

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: P560852

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560852
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-LD4-1HI-40-UNV-82-86-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

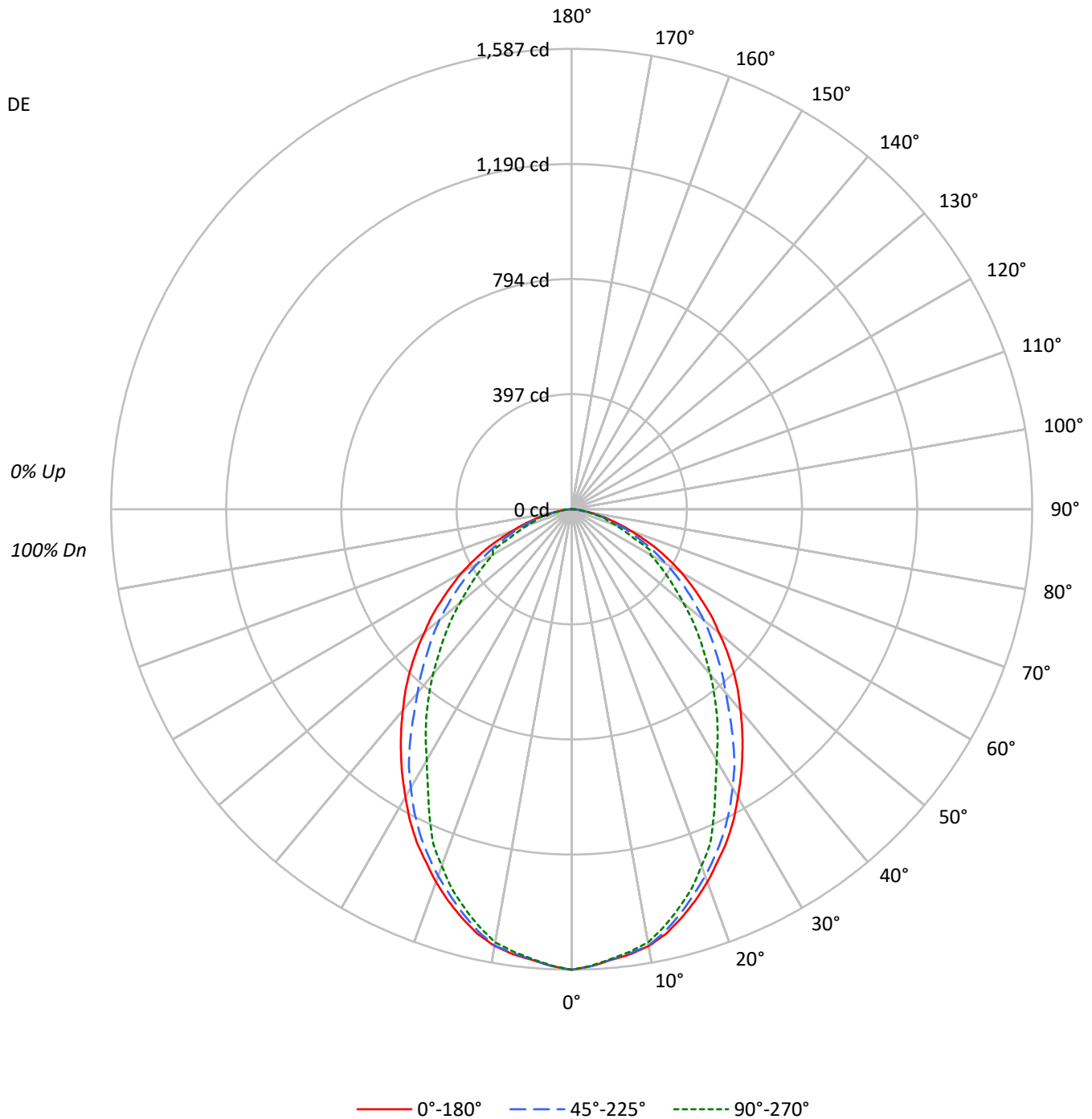
Lumens per Lamp: N/A
Luminaire Lumens: 3116.0 lumens
Efficiency: N/A
Efficacy: 72.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 43.2
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



TEST NUMBER: P560852
CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-86-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P560852

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-86-EDD-90

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°	4271	4271	4271
5°	4213	4208	4203
10°	4177	4172	4142
15°	4064	4023	3967
20°	3915	3852	3747
25°	3754	3672	3443
30°	3558	3444	3102
35°	3370	3183	2869
40°	3178	2901	2611
45°	2996	2681	2360
50°	2773	2489	2105
55°	2565	2256	1886
60°	2350	2014	1689
65°	2068	1764	1496
70°	1703	1544	1271
75°	1355	1183	1240
80°	910	852	797
85°	565	679	794

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2996 cd/sqm



TEST NUMBER: P560852

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-86-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	4.7
10°-20°	405.5	13.0
20°-30°	561.4	18.0
30°-40°	598.6	19.2
40°-50°	546.1	17.5
50°-60°	427.8	13.7
60°-70°	278.8	8.9
70°-80°	123.5	4.0
80°-90°	26.5	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°	1114.6	35.8
0°-40°	1713.2	55.0
0°-60°	2687.1	86.2
0°-90°	3116.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3116.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1587	1587	1587	1587	1587	
5°	1560	1558	1558	1556	1556	148
15°	1459	1459	1444	1429	1424	410
25°	1264	1257	1237	1193	1160	580
35°	1026	1018	969	896	873	641
45°	787	771	705	646	620	606
55°	547	530	481	424	402	490
65°	325	306	277	283	235	320
75°	130	121	114	108	119	140
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



TEST NUMBER: P560852

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-86-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1587.2	1587.2	1587.2	1587.2	1587.2
2.5°	1576.2	1576.2	1576.2	1574.4	1574.4
5°	1559.7	1557.9	1557.9	1556.1	1556.1
7.5°	1546.9	1545.0	1543.2	1541.4	1537.7
10°	1528.5	1528.5	1526.7	1517.5	1515.7
12.5°	1499.2	1497.3	1490.0	1477.2	1473.5
15°	1458.8	1458.8	1444.1	1429.4	1423.9
17.5°	1414.8	1412.9	1394.6	1379.9	1372.6
20°	1367.1	1363.4	1345.0	1321.2	1308.3
22.5°	1313.8	1313.8	1291.8	1260.6	1247.8
25°	1264.3	1257.0	1236.8	1192.7	1159.7
27.5°	1207.4	1196.4	1174.4	1112.0	1073.5
30°	1145.0	1139.5	1108.3	1027.6	998.2
32.5°	1086.3	1077.1	1044.1	959.7	935.8
35°	1025.7	1018.4	968.9	895.5	873.4
37.5°	965.2	956.0	893.6	834.9	807.4
40°	904.6	893.6	825.7	772.5	743.2
42.5°	847.8	833.1	767.0	710.1	677.1
45°	787.2	770.7	704.6	645.9	620.2
47.5°	726.6	712.0	651.4	590.9	561.5
50°	662.4	649.6	594.5	534.0	502.8
52.5°	609.2	589.0	535.8	475.3	449.6
55°	546.8	530.3	480.8	423.9	401.9
57.5°	489.9	473.4	427.5	374.3	356.0
60°	436.7	412.9	374.3	328.5	313.8
62.5°	378.0	359.7	326.6	288.1	306.4
65°	324.8	306.4	277.1	282.6	234.9
67.5°	266.1	256.9	231.2	205.5	198.2
70°	216.5	205.5	196.3	168.8	161.5
72.5°	172.5	161.5	148.6	134.0	128.4
75°	130.3	121.1	113.8	108.3	119.3
77.5°	89.9	86.2	80.7	75.2	73.4
80°	58.7	56.9	55.0	53.2	51.4
82.5°	34.9	34.9	34.9	34.9	34.9
85°	18.3	20.2	22.0	23.9	25.7
87.5°	11.0	11.0	12.8	14.7	16.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)