

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: P590186

Luminaire Tested: FSR-24-2-LD4-2HI-40-UNV-82-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590186  
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-82-94-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

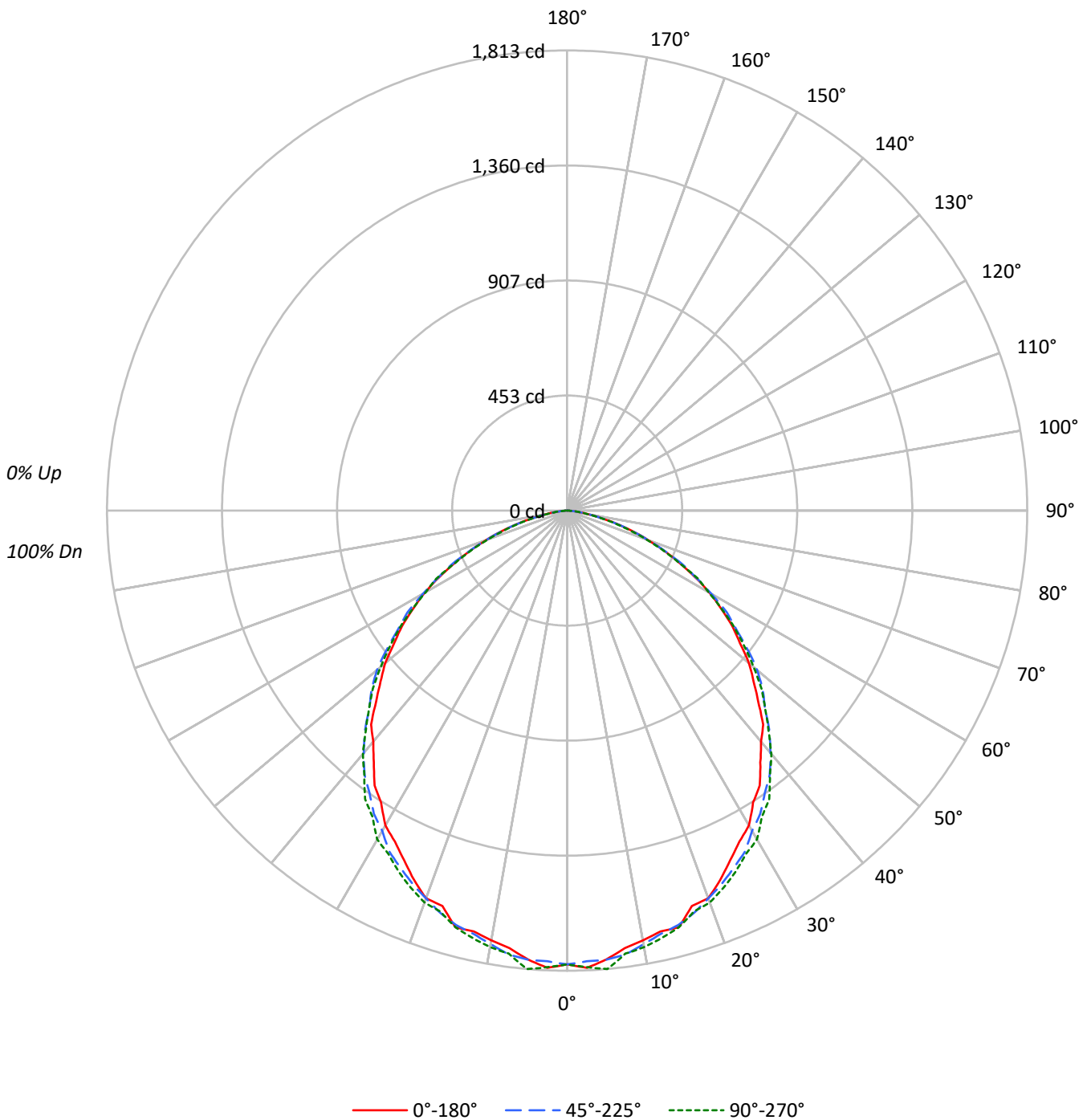
Lumens per Lamp: N/A  
Luminaire Lumens: 4506.0 lumens  
Efficiency: N/A  
Efficacy: 104.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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°	4811	4811	4811
5°	4795	4797	4898
10°	4698	4739	4772
15°	4735	4710	4736
20°	4655	4655	4705
25°	4512	4611	4662
30°	4450	4528	4649
35°	4345	4459	4559
40°	4176	4377	4397
45°	4050	4194	4200
50°	3917	4093	4015
55°	3732	3804	3778
60°	3490	3525	3461
65°	3112	3191	3089
70°	2670	2679	2604
75°	2115	2110	2028
80°	1416	1378	1323
85°	769	763	713

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4302 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.2	3.7
10°-20°	476.6	10.6
20°-30°	714.1	15.8
30°-40°	846.3	18.8
40°-50°	847.9	18.8
50°-60°	719.7	16.0
60°-70°	485.3	10.8
70°-80°	213.2	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°	1358.9	30.2
0°-40°	2205.2	48.9
0°-60°	3772.9	83.7
0°-90°	4506.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4506.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1788	1788	1788	1788	1788	
5°	1775	1771	1776	1771	1813	167
15°	1700	1680	1690	1699	1700	474
25°	1520	1528	1553	1573	1570	703
35°	1323	1327	1357	1389	1388	821
45°	1064	1084	1102	1130	1104	823
55°	796	790	811	805	805	708
65°	489	482	501	482	485	486
75°	203	199	203	189	195	218
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°	1787.9	1787.9	1787.9	1787.9	1787.9
2.5°	1803.3	1789.7	1777.0	1791.8	1800.8
5°	1775.2	1771.0	1775.9	1770.6	1813.3
7.5°	1738.7	1754.6	1763.9	1758.1	1760.6
10°	1719.3	1713.8	1734.3	1748.6	1746.5
12.5°	1698.5	1706.8	1708.0	1723.5	1724.8
15°	1699.7	1680.1	1690.5	1699.2	1699.9
17.5°	1633.7	1654.9	1662.1	1682.1	1657.2
20°	1625.6	1610.1	1625.6	1646.1	1642.9
22.5°	1576.0	1558.6	1591.9	1610.1	1609.0
25°	1519.6	1527.9	1552.9	1573.2	1570.0
27.5°	1470.2	1479.9	1515.5	1543.4	1525.4
30°	1432.1	1427.3	1457.3	1482.2	1496.1
32.5°	1364.0	1381.6	1416.7	1441.4	1428.2
35°	1322.7	1326.6	1357.3	1388.7	1387.8
37.5°	1250.5	1268.7	1311.9	1320.6	1312.6
40°	1188.8	1207.1	1246.1	1255.5	1251.6
42.5°	1143.4	1146.6	1180.1	1190.9	1173.6
45°	1064.2	1084.0	1102.0	1130.4	1103.7
47.5°	996.8	1006.0	1044.8	1052.4	1038.3
50°	935.6	938.8	977.8	968.4	959.1
52.5°	858.7	872.3	894.3	892.4	881.6
55°	795.5	790.2	810.9	805.4	805.2
57.5°	719.5	728.8	745.8	737.1	723.0
60°	648.4	648.7	654.9	645.0	643.1
62.5°	569.3	572.0	573.4	561.2	581.0
65°	488.7	482.2	501.2	482.0	485.2
67.5°	414.6	417.8	416.0	404.0	408.6
70°	339.3	343.5	340.5	326.9	331.0
72.5°	270.5	265.5	268.7	251.6	259.5
75°	203.4	199.2	202.9	188.6	195.1
77.5°	138.5	141.7	139.4	131.8	136.2
80°	91.4	88.9	88.9	84.5	85.4
82.5°	53.3	50.8	50.1	48.7	50.8
85°	24.9	24.2	24.7	24.0	23.1
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)