

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: P546066

Luminaire Tested: **FMR-12-4-LD4-1STD-40-UNV-93-87-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: P546066  
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-93-87-EDD  
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS 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**

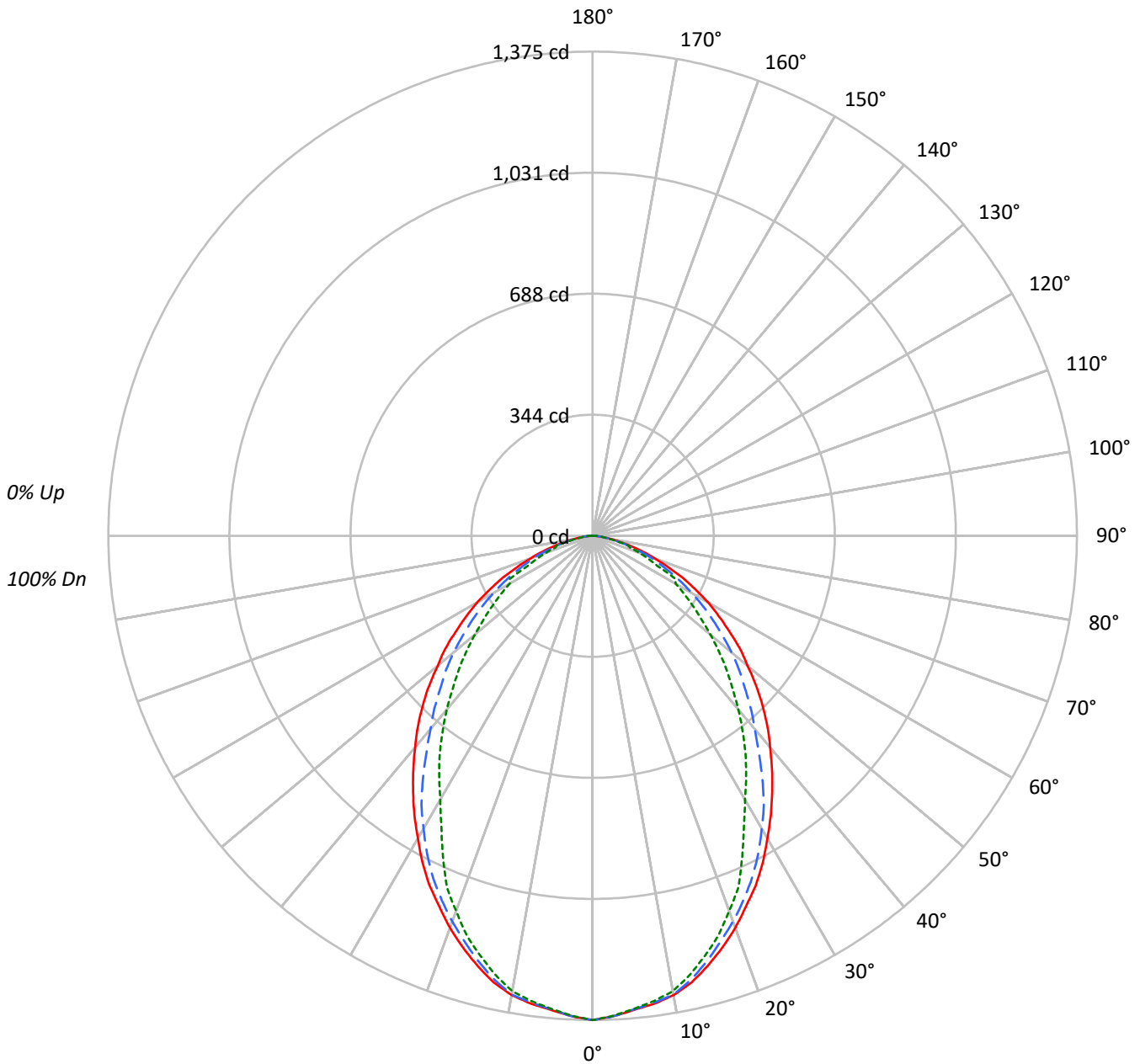
Lumens per Lamp: N/A  
Luminaire Lumens: 2700.0 lumens  
Efficiency: N/A  
Efficacy: 81.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

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

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3701	3701	3701
5°	3651	3646	3642
10°	3619	3615	3589
15°	3521	3486	3437
20°	3392	3338	3247
25°	3253	3182	2984
30°	3083	2984	2688
35°	2920	2758	2486
40°	2754	2513	2262
45°	2596	2324	2045
50°	2403	2157	1824
55°	2223	1955	1634
60°	2037	1746	1463
65°	1792	1529	1296
70°	1476	1338	1101
75°	1174	1025	1074
80°	789	739	690
85°	491	590	689



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.0	4.7
10°-20°	351.4	13.0
20°-30°	486.4	18.0
30°-40°	518.7	19.2
40°-50°	473.2	17.5
50°-60°	370.7	13.7
60°-70°	241.6	8.9
70°-80°	107.0	4.0
80°-90°	23.0	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°	965.8	35.8
0°-40°	1484.5	55.0
0°-60°	2328.4	86.2
0°-90°	2700.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2700.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1352	1350	1350	1348	1348	128
15°	1264	1264	1251	1239	1234	355
25°	1096	1089	1072	1034	1005	503
35°	889	882	840	776	757	556
45°	682	668	611	560	537	525
55°	474	460	417	367	348	425
65°	281	266	240	245	204	277
75°	113	105	99	94	103	121
85°	16	18	19	21	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1375.3	1375.3	1375.3	1375.3	1375.3
2.5°	1365.8	1365.8	1365.8	1364.2	1364.2
5°	1351.5	1349.9	1349.9	1348.3	1348.3
7.5°	1340.4	1338.8	1337.2	1335.6	1332.4
10°	1324.5	1324.5	1322.9	1314.9	1313.3
12.5°	1299.0	1297.4	1291.1	1279.9	1276.8
15°	1264.0	1264.0	1251.3	1238.6	1233.8
17.5°	1225.9	1224.3	1208.4	1195.7	1189.3
20°	1184.5	1181.4	1165.5	1144.8	1133.7
22.5°	1138.4	1138.4	1119.4	1092.3	1081.2
25°	1095.5	1089.1	1071.7	1033.5	1004.9
27.5°	1046.2	1036.7	1017.6	963.5	930.1
30°	992.2	987.4	960.4	890.4	865.0
32.5°	941.3	933.3	904.7	831.6	810.9
35°	888.8	882.4	839.5	775.9	756.8
37.5°	836.3	828.4	774.3	723.4	699.6
40°	783.9	774.3	715.5	669.4	643.9
42.5°	734.6	721.9	664.6	615.3	586.7
45°	682.1	667.8	610.6	559.7	537.4
47.5°	629.6	616.9	564.4	512.0	486.5
50°	574.0	562.9	515.2	462.7	435.7
52.5°	527.9	510.4	464.3	411.8	389.5
55°	473.8	459.5	416.6	367.3	348.2
57.5°	424.5	410.2	370.5	324.4	308.5
60°	378.4	357.7	324.4	284.6	271.9
62.5°	327.5	311.6	283.0	249.6	265.5
65°	281.4	265.5	240.1	244.9	203.5
67.5°	230.5	222.6	200.3	178.1	171.7
70°	187.6	178.1	170.1	146.3	139.9
72.5°	149.5	139.9	128.8	116.1	111.3
75°	112.9	104.9	98.6	93.8	103.3
77.5°	77.9	74.7	70.0	65.2	63.6
80°	50.9	49.3	47.7	46.1	44.5
82.5°	30.2	30.2	30.2	30.2	30.2
85°	15.9	17.5	19.1	20.7	22.3
87.5°	9.5	9.5	11.1	12.7	14.3
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)