



***Your first choice for quick and accurate FTIR analysis of liquids, pastes, and Slurries.***

With the Dipper-210 you can perform rapid FTIR analysis on a wide variety of samples with virtually **no sample handling**. Just drop a DIPPER-210 into any spectrometer sample compartment and dip the conical ATR sensing head into a sample container, as received, for rapid screening or detailed analysis - on the receiving dock or in the lab.

Many laboratories turn to the DIPPER-210 more often than any other sampling accessory for ease of operation, rapid sample throughput, and reliable results. Compare it to your horizontal ATR. Have you had problems with sample retention or element abrasion during cleaning? Sample cleanup with the DIPPER-210 is a cinch - simply dip the probe into the beaker of solvent and wipe it dry. It's as quick and easy as that!

### ***New Opportunities For Your FTIR***

The DIPPER does much more than make routine analysis faster and more reliable. It can open up all sorts of new analysis opportunities, from in-situ reaction monitoring to precision blending. And it's a natural for rapid incoming inspection of raw materials. Dip into beakers, buckets, or even canisters of powder - for positive identification or impurity detection. Of course, you can use it for final inspection of your company's own products as well.

With permanently aligned optics and a choice of ATR element materials, the DIPPER-210 provides highly linear, repeatable, and artifact-free spectra throughout the mid IR region (down to 650  $\text{cm}^{-1}$ ). Transmission ranges from 13 to 18%, (depending on spectrometer f#), so the DIPPER provides excellent results with your standard DTGS detector.

### ***In-Situ Reaction Monitoring - Easy And Economical***

Axiom's ATR Immersion Probes have already saved hundreds of \$ millions for companies in industries ranging from basic chemicals to pharmaceutical by providing an improved understanding of the reactions used in many of their manufacturing processes. The DIPPER provides a simple and economical way for you to start sharing these benefits. The 25 mm (1") diameter sensing head is equipped with a 29/42 sliding tapered joint for easy interfacing with standard laboratory reaction vessels.

### ***Flexibility And Upward***

# **DIPPER-210**

## **UNIVERSAL IMMERSION SAMPLING SYSTEM**



### ***Features:***

- Dips into any container for rapid sample screening
- Mates to standard reaction vessels
- Rapid cleaning with no sample retention
- Broad spectral response (650 - 4,000  $\text{cm}^{-1}$ )
- Sample compartment mounting
- High transmission (13-18%)
- Continuous purge for rapid sample throughput

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4,835,389  
5,051,551

## Compatibility

The standard DIPPER-210 consists of a DPR-210 Conical Immersion Probe Sensing Head combined with the DSR-210 Articulated Sample Region Mount, which allows the probe to be dipped into any open container. It comes complete with adjustable purge shrouds and a sample compartment interface plate to match your FTIR spectrometer - no matter what make or model. The entire assembly can be installed and ready for sampling in minutes.

When your sample interfacing needs are remote from the spectrometer, the DPR-210 sensing head can be coupled to a collimated output port with Axiot optical transfer modules. The DPR-210 sensing head can also be installed in an external sample region such as the Axiom AXM-600 Series for flexible sampling in remote locations such as a fume hood. Please contact Axiom to find out more about how a DPR-210 system can fit your sample interfacing needs.

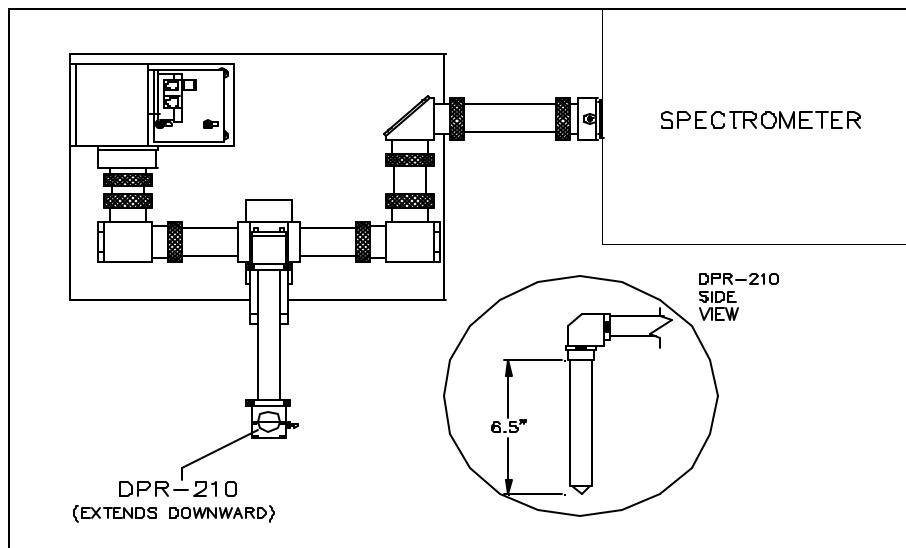


Figure 1: DPR-210 outboard sampling configuration including Axiot optical transfer modules, AXM remote sample region, and outboard detector.

## Dipper-210 Specifications

Standard Element:	ZnSe
Spectral Range:	650 $\text{cm}^{-1}$ to $>4,000 \text{ cm}^{-1}$
Probe Diameter:	25 mm
Immersion Length:	16.5 cm
Length of Lateral Extension:	22.8 cm (from sample region focus)
Number of ATR Reflections:	2
Angle of Incidence:	45°
Sliding Tapered Joint:	29/42
Maximum Temperature:	260°C
Material of Construction:	316 stainless steel
Seal Type:	Dual Kalrez® O-rings

## Available Dipper-210 ATR Elements

<u>Material</u>	<u>Spectral Cutoff</u>	<u>Hardness (KNOOP)</u>	<u>Attacked By</u>
ZnSe	650 $\text{cm}^{-1}$	120	Acids, oxidizers
ZnS (CVD)	950 $\text{cm}^{-1}$	250	Strong oxidizers, some acids
AMTIR-1	850 $\text{cm}^{-1}$	170	Strong Alkalis
Ge	700 $\text{cm}^{-1}$	780	Hot sulphuric acid, aqua regia
Silicon	1150 $\text{cm}^{-1}$	1500	HF, HNO <sub>3</sub> , NaOH