

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: P564104

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-81-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P564104
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-24-4-LD4-4STD-40-UNV-81-88-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10626.0 lumens
Efficiency: N/A
Efficacy: 79.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

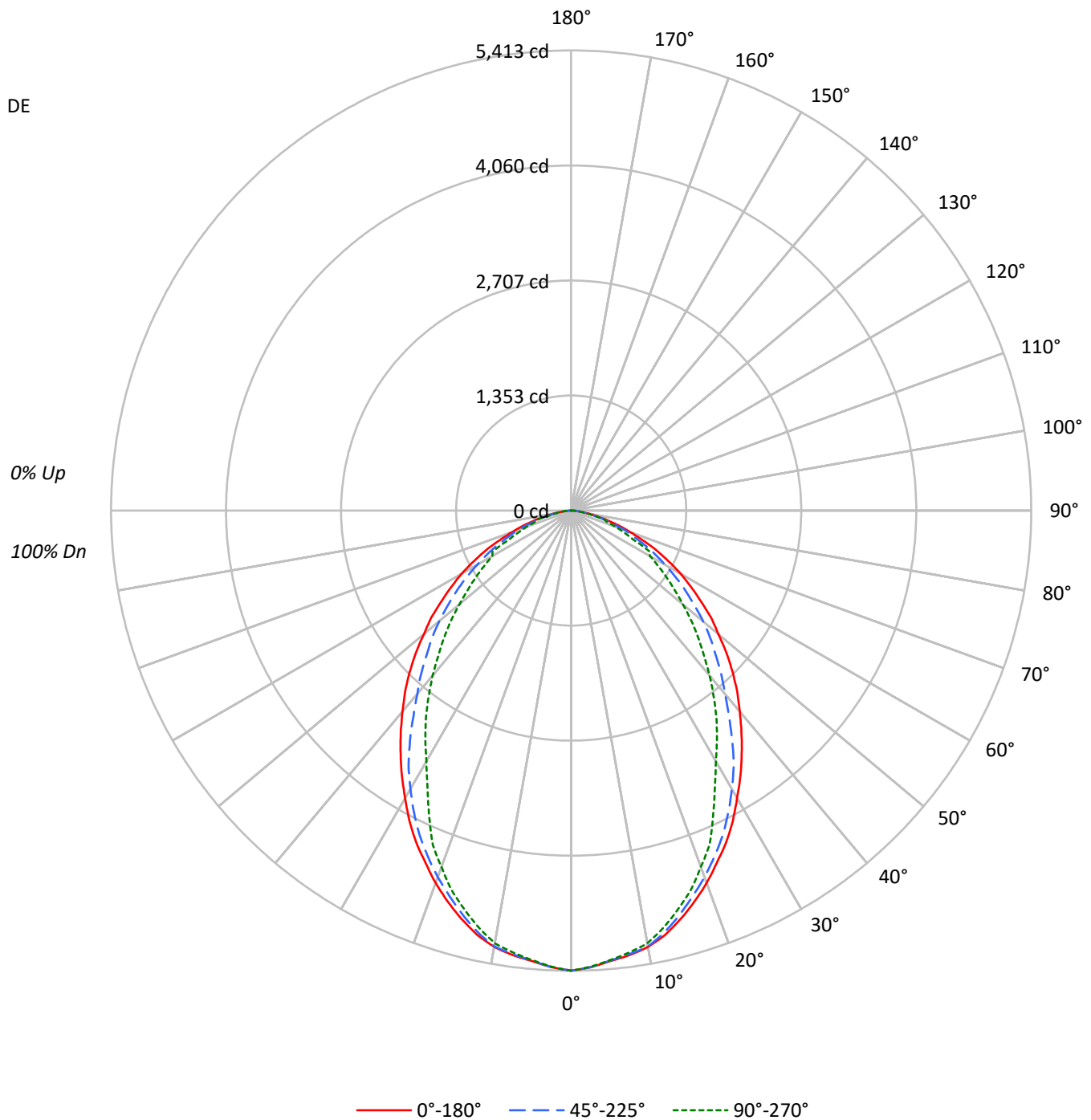
Input Watts (W): 133.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	7283	7283	7283
5°	7184	7175	7167
10°	7122	7113	7062
15°	6930	6860	6764
20°	6675	6568	6388
25°	6401	6261	5871
30°	6066	5872	5289
35°	5745	5427	4892
40°	5419	4946	4451
45°	5108	4572	4024
50°	4729	4244	3589
55°	4374	3846	3215
60°	4008	3435	2879
65°	3526	3008	2550
70°	2905	2634	2166
75°	2310	2017	2114
80°	1551	1454	1358
85°	966	1159	1352

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5108 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	503.9	4.7
10°-20°	1382.8	13.0
20°-30°	1914.4	18.0
30°-40°	2041.3	19.2
40°-50°	1862.2	17.5
50°-60°	1458.9	13.7
60°-70°	950.8	8.9
70°-80°	421.3	4.0
80°-90°	90.4	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°	3801.0	35.8
0°-40°	5842.3	55.0
0°-60°	9163.4	86.2
0°-90°	10626.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10626.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5413	5413	5413	5413	5413	
5°	5319	5313	5313	5306	5306	505
15°	4975	4975	4925	4875	4856	1399
25°	4311	4286	4218	4067	3955	1979
35°	3498	3473	3304	3054	2979	2187
45°	2684	2628	2403	2203	2115	2068
55°	1865	1808	1640	1446	1370	1673
65°	1108	1045	945	964	801	1092
75°	444	413	388	369	407	476
85°	63	69	75	81	88	87
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5412.7	5412.7	5412.7	5412.7	5412.7
2.5°	5375.2	5375.2	5375.2	5368.9	5368.9
5°	5318.9	5312.6	5312.6	5306.4	5306.4
7.5°	5275.1	5268.8	5262.6	5256.3	5243.8
10°	5212.5	5212.5	5206.2	5175.0	5168.7
12.5°	5112.4	5106.1	5081.1	5037.3	5024.8
15°	4974.7	4974.7	4924.7	4874.6	4855.8
17.5°	4824.5	4818.3	4755.7	4705.6	4680.6
20°	4661.8	4649.3	4586.8	4505.4	4461.6
22.5°	4480.4	4480.4	4405.3	4298.9	4255.1
25°	4311.4	4286.4	4217.6	4067.4	3954.7
27.5°	4117.4	4079.9	4004.8	3792.0	3660.6
30°	3904.7	3885.9	3779.5	3504.2	3404.1
32.5°	3704.4	3673.2	3560.5	3272.7	3191.3
35°	3497.9	3472.9	3304.0	3053.7	2978.6
37.5°	3291.4	3260.2	3047.4	2847.2	2753.3
40°	3085.0	3047.4	2815.9	2634.4	2534.3
42.5°	2891.0	2840.9	2615.6	2421.7	2309.0
45°	2684.5	2628.2	2402.9	2202.6	2115.0
47.5°	2478.0	2427.9	2221.4	2014.9	1914.8
50°	2259.0	2215.2	2027.4	1820.9	1714.6
52.5°	2077.5	2008.7	1827.2	1620.7	1533.1
55°	1864.7	1808.4	1639.5	1445.5	1370.4
57.5°	1670.8	1614.4	1458.0	1276.5	1214.0
60°	1489.3	1407.9	1276.5	1120.1	1070.0
62.5°	1289.0	1226.5	1113.8	982.4	1045.0
65°	1107.6	1045.0	944.9	963.7	801.0
67.5°	907.3	876.1	788.4	700.8	675.8
70°	738.4	700.8	669.6	575.7	550.7
72.5°	588.2	550.7	506.9	456.8	438.0
75°	444.3	413.0	388.0	369.2	406.7
77.5°	306.6	294.1	275.3	256.6	250.3
80°	200.2	194.0	187.7	181.5	175.2
82.5°	118.9	118.9	118.9	118.9	118.9
85°	62.6	68.8	75.1	81.3	87.6
87.5°	37.5	37.5	43.8	50.1	56.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)