

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: P547201

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-81-86-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: P547201  
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-LD4-3STD-40-UNV-81-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

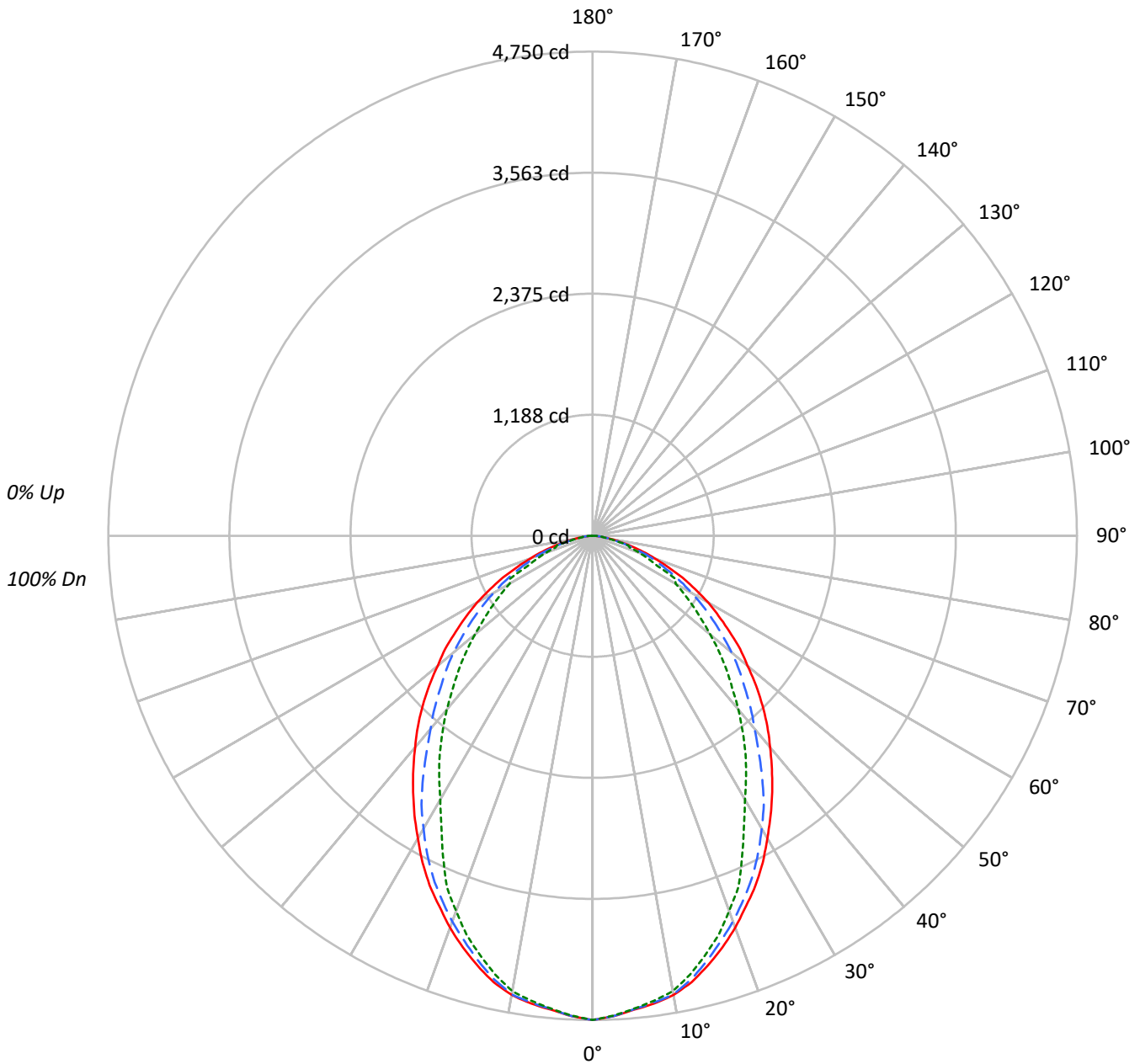
Lumens per Lamp: N/A  
Luminaire Lumens: 9325.0 lumens  
Efficiency: N/A  
Efficacy: 93.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 99.9  
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°	6391	6391	6391
5°	6304	6297	6289
10°	6250	6242	6197
15°	6081	6020	5936
20°	5858	5763	5606
25°	5617	5495	5152
30°	5324	5153	4641
35°	5042	4762	4293
40°	4755	4340	3906
45°	4483	4012	3532
50°	4150	3724	3149
55°	3839	3375	2821
60°	3517	3014	2527
65°	3095	2640	2238
70°	2549	2312	1901
75°	2027	1770	1855
80°	1361	1276	1192
85°	848	1017	1187



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	442.2	4.7
10°-20°	1213.5	13.0
20°-30°	1680.0	18.0
30°-40°	1791.4	19.2
40°-50°	1634.2	17.5
50°-60°	1280.3	13.7
60°-70°	834.4	8.9
70°-80°	369.7	4.0
80°-90°	79.3	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°	3335.6	35.8
0°-40°	5127.0	55.0
0°-60°	8041.5	86.2
0°-90°	9325.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9325.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4750	4750	4750	4750	4750	
5°	4668	4662	4662	4657	4657	443
15°	4366	4366	4322	4278	4261	1227
25°	3784	3762	3701	3569	3470	1737
35°	3070	3048	2899	2680	2614	1919
45°	2356	2306	2109	1933	1856	1815
55°	1636	1587	1439	1268	1203	1468
65°	972	917	829	846	703	958
75°	390	362	340	324	357	418
85°	55	60	66	71	77	76
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4750.0	4750.0	4750.0	4750.0	4750.0
2.5°	4717.1	4717.1	4717.1	4711.6	4711.6
5°	4667.7	4662.2	4662.2	4656.7	4656.7
7.5°	4629.2	4623.7	4618.2	4612.7	4601.8
10°	4574.3	4574.3	4568.8	4541.4	4535.9
12.5°	4486.4	4481.0	4459.0	4420.5	4409.6
15°	4365.6	4365.6	4321.7	4277.8	4261.3
17.5°	4233.8	4228.4	4173.4	4129.5	4107.5
20°	4091.1	4080.1	4025.2	3953.8	3915.3
22.5°	3931.8	3931.8	3865.9	3772.6	3734.1
25°	3783.6	3761.6	3701.2	3569.4	3470.5
27.5°	3613.3	3580.4	3514.5	3327.8	3212.4
30°	3426.6	3410.1	3316.8	3075.2	2987.3
32.5°	3250.9	3223.4	3124.6	2872.0	2800.6
35°	3069.7	3047.7	2899.4	2679.8	2613.9
37.5°	2888.5	2861.0	2674.3	2498.6	2416.2
40°	2707.2	2674.3	2471.1	2311.9	2224.0
42.5°	2537.0	2493.1	2295.4	2125.2	2026.3
45°	2355.8	2306.4	2108.7	1933.0	1856.1
47.5°	2174.6	2130.6	1949.4	1768.2	1680.4
50°	1982.4	1943.9	1779.2	1598.0	1504.6
52.5°	1823.1	1762.7	1603.5	1422.3	1345.4
55°	1636.4	1587.0	1438.7	1268.5	1202.6
57.5°	1466.2	1416.8	1279.5	1120.2	1065.3
60°	1306.9	1235.6	1120.2	983.0	939.0
62.5°	1131.2	1076.3	977.5	862.1	917.1
65°	972.0	917.1	829.2	845.7	702.9
67.5°	796.2	768.8	691.9	615.0	593.1
70°	648.0	615.0	587.6	505.2	483.2
72.5°	516.2	483.2	444.8	400.9	384.4
75°	389.9	362.4	340.5	324.0	356.9
77.5°	269.1	258.1	241.6	225.1	219.7
80°	175.7	170.2	164.7	159.2	153.8
82.5°	104.3	104.3	104.3	104.3	104.3
85°	54.9	60.4	65.9	71.4	76.9
87.5°	32.9	32.9	38.4	43.9	49.4
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)