

TECHNICAL BULLETIN

Model 48i Mirror Peaking

The purpose of this technical bulletin is to describe a method of peaking the optical mirrors in the optical bench of the Model 48i Series (IR) Infrared GFC CO analyzers.

48i Optical bench configurations:

There are two types of optical benches in the 48i Series Gas Analyzers.

- A)** Standard models & Trace levels optical benches have four mirrors. Entrance mirror, Exit mirror, Field mirror & Relay mirror.

This optical bench configuration is considered a 32 pass optical bench.

- B)** High level optical benches have three mirrors. Entrance mirror, Exit mirror and Field mirror.

This optical bench configuration is considered a 2 pass optical bench. The entrance & exit mirrors are adjustable while the field mirror is fixed.

Why would I need to “peak” my entrance & exit mirrors?

In the event that the entrance or exit mirrors were removed to be cleaned or inspected, these mirrors may not be reinstalled in the same original position & may need to be “Peaked” (positioned for optimum light path throughput)

Instrument & air setup for mirror peaking:

- 1) Flow zero air or nitrogen to the analyzer.
- 2) From the main menu go to Instrument Controls - then scroll down to Service Mode and toggle Service Mode on.
- 3) From the main menu, scroll down to the Service Menu selection. Once in the service menu, scroll down to Pre-Amp Board Calibration.

Entrance mirror adjustment process:

- 1) Loosen the two screws on the entrance mirror. The entrance mirror is located on the top of the optical bench on the rear left side, the mirror housing is round.
- 2) Adjust the round mirror housing until the maximum Sample & Reference intensity is obtained.
- 3) Tighten the two screws and verify the intensity remained the same.

Note: The intensities are expressed as a frequency.

Example: SAMPLE INTENSITY: 60,000 Hz REFERENCE INTENSITY: 40,000 Hz

Exit mirror adjustment process:

- 1) Loosen the two screws on the exit mirror. The exit mirror is located on the right side of the optical bench on the rear right side, the mirror housing is also round.
- 2) Adjust the round mirror housing until the maximum Sample & Reference intensity is obtained.
- 3) Tighten the two screws and verify the intensity remained the same.

Note: The intensities are expressed as a frequency.

Example: SAMPLE INTENSITY: 90,000 Hz REFERENCE INTENSITY: 70,000Hz

Pre-Amp Board Calibration Procedure:

1) While in the pre-amp board calibration screen, adjust the "SET TO" value either up or down to set the sample & reference Intensity so that the average of the intensities are 150,000 Hz. Save this value

Example: SAMPLE INTENSITY: 160,000 Hz REFERENCE INTENSITY: 140,000Hz
Set to: 116

USA

27 Forge Parkway
Franklin, MA 02038
Ph: (508) 520-0430
Toll Free: (866) 282-0430
orders.aqi@thermofisher.com

Find out more at thermofisher.com