

## A. INTRODUCTION

The ILT1700.VI driver is a sample LabVIEW<sup>®</sup> program that allows the end user to perform data acquisition with an ILT1700 Research Radiometer. The VI will run in LabVIEW<sup>®</sup> 8.2 Full Development System and offers the ability to record readings in either DC, or integrate mode as well as to calculate the percentage of a baseline reading. The data is saved in a tab-delimited text file that can be opened with Excel. Users with LabVIEW<sup>®</sup> 8.2 Full Development System can customize the VI to meet their unique application requirements.

We also offer an ILT1700.VI program for customers who do not own a copy of LabVIEW<sup>®</sup> Full Development System. The application is a fully compiled, run-time version of the VI driver. Users can run the program, obtain data from an ILT1700 meter and save it into a file. The program is available for Windows 2000, XP and VISTA.

## B. INSTALLATION OF THE USB PORT DRIVER (VCP)

You will need your ILT1700 meter, a USB cable and your complimentary drivers CD. Connect the ILT1700 with a USB cable to a USB 2.0 port of your computer. The Found New Hardware Wizard will come up to assist you with installing the DLP-USB232M Virtual Com Port Driver (VCP). You need to insert your CD when requested (and select the ILT700USB\_Drivers folder as needed). Follow the install procedures until the installation of Com Port Driver is finished. To begin, Click on Start, Settings/Control Panel/System/Hardware/Device Manager/Ports in the Start Menu and double click on com port to check the Device Status of the USB Serial Port (COM#). In the general tab it should read "This device is working properly".

## C. INSTALLATION OF THE ILT1700 PROGRAM

If you have LabVIEW<sup>®</sup> 8.2 Full Development System and are an experienced LabVIEW<sup>®</sup> user, locate the ILT1700.VI in the ILT1700 folder and you can begin customization of the VI.

For users that do not own LabVIEW® follow the steps below to install the Virtual ILT1700-USB program:

- a. Insert the CD, open the V-ILT1700 folder on the CD and double click ILT1700Run-Time folder.
- b. Select the **setup.exe** file and double click the file to start the installation process.
- c. Continue to go through each screen and select **Next** until the installation is complete. (You will need to accept the terms and conditions).
- d. Click on **Finish**, and restart your computer.
- e. The Virtual ILT1700-USB program will be installed in the C:\Program Files\ILT1700 directory. The **ILT1700.exe** can be opened using **Start menu\All Programs\ILT1700**.



#### D. TAKING MEASUREMENTS

Before you begin, cover the detector connected to the ILT1700 with the black cap or an opaque object for about 10 seconds, (or disconnect the sensor from the back of the ILT1700) and press the zero button on the front of the ILT1700. Wait until the zero light shuts off and the DC light illuminates.



With the ILT1700 program up on your monitor, look for the drop down box in the lower left corner and select the assigned COM port. If you are not sure which COM port you are using, this information can be found in the Device Manager of your computer. Use Control Panel\System\Hardware\Device Manager\Ports in the Start Menu for information. The default COM port is set at COM4.

There are three buttons at the top left of the Screen.  = Run,  = run continuously,  = abort (For this application we only use the RUN button, do not use run continuously or abort)

To start the program click the **Run Arrow** button  and it will change to a darkened arrow . Read and follow the instructions on the pop-up window, then click OK. (The check box  can be used to disable this pop-up message).

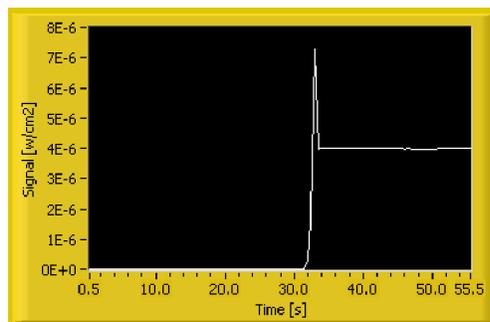


The Start button will flash yellow, Click on the start button to initiate data acquisition.

If you need to do a software zero, cover the detector connected to the ILT1700 with the black cap and press the **Zero** button . The LED indicator will turn green until complete and the Zero Level

indicator should read . Assure the meter was already zero-ed prior to using the program.

The red LED of the **Signal/DC** indicator  should be blinking indicating that the program is acquiring data and the graph should show readings that match the display on the ILT1700.



Data Displays: Above the graph are three additional displays. The Left screen is the irradiance display, the center screen is the percentage display and the right is the integrate display. These displays will change values based on the features you select using the DC, SET 100%, and INT buttons.



If you need to do a software zero, cover the detector connected to the ILT1700 with the black cap and press the **Zero** button . The LED indicator will turn green until complete and the Zero Level indicator should read . Assure the meter was already zero-ed prior to using the program. Once you have zero-ed, the program should show readings as displayed on the ILT1700 meter.

The data can be saved at any point in a tab-delimited file by pressing the **Save** button . Carefully read the pop up messages and follow the instructions. To stop  the program without saving the data, press the **Stop** button. To measure in percentage, click the **Set 100%** button  to set the baseline 100% level. All future readings will be in percentage as a comparison to the 100% baseline reading. To measure accumulated dosage or total exposure, press the **Integrate** button . The program will continue to integrate and show the total dosage in the integration window until you press **Save** or **Stop**. To exit or stop the program, always use the **Stop** or **Save** buttons as they assure that the COM port is properly closed. Try not to use the **Abort Execution** button  in the VI toolbar.

## E. TROUBLE SHOOTING

An error message in “VISA Read in ILT1700.VI” will appear in case that a wrong COM Port is selected or if the VCP driver is not properly working. To exit the message, click Stop and select the correct Com Port. Use Control Panel\System\Hardware\Device Manager\Ports in the Start Menu to locate the proper COM port or to check the proper working of the VCP driver.

## F. HARDWARE FEATURES

USB 2.0  
Windows 2000, XP and VISTA  
Bits per second: 4800  
Data bits: 8  
Parity: none  
Stop bits: 1  
Flow control: none