

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: P545970

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-93-87-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: P545970
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-LD4-1LO-40-UNV-93-87-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

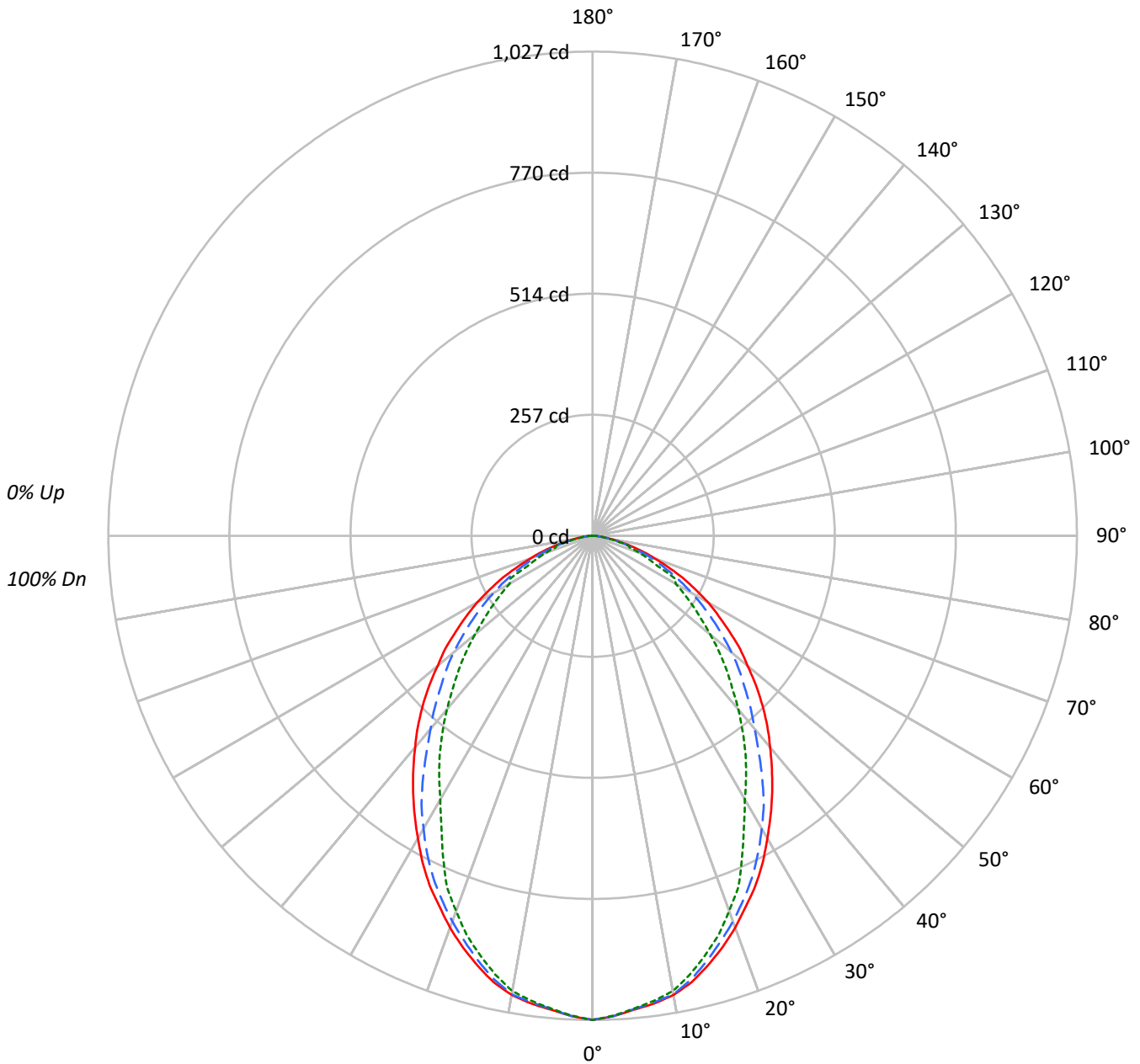
Lumens per Lamp: N/A
Luminaire Lumens: 2016.0 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
Input Voltage (V): NR
Input Current (A_{in}): 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°	2763	2763	2763
5°	2726	2723	2719
10°	2702	2699	2679
15°	2629	2603	2567
20°	2533	2492	2424
25°	2429	2376	2228
30°	2302	2228	2007
35°	2180	2059	1856
40°	2056	1877	1689
45°	1938	1735	1527
50°	1794	1611	1362
55°	1660	1459	1220
60°	1521	1304	1093
65°	1338	1142	968
70°	1102	999	822
75°	876	765	803
80°	589	552	514
85°	367	438	513



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.6	4.7
10°-20°	262.3	13.0
20°-30°	363.2	18.0
30°-40°	387.3	19.2
40°-50°	353.3	17.5
50°-60°	276.8	13.7
60°-70°	180.4	8.9
70°-80°	79.9	4.0
80°-90°	17.2	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°	721.1	35.8
0°-40°	1108.4	55.0
0°-60°	1738.5	86.2
0°-90°	2016.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2016.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1027	1027	1027	1027	1027	
5°	1009	1008	1008	1007	1007	96
15°	944	944	934	925	921	265
25°	818	813	800	772	750	376
35°	664	659	627	579	565	415
45°	509	499	456	418	401	392
55°	354	343	311	274	260	317
65°	210	198	179	183	152	207
75°	84	78	74	70	77	90
85°	12	13	14	15	17	16
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1026.9	1026.9	1026.9	1026.9	1026.9
2.5°	1019.8	1019.8	1019.8	1018.6	1018.6
5°	1009.1	1007.9	1007.9	1006.7	1006.7
7.5°	1000.8	999.6	998.4	997.2	994.9
10°	988.9	988.9	987.7	981.8	980.6
12.5°	969.9	968.8	964.0	955.7	953.3
15°	943.8	943.8	934.3	924.8	921.3
17.5°	915.3	914.1	902.3	892.8	888.0
20°	884.5	882.1	870.2	854.8	846.5
22.5°	850.0	850.0	835.8	815.6	807.3
25°	818.0	813.2	800.2	771.7	750.3
27.5°	781.2	774.1	759.8	719.4	694.5
30°	740.8	737.2	717.1	664.8	645.8
32.5°	702.8	696.9	675.5	620.9	605.5
35°	663.6	658.9	626.8	579.4	565.1
37.5°	624.5	618.5	578.2	540.2	522.4
40°	585.3	578.2	534.2	499.8	480.8
42.5°	548.5	539.0	496.2	459.4	438.1
45°	509.3	498.6	455.9	417.9	401.3
47.5°	470.1	460.6	421.5	382.3	363.3
50°	428.6	420.3	384.7	345.5	325.3
52.5°	394.1	381.1	346.7	307.5	290.9
55°	353.8	343.1	311.0	274.2	260.0
57.5°	317.0	306.3	276.6	242.2	230.3
60°	282.6	267.1	242.2	212.5	203.0
62.5°	244.6	232.7	211.3	186.4	198.3
65°	210.1	198.3	179.3	182.8	152.0
67.5°	172.1	166.2	149.6	133.0	128.2
70°	140.1	133.0	127.0	109.2	104.5
72.5°	111.6	104.5	96.2	86.7	83.1
75°	84.3	78.4	73.6	70.0	77.2
77.5°	58.2	55.8	52.2	48.7	47.5
80°	38.0	36.8	35.6	34.4	33.2
82.5°	22.6	22.6	22.6	22.6	22.6
85°	11.9	13.1	14.2	15.4	16.6
87.5°	7.1	7.1	8.3	9.5	10.7
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)