

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: P546586

Luminaire Tested: **FMR-24-4-LD4-1STD-35-UNV-80-87-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: P546586  
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-LD4-1STD-35-UNV-80-87-EDD  
Description: 2X4 FMR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

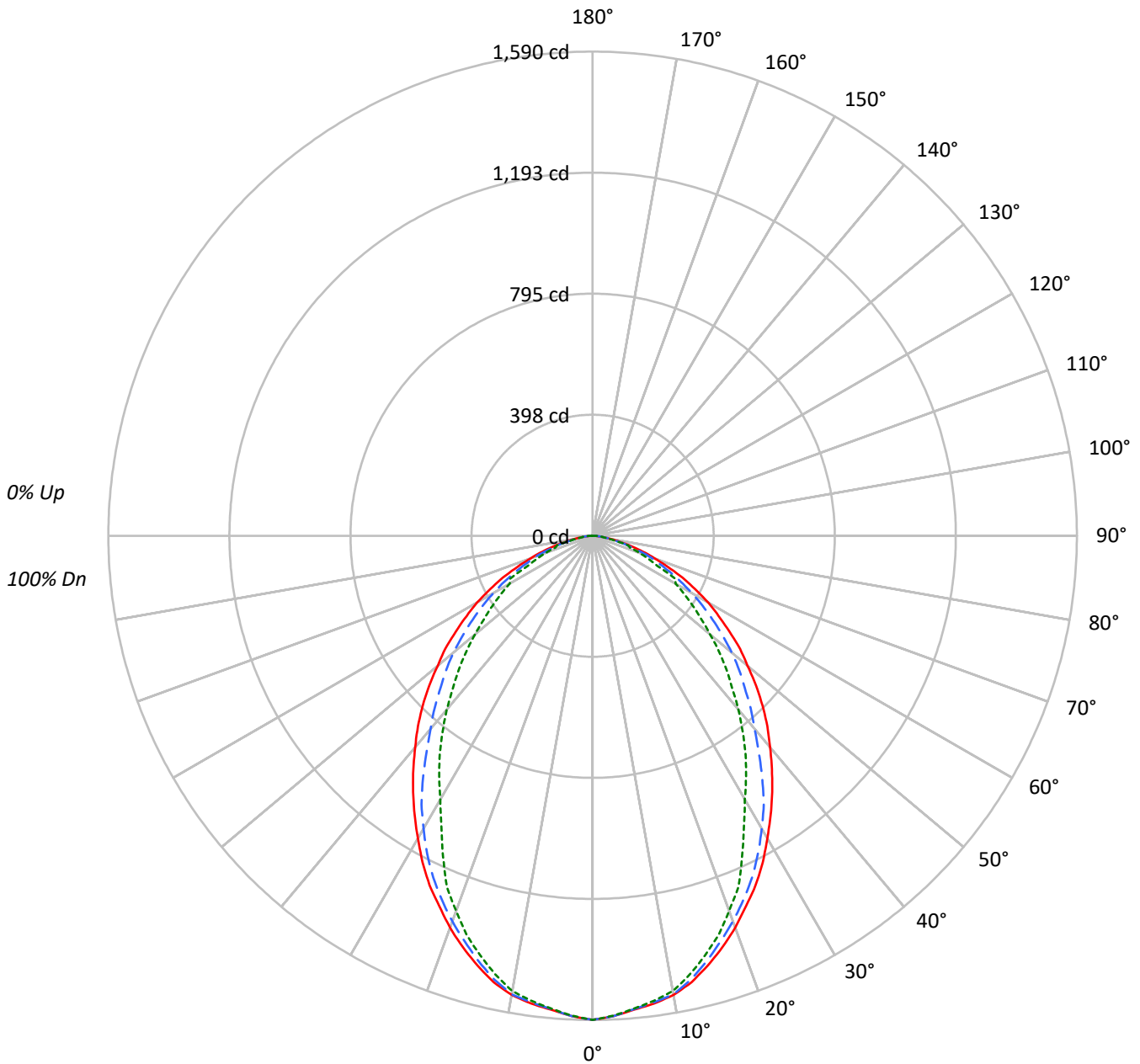
Lumens per Lamp: N/A  
Luminaire Lumens: 3121.0 lumens  
Efficiency: N/A  
Efficacy: 93.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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				
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	100	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30

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

	0°	45°	90°
0°	2139	2139	2139
5°	2110	2108	2105
10°	2092	2089	2074
15°	2035	2015	1987
20°	1960	1929	1876
25°	1880	1839	1724
30°	1782	1725	1553
35°	1688	1594	1437
40°	1591	1453	1307
45°	1500	1343	1182
50°	1389	1247	1054
55°	1285	1129	944
60°	1177	1009	846
65°	1036	883	749
70°	853	774	636
75°	678	593	621
80°	456	427	399
85°	284	341	397



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.0	4.7
10°-20°	406.1	13.0
20°-30°	562.3	18.0
30°-40°	599.6	19.2
40°-50°	547.0	17.5
50°-60°	428.5	13.7
60°-70°	279.3	8.9
70°-80°	123.7	4.0
80°-90°	26.6	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°	1116.4	35.8
0°-40°	1716.0	55.0
0°-60°	2691.4	86.2
0°-90°	3121.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3121.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1590	1590	1590	1590	1590	
5°	1562	1560	1560	1559	1559	148
15°	1461	1461	1446	1432	1426	411
25°	1266	1259	1239	1195	1162	581
35°	1027	1020	970	897	875	642
45°	788	772	706	647	621	607
55°	548	531	482	425	402	491
65°	325	307	278	283	235	321
75°	130	121	114	108	120	140
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1589.8	1589.8	1589.8	1589.8	1589.8
2.5°	1578.8	1578.8	1578.8	1576.9	1576.9
5°	1562.2	1560.4	1560.4	1558.6	1558.6
7.5°	1549.4	1547.5	1545.7	1543.8	1540.2
10°	1531.0	1531.0	1529.1	1520.0	1518.1
12.5°	1501.6	1499.7	1492.4	1479.5	1475.8
15°	1461.1	1461.1	1446.4	1431.7	1426.2
17.5°	1417.0	1415.2	1396.8	1382.1	1374.8
20°	1369.2	1365.6	1347.2	1323.3	1310.4
22.5°	1315.9	1315.9	1293.9	1262.6	1249.8
25°	1266.3	1259.0	1238.8	1194.6	1161.6
27.5°	1209.3	1198.3	1176.3	1113.8	1075.2
30°	1146.9	1141.3	1110.1	1029.2	999.8
32.5°	1088.0	1078.9	1045.8	961.2	937.3
35°	1027.4	1020.0	970.4	896.9	874.8
37.5°	966.7	957.6	895.1	836.3	808.7
40°	906.1	895.1	827.1	773.8	744.4
42.5°	849.1	834.4	768.2	711.3	678.2
45°	788.5	771.9	705.8	646.9	621.2
47.5°	727.8	713.1	652.5	591.8	562.4
50°	663.5	650.6	595.5	534.8	503.6
52.5°	610.2	590.0	536.7	476.0	450.3
55°	547.7	531.2	481.5	424.6	402.5
57.5°	490.7	474.2	428.2	374.9	356.6
60°	437.4	413.5	374.9	329.0	314.3
62.5°	378.6	360.2	327.1	288.6	306.9
65°	325.3	306.9	277.5	283.0	235.3
67.5°	266.5	257.3	231.6	205.8	198.5
70°	216.9	205.8	196.7	169.1	161.7
72.5°	172.8	161.7	148.9	134.2	128.7
75°	130.5	121.3	114.0	108.4	119.5
77.5°	90.1	86.4	80.9	75.4	73.5
80°	58.8	57.0	55.1	53.3	51.5
82.5°	34.9	34.9	34.9	34.9	34.9
85°	18.4	20.2	22.1	23.9	25.7
87.5°	11.0	11.0	12.9	14.7	16.5
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)