

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: P590886

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-82-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590886  
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-LD4-4LO-50-UNV-82-85-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

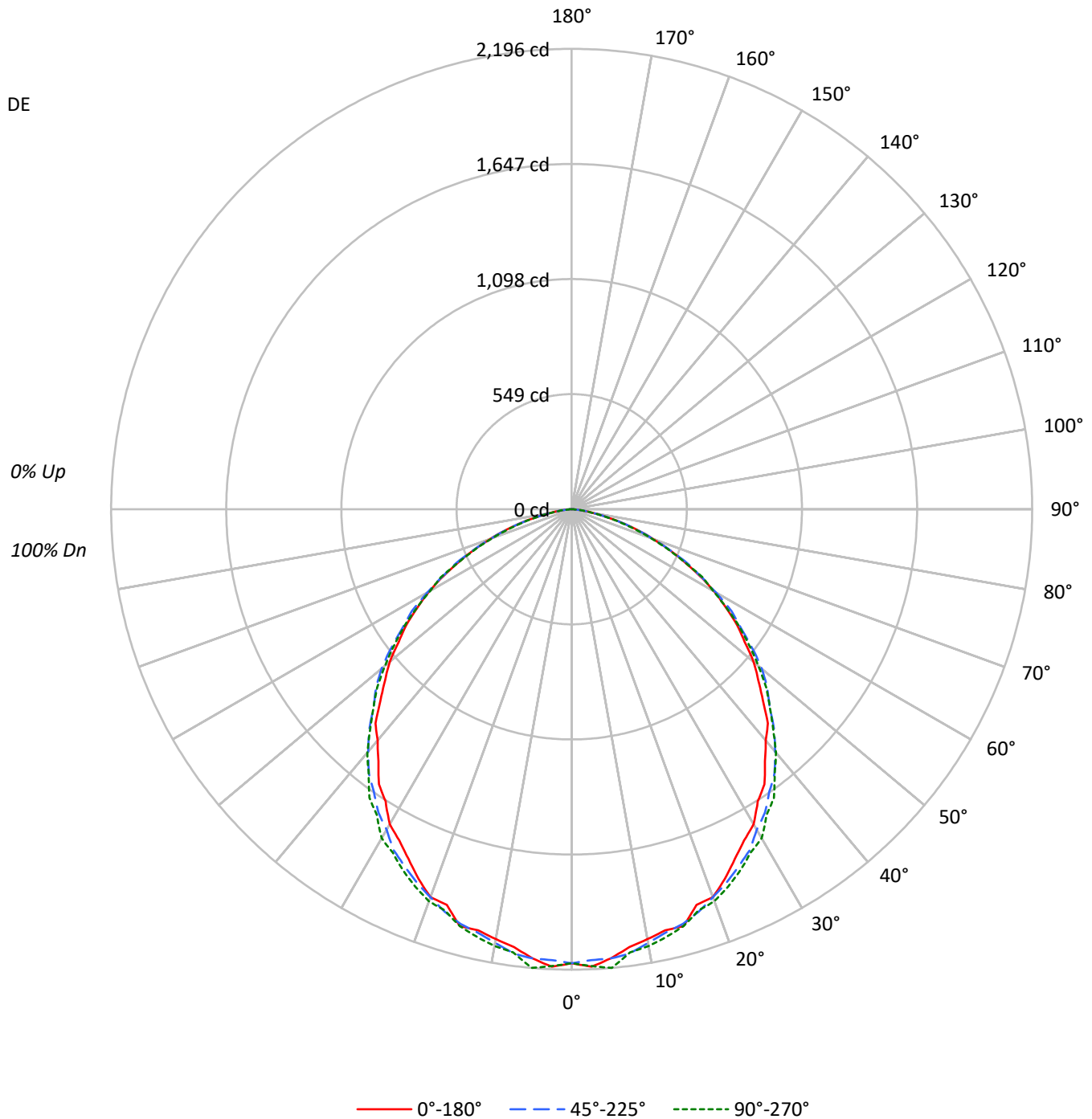
Lumens per Lamp: N/A  
Luminaire Lumens: 5457.0 lumens  
Efficiency: N/A  
Efficacy: 116.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	5827	5827	5827
5°	5807	5810	5932
10°	5690	5739	5780
15°	5735	5703	5735
20°	5638	5638	5698
25°	5464	5584	5645
30°	5389	5484	5630
35°	5262	5400	5521
40°	5057	5301	5325
45°	4905	5079	5087
50°	4744	4958	4863
55°	4520	4608	4575
60°	4226	4268	4192
65°	3768	3864	3741
70°	3234	3245	3154
75°	2561	2555	2456
80°	1715	1667	1602
85°	932	923	865

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5210 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	203.7	3.7
10°-20°	577.2	10.6
20°-30°	864.8	15.8
30°-40°	1025.0	18.8
40°-50°	1026.9	18.8
50°-60°	871.6	16.0
60°-70°	587.7	10.8
70°-80°	258.2	4.7
80°-90°	42.0	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°	1645.7	30.2
0°-40°	2670.7	48.9
0°-60°	4569.2	83.7
0°-90°	5457.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5457.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2165	2165	2165	2165	2165	
5°	2150	2145	2151	2144	2196	203
15°	2058	2035	2047	2058	2059	574
25°	1840	1850	1881	1905	1901	851
35°	1602	1607	1644	1682	1681	995
45°	1289	1313	1335	1369	1337	997
55°	963	957	982	975	975	857
65°	592	584	607	584	588	589
75°	246	241	246	228	236	264
85°	30	29	30	29	28	44
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2165.2	2165.2	2165.2	2165.2	2165.2
2.5°	2183.9	2167.4	2152.1	2170.0	2180.9
5°	2149.8	2144.8	2150.7	2144.2	2196.0
7.5°	2105.7	2124.9	2136.1	2129.1	2132.2
10°	2082.2	2075.5	2100.3	2117.7	2115.2
12.5°	2057.0	2067.1	2068.5	2087.2	2088.9
15°	2058.4	2034.6	2047.2	2057.8	2058.7
17.5°	1978.5	2004.2	2012.8	2037.2	2007.0
20°	1968.7	1949.9	1968.7	1993.5	1989.6
22.5°	1908.6	1887.6	1927.9	1949.9	1948.5
25°	1840.3	1850.4	1880.6	1905.2	1901.3
27.5°	1780.5	1792.3	1835.3	1869.1	1847.3
30°	1734.4	1728.5	1764.9	1795.1	1811.8
32.5°	1651.9	1673.2	1715.7	1745.6	1729.6
35°	1601.9	1606.6	1643.8	1681.8	1680.7
37.5°	1514.4	1536.5	1588.7	1599.4	1589.6
40°	1439.7	1461.8	1509.1	1520.5	1515.8
42.5°	1384.7	1388.6	1429.1	1442.3	1421.3
45°	1288.8	1312.8	1334.6	1369.0	1336.6
47.5°	1207.1	1218.3	1265.3	1274.5	1257.5
50°	1133.1	1137.0	1184.2	1172.8	1161.6
52.5°	1040.0	1056.5	1083.0	1080.8	1067.6
55°	963.4	956.9	982.1	975.4	975.1
57.5°	871.4	882.6	903.3	892.6	875.6
60°	785.3	785.6	793.1	781.1	778.9
62.5°	689.4	692.8	694.4	679.6	703.7
65°	591.8	584.0	606.9	583.7	587.6
67.5°	502.1	506.0	503.8	489.2	494.8
70°	411.0	416.0	412.4	395.9	400.9
72.5°	327.6	321.5	325.4	304.7	314.2
75°	246.3	241.3	245.7	228.4	236.2
77.5°	167.7	171.7	168.9	159.6	164.9
80°	110.7	107.6	107.6	102.3	103.4
82.5°	64.6	61.5	60.7	59.0	61.5
85°	30.2	29.4	29.9	29.1	28.0
87.5°	10.9	11.2	11.2	10.6	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)