



## Platform for Integrated Cookstove Assessment (PICA): Particle and Temperature Sensor (PATS+) and Software Specifications



### Physical

- Dimensions: 13 x 7.2 x 3.3 cm
- Weight (with battery): 110g

### Sampling Conditions

- Operating temperature: 0 to 50°C (32 to 120°F)
- Operating humidity: 0 to ~95% RH, non-condensing

### Capabilities

- Lower particulate matter detection limit: 10  $\mu\text{g}/\text{m}^3$  under most conditions
- Upper particulate matter detection limit: 30,000 to 50,000  $\mu\text{g}/\text{m}^3$
- Data logging (SD card)
- Logs PM concentration, temperature, humidity, movement, and battery voltage
- Optional sensor for carbon monoxide (0-500 ppm)
- Logging interval: two seconds to one hour

### Power

- Internal, rechargeable battery: run-time: >80 hours
- External battery can extend run-time to weeks

### Equipment

- PATS+
- Micro-USB data cable
- Zeroing box and pump (refer to page 2)
- SD card (included with PATS+)
- PICA (Platform for Integrated Cookstove Assessment) software (refer to page 2 for PICA specifications)

### Storage

- Storage temperature 4 to 38°C (40 to 100°F)
- When not in use, keep in a sealed Ziploc (airtight) bag in a box in a safe location

### Contact Information

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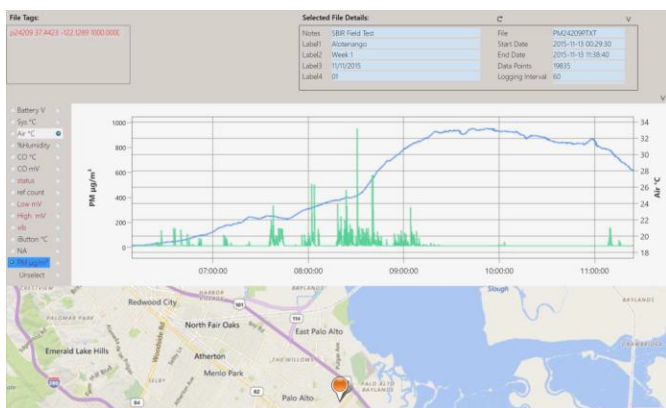
## Platform for Integrated Cookstove software specifications

### PICA Software Features:

#### System Requirement:

- Windows 64-bit Operating system (7 or any later version of windows)
- Latest .NET framework installed
- Virtual COM port drivers installed (automatic for most Windows OSs)

- Launches PATS+ and SUMs iButtons, including setting the log interval, adding reference notes, and choosing GPS location.
- Downloading PATS+ and SUMs data
- Particle concentration estimates based on internal lab-based calibration
- Option to include field-based adjustments
- Excel output file with PM estimate
- Interactive graphical representation of real time data
- Map of GPS coordinates
- Can merge PATS+ with SUMs data and save in a single file
- Can image multiple files and metrics on a single plot
- Statistical analysis of collected data
- Excel output file with PM estimate and statistical calculations



### Accessories



Berkeley Air PATS+ Zero Boxes are constructed by hand, on-site to fit the specific needs of PATS+ devices. Each box is air-tight and features a built-in HEPA filter to flush the box with clean, particle-free air, as well as a fitted one-way valve to prevent back-flow during the zeroing period. Zero boxes have been designed and lab tested with field conditions in mind, and are essential for zero calibration of particle-monitoring instruments in the field.