

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: P545840

Luminaire Tested: **FMR-12-4-LD4-1HI-35-UNV-93-85-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: P545840
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-LD4-1HI-35-UNV-93-85-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

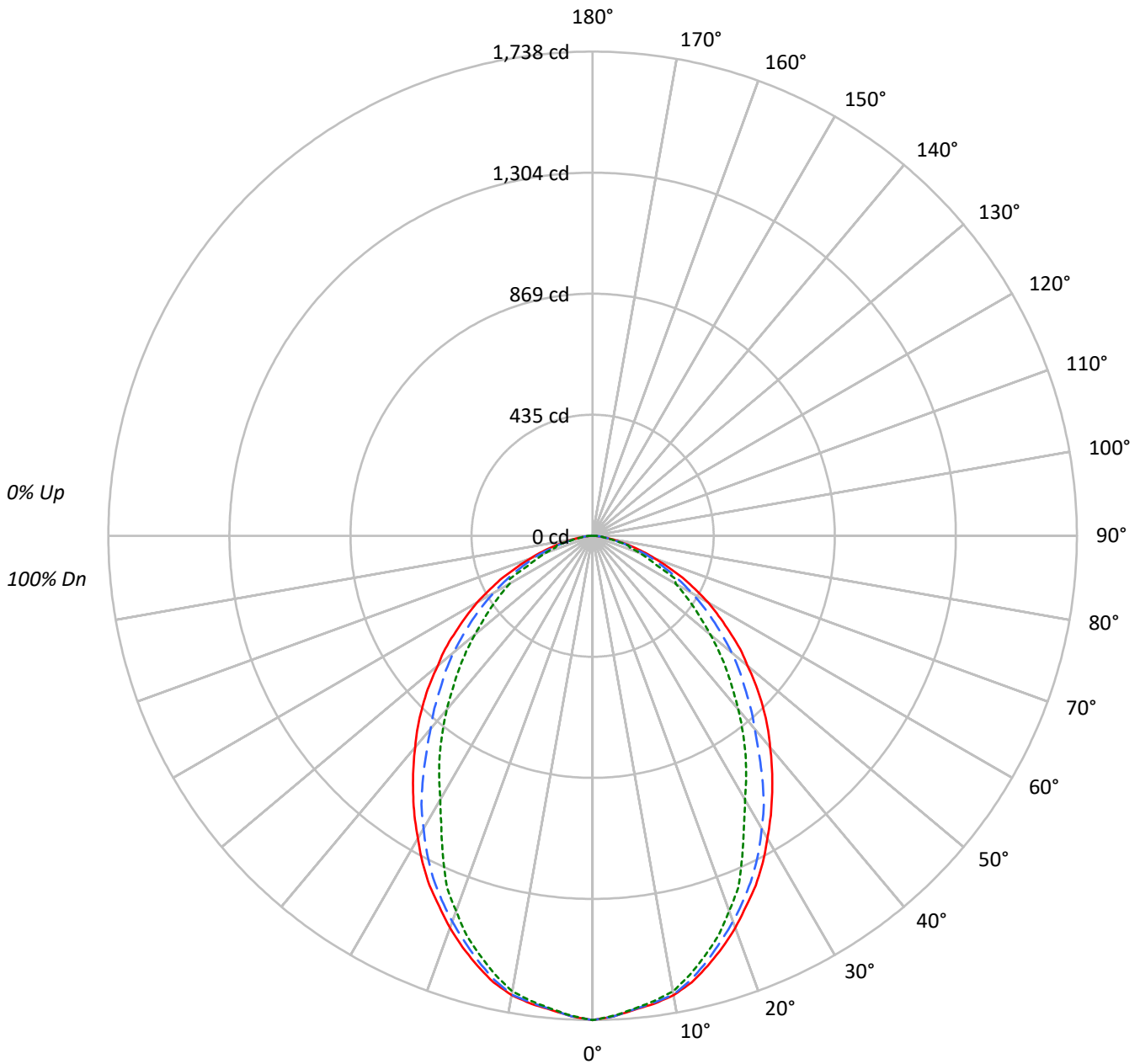
Lumens per Lamp: N/A
Luminaire Lumens: 3413.0 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 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°	4678	4678	4678
5°	4615	4609	4604
10°	4575	4569	4536
15°	4451	4407	4345
20°	4288	4219	4104
25°	4112	4022	3771
30°	3897	3772	3397
35°	3691	3486	3143
40°	3481	3177	2859
45°	3281	2937	2585
50°	3038	2726	2305
55°	2810	2471	2065
60°	2574	2207	1850
65°	2265	1933	1638
70°	1866	1692	1392
75°	1484	1295	1358
80°	996	934	872
85°	621	744	868



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	161.8	4.7
10°-20°	444.1	13.0
20°-30°	614.9	18.0
30°-40°	655.6	19.2
40°-50°	598.1	17.5
50°-60°	468.6	13.7
60°-70°	305.4	8.9
70°-80°	135.3	4.0
80°-90°	29.1	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°	1220.9	35.8
0°-40°	1876.5	55.0
0°-60°	2943.2	86.2
0°-90°	3413.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3413.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1738	1738	1738	1738	1738	
5°	1708	1706	1706	1704	1704	162
15°	1598	1598	1582	1566	1560	449
25°	1385	1377	1355	1306	1270	636
35°	1124	1116	1061	981	957	702
45°	862	844	772	708	679	664
55°	599	581	527	464	440	537
65°	356	336	304	310	257	351
75°	143	133	125	119	131	153
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1738.5	1738.5	1738.5	1738.5	1738.5
2.5°	1726.5	1726.5	1726.5	1724.5	1724.5
5°	1708.4	1706.4	1706.4	1704.4	1704.4
7.5°	1694.3	1692.3	1690.3	1688.3	1684.3
10°	1674.2	1674.2	1672.2	1662.2	1660.2
12.5°	1642.1	1640.1	1632.0	1617.9	1613.9
15°	1597.8	1597.8	1581.8	1565.7	1559.7
17.5°	1549.6	1547.6	1527.5	1511.4	1503.4
20°	1497.4	1493.3	1473.2	1447.1	1433.0
22.5°	1439.1	1439.1	1414.9	1380.8	1366.7
25°	1384.8	1376.8	1354.7	1306.4	1270.2
27.5°	1322.5	1310.4	1286.3	1218.0	1175.8
30°	1254.2	1248.1	1214.0	1125.5	1093.4
32.5°	1189.8	1179.8	1143.6	1051.2	1025.0
35°	1123.5	1115.5	1061.2	980.8	956.7
37.5°	1057.2	1047.1	978.8	914.5	884.3
40°	990.9	978.8	904.4	846.2	814.0
42.5°	928.6	912.5	840.1	777.8	741.6
45°	862.2	844.1	771.8	707.5	679.3
47.5°	795.9	779.8	713.5	647.2	615.0
50°	725.6	711.5	651.2	584.9	550.7
52.5°	667.3	645.2	586.9	520.6	492.4
55°	598.9	580.9	526.6	464.3	440.2
57.5°	536.6	518.5	468.3	410.0	389.9
60°	478.3	452.2	410.0	359.8	343.7
62.5°	414.0	393.9	357.8	315.5	335.6
65°	355.7	335.6	303.5	309.5	257.3
67.5°	291.4	281.4	253.2	225.1	217.1
70°	237.2	225.1	215.1	184.9	176.9
72.5°	188.9	176.9	162.8	146.7	140.7
75°	142.7	132.7	124.6	118.6	130.6
77.5°	98.5	94.5	88.4	82.4	80.4
80°	64.3	62.3	60.3	58.3	56.3
82.5°	38.2	38.2	38.2	38.2	38.2
85°	20.1	22.1	24.1	26.1	28.1
87.5°	12.1	12.1	14.1	16.1	18.1
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)