

# Sampling Accessories

## Temperature-regulated Cuvette Holders

### CUV-QPOD

#### Temperature-Controlled Cuvette Holder

The qpod™ is a temperature-regulated sample compartment for fiber optic spectroscopy that controls the temperature of standard 1-cm square cuvettes to  $\pm 0.05$  °C. The unit includes a Peltier controller, magnetic stirrer and fused silica focusing lenses, and has SMA 905 connectors for easy coupling to Ocean Optics spectrometers and accessories. Each unit is calibrated against a NIST-traceable thermometer; performance data is provided.

The qpod™ is built for cuvettes with a Z-dimension of 8.5 mm.

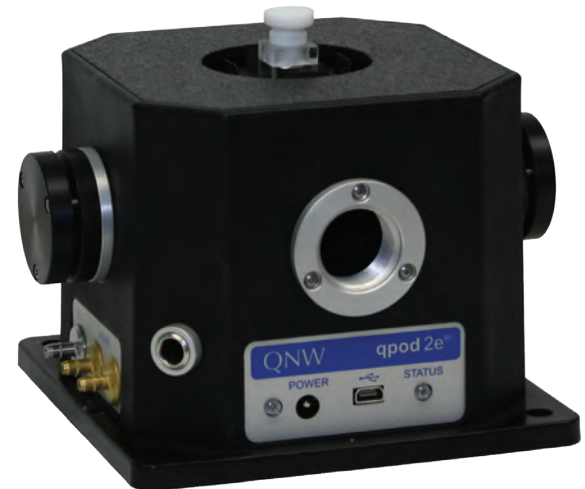
When combined with Ocean Optics spectrometers and accessories, the qpod is especially useful for absorbance and fluorescence measurements that require stringent control of the sample's temperature.

Here are some typical applications:

- DNA melting and annealing
- Protein thermodynamics
- Fluorophore characterization
- Enzyme kinetics
- On-line thermocycling of biological particles

#### Available Items

Item	Description
CUV-QPOD-ABSKIT	Temperature Controlled Sample Compartment - Absorbance
CUV-QPOD-FLKIT	Temperature Controlled Sample Compartment - Fluorescence
CUV-QPOD-MPKIT	Temperature Controlled Compartment - Absorbance and Fluorescence
CUV-QPOD	Temperature Controlled Sample Compartment - No Optics
CUV-QPOD-CL-UV	Collimating Lens for qpod Absorbance
CUV-QPOD-IL-UV	Imaging Lens for qpod Fluorescence
CUV-QPOD-MP	Mirror Plug for qpod Sample Compartment
CUV-QPOD-POL	Polarizer for qpod Sample Compartment
CUV-QPOD-FH	Holder for 12.5 mm Diameter Optical Filter for qpod
CUV-QPOD-SER	Serial Interface for qpod External Computer Control



#### Features

- Rapid and precise temperature control over a wide range of temperatures from -30 °C to +105 °C  $\pm 0.05$  °C (controllable to even lower temperatures under special conditions)
- Calibrated against a NIST-traceable thermometer with performance data provided
- Designed for standard 1 x 1 cm square cuvettes or standard microcuvettes
- All optical components have focusing and position adjustments to maximize light throughput
- Light-tight cover with access cap providing a means of holding a thermistor probe in the cuvette

The qpod™ was conceived by our channel partner Quantum Northwest as an improvement on its CUV-TLC-Series Temperature-regulated Cuvette Holders.



#### Technical Tip

Proper use of cuvettes can help avoid measurement errors. For example, cuvettes always should be used in the same orientation. Most cuvettes have index marks as a guide. Also, it's important not to touch the optical surfaces of the cuvette. Oils from your skin, particles from wiping tissues and other contaminants can affect the readings.

For open-top square cuvettes, perhaps the most effective approach is to use a slender transfer or Pasteur pipette to add and remove fluids. The tiny tip allows for suction of fluid from the corners, minimizing the carry-over volume.

The typical procedure is to rinse the cuvette with the next sample to be analyzed at least three times. If the residual fluid is less than 10% of the wash fluid (it's more likely to be 1% or less), the carry-over is reduced to 1/1000. It is important that the pipettes also be washed with the sample and not allowed to touch or scratch the inside optical surfaces.