

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: P546149

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-81-96-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: P546149
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-40-UNV-81-96-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

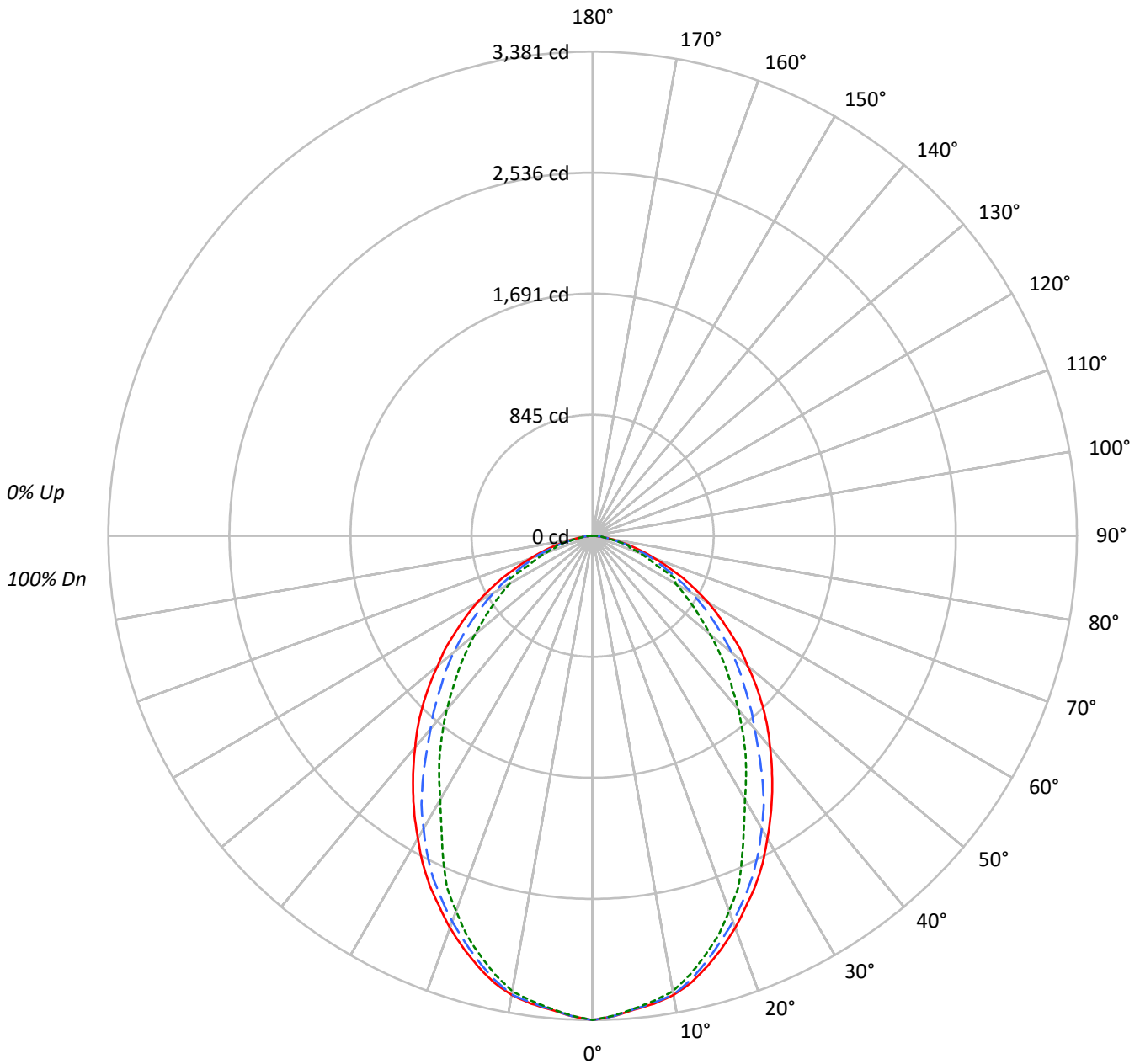
Lumens per Lamp: N/A
Luminaire Lumens: 6638.0 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
Input Voltage (V): NR
Input Current (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°	9099	9099	9099
5°	8975	8965	8954
10°	8898	8887	8823
15°	8658	8571	8451
20°	8340	8205	7981
25°	7997	7823	7335
30°	7579	7337	6608
35°	7178	6780	6113
40°	6770	6179	5562
45°	6382	5713	5028
50°	5908	5302	4484
55°	5465	4805	4016
60°	5007	4292	3597
65°	4406	3759	3186
70°	3629	3291	2707
75°	2885	2520	2642
80°	1939	1818	1697
85°	1207	1448	1689



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.8	4.7
10°-20°	863.8	13.0
20°-30°	1195.9	18.0
30°-40°	1275.2	19.2
40°-50°	1163.3	17.5
50°-60°	911.4	13.7
60°-70°	594.0	8.9
70°-80°	263.2	4.0
80°-90°	56.5	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°	2374.5	35.8
0°-40°	3649.6	55.0
0°-60°	5724.4	86.2
0°-90°	6638.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6638.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3381	3381	3381	3381	3381	
5°	3323	3319	3319	3315	3315	315
15°	3108	3108	3076	3045	3033	874
25°	2693	2678	2635	2541	2470	1236
35°	2185	2170	2064	1908	1861	1366
45°	1677	1642	1501	1376	1321	1292
55°	1165	1130	1024	903	856	1045
65°	692	653	590	602	500	682
75°	278	258	242	231	254	297
85°	39	43	47	51	55	54
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3381.3	3381.3	3381.3	3381.3	3381.3
2.5°	3357.9	3357.9	3357.9	3353.9	3353.9
5°	3322.7	3318.8	3318.8	3314.9	3314.9
7.5°	3295.3	3291.4	3287.5	3283.6	3275.8
10°	3256.2	3256.2	3252.3	3232.8	3228.9
12.5°	3193.7	3189.8	3174.1	3146.8	3138.9
15°	3107.7	3107.7	3076.4	3045.1	3033.4
17.5°	3013.9	3010.0	2970.9	2939.6	2924.0
20°	2912.2	2904.4	2865.3	2814.5	2787.1
22.5°	2798.9	2798.9	2752.0	2685.5	2658.1
25°	2693.3	2677.7	2634.7	2540.9	2470.5
27.5°	2572.1	2548.7	2501.8	2368.9	2286.8
30°	2439.2	2427.5	2361.1	2189.1	2126.5
32.5°	2314.1	2294.6	2224.2	2044.4	1993.6
35°	2185.1	2169.5	2064.0	1907.6	1860.7
37.5°	2056.1	2036.6	1903.7	1778.6	1720.0
40°	1927.2	1903.7	1759.1	1645.7	1583.2
42.5°	1806.0	1774.7	1634.0	1512.8	1442.4
45°	1677.0	1641.8	1501.1	1376.0	1321.3
47.5°	1548.0	1516.7	1387.7	1258.7	1196.2
50°	1411.2	1383.8	1266.5	1137.5	1071.1
52.5°	1297.8	1254.8	1141.4	1012.4	957.7
55°	1164.9	1129.7	1024.2	903.0	856.1
57.5°	1043.7	1008.5	910.8	797.4	758.4
60°	930.3	879.5	797.4	699.7	668.4
62.5°	805.3	766.2	695.8	613.7	652.8
65°	691.9	652.8	590.3	602.0	500.4
67.5°	566.8	547.3	492.5	437.8	422.2
70°	461.3	437.8	418.3	359.6	344.0
72.5°	367.4	344.0	316.6	285.4	273.6
75°	277.5	258.0	242.4	230.6	254.1
77.5°	191.5	183.7	172.0	160.3	156.4
80°	125.1	121.2	117.3	113.4	109.5
82.5°	74.3	74.3	74.3	74.3	74.3
85°	39.1	43.0	46.9	50.8	54.7
87.5°	23.5	23.5	27.4	31.3	35.2
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)