

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: 168P125

Luminaire Tested: **CFS12CR-232-120-IK12**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 168P125
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CFS12CR-232-120-IK12
Description: FAIL-SAFE 1 X 4 Fail-Safe CFS Series with a Prismatic Acrylic 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

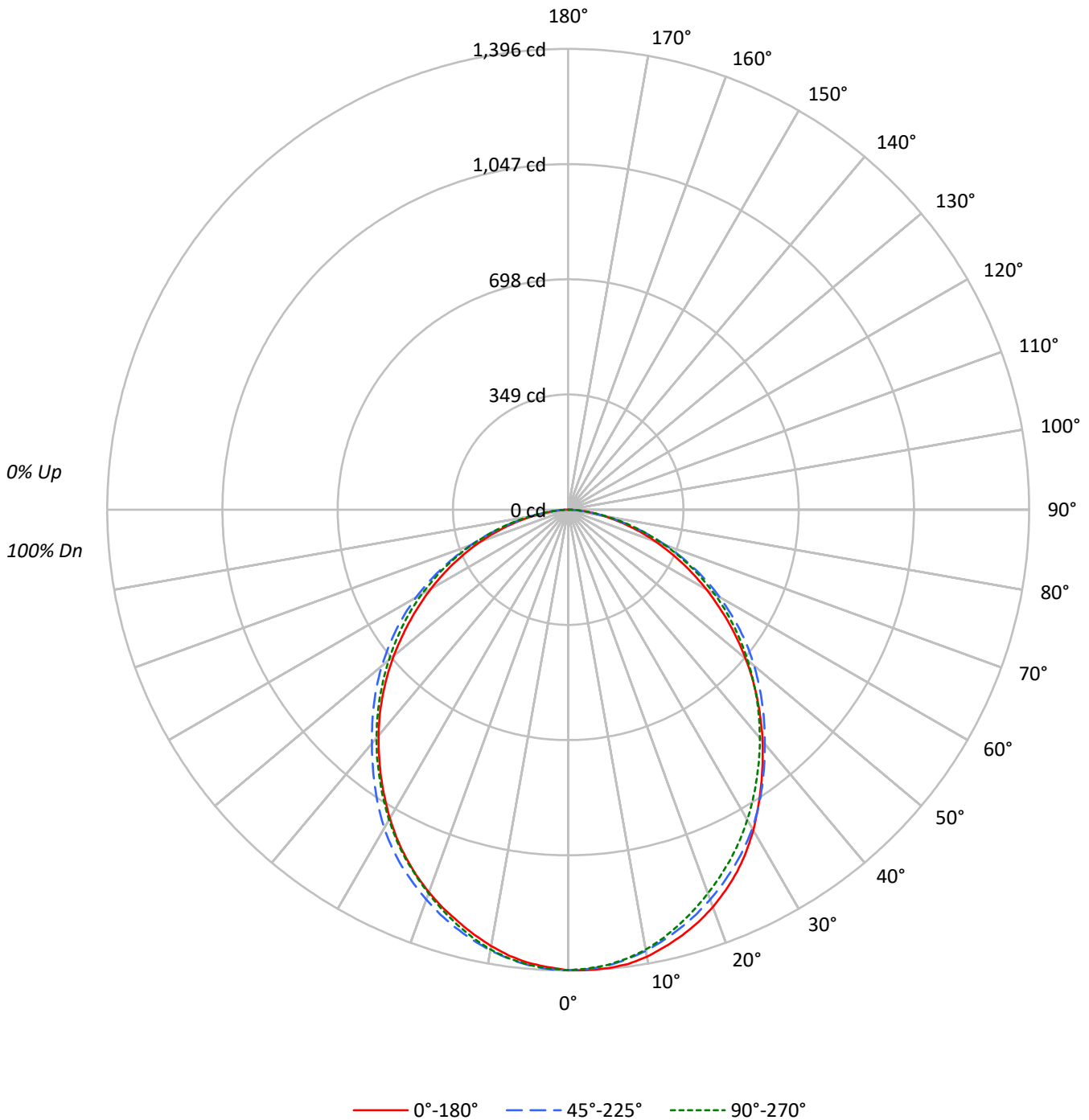
Lumens per Lamp: 2800 (2 lamps)
Luminaire Lumens: 3531.1 lumens
Efficiency: 63.1%
Efficacy: 61.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.16 / 1.3
Luminous Opening: Rectangular (W 3.65' x L: 0.65' x H: 0')
CIE Type: Direct

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

TEST NUMBER: 168P125

CATALOG NUMBER: CFS12CR-232-120-IK12

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	75	75	75	75	73	73	73	73	70	70	70		67	67	67		64	64	64	63
1	69	66	63	61	67	65	62	60	62	60	58		59	58	56		57	56	55	53
2	63	58	54	50	61	57	53	49	54	51	48		52	50	47		50	48	46	45
3	57	51	46	42	56	50	45	41	48	44	41		46	43	40		45	42	39	38
4	53	45	40	36	51	44	39	35	43	38	35		41	38	34		40	37	34	33
5	48	40	35	31	47	40	35	31	38	34	30		37	33	30		36	33	30	28
6	45	37	31	27	44	36	31	27	35	30	27		34	30	26		33	29	26	25
7	42	33	28	24	41	33	28	24	32	27	24		31	27	23		30	26	23	22
8	39	30	25	21	38	30	25	21	29	24	21		28	24	21		28	24	21	20
9	36	28	23	19	35	28	23	19	27	22	19		26	22	19		25	22	19	18
10	34	26	21	18	33	25	21	18	25	20	17		24	20	17		24	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6329	6329	6329
5°	6349	6303	6276
10°	6335	6233	6183
15°	6270	6111	6064
20°	6185	5972	5953
25°	6057	5837	5822
30°	5873	5684	5658
35°	5644	5511	5472
40°	5425	5348	5289
45°	5197	5178	5094
50°	4948	5004	4870
55°	4675	4833	4611
60°	4392	4646	4365
65°	4079	4412	4079
70°	3728	4099	3741
75°	3313	3681	3296
80°	2822	3083	2691
85°	2343	2290	1978



TEST NUMBER: 168P125

CATALOG NUMBER: CFS12CR-232-120-IK12

ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	131.3	3.7	2.3	0°	1395	1395	1395	1395	1395	
10°-20°	369.3	10.5	6.6	5°	1394	1386	1384	1385	1378	132
20°-30°	545.0	15.4	9.7	15°	1335	1312	1301	1312	1291	376
30°-40°	632.0	17.9	11.3	25°	1210	1191	1166	1192	1163	556
40°-50°	631.0	17.9	11.3	35°	1019	1024	995	1021	988	637
50°-60°	550.3	15.6	9.8	45°	810	831	807	832	794	625
60°-70°	403.5	11.4	7.2	55°	591	635	611	637	583	529
70°-80°	216.6	6.1	3.9	65°	380	422	411	423	380	377
80°-90°	52.0	1.5	0.9	75°	189	208	210	207	188	202
90°-100°	0.0	0.0	0.0	85°	45	42	44	42	38	49
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	3
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°	1045.7	29.6	18.7	165°	0	0	0	0	0	0
0°-40°	1677.7	47.5	30.0	175°	0	0	0	0	0	0
0°-60°	2859.0	81.0	51.1	180°	0	0	0	0	0	0
0°-90°	3531.1	100.0	63.1							
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°	3531.1	100.0	63.1							



TEST NUMBER: 168P125

CATALOG NUMBER: CFS12CR-232-120-IK12

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1395	1395	1395	1395	1395	1395	1395	1395	1395
2.5°	1396	1395	1393	1391	1391	1392	1393	1395	1387
5°	1394	1389	1386	1383	1384	1384	1385	1388	1378
7.5°	1388	1378	1373	1371	1371	1371	1372	1377	1363
10°	1375	1361	1357	1353	1353	1353	1356	1361	1342
12.5°	1356	1340	1336	1330	1329	1331	1335	1340	1318
15°	1335	1317	1312	1304	1301	1305	1312	1318	1291
17.5°	1310	1291	1286	1275	1270	1277	1286	1291	1264
20°	1281	1262	1257	1244	1237	1246	1257	1262	1233
22.5°	1247	1228	1225	1210	1202	1213	1225	1228	1200
25°	1210	1192	1191	1175	1166	1178	1192	1192	1163
27.5°	1168	1152	1155	1138	1127	1141	1155	1152	1123
30°	1121	1109	1115	1098	1085	1099	1114	1108	1080
32.5°	1070	1060	1071	1054	1041	1054	1069	1060	1034
35°	1019	1010	1024	1008	995	1009	1021	1010	988
37.5°	967	962	975	961	950	962	973	962	941
40°	916	913	926	914	903	915	925	915	893
42.5°	863	864	879	867	855	869	878	866	845
45°	810	814	831	820	807	822	832	817	794
47.5°	756	764	783	771	758	773	785	766	743
50°	701	712	735	722	709	723	737	714	690
52.5°	646	659	686	672	660	673	687	659	636
55°	591	605	635	621	611	624	637	605	583
57.5°	536	551	582	570	562	573	585	552	531
60°	484	499	530	520	512	523	532	499	481
62.5°	431	447	476	469	461	472	478	447	430
65°	380	395	422	418	411	420	423	395	380
67.5°	329	343	367	366	360	367	367	343	330
70°	281	292	313	315	309	315	313	292	282
72.5°	234	243	260	263	259	263	260	243	235
75°	189	195	208	213	210	213	207	195	188
77.5°	147	150	159	165	163	163	158	149	144
80°	108	108	114	119	118	118	113	108	103
82.5°	73	72	74	79	77	78	73	71	68
85°	45	42	42	45	44	44	42	41	38
87.5°	20	18	18	19	17	18	17	17	15
90°	0	0	0	0	0	0	0	0	0
92.5°	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0	0
97.5°	0	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0	0
102.5°	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0
107.5°	0	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0	0



TEST NUMBER: 168P125

CATALOG NUMBER: CFS12CR-232-120-IK12

CANDELA DISTRIBUTION (continued):

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

(END OF REPORT)