

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: P560841

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560841
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-81-88-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

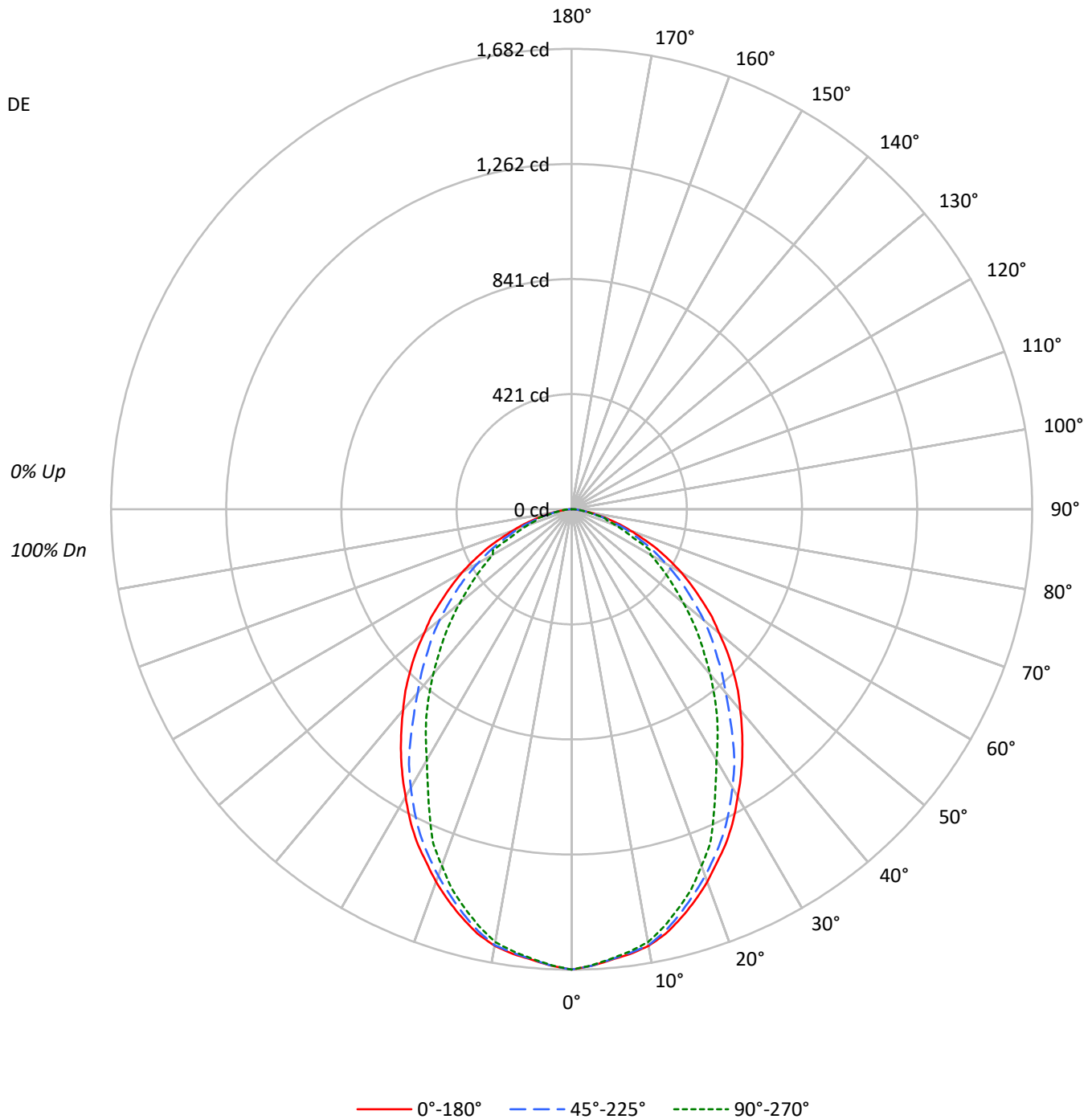
Lumens per Lamp: N/A
Luminaire Lumens: 3301.0 lumens
Efficiency: N/A
Efficacy: 76.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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				
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°	4525	4525	4525
5°	4463	4458	4453
10°	4425	4419	4388
15°	4305	4262	4203
20°	4147	4080	3969
25°	3977	3890	3648
30°	3769	3648	3286
35°	3570	3372	3040
40°	3366	3073	2766
45°	3174	2841	2500
50°	2938	2637	2230
55°	2718	2389	1997
60°	2490	2134	1789
65°	2191	1869	1584
70°	1805	1637	1346
75°	1435	1253	1314
80°	964	903	843
85°	599	719	840

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3174 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	4.7
10°-20°	429.6	13.0
20°-30°	594.7	18.0
30°-40°	634.1	19.2
40°-50°	578.5	17.5
50°-60°	453.2	13.7
60°-70°	295.4	8.9
70°-80°	130.9	4.0
80°-90°	28.1	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°	1180.8	35.8
0°-40°	1814.9	55.0
0°-60°	2846.7	86.2
0°-90°	3301.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3301.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1682	1682	1682	1682	1682	
5°	1652	1650	1650	1648	1648	157
15°	1545	1545	1530	1514	1508	434
25°	1339	1332	1310	1264	1229	615
35°	1087	1079	1026	949	925	679
45°	834	816	746	684	657	642
55°	579	562	509	449	426	520
65°	344	325	294	299	249	339
75°	138	128	120	115	126	148
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1681.5	1681.5	1681.5	1681.5	1681.5
2.5°	1669.8	1669.8	1669.8	1667.9	1667.9
5°	1652.3	1650.4	1650.4	1648.4	1648.4
7.5°	1638.7	1636.8	1634.8	1632.9	1629.0
10°	1619.3	1619.3	1617.3	1607.6	1605.7
12.5°	1588.2	1586.2	1578.5	1564.9	1561.0
15°	1545.4	1545.4	1529.9	1514.3	1508.5
17.5°	1498.8	1496.8	1477.4	1461.8	1454.0
20°	1448.2	1444.3	1424.9	1399.6	1386.0
22.5°	1391.8	1391.8	1368.5	1335.5	1321.9
25°	1339.4	1331.6	1310.2	1263.5	1228.6
27.5°	1279.1	1267.4	1244.1	1178.0	1137.2
30°	1213.0	1207.2	1174.1	1088.6	1057.5
32.5°	1150.8	1141.1	1106.1	1016.7	991.4
35°	1086.6	1078.9	1026.4	948.6	925.3
37.5°	1022.5	1012.8	946.7	884.5	855.3
40°	958.3	946.7	874.8	818.4	787.3
42.5°	898.1	882.5	812.6	752.3	717.3
45°	833.9	816.4	746.5	684.3	657.0
47.5°	769.8	754.2	690.1	625.9	594.8
50°	701.8	688.1	629.8	565.7	532.6
52.5°	645.4	624.0	567.6	503.5	476.3
55°	579.3	561.8	509.3	449.0	425.7
57.5°	519.0	501.5	452.9	396.6	377.1
60°	462.7	437.4	396.6	348.0	332.4
62.5°	400.4	381.0	346.0	305.2	324.6
65°	344.1	324.6	293.5	299.4	248.8
67.5°	281.9	272.1	244.9	217.7	209.9
70°	229.4	217.7	208.0	178.8	171.1
72.5°	182.7	171.1	157.5	141.9	136.1
75°	138.0	128.3	120.5	114.7	126.4
77.5°	95.3	91.4	85.5	79.7	77.8
80°	62.2	60.3	58.3	56.4	54.4
82.5°	36.9	36.9	36.9	36.9	36.9
85°	19.4	21.4	23.3	25.3	27.2
87.5°	11.7	11.7	13.6	15.6	17.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)