

Compatible temperature-controlled filter holder

Filter radiometers are widely in use to establish detector-based spectral irradiance and irradiance responsivity scales in UV-VIS-NIR, luminous intensity and illuminance responsivity scales at level of high accuracy. To meet the customers' needs we have improved the construction of our filter radiometers.

Our filter radiometer consists of a temperature-controlled filter holder with manually exchangeable filter mounts and a multi-element photodetector (Fig. 1).



Fig. 1. General overview of the temperature-controlled filter holder with trap detector which in normal working conditions are mounted together.

The optimal stabilization time of desired filter temperature can be achieved by adjusting the temperature controller in use (Fig 2). There are several temperature controllers available in the market which can be operated with our filter radiometer.

The filters for the radiometer can be end-user supplied or we can propose filters supply according to specifications.

Depending on application users might need to use different type of a photodetector with our temperature-controlled filter holder as a complete filter radiometer.

Our filter holders are designed compatible with all our trap detectors (3-, 4- and 6-element traps) enhancing filter radiometer selection to meet our customers' expectations.

The calibration of filter radiometer as a package and/or by separate components (filter transmittance, precision aperture, trap detector) can be arranged upon request.

The temperature-controlled holder is constructed to maintain filter mount temperature at $22\text{ °C} \pm 3\text{ °C}$. The ambient temperature can be normal laboratory conditions $25\text{ °C} \pm 5\text{ °C}$.

The temperature of the filter compartment is set by using Peltier' cooler/heater. The actual temperature of the filter depends on the feedback thermistor (we use transducers of type AD590, normally) and filter size. Our filter compartments support filter outer diameters up to 25 mm (1 inch).

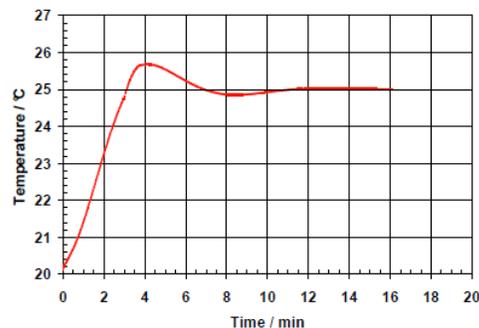


Fig. 2. Example of temperature stabilization at setpoint 25 °C measured in the center of the 3 mm-thick glass cylinder mounted in the filter folder. The current of the Peltier' element was driven and feedback temperature sensor was measured by using commercially available temperature controller.