

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: P590213

Luminaire Tested: FSR-24-2-LD4-2HI-50-UNV-82-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590213  
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-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

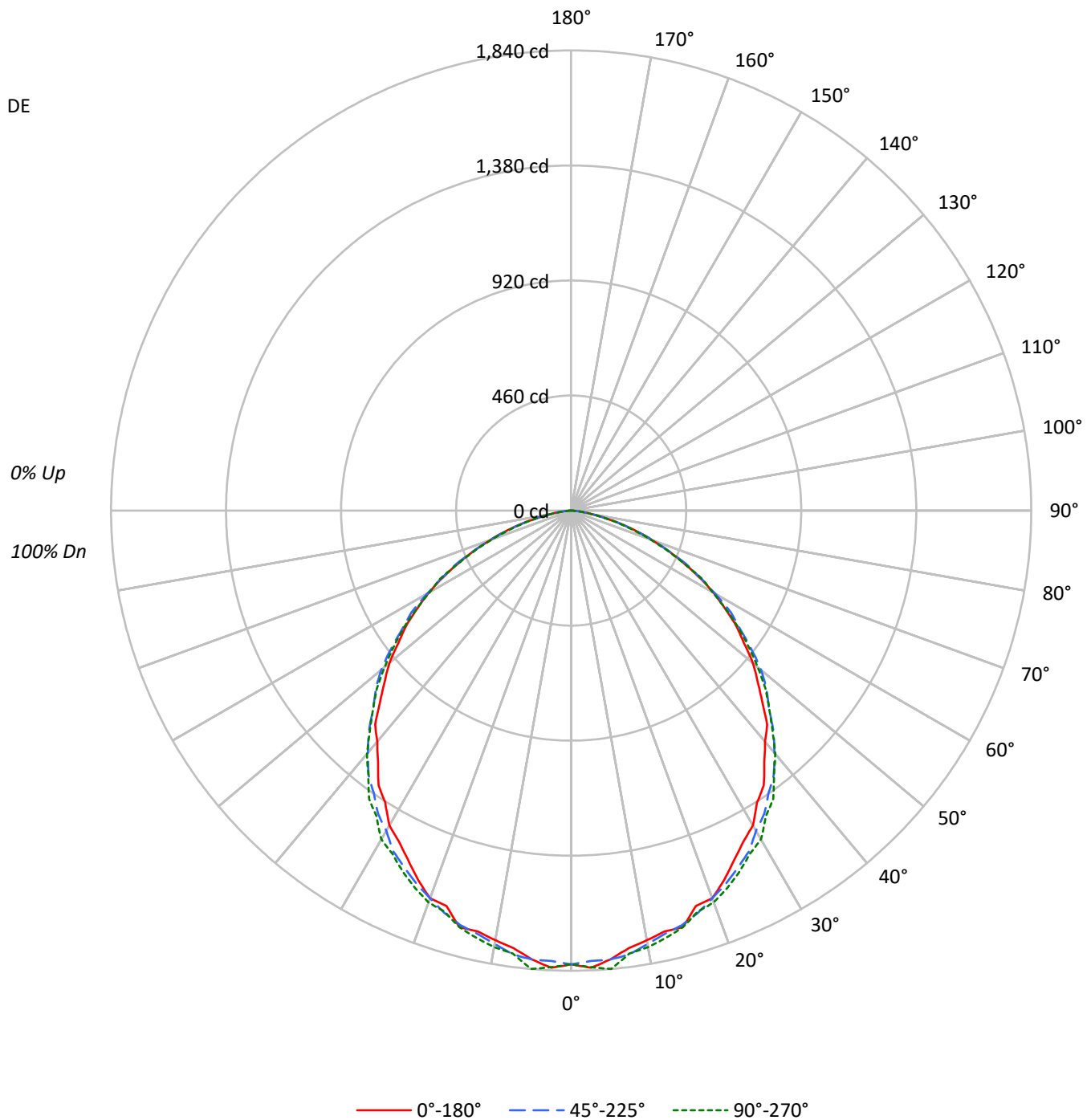
Lumens per Lamp: N/A  
Luminaire Lumens: 4572.0 lumens  
Efficiency: N/A  
Efficacy: 105.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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°	4882	4882	4882
5°	4866	4867	4970
10°	4767	4808	4842
15°	4805	4778	4805
20°	4723	4723	4774
25°	4578	4678	4730
30°	4515	4594	4717
35°	4409	4524	4626
40°	4237	4441	4461
45°	4109	4255	4262
50°	3974	4154	4074
55°	3787	3860	3833
60°	3541	3576	3512
65°	3157	3238	3135
70°	2709	2718	2643
75°	2146	2141	2058
80°	1438	1398	1344
85°	781	775	722

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4365 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.6	3.7
10°-20°	483.6	10.6
20°-30°	724.5	15.8
30°-40°	858.7	18.8
40°-50°	860.3	18.8
50°-60°	730.3	16.0
60°-70°	492.4	10.8
70°-80°	216.3	4.7
80°-90°	35.2	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°	1378.8	30.2
0°-40°	2237.5	48.9
0°-60°	3828.1	83.7
0°-90°	4572.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4572.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1814	1814	1814	1814	1814	
5°	1801	1797	1802	1796	1840	170
15°	1725	1705	1715	1724	1725	480
25°	1542	1550	1576	1596	1593	713
35°	1342	1346	1377	1409	1408	833
45°	1080	1100	1118	1147	1120	835
55°	807	802	823	817	817	718
65°	496	489	508	489	492	493
75°	206	202	206	191	198	221
85°	25	25	25	24	23	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1814.1	1814.1	1814.1	1814.1	1814.1
2.5°	1829.7	1815.9	1803.0	1818.0	1827.2
5°	1801.2	1797.0	1801.9	1796.5	1839.8
7.5°	1764.2	1780.3	1789.7	1783.8	1786.4
10°	1744.5	1738.9	1759.7	1774.2	1772.1
12.5°	1723.4	1731.8	1733.0	1748.7	1750.1
15°	1724.6	1704.7	1715.2	1724.1	1724.8
17.5°	1657.6	1679.1	1686.4	1706.8	1681.5
20°	1649.4	1633.7	1649.4	1670.2	1667.0
22.5°	1599.0	1581.5	1615.2	1633.7	1632.5
25°	1541.9	1550.3	1575.6	1596.2	1592.9
27.5°	1491.8	1501.6	1537.7	1566.0	1547.7
30°	1453.1	1448.2	1478.6	1503.9	1518.0
32.5°	1384.0	1401.8	1437.4	1462.5	1449.1
35°	1342.1	1346.1	1377.2	1409.1	1408.1
37.5°	1268.8	1287.3	1331.1	1340.0	1331.8
40°	1206.2	1224.8	1264.3	1273.9	1270.0
42.5°	1160.1	1163.4	1197.3	1208.4	1190.8
45°	1079.8	1099.9	1118.2	1147.0	1119.8
47.5°	1011.4	1020.7	1060.1	1067.8	1053.5
50°	949.3	952.6	992.2	982.6	973.2
52.5°	871.3	885.1	907.4	905.5	894.5
55°	807.1	801.7	822.8	817.2	817.0
57.5°	730.1	739.4	756.8	747.9	733.6
60°	657.9	658.2	664.5	654.4	652.5
62.5°	577.6	580.4	581.8	569.4	589.5
65°	495.8	489.3	508.5	489.1	492.3
67.5°	420.7	423.9	422.1	409.9	414.6
70°	344.3	348.5	345.5	331.7	335.9
72.5°	274.5	269.4	272.6	255.3	263.3
75°	206.4	202.1	205.9	191.4	197.9
77.5°	140.5	143.8	141.5	133.7	138.2
80°	92.8	90.2	90.2	85.7	86.7
82.5°	54.1	51.5	50.8	49.4	51.5
85°	25.3	24.6	25.1	24.4	23.4
87.5°	9.1	9.4	9.4	8.9	8.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)