

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: P546481

Luminaire Tested: **FMR-24-4-LD4-1HI-40-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: P546481
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-93-86-EDD
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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

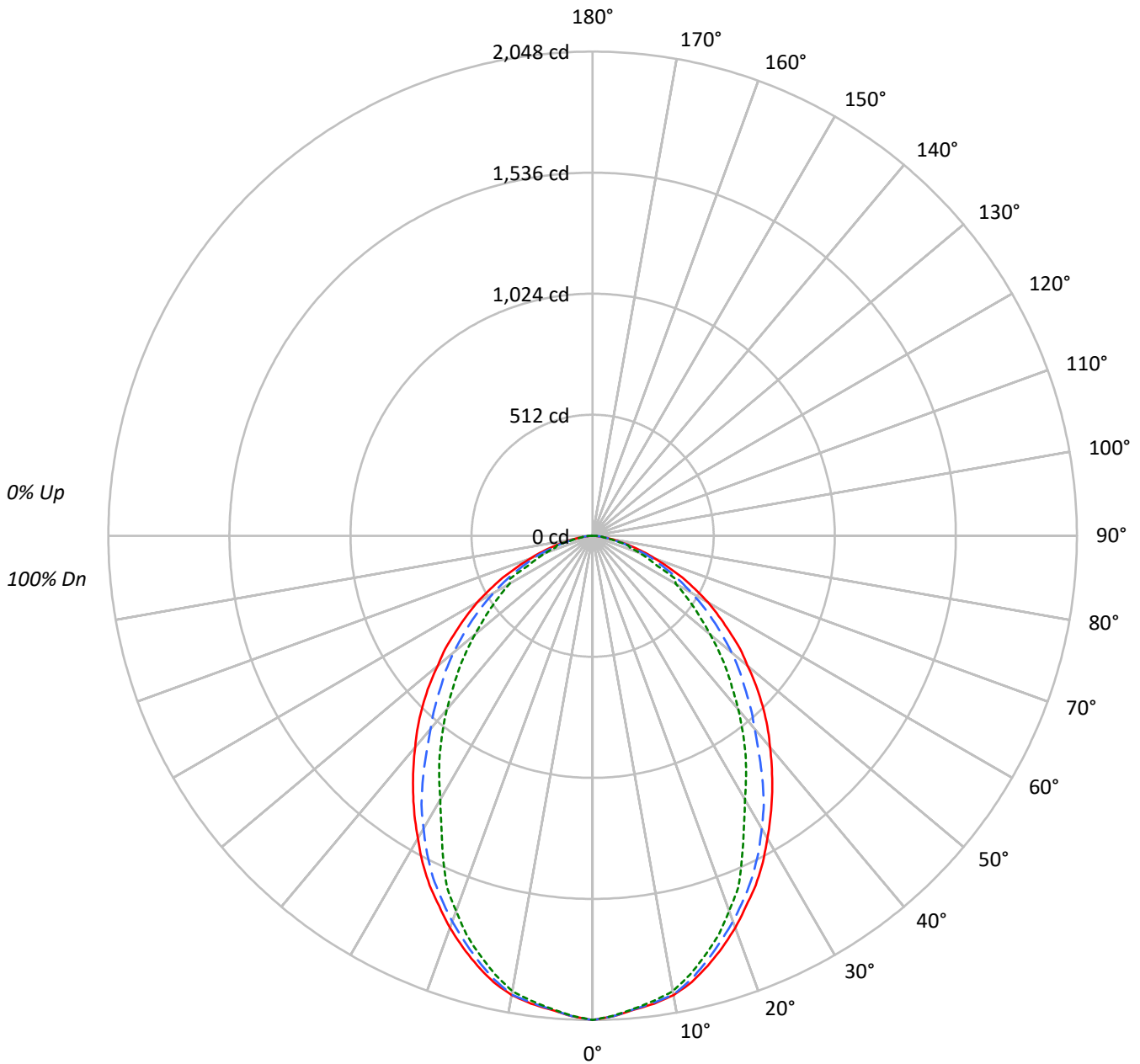
Lumens per Lamp: N/A
Luminaire Lumens: 4021.0 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	2756	2756	2756
5°	2718	2715	2712
10°	2695	2692	2672
15°	2622	2596	2560
20°	2526	2485	2417
25°	2422	2369	2222
30°	2296	2222	2001
35°	2174	2054	1851
40°	2050	1872	1684
45°	1933	1730	1523
50°	1789	1606	1358
55°	1655	1455	1217
60°	1517	1300	1090
65°	1334	1138	965
70°	1099	997	820
75°	874	763	800
80°	587	550	514
85°	366	438	513



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.7	4.7
10°-20°	523.3	13.0
20°-30°	724.4	18.0
30°-40°	772.4	19.2
40°-50°	704.7	17.5
50°-60°	552.1	13.7
60°-70°	359.8	8.9
70°-80°	159.4	4.0
80°-90°	34.2	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°	1438.3	35.8
0°-40°	2210.8	55.0
0°-60°	3467.6	86.2
0°-90°	4021.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4021.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2048	2048	2048	2048	2048	
5°	2013	2010	2010	2008	2008	191
15°	1882	1882	1864	1845	1838	529
25°	1632	1622	1596	1539	1496	749
35°	1324	1314	1250	1156	1127	828
45°	1016	994	909	834	800	782
55°	706	684	620	547	519	633
65°	419	395	358	365	303	413
75°	168	156	147	140	154	180
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2048.2	2048.2	2048.2	2048.2	2048.2
2.5°	2034.0	2034.0	2034.0	2031.7	2031.7
5°	2012.7	2010.4	2010.4	2008.0	2008.0
7.5°	1996.1	1993.8	1991.4	1989.0	1984.3
10°	1972.5	1972.5	1970.1	1958.3	1955.9
12.5°	1934.6	1932.2	1922.7	1906.2	1901.4
15°	1882.5	1882.5	1863.5	1844.6	1837.5
17.5°	1825.7	1823.3	1799.6	1780.7	1771.2
20°	1764.1	1759.4	1735.7	1704.9	1688.3
22.5°	1695.4	1695.4	1667.0	1626.8	1610.2
25°	1631.5	1622.0	1596.0	1539.1	1496.5
27.5°	1558.1	1543.9	1515.5	1435.0	1385.2
30°	1477.6	1470.5	1430.2	1326.0	1288.1
32.5°	1401.8	1390.0	1347.3	1238.4	1207.6
35°	1323.7	1314.2	1250.3	1155.5	1127.1
37.5°	1245.5	1233.7	1153.2	1077.4	1041.9
40°	1167.4	1153.2	1065.6	996.9	959.0
42.5°	1094.0	1075.0	989.8	916.4	873.8
45°	1015.8	994.5	909.3	833.5	800.4
47.5°	937.7	918.7	840.6	762.5	724.6
50°	854.8	838.2	767.2	689.1	648.8
52.5°	786.1	760.1	691.4	613.3	580.1
55°	705.6	684.3	620.4	547.0	518.6
57.5°	632.2	610.9	551.7	483.1	459.4
60°	563.6	532.8	483.1	423.9	404.9
62.5°	487.8	464.1	421.5	371.8	395.4
65°	419.1	395.4	357.6	364.7	303.1
67.5°	343.3	331.5	298.4	265.2	255.7
70°	279.4	265.2	253.4	217.8	208.4
72.5°	222.6	208.4	191.8	172.9	165.8
75°	168.1	156.3	146.8	139.7	153.9
77.5°	116.0	111.3	104.2	97.1	94.7
80°	75.8	73.4	71.0	68.7	66.3
82.5°	45.0	45.0	45.0	45.0	45.0
85°	23.7	26.0	28.4	30.8	33.2
87.5°	14.2	14.2	16.6	18.9	21.3
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)