

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: P546097

Luminaire Tested: **FMR-12-4-LD4-1STD-50-UNV-93-86-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: P546097
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-50-UNV-93-86-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

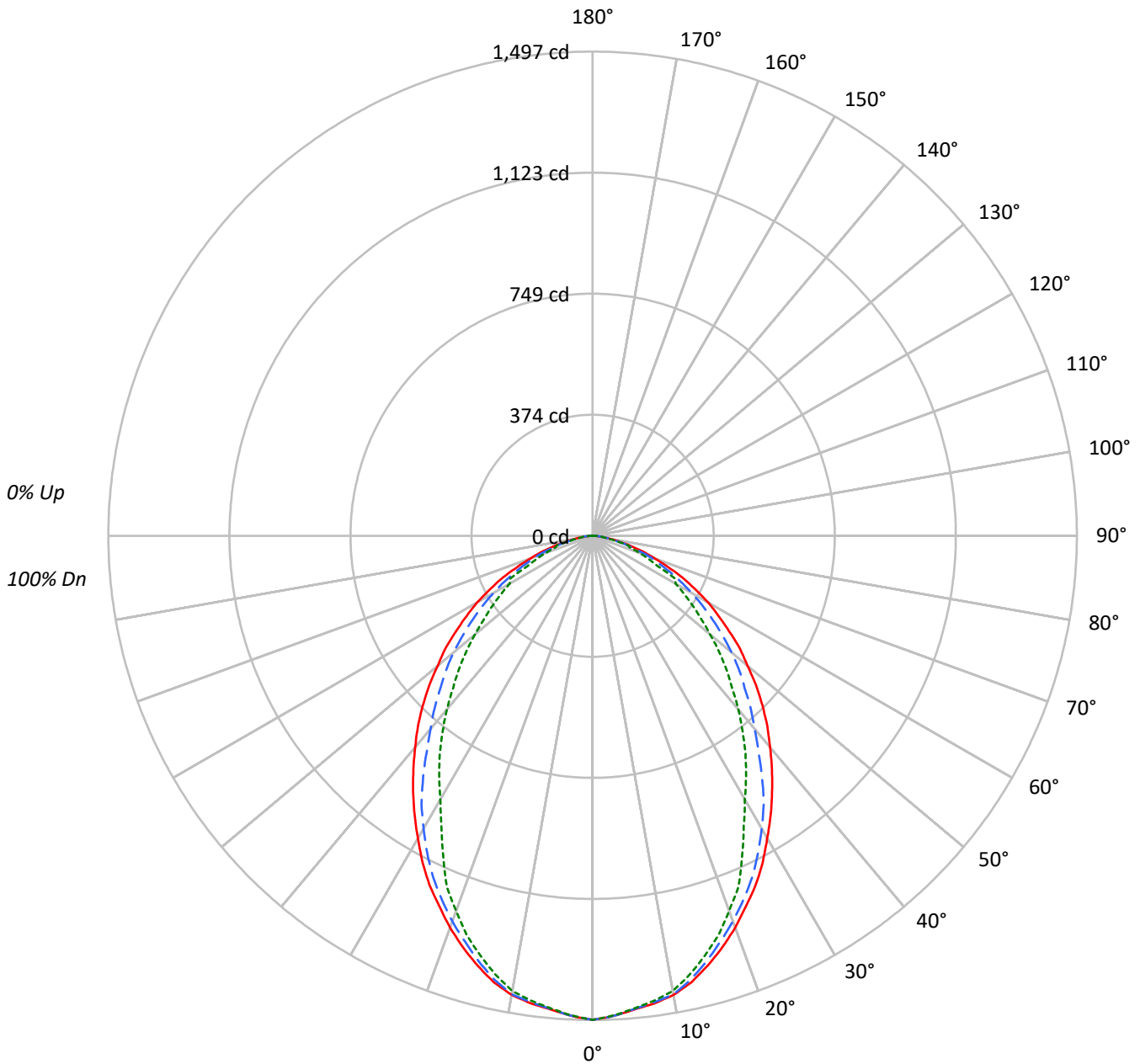
Lumens per Lamp: N/A
Luminaire Lumens: 2938.0 lumens
Efficiency: N/A
Efficacy: 88.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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°	4027	4027	4027
5°	3972	3968	3963
10°	3938	3933	3905
15°	3832	3793	3740
20°	3691	3632	3533
25°	3540	3462	3247
30°	3355	3247	2925
35°	3177	3001	2706
40°	2996	2735	2461
45°	2825	2528	2226
50°	2615	2347	1985
55°	2419	2127	1778
60°	2216	1900	1593
65°	1950	1664	1410
70°	1607	1456	1198
75°	1277	1116	1170
80°	859	804	750
85°	534	642	747



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.3	4.7
10°-20°	382.3	13.0
20°-30°	529.3	18.0
30°-40°	564.4	19.2
40°-50°	514.9	17.5
50°-60°	403.4	13.7
60°-70°	262.9	8.9
70°-80°	116.5	4.0
80°-90°	25.0	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°	1051.0	35.8
0°-40°	1615.4	55.0
0°-60°	2533.6	86.2
0°-90°	2938.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2938.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1497	1497	1497	1497	1497	
5°	1471	1469	1469	1467	1467	140
15°	1376	1376	1362	1348	1343	387
25°	1192	1185	1166	1125	1094	547
35°	967	960	914	844	824	605
45°	742	727	664	609	585	572
55°	516	500	453	400	379	462
65°	306	289	261	266	222	302
75°	123	114	107	102	112	132
85°	17	19	21	22	24	24
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1496.6	1496.6	1496.6	1496.6	1496.6
2.5°	1486.2	1486.2	1486.2	1484.5	1484.5
5°	1470.6	1468.9	1468.9	1467.2	1467.2
7.5°	1458.5	1456.8	1455.1	1453.3	1449.9
10°	1441.2	1441.2	1439.5	1430.8	1429.1
12.5°	1413.5	1411.8	1404.9	1392.8	1389.3
15°	1375.5	1375.5	1361.6	1347.8	1342.6
17.5°	1333.9	1332.2	1314.9	1301.1	1294.2
20°	1289.0	1285.5	1268.2	1245.7	1233.6
22.5°	1238.8	1238.8	1218.0	1188.6	1176.5
25°	1192.1	1185.2	1166.1	1124.6	1093.5
27.5°	1138.4	1128.1	1107.3	1048.5	1012.1
30°	1079.6	1074.4	1045.0	968.9	941.2
32.5°	1024.2	1015.6	984.5	904.9	882.4
35°	967.2	960.2	913.5	844.3	823.6
37.5°	910.1	901.4	842.6	787.2	761.3
40°	853.0	842.6	778.6	728.4	700.7
42.5°	799.3	785.5	723.2	669.6	638.4
45°	742.2	726.7	664.4	609.0	584.8
47.5°	685.1	671.3	614.2	557.1	529.4
50°	624.6	612.5	560.6	503.5	474.1
52.5°	574.4	555.4	505.2	448.1	423.9
55°	515.6	500.0	453.3	399.7	378.9
57.5°	461.9	446.4	403.1	353.0	335.6
60°	411.8	389.3	353.0	309.7	295.9
62.5°	356.4	339.1	308.0	271.6	288.9
65°	306.2	288.9	261.3	266.4	221.5
67.5°	250.9	242.2	218.0	193.8	186.9
70°	204.2	193.8	185.1	159.2	152.3
72.5°	162.6	152.3	140.1	126.3	121.1
75°	122.8	114.2	107.3	102.1	112.5
77.5°	84.8	81.3	76.1	70.9	69.2
80°	55.4	53.6	51.9	50.2	48.4
82.5°	32.9	32.9	32.9	32.9	32.9
85°	17.3	19.0	20.8	22.5	24.2
87.5°	10.4	10.4	12.1	13.8	15.6
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)