

Parr calorimeters as teaching instruments.

Calorimeters have long been an everyday use piece of equipment in industry and academic research, but they are now becoming more common place in teaching laboratories for undergraduates and high school students. As such, Parr have developed a number of instruments that are ideal for these purposes. Whether you want a very basic teaching instrument with emphasis placed on manual handling and manual calculations to obtain your calorific value , or a more sophisticated one with data logging facilities, report generation and automation which can double up as a research instrument, Parr has the right calorimeter for you.

Included with each calorimeter below you will also get a spare parts kit including all the parts you need to service your bomb, an oxygen regulator specifically designed for use with these instruments, 6 combustion crucibles, 3 reams of fuse wire, and a bomb holder and stand. In other words, it's everything you need to get you up and running, and keep you running for a couple of years before you need to even think about replenishing any of your consumables.

1341 Plain Jacket Calorimeter



- Ideal for teaching at high school and undergraduate level.
- Manual operations of: oxygen fill, ignition and recording of temperature values
- 2 Tests Per hour.
- Parr's most modestly priced instrument with very low running costs and simple, robust nature.
- No water supply for the calorimeter is required.
- Simple design means no calibration is required.

The 1341 is a basic, robust instrument designed with teaching in mind. It requires minimal training for the users and has very low running costs. It can be used with a broad range of solid and liquid combustible samples. Users take temperature readings off the digital thermometer and use these to calculate their own CV values, often by plotting them into a excel spread sheet to produce data graphs. This ensures that the principles behind calorimetry are thoroughly understood by the user. And when you have finished using it, simply pick it up off the desk and put it in a cupboard.

Laboratory Requirements

The calorimeter requires a source of 99.5% oxygen, deionized water and a plug socket for the ignition unit for operation.

1341 plain jacket calorimeter with 6772 calorimetric thermometer.



- Suitable for teaching and research purposes.
- Manual operations of: oxygen fill, Automatic operations of: ignition and recording of temperature values
- 2-3 tests Per hour
- No water supply for the calorimeter is required.
- Automatic CV calculations and report.
- Has "Student Mode" for teaching.
- Touchscreen technology
- Has data logging facilities
- Data transfers via file transfer protocol (FTP) of results in a .csv file that can be directly opened in excel.
- Full installation and training included.

The 6772 calorimetric thermometer is an add module to the 1341 plain jacket calorimeter. It is a high precision temperature measuring system which will automatically determine the net temperature rise, apply all necessary corrections and calculate and report the heat of combustion. You can also add a printer to this and directly print results, obtain weights from a balance and transfer data to a computer just like the 6000 series.

One of the best features of this 6772 add-on module is that data can be transferred to an Ethernet network connected computer using the FTP File Transfer Protocol. Test reports may also be viewed and printed with a web browser over a LAN, just by typing in the calorimeters IP address into internet explorer for example. So it's very user friendly and versatile.

The “student mode” tells the 6772 not to show an automatic CV value, but instead data log temperature readings every 12 seconds. These can be sent to an attached printer, or they can be transferred from the calorimeter in a .csv file and exported in excel. From here the students can make their own graphs, manipulate the data and calculate their own CVs.

Finally, you won’t have to be tied down to any water supply so you can just pick them up and move them around, or when you’re finished them, store them in a cupboard.

Laboratory Requirements

The calorimeter requires a source of 99.5% oxygen, deionized water and a plug socket for the 6772 unit for operation.

Parr 6100 compensated jacket calorimeter



- Highly versatile instrument, perfect for both research and teaching.
- Semi-automatic operations of: oxygen fill, ignition and recording of temperature values
- 6-8 tests Per hour
- No water supply for the calorimeter is required.
- Automatic CV calculations and report generation.
- Touchscreen technology
- Has data logging facilities
- Data transfers via file transfer protocol (FTP) of results in a .csv file that can be directly opened in excel.
- Full installation and training included.

The 6100 Calorimeter utilizes Parr’s real time thermal correction capabilities to provide an instrument for rapid testing with good repeatability at a very attractive price. The 6100 has a significantly increased accuracy over the 1341 and makes it a very versatile instrument for both teaching and accurate research purposes. The automation and “dynamic” running mode means that a higher throughput of samples per hour can be processed, 6-8, compared to the 2-3 in the 1341. The 6100 calorimeter is housed in a single compact case 22.5 inches wide, 15.5 inches deep and 17.0 inches high (57x40x43 cm).

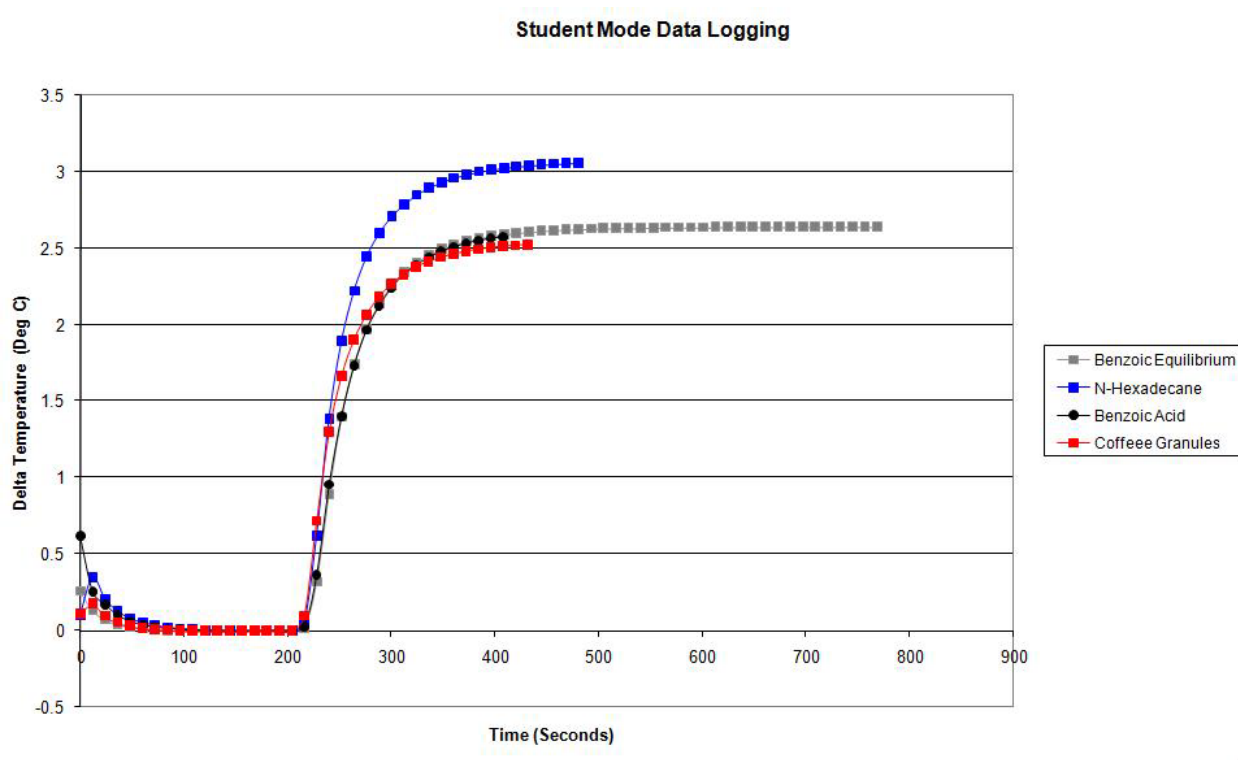
In addition to the desirable automation and increased accuracy, the 6100 can do everything the 1341 & 6772 combo can do in terms of data logging, file transfer, "student mode" and networking capability.

Laboratory Requirements

The calorimeter requires a source of 99.5% oxygen, deionized water and a plug socket for power.

Student mode Data

The following graph is real data as obtained from a 6100 running in student mode. The raw data was transferred from the calorimeter via an Ethernet cable to our office network, and the .csv file was then opened with Excel and the graph below plotted. The whole process took only a few minutes. You can then use the standard CV calculation methods to obtain your final result.



For prices and availability of all these instruments please contact our office on 0161 491 3068 or email dan@scimed.co.uk.