

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: P561024

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561024  
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-LD4-1LO-40-UNV-81-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

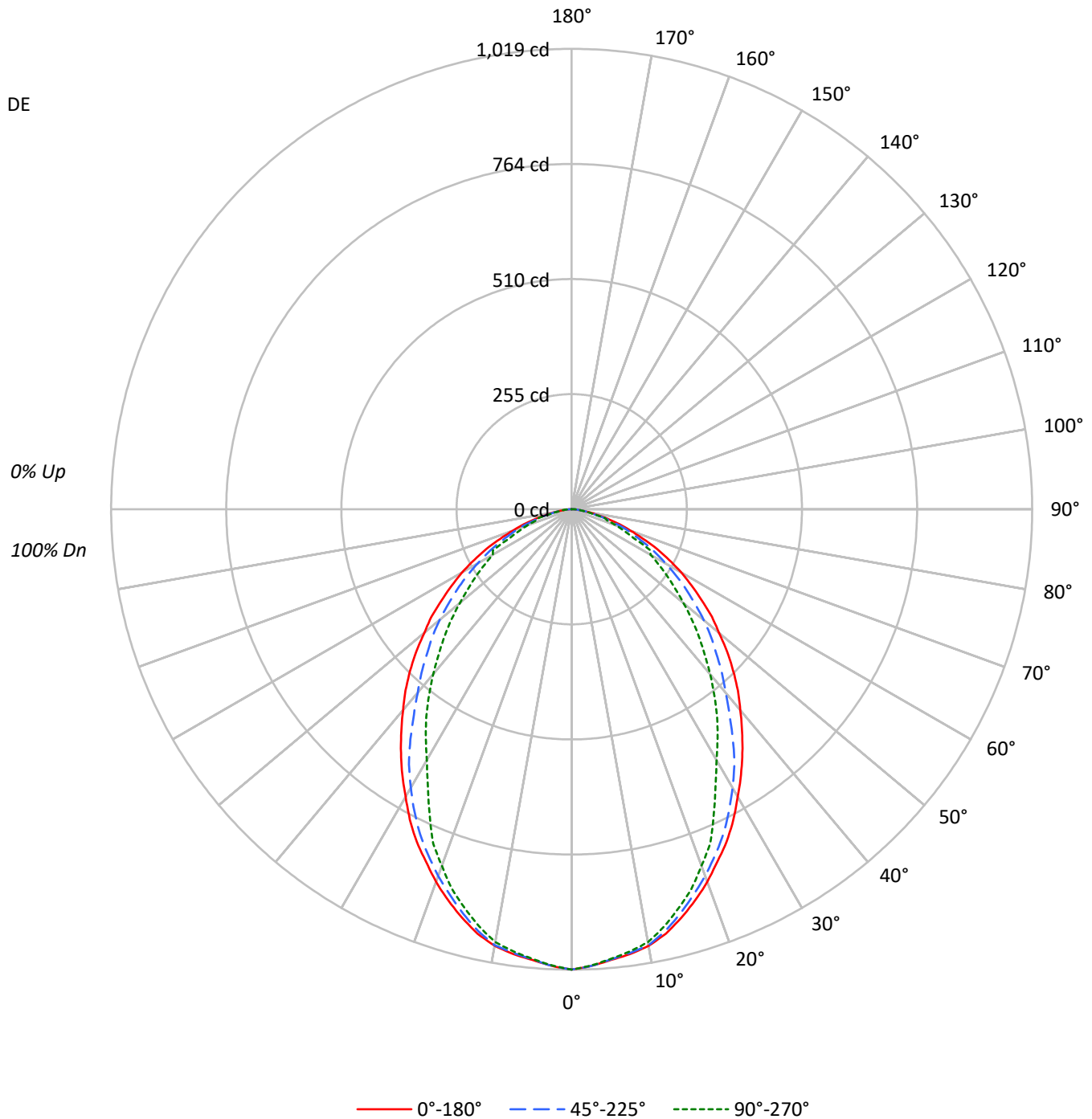
Lumens per Lamp: N/A  
Luminaire Lumens: 2000.0 lumens  
Efficiency: N/A  
Efficacy: 85.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2742	2742	2742
5°	2704	2701	2698
10°	2681	2678	2658
15°	2608	2582	2546
20°	2513	2472	2405
25°	2409	2357	2210
30°	2284	2211	1991
35°	2163	2043	1842
40°	2040	1862	1676
45°	1923	1721	1515
50°	1780	1598	1351
55°	1647	1448	1210
60°	1509	1293	1084
65°	1328	1132	960
70°	1094	991	815
75°	869	759	796
80°	584	547	511
85°	364	435	509

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1923 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.8	4.7
10°-20°	260.3	13.0
20°-30°	360.3	18.0
30°-40°	384.2	19.2
40°-50°	350.5	17.5
50°-60°	274.6	13.7
60°-70°	179.0	8.9
70°-80°	79.3	4.0
80°-90°	17.0	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°	715.4	35.8
0°-40°	1099.6	55.0
0°-60°	1724.7	86.2
0°-90°	2000.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2000.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1019	1019	1019	1019	1019	
5°	1001	1000	1000	999	999	95
15°	936	936	927	918	914	263
25°	812	807	794	766	744	373
35°	658	654	622	575	561	412
45°	505	495	452	415	398	389
55°	351	340	309	272	258	315
65°	208	197	178	181	151	205
75°	84	78	73	70	77	90
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1018.8	1018.8	1018.8	1018.8	1018.8
2.5°	1011.7	1011.7	1011.7	1010.5	1010.5
5°	1001.1	999.9	999.9	998.8	998.8
7.5°	992.9	991.7	990.5	989.3	987.0
10°	981.1	981.1	979.9	974.0	972.8
12.5°	962.2	961.1	956.4	948.1	945.8
15°	936.3	936.3	926.9	917.5	914.0
17.5°	908.1	906.9	895.1	885.7	881.0
20°	877.4	875.1	863.3	848.0	839.8
22.5°	843.3	843.3	829.2	809.1	800.9
25°	811.5	806.8	793.8	765.6	744.4
27.5°	775.0	767.9	753.8	713.7	689.0
30°	734.9	731.4	711.4	659.6	640.7
32.5°	697.2	691.4	670.2	616.0	600.7
35°	658.4	653.7	621.9	574.8	560.6
37.5°	619.5	613.6	573.6	535.9	518.2
40°	580.6	573.6	530.0	495.8	477.0
42.5°	544.1	534.7	492.3	455.8	434.6
45°	505.3	494.7	452.3	414.6	398.1
47.5°	466.4	457.0	418.1	379.2	360.4
50°	425.2	416.9	381.6	342.7	322.7
52.5°	391.0	378.1	343.9	305.0	288.6
55°	351.0	340.4	308.6	272.1	257.9
57.5°	314.5	303.9	274.4	240.3	228.5
60°	280.3	265.0	240.3	210.8	201.4
62.5°	242.6	230.8	209.6	184.9	196.7
65°	208.5	196.7	177.8	181.4	150.8
67.5°	170.8	164.9	148.4	131.9	127.2
70°	139.0	131.9	126.0	108.4	103.6
72.5°	110.7	103.6	95.4	86.0	82.4
75°	83.6	77.7	73.0	69.5	76.6
77.5°	57.7	55.4	51.8	48.3	47.1
80°	37.7	36.5	35.3	34.2	33.0
82.5°	22.4	22.4	22.4	22.4	22.4
85°	11.8	13.0	14.1	15.3	16.5
87.5°	7.1	7.1	8.2	9.4	10.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)