

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: P590192

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590192  
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-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

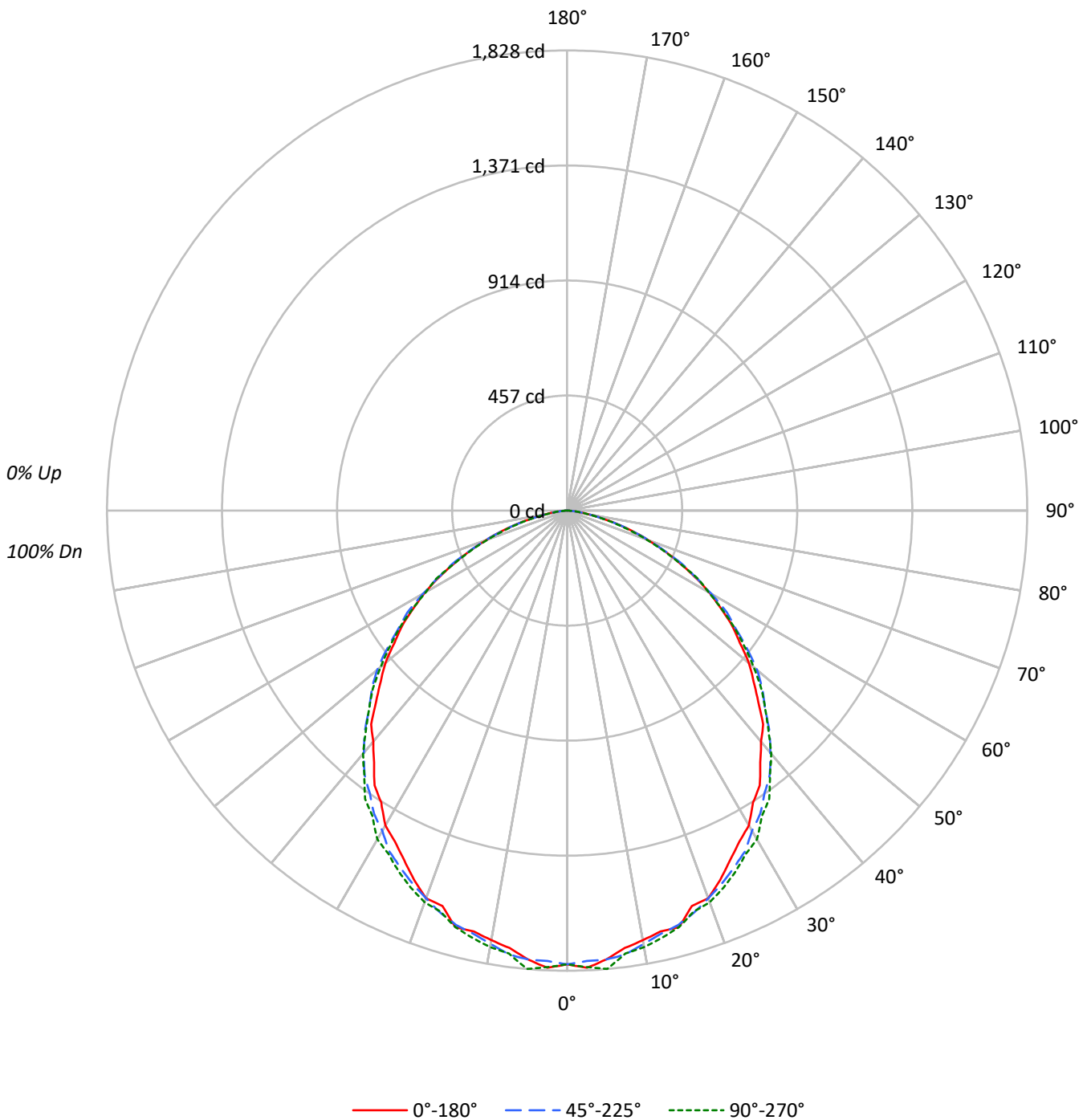
Lumens per Lamp: N/A  
Luminaire Lumens: 4542.0 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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				
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°	4850	4850	4850
5°	4834	4836	4937
10°	4735	4777	4811
15°	4773	4747	4774
20°	4692	4692	4742
25°	4548	4648	4699
30°	4486	4564	4686
35°	4380	4495	4595
40°	4209	4412	4432
45°	4082	4227	4234
50°	3948	4127	4047
55°	3762	3835	3808
60°	3518	3553	3489
65°	3137	3217	3114
70°	2691	2700	2626
75°	2131	2126	2044
80°	1427	1389	1334
85°	775	769	719

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4337 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.5	3.7
10°-20°	480.4	10.6
20°-30°	719.8	15.8
30°-40°	853.1	18.8
40°-50°	854.7	18.8
50°-60°	725.5	16.0
60°-70°	489.1	10.8
70°-80°	214.9	4.7
80°-90°	34.9	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°	1369.8	30.2
0°-40°	2222.9	48.9
0°-60°	3803.0	83.7
0°-90°	4542.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4542.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1802	1802	1802	1802	1802	
5°	1789	1785	1790	1785	1828	169
15°	1713	1694	1704	1713	1714	477
25°	1532	1540	1565	1586	1582	708
35°	1333	1337	1368	1400	1399	828
45°	1073	1093	1111	1140	1112	830
55°	802	796	817	812	812	713
65°	493	486	505	486	489	490
75°	205	201	204	190	197	220
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°	1802.2	1802.2	1802.2	1802.2	1802.2
2.5°	1817.7	1804.0	1791.2	1806.1	1815.2
5°	1789.4	1785.2	1790.1	1784.7	1827.7
7.5°	1752.6	1768.6	1778.0	1772.1	1774.7
10°	1733.0	1727.5	1748.2	1762.6	1760.5
12.5°	1712.1	1720.5	1721.6	1737.2	1738.6
15°	1713.3	1693.5	1704.0	1712.8	1713.5
17.5°	1646.7	1668.1	1675.3	1695.6	1670.5
20°	1638.6	1623.0	1638.6	1659.3	1656.0
22.5°	1588.5	1571.1	1604.6	1623.0	1621.8
25°	1531.8	1540.1	1565.3	1585.8	1582.5
27.5°	1482.0	1491.7	1527.6	1555.7	1537.6
30°	1443.6	1438.7	1468.9	1494.1	1508.0
32.5°	1374.9	1392.6	1428.0	1452.9	1439.6
35°	1333.3	1337.2	1368.2	1399.8	1398.9
37.5°	1260.5	1278.8	1322.4	1331.2	1323.1
40°	1198.3	1216.7	1256.0	1265.6	1261.6
42.5°	1152.5	1155.7	1189.5	1200.4	1183.0
45°	1072.7	1092.7	1110.8	1139.5	1112.5
47.5°	1004.7	1014.0	1053.1	1060.8	1046.6
50°	943.1	946.3	985.7	976.1	966.8
52.5°	865.6	879.3	901.4	899.6	888.6
55°	801.8	796.5	817.4	811.8	811.6
57.5°	725.3	734.6	751.8	743.0	728.8
60°	653.6	653.8	660.1	650.1	648.3
62.5°	573.8	576.6	578.0	565.7	585.7
65°	492.6	486.1	505.2	485.8	489.1
67.5°	417.9	421.2	419.3	407.2	411.9
70°	342.0	346.2	343.2	329.5	333.7
72.5°	272.7	267.6	270.8	253.6	261.5
75°	205.0	200.8	204.5	190.1	196.6
77.5°	139.6	142.9	140.5	132.9	137.3
80°	92.1	89.6	89.6	85.2	86.1
82.5°	53.8	51.2	50.5	49.1	51.2
85°	25.1	24.4	24.9	24.2	23.3
87.5°	9.1	9.3	9.3	8.8	8.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)