

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: 168P127

Luminaire Tested: **FUST8-X12-232-120-80/86-EB81-FNL**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 168P127  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FUST8-X12-232-120-80/86-EB81-FNL  
Description: FAIL-SAFE 1 X 4 Fail-Safe Series with .125 Prismatic Acrylic lens  
and a .250 Clear Polycarbonate lens  
Light Source: Two - FO32/35K - 2800 Lumens ea. - 32 Watts ea.  
Ballast/Driver: Motorola M2-IN-T8-GP-D-120 Electronic - L.O.B.F. = 88.5

**Summary**

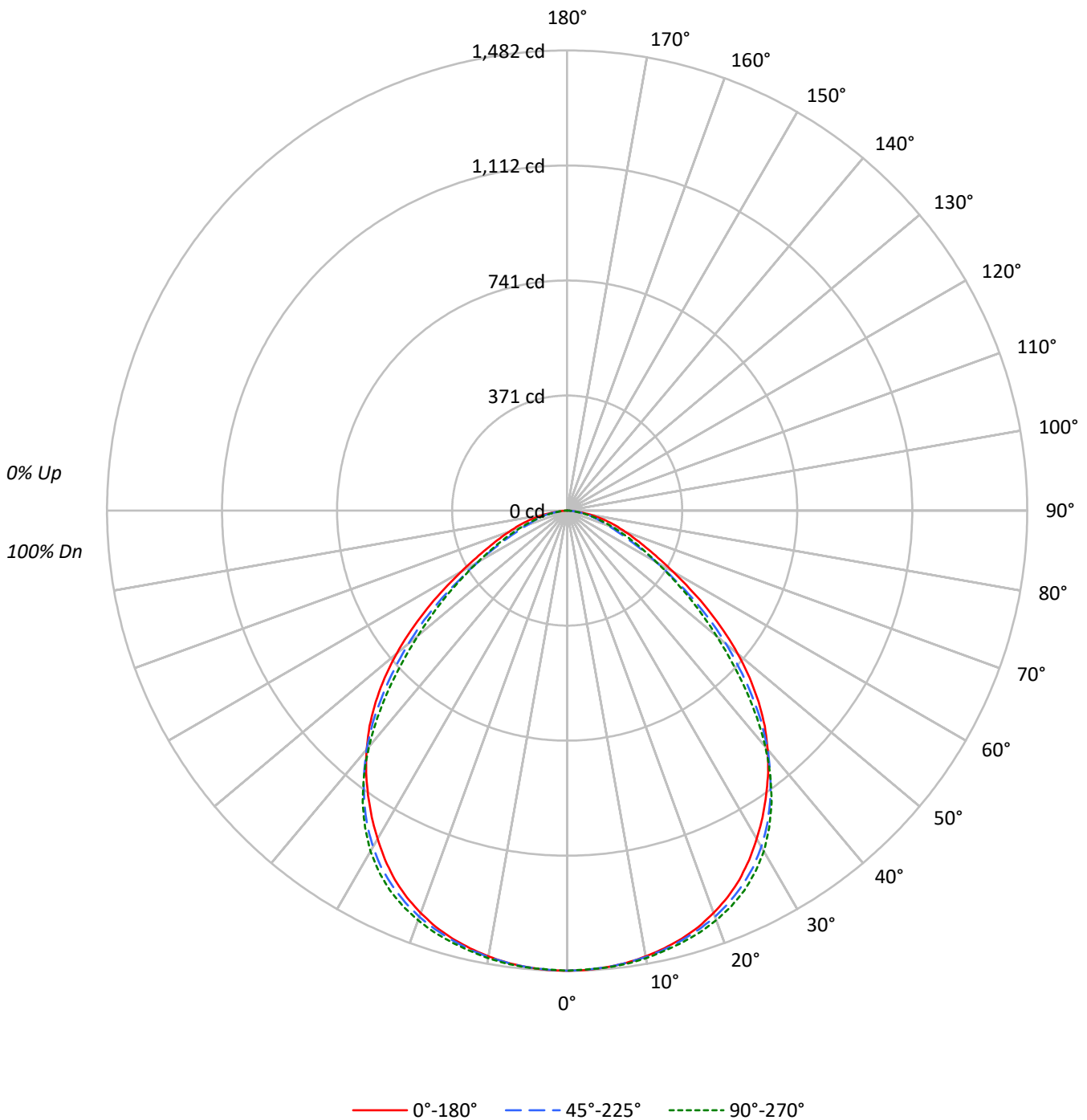
Lumens per Lamp: 2800 (2 lamps)  
Luminaire Lumens: 3337.8 lumens  
Efficiency: 59.6%  
Efficacy: 60.7 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.26 / 1.3  
Luminous Opening: Rectangular (W 0.44' x L: 3.92' x H: 0')  
CIE Type: Direct

Input Watts (W): 55  
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																		
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	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	71	71	71	71	69	69	69	69	66	66	66	63	63	63	61	61	61	60																												
1	66	63	61	59	64	62	60	58	60	58	57	57	56	55	55	54	53	52																												
2	61	56	53	50	59	55	52	49	53	51	48	51	49	47	50	48	46	45																												
3	56	50	46	43	55	49	45	42	48	44	41	46	43	41	45	42	40	39																												
4	52	45	40	37	50	44	40	37	43	39	36	42	38	36	40	38	35	34																												
5	48	41	36	32	47	40	36	32	39	35	32	38	34	31	37	34	31	30																												
6	44	37	32	29	43	36	32	28	35	31	28	34	31	28	34	30	28	27																												
7	41	34	29	25	40	33	29	25	32	28	25	32	28	25	31	27	25	24																												
8	38	31	26	23	38	31	26	23	30	26	23	29	25	23	28	25	22	21																												
9	36	28	24	21	35	28	24	21	27	23	21	27	23	21	26	23	20	19																												
10	34	26	22	19	33	26	22	19	25	22	19	25	21	19	24	21	19	18																												

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

	0°	45°	90°
0°	9249	9249	9249
5°	9246	9246	9253
10°	9239	9252	9277
15°	9220	9252	9297
20°	9158	9245	9324
25°	9034	9179	9296
30°	8799	9015	9130
35°	8517	8685	8746
40°	8187	8187	8090
45°	7696	7422	7166
50°	6961	6485	6087
55°	5984	5353	5092
60°	4918	4119	4144
65°	4105	3160	3441
70°	3613	2518	2865
75°	3279	2291	2387
80°	2624	2013	1833
85°	1360	1217	1146



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	140.5	4.2	2.5	0°	1482	1482	1482	1482	1482	
10°-20°	404.7	12.1	7.2	5°	1476	1474	1476	1481	1477	140
20°-30°	612.8	18.4	10.9	15°	1427	1426	1432	1442	1439	402
30°-40°	708.2	21.2	12.6	25°	1312	1317	1333	1350	1350	603
40°-50°	644.6	19.3	11.5	35°	1118	1125	1140	1149	1148	699
50°-60°	447.3	13.4	8.0	45°	872	853	841	819	812	669
60°-70°	241.1	7.2	4.3	55°	550	532	492	461	468	492
70°-80°	114.4	3.4	2.0	65°	278	261	214	219	233	281
80°-90°	24.2	0.7	0.4	75°	136	120	95	99	99	143
90°-100°	0.0	0.0	0.0	85°	19	20	17	16	16	28
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	1
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	1157.9	34.7	20.7	165°	0	0	0	0	0	0
0°-40°	1866.1	55.9	33.3	175°	0	0	0	0	0	0
0°-60°	2958.0	88.6	52.8	180°	0	0	0	0	0	0
0°-90°	3337.8	100.0	59.6							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	3337.8	100.0	59.6							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1482	1482	1482	1482	1482
2.5°	1481	1479	1480	1485	1479
5°	1476	1474	1476	1481	1477
7.5°	1469	1466	1469	1476	1472
10°	1458	1456	1460	1467	1464
12.5°	1444	1443	1448	1456	1452
15°	1427	1426	1432	1442	1439
17.5°	1406	1406	1414	1426	1424
20°	1379	1381	1392	1405	1404
22.5°	1349	1352	1365	1380	1380
25°	1312	1317	1333	1350	1350
27.5°	1269	1277	1296	1313	1312
30°	1221	1230	1251	1267	1267
32.5°	1171	1179	1199	1212	1211
35°	1118	1125	1140	1149	1148
37.5°	1063	1066	1075	1078	1075
40°	1005	1001	1005	999	993
42.5°	942	929	926	913	904
45°	872	853	841	819	812
47.5°	797	773	753	725	717
50°	717	693	668	635	627
52.5°	634	614	581	547	545
55°	550	532	492	461	468
57.5°	468	452	406	384	395
60°	394	378	330	318	332
62.5°	330	314	267	265	279
65°	278	261	214	219	233
67.5°	235	219	171	182	192
70°	198	183	138	151	157
72.5°	166	150	115	124	126
75°	136	120	95	99	99
77.5°	104	90	76	74	75
80°	73	63	56	51	51
82.5°	44	40	34	31	31
85°	19	20	17	16	16
87.5°	4	6	7	8	9
90°	0	0	0	0	0
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)