

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: P561617

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561617
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-LD4-2LO-40-UNV-82-84-EDD
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

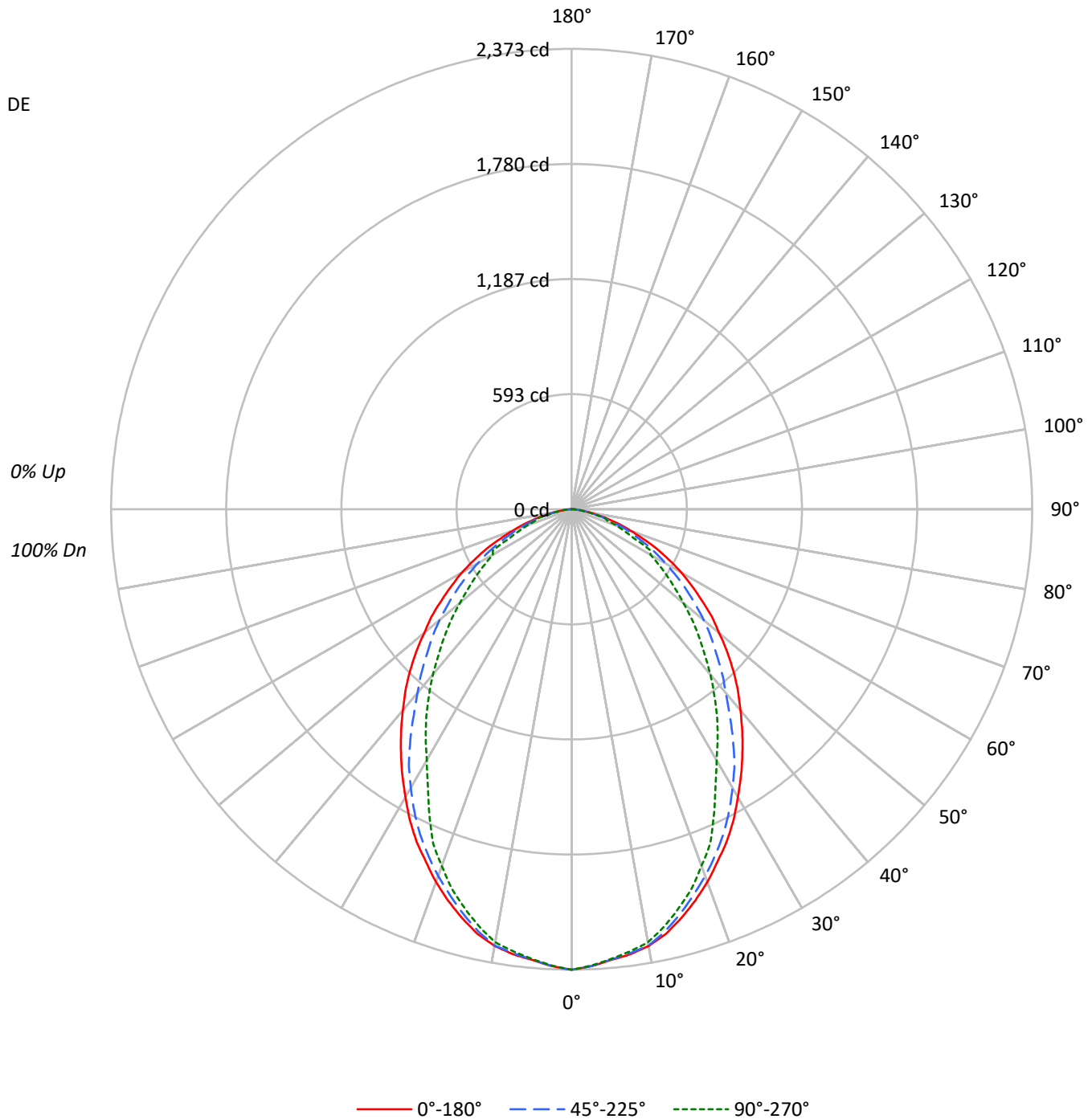
Lumens per Lamp: N/A
Luminaire Lumens: 4659.0 lumens
Efficiency: N/A
Efficacy: 99.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6386	6386	6386
5°	6300	6292	6285
10°	6245	6237	6192
15°	6077	6015	5931
20°	5853	5759	5602
25°	5613	5491	5149
30°	5320	5149	4638
35°	5038	4759	4290
40°	4751	4337	3903
45°	4479	4010	3529
50°	4146	3721	3147
55°	3836	3372	2819
60°	3514	3012	2525
65°	3092	2638	2236
70°	2547	2310	1899
75°	2025	1769	1854
80°	1361	1275	1190
85°	846	1016	1186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4479 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.9	4.7
10°-20°	606.3	13.0
20°-30°	839.4	18.0
30°-40°	895.0	19.2
40°-50°	816.5	17.5
50°-60°	639.7	13.7
60°-70°	416.9	8.9
70°-80°	184.7	4.0
80°-90°	39.7	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°	1666.6	35.8
0°-40°	2561.6	55.0
0°-60°	4017.7	86.2
0°-90°	4659.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4659.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2373	2373	2373	2373	2373	
5°	2332	2329	2329	2327	2327	221
15°	2181	2181	2159	2137	2129	613
25°	1890	1879	1849	1783	1734	868
35°	1534	1523	1449	1339	1306	959
45°	1177	1152	1054	966	927	907
55°	818	793	719	634	601	733
65°	486	458	414	422	351	479
75°	195	181	170	162	178	209
85°	27	30	33	36	38	38
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2373.2	2373.2	2373.2	2373.2	2373.2
2.5°	2356.8	2356.8	2356.8	2354.0	2354.0
5°	2332.1	2329.3	2329.3	2326.6	2326.6
7.5°	2312.9	2310.1	2307.4	2304.6	2299.2
10°	2285.4	2285.4	2282.7	2269.0	2266.2
12.5°	2241.5	2238.8	2227.8	2208.6	2203.1
15°	2181.2	2181.2	2159.2	2137.3	2129.1
17.5°	2115.3	2112.6	2085.2	2063.2	2052.2
20°	2044.0	2038.5	2011.1	1975.4	1956.2
22.5°	1964.4	1964.4	1931.5	1884.9	1865.7
25°	1890.4	1879.4	1849.2	1783.4	1734.0
27.5°	1805.3	1788.8	1755.9	1662.6	1605.0
30°	1712.0	1703.8	1657.1	1536.4	1492.5
32.5°	1624.2	1610.5	1561.1	1434.9	1399.2
35°	1533.7	1522.7	1448.6	1338.9	1306.0
37.5°	1443.1	1429.4	1336.1	1248.3	1207.2
40°	1352.6	1336.1	1234.6	1155.1	1111.2
42.5°	1267.6	1245.6	1146.8	1061.8	1012.4
45°	1177.0	1152.3	1053.6	965.8	927.3
47.5°	1086.5	1064.5	974.0	883.4	839.5
50°	990.4	971.2	888.9	798.4	751.8
52.5°	910.9	880.7	801.1	710.6	672.2
55°	817.6	792.9	718.8	633.8	600.9
57.5°	732.5	707.9	639.3	559.7	532.3
60°	653.0	617.3	559.7	491.1	469.2
62.5°	565.2	537.7	488.4	430.7	458.2
65°	485.6	458.2	414.3	422.5	351.2
67.5°	397.8	384.1	345.7	307.3	296.3
70°	323.7	307.3	293.6	252.4	241.4
72.5°	257.9	241.4	222.2	200.3	192.1
75°	194.8	181.1	170.1	161.9	178.3
77.5°	134.4	129.0	120.7	112.5	109.7
80°	87.8	85.1	82.3	79.6	76.8
82.5°	52.1	52.1	52.1	52.1	52.1
85°	27.4	30.2	32.9	35.7	38.4
87.5°	16.5	16.5	19.2	21.9	24.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)