

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: P546809

Luminaire Tested: **FMR-24-4-LD4-2LO-40-UNV-80-86-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: P546809  
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-80-86-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

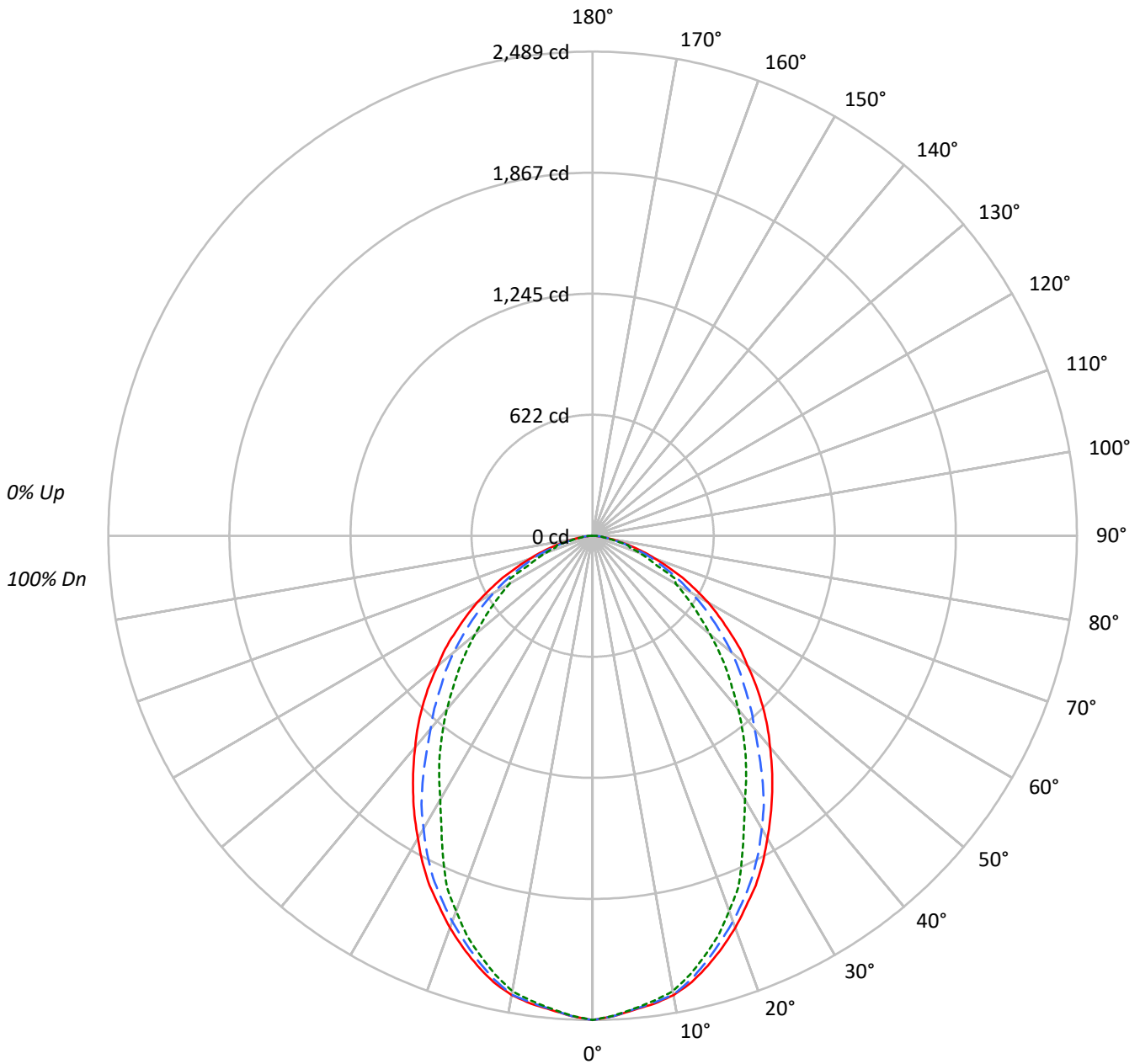
Lumens per Lamp: N/A  
Luminaire Lumens: 4887.0 lumens  
Efficiency: N/A  
Efficacy: 104.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	3349	3349	3349
5°	3304	3300	3296
10°	3275	3271	3248
15°	3187	3155	3111
20°	3070	3020	2938
25°	2944	2880	2700
30°	2790	2701	2432
35°	2642	2496	2250
40°	2492	2275	2047
45°	2349	2103	1851
50°	2175	1952	1650
55°	2012	1769	1479
60°	1843	1580	1324
65°	1622	1384	1173
70°	1336	1211	996
75°	1062	927	973
80°	714	669	625
85°	445	533	622



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	231.7	4.7
10°-20°	636.0	13.0
20°-30°	880.4	18.0
30°-40°	938.8	19.2
40°-50°	856.5	17.5
50°-60°	671.0	13.7
60°-70°	437.3	8.9
70°-80°	193.7	4.0
80°-90°	41.6	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°	1748.1	35.8
0°-40°	2686.9	55.0
0°-60°	4214.3	86.2
0°-90°	4887.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4887.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2489	2489	2489	2489	2489	
5°	2446	2443	2443	2440	2440	232
15°	2288	2288	2265	2242	2233	643
25°	1983	1971	1940	1871	1819	910
35°	1609	1597	1520	1404	1370	1006
45°	1235	1209	1105	1013	973	951
55°	858	832	754	665	630	769
65°	509	481	435	443	368	502
75°	204	190	178	170	187	219
85°	29	32	34	37	40	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2489.4	2489.4	2489.4	2489.4	2489.4
2.5°	2472.1	2472.1	2472.1	2469.2	2469.2
5°	2446.2	2443.3	2443.3	2440.4	2440.4
7.5°	2426.1	2423.2	2420.3	2417.4	2411.7
10°	2397.3	2397.3	2394.4	2380.0	2377.1
12.5°	2351.2	2348.4	2336.8	2316.7	2310.9
15°	2287.9	2287.9	2264.9	2241.9	2233.2
17.5°	2218.9	2216.0	2187.2	2164.2	2152.7
20°	2144.0	2138.3	2109.5	2072.1	2051.9
22.5°	2060.6	2060.6	2026.0	1977.1	1957.0
25°	1982.9	1971.4	1939.7	1870.6	1818.8
27.5°	1893.6	1876.4	1841.8	1744.0	1683.6
30°	1795.8	1787.2	1738.2	1611.6	1565.6
32.5°	1703.7	1689.3	1637.5	1505.1	1467.7
35°	1608.7	1597.2	1519.5	1404.4	1369.9
37.5°	1513.8	1499.4	1401.5	1309.4	1266.3
40°	1418.8	1401.5	1295.0	1211.6	1165.5
42.5°	1329.6	1306.6	1203.0	1113.7	1061.9
45°	1234.6	1208.7	1105.1	1013.0	972.7
47.5°	1139.6	1116.6	1021.6	926.7	880.6
50°	1038.9	1018.8	932.4	837.5	788.5
52.5°	955.5	923.8	840.3	745.4	705.1
55°	857.6	831.7	754.0	664.8	630.3
57.5°	768.4	742.5	670.5	587.1	558.3
60°	684.9	647.5	587.1	515.1	492.1
62.5°	592.8	564.1	512.3	451.8	480.6
65°	509.4	480.6	434.6	443.2	368.4
67.5°	417.3	402.9	362.6	322.3	310.8
70°	339.6	322.3	307.9	264.8	253.3
72.5°	270.5	253.3	233.1	210.1	201.5
75°	204.3	189.9	178.4	169.8	187.1
77.5°	141.0	135.3	126.6	118.0	115.1
80°	92.1	89.2	86.3	83.5	80.6
82.5°	54.7	54.7	54.7	54.7	54.7
85°	28.8	31.7	34.5	37.4	40.3
87.5°	17.3	17.3	20.1	23.0	25.9
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)