

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: P547471

Luminaire Tested: **FMR-24-4-LD4-4STD-35-UNV-93-84-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: P547471  
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-LD4-4STD-35-UNV-93-84-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

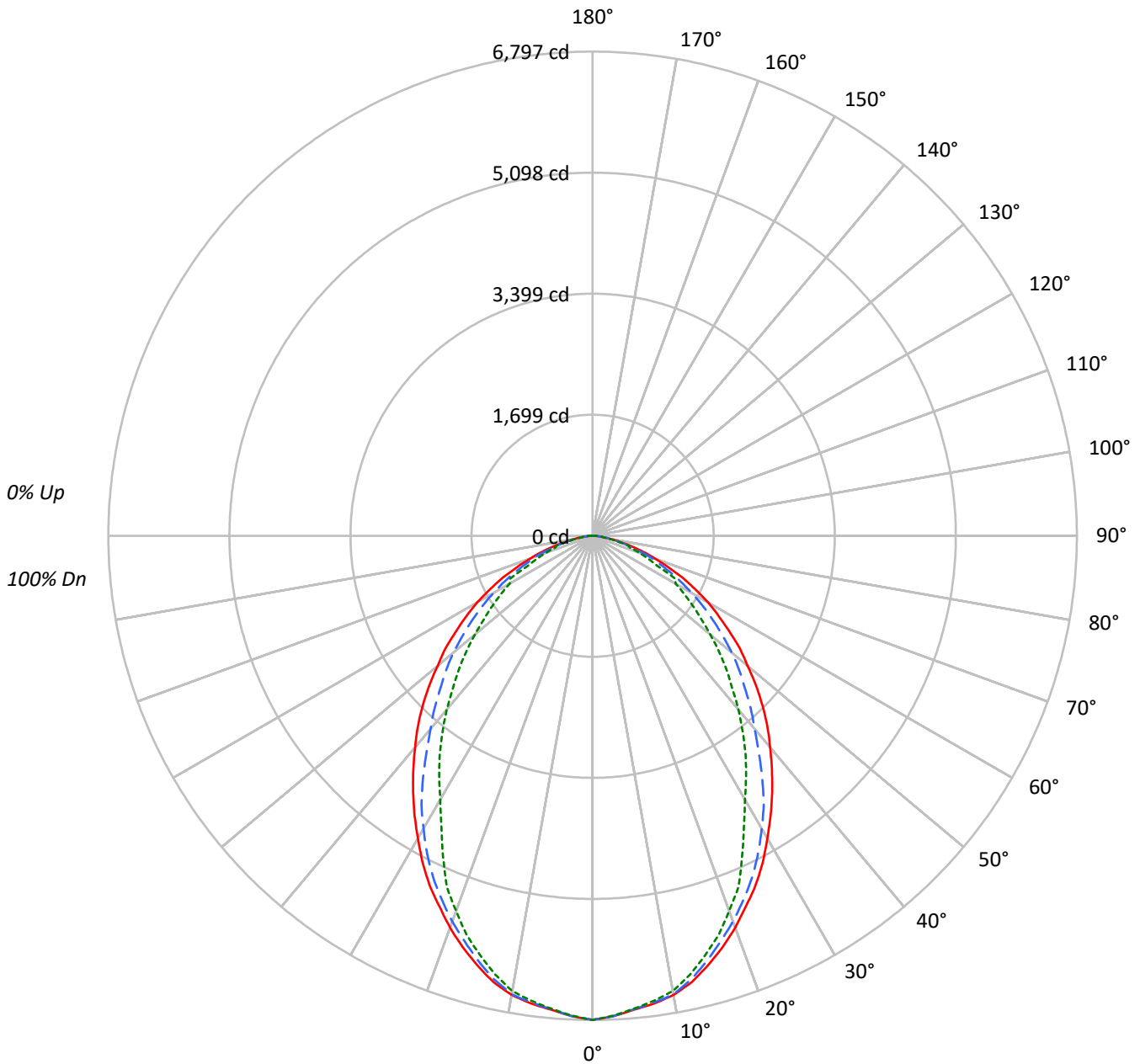
Lumens per Lamp: N/A  
Luminaire Lumens: 13343.0 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 133.2  
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°	9145	9145	9145
5°	9021	9010	9000
10°	8942	8932	8867
15°	8701	8614	8493
20°	8382	8247	8022
25°	8037	7862	7372
30°	7618	7373	6641
35°	7215	6815	6143
40°	6804	6210	5589
45°	6414	5741	5053
50°	5938	5329	4507
55°	5493	4829	4037
60°	5032	4313	3616
65°	4428	3777	3202
70°	3648	3308	2720
75°	2900	2533	2655
80°	1948	1826	1705
85°	1213	1456	1698



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	632.7	4.7
10°-20°	1736.3	13.0
20°-30°	2403.9	18.0
30°-40°	2563.2	19.2
40°-50°	2338.4	17.5
50°-60°	1832.0	13.7
60°-70°	1194.0	8.9
70°-80°	529.0	4.0
80°-90°	113.6	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°	4772.9	35.8
0°-40°	7336.1	55.0
0°-60°	11506.5	86.2
0°-90°	13343.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13343.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6797	6797	6797	6797	6797	
5°	6679	6671	6671	6663	6663	634
15°	6247	6247	6184	6121	6097	1756
25°	5414	5382	5296	5107	4966	2485
35°	4392	4361	4149	3834	3740	2746
45°	3371	3300	3017	2766	2656	2597
55°	2342	2271	2059	1815	1721	2100
65°	1391	1312	1186	1210	1006	1371
75°	558	519	487	464	511	598
85°	79	86	94	102	110	109
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6796.7	6796.7	6796.7	6796.7	6796.7
2.5°	6749.6	6749.6	6749.6	6741.7	6741.7
5°	6678.9	6671.0	6671.0	6663.2	6663.2
7.5°	6623.9	6616.0	6608.2	6600.3	6584.6
10°	6545.3	6545.3	6537.4	6498.2	6490.3
12.5°	6419.6	6411.7	6380.3	6325.3	6309.6
15°	6246.7	6246.7	6183.9	6121.0	6097.4
17.5°	6058.1	6050.3	5971.7	5908.8	5877.4
20°	5853.8	5838.1	5759.6	5657.4	5602.4
22.5°	5626.0	5626.0	5531.7	5398.1	5343.1
25°	5413.8	5382.4	5296.0	5107.4	4965.9
27.5°	5170.2	5123.1	5028.8	4761.7	4596.6
30°	4903.1	4879.5	4745.9	4400.2	4274.5
32.5°	4651.6	4612.4	4470.9	4109.5	4007.3
35°	4392.3	4360.9	4148.8	3834.5	3740.2
37.5°	4133.1	4093.8	3826.6	3575.2	3457.3
40°	3873.8	3826.6	3535.9	3308.0	3182.3
42.5°	3630.2	3567.3	3284.4	3040.9	2899.4
45°	3370.9	3300.2	3017.3	2765.8	2655.8
47.5°	3111.6	3048.7	2789.4	2530.1	2404.4
50°	2836.6	2781.6	2545.8	2286.5	2153.0
52.5°	2608.7	2522.3	2294.4	2035.1	1925.1
55°	2341.5	2270.8	2058.7	1815.1	1720.8
57.5°	2098.0	2027.2	1830.8	1602.9	1524.4
60°	1870.1	1767.9	1602.9	1406.5	1343.6
62.5°	1618.6	1540.1	1398.6	1233.6	1312.2
65°	1390.8	1312.2	1186.5	1210.1	1005.8
67.5°	1139.3	1100.1	990.0	880.0	848.6
70°	927.2	880.0	840.8	722.9	691.5
72.5°	738.6	691.5	636.5	573.6	550.0
75°	557.9	518.6	487.2	463.6	510.7
77.5°	385.0	369.3	345.7	322.2	314.3
80°	251.4	243.6	235.7	227.9	220.0
82.5°	149.3	149.3	149.3	149.3	149.3
85°	78.6	86.4	94.3	102.1	110.0
87.5°	47.1	47.1	55.0	62.9	70.7
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)