

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: P546048

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-81-85-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: P546048  
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-81-85-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR PC 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**

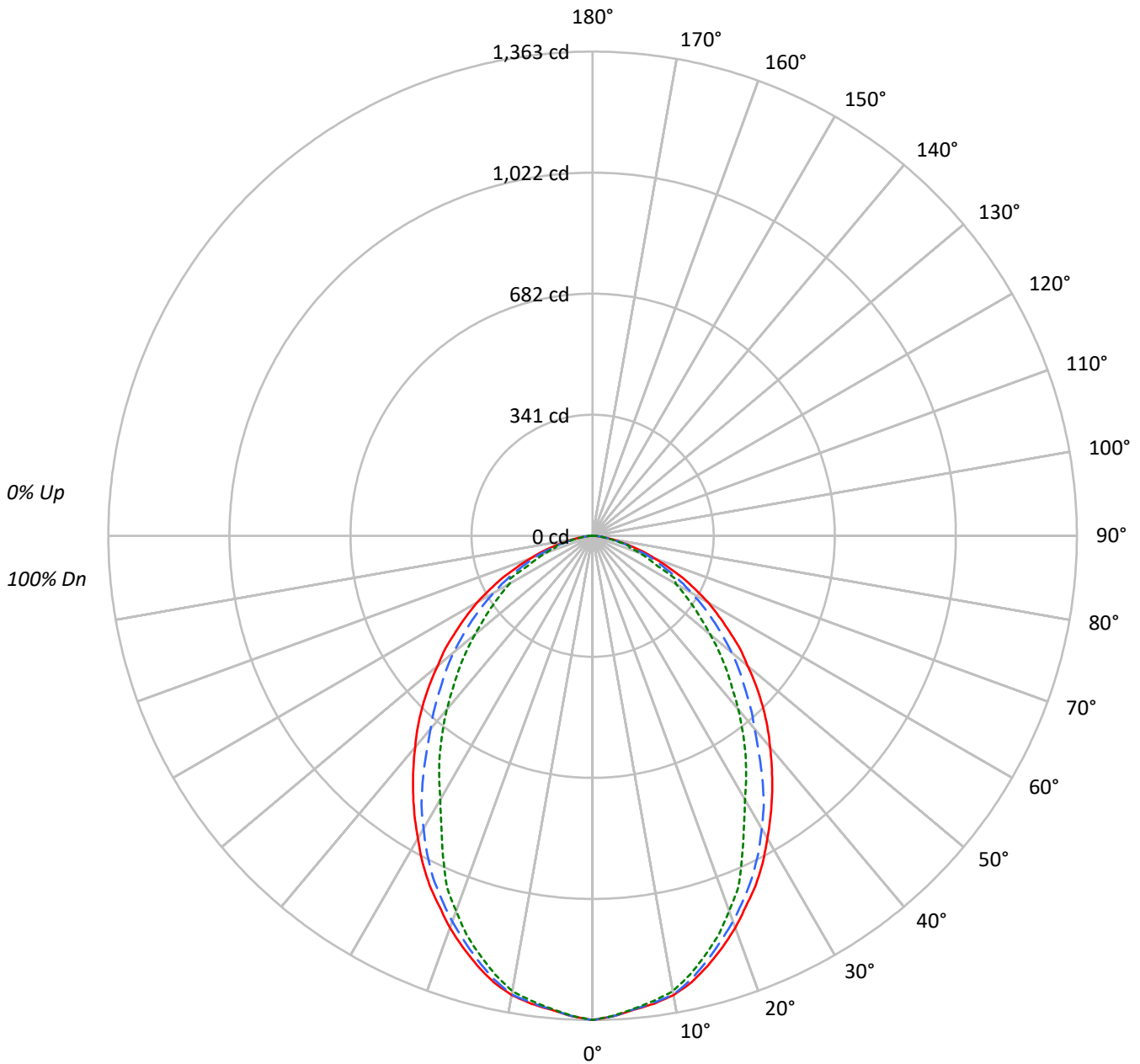
Lumens per Lamp: N/A  
Luminaire Lumens: 2676.0 lumens  
Efficiency: N/A  
Efficacy: 80.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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°	3668	3668	3668
5°	3618	3614	3610
10°	3587	3583	3557
15°	3490	3455	3407
20°	3362	3308	3218
25°	3224	3154	2957
30°	3055	2958	2664
35°	2894	2734	2464
40°	2729	2491	2242
45°	2573	2303	2027
50°	2382	2138	1808
55°	2203	1937	1619
60°	2019	1730	1450
65°	1776	1515	1284
70°	1463	1327	1091
75°	1163	1016	1065
80°	781	733	683
85°	488	584	682



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.9	4.7
10°-20°	348.2	13.0
20°-30°	482.1	18.0
30°-40°	514.1	19.2
40°-50°	469.0	17.5
50°-60°	367.4	13.7
60°-70°	239.5	8.9
70°-80°	106.1	4.0
80°-90°	22.8	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°	957.2	35.8
0°-40°	1471.3	55.0
0°-60°	2307.7	86.2
0°-90°	2676.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2676.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1363	1363	1363	1363	1363	
5°	1340	1338	1338	1336	1336	127
15°	1253	1253	1240	1228	1223	352
25°	1086	1080	1062	1024	996	498
35°	881	875	832	769	750	551
45°	676	662	605	555	533	521
55°	470	455	413	364	345	421
65°	279	263	238	243	202	275
75°	112	104	98	93	102	120
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°	1363.1	1363.1	1363.1	1363.1	1363.1
2.5°	1353.7	1353.7	1353.7	1352.1	1352.1
5°	1339.5	1337.9	1337.9	1336.3	1336.3
7.5°	1328.4	1326.9	1325.3	1323.7	1320.6
10°	1312.7	1312.7	1311.1	1303.2	1301.7
12.5°	1287.5	1285.9	1279.6	1268.6	1265.4
15°	1252.8	1252.8	1240.2	1227.6	1222.9
17.5°	1215.0	1213.4	1197.7	1185.0	1178.7
20°	1174.0	1170.9	1155.1	1134.6	1123.6
22.5°	1128.3	1128.3	1109.4	1082.6	1071.6
25°	1085.8	1079.5	1062.1	1024.3	995.9
27.5°	1036.9	1027.5	1008.6	955.0	921.9
30°	983.3	978.6	951.8	882.5	857.3
32.5°	932.9	925.0	896.7	824.2	803.7
35°	880.9	874.6	832.1	769.0	750.1
37.5°	828.9	821.0	767.4	717.0	693.4
40°	776.9	767.4	709.1	663.4	638.2
42.5°	728.0	715.4	658.7	609.9	581.5
45°	676.0	661.9	605.1	554.7	532.6
47.5°	624.0	611.4	559.4	507.4	482.2
50°	568.9	557.9	510.6	458.6	431.8
52.5°	523.2	505.9	460.2	408.1	386.1
55°	469.6	455.4	412.9	364.0	345.1
57.5°	420.8	406.6	367.2	321.5	305.7
60°	375.1	354.6	321.5	282.1	269.5
62.5°	324.6	308.9	280.5	247.4	263.2
65°	278.9	263.2	238.0	242.7	201.7
67.5°	228.5	220.6	198.6	176.5	170.2
70°	186.0	176.5	168.6	145.0	138.7
72.5°	148.1	138.7	127.6	115.0	110.3
75°	111.9	104.0	97.7	93.0	102.4
77.5°	77.2	74.1	69.3	64.6	63.0
80°	50.4	48.9	47.3	45.7	44.1
82.5°	29.9	29.9	29.9	29.9	29.9
85°	15.8	17.3	18.9	20.5	22.1
87.5°	9.5	9.5	11.0	12.6	14.2
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)