

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: 168P141

Luminaire Tested: **FUS-LP-X12-232-120-80/87**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 168P141
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUS-LP-X12-232-120-80/87
Description: FAIL-SAFE 1 X 4 Fail-Safe FUS Low Profile Series with .125
Prismatic Acrylic lens and a .375 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. = 88.6%

Summary

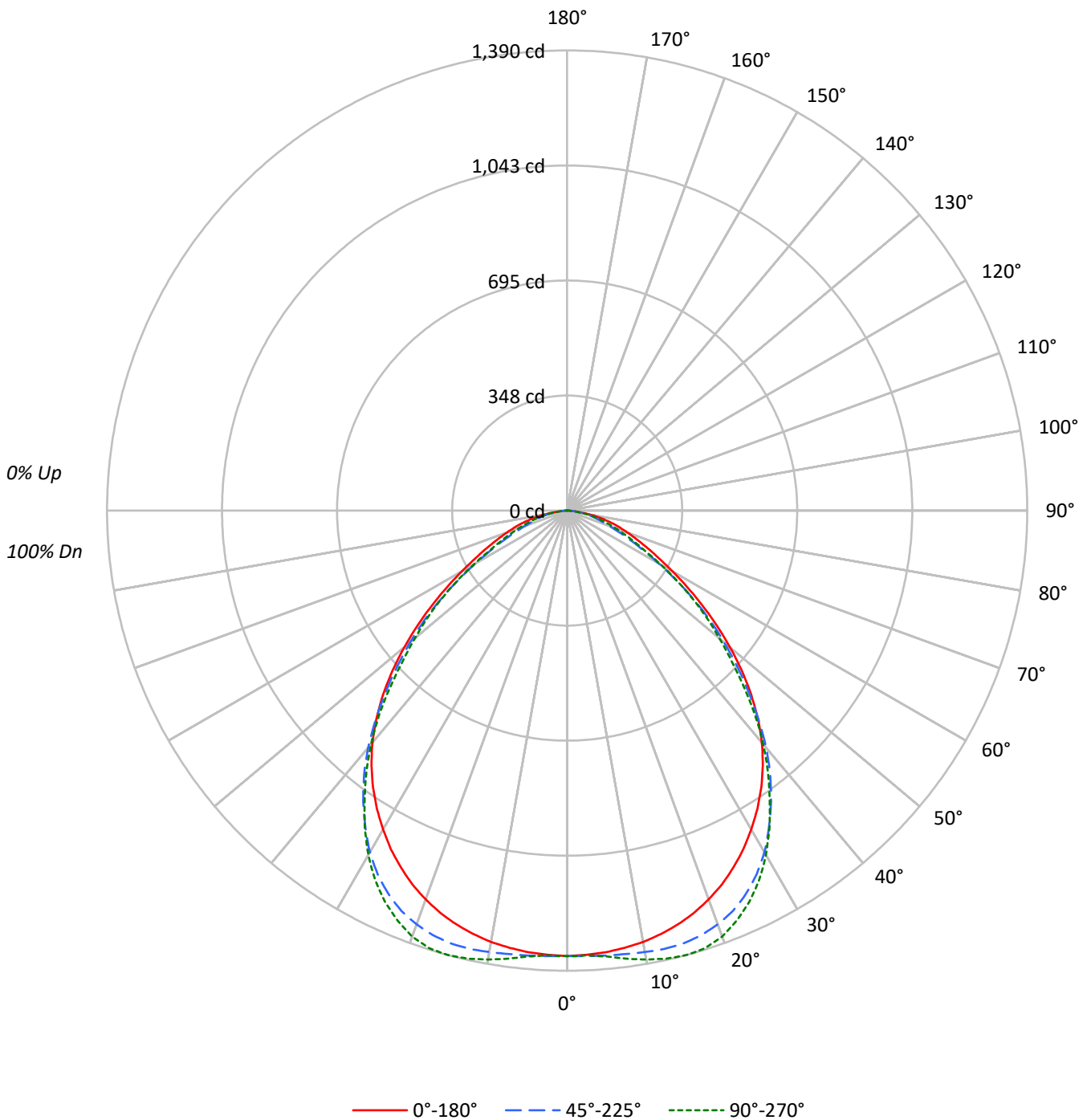
Lumens per Lamp: 2800 (2 lamps)
Luminaire Lumens: 3134.1 lumens
Efficiency: 56.0%
Efficacy: 55.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.29 / 1.3
Luminous Opening: Rectangular (W 0.44' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 57
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									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	0													
RCR																																					
0	67	67	67	67	65	65	65	65	62	62	62	60	60	60	57	57	57	56																			
1	62	60	57	56	60	58	56	55	56	54	53	54	53	51	52	51	50	49																			
2	57	53	50	47	56	52	49	46	50	47	45	48	46	44	47	45	43	42																			
3	52	47	43	40	51	46	43	40	45	42	39	43	41	38	42	40	38	36																			
4	48	42	38	35	47	42	37	34	40	37	34	39	36	33	38	35	33	32																			
5	45	38	34	30	44	38	33	30	36	33	30	35	32	29	34	31	29	28																			
6	42	35	30	27	41	34	30	27	33	29	26	32	29	26	31	28	26	25																			
7	39	32	27	24	38	31	27	24	30	26	24	30	26	23	29	26	23	22																			
8	36	29	25	21	35	29	24	21	28	24	21	27	24	21	27	23	21	20																			
9	34	27	22	19	33	26	22	19	26	22	19	25	22	19	25	21	19	18																			
10	32	25	21	18	31	24	20	18	24	20	18	23	20	18	23	20	17	17																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8400	8400	8400
5°	8388	8451	8470
10°	8384	8580	8726
15°	8360	8748	8981
20°	8301	8833	9092
25°	8187	8800	8972
30°	8013	8590	8655
35°	7786	8182	8129
40°	7454	7617	7511
45°	6937	6840	6681
50°	6233	6010	5825
55°	5408	5059	5016
60°	4581	3982	4056
65°	3943	3086	3308
70°	3522	2445	2828
75°	3207	2194	2411
80°	2552	1905	1905
85°	1360	1217	1289



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	128.9	4.1	2.3	0°	1346	1346	1346	1346	1346	
10°-20°	380.7	12.1	6.8	5°	1339	1342	1349	1356	1352	127
20°-30°	580.2	18.5	10.4	15°	1294	1314	1354	1386	1390	365
30°-40°	661.0	21.1	11.8	25°	1189	1225	1278	1305	1303	547
40°-50°	594.4	19.0	10.6	35°	1022	1050	1074	1075	1067	638
50°-60°	423.4	13.5	7.6	45°	786	781	775	757	757	604
60°-70°	231.9	7.4	4.1	55°	497	496	465	453	461	446
70°-80°	109.2	3.5	2.0	65°	267	246	209	213	224	269
80°-90°	24.3	0.8	0.4	75°	133	111	91	92	100	140
90°-100°	0.0	0.0	0.0	85°	19	20	17	18	18	27
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°	1089.8	34.8	19.5	165°	0	0	0	0	0	0
0°-40°	1750.8	55.9	31.3	175°	0	0	0	0	0	0
0°-60°	2768.6	88.3	49.4	180°	0	0	0	0	0	0
0°-90°	3134.1	100.0	56.0							
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°	3134.1	100.0	56.0							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1346	1346	1346	1346	1346
2.5°	1343	1344	1347	1351	1345
5°	1339	1342	1349	1356	1352
7.5°	1332	1339	1351	1366	1365
10°	1323	1333	1354	1375	1377
12.5°	1310	1324	1356	1383	1386
15°	1294	1314	1354	1386	1390
17.5°	1274	1300	1345	1381	1386
20°	1250	1280	1330	1365	1369
22.5°	1222	1255	1309	1340	1340
25°	1189	1225	1278	1305	1303
27.5°	1153	1189	1239	1259	1257
30°	1112	1149	1192	1205	1201
32.5°	1069	1103	1135	1143	1137
35°	1022	1050	1074	1075	1067
37.5°	971	989	1008	1003	996
40°	915	924	935	926	922
42.5°	853	854	855	842	842
45°	786	781	775	757	757
47.5°	715	708	696	677	674
50°	642	636	619	600	600
52.5°	569	566	543	526	531
55°	497	496	465	453	461
57.5°	429	425	389	383	392
60°	367	358	319	319	325
62.5°	313	297	259	262	267
65°	267	246	209	213	224
67.5°	227	205	167	174	188
70°	193	170	134	144	155
72.5°	163	139	110	117	126
75°	133	111	91	92	100
77.5°	102	84	72	69	76
80°	71	60	53	48	53
82.5°	42	39	33	31	33
85°	19	20	17	18	18
87.5°	5	7	8	10	10
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)