

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: P560870

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

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560870
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-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: 3248.0 lumens
Efficiency: N/A
Efficacy: 75.2 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

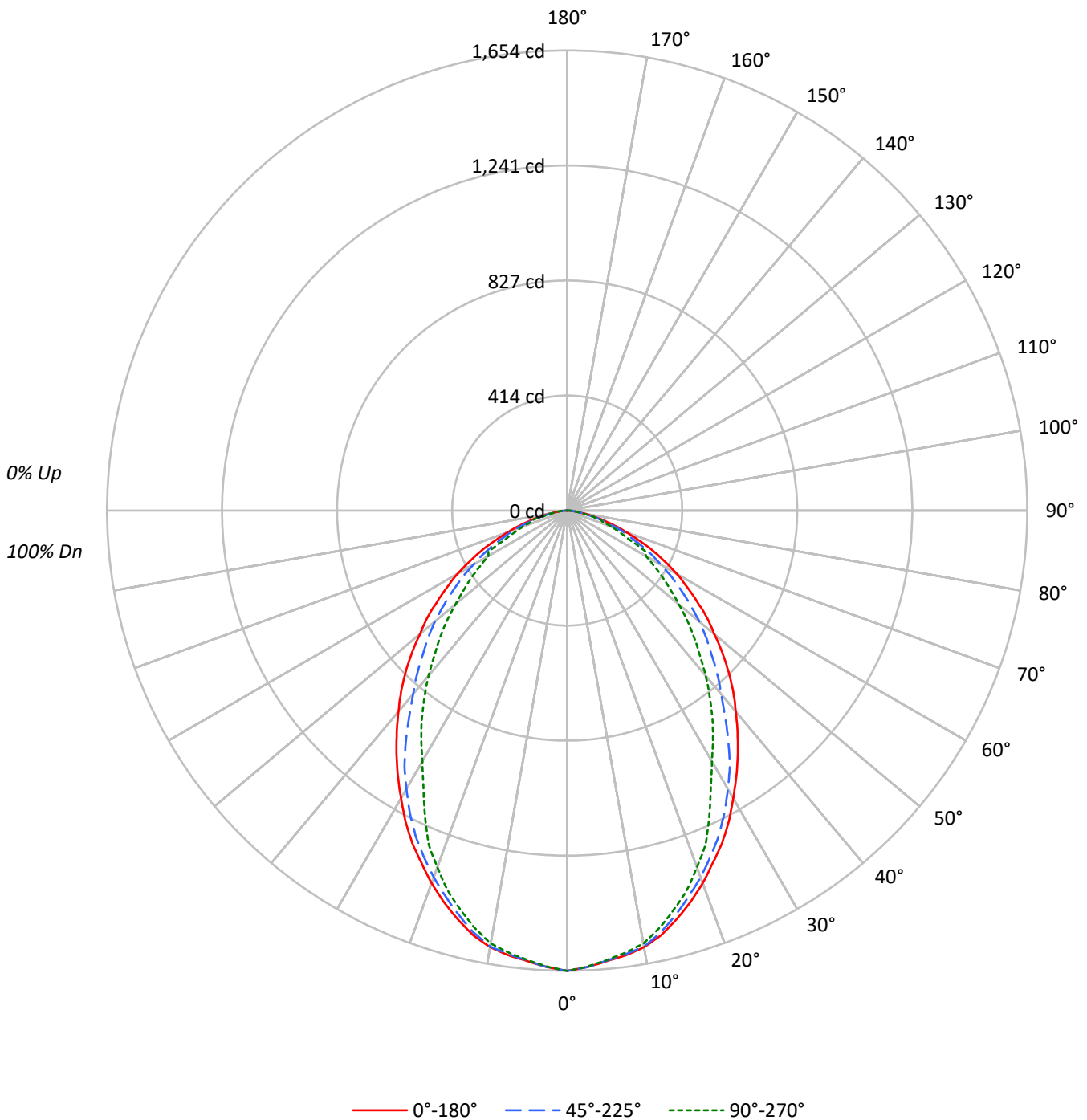
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4452	4452	4452
5°	4392	4387	4381
10°	4354	4348	4317
15°	4236	4194	4135
20°	4081	4015	3905
25°	3913	3828	3589
30°	3709	3590	3233
35°	3512	3318	2991
40°	3313	3023	2721
45°	3123	2795	2460
50°	2891	2594	2194
55°	2674	2351	1965
60°	2450	2100	1760
65°	2155	1839	1559
70°	1776	1611	1324
75°	1412	1233	1292
80°	948	890	831
85°	590	710	827

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3123 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.0	4.7
10°-20°	422.7	13.0
20°-30°	585.2	18.0
30°-40°	623.9	19.2
40°-50°	569.2	17.5
50°-60°	445.9	13.7
60°-70°	290.6	8.9
70°-80°	128.8	4.0
80°-90°	27.6	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°	1161.8	35.8
0°-40°	1785.8	55.0
0°-60°	2801.0	86.2
0°-90°	3248.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3248.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1654	1654	1654	1654	1654	
5°	1626	1624	1624	1622	1622	154
15°	1521	1521	1505	1490	1484	427
25°	1318	1310	1289	1243	1209	605
35°	1069	1062	1010	933	910	668
45°	820	803	734	673	646	632
55°	570	553	501	442	419	511
65°	338	319	289	295	245	334
75°	136	126	119	113	124	146
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°	1654.5	1654.5	1654.5	1654.5	1654.5
2.5°	1643.0	1643.0	1643.0	1641.1	1641.1
5°	1625.8	1623.9	1623.9	1622.0	1622.0
7.5°	1612.4	1610.5	1608.6	1606.7	1602.8
10°	1593.3	1593.3	1591.4	1581.8	1579.9
12.5°	1562.7	1560.8	1553.1	1539.7	1535.9
15°	1520.6	1520.6	1505.3	1490.0	1484.3
17.5°	1474.7	1472.8	1453.7	1438.4	1430.7
20°	1425.0	1421.1	1402.0	1377.1	1363.8
22.5°	1369.5	1369.5	1346.5	1314.0	1300.6
25°	1317.9	1310.2	1289.2	1243.3	1208.8
27.5°	1258.6	1247.1	1224.1	1159.1	1118.9
30°	1193.5	1187.8	1155.3	1071.1	1040.5
32.5°	1132.3	1122.8	1088.3	1000.3	975.5
35°	1069.2	1061.5	1009.9	933.4	910.4
37.5°	1006.1	996.5	931.5	870.3	841.6
40°	943.0	931.5	860.7	805.2	774.6
42.5°	883.7	868.4	799.5	740.2	705.8
45°	820.5	803.3	734.5	673.3	646.5
47.5°	757.4	742.1	679.0	615.9	585.3
50°	690.5	677.1	619.7	556.6	524.1
52.5°	635.0	614.0	558.5	495.4	468.6
55°	570.0	552.8	501.1	441.8	418.9
57.5°	510.7	493.5	445.7	390.2	371.1
60°	455.2	430.4	390.2	342.4	327.1
62.5°	394.0	374.9	340.5	300.3	319.4
65°	338.5	319.4	288.8	294.6	244.8
67.5°	277.3	267.8	241.0	214.2	206.6
70°	225.7	214.2	204.7	176.0	168.3
72.5°	179.8	168.3	154.9	139.6	133.9
75°	135.8	126.2	118.6	112.8	124.3
77.5°	93.7	89.9	84.2	78.4	76.5
80°	61.2	59.3	57.4	55.5	53.6
82.5°	36.3	36.3	36.3	36.3	36.3
85°	19.1	21.0	23.0	24.9	26.8
87.5°	11.5	11.5	13.4	15.3	17.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)