

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: P561410

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561410
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-LD4-2HI-40-UNV-81-85-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

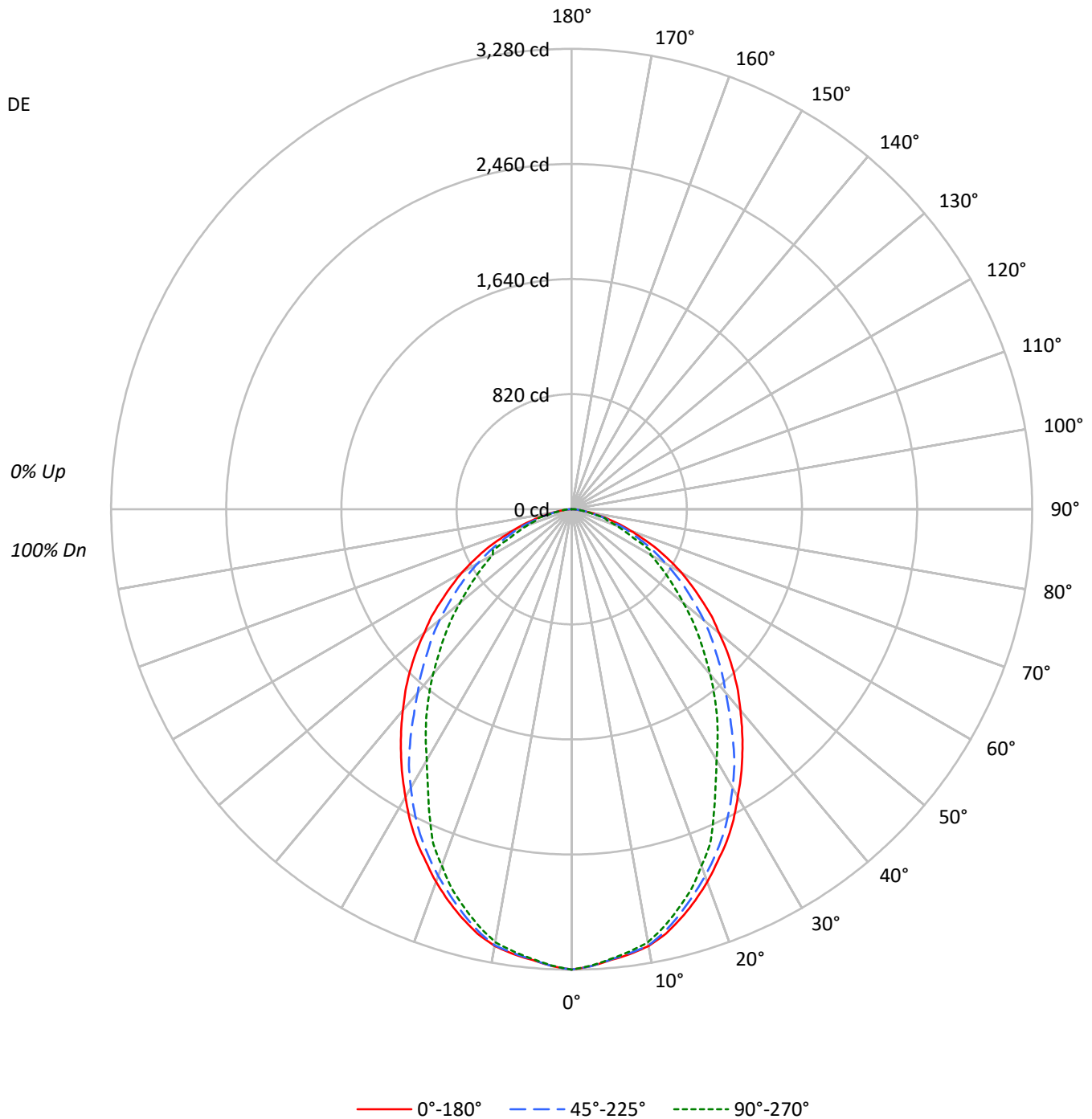
Lumens per Lamp: N/A
Luminaire Lumens: 6439.0 lumens
Efficiency: N/A
Efficacy: 74.5 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
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°	8826	8826	8826
5°	8706	8696	8686
10°	8631	8620	8558
15°	8398	8314	8198
20°	8090	7959	7742
25°	7757	7588	7115
30°	7352	7117	6410
35°	6963	6577	5929
40°	6567	5994	5395
45°	6191	5541	4877
50°	5731	5143	4350
55°	5301	4661	3896
60°	4857	4163	3490
65°	4274	3646	3091
70°	3520	3192	2626
75°	2799	2444	2563
80°	1880	1764	1646
85°	1170	1405	1639

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6191 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	305.3	4.7
10°-20°	837.9	13.0
20°-30°	1160.0	18.0
30°-40°	1236.9	19.2
40°-50°	1128.5	17.5
50°-60°	884.1	13.7
60°-70°	576.2	8.9
70°-80°	255.3	4.0
80°-90°	54.8	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°	2303.3	35.8
0°-40°	3540.2	55.0
0°-60°	5552.7	86.2
0°-90°	6439.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6439.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3280	3280	3280	3280	3280	
5°	3223	3219	3219	3216	3216	306
15°	3014	3014	2984	2954	2942	847
25°	2613	2597	2556	2465	2396	1199
35°	2120	2104	2002	1850	1805	1325
45°	1627	1593	1456	1335	1282	1253
55°	1130	1096	994	876	830	1014
65°	671	633	573	584	485	661
75°	269	250	235	224	246	289
85°	38	42	46	49	53	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3279.9	3279.9	3279.9	3279.9	3279.9
2.5°	3257.2	3257.2	3257.2	3253.4	3253.4
5°	3223.1	3219.3	3219.3	3215.5	3215.5
7.5°	3196.5	3192.7	3188.9	3185.1	3177.6
10°	3158.6	3158.6	3154.8	3135.9	3132.1
12.5°	3097.9	3094.1	3079.0	3052.4	3044.8
15°	3014.5	3014.5	2984.2	2953.8	2942.5
17.5°	2923.5	2919.7	2881.8	2851.5	2836.3
20°	2824.9	2817.3	2779.4	2730.1	2703.6
22.5°	2715.0	2715.0	2669.5	2605.0	2578.5
25°	2612.6	2597.4	2555.7	2464.7	2396.4
27.5°	2495.0	2472.3	2426.8	2297.9	2218.2
30°	2366.1	2354.7	2290.3	2123.4	2062.8
32.5°	2244.8	2225.8	2157.6	1983.1	1933.8
35°	2119.6	2104.5	2002.1	1850.4	1804.9
37.5°	1994.5	1975.5	1846.6	1725.3	1668.4
40°	1869.4	1846.6	1706.3	1596.4	1535.7
42.5°	1751.8	1721.5	1585.0	1467.4	1399.2
45°	1626.7	1592.6	1456.1	1334.7	1281.6
47.5°	1501.6	1471.2	1346.1	1221.0	1160.3
50°	1368.9	1342.3	1228.6	1103.4	1039.0
52.5°	1258.9	1217.2	1107.2	982.1	929.0
55°	1130.0	1095.8	993.5	875.9	830.4
57.5°	1012.4	978.3	883.5	773.5	735.6
60°	902.5	853.2	773.5	678.7	648.4
62.5°	781.1	743.2	674.9	595.3	633.2
65°	671.2	633.2	572.6	583.9	485.4
67.5°	549.8	530.9	477.8	424.7	409.5
70°	447.4	424.7	405.7	348.8	333.7
72.5°	356.4	333.7	307.1	276.8	265.4
75°	269.2	250.3	235.1	223.7	246.5
77.5°	185.8	178.2	166.8	155.5	151.7
80°	121.3	117.5	113.8	110.0	106.2
82.5°	72.0	72.0	72.0	72.0	72.0
85°	37.9	41.7	45.5	49.3	53.1
87.5°	22.8	22.8	26.5	30.3	34.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)