

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: P546160

Luminaire Tested: **FMR-12-4-LD4-2HI-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: P546160
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-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

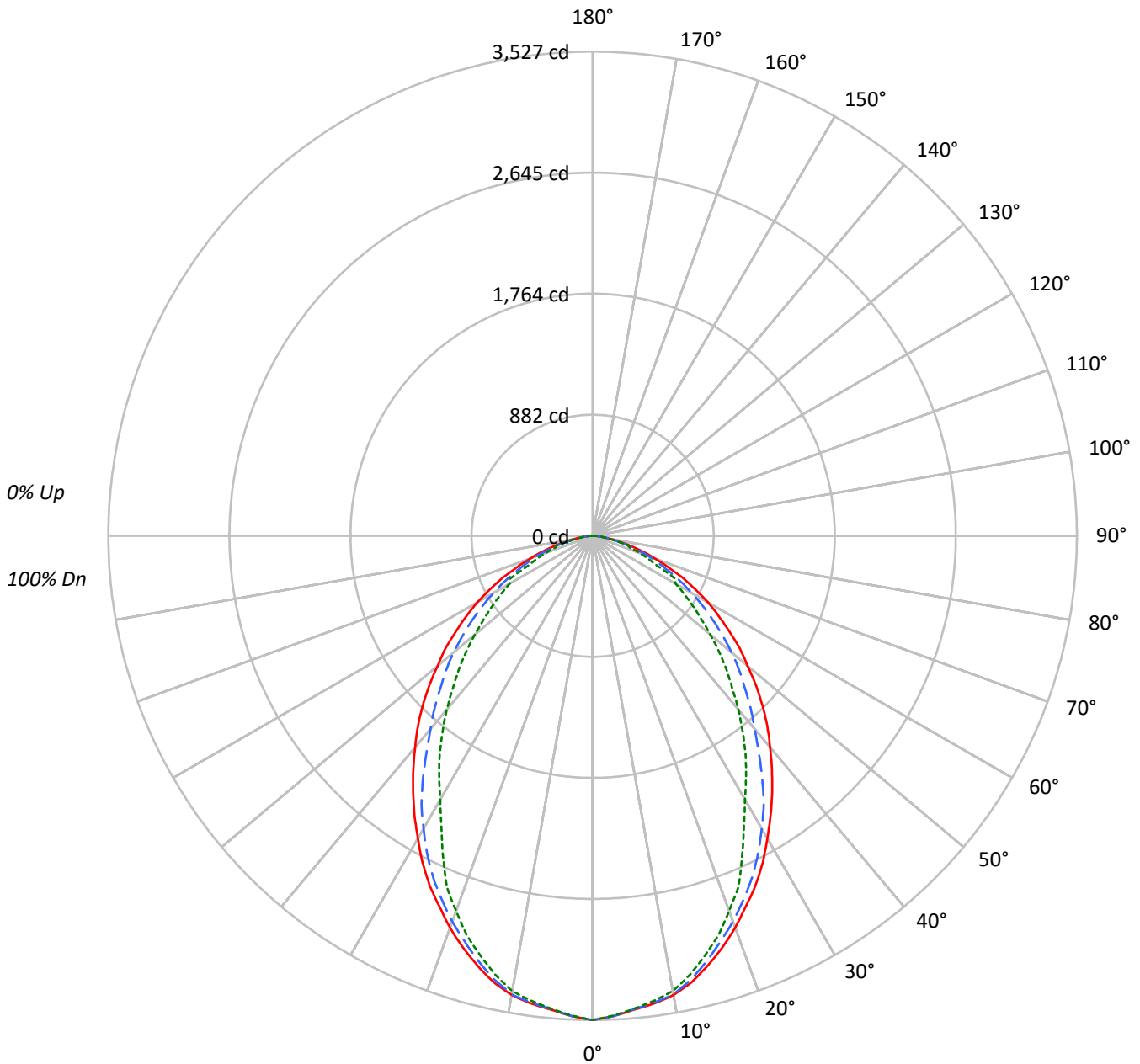
Lumens per Lamp: N/A
Luminaire Lumens: 6924.0 lumens
Efficiency: N/A
Efficacy: 80.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	9491	9491	9491
5°	9362	9351	9340
10°	9281	9270	9203
15°	9031	8940	8815
20°	8699	8559	8325
25°	8342	8160	7651
30°	7906	7653	6892
35°	7488	7072	6376
40°	7061	6446	5801
45°	6657	5958	5245
50°	6162	5531	4677
55°	5701	5012	4190
60°	5223	4477	3752
65°	4595	3920	3323
70°	3785	3433	2823
75°	3010	2628	2755
80°	2022	1895	1770
85°	1260	1510	1763



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.3	4.7
10°-20°	901.0	13.0
20°-30°	1247.4	18.0
30°-40°	1330.1	19.2
40°-50°	1213.5	17.5
50°-60°	950.6	13.7
60°-70°	619.6	8.9
70°-80°	274.5	4.0
80°-90°	58.9	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°	2476.8	35.8
0°-40°	3806.9	55.0
0°-60°	5971.0	86.2
0°-90°	6924.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6924.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3527	3527	3527	3527	3527	
5°	3466	3462	3462	3458	3458	329
15°	3242	3242	3209	3176	3164	911
25°	2809	2793	2748	2650	2577	1290
35°	2279	2263	2153	1990	1941	1425
45°	1749	1712	1566	1435	1378	1347
55°	1215	1178	1068	942	893	1090
65°	722	681	616	628	522	711
75°	290	269	253	241	265	310
85°	41	45	49	53	57	57
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3527.0	3527.0	3527.0	3527.0	3527.0
2.5°	3502.5	3502.5	3502.5	3498.5	3498.5
5°	3465.8	3461.8	3461.8	3457.7	3457.7
7.5°	3437.3	3433.2	3429.1	3425.1	3416.9
10°	3396.5	3396.5	3392.4	3372.1	3368.0
12.5°	3331.3	3327.2	3310.9	3282.3	3274.2
15°	3241.6	3241.6	3209.0	3176.3	3164.1
17.5°	3143.7	3139.6	3098.9	3066.2	3049.9
20°	3037.7	3029.5	2988.8	2935.8	2907.2
22.5°	2919.5	2919.5	2870.5	2801.2	2772.7
25°	2809.4	2793.1	2748.2	2650.3	2576.9
27.5°	2683.0	2658.5	2609.6	2470.9	2385.3
30°	2544.3	2532.1	2462.8	2283.4	2218.1
32.5°	2413.8	2393.5	2320.1	2132.5	2079.5
35°	2279.3	2263.0	2152.9	1989.8	1940.9
37.5°	2144.7	2124.4	1985.7	1855.2	1794.1
40°	2010.2	1985.7	1834.9	1716.6	1651.4
42.5°	1883.8	1851.2	1704.4	1578.0	1504.6
45°	1749.2	1712.5	1565.7	1435.3	1378.2
47.5°	1614.7	1582.1	1447.5	1312.9	1247.7
50°	1472.0	1443.4	1321.1	1186.5	1117.2
52.5°	1353.7	1308.9	1190.6	1056.1	999.0
55°	1215.1	1178.4	1068.3	941.9	893.0
57.5°	1088.7	1052.0	950.0	831.8	791.0
60°	970.4	917.4	831.8	729.9	697.2
62.5°	840.0	799.2	725.8	640.2	680.9
65°	721.7	680.9	615.7	627.9	521.9
67.5°	591.2	570.8	513.8	456.7	440.4
70°	481.1	456.7	436.3	375.1	358.8
72.5°	383.3	358.8	330.3	297.7	285.4
75°	289.5	269.1	252.8	240.6	265.0
77.5°	199.8	191.6	179.4	167.2	163.1
80°	130.5	126.4	122.3	118.2	114.2
82.5°	77.5	77.5	77.5	77.5	77.5
85°	40.8	44.9	48.9	53.0	57.1
87.5°	24.5	24.5	28.5	32.6	36.7
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)