

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: P561033

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-81-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561033
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-81-88-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

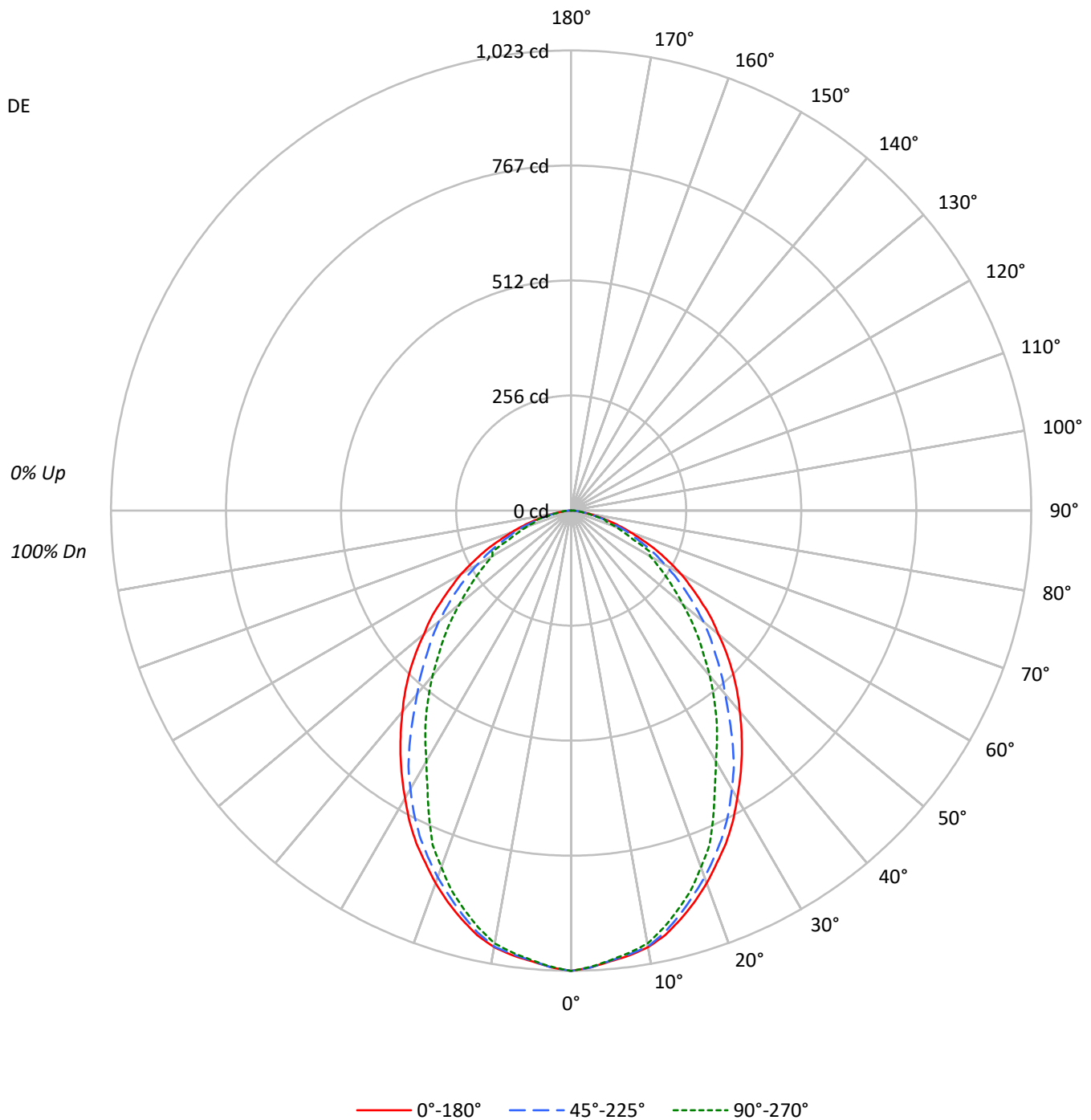
Lumens per Lamp: N/A
Luminaire Lumens: 2009.0 lumens
Efficiency: N/A
Efficacy: 85.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	2754	2754	2754
5°	2716	2713	2710
10°	2693	2690	2670
15°	2620	2594	2558
20°	2524	2483	2416
25°	2420	2368	2220
30°	2294	2220	2000
35°	2172	2052	1850
40°	2049	1870	1683
45°	1931	1729	1522
50°	1788	1605	1357
55°	1654	1454	1216
60°	1516	1299	1089
65°	1333	1137	964
70°	1098	996	819
75°	873	763	800
80°	587	550	513
85°	364	438	513

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1931 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	4.7
10°-20°	261.4	13.0
20°-30°	361.9	18.0
30°-40°	385.9	19.2
40°-50°	352.1	17.5
50°-60°	275.8	13.7
60°-70°	179.8	8.9
70°-80°	79.7	4.0
80°-90°	17.1	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°	718.6	35.8
0°-40°	1104.6	55.0
0°-60°	1732.5	86.2
0°-90°	2009.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2009.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1023	1023	1023	1023	1023	
5°	1006	1004	1004	1003	1003	95
15°	940	940	931	922	918	264
25°	815	810	797	769	748	374
35°	661	657	625	577	563	413
45°	508	497	454	416	400	391
55°	353	342	310	273	259	316
65°	209	198	179	182	151	206
75°	84	78	73	70	77	90
85°	12	13	14	15	17	16
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1023.4	1023.4	1023.4	1023.4	1023.4
2.5°	1016.3	1016.3	1016.3	1015.1	1015.1
5°	1005.6	1004.4	1004.4	1003.2	1003.2
7.5°	997.3	996.1	995.0	993.8	991.4
10°	985.5	985.5	984.3	978.4	977.2
12.5°	966.6	965.4	960.7	952.4	950.0
15°	940.5	940.5	931.1	921.6	918.1
17.5°	912.1	911.0	899.1	889.7	884.9
20°	881.4	879.0	867.2	851.8	843.5
22.5°	847.1	847.1	832.9	812.8	804.5
25°	815.1	810.4	797.4	769.0	747.7
27.5°	778.5	771.4	757.2	716.9	692.1
30°	738.2	734.7	714.6	662.5	643.6
32.5°	700.4	694.5	673.2	618.7	603.4
35°	661.3	656.6	624.7	577.3	563.1
37.5°	622.3	616.4	576.2	538.3	520.6
40°	583.3	576.2	532.4	498.1	479.1
42.5°	546.6	537.1	494.5	457.8	436.6
45°	507.5	496.9	454.3	416.4	399.9
47.5°	468.5	459.0	420.0	380.9	362.0
50°	427.1	418.8	383.3	344.3	324.2
52.5°	392.8	379.8	345.5	306.4	289.9
55°	352.6	341.9	310.0	273.3	259.1
57.5°	315.9	305.2	275.7	241.3	229.5
60°	281.6	266.2	241.3	211.8	202.3
62.5°	243.7	231.9	210.6	185.7	197.6
65°	209.4	197.6	178.6	182.2	151.4
67.5°	171.5	165.6	149.1	132.5	127.8
70°	139.6	132.5	126.6	108.8	104.1
72.5°	111.2	104.1	95.8	86.4	82.8
75°	84.0	78.1	73.4	69.8	76.9
77.5°	58.0	55.6	52.1	48.5	47.3
80°	37.9	36.7	35.5	34.3	33.1
82.5°	22.5	22.5	22.5	22.5	22.5
85°	11.8	13.0	14.2	15.4	16.6
87.5°	7.1	7.1	8.3	9.5	10.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)