

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: P546019

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-81-88-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: P546019
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-35-UNV-81-88-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

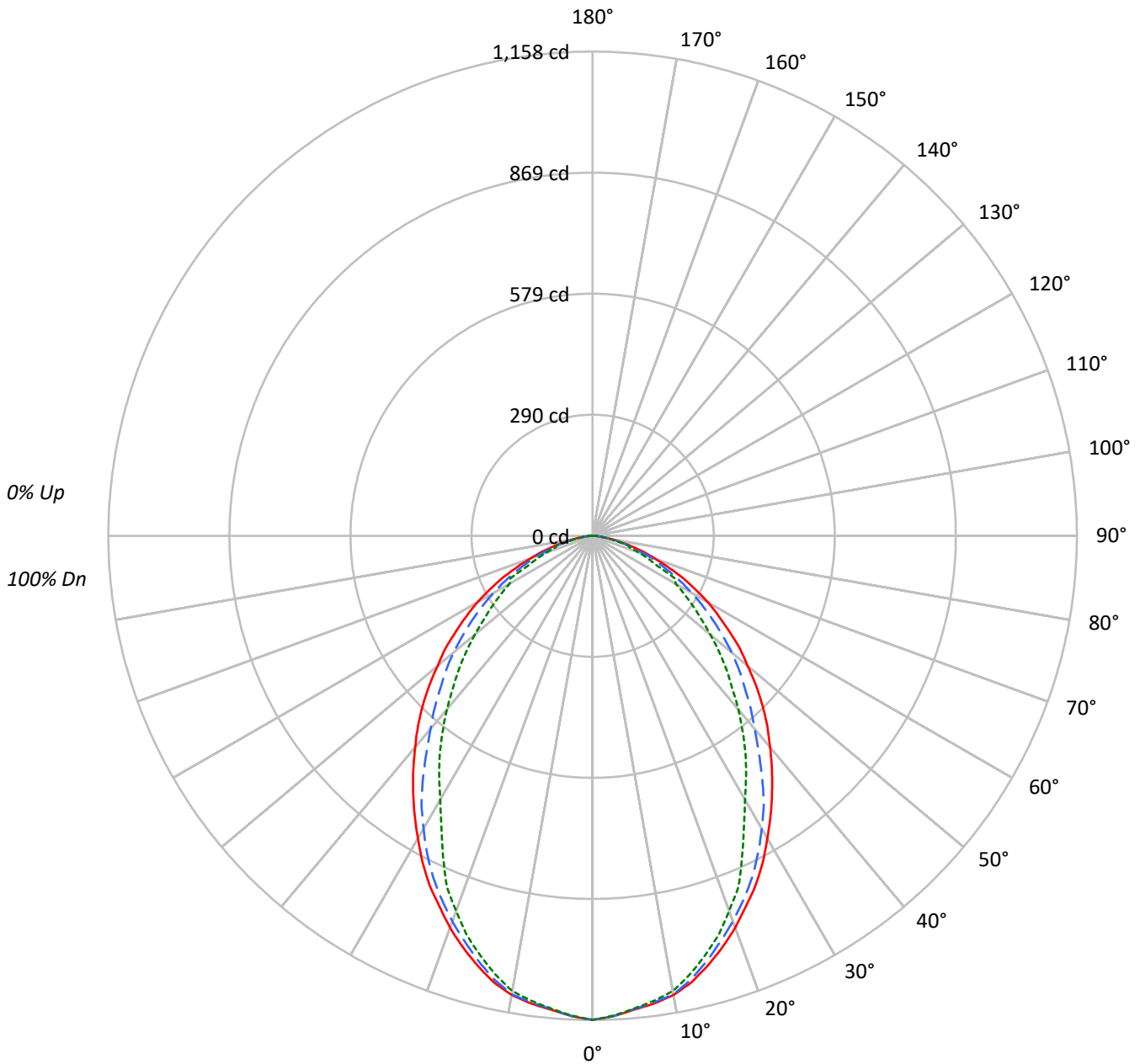
Lumens per Lamp: N/A
Luminaire Lumens: 2273.0 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3116	3116	3116
5°	3073	3070	3066
10°	3047	3043	3021
15°	2964	2935	2894
20°	2856	2810	2733
25°	2738	2679	2512
30°	2595	2512	2263
35°	2458	2322	2093
40°	2318	2116	1904
45°	2185	1956	1722
50°	2023	1816	1536
55°	1871	1645	1375
60°	1715	1470	1232
65°	1508	1287	1091
70°	1242	1127	927
75°	988	863	905
80°	663	623	581
85°	414	497	577



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.8	4.7
10°-20°	295.8	13.0
20°-30°	409.5	18.0
30°-40°	436.6	19.2
40°-50°	398.4	17.5
50°-60°	312.1	13.7
60°-70°	203.4	8.9
70°-80°	90.1	4.0
80°-90°	19.3	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°	813.1	35.8
0°-40°	1249.7	55.0
0°-60°	1960.1	86.2
0°-90°	2273.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2273.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1158	1158	1158	1158	1158	
5°	1138	1136	1136	1135	1135	108
15°	1064	1064	1053	1043	1039	299
25°	922	917	902	870	846	423
35°	748	743	707	653	637	468
45°	574	562	514	471	452	442
55°	399	387	351	309	293	358
65°	237	224	202	206	171	233
75°	95	88	83	79	87	102
85°	13	15	16	17	19	19
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1157.8	1157.8	1157.8	1157.8	1157.8
2.5°	1149.8	1149.8	1149.8	1148.5	1148.5
5°	1137.8	1136.4	1136.4	1135.1	1135.1
7.5°	1128.4	1127.0	1125.7	1124.4	1121.7
10°	1115.0	1115.0	1113.7	1107.0	1105.6
12.5°	1093.6	1092.2	1086.9	1077.5	1074.8
15°	1064.1	1064.1	1053.4	1042.7	1038.7
17.5°	1032.0	1030.7	1017.3	1006.6	1001.2
20°	997.2	994.5	981.1	963.7	954.4
22.5°	958.4	958.4	942.3	919.6	910.2
25°	922.3	916.9	902.2	870.1	846.0
27.5°	880.8	872.7	856.7	811.2	783.0
30°	835.2	831.2	808.5	749.6	728.2
32.5°	792.4	785.7	761.6	700.1	682.7
35°	748.2	742.9	706.7	653.2	637.1
37.5°	704.1	697.4	651.9	609.0	589.0
40°	659.9	651.9	602.3	563.5	542.1
42.5°	618.4	607.7	559.5	518.0	493.9
45°	574.2	562.2	514.0	471.2	452.4
47.5°	530.1	519.4	475.2	431.0	409.6
50°	483.2	473.8	433.7	389.5	366.8
52.5°	444.4	429.7	390.9	346.7	327.9
55°	398.9	386.8	350.7	309.2	293.1
57.5°	357.4	345.3	311.9	273.1	259.7
60°	318.6	301.2	273.1	239.6	228.9
62.5°	275.7	262.4	238.3	210.2	223.5
65°	236.9	223.5	202.1	206.1	171.3
67.5°	194.1	187.4	168.7	149.9	144.6
70°	157.9	149.9	143.2	123.1	117.8
72.5°	125.8	117.8	108.4	97.7	93.7
75°	95.0	88.3	83.0	79.0	87.0
77.5°	65.6	62.9	58.9	54.9	53.5
80°	42.8	41.5	40.2	38.8	37.5
82.5°	25.4	25.4	25.4	25.4	25.4
85°	13.4	14.7	16.1	17.4	18.7
87.5°	8.0	8.0	9.4	10.7	12.0
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)