

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: P545830

Luminaire Tested: **FMR-12-4-LD4-1HI-35-UNV-81-97-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: P545830  
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-81-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

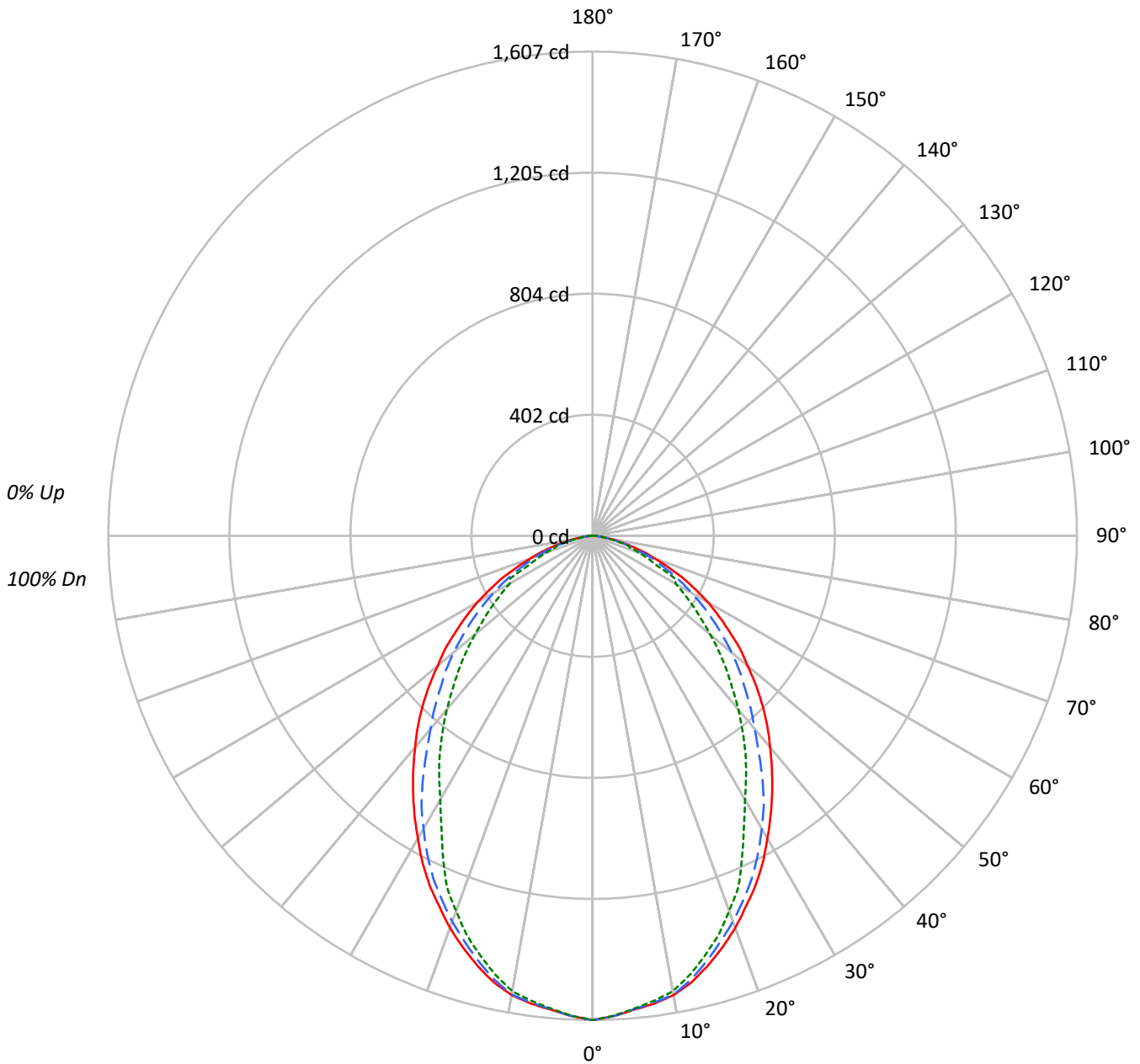
Lumens per Lamp: N/A  
Luminaire Lumens: 3155.0 lumens  
Efficiency: N/A  
Efficacy: 73.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

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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°	4325	4325	4325
5°	4266	4261	4256
10°	4229	4224	4194
15°	4115	4074	4017
20°	3964	3900	3794
25°	3801	3718	3486
30°	3603	3487	3141
35°	3412	3223	2905
40°	3218	2937	2643
45°	3033	2715	2390
50°	2808	2520	2131
55°	2598	2284	1909
60°	2380	2040	1710
65°	2094	1786	1514
70°	1725	1564	1286
75°	1371	1198	1256
80°	922	863	806
85°	574	689	803



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.6	4.7
10°-20°	410.6	13.0
20°-30°	568.4	18.0
30°-40°	606.1	19.2
40°-50°	552.9	17.5
50°-60°	433.2	13.7
60°-70°	282.3	8.9
70°-80°	125.1	4.0
80°-90°	26.9	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°	1128.6	35.8
0°-40°	1734.7	55.0
0°-60°	2720.8	86.2
0°-90°	3155.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3155.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1607	1607	1607	1607	1607	
5°	1579	1577	1577	1576	1576	150
15°	1477	1477	1462	1447	1442	415
25°	1280	1273	1252	1208	1174	588
35°	1039	1031	981	907	884	649
45°	797	780	713	654	628	614
55°	554	537	487	429	407	497
65°	329	310	280	286	238	324
75°	132	123	115	110	121	141
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1607.1	1607.1	1607.1	1607.1	1607.1
2.5°	1596.0	1596.0	1596.0	1594.1	1594.1
5°	1579.2	1577.4	1577.4	1575.5	1575.5
7.5°	1566.2	1564.4	1562.5	1560.7	1557.0
10°	1547.7	1547.7	1545.8	1536.5	1534.7
12.5°	1517.9	1516.1	1508.6	1495.6	1491.9
15°	1477.1	1477.1	1462.2	1447.3	1441.8
17.5°	1432.5	1430.6	1412.0	1397.2	1389.7
20°	1384.2	1380.4	1361.9	1337.7	1324.7
22.5°	1330.3	1330.3	1308.0	1276.4	1263.4
25°	1280.1	1272.7	1252.2	1207.7	1174.2
27.5°	1222.5	1211.4	1189.1	1125.9	1086.9
30°	1159.4	1153.8	1122.2	1040.4	1010.7
32.5°	1099.9	1090.6	1057.2	971.7	947.5
35°	1038.6	1031.2	981.0	906.7	884.4
37.5°	977.3	968.0	904.8	845.4	817.5
40°	916.0	904.8	836.1	782.2	752.5
42.5°	858.4	843.5	776.6	719.0	685.6
45°	797.1	780.3	713.4	654.0	628.0
47.5°	735.7	720.9	659.6	598.3	568.5
50°	670.7	657.7	602.0	540.7	509.1
52.5°	616.8	596.4	542.5	481.2	455.2
55°	553.7	536.9	486.8	429.2	406.9
57.5°	496.1	479.3	432.9	379.0	360.4
60°	442.2	418.0	379.0	332.6	317.7
62.5°	382.7	364.2	330.7	291.7	310.3
65°	328.9	310.3	280.5	286.1	237.8
67.5°	269.4	260.1	234.1	208.1	200.7
70°	219.2	208.1	198.8	170.9	163.5
72.5°	174.6	163.5	150.5	135.6	130.1
75°	131.9	122.6	115.2	109.6	120.8
77.5°	91.0	87.3	81.7	76.2	74.3
80°	59.5	57.6	55.7	53.9	52.0
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.4	22.3	24.2	26.0
87.5°	11.1	11.1	13.0	14.9	16.7
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)