

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: P561031

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-81-87-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561031
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-81-87-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

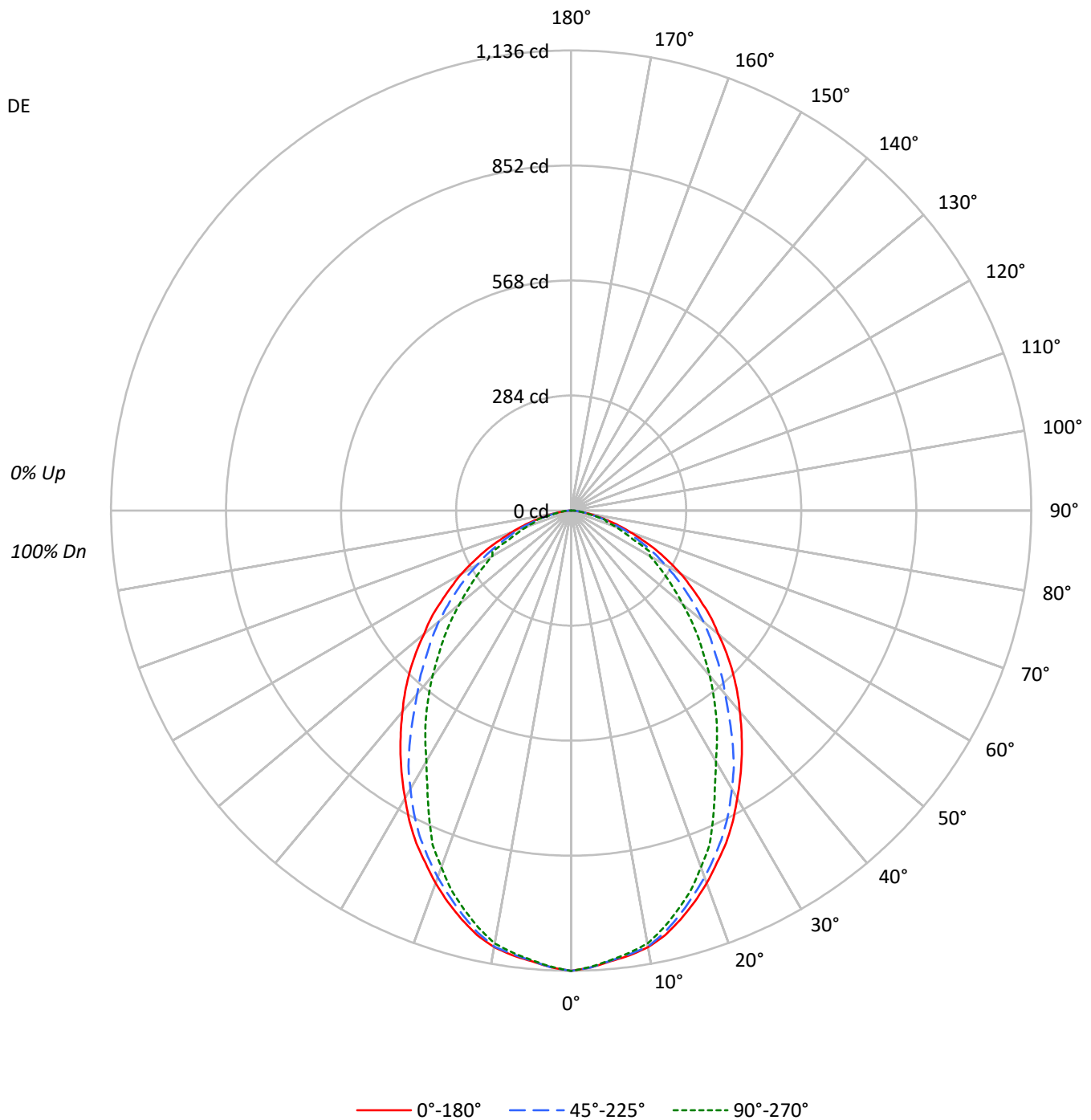
Lumens per Lamp: N/A
Luminaire Lumens: 2231.0 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3058	3058	3058
5°	3016	3013	3009
10°	2990	2987	2965
15°	2910	2881	2840
20°	2803	2758	2682
25°	2688	2629	2465
30°	2547	2466	2221
35°	2413	2279	2054
40°	2275	2077	1869
45°	2145	1920	1690
50°	1986	1782	1507
55°	1837	1615	1350
60°	1683	1442	1209
65°	1480	1263	1071
70°	1220	1106	910
75°	970	847	888
80°	651	611	570
85°	404	488	568

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2145 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.8	4.7
10°-20°	290.3	13.0
20°-30°	401.9	18.0
30°-40°	428.6	19.2
40°-50°	391.0	17.5
50°-60°	306.3	13.7
60°-70°	199.6	8.9
70°-80°	88.4	4.0
80°-90°	19.0	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°	798.0	35.8
0°-40°	1226.6	55.0
0°-60°	1923.9	86.2
0°-90°	2231.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2231.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1136	1136	1136	1136	1136	
5°	1117	1115	1115	1114	1114	106
15°	1044	1044	1034	1024	1020	294
25°	905	900	886	854	830	416
35°	734	729	694	641	625	459
45°	564	552	504	462	444	434
55°	392	380	344	304	288	351
65°	232	219	198	202	168	229
75°	93	87	82	78	85	100
85°	13	14	16	17	18	18
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1136.4	1136.4	1136.4	1136.4	1136.4
2.5°	1128.6	1128.6	1128.6	1127.2	1127.2
5°	1116.7	1115.4	1115.4	1114.1	1114.1
7.5°	1107.5	1106.2	1104.9	1103.6	1101.0
10°	1094.4	1094.4	1093.1	1086.5	1085.2
12.5°	1073.4	1072.1	1066.8	1057.6	1055.0
15°	1044.5	1044.5	1034.0	1023.5	1019.5
17.5°	1012.9	1011.6	998.5	988.0	982.7
20°	978.8	976.2	963.0	945.9	936.7
22.5°	940.7	940.7	924.9	902.6	893.4
25°	905.2	900.0	885.5	854.0	830.3
27.5°	864.5	856.6	840.8	796.2	768.6
30°	819.8	815.9	793.5	735.7	714.7
32.5°	777.8	771.2	747.6	687.1	670.0
35°	734.4	729.2	693.7	641.1	625.4
37.5°	691.1	684.5	639.8	597.8	578.1
40°	647.7	639.8	591.2	553.1	532.1
42.5°	607.0	596.5	549.2	508.4	484.8
45°	563.6	551.8	504.5	462.5	444.1
47.5°	520.3	509.8	466.4	423.0	402.0
50°	474.3	465.1	425.7	382.3	360.0
52.5°	436.2	421.7	383.6	340.3	321.9
55°	391.5	379.7	344.2	303.5	287.7
57.5°	350.8	339.0	306.1	268.0	254.9
60°	312.7	295.6	268.0	235.2	224.7
62.5°	270.6	257.5	233.9	206.3	219.4
65°	232.5	219.4	198.4	202.3	168.2
67.5°	190.5	183.9	165.5	147.1	141.9
70°	155.0	147.1	140.6	120.9	115.6
72.5°	123.5	115.6	106.4	95.9	92.0
75°	93.3	86.7	81.5	77.5	85.4
77.5°	64.4	61.7	57.8	53.9	52.6
80°	42.0	40.7	39.4	38.1	36.8
82.5°	25.0	25.0	25.0	25.0	25.0
85°	13.1	14.5	15.8	17.1	18.4
87.5°	7.9	7.9	9.2	10.5	11.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)