

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: P560806

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560806
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-35-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 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3203.0 lumens
Efficiency: N/A
Efficacy: 74.1 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

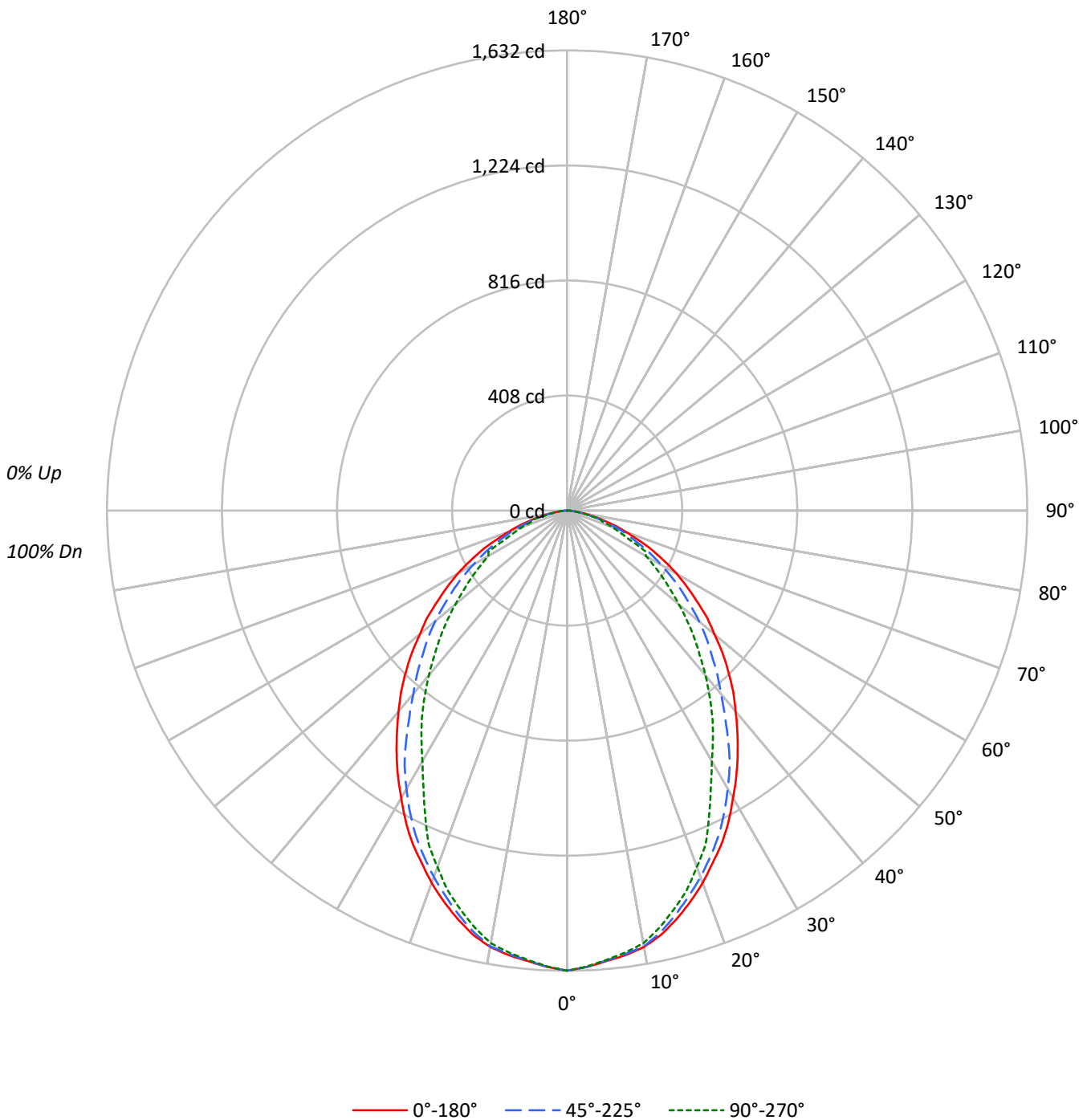
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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																												
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°	4391	4391	4391
5°	4331	4326	4321
10°	4293	4288	4257
15°	4177	4135	4078
20°	4024	3959	3851
25°	3859	3775	3540
30°	3657	3540	3188
35°	3464	3272	2949
40°	3267	2982	2683
45°	3080	2756	2426
50°	2851	2558	2164
55°	2637	2319	1938
60°	2416	2071	1736
65°	2126	1813	1537
70°	1751	1588	1306
75°	1392	1215	1275
80°	936	877	818
85°	584	698	815

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3080 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.9	4.7
10°-20°	416.8	13.0
20°-30°	577.0	18.0
30°-40°	615.3	19.2
40°-50°	561.3	17.5
50°-60°	439.8	13.7
60°-70°	286.6	8.9
70°-80°	127.0	4.0
80°-90°	27.2	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°	1145.7	35.8
0°-40°	1761.0	55.0
0°-60°	2762.1	86.2
0°-90°	3203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3203.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1632	1632	1632	1632	1632	
5°	1603	1601	1601	1600	1600	152
15°	1500	1500	1484	1469	1464	422
25°	1300	1292	1271	1226	1192	597
35°	1054	1047	996	920	898	659
45°	809	792	724	664	638	623
55°	562	545	494	436	413	504
65°	334	315	285	290	241	329
75°	134	124	117	111	123	144
85°	19	21	23	24	26	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1631.6	1631.6	1631.6	1631.6	1631.6
2.5°	1620.2	1620.2	1620.2	1618.4	1618.4
5°	1603.3	1601.4	1601.4	1599.5	1599.5
7.5°	1590.1	1588.2	1586.3	1584.4	1580.6
10°	1571.2	1571.2	1569.3	1559.9	1558.0
12.5°	1541.0	1539.1	1531.6	1518.4	1514.6
15°	1499.5	1499.5	1484.4	1469.4	1463.7
17.5°	1454.3	1452.4	1433.5	1418.4	1410.9
20°	1405.2	1401.4	1382.6	1358.1	1344.9
22.5°	1350.5	1350.5	1327.9	1295.8	1282.6
25°	1299.6	1292.0	1271.3	1226.0	1192.1
27.5°	1241.1	1229.8	1207.2	1143.0	1103.4
30°	1177.0	1171.3	1139.3	1056.3	1026.1
32.5°	1116.6	1107.2	1073.2	986.5	962.0
35°	1054.4	1046.8	995.9	920.5	897.8
37.5°	992.1	982.7	918.6	858.2	829.9
40°	929.9	918.6	848.8	794.1	763.9
42.5°	871.4	856.3	788.4	730.0	696.0
45°	809.2	792.2	724.3	663.9	637.5
47.5°	746.9	731.8	669.6	607.4	577.2
50°	680.9	667.7	611.1	548.9	516.8
52.5°	626.2	605.5	550.8	488.5	462.1
55°	562.1	545.1	494.2	435.7	413.1
57.5°	503.6	486.6	439.5	384.8	365.9
60°	448.9	424.4	384.8	337.6	322.5
62.5°	388.6	369.7	335.7	296.1	315.0
65°	333.9	315.0	284.8	290.5	241.4
67.5°	273.5	264.1	237.7	211.3	203.7
70°	222.6	211.3	201.8	173.5	166.0
72.5°	177.3	166.0	152.8	137.7	132.0
75°	133.9	124.5	116.9	111.3	122.6
77.5°	92.4	88.7	83.0	77.3	75.4
80°	60.4	58.5	56.6	54.7	52.8
82.5°	35.8	35.8	35.8	35.8	35.8
85°	18.9	20.7	22.6	24.5	26.4
87.5°	11.3	11.3	13.2	15.1	17.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)