

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: P546049

Luminaire Tested: **FMR-12-4-LD4-1STD-40-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: P546049
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-LD4-1STD-40-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 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

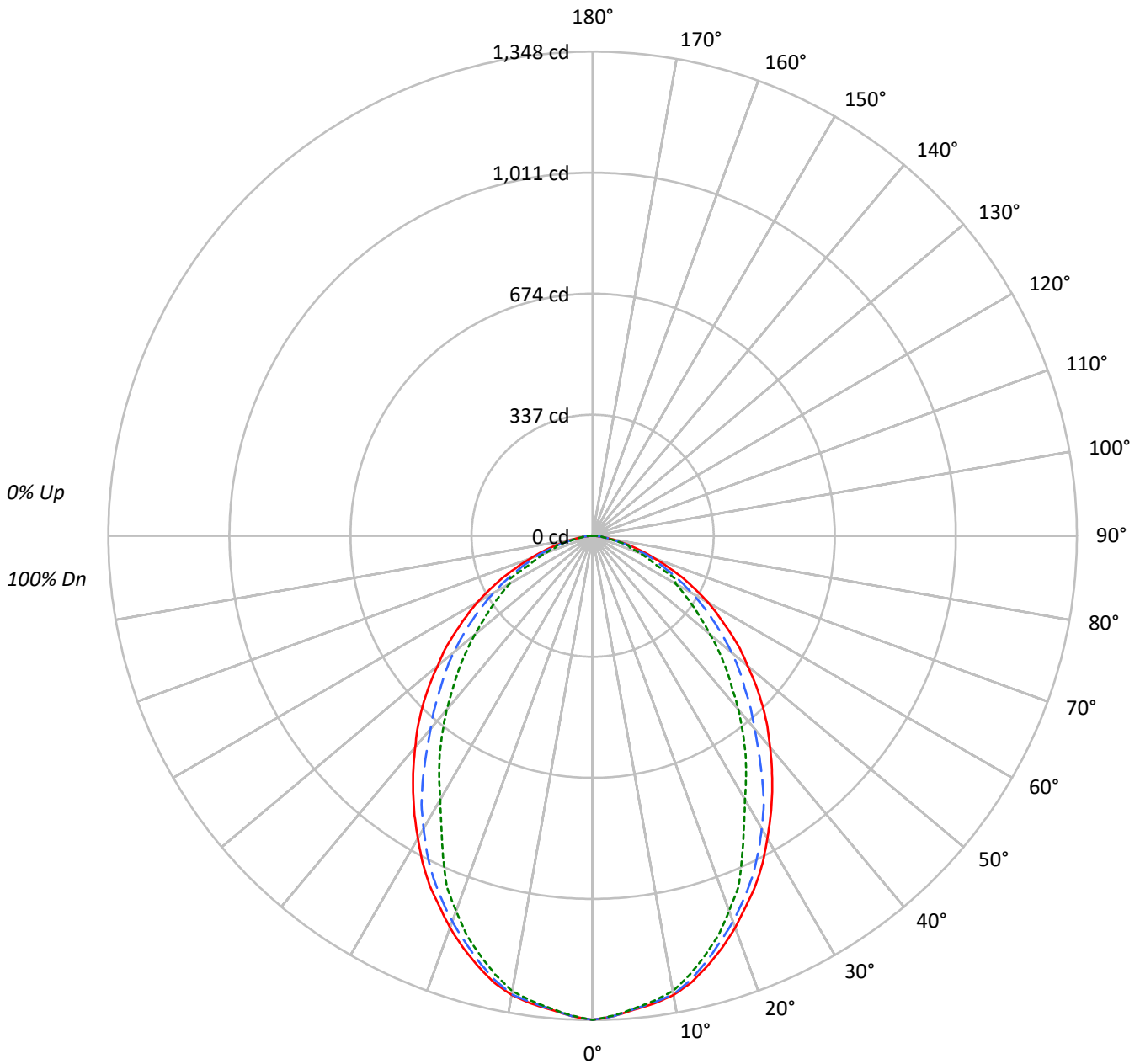
Lumens per Lamp: N/A
Luminaire Lumens: 2646.0 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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°	3627	3627	3627
5°	3578	3573	3569
10°	3547	3542	3517
15°	3451	3416	3369
20°	3324	3271	3182
25°	3188	3118	2924
30°	3021	2924	2634
35°	2861	2703	2437
40°	2699	2463	2217
45°	2544	2277	2004
50°	2355	2114	1787
55°	2178	1915	1601
60°	1996	1711	1434
65°	1756	1498	1270
70°	1447	1312	1079
75°	1150	1004	1053
80°	773	724	676
85°	482	577	673



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.5	4.7
10°-20°	344.3	13.0
20°-30°	476.7	18.0
30°-40°	508.3	19.2
40°-50°	463.7	17.5
50°-60°	363.3	13.7
60°-70°	236.8	8.9
70°-80°	104.9	4.0
80°-90°	22.5	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°	946.5	35.8
0°-40°	1454.8	55.0
0°-60°	2281.8	86.2
0°-90°	2646.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2646.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1324	1323	1323	1321	1321	126
15°	1239	1239	1226	1214	1209	348
25°	1074	1067	1050	1013	985	493
35°	871	865	823	760	742	545
45°	668	654	598	548	527	515
55°	464	450	408	360	341	416
65°	276	260	235	240	199	272
75°	111	103	97	92	101	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.8	1347.8	1347.8	1347.8	1347.8
2.5°	1338.5	1338.5	1338.5	1336.9	1336.9
5°	1324.5	1322.9	1322.9	1321.3	1321.3
7.5°	1313.6	1312.0	1310.4	1308.9	1305.8
10°	1298.0	1298.0	1296.4	1288.6	1287.1
12.5°	1273.0	1271.5	1265.3	1254.3	1251.2
15°	1238.8	1238.8	1226.3	1213.8	1209.2
17.5°	1201.4	1199.8	1184.2	1171.8	1165.5
20°	1160.9	1157.7	1142.2	1121.9	1111.0
22.5°	1115.7	1115.7	1097.0	1070.5	1059.6
25°	1073.6	1067.4	1050.2	1012.8	984.8
27.5°	1025.3	1015.9	997.2	944.3	911.5
30°	972.3	967.6	941.1	872.6	847.7
32.5°	922.5	914.7	886.6	814.9	794.7
35°	871.0	864.8	822.7	760.4	741.7
37.5°	819.6	811.8	758.8	709.0	685.6
40°	768.2	758.8	701.2	656.0	631.1
42.5°	719.9	707.4	651.3	603.0	575.0
45°	668.5	654.4	598.3	548.5	526.7
47.5°	617.0	604.6	553.2	501.7	476.8
50°	562.5	551.6	504.9	453.4	426.9
52.5°	517.3	500.2	455.0	403.6	381.8
55°	464.3	450.3	408.2	359.9	341.2
57.5°	416.0	402.0	363.1	317.9	302.3
60°	370.8	350.6	317.9	278.9	266.5
62.5°	321.0	305.4	277.4	244.6	260.2
65°	275.8	260.2	235.3	240.0	199.4
67.5°	225.9	218.1	196.3	174.5	168.3
70°	183.9	174.5	166.7	143.4	137.1
72.5°	146.5	137.1	126.2	113.7	109.1
75°	110.6	102.8	96.6	91.9	101.3
77.5°	76.4	73.2	68.6	63.9	62.3
80°	49.9	48.3	46.7	45.2	43.6
82.5°	29.6	29.6	29.6	29.6	29.6
85°	15.6	17.1	18.7	20.3	21.8
87.5°	9.3	9.3	10.9	12.5	14.0
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)