

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: P560844

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560844
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-81-96-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3256.0 lumens
Efficiency: N/A
Efficacy: 75.4 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

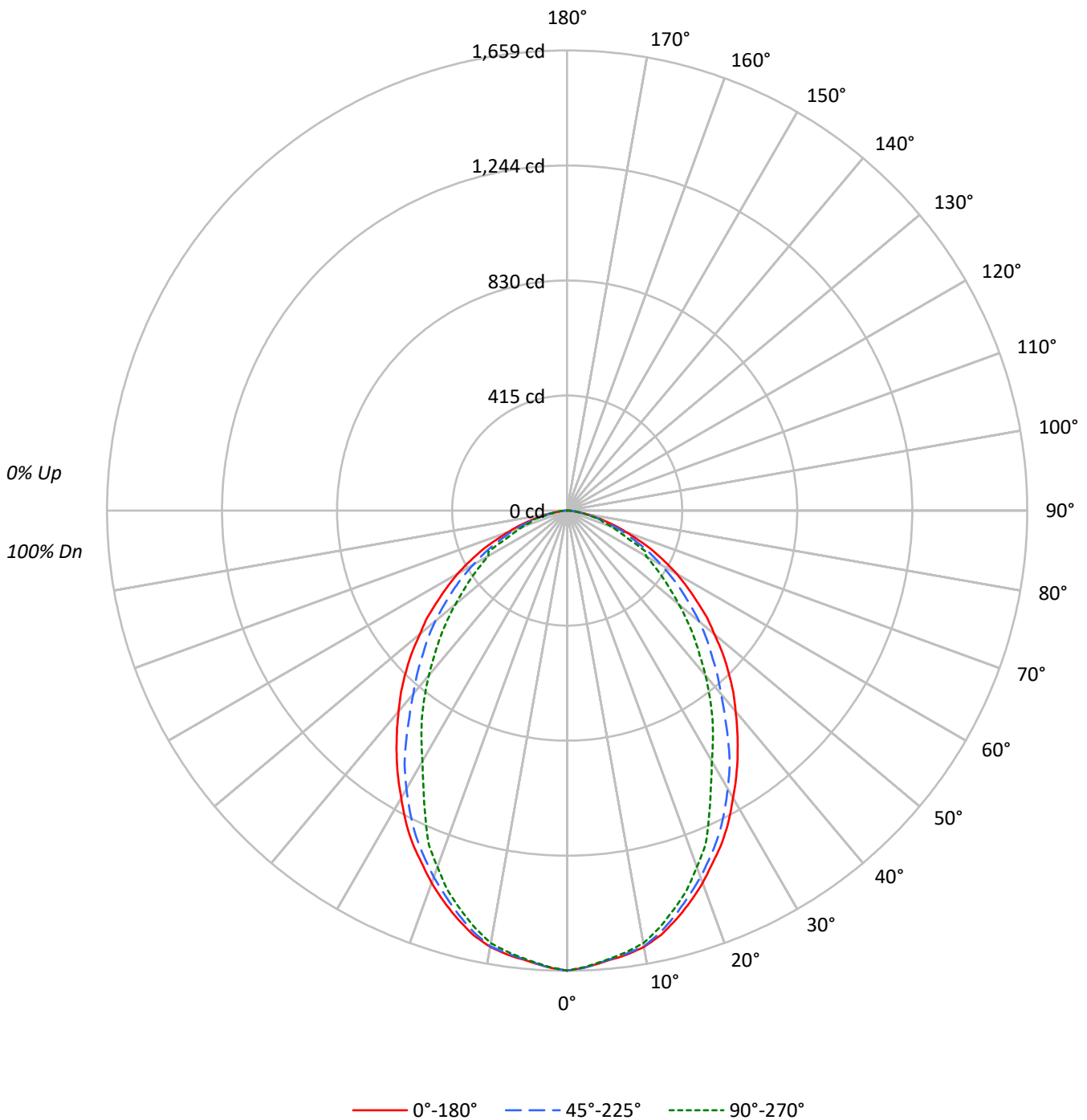
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4463	4463	4463
5°	4403	4397	4392
10°	4364	4359	4328
15°	4247	4204	4145
20°	4091	4025	3915
25°	3923	3837	3598
30°	3718	3599	3241
35°	3521	3326	2998
40°	3321	3031	2728
45°	3131	2802	2466
50°	2898	2601	2200
55°	2681	2357	1970
60°	2456	2105	1765
65°	2161	1843	1563
70°	1781	1614	1327
75°	1415	1236	1295
80°	951	891	832
85°	593	710	827

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3131 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.4	4.7
10°-20°	423.7	13.0
20°-30°	586.6	18.0
30°-40°	625.5	19.2
40°-50°	570.6	17.5
50°-60°	447.0	13.7
60°-70°	291.4	8.9
70°-80°	129.1	4.0
80°-90°	27.7	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°	1164.7	35.8
0°-40°	1790.2	55.0
0°-60°	2807.9	86.2
0°-90°	3256.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3256.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1659	1659	1659	1659	1659	
5°	1630	1628	1628	1626	1626	155
15°	1524	1524	1509	1494	1488	429
25°	1321	1313	1292	1246	1212	607
35°	1072	1064	1012	936	913	670
45°	823	805	736	675	648	634
55°	571	554	502	443	420	512
65°	339	320	290	295	245	334
75°	136	126	119	113	125	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°	1658.6	1658.6	1658.6	1658.6	1658.6
2.5°	1647.1	1647.1	1647.1	1645.1	1645.1
5°	1629.8	1627.9	1627.9	1626.0	1626.0
7.5°	1616.4	1614.5	1612.5	1610.6	1606.8
10°	1597.2	1597.2	1595.3	1585.7	1583.8
12.5°	1566.5	1564.6	1556.9	1543.5	1539.7
15°	1524.3	1524.3	1509.0	1493.7	1487.9
17.5°	1478.3	1476.4	1457.2	1441.9	1434.2
20°	1428.5	1424.6	1405.5	1380.5	1367.1
22.5°	1372.9	1372.9	1349.9	1317.3	1303.8
25°	1321.1	1313.4	1292.3	1246.3	1211.8
27.5°	1261.7	1250.2	1227.1	1162.0	1121.7
30°	1196.5	1190.7	1158.1	1073.8	1043.1
32.5°	1135.1	1125.5	1091.0	1002.8	977.9
35°	1071.8	1064.2	1012.4	935.7	912.7
37.5°	1008.6	999.0	933.8	872.4	843.7
40°	945.3	933.8	862.8	807.2	776.6
42.5°	885.8	870.5	801.5	742.0	707.5
45°	822.6	805.3	736.3	674.9	648.1
47.5°	759.3	744.0	680.7	617.4	586.7
50°	692.2	678.8	621.2	558.0	525.4
52.5°	636.6	615.5	559.9	496.6	469.8
55°	571.4	554.1	502.4	442.9	419.9
57.5°	511.9	494.7	446.8	391.2	372.0
60°	456.3	431.4	391.2	343.2	327.9
62.5°	395.0	375.8	341.3	301.0	320.2
65°	339.4	320.2	289.5	295.3	245.4
67.5°	278.0	268.4	241.6	214.8	207.1
70°	226.3	214.8	205.2	176.4	168.7
72.5°	180.2	168.7	155.3	140.0	134.2
75°	136.1	126.5	118.9	113.1	124.6
77.5°	94.0	90.1	84.4	78.6	76.7
80°	61.4	59.4	57.5	55.6	53.7
82.5°	36.4	36.4	36.4	36.4	36.4
85°	19.2	21.1	23.0	24.9	26.8
87.5°	11.5	11.5	13.4	15.3	17.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)