

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: P546294

Luminaire Tested: **FMR-12-4-LD4-2LO-50-UNV-93-97-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: P546294  
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-LD4-2LO-50-UNV-93-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

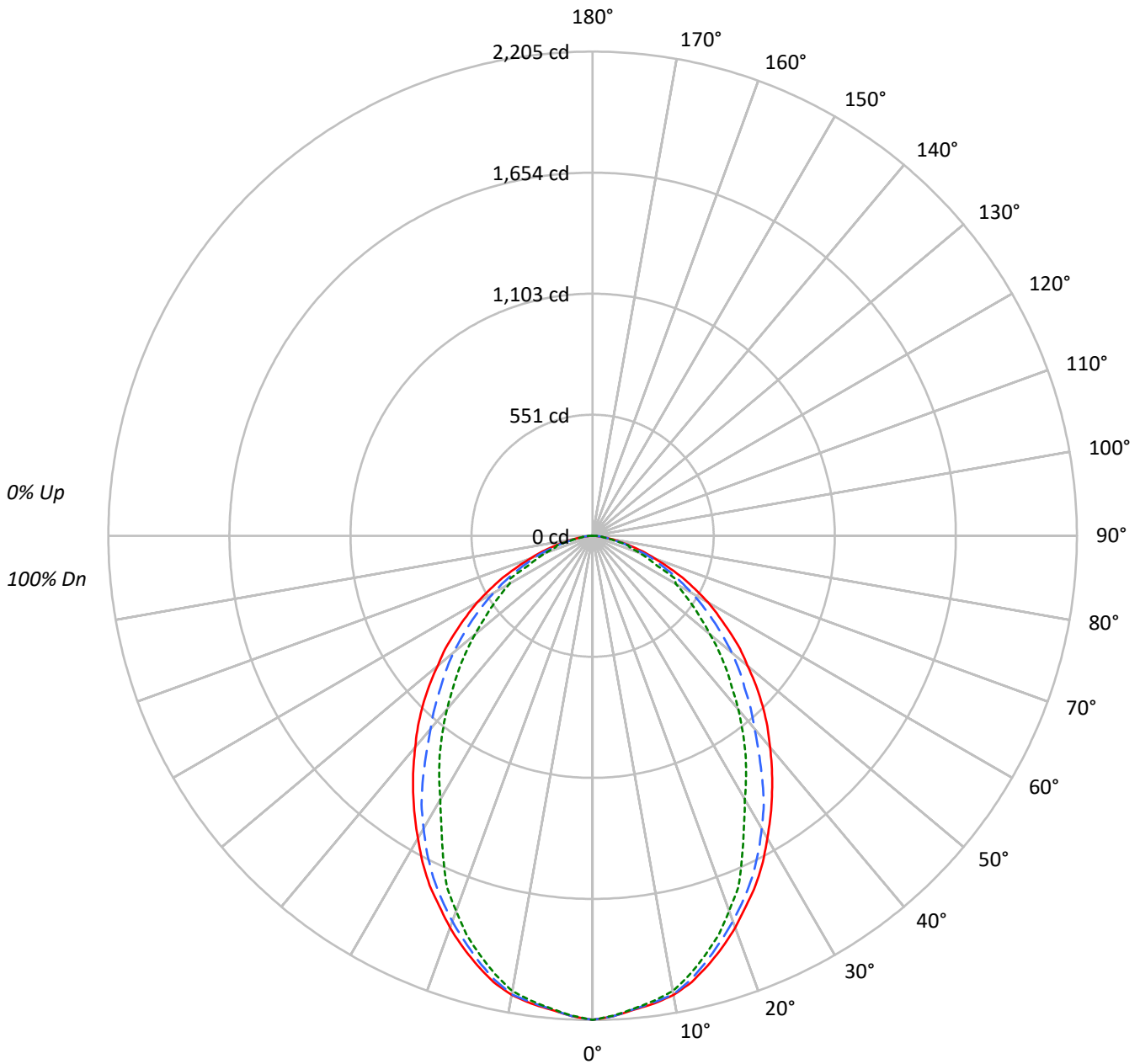
Lumens per Lamp: N/A  
Luminaire Lumens: 4328.0 lumens  
Efficiency: N/A  
Efficacy: 92.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 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°	5933	5933	5933
5°	5852	5845	5838
10°	5801	5794	5752
15°	5645	5588	5510
20°	5438	5350	5204
25°	5214	5100	4783
30°	4942	4783	4308
35°	4680	4421	3985
40°	4414	4029	3626
45°	4161	3725	3279
50°	3852	3457	2923
55°	3563	3133	2619
60°	3265	2798	2345
65°	2872	2451	2077
70°	2366	2146	1765
75°	1882	1643	1723
80°	1265	1185	1106
85°	787	945	1102



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.2	4.7
10°-20°	563.2	13.0
20°-30°	779.7	18.0
30°-40°	831.4	19.2
40°-50°	758.5	17.5
50°-60°	594.2	13.7
60°-70°	387.3	8.9
70°-80°	171.6	4.0
80°-90°	36.8	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°	1548.2	35.8
0°-40°	2379.6	55.0
0°-60°	3732.3	86.2
0°-90°	4328.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4328.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2205	2205	2205	2205	2205	
5°	2166	2164	2164	2161	2161	206
15°	2026	2026	2006	1985	1978	570
25°	1756	1746	1718	1657	1611	806
35°	1425	1414	1346	1244	1213	891
45°	1093	1070	979	897	862	842
55°	760	737	668	589	558	681
65°	451	426	385	392	326	445
75°	181	168	158	150	166	194
85°	26	28	31	33	36	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2204.6	2204.6	2204.6	2204.6	2204.6
2.5°	2189.3	2189.3	2189.3	2186.8	2186.8
5°	2166.4	2163.8	2163.8	2161.3	2161.3
7.5°	2148.6	2146.0	2143.5	2140.9	2135.8
10°	2123.1	2123.1	2120.5	2107.8	2105.2
12.5°	2082.3	2079.7	2069.5	2051.7	2046.6
15°	2026.2	2026.2	2005.8	1985.4	1977.8
17.5°	1965.0	1962.5	1937.0	1916.6	1906.4
20°	1898.8	1893.7	1868.2	1835.1	1817.2
22.5°	1824.9	1824.9	1794.3	1751.0	1733.1
25°	1756.1	1745.9	1717.8	1656.7	1610.8
27.5°	1677.0	1661.8	1631.2	1544.5	1491.0
30°	1590.4	1582.7	1539.4	1427.3	1386.5
32.5°	1508.8	1496.1	1450.2	1333.0	1299.8
35°	1424.7	1414.5	1345.7	1243.8	1213.2
37.5°	1340.6	1327.9	1241.2	1159.7	1121.4
40°	1256.5	1241.2	1146.9	1073.0	1032.2
42.5°	1177.5	1157.1	1065.4	986.3	940.5
45°	1093.4	1070.5	978.7	897.1	861.5
47.5°	1009.3	988.9	904.8	820.7	779.9
50°	920.1	902.2	825.8	741.7	698.3
52.5°	846.2	818.1	744.2	660.1	624.4
55°	759.5	736.6	667.8	588.7	558.2
57.5°	680.5	657.6	593.8	519.9	494.4
60°	606.6	573.5	519.9	456.2	435.8
62.5°	525.0	499.5	453.7	400.1	425.6
65°	451.1	425.6	384.9	392.5	326.2
67.5°	369.6	356.8	321.1	285.5	275.3
70°	300.7	285.5	272.7	234.5	224.3
72.5°	239.6	224.3	206.4	186.1	178.4
75°	181.0	168.2	158.0	150.4	165.7
77.5°	124.9	119.8	112.1	104.5	101.9
80°	81.6	79.0	76.5	73.9	71.4
82.5°	48.4	48.4	48.4	48.4	48.4
85°	25.5	28.0	30.6	33.1	35.7
87.5°	15.3	15.3	17.8	20.4	22.9
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)