

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: P547214

Luminaire Tested: **FMR-24-4-LD4-3STD-40-UNV-82-97-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: P547214  
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-82-97-EDD  
Description: 2X4 FMR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR  
TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

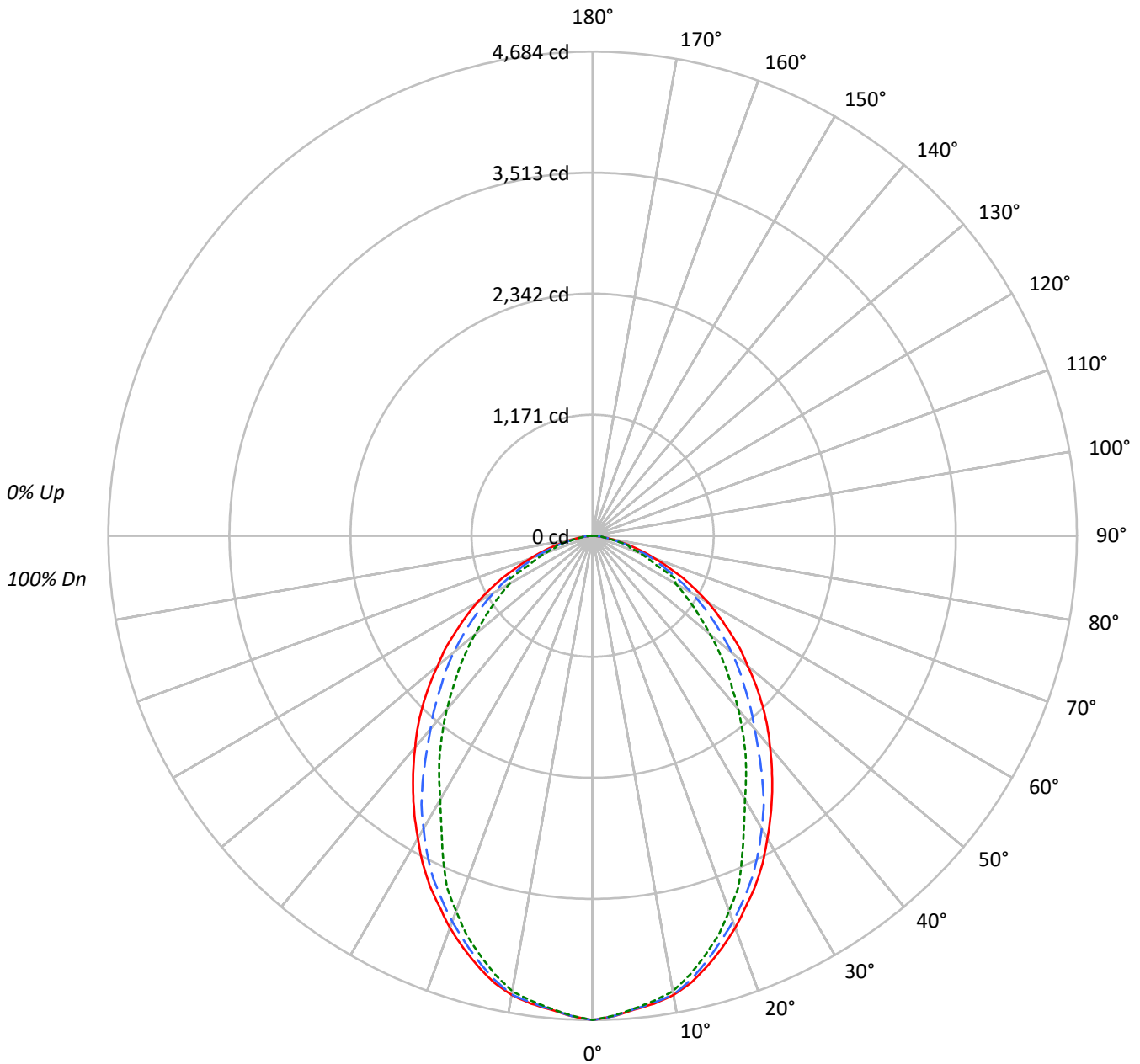
Lumens per Lamp: N/A  
Luminaire Lumens: 9196.0 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°	6303	6303	6303
5°	6217	6210	6202
10°	6163	6156	6111
15°	5997	5937	5854
20°	5777	5684	5529
25°	5539	5419	5081
30°	5250	5082	4577
35°	4972	4697	4234
40°	4689	4280	3852
45°	4421	3957	3483
50°	4092	3673	3106
55°	3786	3328	2782
60°	3468	2973	2492
65°	3052	2603	2207
70°	2514	2279	1875
75°	1999	1746	1830
80°	1343	1259	1175
85°	837	1003	1170



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	436.0	4.7
10°-20°	1196.7	13.0
20°-30°	1656.7	18.0
30°-40°	1766.6	19.2
40°-50°	1611.6	17.5
50°-60°	1262.6	13.7
60°-70°	822.9	8.9
70°-80°	364.6	4.0
80°-90°	78.3	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°	3289.5	35.8
0°-40°	5056.0	55.0
0°-60°	7930.3	86.2
0°-90°	9196.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9196.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4684	4684	4684	4684	4684	
5°	4603	4598	4598	4592	4592	437
15°	4305	4305	4262	4219	4202	1210
25°	3731	3710	3650	3520	3422	1713
35°	3027	3006	2859	2643	2578	1893
45°	2323	2274	2080	1906	1830	1790
55°	1614	1565	1419	1251	1186	1447
65°	958	904	818	834	693	945
75°	384	357	336	320	352	412
85°	54	60	65	70	76	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4684.3	4684.3	4684.3	4684.3	4684.3
2.5°	4651.8	4651.8	4651.8	4646.4	4646.4
5°	4603.1	4597.7	4597.7	4592.3	4592.3
7.5°	4565.2	4559.8	4554.3	4548.9	4538.1
10°	4511.0	4511.0	4505.6	4478.5	4473.1
12.5°	4424.4	4419.0	4397.3	4359.4	4348.6
15°	4305.2	4305.2	4261.9	4218.6	4202.3
17.5°	4175.3	4169.9	4115.7	4072.4	4050.7
20°	4034.5	4023.6	3969.5	3899.1	3861.2
22.5°	3877.4	3877.4	3812.4	3720.4	3682.5
25°	3731.2	3709.5	3650.0	3520.0	3422.5
27.5°	3563.3	3530.8	3465.9	3281.7	3168.0
30°	3379.2	3363.0	3270.9	3032.6	2946.0
32.5°	3205.9	3178.8	3081.4	2832.3	2761.9
35°	3027.2	3005.5	2859.3	2642.7	2577.7
37.5°	2848.5	2821.4	2637.3	2464.0	2382.8
40°	2669.8	2637.3	2436.9	2279.9	2193.2
42.5°	2501.9	2458.6	2263.6	2095.8	1998.3
45°	2323.2	2274.5	2079.5	1906.2	1830.4
47.5°	2144.5	2101.2	1922.5	1743.8	1657.1
50°	1955.0	1917.1	1754.6	1575.9	1483.8
52.5°	1797.9	1738.3	1581.3	1402.6	1326.8
55°	1613.8	1565.1	1418.8	1251.0	1186.0
57.5°	1445.9	1397.2	1261.8	1104.7	1050.6
60°	1288.9	1218.5	1104.7	969.4	926.0
62.5°	1115.6	1061.4	963.9	850.2	904.4
65°	958.5	904.4	817.7	834.0	693.2
67.5°	785.2	758.2	682.3	606.5	584.9
70°	639.0	606.5	579.4	498.2	476.6
72.5°	509.0	476.6	438.6	395.3	379.1
75°	384.5	357.4	335.8	319.5	352.0
77.5°	265.4	254.5	238.3	222.0	216.6
80°	173.3	167.9	162.5	157.0	151.6
82.5°	102.9	102.9	102.9	102.9	102.9
85°	54.2	59.6	65.0	70.4	75.8
87.5°	32.5	32.5	37.9	43.3	48.7
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)