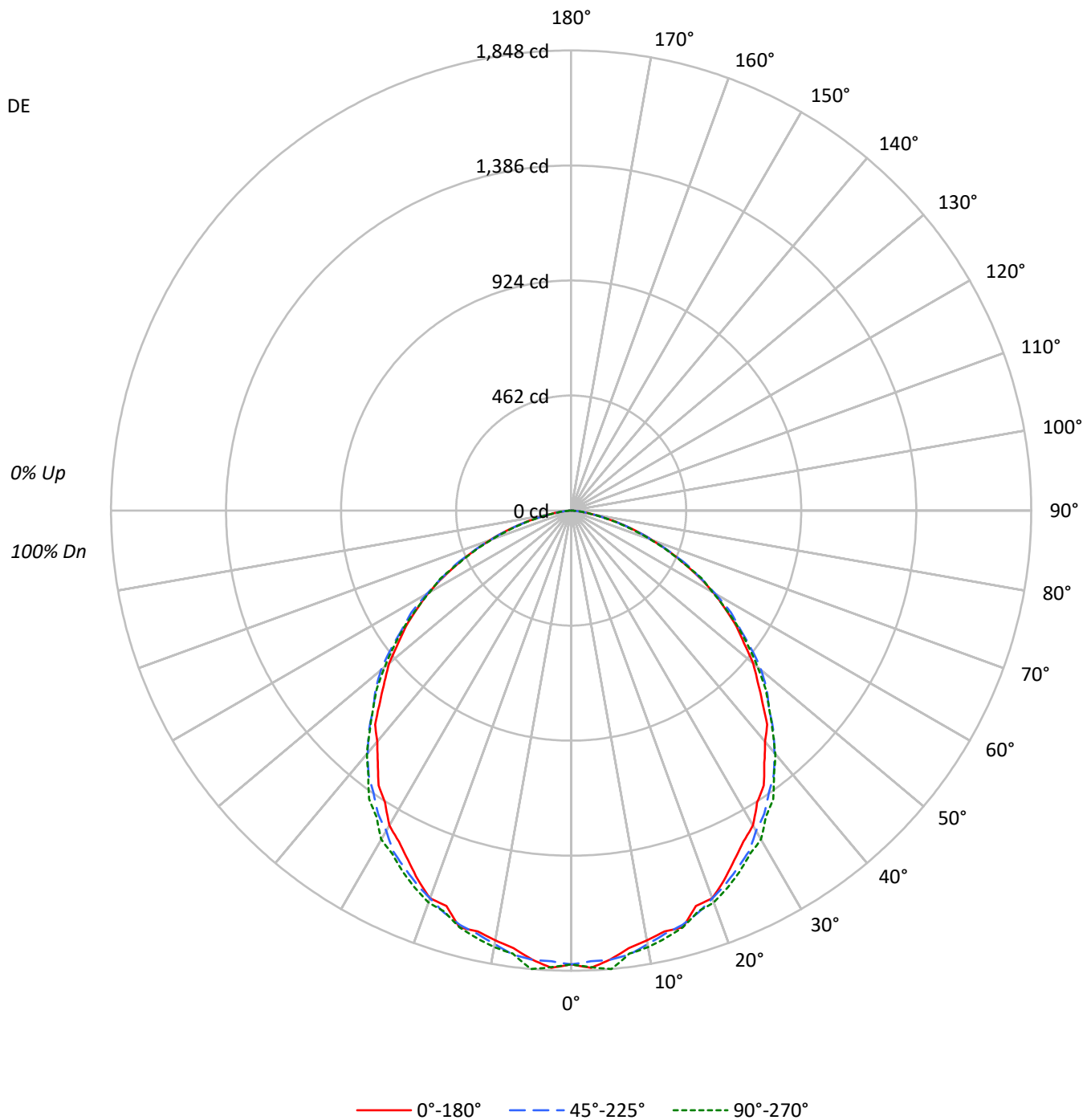
Lumens per Lamp: N/A  
Luminaire Lumens: 4593.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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				
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°	4904	4904	4904
5°	4888	4890	4993
10°	4789	4830	4865
15°	4827	4800	4827
20°	4745	4745	4796
25°	4599	4700	4752
30°	4536	4616	4739
35°	4429	4545	4647
40°	4257	4462	4482
45°	4128	4275	4281
50°	3993	4173	4093
55°	3804	3878	3850
60°	3557	3592	3528
65°	3172	3252	3149
70°	2722	2731	2655
75°	2155	2150	2067
80°	1444	1404	1350
85°	784	778	726

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4385 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.4	3.7
10°-20°	485.8	10.6
20°-30°	727.9	15.8
30°-40°	862.7	18.8
40°-50°	864.3	18.8
50°-60°	733.6	16.0
60°-70°	494.6	10.8
70°-80°	217.3	4.7
80°-90°	35.3	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°	1385.1	30.2
0°-40°	2247.8	48.9
0°-60°	3845.7	83.7
0°-90°	4593.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4593.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1822	1822	1822	1822	1822	
5°	1809	1805	1810	1805	1848	171
15°	1732	1712	1723	1732	1733	483
25°	1549	1557	1583	1604	1600	716
35°	1348	1352	1384	1416	1415	837
45°	1085	1105	1123	1152	1125	839
55°	811	805	827	821	821	721
65°	498	492	511	491	495	495
75°	207	203	207	192	199	222
85°	25	25	25	24	24	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1822.4	1822.4	1822.4	1822.4	1822.4
2.5°	1838.2	1824.3	1811.3	1826.4	1835.6
5°	1809.4	1805.2	1810.2	1804.7	1848.3
7.5°	1772.3	1788.5	1797.9	1792.0	1794.6
10°	1752.5	1746.9	1767.8	1782.4	1780.3
12.5°	1731.3	1739.8	1741.0	1756.7	1758.1
15°	1732.5	1712.5	1723.1	1732.0	1732.7
17.5°	1665.2	1686.9	1694.1	1714.6	1689.2
20°	1657.0	1641.2	1657.0	1677.9	1674.6
22.5°	1606.4	1588.7	1622.6	1641.2	1640.0
25°	1549.0	1557.4	1582.9	1603.6	1600.3
27.5°	1498.6	1508.5	1544.7	1573.2	1554.9
30°	1459.8	1454.9	1485.4	1510.9	1525.0
32.5°	1390.4	1408.3	1444.0	1469.2	1455.8
35°	1348.3	1352.3	1383.6	1415.6	1414.6
37.5°	1274.6	1293.2	1337.2	1346.1	1337.9
40°	1211.8	1230.4	1270.1	1279.8	1275.8
42.5°	1165.4	1168.7	1202.8	1213.9	1196.3
45°	1084.7	1105.0	1123.3	1152.3	1125.0
47.5°	1016.0	1025.4	1065.0	1072.7	1058.4
50°	953.7	957.0	996.7	987.1	977.7
52.5°	875.3	889.2	911.5	909.7	898.6
55°	810.8	805.4	826.6	821.0	820.7
57.5°	733.4	742.8	760.2	751.3	737.0
60°	661.0	661.2	667.5	657.4	655.5
62.5°	580.2	583.1	584.5	572.0	592.2
65°	498.1	491.5	510.8	491.3	494.6
67.5°	422.6	425.9	424.0	411.8	416.5
70°	345.9	350.1	347.1	333.2	337.4
72.5°	275.8	270.6	273.9	256.5	264.5
75°	207.3	203.1	206.8	192.2	198.8
77.5°	141.2	144.5	142.1	134.4	138.8
80°	93.2	90.6	90.6	86.1	87.1
82.5°	54.4	51.8	51.1	49.6	51.8
85°	25.4	24.7	25.2	24.5	23.5
87.5°	9.2	9.4	9.4	8.9	8.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)