

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: P560928

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560928
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-50-UNV-93-84-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3648.0 lumens
Efficiency: N/A
Efficacy: 84.4 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

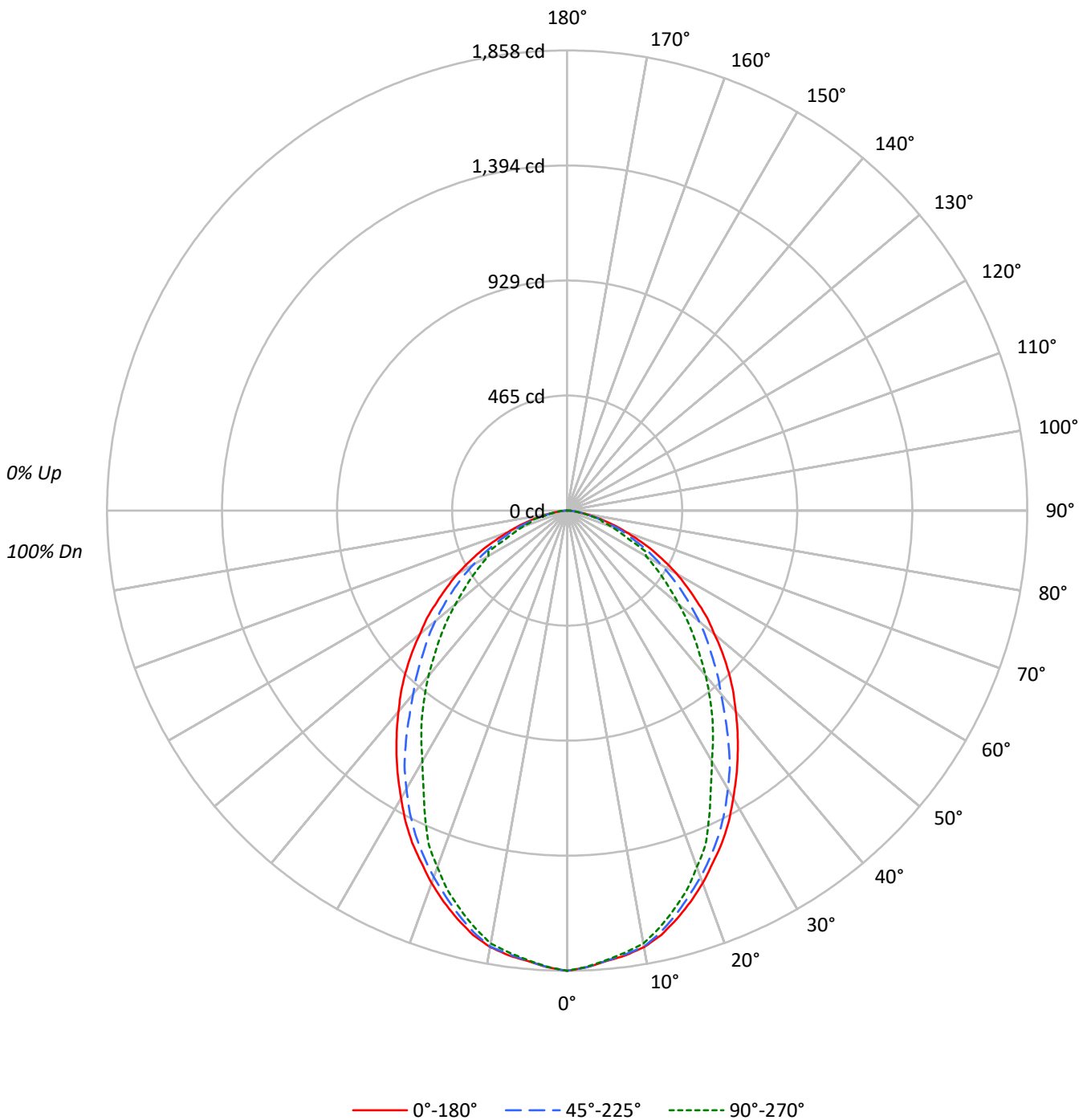
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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°	5000	5000	5000
5°	4932	4927	4921
10°	4890	4884	4849
15°	4758	4710	4644
20°	4583	4509	4386
25°	4395	4299	4031
30°	4165	4032	3631
35°	3945	3726	3359
40°	3720	3396	3056
45°	3507	3139	2763
50°	3247	2914	2464
55°	3004	2640	2207
60°	2752	2358	1977
65°	2421	2066	1751
70°	1995	1809	1487
75°	1586	1385	1451
80°	1065	998	933
85°	664	797	929

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3507 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.0	4.7
10°-20°	474.7	13.0
20°-30°	657.2	18.0
30°-40°	700.8	19.2
40°-50°	639.3	17.5
50°-60°	500.8	13.7
60°-70°	326.4	8.9
70°-80°	144.6	4.0
80°-90°	31.0	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°	1304.9	35.8
0°-40°	2005.7	55.0
0°-60°	3145.9	86.2
0°-90°	3648.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3648.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1858	1858	1858	1858	1858	
5°	1826	1824	1824	1822	1822	173
15°	1708	1708	1691	1674	1667	480
25°	1480	1472	1448	1396	1358	680
35°	1201	1192	1134	1048	1023	751
45°	922	902	825	756	726	710
55°	640	621	563	496	470	574
65°	380	359	324	331	275	375
75°	152	142	133	127	140	163
85°	22	24	26	28	30	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1858.2	1858.2	1858.2	1858.2	1858.2
2.5°	1845.4	1845.4	1845.4	1843.2	1843.2
5°	1826.0	1823.9	1823.9	1821.7	1821.7
7.5°	1811.0	1808.8	1806.7	1804.5	1800.2
10°	1789.5	1789.5	1787.3	1776.6	1774.5
12.5°	1755.1	1753.0	1744.4	1729.3	1725.1
15°	1707.9	1707.9	1690.7	1673.5	1667.0
17.5°	1656.3	1654.2	1632.7	1615.5	1606.9
20°	1600.5	1596.2	1574.7	1546.7	1531.7
22.5°	1538.2	1538.2	1512.4	1475.9	1460.8
25°	1480.1	1471.6	1447.9	1396.4	1357.7
27.5°	1413.6	1400.7	1374.9	1301.8	1256.7
30°	1340.5	1334.1	1297.5	1203.0	1168.7
32.5°	1271.8	1261.0	1222.4	1123.5	1095.6
35°	1200.9	1192.3	1134.3	1048.3	1022.6
37.5°	1130.0	1119.2	1046.2	977.5	945.2
40°	1059.1	1046.2	966.7	904.4	870.0
42.5°	992.5	975.3	898.0	831.4	792.7
45°	921.6	902.3	824.9	756.2	726.1
47.5°	850.7	833.5	762.6	691.7	657.4
50°	775.5	760.5	696.0	625.1	588.6
52.5°	713.2	689.6	627.3	556.4	526.3
55°	640.2	620.8	562.8	496.2	470.5
57.5°	573.6	554.3	500.5	438.2	416.8
60°	511.3	483.4	438.2	384.5	367.4
62.5°	442.5	421.1	382.4	337.3	358.8
65°	380.2	358.8	324.4	330.8	275.0
67.5°	311.5	300.8	270.7	240.6	232.0
70°	253.5	240.6	229.9	197.6	189.0
72.5°	201.9	189.0	174.0	156.8	150.4
75°	152.5	141.8	133.2	126.7	139.6
77.5°	105.3	101.0	94.5	88.1	85.9
80°	68.7	66.6	64.4	62.3	60.2
82.5°	40.8	40.8	40.8	40.8	40.8
85°	21.5	23.6	25.8	27.9	30.1
87.5°	12.9	12.9	15.0	17.2	19.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)