

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P546189

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-82-96-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P546189
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 6/15/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMR-12-4-LD4-2HI-50-UNV-82-96-EDD
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

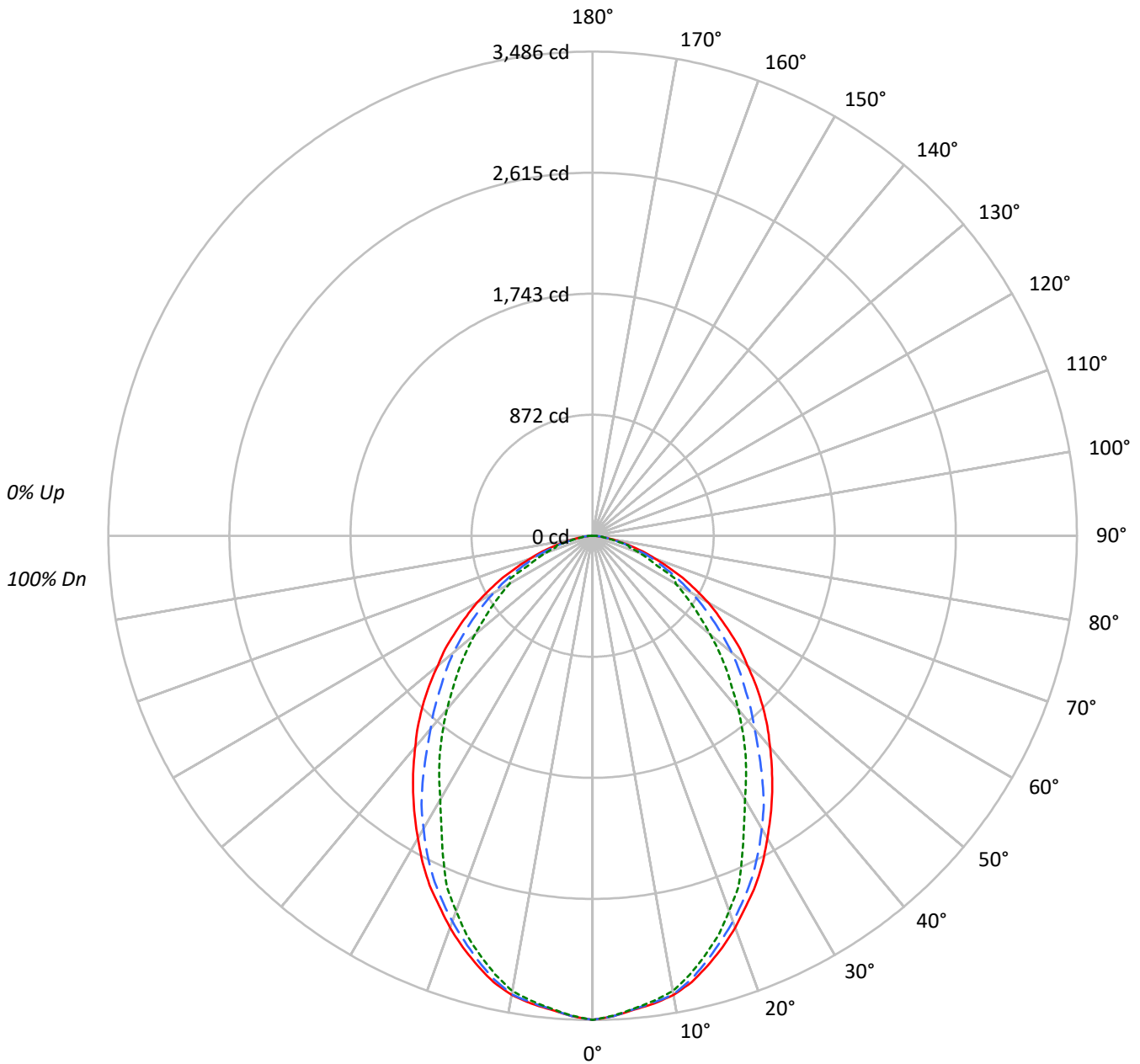
Lumens per Lamp: N/A
Luminaire Lumens: 6843.0 lumens
Efficiency: N/A
Efficacy: 79.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
Input Voltage (V): NR
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: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	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°	9380	9380	9380
5°	9253	9242	9231
10°	9172	9161	9095
15°	8925	8835	8712
20°	8597	8459	8228
25°	8244	8065	7562
30°	7814	7563	6812
35°	7400	6990	6301
40°	6979	6370	5733
45°	6579	5889	5184
50°	6090	5466	4623
55°	5634	4953	4140
60°	5162	4425	3709
65°	4542	3875	3284
70°	3741	3393	2790
75°	2975	2597	2723
80°	1999	1874	1748
85°	1244	1494	1741



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.5	4.7
10°-20°	890.5	13.0
20°-30°	1232.8	18.0
30°-40°	1314.6	19.2
40°-50°	1199.3	17.5
50°-60°	939.5	13.7
60°-70°	612.3	8.9
70°-80°	271.3	4.0
80°-90°	58.3	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°	2447.8	35.8
0°-40°	3762.4	55.0
0°-60°	5901.1	86.2
0°-90°	6843.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6843.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3486	3486	3486	3486	3486	
5°	3425	3421	3421	3417	3417	325
15°	3204	3204	3171	3139	3127	901
25°	2776	2760	2716	2619	2547	1275
35°	2253	2236	2128	1966	1918	1408
45°	1729	1692	1547	1418	1362	1332
55°	1201	1165	1056	931	882	1077
65°	713	673	608	621	516	703
75°	286	266	250	238	262	307
85°	40	44	48	52	56	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3485.7	3485.7	3485.7	3485.7	3485.7
2.5°	3461.6	3461.6	3461.6	3457.5	3457.5
5°	3425.3	3421.3	3421.3	3417.2	3417.2
7.5°	3397.1	3393.0	3389.0	3385.0	3376.9
10°	3356.8	3356.8	3352.8	3332.6	3328.6
12.5°	3292.3	3288.3	3272.2	3243.9	3235.9
15°	3203.7	3203.7	3171.4	3139.2	3127.1
17.5°	3106.9	3102.9	3062.6	3030.4	3014.3
20°	3002.2	2994.1	2953.8	2901.4	2873.2
22.5°	2885.3	2885.3	2836.9	2768.4	2740.2
25°	2776.5	2760.4	2716.1	2619.3	2546.8
27.5°	2651.6	2627.4	2579.0	2442.0	2357.4
30°	2514.6	2502.5	2434.0	2256.7	2192.2
32.5°	2385.6	2365.5	2292.9	2107.6	2055.2
35°	2252.6	2236.5	2127.7	1966.5	1918.2
37.5°	2119.6	2099.5	1962.5	1833.5	1773.1
40°	1986.7	1962.5	1813.4	1696.5	1632.0
42.5°	1861.7	1829.5	1684.4	1559.5	1487.0
45°	1728.8	1692.5	1547.4	1418.5	1362.1
47.5°	1595.8	1563.5	1430.6	1297.6	1233.1
50°	1454.7	1426.5	1305.6	1172.7	1104.2
52.5°	1337.9	1293.5	1176.7	1043.7	987.3
55°	1200.9	1164.6	1055.8	930.9	882.5
57.5°	1075.9	1039.7	938.9	822.1	781.8
60°	959.1	906.7	822.1	721.3	689.1
62.5°	830.1	789.8	717.3	632.7	673.0
65°	713.3	673.0	608.5	620.6	515.8
67.5°	584.3	564.2	507.7	451.3	435.2
70°	475.5	451.3	431.2	370.7	354.6
72.5°	378.8	354.6	326.4	294.2	282.1
75°	286.1	266.0	249.8	237.8	261.9
77.5°	197.5	189.4	177.3	165.2	161.2
80°	129.0	124.9	120.9	116.9	112.8
82.5°	76.6	76.6	76.6	76.6	76.6
85°	40.3	44.3	48.4	52.4	56.4
87.5°	24.2	24.2	28.2	32.2	36.3
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)