

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: P590154

Luminaire Tested: FSR-24-2-LD4-2HI-35-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590154  
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-35-UNV-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

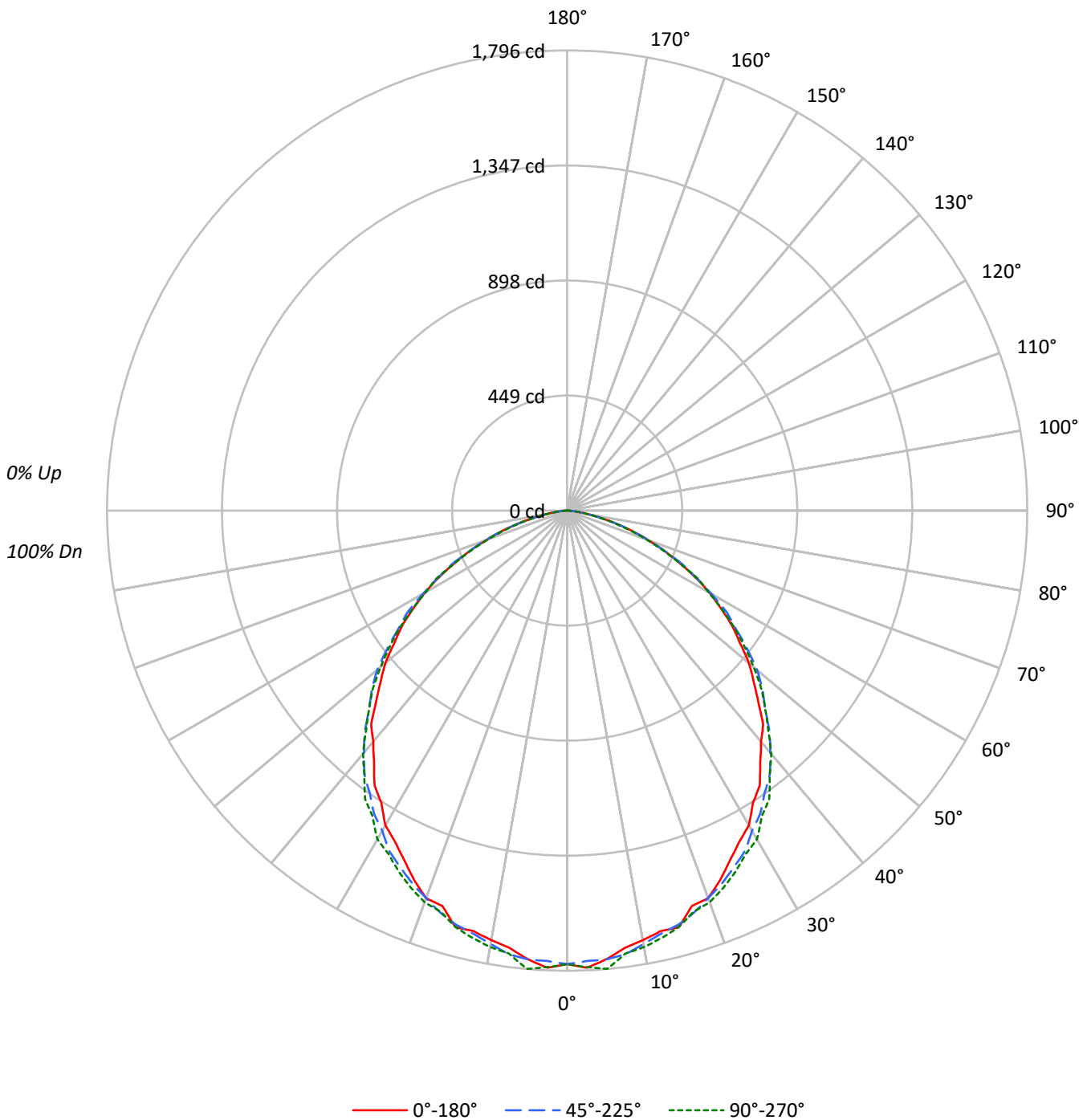
Lumens per Lamp: N/A  
Luminaire Lumens: 4462.0 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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					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°	4764	4764	4764
5°	4748	4750	4850
10°	4652	4693	4726
15°	4689	4663	4690
20°	4610	4610	4659
25°	4468	4566	4616
30°	4407	4484	4603
35°	4303	4415	4515
40°	4135	4334	4354
45°	4010	4153	4159
50°	3879	4054	3976
55°	3696	3767	3741
60°	3456	3490	3427
65°	3081	3160	3060
70°	2644	2653	2579
75°	2094	2089	2009
80°	1402	1364	1311
85°	763	756	707

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4260 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	166.5	3.7
10°-20°	472.0	10.6
20°-30°	707.1	15.8
30°-40°	838.1	18.8
40°-50°	839.6	18.8
50°-60°	712.7	16.0
60°-70°	480.5	10.8
70°-80°	211.2	4.7
80°-90°	34.3	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°	1345.6	30.2
0°-40°	2183.7	48.9
0°-60°	3736.0	83.7
0°-90°	4462.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4462.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1770	1770	1770	1770	1770	
5°	1758	1754	1758	1753	1796	166
15°	1683	1664	1674	1683	1683	469
25°	1505	1513	1538	1558	1555	696
35°	1310	1314	1344	1375	1374	813
45°	1054	1073	1091	1119	1093	815
55°	788	782	803	798	797	701
65°	484	478	496	477	480	481
75°	201	197	201	187	193	216
85°	25	24	24	24	23	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1770.4	1770.4	1770.4	1770.4	1770.4
2.5°	1785.7	1772.2	1759.7	1774.3	1783.2
5°	1757.8	1753.7	1758.5	1753.3	1795.6
7.5°	1721.7	1737.5	1746.6	1740.9	1743.4
10°	1702.5	1697.0	1717.4	1731.5	1729.5
12.5°	1681.9	1690.2	1691.3	1706.6	1708.0
15°	1683.1	1663.7	1673.9	1682.6	1683.3
17.5°	1617.7	1638.7	1645.8	1665.7	1641.0
20°	1609.7	1594.4	1609.7	1630.1	1626.9
22.5°	1560.6	1543.4	1576.3	1594.4	1593.3
25°	1504.8	1513.0	1537.7	1557.8	1554.6
27.5°	1455.9	1465.5	1500.7	1528.3	1510.5
30°	1418.2	1413.4	1443.1	1467.8	1481.5
32.5°	1350.7	1368.1	1402.8	1427.3	1414.3
35°	1309.8	1313.7	1344.1	1375.2	1374.3
37.5°	1238.3	1256.3	1299.1	1307.7	1299.7
40°	1177.2	1195.3	1233.9	1243.3	1239.4
42.5°	1132.2	1135.4	1168.5	1179.3	1162.1
45°	1053.8	1073.4	1091.3	1119.4	1092.9
47.5°	987.0	996.2	1034.6	1042.1	1028.2
50°	926.5	929.7	968.3	958.9	949.8
52.5°	850.3	863.8	885.5	883.7	873.0
55°	787.7	782.5	803.0	797.5	797.3
57.5°	712.5	721.7	738.6	729.9	715.9
60°	642.1	642.3	648.5	638.7	636.8
62.5°	563.7	566.4	567.8	555.7	575.4
65°	483.9	477.5	496.3	477.3	480.5
67.5°	410.5	413.7	411.9	400.0	404.6
70°	336.0	340.1	337.2	323.7	327.8
72.5°	267.9	262.9	266.1	249.2	256.9
75°	201.4	197.3	200.9	186.8	193.2
77.5°	137.2	140.4	138.1	130.5	134.9
80°	90.5	88.0	88.0	83.7	84.6
82.5°	52.8	50.3	49.6	48.2	50.3
85°	24.7	24.0	24.5	23.8	22.9
87.5°	8.9	9.1	9.1	8.7	8.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)