

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: P546458

Luminaire Tested: **FMR-24-4-LD4-1HI-40-UNV-80-87-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: P546458  
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-LD4-1HI-40-UNV-80-87-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

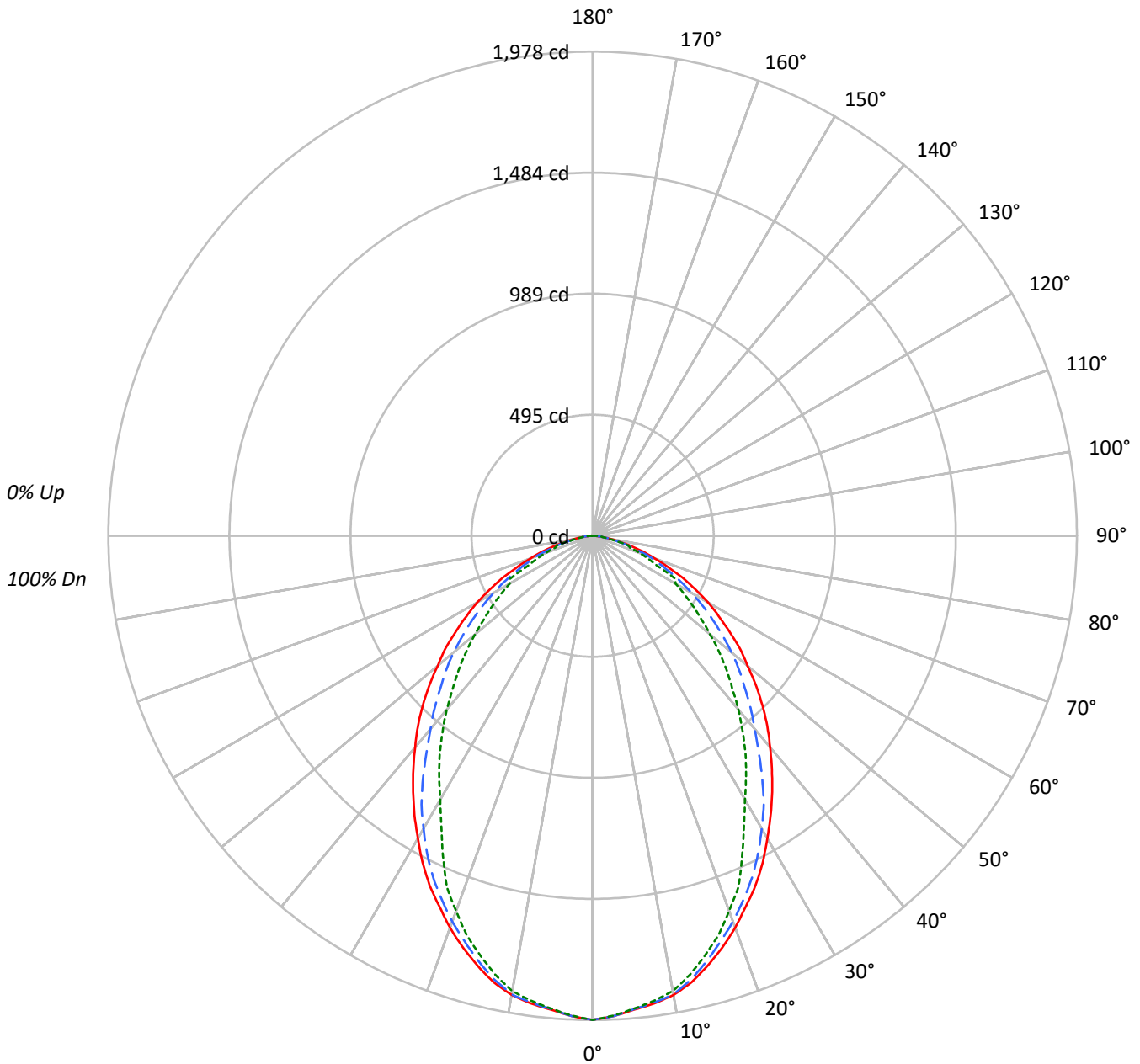
Lumens per Lamp: N/A  
Luminaire Lumens: 3883.0 lumens  
Efficiency: N/A  
Efficacy: 89.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	2661	2661	2661
5°	2625	2622	2619
10°	2602	2599	2581
15°	2532	2507	2472
20°	2439	2400	2334
25°	2339	2288	2146
30°	2217	2146	1933
35°	2099	1983	1788
40°	1980	1807	1627
45°	1867	1671	1471
50°	1728	1551	1311
55°	1598	1405	1175
60°	1464	1255	1052
65°	1288	1099	932
70°	1061	963	792
75°	844	737	773
80°	567	532	496
85°	354	423	494



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.1	4.7
10°-20°	505.3	13.0
20°-30°	699.6	18.0
30°-40°	745.9	19.2
40°-50°	680.5	17.5
50°-60°	533.1	13.7
60°-70°	347.5	8.9
70°-80°	153.9	4.0
80°-90°	33.0	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°	1389.0	35.8
0°-40°	2134.9	55.0
0°-60°	3348.5	86.2
0°-90°	3883.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3883.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1978	1978	1978	1978	1978	
5°	1944	1941	1941	1939	1939	184
15°	1818	1818	1800	1781	1774	511
25°	1576	1566	1541	1486	1445	723
35°	1278	1269	1207	1116	1088	799
45°	981	960	878	805	773	756
55°	681	661	599	528	501	611
65°	405	382	345	352	293	399
75°	162	151	142	135	149	174
85°	23	25	27	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1977.9	1977.9	1977.9	1977.9	1977.9
2.5°	1964.2	1964.2	1964.2	1961.9	1961.9
5°	1943.6	1941.4	1941.4	1939.1	1939.1
7.5°	1927.6	1925.4	1923.1	1920.8	1916.2
10°	1904.8	1904.8	1902.5	1891.1	1888.8
12.5°	1868.2	1865.9	1856.8	1840.7	1836.2
15°	1817.9	1817.9	1799.6	1781.3	1774.4
17.5°	1763.0	1760.7	1737.9	1719.6	1710.4
20°	1703.6	1699.0	1676.1	1646.4	1630.4
22.5°	1637.2	1637.2	1609.8	1570.9	1554.9
25°	1575.5	1566.4	1541.2	1486.3	1445.2
27.5°	1504.6	1490.9	1463.5	1385.7	1337.7
30°	1426.9	1420.0	1381.1	1280.5	1243.9
32.5°	1353.7	1342.3	1301.1	1195.9	1166.2
35°	1278.2	1269.1	1207.3	1115.9	1088.4
37.5°	1202.8	1191.3	1113.6	1040.4	1006.1
40°	1127.3	1113.6	1029.0	962.7	926.1
42.5°	1056.4	1038.1	955.8	884.9	843.8
45°	981.0	960.4	878.1	804.9	772.9
47.5°	905.5	887.2	811.8	736.3	699.7
50°	825.5	809.5	740.9	665.4	626.5
52.5°	759.2	734.0	667.7	592.2	560.2
55°	681.4	660.8	599.1	528.2	500.8
57.5°	610.5	590.0	532.8	466.5	443.6
60°	544.2	514.5	466.5	409.3	391.0
62.5°	471.0	448.2	407.0	359.0	381.9
65°	404.7	381.9	345.3	352.1	292.7
67.5°	331.6	320.1	288.1	256.1	247.0
70°	269.8	256.1	244.7	210.4	201.2
72.5°	214.9	201.2	185.2	166.9	160.1
75°	162.4	150.9	141.8	134.9	148.6
77.5°	112.0	107.5	100.6	93.8	91.5
80°	73.2	70.9	68.6	66.3	64.0
82.5°	43.4	43.4	43.4	43.4	43.4
85°	22.9	25.2	27.4	29.7	32.0
87.5°	13.7	13.7	16.0	18.3	20.6
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)