

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: P560903

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560903  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1HI-50-UNV-81-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

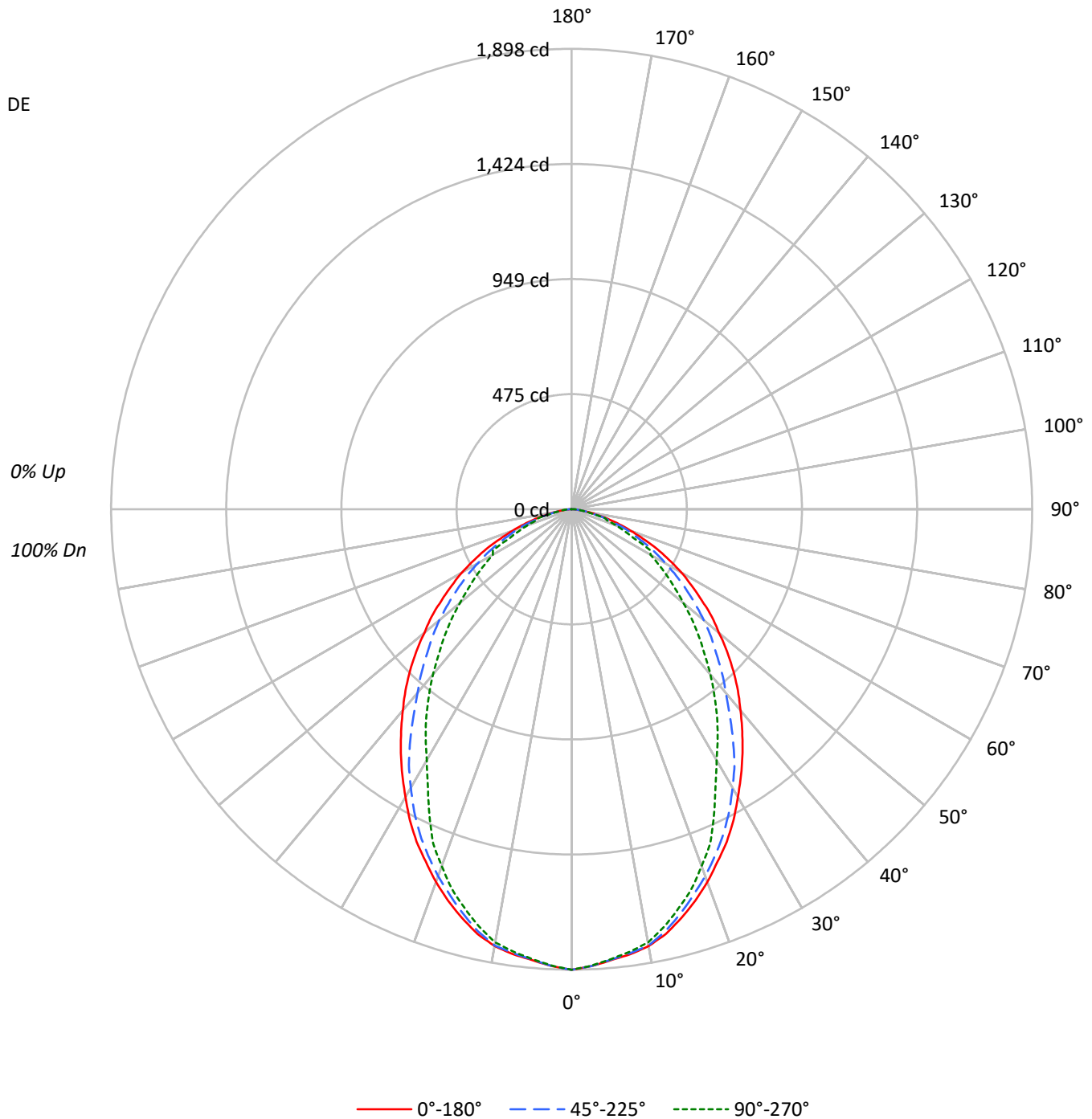
Lumens per Lamp: N/A  
Luminaire Lumens: 3727.0 lumens  
Efficiency: N/A  
Efficacy: 86.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5109	5109	5109
5°	5039	5034	5028
10°	4996	4990	4954
15°	4861	4812	4745
20°	4682	4607	4481
25°	4490	4392	4119
30°	4255	4119	3710
35°	4030	3807	3432
40°	3801	3470	3123
45°	3583	3207	2823
50°	3317	2977	2518
55°	3068	2698	2255
60°	2812	2410	2020
65°	2474	2110	1789
70°	2038	1847	1519
75°	1620	1415	1484
80°	1088	1020	953
85°	676	812	948

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3583 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.7	4.7
10°-20°	485.0	13.0
20°-30°	671.5	18.0
30°-40°	716.0	19.2
40°-50°	653.2	17.5
50°-60°	511.7	13.7
60°-70°	333.5	8.9
70°-80°	147.8	4.0
80°-90°	31.7	0.9
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°	1333.2	35.8
0°-40°	2049.1	55.0
0°-60°	3214.0	86.2
0°-90°	3727.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3727.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1898	1898	1898	1898	1898	
5°	1866	1863	1863	1861	1861	177
15°	1745	1745	1727	1710	1703	491
25°	1512	1503	1479	1427	1387	694
35°	1227	1218	1159	1071	1045	767
45°	942	922	843	773	742	725
55°	654	634	575	507	481	587
65°	388	366	331	338	281	383
75°	156	145	136	130	143	167
85°	22	24	26	28	31	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1898.5	1898.5	1898.5	1898.5	1898.5
2.5°	1885.3	1885.3	1885.3	1883.1	1883.1
5°	1865.6	1863.4	1863.4	1861.2	1861.2
7.5°	1850.2	1848.0	1845.8	1843.6	1839.2
10°	1828.3	1828.3	1826.1	1815.1	1812.9
12.5°	1793.1	1790.9	1782.2	1766.8	1762.4
15°	1744.8	1744.8	1727.3	1709.7	1703.1
17.5°	1692.2	1690.0	1668.0	1650.5	1641.7
20°	1635.1	1630.7	1608.8	1580.2	1564.9
22.5°	1571.5	1571.5	1545.1	1507.8	1492.4
25°	1512.2	1503.4	1479.3	1426.6	1387.1
27.5°	1444.2	1431.0	1404.7	1330.0	1283.9
30°	1369.5	1363.0	1325.6	1229.1	1194.0
32.5°	1299.3	1288.3	1248.8	1147.9	1119.3
35°	1226.9	1218.1	1158.8	1071.1	1044.7
37.5°	1154.5	1143.5	1068.9	998.6	965.7
40°	1082.0	1068.9	987.7	924.0	888.9
42.5°	1014.0	996.4	917.4	849.4	809.9
45°	941.6	921.8	842.8	772.6	741.8
47.5°	869.1	851.6	779.1	706.7	671.6
50°	792.3	777.0	711.1	638.7	601.4
52.5°	728.7	704.5	640.9	568.4	537.7
55°	654.0	634.3	575.0	507.0	480.7
57.5°	586.0	566.3	511.4	447.7	425.8
60°	522.4	493.8	447.7	392.9	375.3
62.5°	452.1	430.2	390.7	344.6	366.5
65°	388.5	366.5	331.4	338.0	280.9
67.5°	318.2	307.3	276.5	245.8	237.0
70°	259.0	245.8	234.8	201.9	193.1
72.5°	206.3	193.1	177.8	160.2	153.6
75°	155.8	144.9	136.1	129.5	142.7
77.5°	107.5	103.2	96.6	90.0	87.8
80°	70.2	68.0	65.8	63.6	61.5
82.5°	41.7	41.7	41.7	41.7	41.7
85°	21.9	24.1	26.3	28.5	30.7
87.5°	13.2	13.2	15.4	17.6	19.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)