

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: P547457

Luminaire Tested: **FMR-24-4-LD4-4STD-35-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: P547457  
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-81-86-EDD  
Description: 2X4 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

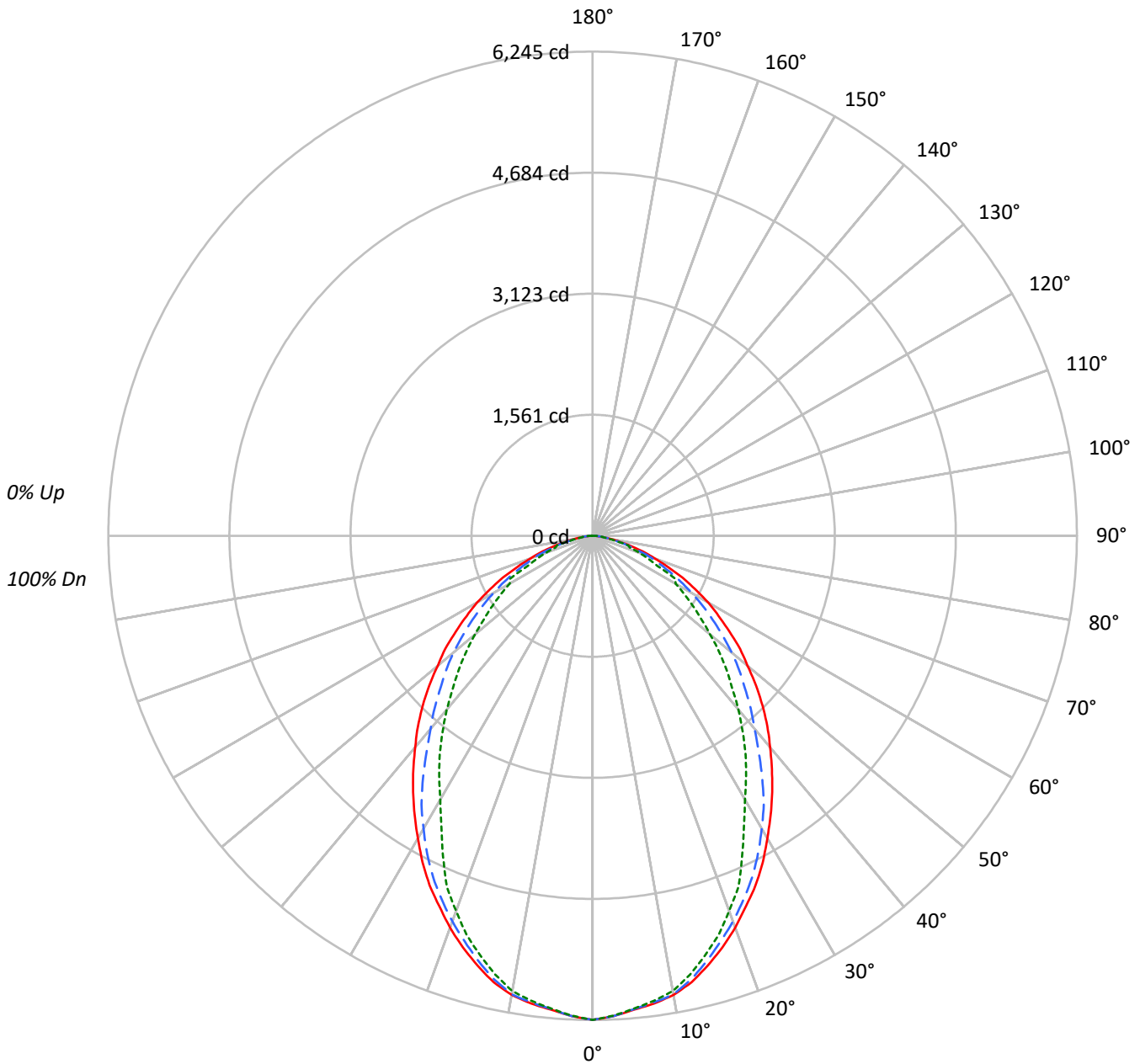
Lumens per Lamp: N/A  
Luminaire Lumens: 12259.0 lumens  
Efficiency: N/A  
Efficacy: 92.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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

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

	0°	45°	90°
0°	8402	8402	8402
5°	8288	8278	8268
10°	8216	8206	8147
15°	7994	7914	7803
20°	7701	7577	7370
25°	7384	7224	6773
30°	6999	6774	6101
35°	6628	6261	5644
40°	6251	5706	5135
45°	5893	5275	4643
50°	5455	4896	4140
55°	5046	4437	3709
60°	4624	3963	3322
65°	4068	3471	2942
70°	3351	3039	2499
75°	2665	2327	2439
80°	1790	1678	1566
85°	1115	1337	1561



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	581.3	4.7
10°-20°	1595.3	13.0
20°-30°	2208.6	18.0
30°-40°	2355.0	19.2
40°-50°	2148.4	17.5
50°-60°	1683.1	13.7
60°-70°	1097.0	8.9
70°-80°	486.0	4.0
80°-90°	104.4	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°	4385.1	35.8
0°-40°	6740.1	55.0
0°-60°	10571.7	86.2
0°-90°	12259.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12259.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6245	6245	6245	6245	6245	
5°	6136	6129	6129	6122	6122	582
15°	5739	5739	5682	5624	5602	1613
25°	4974	4945	4866	4692	4562	2284
35°	4036	4007	3812	3523	3436	2523
45°	3097	3032	2772	2541	2440	2386
55°	2151	2086	1891	1668	1581	1930
65°	1278	1206	1090	1112	924	1259
75°	513	476	448	426	469	549
85°	72	79	87	94	101	100
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6244.6	6244.6	6244.6	6244.6	6244.6
2.5°	6201.3	6201.3	6201.3	6194.0	6194.0
5°	6136.3	6129.1	6129.1	6121.8	6121.8
7.5°	6085.7	6078.5	6071.3	6064.1	6049.7
10°	6013.6	6013.6	6006.3	5970.2	5963.0
12.5°	5898.1	5890.8	5862.0	5811.4	5797.0
15°	5739.2	5739.2	5681.5	5623.7	5602.1
17.5°	5566.0	5558.8	5486.6	5428.8	5399.9
20°	5378.3	5363.8	5291.6	5197.8	5147.3
22.5°	5168.9	5168.9	5082.3	4959.6	4909.0
25°	4974.0	4945.1	4865.7	4692.5	4562.5
27.5°	4750.2	4706.9	4620.3	4374.8	4223.2
30°	4504.8	4483.1	4360.4	4042.7	3927.2
32.5°	4273.7	4237.6	4107.7	3775.6	3681.8
35°	4035.5	4006.6	3811.7	3522.9	3436.3
37.5°	3797.3	3761.2	3515.7	3284.7	3176.4
40°	3559.0	3515.7	3248.6	3039.3	2923.8
42.5°	3335.3	3277.5	3017.6	2793.8	2663.9
45°	3097.0	3032.0	2772.2	2541.1	2440.1
47.5°	2858.8	2801.0	2562.8	2324.6	2209.1
50°	2606.1	2555.6	2339.0	2100.8	1978.0
52.5°	2396.8	2317.3	2108.0	1869.8	1768.7
55°	2151.3	2086.3	1891.4	1667.6	1581.0
57.5°	1927.5	1862.5	1682.1	1472.7	1400.5
60°	1718.2	1624.3	1472.7	1292.2	1234.5
62.5°	1487.1	1415.0	1285.0	1133.4	1205.6
65°	1277.8	1205.6	1090.1	1111.8	924.1
67.5°	1046.8	1010.7	909.6	808.5	779.7
70°	851.9	808.5	772.4	664.2	635.3
72.5°	678.6	635.3	584.8	527.0	505.3
75°	512.6	476.5	447.6	425.9	469.2
77.5°	353.7	339.3	317.6	296.0	288.8
80°	231.0	223.8	216.6	209.4	202.1
82.5°	137.2	137.2	137.2	137.2	137.2
85°	72.2	79.4	86.6	93.8	101.1
87.5°	43.3	43.3	50.5	57.8	65.0
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)