

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: P546820

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-81-94-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: P546820  
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-24-4-LD4-2LO-40-UNV-81-94-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

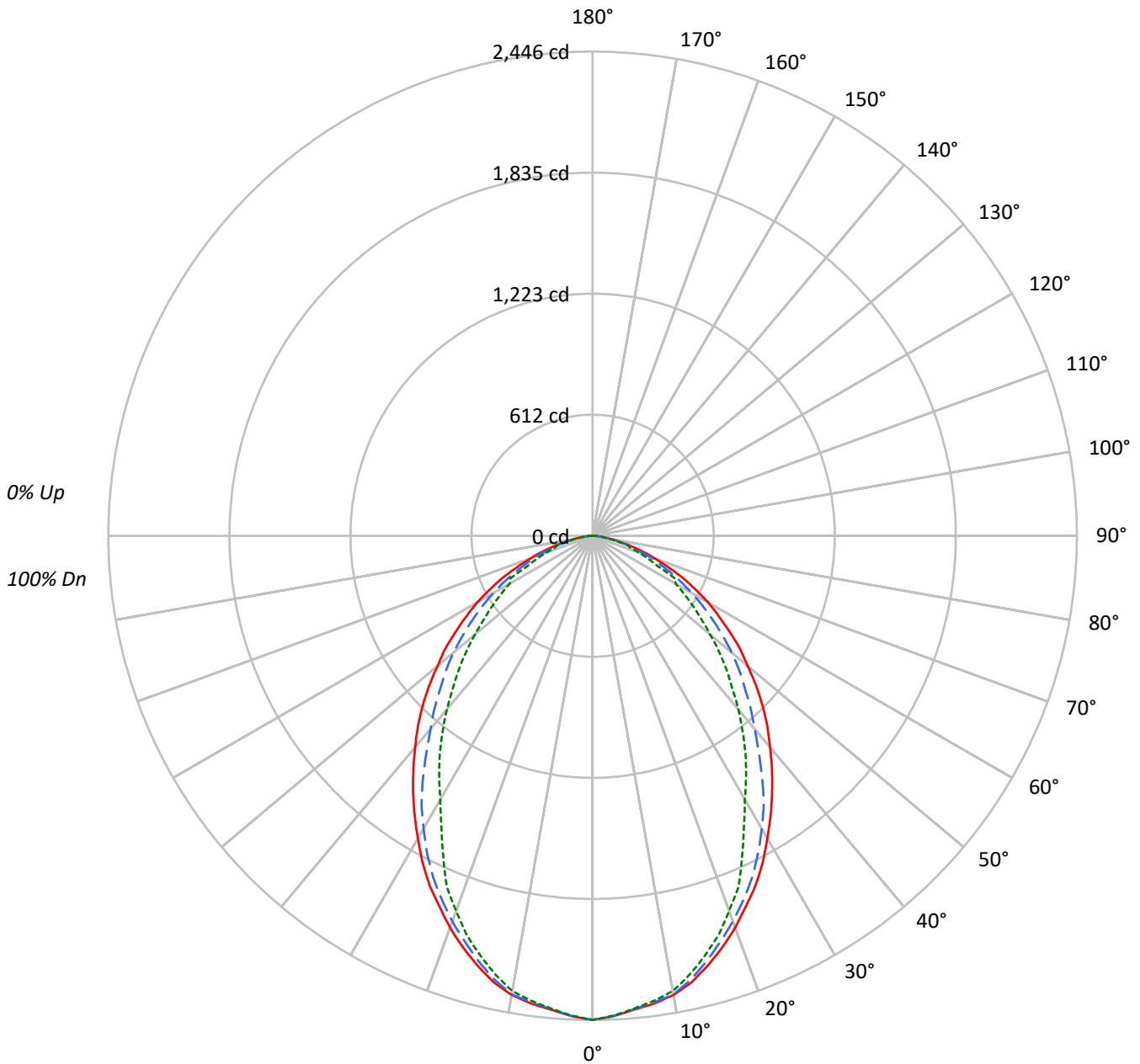
Lumens per Lamp: N/A  
Luminaire Lumens: 4801.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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°	3291	3291	3291
5°	3246	3242	3238
10°	3218	3214	3191
15°	3131	3099	3056
20°	3016	2967	2886
25°	2892	2829	2653
30°	2741	2653	2389
35°	2596	2452	2211
40°	2448	2235	2011
45°	2308	2066	1818
50°	2136	1917	1622
55°	1976	1738	1453
60°	1811	1552	1301
65°	1593	1359	1152
70°	1312	1190	979
75°	1043	911	955
80°	701	657	614
85°	437	523	611



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.6	4.7
10°-20°	624.8	13.0
20°-30°	864.9	18.0
30°-40°	922.3	19.2
40°-50°	841.4	17.5
50°-60°	659.2	13.7
60°-70°	429.6	8.9
70°-80°	190.3	4.0
80°-90°	40.9	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°	1717.4	35.8
0°-40°	2639.6	55.0
0°-60°	4140.2	86.2
0°-90°	4801.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4801.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2446	2446	2446	2446	2446	
5°	2403	2400	2400	2398	2398	228
15°	2248	2248	2225	2202	2194	632
25°	1948	1937	1906	1838	1787	894
35°	1580	1569	1493	1380	1346	988
45°	1213	1187	1086	995	956	934
55°	842	817	741	653	619	756
65°	500	472	427	435	362	493
75°	201	187	175	167	184	215
85°	28	31	34	37	40	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2445.6	2445.6	2445.6	2445.6	2445.6
2.5°	2428.6	2428.6	2428.6	2425.8	2425.8
5°	2403.2	2400.3	2400.3	2397.5	2397.5
7.5°	2383.4	2380.5	2377.7	2374.9	2369.2
10°	2355.1	2355.1	2352.3	2338.1	2335.3
12.5°	2309.9	2307.0	2295.7	2275.9	2270.3
15°	2247.7	2247.7	2225.0	2202.4	2193.9
17.5°	2179.8	2177.0	2148.7	2126.1	2114.8
20°	2106.3	2100.6	2072.4	2035.6	2015.8
22.5°	2024.3	2024.3	1990.4	1942.3	1922.5
25°	1948.0	1936.7	1905.6	1837.7	1786.8
27.5°	1860.3	1843.4	1809.4	1713.3	1653.9
30°	1764.2	1755.7	1707.7	1583.3	1538.0
32.5°	1673.7	1659.6	1608.7	1478.6	1441.9
35°	1580.4	1569.1	1492.8	1379.7	1345.8
37.5°	1487.1	1473.0	1376.9	1286.4	1244.0
40°	1393.8	1376.9	1272.3	1190.3	1145.0
42.5°	1306.2	1283.6	1181.8	1094.1	1043.3
45°	1212.9	1187.4	1085.7	995.2	955.6
47.5°	1119.6	1097.0	1003.7	910.4	865.1
50°	1020.6	1000.8	916.0	822.7	774.7
52.5°	938.6	907.5	825.6	732.3	692.7
55°	842.5	817.1	740.7	653.1	619.2
57.5°	754.9	729.4	658.7	576.8	548.5
60°	672.9	636.1	576.8	506.1	483.5
62.5°	582.4	554.1	503.2	443.9	472.1
65°	500.4	472.1	426.9	435.4	361.9
67.5°	410.0	395.8	356.2	316.7	305.3
70°	333.6	316.7	302.5	260.1	248.8
72.5°	265.8	248.8	229.0	206.4	197.9
75°	200.7	186.6	175.3	166.8	183.8
77.5°	138.5	132.9	124.4	115.9	113.1
80°	90.5	87.6	84.8	82.0	79.2
82.5°	53.7	53.7	53.7	53.7	53.7
85°	28.3	31.1	33.9	36.8	39.6
87.5°	17.0	17.0	19.8	22.6	25.4
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)