

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: P589408

Luminaire Tested: **FMR-24-2-LD4-3LO-40-UNV-81-87-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589408  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMR-24-2-LD4-3LO-40-UNV-81-87-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

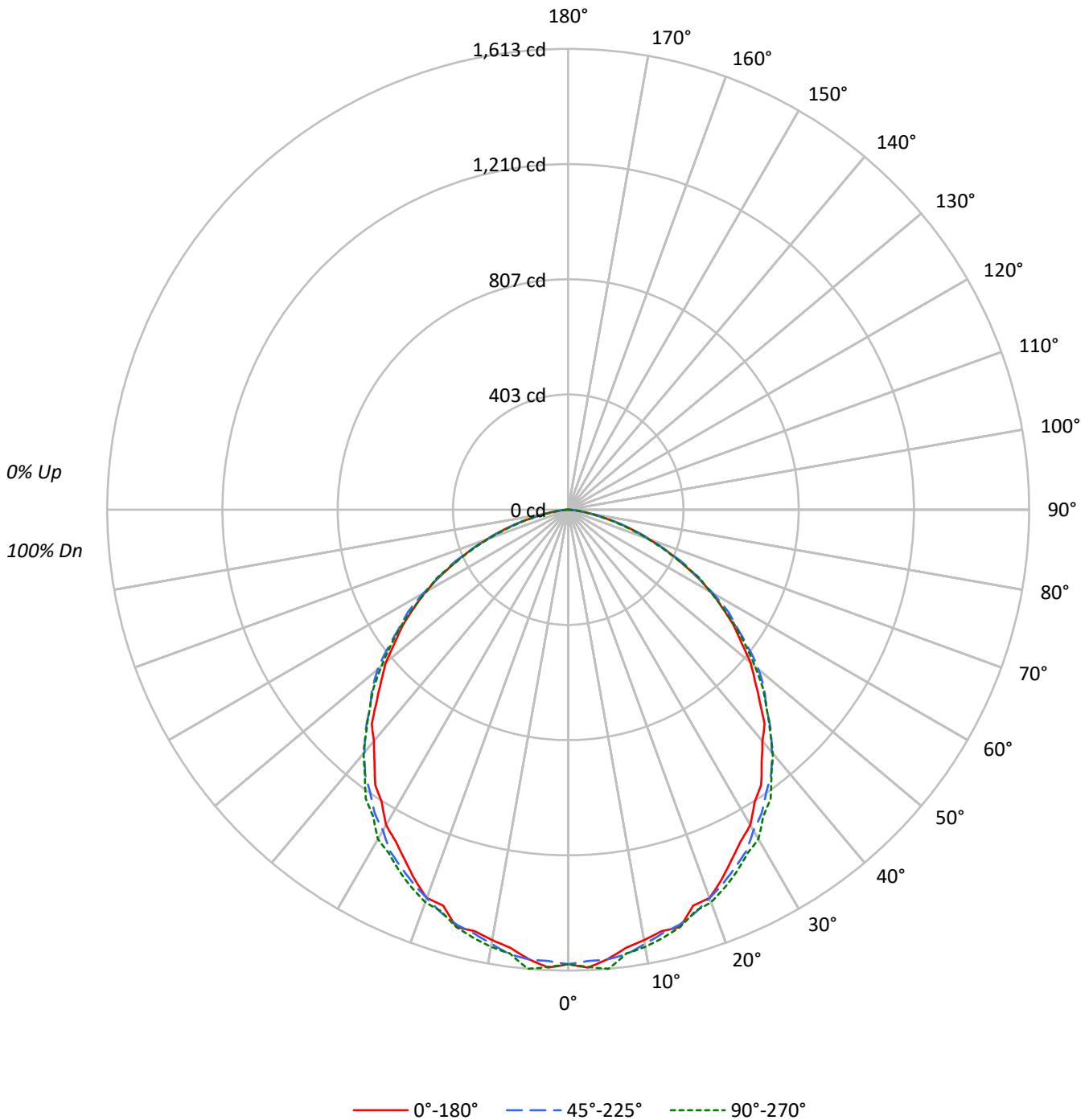
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4009.0 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	4281	4281	4281
5°	4266	4268	4358
10°	4180	4216	4246
15°	4213	4190	4213
20°	4142	4142	4186
25°	4014	4102	4147
30°	3959	4029	4136
35°	3866	3967	4056
40°	3716	3894	3912
45°	3603	3731	3737
50°	3485	3642	3573
55°	3320	3385	3361
60°	3105	3136	3080
65°	2769	2839	2749
70°	2375	2383	2317
75°	1881	1877	1804
80°	1260	1226	1178
85°	685	679	633



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.6	3.7
10°-20°	424.1	10.6
20°-30°	635.3	15.8
30°-40°	753.0	18.8
40°-50°	754.4	18.8
50°-60°	640.4	16.0
60°-70°	431.7	10.8
70°-80°	189.7	4.7
80°-90°	30.8	0.8
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°	1209.0	30.2
0°-40°	1962.0	48.9
0°-60°	3356.8	83.7
0°-90°	4009.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4009.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1591	1591	1591	1591	1591	
5°	1579	1576	1580	1575	1613	149
15°	1512	1495	1504	1512	1512	421
25°	1352	1359	1382	1400	1397	625
35°	1177	1180	1208	1236	1235	731
45°	947	964	980	1006	982	732
55°	708	703	722	717	716	630
65°	435	429	446	429	432	432
75°	181	177	180	168	174	194
85°	22	22	22	21	20	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1590.7	1590.7	1590.7	1590.7	1590.7
2.5°	1604.4	1592.3	1581.0	1594.2	1602.2
5°	1579.4	1575.7	1580.0	1575.3	1613.3
7.5°	1546.9	1561.1	1569.3	1564.2	1566.4
10°	1529.7	1524.7	1543.0	1555.8	1553.9
12.5°	1511.2	1518.6	1519.6	1533.4	1534.6
15°	1512.2	1494.8	1504.0	1511.8	1512.4
17.5°	1453.5	1472.4	1478.7	1496.6	1474.4
20°	1446.3	1432.5	1446.3	1464.6	1461.7
22.5°	1402.1	1386.7	1416.3	1432.5	1431.5
25°	1352.0	1359.4	1381.6	1399.7	1396.8
27.5°	1308.1	1316.7	1348.3	1373.2	1357.2
30°	1274.2	1269.9	1296.6	1318.7	1331.1
32.5°	1213.6	1229.2	1260.4	1282.4	1270.7
35°	1176.8	1180.3	1207.6	1235.6	1234.7
37.5°	1112.5	1128.8	1167.2	1175.0	1167.8
40°	1057.7	1073.9	1108.6	1117.1	1113.6
42.5°	1017.2	1020.1	1049.9	1059.6	1044.2
45°	946.8	964.5	980.5	1005.7	981.9
47.5°	886.8	895.0	929.6	936.3	923.8
50°	832.4	835.3	870.0	861.6	853.4
52.5°	764.0	776.1	795.6	794.0	784.3
55°	707.7	703.0	721.5	716.6	716.4
57.5°	640.2	648.4	663.6	655.8	643.3
60°	576.9	577.1	582.7	573.8	572.2
62.5°	506.5	508.9	510.2	499.3	516.9
65°	434.8	429.0	445.9	428.8	431.7
67.5°	368.9	371.7	370.1	359.4	363.5
70°	301.9	305.6	302.9	290.8	294.5
72.5°	240.7	236.2	239.1	223.9	230.8
75°	180.9	177.2	180.5	167.8	173.5
77.5°	123.2	126.1	124.0	117.3	121.2
80°	81.3	79.1	79.1	75.2	76.0
82.5°	47.4	45.2	44.6	43.3	45.2
85°	22.2	21.6	22.0	21.4	20.5
87.5°	8.0	8.2	8.2	7.8	7.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)