

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: P546259

Luminaire Tested: **FMR-12-4-LD4-2LO-40-UNV-93-88-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: P546259
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-40-UNV-93-88-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

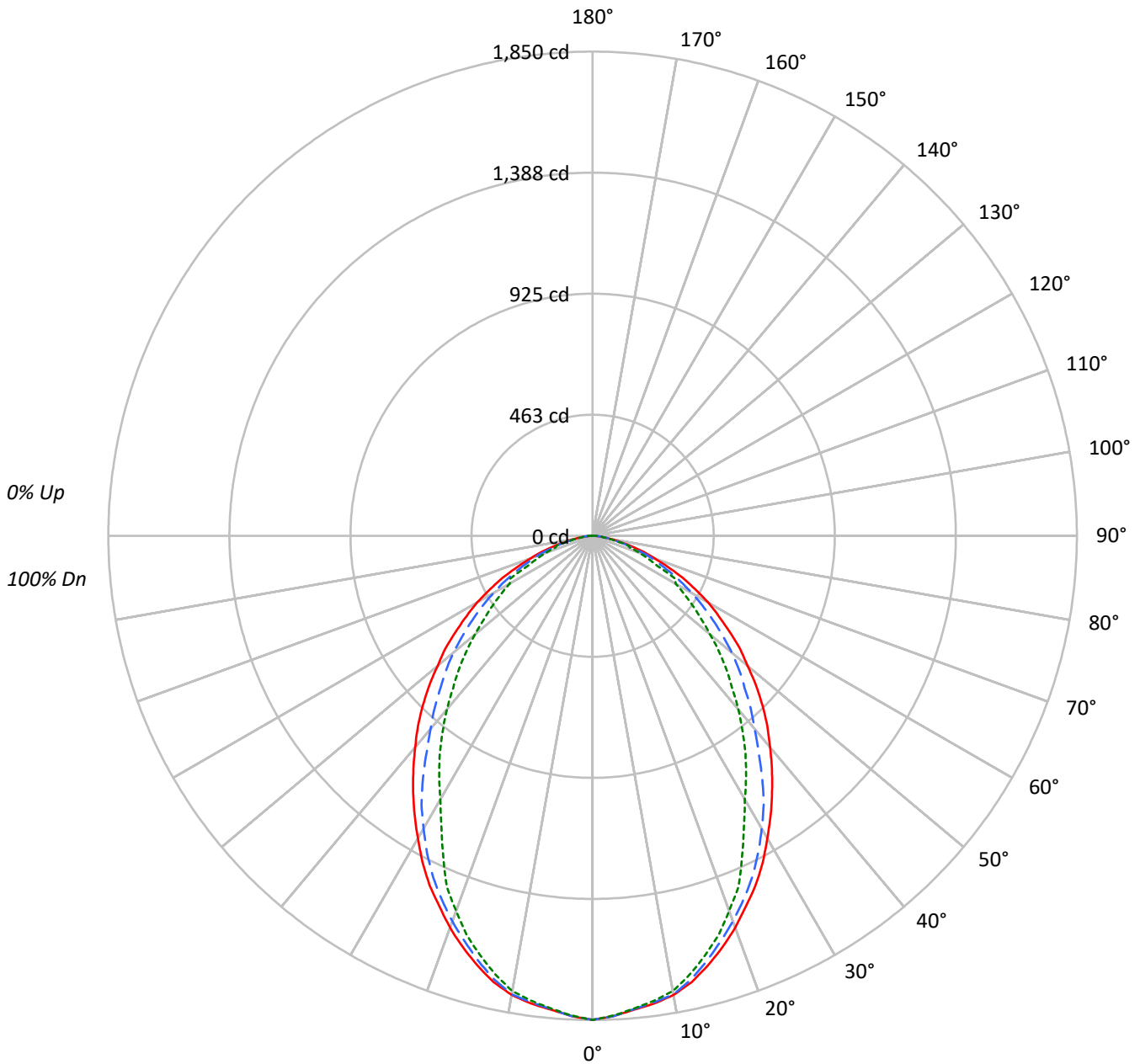
Lumens per Lamp: N/A
Luminaire Lumens: 3631.0 lumens
Efficiency: N/A
Efficacy: 77.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P546259

CATALOG NUMBER: FMR-12-4-LD4-2LO-40-UNV-93-88-EDD

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°	4977	4977	4977
5°	4910	4904	4898
10°	4867	4861	4826
15°	4736	4688	4623
20°	4562	4488	4366
25°	4374	4279	4013
30°	4146	4013	3614
35°	3927	3709	3344
40°	3703	3380	3042
45°	3491	3125	2750
50°	3231	2900	2453
55°	2989	2628	2197
60°	2739	2348	1968
65°	2410	2056	1743
70°	1985	1800	1481
75°	1578	1379	1445
80°	1060	993	928
85°	661	794	923



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.2	4.7
10°-20°	472.5	13.0
20°-30°	654.2	18.0
30°-40°	697.5	19.2
40°-50°	636.3	17.5
50°-60°	498.5	13.7
60°-70°	324.9	8.9
70°-80°	144.0	4.0
80°-90°	30.9	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°	1298.8	35.8
0°-40°	1996.4	55.0
0°-60°	3131.2	86.2
0°-90°	3631.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3631.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1850	1850	1850	1850	1850	
5°	1818	1815	1815	1813	1813	173
15°	1700	1700	1683	1666	1659	478
25°	1473	1465	1441	1390	1351	676
35°	1195	1187	1129	1044	1018	747
45°	917	898	821	753	723	707
55°	637	618	560	494	468	572
65°	378	357	323	329	274	373
75°	152	141	133	126	139	163
85°	21	24	26	28	30	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.6	1849.6	1849.6	1849.6	1849.6
2.5°	1836.8	1836.8	1836.8	1834.6	1834.6
5°	1817.5	1815.4	1815.4	1813.2	1813.2
7.5°	1802.5	1800.4	1798.3	1796.1	1791.9
10°	1781.2	1781.2	1779.0	1768.3	1766.2
12.5°	1746.9	1744.8	1736.3	1721.3	1717.0
15°	1699.9	1699.9	1682.8	1665.7	1659.3
17.5°	1648.6	1646.4	1625.1	1608.0	1599.4
20°	1593.0	1588.7	1567.3	1539.5	1524.6
22.5°	1531.0	1531.0	1505.3	1469.0	1454.0
25°	1473.3	1464.7	1441.2	1389.9	1351.4
27.5°	1407.0	1394.1	1368.5	1295.8	1250.9
30°	1334.3	1327.9	1291.5	1197.4	1163.2
32.5°	1265.8	1255.2	1216.7	1118.3	1090.5
35°	1195.3	1186.7	1129.0	1043.5	1017.8
37.5°	1124.7	1114.0	1041.3	972.9	940.8
40°	1054.2	1041.3	962.2	900.2	866.0
42.5°	987.9	970.8	893.8	827.5	789.0
45°	917.3	898.1	821.1	752.7	722.7
47.5°	846.7	829.6	759.1	688.5	654.3
50°	771.9	756.9	692.8	622.2	585.9
52.5°	709.9	686.4	624.4	553.8	523.9
55°	637.2	618.0	560.2	493.9	468.3
57.5°	570.9	551.7	498.2	436.2	414.8
60°	508.9	481.1	436.2	382.7	365.6
62.5°	440.5	419.1	380.6	335.7	357.1
65°	378.5	357.1	322.9	329.3	273.7
67.5°	310.0	299.4	269.4	239.5	230.9
70°	252.3	239.5	228.8	196.7	188.2
72.5°	201.0	188.2	173.2	156.1	149.7
75°	151.8	141.1	132.6	126.2	139.0
77.5°	104.8	100.5	94.1	87.7	85.5
80°	68.4	66.3	64.1	62.0	59.9
82.5°	40.6	40.6	40.6	40.6	40.6
85°	21.4	23.5	25.7	27.8	29.9
87.5°	12.8	12.8	15.0	17.1	19.2
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)