

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: P561254

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561254
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-LD4-1STD-40-UNV-93-87-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2648.0 lumens
Efficiency: N/A
Efficacy: 79.5 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

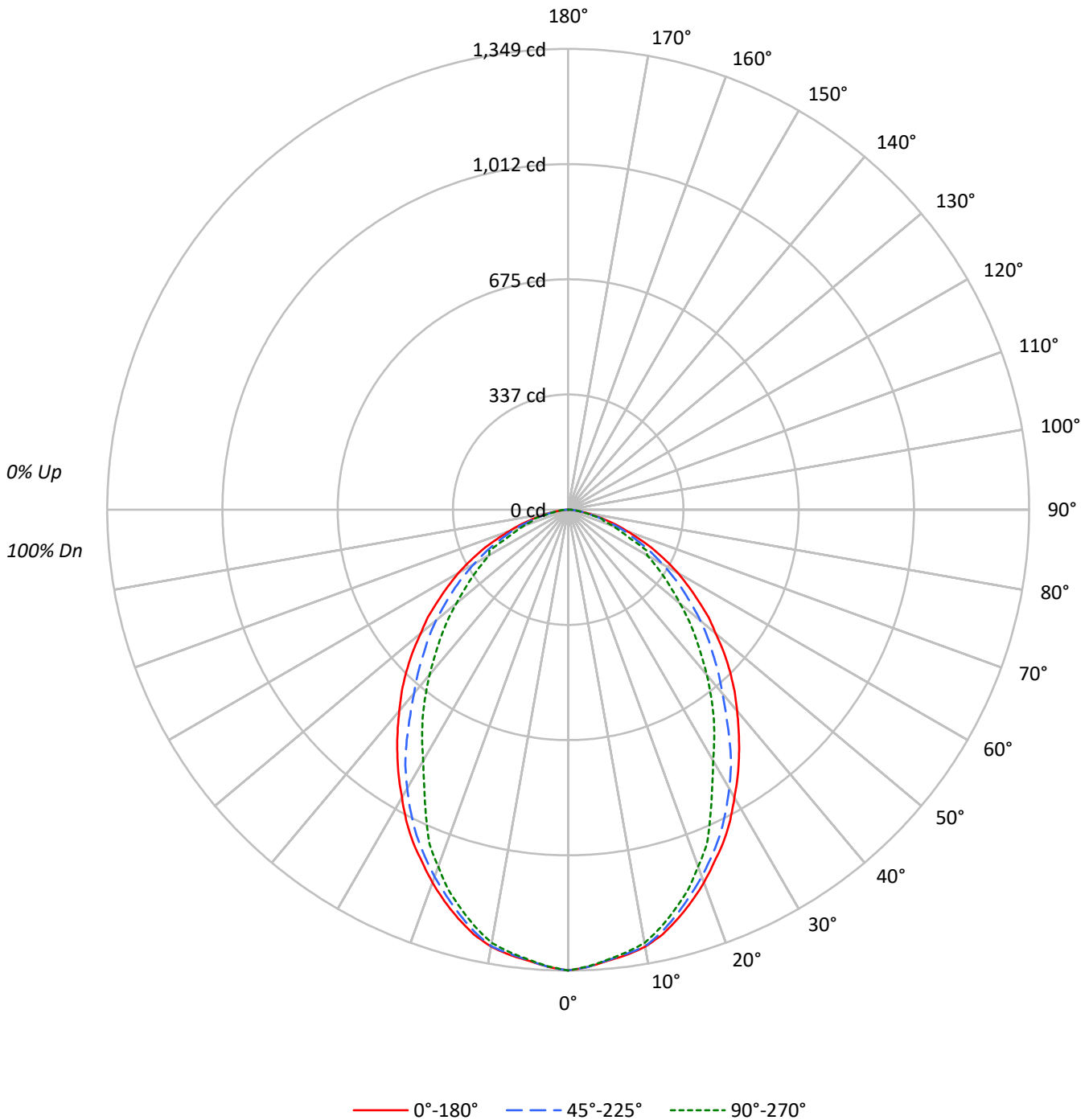
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	3630	3630	3630
5°	3581	3576	3572
10°	3550	3545	3519
15°	3454	3419	3371
20°	3327	3273	3184
25°	3190	3121	2926
30°	3023	2927	2636
35°	2864	2705	2439
40°	2701	2465	2218
45°	2546	2279	2006
50°	2357	2115	1789
55°	2180	1917	1602
60°	1997	1712	1435
65°	1757	1500	1271
70°	1448	1313	1079
75°	1151	1005	1054
80°	773	725	677
85°	482	577	673

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2546 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.6	4.7
10°-20°	344.6	13.0
20°-30°	477.1	18.0
30°-40°	508.7	19.2
40°-50°	464.1	17.5
50°-60°	363.6	13.7
60°-70°	236.9	8.9
70°-80°	105.0	4.0
80°-90°	22.5	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°	947.2	35.8
0°-40°	1455.9	55.0
0°-60°	2283.5	86.2
0°-90°	2648.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2648.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1349	1349	1349	1349	1349	
5°	1326	1324	1324	1322	1322	126
15°	1240	1240	1227	1215	1210	349
25°	1074	1068	1051	1014	986	493
35°	872	866	823	761	742	545
45°	669	655	599	549	527	515
55°	465	451	409	360	342	417
65°	276	260	236	240	200	272
75°	111	103	97	92	101	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1348.9	1348.9	1348.9	1348.9	1348.9
2.5°	1339.5	1339.5	1339.5	1337.9	1337.9
5°	1325.5	1323.9	1323.9	1322.3	1322.3
7.5°	1314.5	1313.0	1311.4	1309.9	1306.8
10°	1299.0	1299.0	1297.4	1289.6	1288.0
12.5°	1274.0	1272.4	1266.2	1255.3	1252.2
15°	1239.7	1239.7	1227.2	1214.7	1210.1
17.5°	1202.3	1200.7	1185.1	1172.6	1166.4
20°	1161.7	1158.6	1143.0	1122.7	1111.8
22.5°	1116.5	1116.5	1097.8	1071.3	1060.4
25°	1074.4	1068.2	1051.0	1013.6	985.5
27.5°	1026.1	1016.7	998.0	945.0	912.2
30°	973.0	968.4	941.9	873.2	848.3
32.5°	923.1	915.4	887.3	815.6	795.3
35°	871.7	865.5	823.3	761.0	742.3
37.5°	820.2	812.4	759.4	709.5	686.1
40°	768.8	759.4	701.7	656.5	631.5
42.5°	720.4	708.0	651.8	603.5	575.4
45°	669.0	654.9	598.8	548.9	527.1
47.5°	617.5	605.0	553.6	502.1	477.2
50°	562.9	552.0	505.2	453.8	427.3
52.5°	517.7	500.6	455.3	403.9	382.0
55°	464.7	450.7	408.6	360.2	341.5
57.5°	416.4	402.3	363.3	318.1	302.5
60°	371.1	350.9	318.1	279.1	266.7
62.5°	321.2	305.6	277.6	244.8	260.4
65°	276.0	260.4	235.5	240.1	199.6
67.5°	226.1	218.3	196.5	174.6	168.4
70°	184.0	174.6	166.9	143.5	137.2
72.5°	146.6	137.2	126.3	113.8	109.2
75°	110.7	102.9	96.7	92.0	101.4
77.5°	76.4	73.3	68.6	63.9	62.4
80°	49.9	48.3	46.8	45.2	43.7
82.5°	29.6	29.6	29.6	29.6	29.6
85°	15.6	17.2	18.7	20.3	21.8
87.5°	9.4	9.4	10.9	12.5	14.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)