

Gary Ochoa
Jessy Rael
Clay Cooper
Wes Levanduski

BF-V

Instrument Validation Report – Venier SS Thermometer Probe - Barometer

Purpose:

The purpose of our experiment is to measure the device's precisions and identify its sources of error. We will also compare our readings to an accepted value to evaluate accuracy and make sure they are functioning according to how we plan on using them.

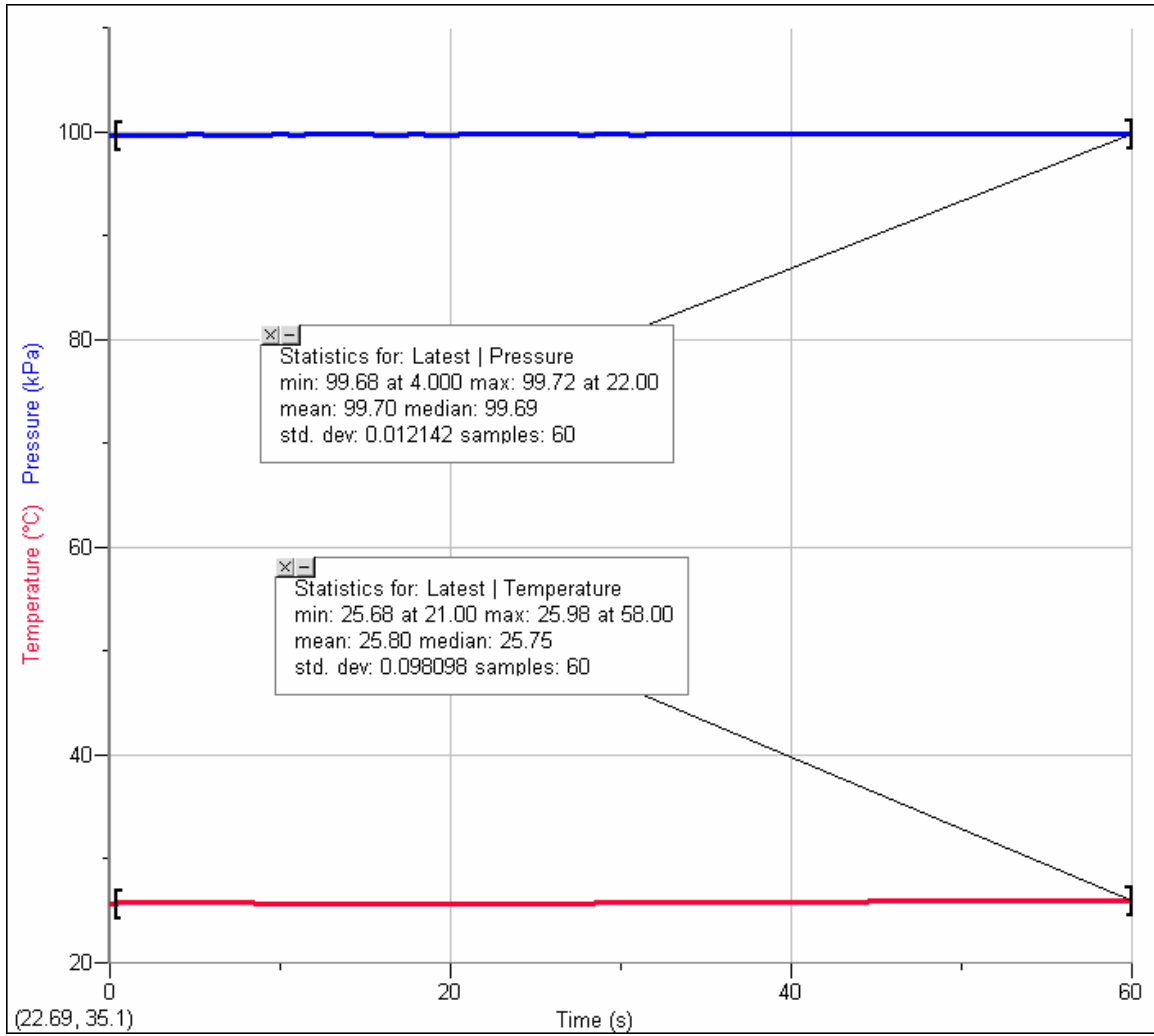
Method:

For our experiments we are going to first – let the thermometer probe and barometer sit inside the classroom for 60 seconds to see if the probe will have a steady reading.

Then we are going to put the thermometer probe and barometer out side of the room for 60 seconds and see if there is a drop in temperature but not exactly a drop in kPa.

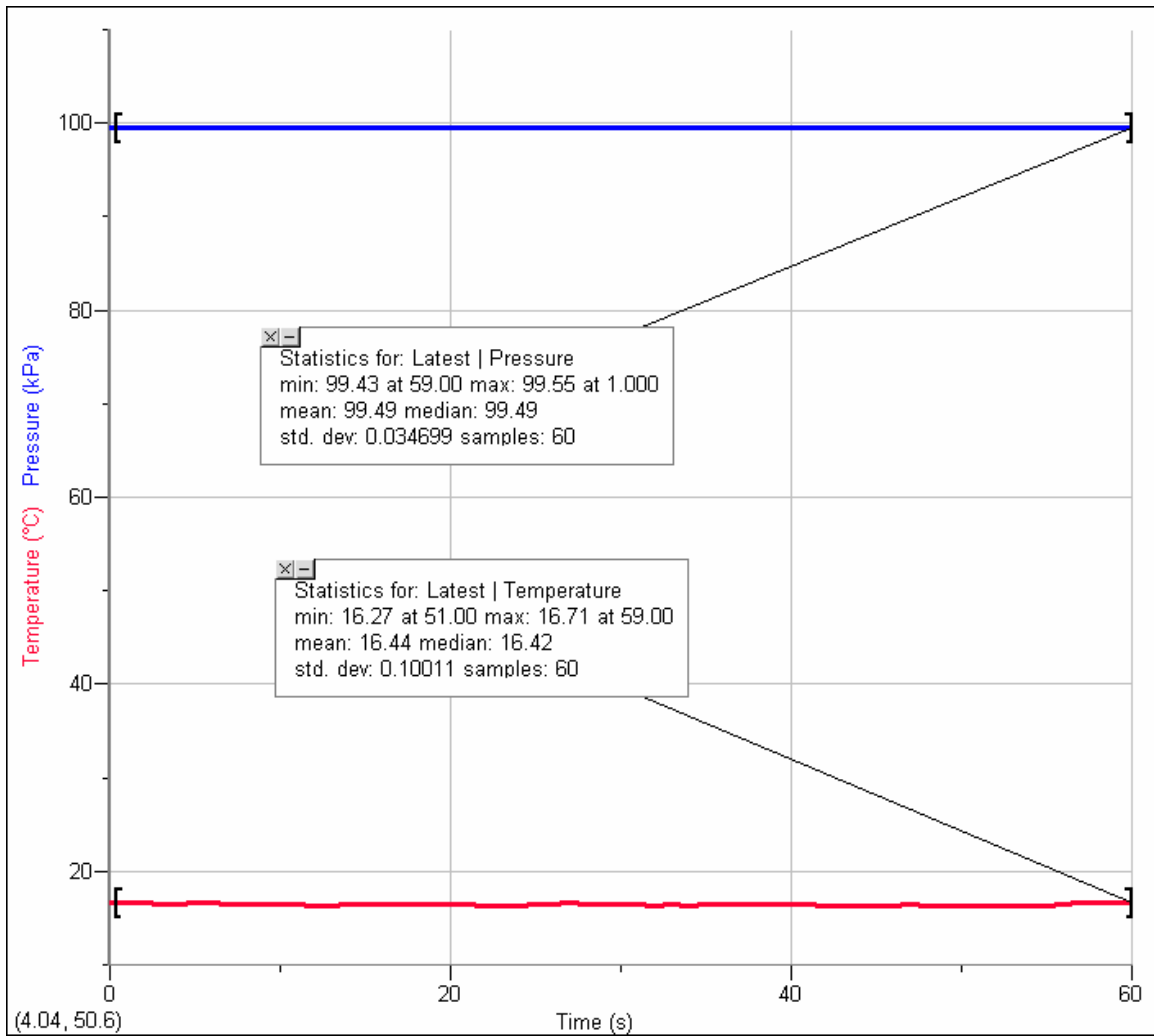
For our final test we are going to keep the thermometer and barometer out side of the room for 30 seconds and then bring the devices inside of the room 30 seconds to look to see if the devices change the different environments. We are looking for a change in temp. more than a change in kPa.

Test 1:



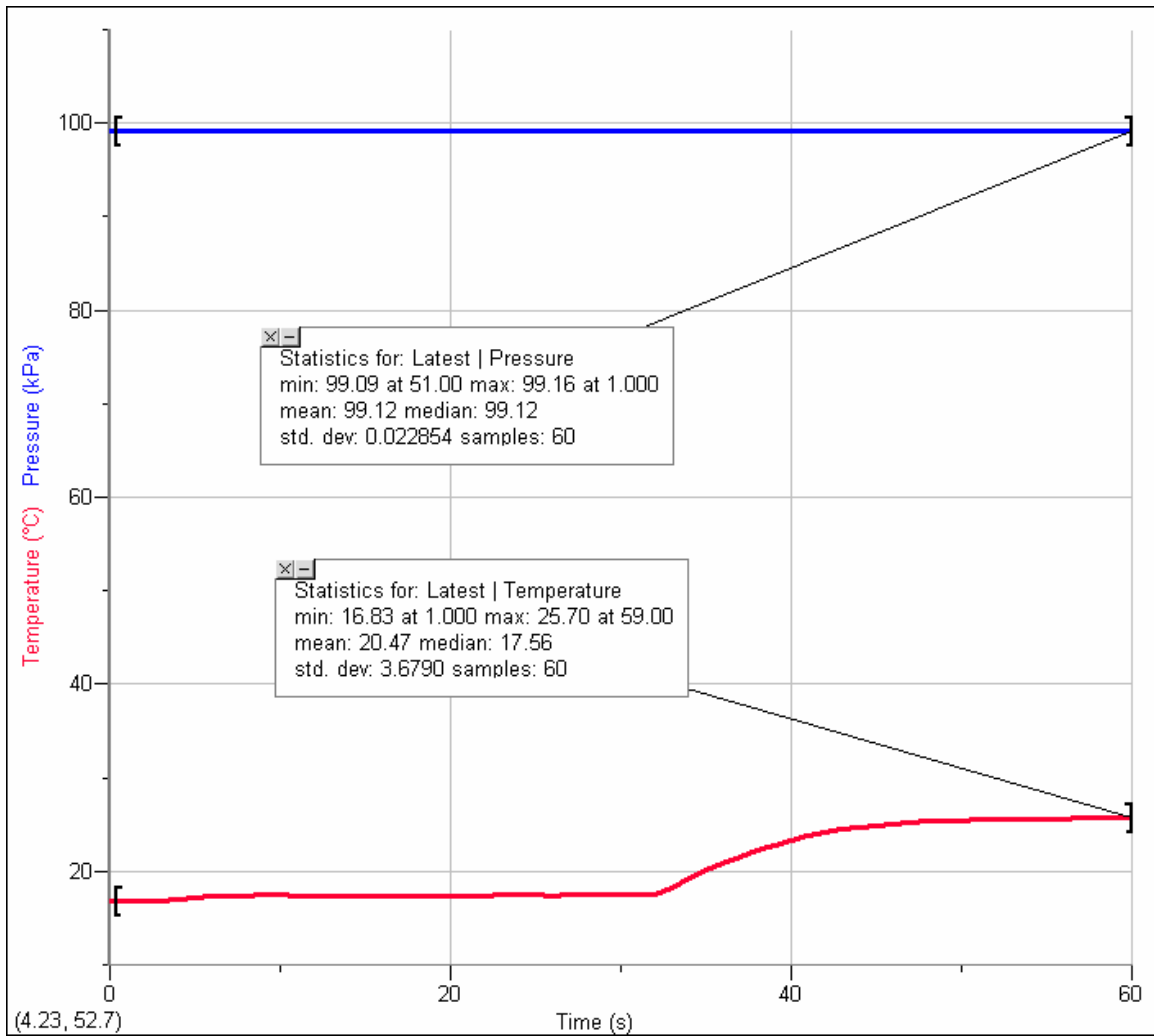
As we can see from our graph the thermometer reads pretty steadily through out the test, changing 0.32 degrees Celsius total while sitting inside of a controlled environment and the pressure inside changed only .04 kPa.

Test 2:



Our second test we put the devices outside of the class room on a seat so it wouldn't move. The thermometer did read the change in temperature that we were expecting it to read and we had the barometer at a lower height so it did read a little lower pressure.

Test 3:



For our third test we had the devices outside to begin the test with, we let it rest outside for 30 seconds and around the 30 second mark we brought the devices inside the classroom. We kept the barometer at the same height so we didn't expect much of a change in pressure, but we did see the change in temperature that we were hoping for.

Conclusion: Our tests are considered a success. We got the results that we expected and learned that the standard deviation for the barometer is about .02 kPa and for the thermometer probe is around .1 degrees Celsius.