

**This short manual is no replacement of the actual IROX DIESEL manual!
Please read the manual first to ensure complete functionality of the instrument.**

SET – UP YOUR INSTRUMENT

- Place the IROX on a solid bench top.
- Make sure the line voltage corresponds to the voltage setting above the power inlet on the rear of the instrument.

STOP / ESC	...	Stop measurement at any time
RUN	...	Start measurement
TASK / ENTER	...	Execute a selected operation
SHIFT	...	Executing special functions
+ and -	...	Modify numbers
▲ ▼ and ◀ ▶	...	Change the cursor position

FTIR CALIBRATION & MEASUREMENT

1. Switch on the instrument with the power switch above the power connector on the rear panel.
2. Wait approximately 10 minutes for “warming up FTIR” and “adjusting FTIR” until the **Hexane calibration menu** appears:

```
*****
Grabner Instruments      3.01.2003 11:52a
hm
                                IROX-D
Hexane                    calibration
                                end
*****
```

CALIBRATION:

ATTENTION: The Calibration of the FTIR spectrometer must be done once a day before the IROX is used for measurements

1. Connect the sample introduction tube to the Luer inlet on the right side of the IROX. Insert the end of the tube into a bottle of n-Hexane (please use only high purity grade, type HPLC).
2. Press RUN to start the calibration measurement. If a Multiple sample inlet is connected, use inlet 1 for filling. Inlet 1 is the first inlet from the front side.
3. When the measurement is finished, the display changes to back to the Hexane calibration menu.
4. Shift the cursor to **END** and press TASK. The new reference spectrum is stored and used for further calculation of concentrations.

The display will show the Start-up menu:

```
*****
Grabner Instruments      3.01.2003 11:52a
                                IROX-D V1.87
meas.      param.      setup      calib.
*****
```

MEASURING

1. In the start-up menu, shift the cursor to **meas** and press TASK

```
*****
Grabner Instruments      3.01.2003 11:52a
hm
  Diesel 1
                groups:12345
mem      print      view      end
*****
```

2. Select the **groups** of the library you want to use for property prediction by pressing TASK on the respective number. The selected **groups** appear underlined.
3. Connect the sample introduction tube to the Luer inlet on the right side of the IROX. Insert the end of the tube into the diesel sample that has to be analyzed.
4. Press RUN to start the measurement.

```
*****
Diesel 1              3/01/2003 11:22a
Total Aromatics      21.2  vol%
PN Aromatics         4.6  vol%
Cetane Improver      525  ppm
Cetane Number        45.6
Cetane Index         48.7
T85                  365.3  C
*****
```

5. When the measurement is finished the result is displayed. Browse through the list with ▲ and ▼ keys line by line or with SHIFT ▲ and ▼ to switch a whole page.
6. Press STOP to leave this menu. The instrument is ready for the next measurement.

ADDING SAMPLES TO THE DATABASE (LIBRARY)

If the measuring results of the predicted values like Total Aromatics, Polynuclear Aromatics, Cetane Number, Cetane Index and T85 should be improved then add known diesel samples to the database.

1. In the Start-up menu, shift the cursor to **calib** and press TASK. Move the cursor to **correlation** and press TASK again to enter the **correlation calibration menu**:

```
*****
Grabner Instruments      3.12.1999 11:52a
  Cal Sample 1              correlation
                calibration
                group=1
                mem      param.      end
*****
```

2. You can now edit the sample identification name.
3. Select the group into which this calibration sample shall be added by moving the cursor to **group=1** and altering the number with the + and - keys.
4. Move the cursor to **param.** and press TASK: enter all known values for the listed properties, and make sure that the value for the unknown properties are set to --.
5. Press STOP to leave this menu. You return to the correlation calibration menu.
6. Press RUN to start the measurement. When the test is finished IROX DIESEL automatically stores the spectra and the associated properties in the library and the instrument returns to the calibration menu.
7. The instrument is now ready for the next calibration (repeat 2 – 6). Leave the calibration menu by pressing TASK with the cursor on **end**.
8. To view the results and the values of the properties that were edited during calibration, shift the cursor to **mem** and press TASK. Move the sample cursor to the measurement of interest and the main cursor to **view** and press TASK. The values will be displayed.