

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: P546064

Luminaire Tested: **FMR-12-4-LD4-1STD-40-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: P546064
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-40-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 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

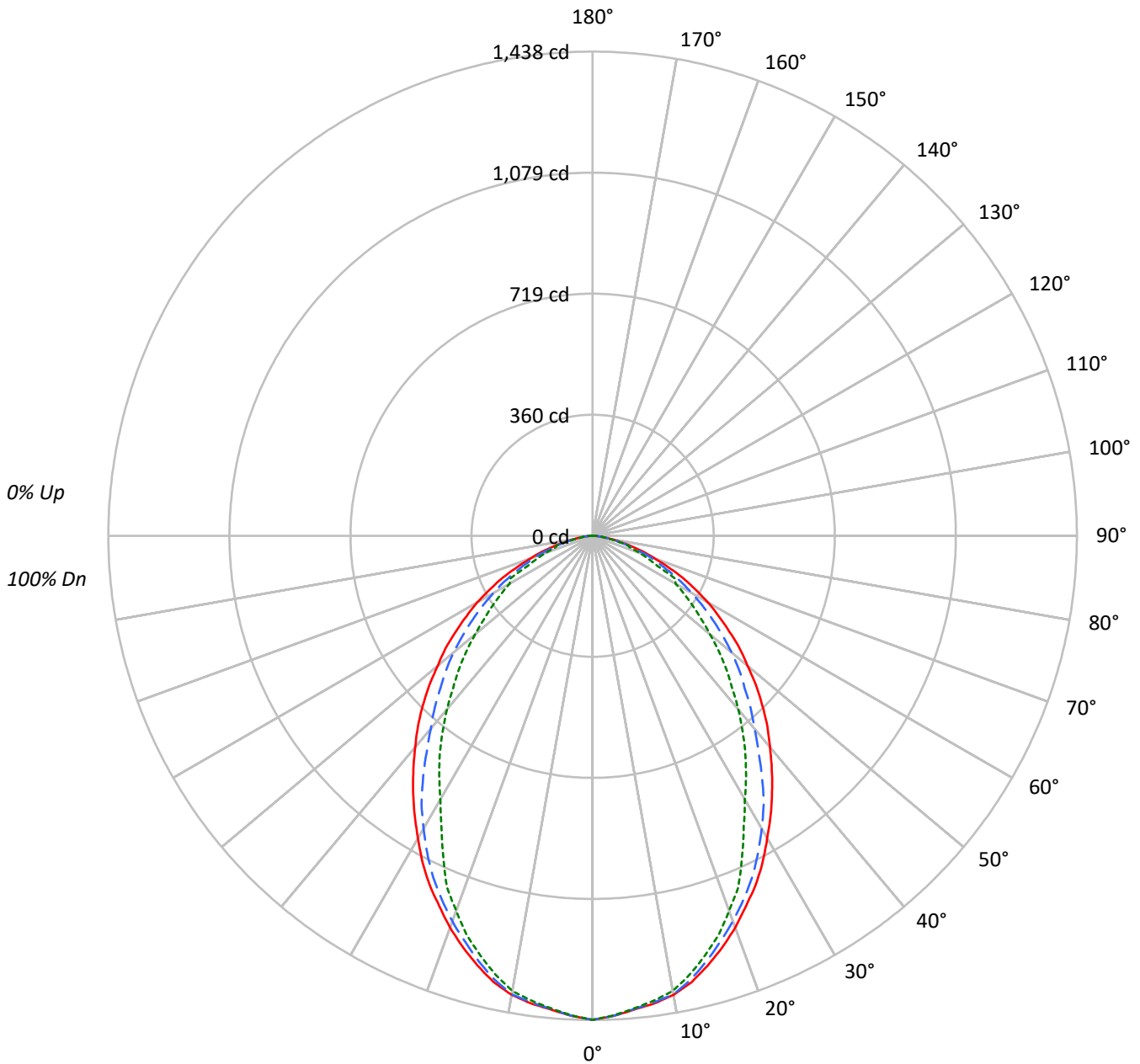
Lumens per Lamp: N/A
Luminaire Lumens: 2822.0 lumens
Efficiency: N/A
Efficacy: 84.7 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P546064

CATALOG NUMBER: FMR-12-4-LD4-1STD-40-UNV-93-85-EDD

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				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				100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65				65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50				50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44				44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40				40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36				36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33				33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30				30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3868	3868	3868
5°	3816	3811	3807
10°	3783	3778	3751
15°	3681	3644	3593
20°	3546	3488	3393
25°	3400	3326	3119
30°	3222	3119	2809
35°	3052	2882	2598
40°	2878	2627	2364
45°	2713	2428	2138
50°	2511	2254	1906
55°	2323	2043	1707
60°	2129	1824	1530
65°	1873	1598	1354
70°	1543	1399	1150
75°	1227	1071	1123
80°	824	773	721
85°	513	614	719



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.8	4.7
10°-20°	367.2	13.0
20°-30°	508.4	18.0
30°-40°	542.1	19.2
40°-50°	494.6	17.5
50°-60°	387.5	13.7
60°-70°	252.5	8.9
70°-80°	111.9	4.0
80°-90°	24.0	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°	1009.5	35.8
0°-40°	1551.6	55.0
0°-60°	2433.6	86.2
0°-90°	2822.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2822.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1438	1438	1438	1438	1438	
5°	1413	1411	1411	1409	1409	134
15°	1321	1321	1308	1295	1290	371
25°	1145	1138	1120	1080	1050	526
35°	929	922	877	811	791	581
45°	713	698	638	585	562	549
55°	495	480	435	384	364	444
65°	294	278	251	256	213	290
75°	118	110	103	98	108	126
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1437.5	1437.5	1437.5	1437.5	1437.5
2.5°	1427.5	1427.5	1427.5	1425.9	1425.9
5°	1412.6	1410.9	1410.9	1409.2	1409.2
7.5°	1400.9	1399.3	1397.6	1395.9	1392.6
10°	1384.3	1384.3	1382.6	1374.3	1372.7
12.5°	1357.7	1356.1	1349.4	1337.8	1334.5
15°	1321.2	1321.2	1307.9	1294.6	1289.6
17.5°	1281.3	1279.6	1263.0	1249.7	1243.1
20°	1238.1	1234.7	1218.1	1196.5	1184.9
22.5°	1189.9	1189.9	1169.9	1141.7	1130.0
25°	1145.0	1138.4	1120.1	1080.2	1050.3
27.5°	1093.5	1083.5	1063.6	1007.1	972.2
30°	1037.0	1032.0	1003.7	930.6	904.0
32.5°	983.8	975.5	945.6	869.1	847.5
35°	929.0	922.3	877.4	811.0	791.0
37.5°	874.1	865.8	809.3	756.1	731.2
40°	819.3	809.3	747.8	699.6	673.0
42.5°	767.8	754.5	694.6	643.1	613.2
45°	712.9	698.0	638.1	585.0	561.7
47.5°	658.1	644.8	590.0	535.1	508.5
50°	599.9	588.3	538.4	483.6	455.3
52.5°	551.7	533.4	485.3	430.4	407.2
55°	495.2	480.3	435.4	383.9	363.9
57.5°	443.7	428.8	387.2	339.0	322.4
60°	395.5	373.9	339.0	297.5	284.2
62.5°	342.3	325.7	295.8	260.9	277.5
65°	294.1	277.5	250.9	255.9	212.7
67.5°	241.0	232.7	209.4	186.1	179.5
70°	196.1	186.1	177.8	152.9	146.2
72.5°	156.2	146.2	134.6	121.3	116.3
75°	118.0	109.7	103.0	98.0	108.0
77.5°	81.4	78.1	73.1	68.1	66.5
80°	53.2	51.5	49.9	48.2	46.5
82.5°	31.6	31.6	31.6	31.6	31.6
85°	16.6	18.3	19.9	21.6	23.3
87.5°	10.0	10.0	11.6	13.3	15.0
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)