

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: P560850

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560850
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-82-85-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

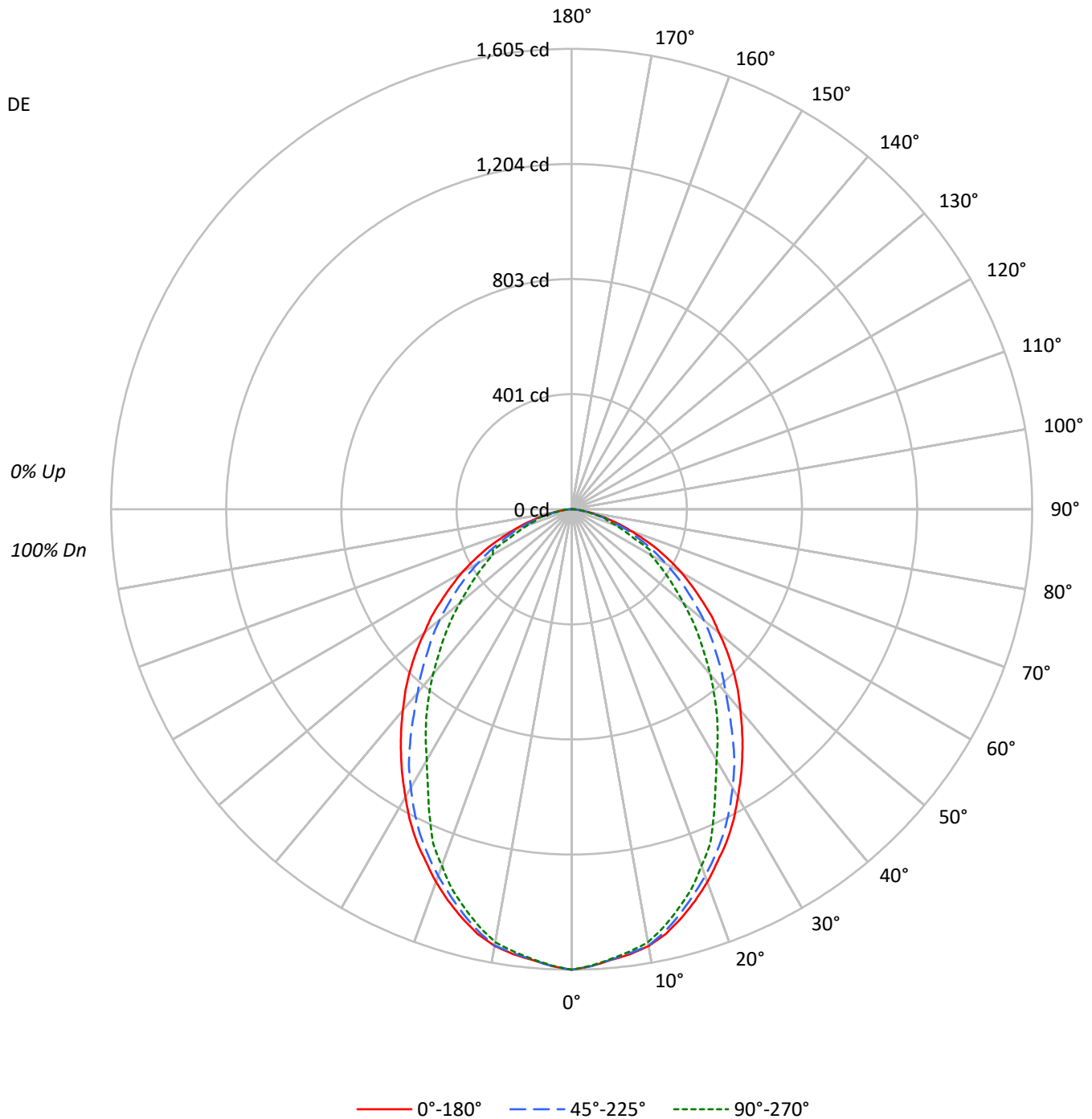
Lumens per Lamp: N/A
Luminaire Lumens: 3151.0 lumens
Efficiency: N/A
Efficacy: 72.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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	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°	4319	4319	4319
5°	4260	4256	4250
10°	4224	4218	4188
15°	4110	4068	4011
20°	3959	3895	3789
25°	3796	3714	3482
30°	3598	3483	3136
35°	3408	3218	2902
40°	3214	2933	2640
45°	3029	2712	2387
50°	2804	2517	2128
55°	2594	2281	1907
60°	2377	2037	1708
65°	2091	1784	1512
70°	1723	1562	1285
75°	1369	1196	1254
80°	921	863	806
85°	574	689	803

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3029 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.4	4.7
10°-20°	410.0	13.0
20°-30°	567.7	18.0
30°-40°	605.3	19.2
40°-50°	552.2	17.5
50°-60°	432.6	13.7
60°-70°	282.0	8.9
70°-80°	124.9	4.0
80°-90°	26.8	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°	1127.1	35.8
0°-40°	1732.4	55.0
0°-60°	2717.3	86.2
0°-90°	3151.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3151.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1605	1605	1605	1605	1605	
5°	1577	1575	1575	1574	1574	150
15°	1475	1475	1460	1446	1440	415
25°	1278	1271	1251	1206	1173	587
35°	1037	1030	980	906	883	648
45°	796	779	712	653	627	613
55°	553	536	486	429	406	496
65°	328	310	280	286	238	324
75°	132	122	115	110	121	141
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1605.1	1605.1	1605.1	1605.1	1605.1
2.5°	1593.9	1593.9	1593.9	1592.1	1592.1
5°	1577.2	1575.4	1575.4	1573.5	1573.5
7.5°	1564.3	1562.4	1560.5	1558.7	1555.0
10°	1545.7	1545.7	1543.8	1534.6	1532.7
12.5°	1516.0	1514.2	1506.7	1493.7	1490.0
15°	1475.2	1475.2	1460.3	1445.5	1439.9
17.5°	1430.7	1428.8	1410.2	1395.4	1388.0
20°	1382.4	1378.7	1360.1	1336.0	1323.0
22.5°	1328.6	1328.6	1306.3	1274.8	1261.8
25°	1278.5	1271.1	1250.7	1206.1	1172.7
27.5°	1221.0	1209.8	1187.6	1124.5	1085.5
30°	1157.9	1152.3	1120.8	1039.1	1009.4
32.5°	1098.5	1089.2	1055.8	970.5	946.3
35°	1037.3	1029.8	979.7	905.5	883.3
37.5°	976.0	966.8	903.7	844.3	816.5
40°	914.8	903.7	835.0	781.2	751.5
42.5°	857.3	842.4	775.6	718.1	684.7
45°	796.0	779.3	712.5	653.2	627.2
47.5°	734.8	720.0	658.7	597.5	567.8
50°	669.9	656.9	601.2	540.0	508.4
52.5°	616.1	595.6	541.8	480.6	454.6
55°	553.0	536.3	486.2	428.6	406.4
57.5°	495.4	478.7	432.4	378.5	360.0
60°	441.6	417.5	378.5	332.1	317.3
62.5°	382.2	363.7	330.3	291.3	309.9
65°	328.4	309.9	280.2	285.8	237.5
67.5°	269.1	259.8	233.8	207.8	200.4
70°	219.0	207.8	198.5	170.7	163.3
72.5°	174.4	163.3	150.3	135.5	129.9
75°	131.7	122.5	115.0	109.5	120.6
77.5°	90.9	87.2	81.6	76.1	74.2
80°	59.4	57.5	55.7	53.8	52.0
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.4	22.3	24.1	26.0
87.5°	11.1	11.1	13.0	14.8	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)