

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: P545862

Luminaire Tested: **FMR-12-4-LD4-1HI-40-UNV-81-97-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: P545862  
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-12-4-LD4-1HI-40-UNV-81-97-EDD  
Description: 1X4 FMR TROFFER WITH .156 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**

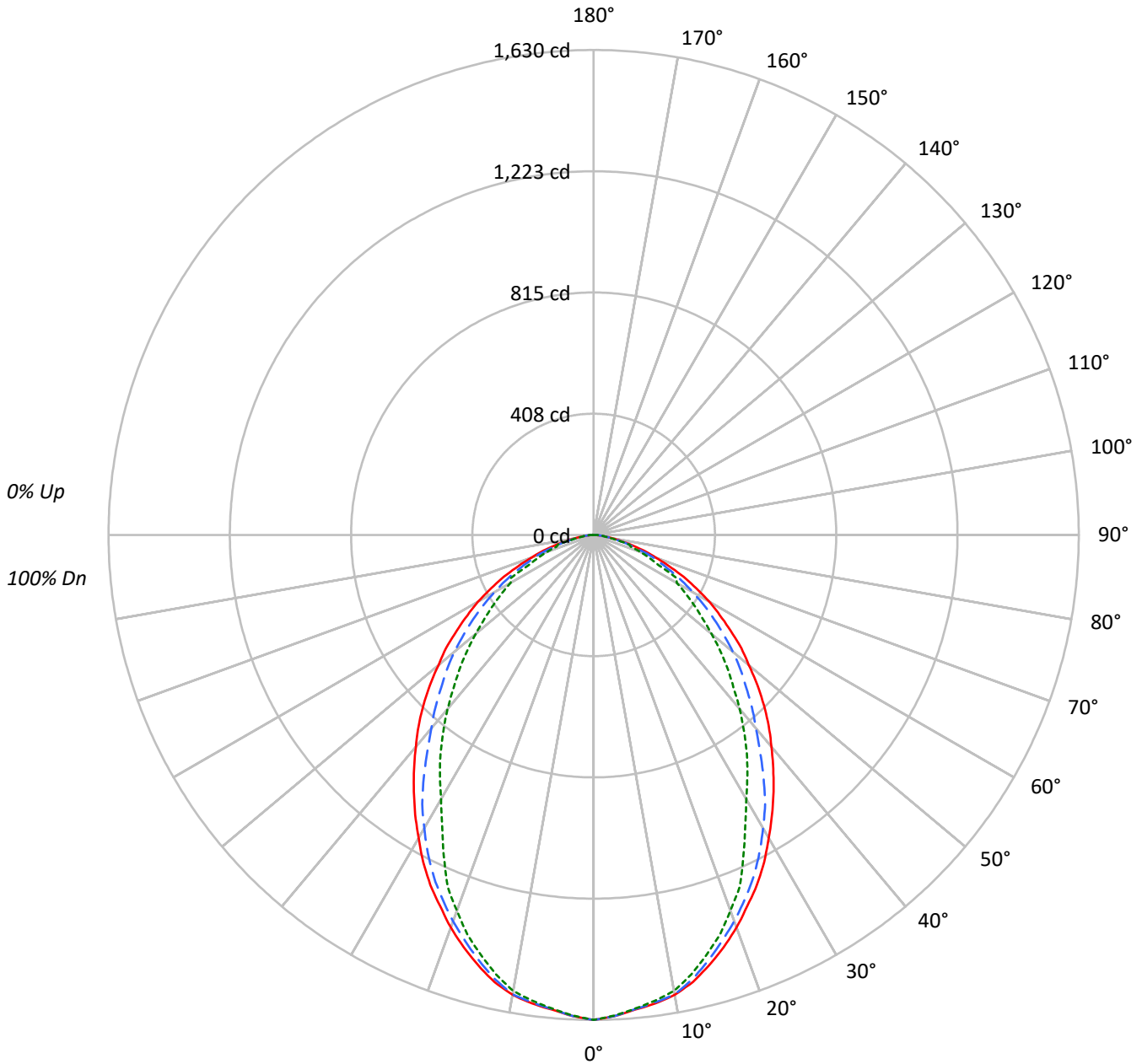
Lumens per Lamp: N/A  
Luminaire Lumens: 3200.0 lumens  
Efficiency: N/A  
Efficacy: 74.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.2  
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				
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°	4386	4386	4386
5°	4327	4322	4317
10°	4289	4284	4253
15°	4174	4132	4074
20°	4020	3956	3848
25°	3855	3771	3536
30°	3654	3537	3185
35°	3461	3269	2947
40°	3263	2979	2681
45°	3076	2754	2424
50°	2848	2556	2161
55°	2635	2316	1936
60°	2414	2069	1734
65°	2124	1812	1536
70°	1750	1586	1304
75°	1391	1214	1274
80°	934	876	818
85°	580	698	815



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.7	4.7
10°-20°	416.4	13.0
20°-30°	576.5	18.0
30°-40°	614.7	19.2
40°-50°	560.8	17.5
50°-60°	439.4	13.7
60°-70°	286.3	8.9
70°-80°	126.9	4.0
80°-90°	27.2	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°	1144.7	35.8
0°-40°	1759.4	55.0
0°-60°	2759.6	86.2
0°-90°	3200.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3200.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1630	1630	1630	1630	1630	
5°	1602	1600	1600	1598	1598	152
15°	1498	1498	1483	1468	1462	421
25°	1298	1291	1270	1225	1191	596
35°	1053	1046	995	920	897	659
45°	808	792	724	663	637	623
55°	562	545	494	435	413	504
65°	334	315	284	290	241	329
75°	134	124	117	111	122	143
85°	19	21	23	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1630.0	1630.0	1630.0	1630.0	1630.0
2.5°	1618.7	1618.7	1618.7	1616.8	1616.8
5°	1601.8	1599.9	1599.9	1598.0	1598.0
7.5°	1588.6	1586.7	1584.8	1582.9	1579.2
10°	1569.7	1569.7	1567.9	1558.4	1556.5
12.5°	1539.6	1537.7	1530.2	1517.0	1513.2
15°	1498.1	1498.1	1483.1	1468.0	1462.3
17.5°	1452.9	1451.0	1432.2	1417.1	1409.6
20°	1403.9	1400.1	1381.3	1356.8	1343.6
22.5°	1349.3	1349.3	1326.6	1294.6	1281.4
25°	1298.4	1290.8	1270.1	1224.9	1191.0
27.5°	1240.0	1228.7	1206.0	1142.0	1102.4
30°	1175.9	1170.2	1138.2	1055.3	1025.1
32.5°	1115.6	1106.2	1072.2	985.6	961.1
35°	1053.4	1045.9	995.0	919.6	897.0
37.5°	991.2	981.8	917.7	857.4	829.2
40°	929.0	917.7	848.0	793.3	763.2
42.5°	870.6	855.5	787.7	729.3	695.4
45°	808.4	791.5	723.6	663.3	636.9
47.5°	746.2	731.2	669.0	606.8	576.6
50°	680.3	667.1	610.6	548.4	516.3
52.5°	625.6	604.9	550.3	488.1	461.7
55°	561.6	544.6	493.7	435.3	412.7
57.5°	503.1	486.2	439.1	384.4	365.6
60°	448.5	424.0	384.4	337.3	322.2
62.5°	388.2	369.3	335.4	295.9	314.7
65°	333.5	314.7	284.5	290.2	241.2
67.5°	273.2	263.8	237.4	211.1	203.5
70°	222.4	211.1	201.6	173.4	165.8
72.5°	177.1	165.8	152.6	137.6	131.9
75°	133.8	124.4	116.8	111.2	122.5
77.5°	92.3	88.6	82.9	77.3	75.4
80°	60.3	58.4	56.5	54.6	52.8
82.5°	35.8	35.8	35.8	35.8	35.8
85°	18.8	20.7	22.6	24.5	26.4
87.5°	11.3	11.3	13.2	15.1	17.0
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)