



bladewerxTM
Cutting-Edge Technology for Instruments and Measurement Applications



EpeéCAM

Quick Start Guide

What's in the Box?

EpeéCAM

The Bladewerx EpeéCAM is a continuous air monitor that detects alpha and beta emitting particulates while compensating for radon background in real time. It can be configured to measure the presence of specific isotopes and then alarm at a preset level. Measurements are made by pulling air through a filter monitored by the detector. When the captured particulates decay, the emitted alpha and/or beta particles are detected and the EpeéCAM records the isotope of interest particles and their energies. Over the course of several hours, three naturally-occurring peaks will emerge in the data. Using the Alpha Peak Fitting Software, the EpeéCAM subtracts the counts from the naturally-occurring Radon and performs alarm determinations and data reporting for a specific isotope.

Get It Running!

Plug It In

Begin charging the EpeeCAM by plugging in the A/C Adapter. The Charger LED will be red to indicate the battery is charging and will turn green when it is fully charged. The light is off when it is not plugged in. You can play around with it while it is charging.

Check the Filter

I know you want to turn it on, but check if a filter has been installed first. On the radial head (the black cylinder protruding from the right side), twist the Filter Holder until the indents on the cap line up with the screws and pull it out. A screw-on cap retains the filter. You should see a white filter—not the black filter support indicating a missing filter! Now just push the filter holder in and twist it an eighth-turn, locking it under the screws.

Turn It On

Now you can go ahead and push the power button! The green Normal light will come on immediately. It will take 30 seconds to warm up and then you will hear the wonderful hum of the pump running. When you hear the EpeeCAM report “Starting Dose Measurement”, it has begun collecting data.

Install PC Software

While you wait for the counts to accumulate, install the *EpeeCAM Calibration Interface* program file from the customer CD onto the computer. The Setup file is located in the *EpeeCAM Calibration Client* folder.

Transferring Log Data to PC

There are two ways to retrieve log data off the EpeeCAM: by inserting a USB jump drive into the USB port on the EpeeCAM, and by attaching the EpeeCAM via the mini-USB cable and retrieving the data manually using your Window File Manager.

- After inserting a USB thumb drive in the EpeeCAM, the software will recognize it and automatically copy all log files to the drive. Voice output announces “Copying log files” and “Copy complete” when finished.
- Using the mini USB cable, plug the EpeeCAM into the PC. Windows Mobile Device Center will automatically open and sync to device. **[This may take several minutes the first time while Microsoft Windows downloads the appropriate drivers.]** Once connected, use the Windows File Manager to browse the contents of your device. It will show up under Devices and Drives as BWEPCAM_XXXX (where XXXX is the serial number). Open the BWEPCAM_XXXX folder, click the root symbol “\” and then open the My Documents folder. Transfer appropriate log files to the location needed. Use the *Microsoft Excel* worksheets included in the *Burn-in Data* folder on the CD to import the log data text and view the spectrum growth, and the DAC-h chart.

Run Overnight

Leave the EpeeCAM running overnight to collect a sample for custom calibration. In the morning, run the *Calibration Client* and connect to the EpeeCAM using the mini-USB cable. Check the spectrum and peak fit curve under the *Calibrate—Alpha Energy...* menu to verify the peak markers are properly located. If they are not, move the red markers to the height of each peak. When looking at the spectrum, the red peak fit curve should closely match the spectrum histogram counts.

It is best to leave the EpeeCAM plugged into the A/C Adapter when doing overnight sampling.

Set Up the EpeeCAM for the Isotope(s)-of-Interest

Using the Calibration Client, under **Monitor—Instrument Options...** set up your EpeeCAM for monitoring the alpha isotope-of-interest on the **Iso 1** tab. A second alpha lol can be defined on the **Iso 2** tab

Your EpeeCAM is ready to go!

Filter Change Procedure

In order to minimize the possibility of air leakage around the filter in the EpeeCAM, lubrication of the mating surface between the filter holder and the sample head is necessary. Bladewerx recommends that the beveled surface on the filter retaining assembly be coated with a thin **layer of vacuum grease** (such as Dow Corning high vacuum grease). This should be done prior to re-installing the filter holder **after each filter change**.

The photo below shows the surface that requires lubrication. Coat the beveled area all the way around the top of the filter holder as shown.



Parts of your EpeeCAM

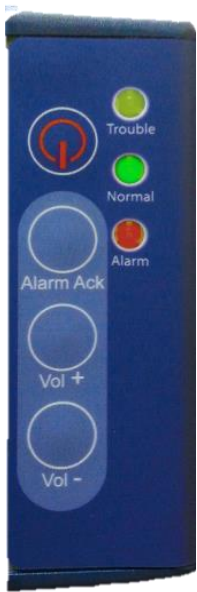
Radial Entry Head:

There are three parts to the radial-entry sampling head:

Detector Side – encloses the detector with face exposed to filter

Filter Side – receives the filter holder and positions at appropriate distance from detector

Filter Holder – removable holder for filters with a screw-on cap to retain filter



Buttons:

Power – Turns pump on and off, begins recording data

Alarm Acknowledge – 1st press silences alarm, 2nd press clears alarm, Hold down for 10 seconds resets the instrument and starts a new spectrum.

Volume Up and Down – Changes the volume of the voice output

LED Indicators:

Trouble – *yellow* – (solid yellow) the CAM is out of calibration and is not sampling correctly. (Blinking yellow) Flow is out of range or other non-fatal error)

Normal – *green* – the CAM is sampling correctly and counts are at an acceptable level

Alarm – *red* – counts are above the acceptable level

Charger – *red* – charging; *green* – fully charged; *off* – not plugged in

Ports:

Power – (back face) for A/C Adapter to wall outlet – used to charge the unit

Mini USB – for mini USB cable to PC – used to download data directly to the PC

USB – for USB memory stick only – used to download data in the field

Audio – for headphones – used to report data and alarm in noisy environments

Reset – used for a hard reset of the instrument

Accessories:

A/C Adapter – to charge the internal battery or power the unit long term

Mini USB cable – to connect CAM to PC for configuration, calibration and pulling data

Shoulder Strap – to carry when used as a personal breathing-zone-monitor (BZM)

Software CD (one per order) – to install software and view manual

Flow Cal Aid (one per order) – to calibrate the air flow of the CAM

Filters (sold separately) – to catch the alpha/beta particulates in front of detector

