

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: P560840

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560840
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-81-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2773.0 lumens
Efficiency: N/A
Efficacy: 64.2 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

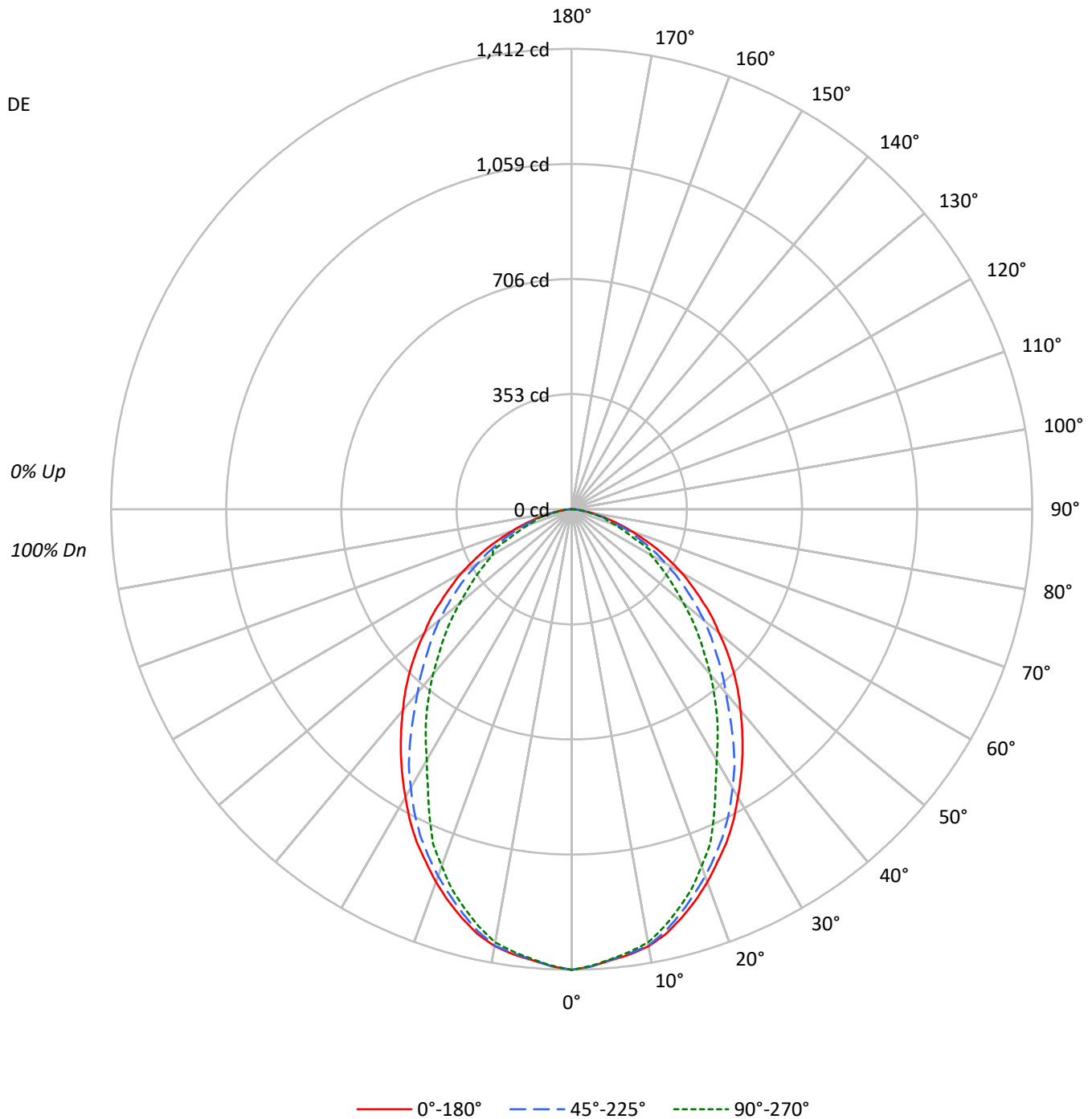
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	3801	3801	3801
5°	3749	3745	3741
10°	3717	3712	3686
15°	3617	3580	3530
20°	3484	3428	3334
25°	3341	3268	3064
30°	3166	3065	2760
35°	2999	2832	2553
40°	2828	2581	2323
45°	2666	2387	2100
50°	2468	2215	1873
55°	2283	2007	1678
60°	2091	1793	1503
65°	1840	1570	1331
70°	1516	1375	1131
75°	1205	1052	1103
80°	810	759	708
85°	503	605	707

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2666 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.5	4.7
10°-20°	360.9	13.0
20°-30°	499.6	18.0
30°-40°	532.7	19.2
40°-50°	486.0	17.5
50°-60°	380.7	13.7
60°-70°	248.1	8.9
70°-80°	109.9	4.0
80°-90°	23.6	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°	991.9	35.8
0°-40°	1524.6	55.0
0°-60°	2391.3	86.2
0°-90°	2773.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2773.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1412	1412	1412	1412	1412	
5°	1388	1386	1386	1385	1385	132
15°	1298	1298	1285	1272	1267	365
25°	1125	1119	1101	1061	1032	517
35°	913	906	862	797	777	571
45°	700	686	627	575	552	540
55°	487	472	428	377	358	436
65°	289	273	247	252	209	285
75°	116	108	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1412.5	1412.5	1412.5	1412.5	1412.5
2.5°	1402.7	1402.7	1402.7	1401.1	1401.1
5°	1388.0	1386.4	1386.4	1384.8	1384.8
7.5°	1376.6	1375.0	1373.3	1371.7	1368.4
10°	1360.3	1360.3	1358.6	1350.5	1348.8
12.5°	1334.1	1332.5	1326.0	1314.6	1311.3
15°	1298.2	1298.2	1285.2	1272.1	1267.2
17.5°	1259.0	1257.4	1241.1	1228.0	1221.5
20°	1216.6	1213.3	1197.0	1175.7	1164.3
22.5°	1169.2	1169.2	1149.6	1121.9	1110.4
25°	1125.1	1118.6	1100.6	1061.4	1032.0
27.5°	1074.5	1064.7	1045.1	989.6	955.3
30°	1019.0	1014.1	986.3	914.5	888.3
32.5°	966.7	958.6	929.2	854.0	832.8
35°	912.8	906.3	862.2	796.9	777.3
37.5°	858.9	850.8	795.3	743.0	718.5
40°	805.1	795.3	734.8	687.5	661.4
42.5°	754.4	741.4	682.6	632.0	602.6
45°	700.5	685.9	627.1	574.8	551.9
47.5°	646.7	633.6	579.7	525.8	499.7
50°	589.5	578.1	529.1	475.2	447.4
52.5°	542.1	524.2	476.8	422.9	400.1
55°	486.6	471.9	427.8	377.2	357.6
57.5°	436.0	421.3	380.5	333.1	316.8
60°	388.6	367.4	333.1	292.3	279.2
62.5°	336.4	320.1	290.7	256.4	272.7
65°	289.0	272.7	246.6	251.5	209.0
67.5°	236.8	228.6	205.8	182.9	176.4
70°	192.7	182.9	174.7	150.2	143.7
72.5°	153.5	143.7	132.3	119.2	114.3
75°	115.9	107.8	101.2	96.3	106.1
77.5°	80.0	76.8	71.9	67.0	65.3
80°	52.3	50.6	49.0	47.4	45.7
82.5°	31.0	31.0	31.0	31.0	31.0
85°	16.3	18.0	19.6	21.2	22.9
87.5°	9.8	9.8	11.4	13.1	14.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)