

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: P546193

Luminaire Tested: **FMR-12-4-LD4-2HI-50-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: P546193
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-LD4-2HI-50-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 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

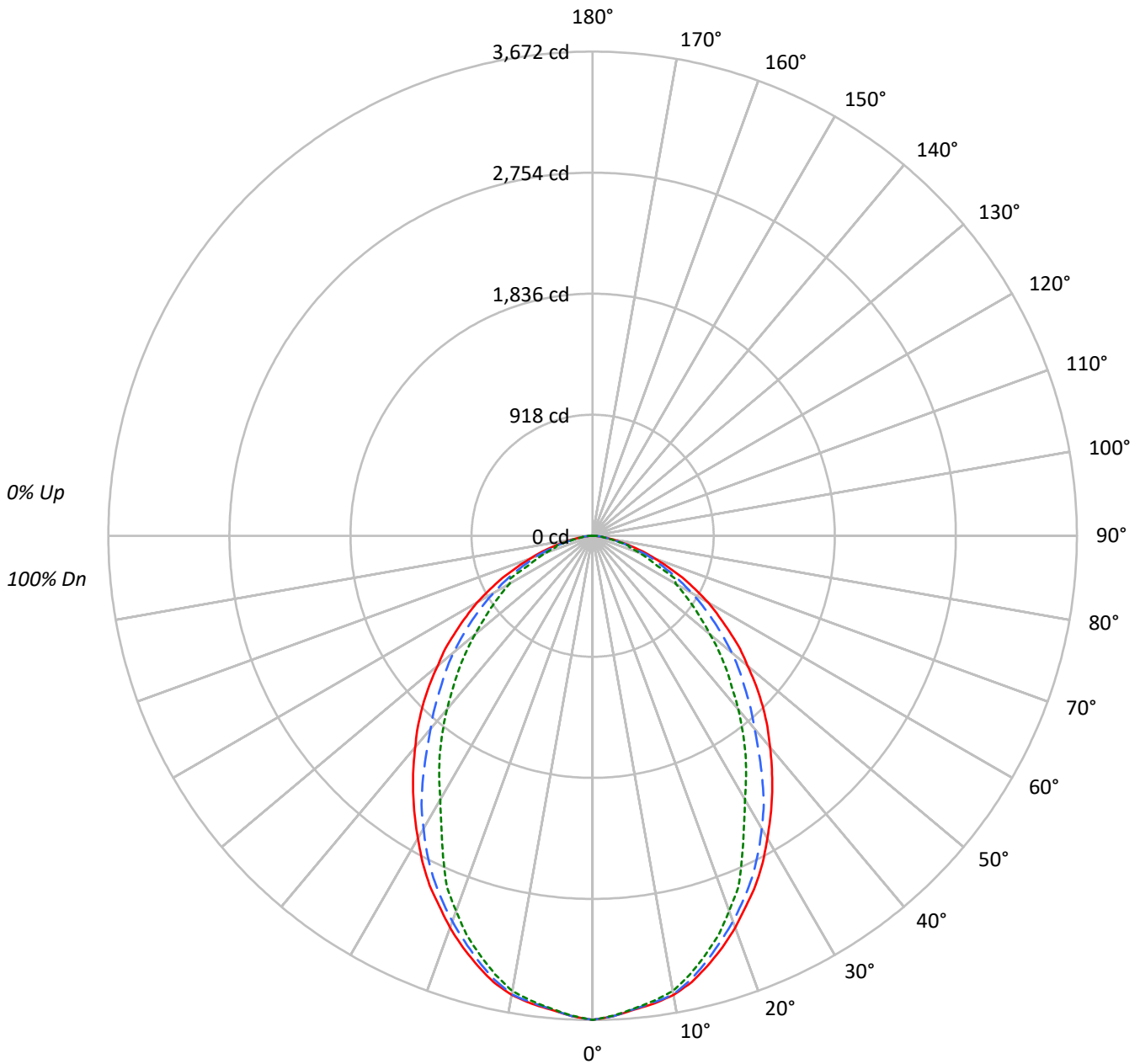
Lumens per Lamp: N/A
Luminaire Lumens: 7208.0 lumens
Efficiency: N/A
Efficacy: 83.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
Input Voltage (V): NR
Input Current (A_{in}): 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°	9880	9880	9880
5°	9746	9735	9723
10°	9662	9650	9580
15°	9401	9307	9176
20°	9056	8910	8667
25°	8684	8494	7965
30°	8230	7966	7175
35°	7795	7363	6638
40°	7351	6710	6039
45°	6930	6203	5460
50°	6415	5758	4869
55°	5934	5218	4361
60°	5437	4660	3906
65°	4784	4081	3459
70°	3941	3574	2939
75°	3134	2737	2869
80°	2104	1973	1843
85°	1309	1572	1834



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	341.8	4.7
10°-20°	938.0	13.0
20°-30°	1298.6	18.0
30°-40°	1384.7	19.2
40°-50°	1263.2	17.5
50°-60°	989.6	13.7
60°-70°	645.0	8.9
70°-80°	285.8	4.0
80°-90°	61.3	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°	2578.4	35.8
0°-40°	3963.0	55.0
0°-60°	6215.9	86.2
0°-90°	7208.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7208.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3672	3672	3672	3672	3672	
5°	3608	3604	3604	3600	3600	342
15°	3374	3374	3341	3307	3294	949
25°	2925	2908	2861	2759	2683	1343
35°	2373	2356	2241	2071	2020	1483
45°	1821	1783	1630	1494	1435	1403
55°	1265	1227	1112	980	930	1135
65°	751	709	641	654	543	740
75°	301	280	263	250	276	323
85°	42	47	51	55	59	59
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3671.7	3671.7	3671.7	3671.7	3671.7
2.5°	3646.2	3646.2	3646.2	3641.9	3641.9
5°	3608.0	3603.7	3603.7	3599.5	3599.5
7.5°	3578.3	3574.0	3569.8	3565.5	3557.1
10°	3535.8	3535.8	3531.6	3510.4	3506.1
12.5°	3467.9	3463.7	3446.7	3417.0	3408.5
15°	3374.5	3374.5	3340.6	3306.6	3293.9
17.5°	3272.7	3268.4	3226.0	3192.0	3175.0
20°	3162.3	3153.8	3111.4	3056.2	3026.5
22.5°	3039.2	3039.2	2988.3	2916.1	2886.4
25°	2924.6	2907.6	2860.9	2759.1	2682.6
27.5°	2793.0	2767.5	2716.6	2572.3	2483.1
30°	2648.7	2636.0	2563.8	2377.0	2309.1
32.5°	2512.9	2491.6	2415.2	2220.0	2164.8
35°	2372.8	2355.8	2241.2	2071.4	2020.5
37.5°	2232.7	2211.5	2067.2	1931.3	1867.7
40°	2092.6	2067.2	1910.1	1787.0	1719.1
42.5°	1961.0	1927.1	1774.3	1642.7	1566.3
45°	1821.0	1782.8	1630.0	1494.1	1434.7
47.5°	1680.9	1646.9	1506.9	1366.8	1298.9
50°	1532.3	1502.6	1375.3	1235.2	1163.0
52.5°	1409.2	1362.5	1239.5	1099.4	1039.9
55°	1264.9	1226.7	1112.1	980.5	929.6
57.5°	1133.3	1095.1	989.0	865.9	823.5
60°	1010.2	955.1	865.9	759.8	725.8
62.5°	874.4	832.0	755.6	666.4	708.9
65°	751.3	708.9	640.9	653.7	543.3
67.5°	615.5	594.3	534.8	475.4	458.4
70°	500.9	475.4	454.2	390.5	373.5
72.5°	399.0	373.5	343.8	309.9	297.1
75°	301.4	280.1	263.2	250.4	275.9
77.5°	208.0	199.5	186.8	174.0	169.8
80°	135.8	131.6	127.3	123.1	118.9
82.5°	80.6	80.6	80.6	80.6	80.6
85°	42.4	46.7	50.9	55.2	59.4
87.5°	25.5	25.5	29.7	34.0	38.2
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)