

Instrument Performance Assurance (IPA) Module

The Instrument Performance Assurance (IPA) module enables you to perform a validation and calibration of the ReactIR instrument laser frequency based on NIST standards for polystyrene. An IPA validation check requires no adjustment to system settings. The calibration adjustment involves rotating the iris on the IPA to align the module to the approximate current peak height used by the sampling technology.

This sheet provides instructions on how to install the IPA module on the factory-standard SIM opening on ReactIR 45m, iC10, 247, and MonARC instruments. Instructions apply to the manual (14200036) and motorized (14200038) versions of the IPA. The motorized version, for use with the ReactIR 45m instrument only, enables the software to control movement of the film in and out of the optical path.

- To use the IPA module, follow the instructions based on the type of ReactIR instrument:
- For 45m or iC10 instruments, refer to the iC IR software online Help.
- For ReactIR 247 instrument, refer to the iC IR or iC Process software online Help.
- For MonARC instruments, refer to the “MonARC Software User Guide.”

I. Before You Begin

- Ensure your ReactIR system is properly aligned for your sampling technology, and note the peak height for use in section III (Preparing the IPA Module).
- Remove the sampling technology from the ReactIR SIM.
- For MonARC and ReactIR 247 instruments, replace the retaining ring on the SIM flange with the instrument-specific type (see images in step 3) supplied with the IPA Module kit.

The table below shows IPA characteristics that apply to specific ReactIR instruments.

IPA Characteristic	Type	ReactIR 247	ReactIR 45m	ReactIR IC 10	MonARC
Type	Motorized		✓		
	Manual	✓	✓	✓	✓
Retaining ring	Pin hole (4 screws)		✓	✓	
	Pin hole (3 screws)	✓			
	Pin slot (4 screws)				✓
Control Software	iC IR	✓	✓	✓	
	iC Process	✓			
	iC RCT				✓

II. Installing the IPA

1. Remove the cap from the end of the IPA module that will attach to the ReactIR instrument. The following images show the manual IPA on the left and the motorized IPA on the right.



2. Locate the guide pin.



3. Orient the IPA module on the instrument SIM by one of the methods described below, based on the type of ReactIR instrument. The SIM opening is the same for all the ReactIR instruments, but it is located on the front of ReactIR iC10 and 45m instruments, on the back of a ReactIR 247, and on the right side of a MonARC.

- **On ReactIR iC10, 45m, or 247**—Align the IPA guide pin with the pin hole on the retaining ring on the instrument SIM. Instrument-specific rings are shown below:

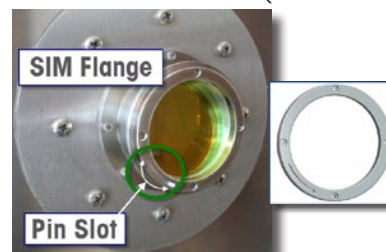


ReactIR iC10 and 45m

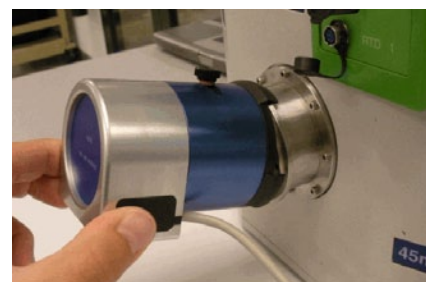


ReactIR 247

- **On MonARC**—Align the IPA pin with the pin slot on the MonARC retaining ring (shown on instrument and in separate inset). If necessary, remove the old style retaining ring and replace it with the slotted version provided in the IPA kit. The slot must be in the 7:00-8:00 (7 o'clock to 8 o'clock) position.



4. Place the IPA on the SIM flange with the top collar tilted up slightly.

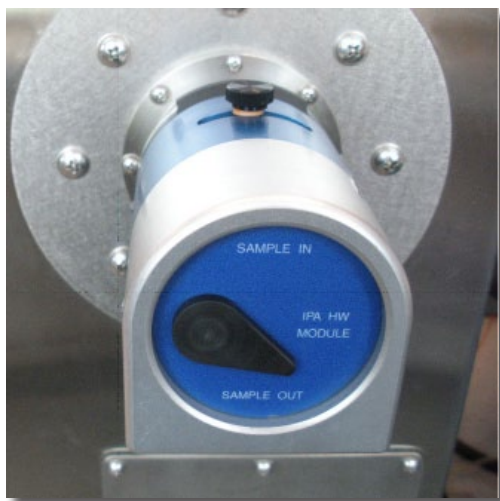


- Gently straighten the IPA and guide it onto the SIM flange. Use a slight side-to-side motion until the module locks in place. You will hear a click as the guide pin seats into the pin-hole guide. On a MonARC installation, you will feel the IPA lock in place without sound.
- For the motorized model on a 45m only**—Plug the motor into the top accessory receptacle labeled ACC, as shown in the following image.



III. Preparing the IPA Module

- For the manual model only**—Ensure that the IPA lever is in the **SAMPLE OUT** position, as shown below.



- In the software, go to the alignment section.
 - In iC IR software (for ReactIR 45m, IC10, or 247)—Test Instrument task pane > Contrast and Align.
 - In iC Process software (for ReactIR 247 controlled by iC Process)—Service page for the 247 instrument
 - At the MonARC touch screen software—Test menu > Align tab.
- With the alignment window in view, loosen the knob. Then, gradually rotate the blue sleeve of the IPA module to attain the same peak height as your prealigned system.

Alignment is normally set to approximately 20,000 counts.



IMPORTANT! For the MonARC, an additional rotation of the entire IPA module within the pin slot on the SIM flange may be necessary to reach the peak height value.

- Carefully tighten the knurled knob on the IPA sleeve until it is snug to hold the proper peak height during validation and calibration.

IV. Performing Validation and Calibration

- Follow the instructions for your ReactIR instrument to validate and, optionally, calibrate the laser frequency. The process involves putting the polystyrene sample IN and OUT of the optical path. For the motorized model, the process is automatic through the iC IR software. For the other models, the process is manual by moving the lever when prompted by the software.

The software guides you through the process.

- For 45m, iC 10, and 247 instruments controlled by iC IR software:
iC IR software > Instrument Performance task pane
 - For ReactIR 247 controlled by iC Process software:
iC Process > ReactIR 247 instrument > Service page
 - For the MonARC:
Touch screen software > Test menu > Validation and Calibration tabs.
- Prior to running calibration, ensure the proper peak height is still set and the knob on the blue sleeve is snug.
 - After calibration, you can run another validation to verify results.
 - Carefully remove the IPA module, replace the lid, and put the module in the storage case.
 - Reconnect your sampling technology. No alignment should be necessary.

V. Replacing Polystyrene Film

As part of a regular maintenance procedure, the polystyrene film should be replaced each year. The film is in an assembly that can be easily removed and replaced. Contact METTLER TOLEDO to order the Polystyrene Replacement Kit (Part Number: 14470001). Instructions for removing and replacing the film are shipped with the kit and also available in the iC IR Documentation Portfolio and online Help.

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