

PSAP – Particle Soot Absorption Photometer

The PSAP measures light absorption. It is sometimes referred to as the CLAP (Carbon Light Absorption Photometer) which was its original name.

PSAP Information (settings, common problems, PSAP kit contents)

The PSAP comes from the factory with some default settings. We change some of these and some stay the default when running on the NOAA data acquisition software. These settings are set to the appropriate values at BRW and should not need to be changed, but they are noted here for completeness. You can check and change these using the toggle switches and screen on the PSAP (see PSAP manual for more details).

Screen#	Description
(1) Intro	Says Radiance Research and that sort of stuff
(2) measurement	This is the screen to have up while flying
(3) measurement	This has some more less immediately useful measurement details
(4) serial port	BPS=9600/None
(5) sample period	This should be set to 2 sec (factory default is 10 sec)
(6) Bond corr.	A=0.814, B=1.237, apply = yes. (factory default A=0.866, B=1.317, apply = yes)
(7) flow cal	0.0 lpm = 1000 mV 0.3 lpm = 1240 mV 2.0 lpm = 2600 mV (these are the factory defaults and they need to be used)
(8) Area	This should be 17.81, this is also factory default.
(9) date	You can set this or not – the data files are time-stamped using computer time not PSAP time
(10) fixed flow	Not used, don't change

Suggested contents of PSAP filter kit:

Tweezers, box of new filters, baggies for used filters, permanent marker (Sharpie™), vacuum grease, spare o-rings, q-tips

Common problems with PSAP operation

- two filters stuck together are put in filter holder
- filters put in filter holder upside down
- o-ring in filter holder or above filter holder falls out