

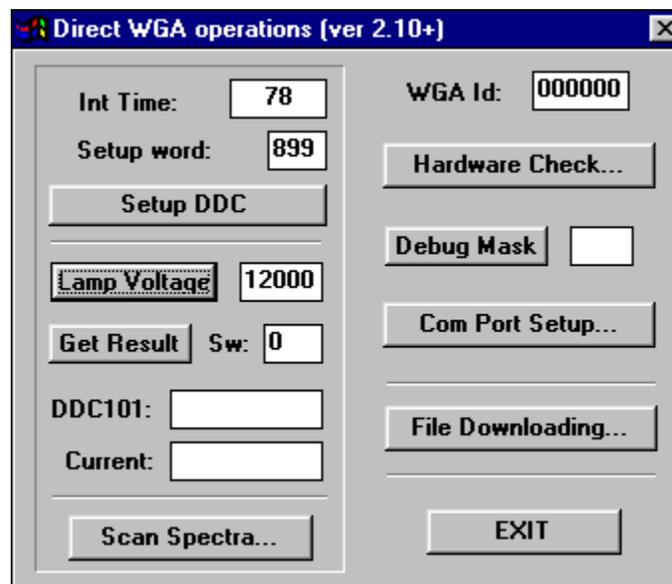
WGA\_TEST is a software tool that communicates between the PC and the instrument through a null modem cable.

## 1. Installation:

- To install WGA\_TEST software to your PC, there are two files required one is WGA\_TEST.exe and the other is BWCC.DLL
- Copy WGA\_TEST.exe from the floppy or the CD provided and paste it in the Desktop on your PC
- Copy the file BWCC.DLL and paste it under System folder under Windows folder in your C drive under C:\WINDOWS\system
- Connect to an external computer through the RS232 serial connector using a null modem cable.
- Double click on WGA\_Test.exe and you will be connected to the PC and you should see the instrument on the WGA Id: rectangle

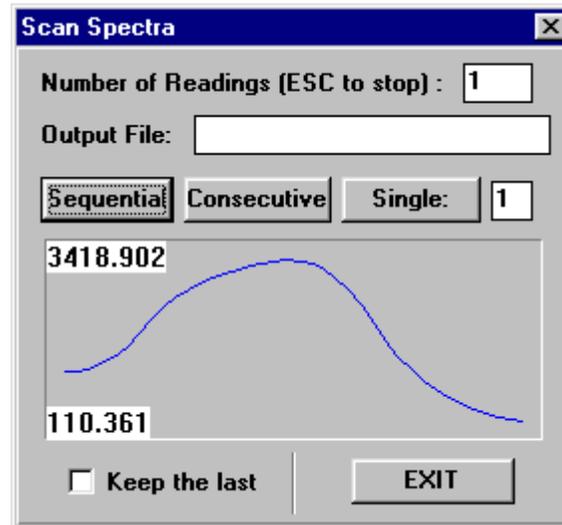
## 2. 100% and Sample Signals:

Double click on WGA\_Test.exe, and you will be prompted with the following window:



- Set the 'Int Time' to 78 and into the 'Setup Word' to 899, and click onto the Setup DDC button.
- Set the Lamp Voltage to 12000. Click on the Lamp Voltage button, this will turn ON the lamp

Click Scan Spectra then Sequential, the instrument scans the detector array and displays the 100% energy curve for the system. The maximum should be approximately above 2000 Namps. The curve should be smooth and no evidence of any saw tooth patterns. The curve should appear as shown below.



Remember to turn the lamp off by typing in '0' into the Lamp Voltage window and clicking the Lamp Voltage button.

Exit the window.

3. Noise Check:

Double click on WGA\_Test.exe, and you will be prompted with the following window:

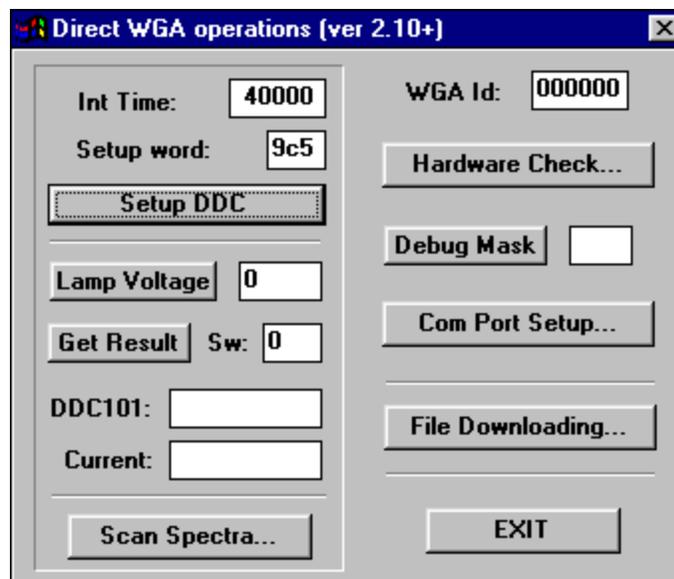
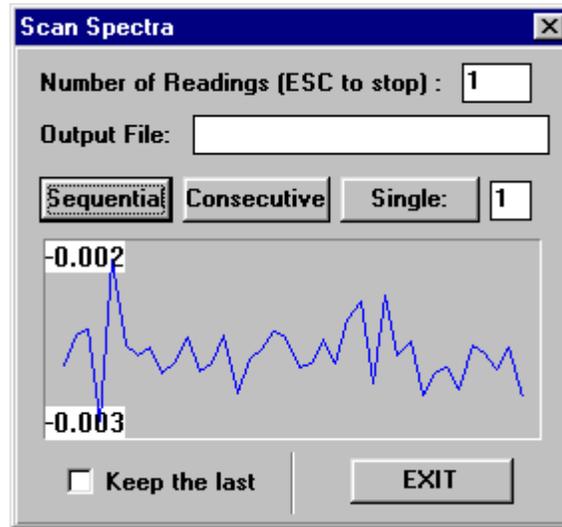


Fig 8

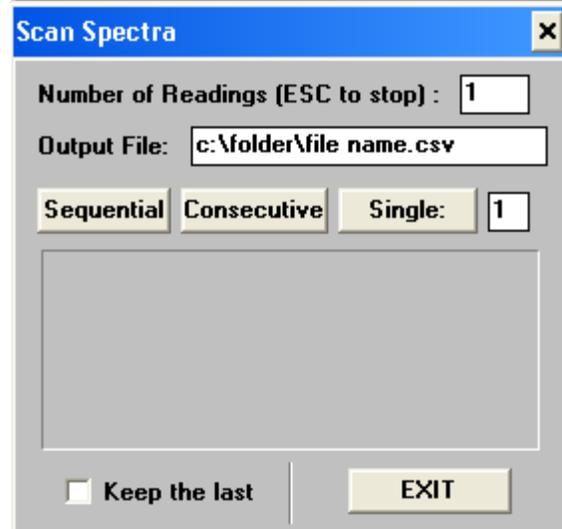
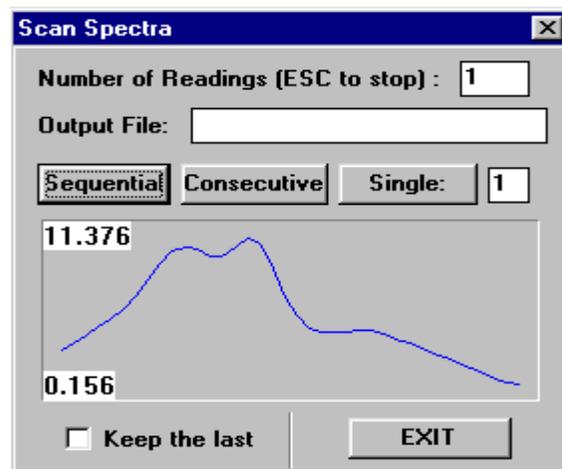
Set 'Int Time' to 40000 and the 'Setup Word' to 9C5, click onto the 'Setup DDC' button. Click on the 'Scan Spectra' button. Click on the Sequential button as shown below:



The instrument will scan the detector array and display the Sample Noise spectrum. The maximum to minimum range should be  $\pm 0.003$  namp. Repeat the Sequential button and check to see that the Sample Noise spectra are consistently within this range.

4. Sample Scan:

- Set 'Int Time' to 40000 and the 'Setup Word' to 9C5, click onto the 'Setup DDC' button.
- Turn ON the lamp by typing 12000 on the Lamp Voltage
- Insert a wheat sample cell
- Press Spectra then Sequential as shown below:



You can Save the Scans by typing Output File field as

Spectra for any of the above destination saved file in the shown below:

So if you choose the file name as results.csv under test folder, you type c:\test\results.csv and you can open it in Excel

## 5. Download and Upload Files:

### 5.1 Download and Upload Calibration Files

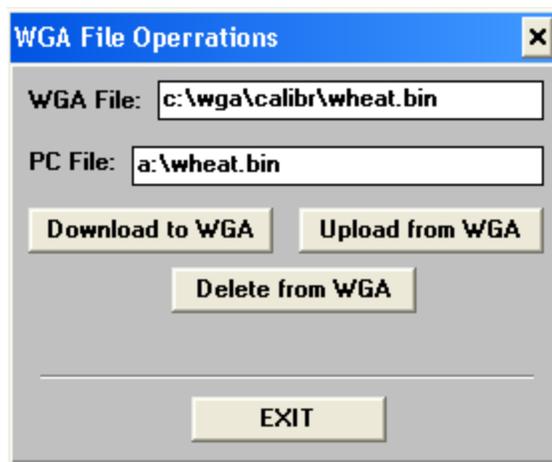
You connect to Wga\_test and press File downloading then in the **WGA File** field put: c:\wga\calibr\calibration .bin and in this case you put: c:\wga\calibr\ Wheat.bin

And if you downloading from floppy put in the **PC file** field

a:\ Wheat.bin then press the button **Download to WGA**

The **PC file** filed is where you have the file on the Computer whether it is floppy or another drive so if you have it on a folder on a C drive

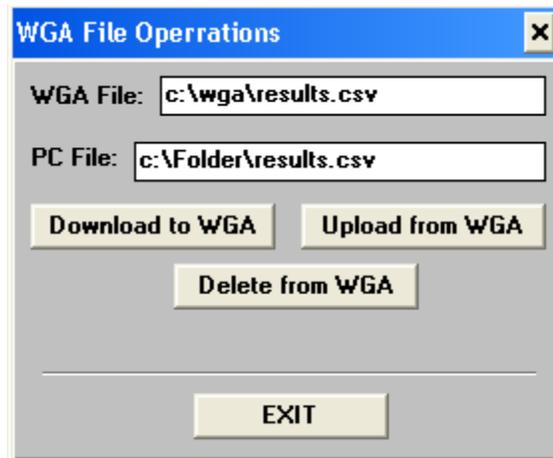
c:\folder\ Wheat.bin then press the button **Download to WGA**



### 5.2 Upload Results File:

You can upload the results saved in the instrument into the PC by typing:

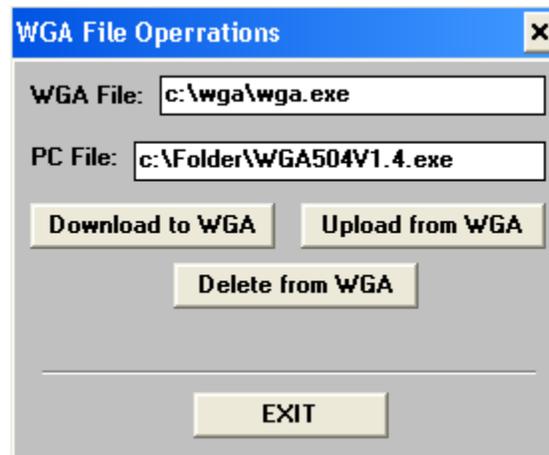
- Click File Downloading on WGA Direct Operations Window
- c:\wga\results.csv in the WGA File rectangle field
- c:\Folder\results.csv the folder where you want to save the results to your PC
- Click the button Upload from WGA, you should get the message Uploaded successfully



### 5.3 Download New Software:

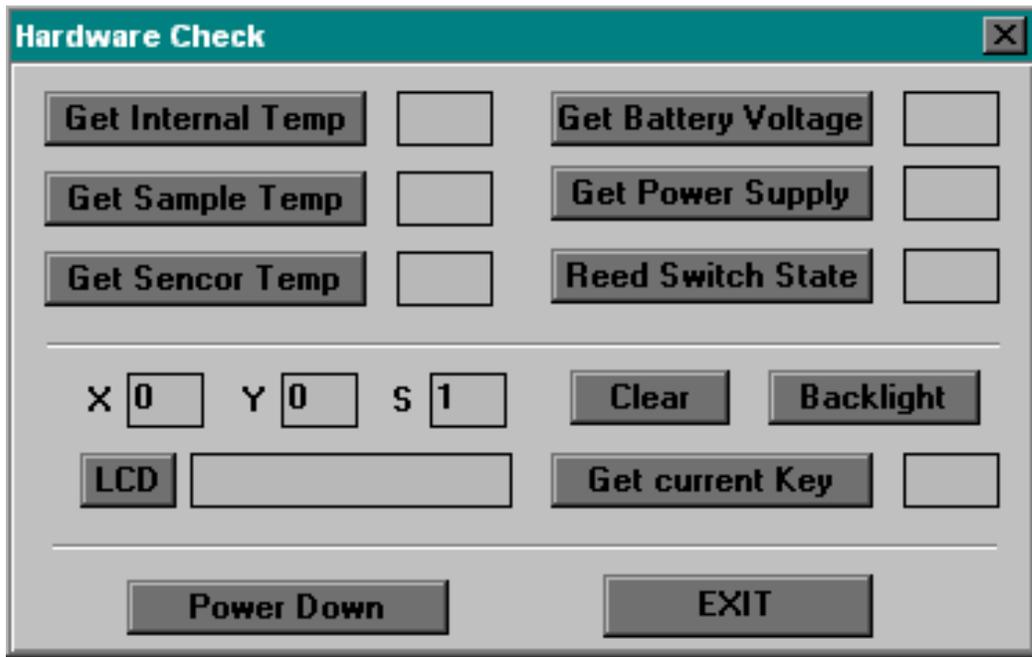
To download a new version of the instrument software

- Click File Downloading on WGA Direct Operations Window
- Type c:\wga\wga.exe in the WGA File rectangle field
- If the latest version is WGA504V1.4.exe and it is saved under the folder Software under c drive for type c:\software\WGA504V1.4.exe
- Click the button Download to WGA, you should get the message Downloaded successfully as shown below



### 6. Hardware Check:

While still using WGA-Test.exe, press the Hardware Check button. As shown below:



Press the Get Internal Temp button. The value displayed is an internal function and does not reflect the instrument temperature.

Press the Get Sample Temp button, it should be about -17C. If the Liquid Sample Cell is used, a temperature reading should be displayed.

Press the Get Sensor Temp button. The value is the calculated temperature of the detector and analogue board.

Press the Get Battery Voltage. The value is the voltage across the battery terminals if installed, or the power from the battery charger, which is the voltage supplied to the motor.

Press Get Power Supply. The value is the voltage being supplied to the Power Supply.

Press the Reed Switch Sate button. With the Sample Cell out of the Sample Cell Holder, and number 3 will appear on the space, which indicates that the reed switch on the sample cell holder is an open circuit. Insert a Sample Cell on the Sample Cell Holder and press the Reed Switch State button and number 1 will appear on the space, showing that the reed switches on the Sample Cell Holder is closed circuit due to the presence of the magnets inside the sample cell.

Press any key on the keypad. Press Get Current Key to display the key that is pressed.

Type in any numbers or characters into the LCD window, Press the LCD button. These figures should be displayed on the instrument's LDC Panel. Type in X and Y coordinates and the message should be moved to this position. The S window allow the size of the character to be set.