

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: P546528

Luminaire Tested: **FMR-24-4-LD4-1LO-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: P546528  
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-24-4-LD4-1LO-40-UNV-81-85-EDD  
Description: 2X4 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**

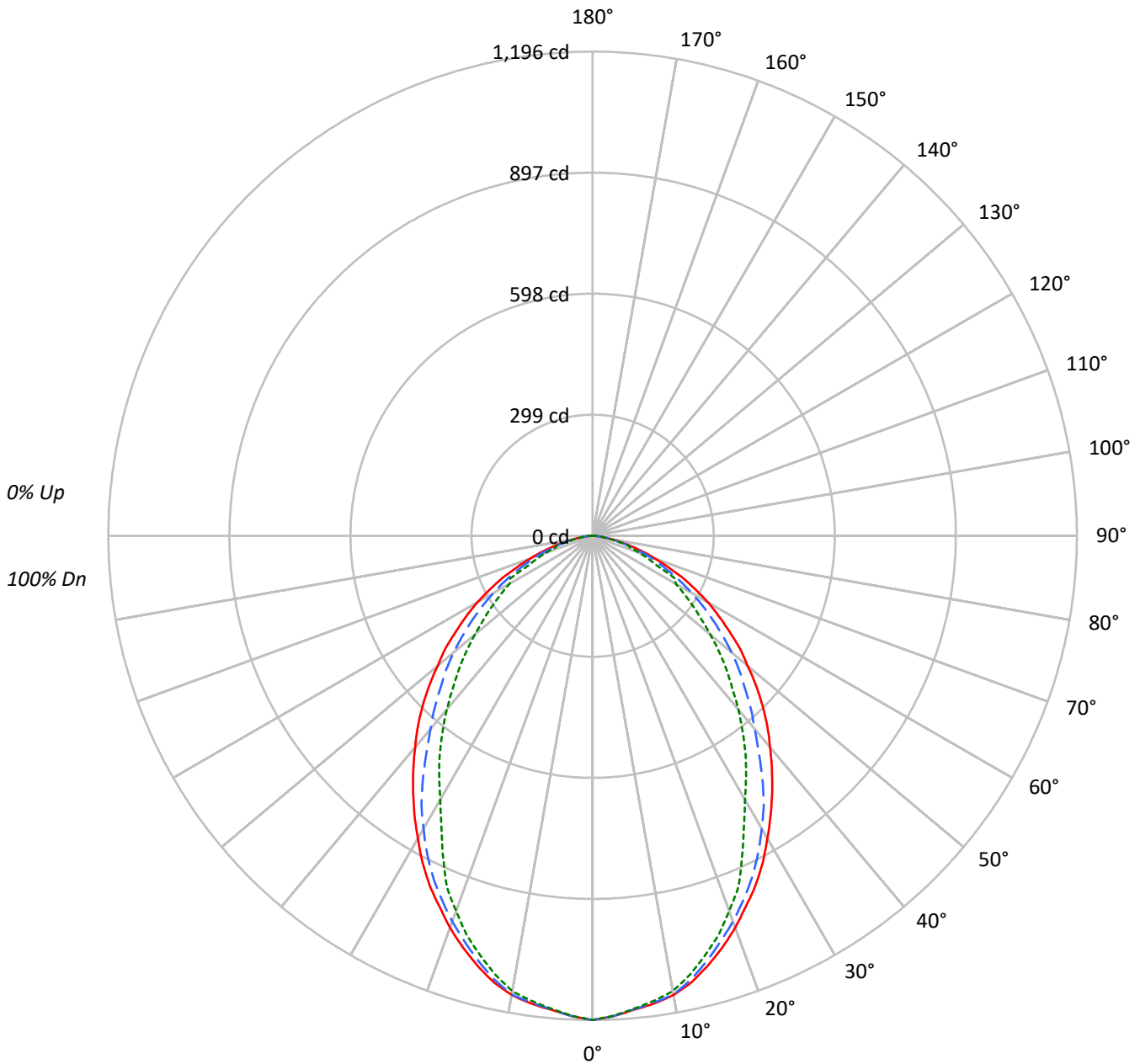
Lumens per Lamp: N/A  
Luminaire Lumens: 2348.0 lumens  
Efficiency: N/A  
Efficacy: 100.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 23.4  
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°	1609	1609	1609
5°	1587	1586	1584
10°	1574	1572	1560
15°	1531	1516	1495
20°	1475	1451	1412
25°	1414	1383	1297
30°	1340	1298	1169
35°	1270	1199	1081
40°	1197	1093	984
45°	1129	1010	889
50°	1045	938	793
55°	966	850	710
60°	886	759	636
65°	779	665	564
70°	642	582	479
75°	510	446	467
80°	342	322	300
85°	213	256	299



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.3	4.7
10°-20°	305.6	13.0
20°-30°	423.0	18.0
30°-40°	451.1	19.2
40°-50°	411.5	17.5
50°-60°	322.4	13.7
60°-70°	210.1	8.9
70°-80°	93.1	4.0
80°-90°	20.0	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°	839.9	35.8
0°-40°	1291.0	55.0
0°-60°	2024.8	86.2
0°-90°	2348.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2348.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1196	1196	1196	1196	1196	
5°	1175	1174	1174	1172	1172	112
15°	1099	1099	1088	1077	1073	309
25°	953	947	932	899	874	437
35°	773	767	730	675	658	483
45°	593	581	531	487	467	457
55°	412	400	362	319	303	370
65°	245	231	209	213	177	241
75°	98	91	86	82	90	105
85°	14	15	17	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1196.0	1196.0	1196.0	1196.0	1196.0
2.5°	1187.7	1187.7	1187.7	1186.4	1186.4
5°	1175.3	1173.9	1173.9	1172.5	1172.5
7.5°	1165.6	1164.2	1162.9	1161.5	1158.7
10°	1151.8	1151.8	1150.4	1143.5	1142.1
12.5°	1129.7	1128.3	1122.8	1113.1	1110.3
15°	1099.3	1099.3	1088.2	1077.1	1073.0
17.5°	1066.1	1064.7	1050.9	1039.8	1034.3
20°	1030.1	1027.3	1013.5	995.5	985.9
22.5°	990.0	990.0	973.4	949.9	940.2
25°	952.7	947.2	931.9	898.8	873.9
27.5°	909.8	901.5	884.9	837.9	808.9
30°	862.8	858.7	835.2	774.3	752.2
32.5°	818.6	811.6	786.8	723.2	705.2
35°	772.9	767.4	730.1	674.8	658.2
37.5°	727.3	720.4	673.4	629.1	608.4
40°	681.7	673.4	622.2	582.1	560.0
42.5°	638.8	627.7	578.0	535.1	510.2
45°	593.2	580.7	531.0	486.7	467.4
47.5°	547.6	536.5	490.9	445.2	423.1
50°	499.2	489.5	448.0	402.4	378.9
52.5°	459.1	443.8	403.7	358.1	338.8
55°	412.0	399.6	362.3	319.4	302.8
57.5°	369.2	356.7	322.2	282.1	268.2
60°	329.1	311.1	282.1	247.5	236.4
62.5°	284.8	271.0	246.1	217.1	230.9
65°	244.7	230.9	208.8	212.9	177.0
67.5°	200.5	193.6	174.2	154.9	149.3
70°	163.2	154.9	147.9	127.2	121.7
72.5°	130.0	121.7	112.0	100.9	96.8
75°	98.2	91.3	85.7	81.6	89.9
77.5°	67.8	65.0	60.8	56.7	55.3
80°	44.2	42.9	41.5	40.1	38.7
82.5°	26.3	26.3	26.3	26.3	26.3
85°	13.8	15.2	16.6	18.0	19.4
87.5°	8.3	8.3	9.7	11.1	12.4
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)