

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: P546225

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-93-86-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: P546225
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-35-UNV-93-86-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

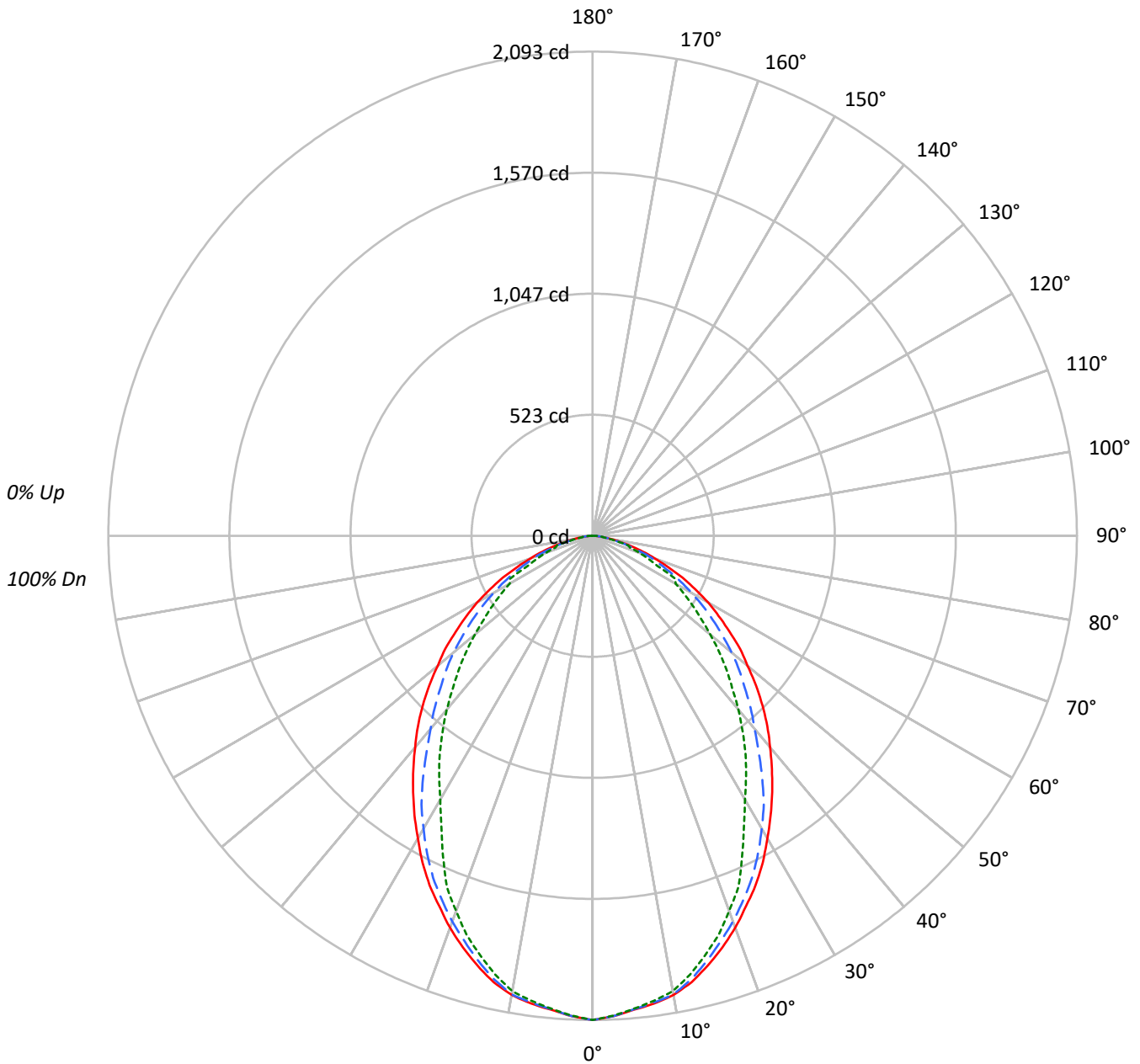
Lumens per Lamp: N/A
Luminaire Lumens: 4109.0 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	5632	5632	5632
5°	5556	5549	5543
10°	5508	5501	5461
15°	5359	5305	5231
20°	5162	5079	4941
25°	4950	4842	4541
30°	4692	4541	4090
35°	4443	4197	3784
40°	4190	3825	3443
45°	3951	3536	3113
50°	3657	3282	2776
55°	3383	2974	2486
60°	3099	2657	2227
65°	2727	2327	1972
70°	2246	2037	1675
75°	1786	1560	1635
80°	1199	1125	1051
85°	747	895	1047



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	194.8	4.7
10°-20°	534.7	13.0
20°-30°	740.3	18.0
30°-40°	789.3	19.2
40°-50°	720.1	17.5
50°-60°	564.2	13.7
60°-70°	367.7	8.9
70°-80°	162.9	4.0
80°-90°	35.0	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°	1469.8	35.8
0°-40°	2259.2	55.0
0°-60°	3543.4	86.2
0°-90°	4109.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4109.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2093	2093	2093	2093	2093	
5°	2057	2054	2054	2052	2052	195
15°	1924	1924	1904	1885	1878	541
25°	1667	1658	1631	1573	1529	765
35°	1353	1343	1278	1181	1152	846
45°	1038	1016	929	852	818	800
55°	721	699	634	559	530	647
65°	428	404	365	373	310	422
75°	172	160	150	143	157	184
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2093.1	2093.1	2093.1	2093.1	2093.1
2.5°	2078.6	2078.6	2078.6	2076.1	2076.1
5°	2056.8	2054.4	2054.4	2051.9	2051.9
7.5°	2039.8	2037.4	2035.0	2032.6	2027.7
10°	2015.6	2015.6	2013.2	2001.1	1998.7
12.5°	1976.9	1974.5	1964.8	1947.9	1943.0
15°	1923.7	1923.7	1904.3	1885.0	1877.7
17.5°	1865.6	1863.2	1839.0	1819.6	1810.0
20°	1802.7	1797.9	1773.7	1742.2	1725.3
22.5°	1732.5	1732.5	1703.5	1662.4	1645.4
25°	1667.2	1657.5	1630.9	1572.8	1529.3
27.5°	1592.2	1577.7	1548.6	1466.4	1415.5
30°	1509.9	1502.7	1461.5	1355.1	1316.3
32.5°	1432.5	1420.4	1376.8	1265.5	1234.1
35°	1352.6	1343.0	1277.6	1180.8	1151.8
37.5°	1272.8	1260.7	1178.4	1101.0	1064.7
40°	1192.9	1178.4	1088.9	1018.7	980.0
42.5°	1117.9	1098.6	1011.4	936.4	892.9
45°	1038.1	1016.3	929.2	851.7	817.9
47.5°	958.2	938.9	859.0	779.2	740.4
50°	873.5	856.6	784.0	704.1	663.0
52.5°	803.4	776.7	706.6	626.7	592.8
55°	721.1	699.3	634.0	559.0	529.9
57.5°	646.1	624.3	563.8	493.6	469.4
60°	575.9	544.4	493.6	433.1	413.8
62.5°	498.5	474.3	430.7	379.9	404.1
65°	428.3	404.1	365.4	372.6	309.7
67.5°	350.9	338.8	304.9	271.0	261.3
70°	285.5	271.0	258.9	222.6	212.9
72.5°	227.5	212.9	196.0	176.6	169.4
75°	171.8	159.7	150.0	142.8	157.3
77.5°	118.6	113.7	106.5	99.2	96.8
80°	77.4	75.0	72.6	70.2	67.8
82.5°	46.0	46.0	46.0	46.0	46.0
85°	24.2	26.6	29.0	31.5	33.9
87.5°	14.5	14.5	16.9	19.4	21.8
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)