

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: P545968

Luminaire Tested: **FMR-12-4-LD4-1LO-40-UNV-93-85-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: P545968
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-93-85-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

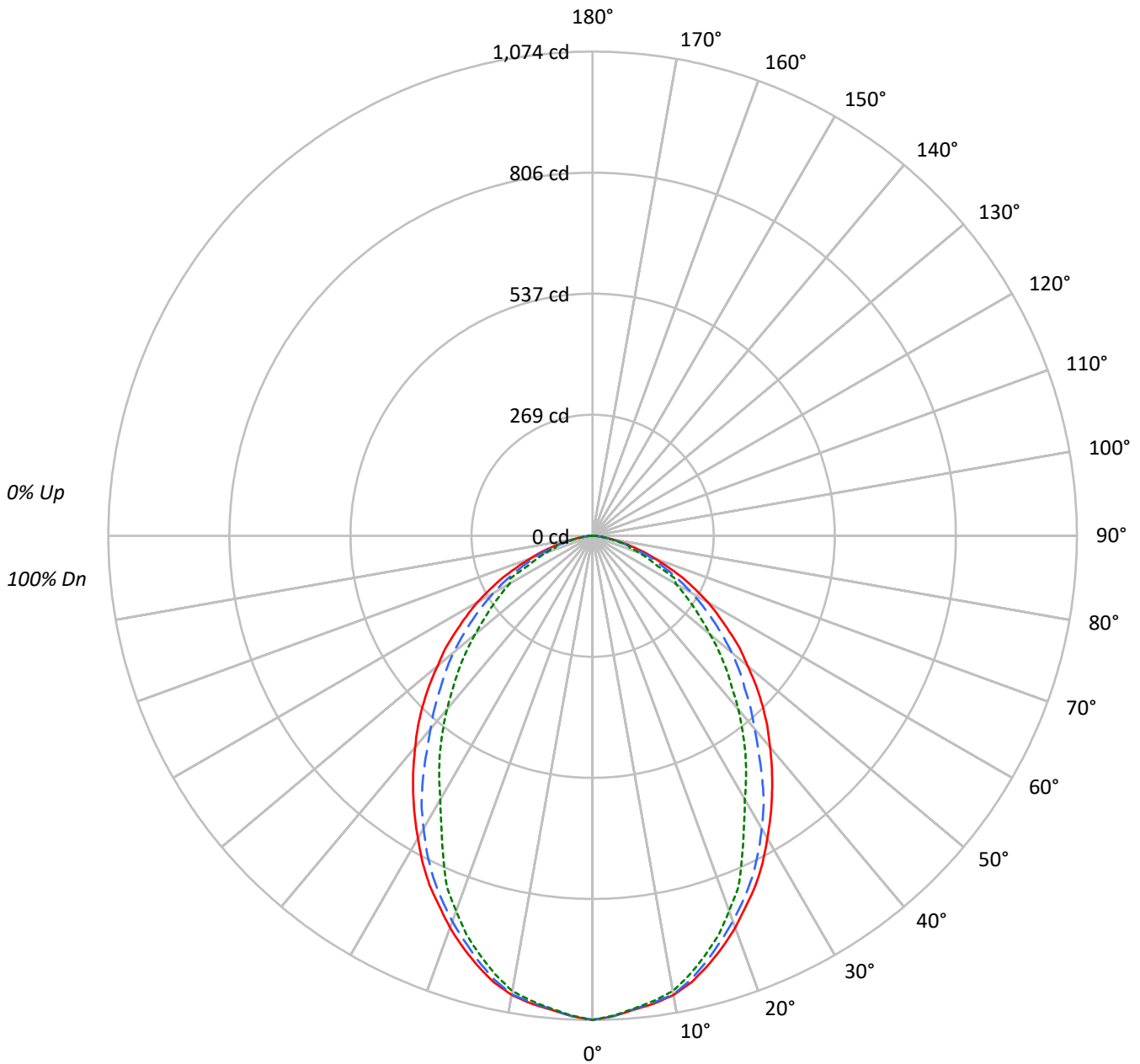
Lumens per Lamp: N/A
Luminaire Lumens: 2108.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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°	2890	2890	2890
5°	2850	2847	2844
10°	2826	2822	2802
15°	2749	2722	2684
20°	2648	2606	2535
25°	2540	2484	2329
30°	2407	2330	2098
35°	2280	2153	1941
40°	2150	1962	1766
45°	2026	1814	1597
50°	1876	1684	1424
55°	1735	1526	1276
60°	1590	1363	1143
65°	1399	1193	1012
70°	1153	1045	859
75°	916	801	839
80°	615	576	539
85°	383	460	537



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.0	4.7
10°-20°	274.3	13.0
20°-30°	379.8	18.0
30°-40°	404.9	19.2
40°-50°	369.4	17.5
50°-60°	289.4	13.7
60°-70°	188.6	8.9
70°-80°	83.6	4.0
80°-90°	17.9	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°	754.0	35.8
0°-40°	1159.0	55.0
0°-60°	1817.8	86.2
0°-90°	2108.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2108.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1074	1074	1074	1074	1074	
5°	1055	1054	1054	1053	1053	100
15°	987	987	977	967	963	277
25°	855	850	837	807	784	393
35°	694	689	655	606	591	434
45°	532	521	477	437	420	410
55°	370	359	325	287	272	332
65°	220	207	187	191	159	217
75°	88	82	77	73	81	94
85°	12	14	15	16	17	17
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1073.8	1073.8	1073.8	1073.8	1073.8
2.5°	1066.3	1066.3	1066.3	1065.1	1065.1
5°	1055.2	1053.9	1053.9	1052.7	1052.7
7.5°	1046.5	1045.2	1044.0	1042.8	1040.3
10°	1034.1	1034.1	1032.8	1026.6	1025.4
12.5°	1014.2	1013.0	1008.0	999.3	996.8
15°	986.9	986.9	977.0	967.0	963.3
17.5°	957.1	955.9	943.4	933.5	928.5
20°	924.8	922.3	909.9	893.8	885.1
22.5°	888.8	888.8	873.9	852.8	844.1
25°	855.3	850.3	836.7	806.9	784.5
27.5°	816.8	809.4	794.5	752.3	726.2
30°	774.6	770.9	749.8	695.2	675.3
32.5°	734.9	728.7	706.3	649.2	633.1
35°	693.9	689.0	655.4	605.8	590.9
37.5°	653.0	646.8	604.5	564.8	546.2
40°	612.0	604.5	558.6	522.6	502.8
42.5°	573.5	563.6	518.9	480.4	458.1
45°	532.5	521.4	476.7	437.0	419.6
47.5°	491.6	481.7	440.7	399.7	379.9
50°	448.1	439.4	402.2	361.2	340.1
52.5°	412.1	398.5	362.5	321.5	304.1
55°	369.9	358.8	325.2	286.8	271.9
57.5°	331.4	320.3	289.2	253.2	240.8
60°	295.4	279.3	253.2	222.2	212.3
62.5°	255.7	243.3	221.0	194.9	207.3
65°	219.7	207.3	187.4	191.2	158.9
67.5°	180.0	173.8	156.4	139.0	134.1
70°	146.5	139.0	132.8	114.2	109.2
72.5°	116.7	109.2	100.6	90.6	86.9
75°	88.1	81.9	77.0	73.2	80.7
77.5°	60.8	58.3	54.6	50.9	49.7
80°	39.7	38.5	37.2	36.0	34.8
82.5°	23.6	23.6	23.6	23.6	23.6
85°	12.4	13.7	14.9	16.1	17.4
87.5°	7.4	7.4	8.7	9.9	11.2
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)