

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: P589230

Luminaire Tested: **FMR-24-2-LD4-2STD-40-UNV-93-85-EDD**

Issue Date: 12/8/2021



**Test Information**

Test Method: LM-79-08  
Report Number: P589230  
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-LD4-2STD-40-UNV-93-85-EDD  
Description: 2X2 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

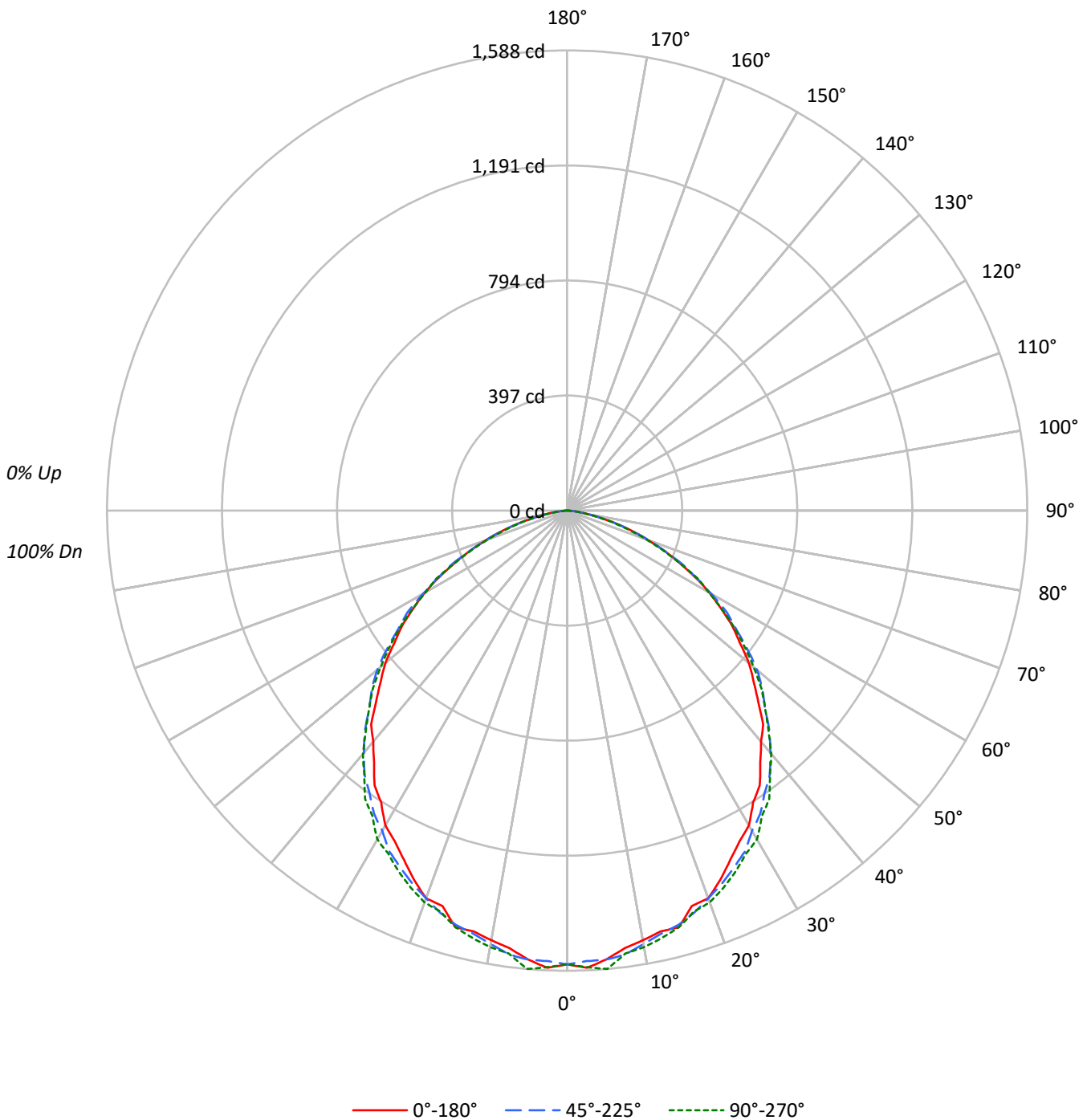
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3946.0 lumens  
Efficiency: N/A  
Efficacy: 118.5 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): 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	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°	4213	4213	4213
5°	4199	4201	4289
10°	4114	4150	4179
15°	4147	4124	4147
20°	4077	4077	4120
25°	3951	4038	4082
30°	3897	3966	4071
35°	3805	3905	3992
40°	3657	3833	3850
45°	3546	3673	3678
50°	3430	3585	3516
55°	3268	3332	3308
60°	3056	3087	3031
65°	2725	2795	2706
70°	2338	2346	2281
75°	1852	1848	1776
80°	1241	1206	1159
85°	673	667	624



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.3	3.7
10°-20°	417.4	10.6
20°-30°	625.3	15.8
30°-40°	741.2	18.8
40°-50°	742.5	18.8
50°-60°	630.3	16.0
60°-70°	424.9	10.8
70°-80°	186.7	4.7
80°-90°	30.3	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°	1190.0	30.2
0°-40°	1931.2	48.9
0°-60°	3304.0	83.7
0°-90°	3946.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3946.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1566	1566	1566	1566	1566	
5°	1555	1551	1555	1550	1588	147
15°	1488	1471	1480	1488	1489	415
25°	1331	1338	1360	1378	1375	615
35°	1158	1162	1189	1216	1215	719
45°	932	949	965	990	966	721
55°	697	692	710	705	705	620
65°	428	422	439	422	425	426
75°	178	174	178	165	171	191
85°	22	21	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°	1565.7	1565.7	1565.7	1565.7	1565.7
2.5°	1579.2	1567.3	1556.2	1569.1	1577.0
5°	1554.6	1550.9	1555.2	1550.5	1587.9
7.5°	1522.6	1536.6	1544.6	1539.6	1541.8
10°	1505.6	1500.8	1518.8	1531.3	1529.5
12.5°	1487.4	1494.7	1495.7	1509.3	1510.5
15°	1488.5	1471.3	1480.4	1488.0	1488.7
17.5°	1430.6	1449.2	1455.5	1473.1	1451.3
20°	1423.6	1410.0	1423.6	1441.6	1438.7
22.5°	1380.1	1364.9	1394.0	1410.0	1409.0
25°	1330.8	1338.0	1359.9	1377.7	1374.8
27.5°	1287.5	1296.0	1327.1	1351.6	1335.8
30°	1254.2	1249.9	1276.2	1298.0	1310.2
32.5°	1194.5	1209.9	1240.6	1262.2	1250.7
35°	1158.3	1161.8	1188.7	1216.2	1215.3
37.5°	1095.1	1111.0	1148.8	1156.5	1149.4
40°	1041.1	1057.1	1091.2	1099.5	1096.1
42.5°	1001.3	1004.1	1033.4	1042.9	1027.7
45°	931.9	949.3	965.1	989.9	966.5
47.5°	872.9	881.0	914.9	921.6	909.3
50°	819.3	822.2	856.3	848.0	839.9
52.5°	752.0	763.9	783.1	781.5	772.0
55°	696.6	692.0	710.2	705.3	705.1
57.5°	630.1	638.2	653.2	645.5	633.1
60°	567.8	568.0	573.5	564.8	563.2
62.5°	498.5	500.9	502.1	491.4	508.8
65°	428.0	422.3	438.9	422.1	424.9
67.5°	363.1	365.9	364.3	353.8	357.8
70°	297.2	300.8	298.2	286.2	289.9
72.5°	236.9	232.5	235.3	220.3	227.2
75°	178.1	174.5	177.7	165.2	170.8
77.5°	121.3	124.1	122.1	115.4	119.3
80°	80.1	77.8	77.8	74.0	74.8
82.5°	46.7	44.5	43.9	42.7	44.5
85°	21.8	21.2	21.6	21.0	20.2
87.5°	7.9	8.1	8.1	7.7	7.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)