

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: P545834

Luminaire Tested: **FMR-12-4-LD4-1HI-35-UNV-82-87-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: P545834
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-LD4-1HI-35-UNV-82-87-EDD
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

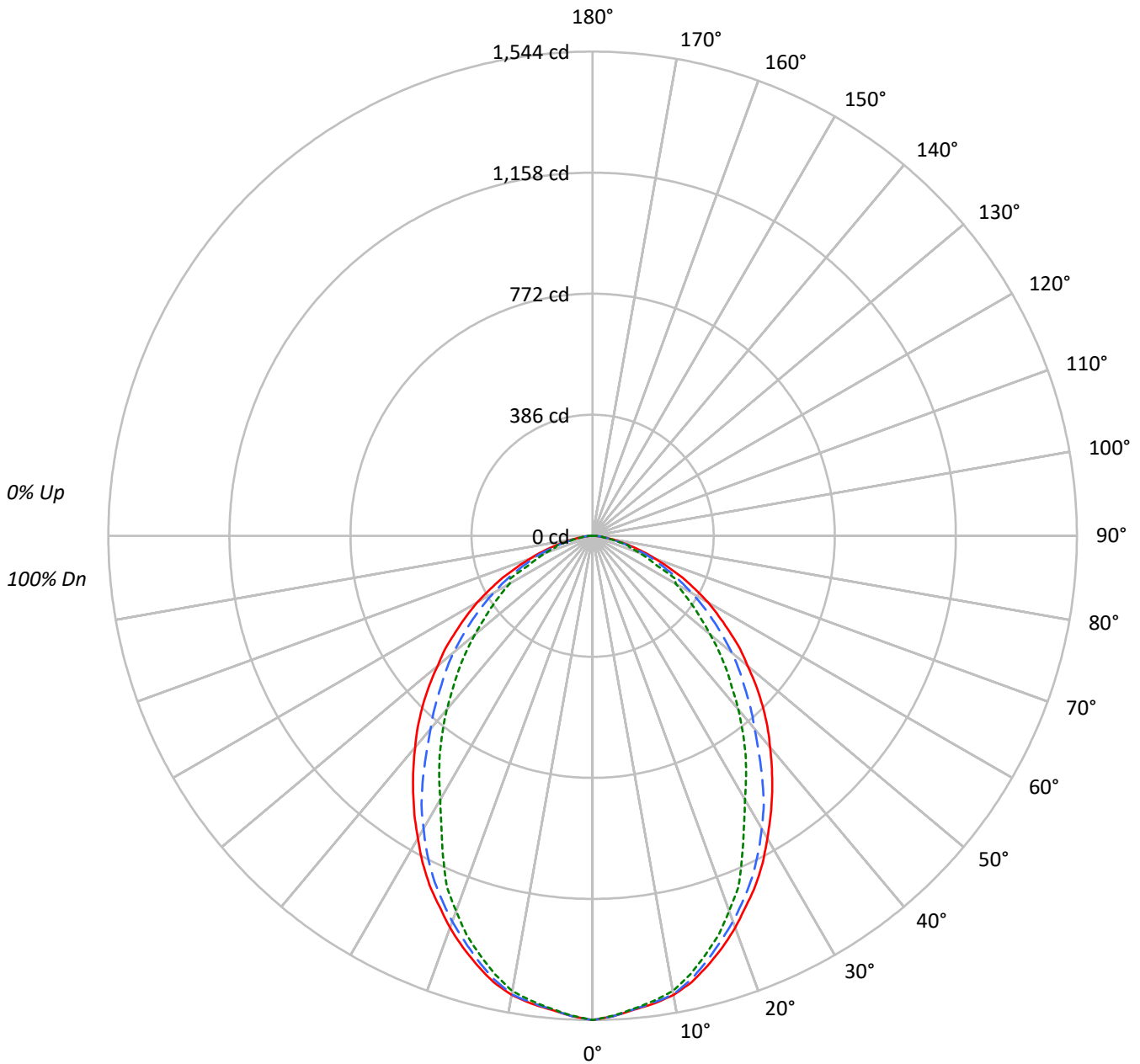
Lumens per Lamp: N/A
Luminaire Lumens: 3031.0 lumens
Efficiency: N/A
Efficacy: 70.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 43.2
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

TEST NUMBER: P545834

CATALOG NUMBER: FMR-12-4-LD4-1HI-35-UNV-82-87-EDD

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°	4155	4155	4155
5°	4098	4093	4089
10°	4063	4058	4029
15°	3953	3913	3859
20°	3808	3747	3644
25°	3651	3572	3350
30°	3461	3350	3017
35°	3278	3096	2791
40°	3091	2821	2539
45°	2914	2608	2296
50°	2698	2421	2048
55°	2495	2194	1834
60°	2286	1960	1643
65°	2011	1716	1455
70°	1657	1503	1236
75°	1317	1151	1206
80°	885	829	775
85°	550	661	772



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.7	4.7
10°-20°	394.4	13.0
20°-30°	546.1	18.0
30°-40°	582.3	19.2
40°-50°	531.2	17.5
50°-60°	416.1	13.7
60°-70°	271.2	8.9
70°-80°	120.2	4.0
80°-90°	25.8	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°	1084.2	35.8
0°-40°	1666.5	55.0
0°-60°	2613.8	86.2
0°-90°	3031.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3031.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1544	1544	1544	1544	1544	
5°	1517	1515	1515	1514	1514	144
15°	1419	1419	1405	1390	1385	399
25°	1230	1223	1203	1160	1128	565
35°	998	991	942	871	850	624
45°	766	750	685	628	603	590
55°	532	516	468	412	391	477
65°	316	298	270	275	228	311
75°	127	118	111	105	116	136
85°	18	20	21	23	25	25
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1544.0	1544.0	1544.0	1544.0	1544.0
2.5°	1533.2	1533.2	1533.2	1531.5	1531.5
5°	1517.2	1515.4	1515.4	1513.6	1513.6
7.5°	1504.7	1502.9	1501.1	1499.3	1495.8
10°	1486.8	1486.8	1485.0	1476.1	1474.3
12.5°	1458.3	1456.5	1449.4	1436.9	1433.3
15°	1419.0	1419.0	1404.7	1390.4	1385.1
17.5°	1376.2	1374.4	1356.5	1342.3	1335.1
20°	1329.8	1326.2	1308.3	1285.1	1272.6
22.5°	1278.0	1278.0	1256.6	1226.2	1213.7
25°	1229.8	1222.7	1203.0	1160.2	1128.1
27.5°	1174.5	1163.8	1142.3	1081.7	1044.2
30°	1113.8	1108.4	1078.1	999.6	971.0
32.5°	1056.7	1047.7	1015.6	933.5	910.3
35°	997.8	990.6	942.4	871.0	849.6
37.5°	938.9	929.9	869.3	812.1	785.4
40°	880.0	869.3	803.2	751.4	722.9
42.5°	824.6	810.4	746.1	690.8	658.6
45°	765.7	749.7	685.4	628.3	603.3
47.5°	706.8	692.5	633.6	574.7	546.2
50°	644.4	631.9	578.3	519.4	489.1
52.5°	592.6	573.0	521.2	462.3	437.3
55°	531.9	515.8	467.6	412.3	390.9
57.5°	476.6	460.5	415.9	364.1	346.3
60°	424.8	401.6	364.1	319.5	305.2
62.5°	367.7	349.8	317.7	280.2	298.1
65°	315.9	298.1	269.5	274.9	228.5
67.5°	258.8	249.9	224.9	199.9	192.8
70°	210.6	199.9	191.0	164.2	157.1
72.5°	167.8	157.1	144.6	130.3	124.9
75°	126.7	117.8	110.7	105.3	116.0
77.5°	87.5	83.9	78.5	73.2	71.4
80°	57.1	55.3	53.5	51.8	50.0
82.5°	33.9	33.9	33.9	33.9	33.9
85°	17.8	19.6	21.4	23.2	25.0
87.5°	10.7	10.7	12.5	14.3	16.1
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)