

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: P546154

Luminaire Tested: **FMR-12-4-LD4-2HI-40-UNV-82-87-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: P546154
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-82-87-EDD
Description: 1X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

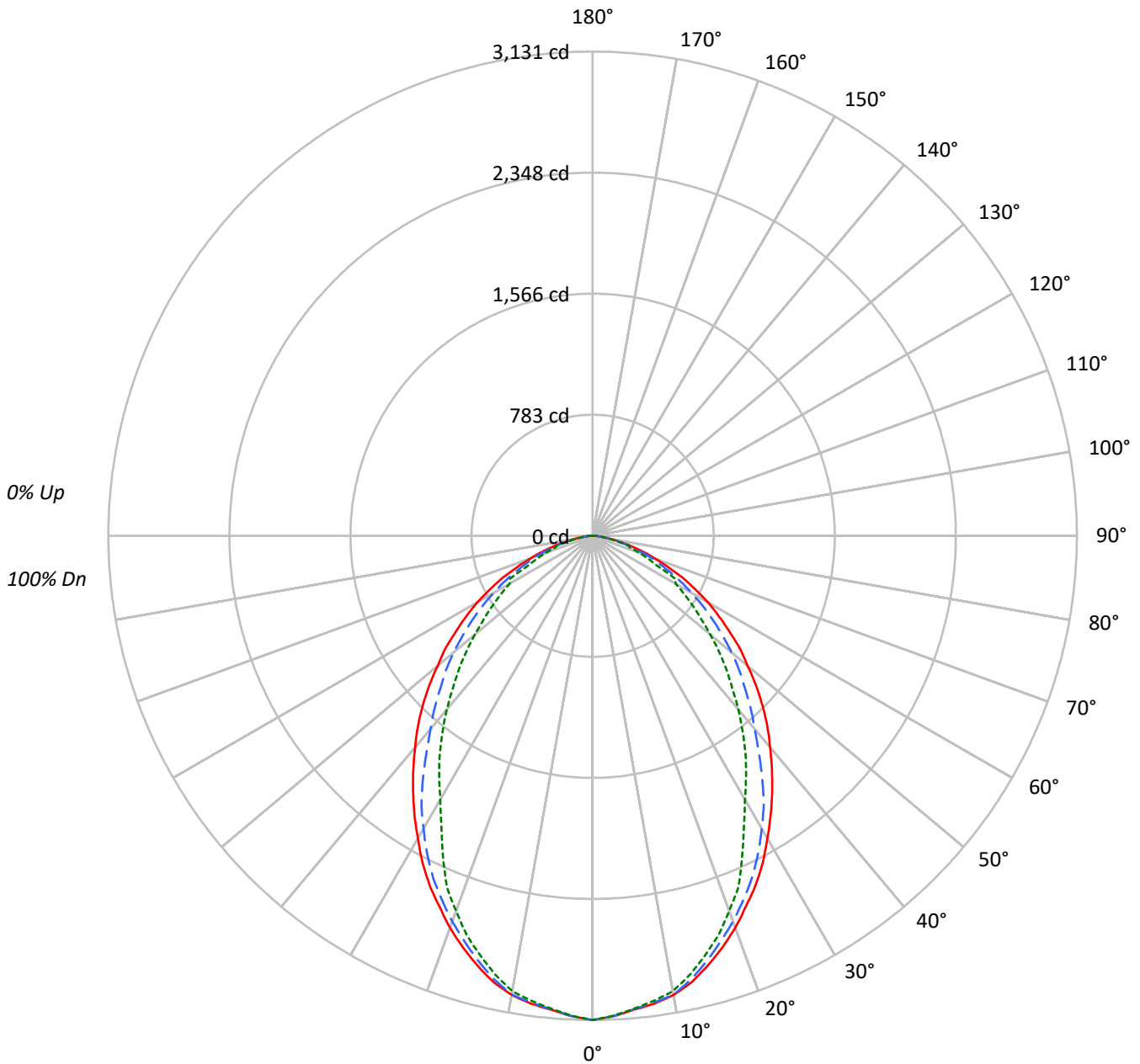
Lumens per Lamp: N/A
Luminaire Lumens: 6147.0 lumens
Efficiency: N/A
Efficacy: 71.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	8426	8426	8426
5°	8312	8302	8292
10°	8240	8229	8170
15°	8017	7936	7826
20°	7723	7598	7391
25°	7405	7244	6793
30°	7019	6794	6119
35°	6647	6279	5661
40°	6269	5722	5150
45°	5910	5290	4656
50°	5471	4910	4152
55°	5061	4449	3719
60°	4637	3975	3331
65°	4080	3480	2950
70°	3360	3047	2506
75°	2672	2333	2446
80°	1795	1683	1571
85°	1118	1340	1565



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	291.5	4.7
10°-20°	799.9	13.0
20°-30°	1107.4	18.0
30°-40°	1180.8	19.2
40°-50°	1077.3	17.5
50°-60°	844.0	13.7
60°-70°	550.0	8.9
70°-80°	243.7	4.0
80°-90°	52.3	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°	2198.8	35.8
0°-40°	3379.7	55.0
0°-60°	5300.9	86.2
0°-90°	6147.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6147.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3131	3131	3131	3131	3131	
5°	3077	3073	3073	3070	3070	292
15°	2878	2878	2849	2820	2809	809
25°	2494	2480	2440	2353	2288	1145
35°	2024	2009	1911	1766	1723	1265
45°	1553	1520	1390	1274	1224	1196
55°	1079	1046	948	836	793	968
65°	641	604	547	558	463	631
75°	257	239	224	214	235	275
85°	36	40	43	47	51	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3131.2	3131.2	3131.2	3131.2	3131.2
2.5°	3109.5	3109.5	3109.5	3105.9	3105.9
5°	3076.9	3073.3	3073.3	3069.7	3069.7
7.5°	3051.6	3047.9	3044.3	3040.7	3033.5
10°	3015.4	3015.4	3011.7	2993.6	2990.0
12.5°	2957.4	2953.8	2939.3	2914.0	2906.8
15°	2877.8	2877.8	2848.8	2819.9	2809.0
17.5°	2790.9	2787.3	2751.1	2722.2	2707.7
20°	2696.8	2689.6	2653.4	2606.3	2581.0
22.5°	2591.8	2591.8	2548.4	2486.9	2461.5
25°	2494.1	2479.6	2439.8	2352.9	2287.8
27.5°	2381.9	2360.2	2316.7	2193.6	2117.6
30°	2258.8	2247.9	2186.4	2027.1	1969.2
32.5°	2143.0	2124.9	2059.7	1893.2	1846.1
35°	2023.5	2009.0	1911.3	1766.5	1723.1
37.5°	1904.1	1886.0	1762.9	1647.0	1592.7
40°	1784.6	1762.9	1628.9	1524.0	1466.1
42.5°	1672.4	1643.4	1513.1	1400.9	1335.7
45°	1552.9	1520.4	1390.0	1274.2	1223.5
47.5°	1433.5	1404.5	1285.1	1165.6	1107.7
50°	1306.8	1281.4	1172.8	1053.4	991.8
52.5°	1201.8	1162.0	1057.0	937.5	886.9
55°	1078.7	1046.1	948.4	836.2	792.8
57.5°	966.5	933.9	843.4	738.5	702.3
60°	861.5	814.5	738.5	648.0	619.0
62.5°	745.7	709.5	644.3	568.3	604.5
65°	640.7	604.5	546.6	557.5	463.3
67.5°	524.9	506.8	456.1	405.4	390.9
70°	427.1	405.4	387.3	333.0	318.5
72.5°	340.3	318.5	293.2	264.3	253.4
75°	257.0	238.9	224.4	213.6	235.3
77.5°	177.4	170.1	159.3	148.4	144.8
80°	115.8	112.2	108.6	105.0	101.4
82.5°	68.8	68.8	68.8	68.8	68.8
85°	36.2	39.8	43.4	47.1	50.7
87.5°	21.7	21.7	25.3	29.0	32.6
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)