

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: P546164

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-93-94-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: P546164
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-40-UNV-93-94-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

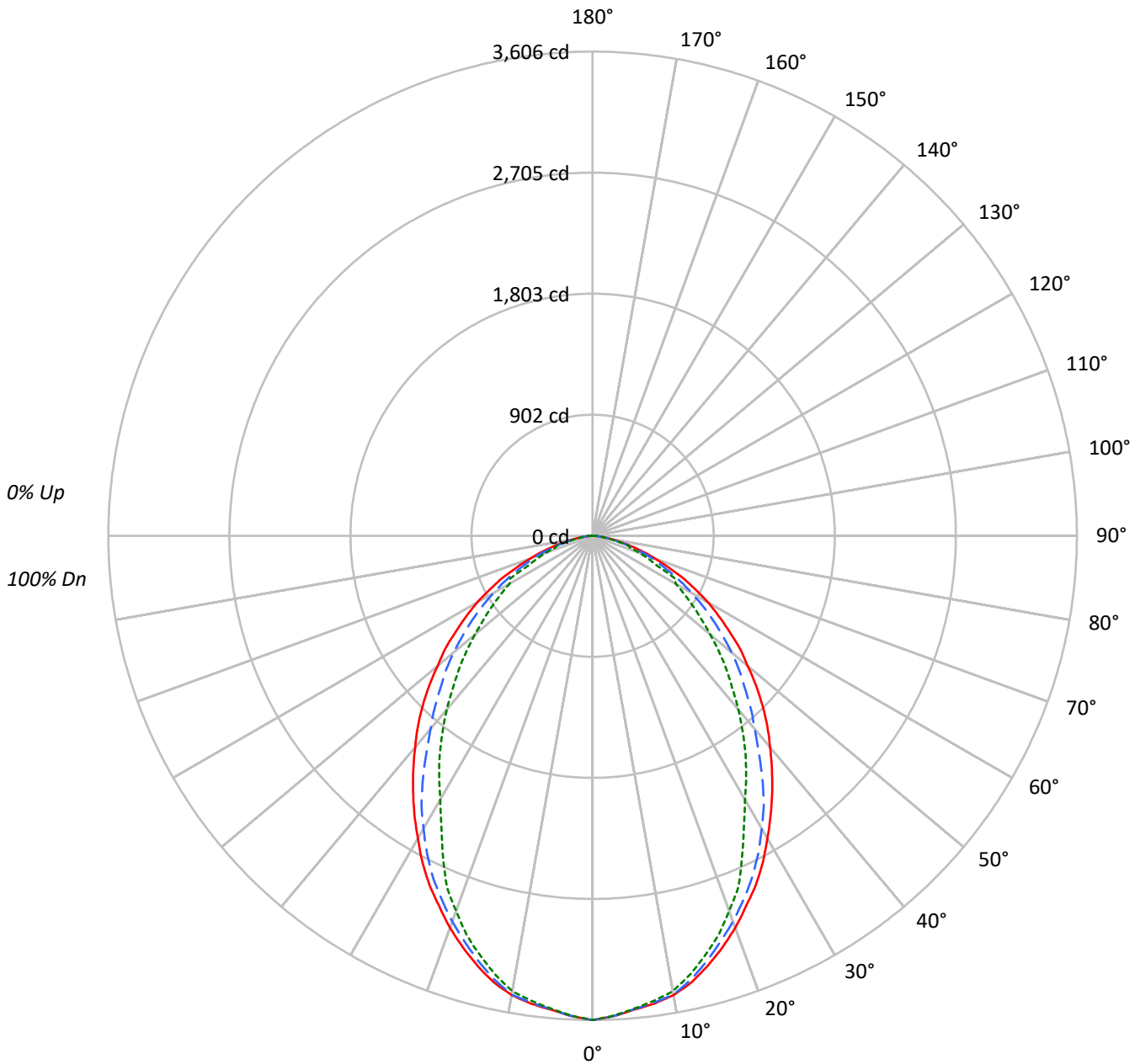
Lumens per Lamp: N/A
Luminaire Lumens: 7080.0 lumens
Efficiency: N/A
Efficacy: 81.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	9705	9705	9705
5°	9573	9562	9551
10°	9490	9479	9410
15°	9234	9141	9014
20°	8895	8752	8513
25°	8530	8344	7824
30°	8084	7825	7048
35°	7656	7232	6520
40°	7221	6591	5932
45°	6807	6093	5363
50°	6301	5655	4783
55°	5829	5125	4284
60°	5341	4577	3837
65°	4699	4009	3398
70°	3871	3510	2887
75°	3078	2688	2818
80°	2067	1939	1808
85°	1288	1544	1803



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	335.7	4.7
10°-20°	921.3	13.0
20°-30°	1275.5	18.0
30°-40°	1360.1	19.2
40°-50°	1240.8	17.5
50°-60°	972.1	13.7
60°-70°	633.6	8.9
70°-80°	280.7	4.0
80°-90°	60.3	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°	2532.6	35.8
0°-40°	3892.7	55.0
0°-60°	6105.5	86.2
0°-90°	7080.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7080.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3606	3606	3606	3606	3606	
5°	3544	3540	3540	3536	3536	336
15°	3315	3315	3281	3248	3235	932
25°	2873	2856	2810	2710	2635	1319
35°	2331	2314	2201	2035	1985	1457
45°	1789	1751	1601	1468	1409	1378
55°	1242	1205	1092	963	913	1114
65°	738	696	630	642	534	727
75°	296	275	258	246	271	317
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3606.5	3606.5	3606.5	3606.5	3606.5
2.5°	3581.4	3581.4	3581.4	3577.3	3577.3
5°	3543.9	3539.7	3539.7	3535.6	3535.6
7.5°	3514.7	3510.6	3506.4	3502.2	3493.9
10°	3473.0	3473.0	3468.9	3448.0	3443.9
12.5°	3406.3	3402.2	3385.5	3356.3	3348.0
15°	3314.6	3314.6	3281.3	3247.9	3235.4
17.5°	3214.5	3210.4	3168.7	3135.3	3118.6
20°	3106.1	3097.8	3056.1	3001.9	2972.7
22.5°	2985.2	2985.2	2935.2	2864.3	2835.1
25°	2872.7	2856.0	2810.1	2710.1	2635.0
27.5°	2743.4	2718.4	2668.4	2526.6	2439.0
30°	2601.7	2589.1	2518.3	2334.8	2268.1
32.5°	2468.2	2447.4	2372.3	2180.6	2126.4
35°	2330.6	2314.0	2201.4	2034.6	1984.6
37.5°	2193.1	2172.2	2030.5	1897.0	1834.5
40°	2055.5	2030.5	1876.2	1755.3	1688.6
42.5°	1926.2	1892.9	1742.8	1613.5	1538.5
45°	1788.6	1751.1	1601.0	1467.6	1409.2
47.5°	1651.0	1617.7	1480.1	1342.5	1275.8
50°	1505.1	1475.9	1350.9	1213.3	1142.4
52.5°	1384.2	1338.4	1217.4	1079.9	1021.5
55°	1242.5	1204.9	1092.4	963.1	913.1
57.5°	1113.2	1075.7	971.5	850.5	808.8
60°	992.3	938.1	850.5	746.3	713.0
62.5°	858.9	817.2	742.1	654.6	696.3
65°	738.0	696.3	629.6	642.1	533.7
67.5°	604.6	583.7	525.3	467.0	450.3
70°	492.0	467.0	446.1	383.6	366.9
72.5°	391.9	366.9	337.7	304.4	291.9
75°	296.0	275.2	258.5	246.0	271.0
77.5°	204.3	196.0	183.4	170.9	166.8
80°	133.4	129.2	125.1	120.9	116.7
82.5°	79.2	79.2	79.2	79.2	79.2
85°	41.7	45.9	50.0	54.2	58.4
87.5°	25.0	25.0	29.2	33.4	37.5
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)