

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: P546177

Luminaire Tested: **FMR-12-4-LD4-2HI-50-UNV-81-86-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: P546177
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-81-86-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

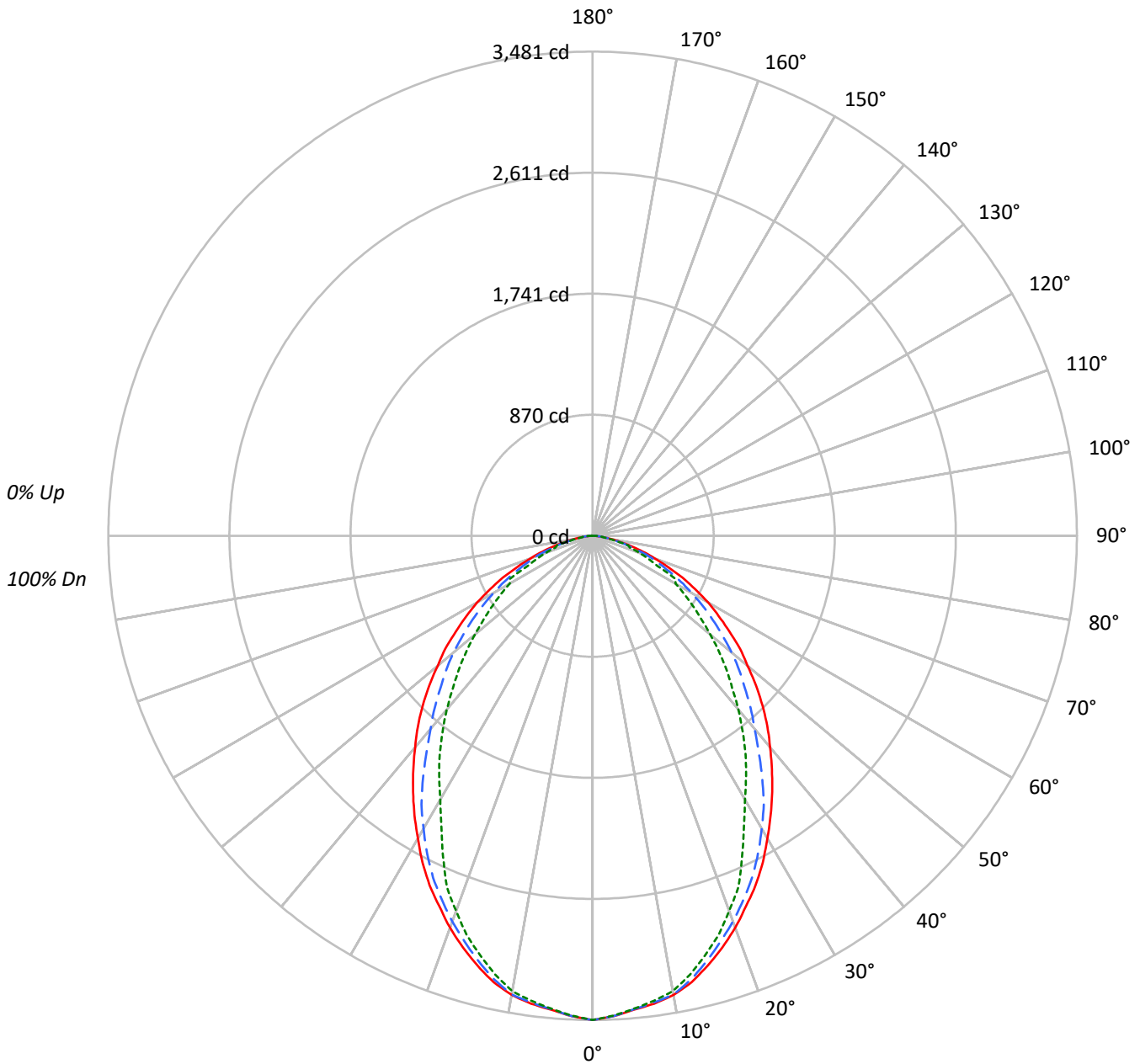
Lumens per Lamp: N/A
Luminaire Lumens: 6834.0 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 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°	9368	9368	9368
5°	9240	9230	9219
10°	9160	9149	9083
15°	8913	8824	8700
20°	8586	8448	8217
25°	8233	8054	7552
30°	7803	7553	6803
35°	7390	6980	6293
40°	6970	6362	5726
45°	6570	5881	5177
50°	6082	5459	4616
55°	5627	4947	4135
60°	5155	4419	3704
65°	4535	3869	3280
70°	3736	3388	2787
75°	2970	2594	2720
80°	1996	1870	1746
85°	1241	1491	1738



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.0	4.7
10°-20°	889.3	13.0
20°-30°	1231.2	18.0
30°-40°	1312.8	19.2
40°-50°	1197.7	17.5
50°-60°	938.3	13.7
60°-70°	611.5	8.9
70°-80°	270.9	4.0
80°-90°	58.2	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°	2444.6	35.8
0°-40°	3757.4	55.0
0°-60°	5893.4	86.2
0°-90°	6834.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6834.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3481	3481	3481	3481	3481	
5°	3421	3417	3417	3413	3413	325
15°	3199	3199	3167	3135	3123	899
25°	2773	2757	2712	2616	2544	1273
35°	2250	2234	2125	1964	1916	1406
45°	1726	1690	1545	1417	1360	1330
55°	1199	1163	1054	930	881	1076
65°	712	672	608	620	515	702
75°	286	266	250	237	262	306
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°	3481.1	3481.1	3481.1	3481.1	3481.1
2.5°	3457.0	3457.0	3457.0	3453.0	3453.0
5°	3420.8	3416.8	3416.8	3412.7	3412.7
7.5°	3392.6	3388.6	3384.6	3380.5	3372.5
10°	3352.4	3352.4	3348.3	3328.2	3324.2
12.5°	3288.0	3284.0	3267.9	3239.7	3231.6
15°	3199.4	3199.4	3167.2	3135.0	3123.0
17.5°	3102.9	3098.8	3058.6	3026.4	3010.3
20°	2998.2	2990.2	2949.9	2897.6	2869.4
22.5°	2881.5	2881.5	2833.2	2764.8	2736.6
25°	2772.8	2756.7	2712.5	2615.9	2543.5
27.5°	2648.1	2623.9	2575.6	2438.8	2354.3
30°	2511.3	2499.2	2430.8	2253.7	2189.3
32.5°	2382.5	2362.4	2289.9	2104.8	2052.5
35°	2249.7	2233.6	2124.9	1963.9	1915.6
37.5°	2116.9	2096.7	1959.9	1831.1	1770.8
40°	1984.1	1959.9	1811.0	1694.3	1629.9
42.5°	1859.3	1827.1	1682.2	1557.5	1485.0
45°	1726.5	1690.3	1545.4	1416.6	1360.3
47.5°	1593.7	1561.5	1428.7	1295.9	1231.5
50°	1452.8	1424.7	1303.9	1171.1	1102.7
52.5°	1336.1	1291.8	1175.1	1042.3	986.0
55°	1199.3	1163.1	1054.4	929.6	881.4
57.5°	1074.5	1038.3	937.7	821.0	780.7
60°	957.8	905.5	821.0	720.4	688.2
62.5°	829.0	788.8	716.4	631.8	672.1
65°	712.3	672.1	607.7	619.8	515.1
67.5°	583.5	563.4	507.1	450.7	434.6
70°	474.9	450.7	430.6	370.2	354.2
72.5°	378.3	354.2	326.0	293.8	281.7
75°	285.7	265.6	249.5	237.4	261.6
77.5°	197.2	189.1	177.1	165.0	161.0
80°	128.8	124.8	120.7	116.7	112.7
82.5°	76.5	76.5	76.5	76.5	76.5
85°	40.2	44.3	48.3	52.3	56.3
87.5°	24.1	24.1	28.2	32.2	36.2
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)