

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: P560834

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560834
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-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: 3219.0 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

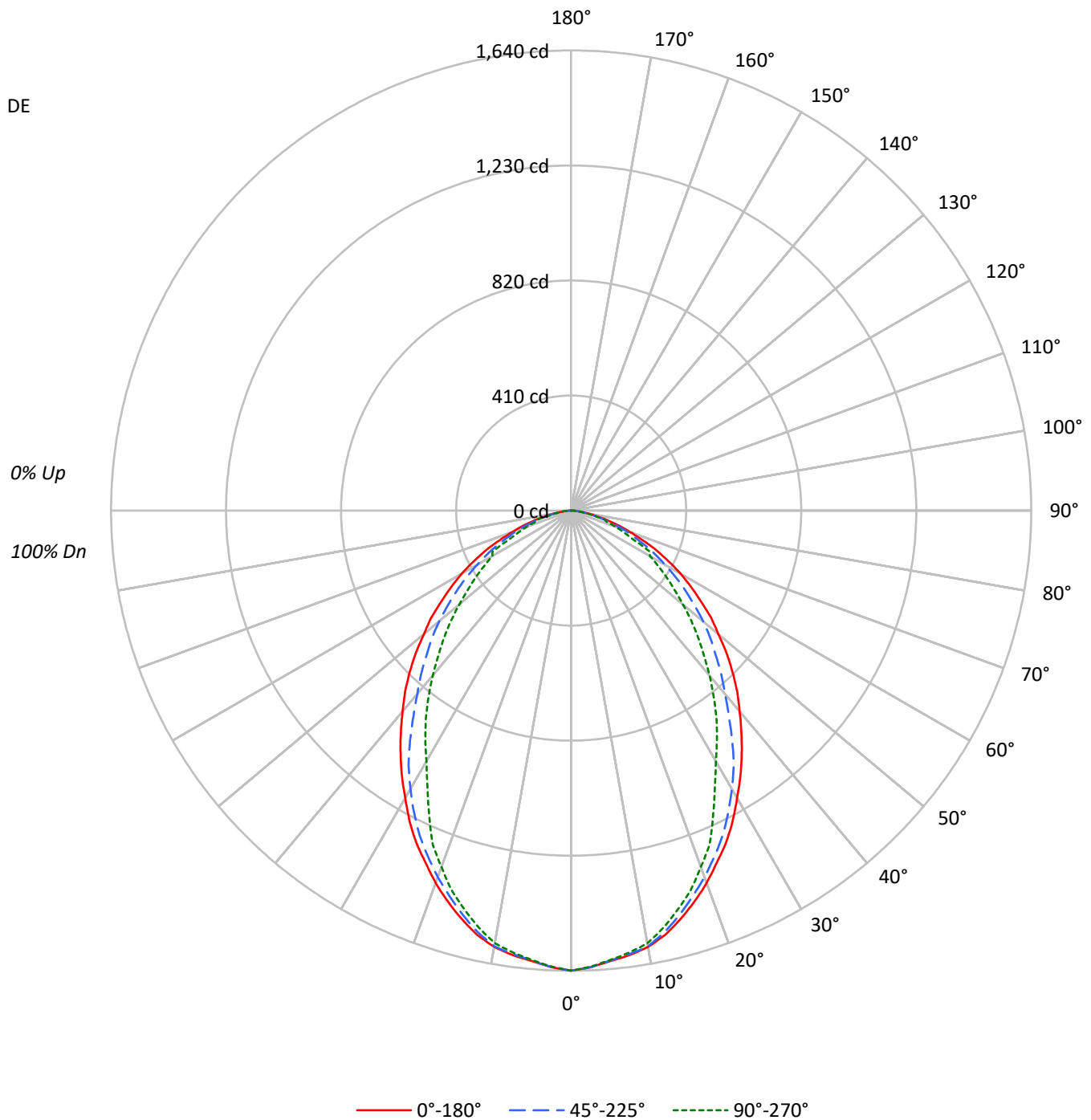
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4412	4412	4412
5°	4353	4347	4342
10°	4315	4310	4279
15°	4198	4156	4098
20°	4044	3979	3871
25°	3878	3794	3557
30°	3676	3558	3204
35°	3481	3288	2964
40°	3283	2996	2697
45°	3095	2770	2438
50°	2865	2571	2174
55°	2650	2330	1947
60°	2428	2081	1745
65°	2136	1822	1545
70°	1760	1596	1312
75°	1399	1222	1281
80°	941	882	823
85°	587	701	818

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3095 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.6	4.7
10°-20°	418.9	13.0
20°-30°	579.9	18.0
30°-40°	618.4	19.2
40°-50°	564.1	17.5
50°-60°	442.0	13.7
60°-70°	288.0	8.9
70°-80°	127.6	4.0
80°-90°	27.4	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°	1151.5	35.8
0°-40°	1769.8	55.0
0°-60°	2775.9	86.2
0°-90°	3219.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3219.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1640	1640	1640	1640	1640	
5°	1611	1609	1609	1608	1608	153
15°	1507	1507	1492	1477	1471	424
25°	1306	1298	1278	1232	1198	600
35°	1060	1052	1001	925	902	662
45°	813	796	728	667	641	626
55°	565	548	497	438	415	507
65°	336	317	286	292	243	331
75°	135	125	118	112	123	144
85°	19	21	23	25	26	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1639.7	1639.7	1639.7	1639.7	1639.7
2.5°	1628.3	1628.3	1628.3	1626.4	1626.4
5°	1611.3	1609.4	1609.4	1607.5	1607.5
7.5°	1598.0	1596.1	1594.2	1592.3	1588.5
10°	1579.1	1579.1	1577.2	1567.7	1565.8
12.5°	1548.7	1546.8	1539.2	1526.0	1522.2
15°	1507.0	1507.0	1491.9	1476.7	1471.0
17.5°	1461.5	1459.6	1440.7	1425.5	1417.9
20°	1412.2	1408.4	1389.5	1364.8	1351.6
22.5°	1357.3	1357.3	1334.5	1302.3	1289.0
25°	1306.1	1298.5	1277.7	1232.2	1198.0
27.5°	1247.3	1235.9	1213.2	1148.7	1108.9
30°	1182.9	1177.2	1145.0	1061.5	1031.2
32.5°	1122.2	1112.7	1078.6	991.4	966.8
35°	1059.7	1052.1	1000.9	925.1	902.3
37.5°	997.1	987.6	923.2	862.5	834.1
40°	934.5	923.2	853.0	798.1	767.7
42.5°	875.8	860.6	792.4	733.6	699.5
45°	813.2	796.2	727.9	667.3	640.7
47.5°	750.7	735.5	672.9	610.4	580.1
50°	684.3	671.1	614.2	551.6	519.4
52.5°	629.3	608.5	553.5	491.0	464.4
55°	564.9	547.8	496.7	437.9	415.1
57.5°	506.1	489.1	441.7	386.7	367.8
60°	451.2	426.5	386.7	339.3	324.2
62.5°	390.5	371.5	337.4	297.6	316.6
65°	335.5	316.6	286.2	291.9	242.6
67.5°	274.9	265.4	238.8	212.3	204.7
70°	223.7	212.3	202.8	174.4	166.8
72.5°	178.2	166.8	153.5	138.4	132.7
75°	134.6	125.1	117.5	111.8	123.2
77.5°	92.9	89.1	83.4	77.7	75.8
80°	60.7	58.8	56.9	55.0	53.1
82.5°	36.0	36.0	36.0	36.0	36.0
85°	19.0	20.9	22.7	24.6	26.5
87.5°	11.4	11.4	13.3	15.2	17.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)