

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: P546034

Luminaire Tested: **FMR-12-4-LD4-1STD-35-UNV-93-87-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: P546034
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-LD4-1STD-35-UNV-93-87-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

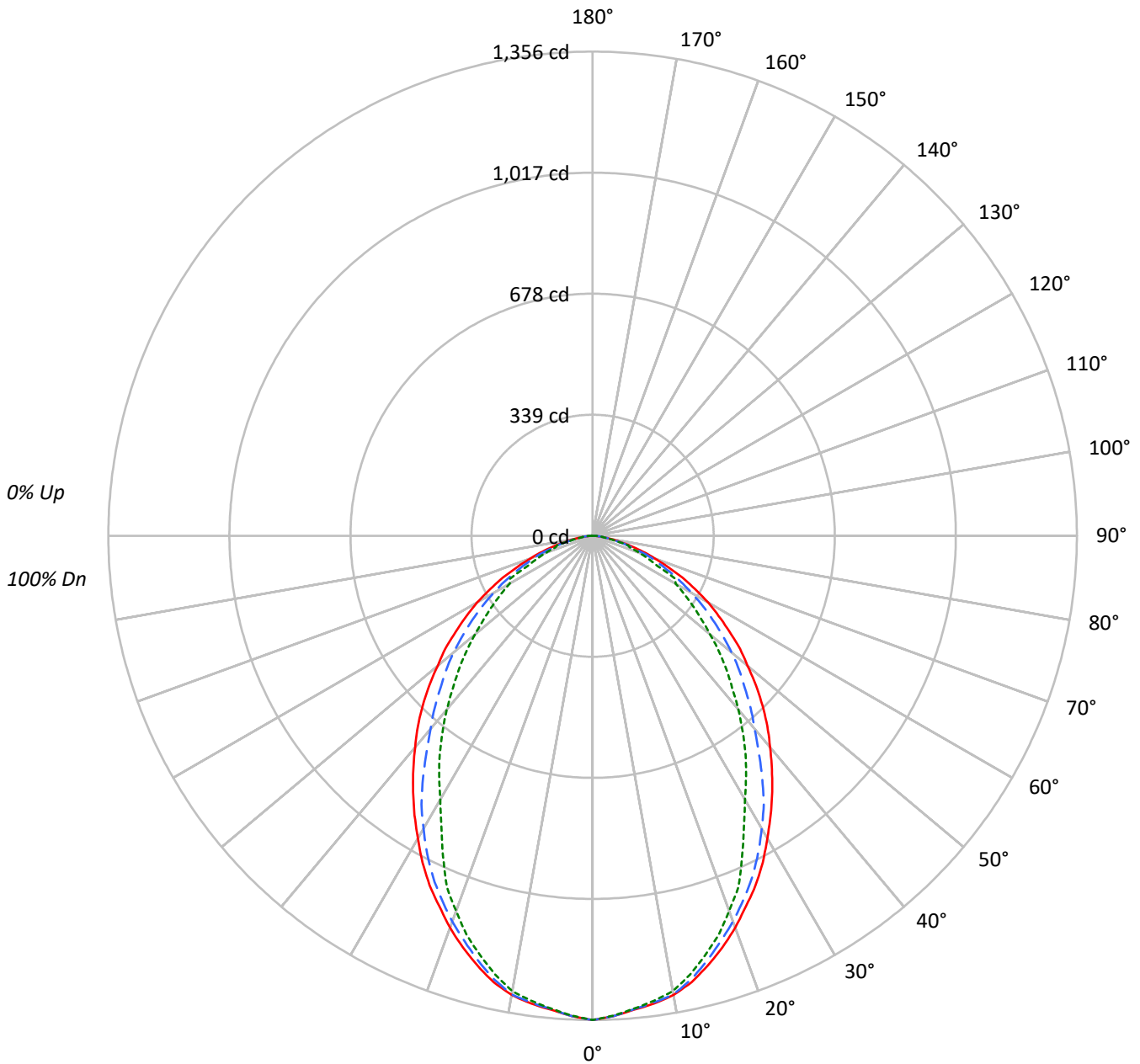
Lumens per Lamp: N/A
Luminaire Lumens: 2662.0 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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°	3649	3649	3649
5°	3599	3595	3591
10°	3568	3564	3538
15°	3472	3437	3389
20°	3344	3291	3201
25°	3207	3137	2942
30°	3040	2942	2650
35°	2879	2719	2451
40°	2715	2478	2230
45°	2559	2291	2017
50°	2369	2126	1798
55°	2191	1927	1611
60°	2008	1721	1443
65°	1767	1507	1278
70°	1456	1319	1086
75°	1157	1011	1059
80°	778	728	680
85°	485	580	676



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.2	4.7
10°-20°	346.4	13.0
20°-30°	479.6	18.0
30°-40°	511.4	19.2
40°-50°	466.5	17.5
50°-60°	365.5	13.7
60°-70°	238.2	8.9
70°-80°	105.5	4.0
80°-90°	22.7	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°	952.2	35.8
0°-40°	1463.6	55.0
0°-60°	2295.6	86.2
0°-90°	2662.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2662.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1356	1356	1356	1356	1356	
5°	1332	1331	1331	1329	1329	126
15°	1246	1246	1234	1221	1216	350
25°	1080	1074	1057	1019	991	496
35°	876	870	828	765	746	548
45°	672	658	602	552	530	518
55°	467	453	411	362	343	419
65°	278	262	237	241	201	273
75°	111	104	97	92	102	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1356.0	1356.0	1356.0	1356.0	1356.0
2.5°	1346.6	1346.6	1346.6	1345.0	1345.0
5°	1332.5	1330.9	1330.9	1329.3	1329.3
7.5°	1321.5	1319.9	1318.4	1316.8	1313.7
10°	1305.8	1305.8	1304.3	1296.4	1294.9
12.5°	1280.7	1279.2	1272.9	1261.9	1258.8
15°	1246.3	1246.3	1233.7	1221.2	1216.5
17.5°	1208.6	1207.1	1191.4	1178.8	1172.6
20°	1167.9	1164.7	1149.1	1128.7	1117.7
22.5°	1122.4	1122.4	1103.6	1077.0	1066.0
25°	1080.1	1073.8	1056.6	1018.9	990.7
27.5°	1031.5	1022.1	1003.3	950.0	917.1
30°	978.2	973.5	946.8	877.9	852.8
32.5°	928.0	920.2	892.0	819.9	799.5
35°	876.3	870.0	827.7	765.0	746.2
37.5°	824.6	816.7	763.4	713.3	689.8
40°	772.8	763.4	705.4	660.0	634.9
42.5°	724.2	711.7	655.3	606.7	578.5
45°	672.5	658.4	602.0	551.8	529.9
47.5°	620.8	608.2	556.5	504.8	479.7
50°	565.9	554.9	507.9	456.2	429.5
52.5°	520.4	503.2	457.7	406.0	384.1
55°	467.1	453.0	410.7	362.1	343.3
57.5°	418.6	404.4	365.3	319.8	304.1
60°	373.1	352.7	319.8	280.6	268.1
62.5°	322.9	307.3	279.0	246.1	261.8
65°	277.5	261.8	236.7	241.4	200.7
67.5°	227.3	219.5	197.5	175.6	169.3
70°	185.0	175.6	167.7	144.2	138.0
72.5°	147.4	138.0	127.0	114.4	109.7
75°	111.3	103.5	97.2	92.5	101.9
77.5°	76.8	73.7	69.0	64.3	62.7
80°	50.2	48.6	47.0	45.5	43.9
82.5°	29.8	29.8	29.8	29.8	29.8
85°	15.7	17.2	18.8	20.4	21.9
87.5°	9.4	9.4	11.0	12.5	14.1
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)