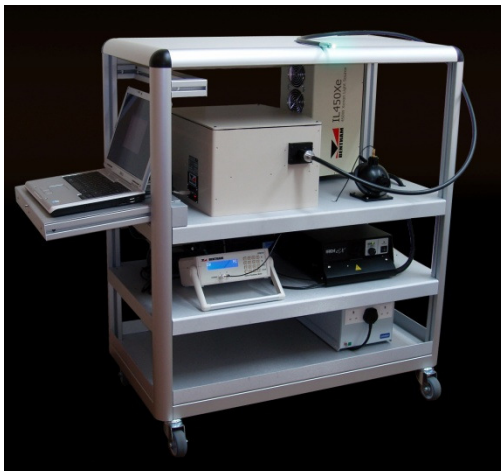
PhotoTest450

Monochromatic

Light Source

(280-600nm)



QUICK USER GUIDE

Version 1 – August 2015

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TABLE OF CONTENTS

1 POWERING ON THE SYSTEM

1 Connect the medical isolation transformer to mains. The fans of the IL540Xe will start running

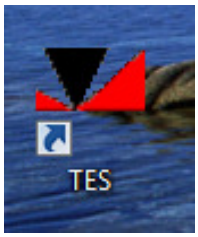
2 Check that the lamp current on the iREM front panel is set to the penultimate level

3 Power on the IREM Ex to power on the IL450Xe. On starting a click will be heard as the lamp strikes, and light emission will be observed through the fan grills to the front of the source.

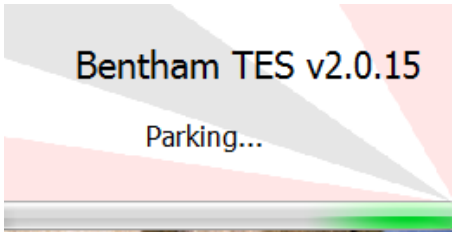
4 Power on the remainder of the system (monochromator TMS300, ORM400, laptop) using the distribution board switch.

5 Power on the computer.

6 Run the TES software application from the desk top.



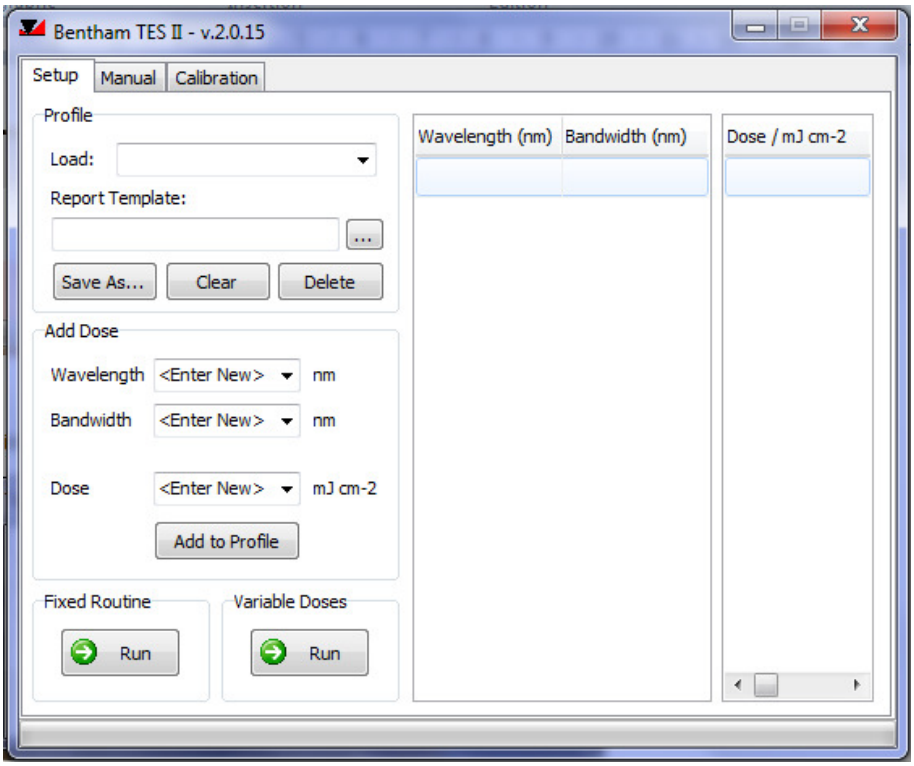
7 The software will initialise the system.



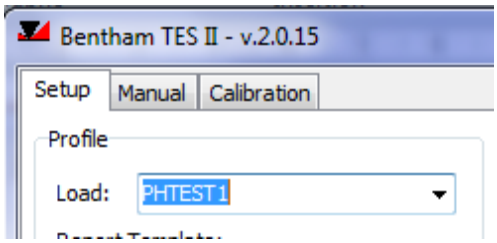
8 The PhotoTest450 is ready to use.

2 RUNNING A FIXED ROUTINE

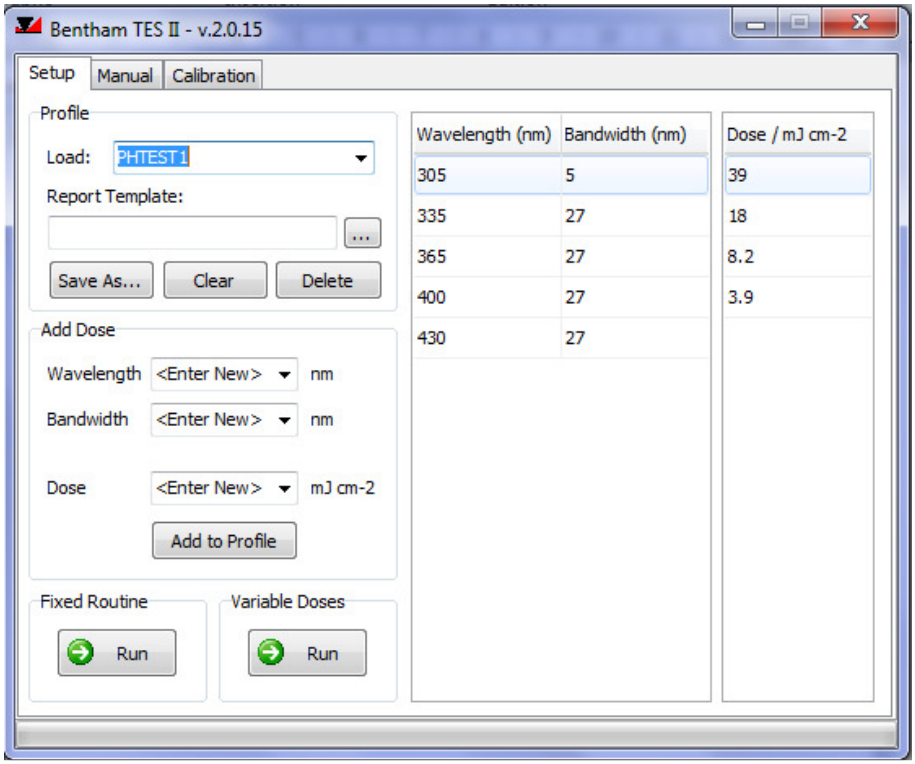
Setup Tab



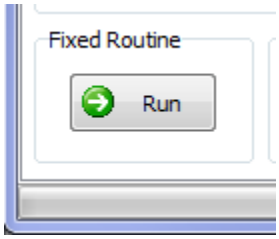
1 Choose the required routing from the list of pre-defined profiles in **Profile/ Load**



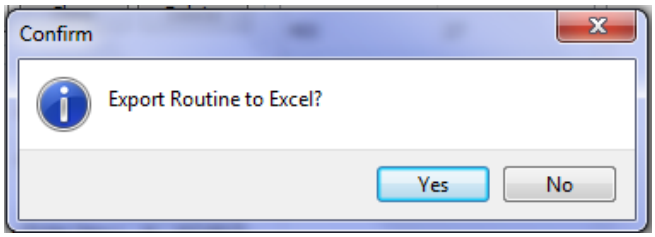
2 The profile parameters will be seen to the right.



3 To run a fixed routine, select **Fixed Routine/ Run**

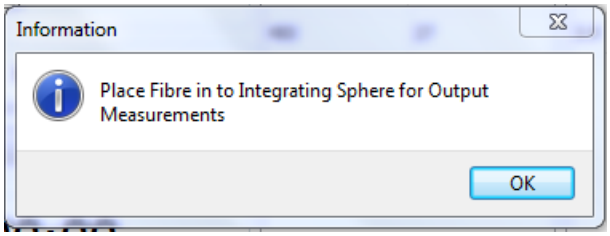


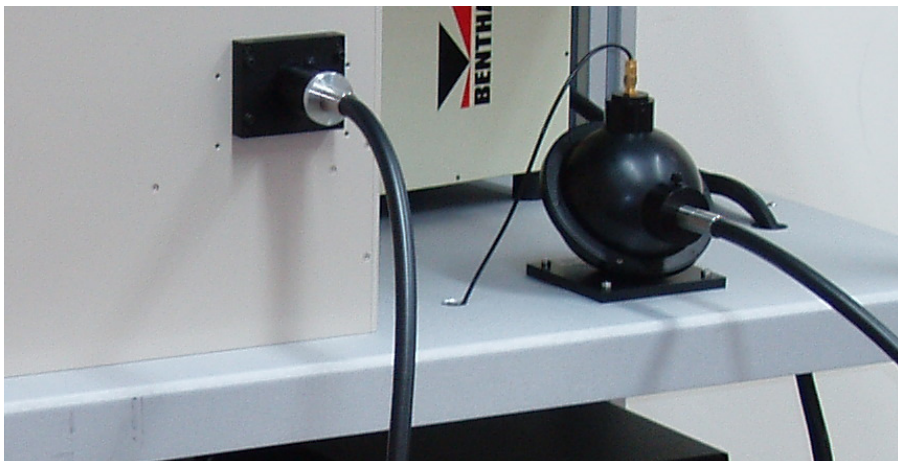
4 Click **Yes** to save the routine to csv file. This will permit saving all parameters relative to the adopted routine for a given patient.



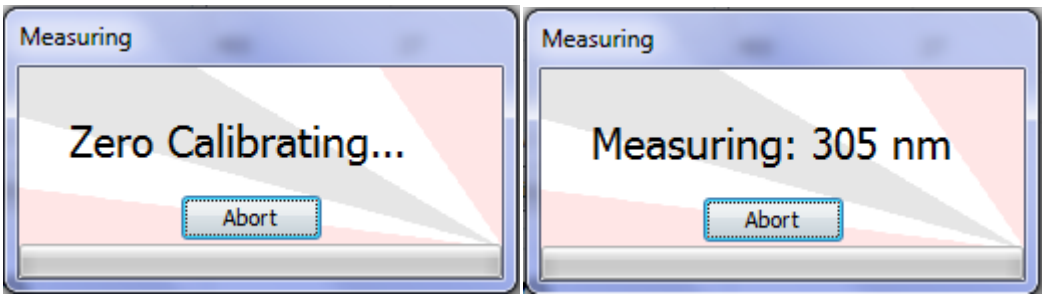
5 Save the csv file under a name making reference to the patient (date, name etc).

6 Install the liquid light guide to the integrating sphere, click on **OK**.



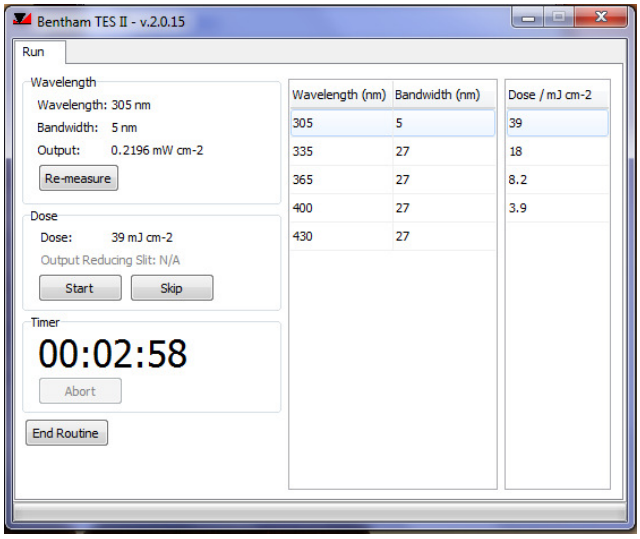


7 An automatic procedure will measurement the power at each wavelength/ bandwidth pair defined in the routine, opening and closing the shutter as required to measure the optical power in the beam.

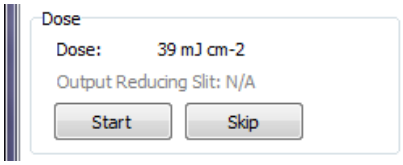


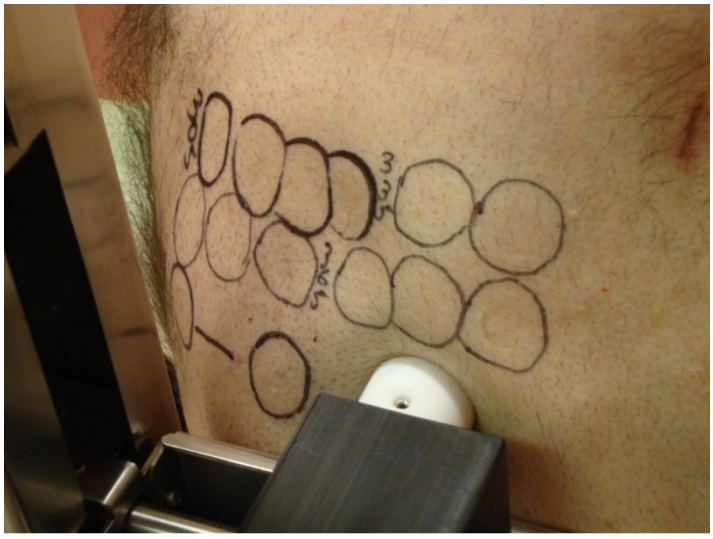
8 At the end of this procedure, the software will wait to commence a series of exposures.

The first dose will be highlighted in the right hand table, and in **Dose** shall be displayed the next exposure.

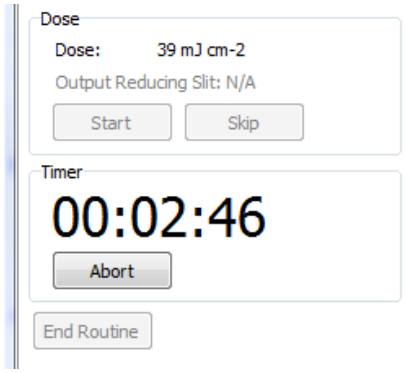


9 The liquid light guide is then positioned in the zone marked on the patient corresponding to the exposure parameters, in contact with the skin. Click on **Start**.

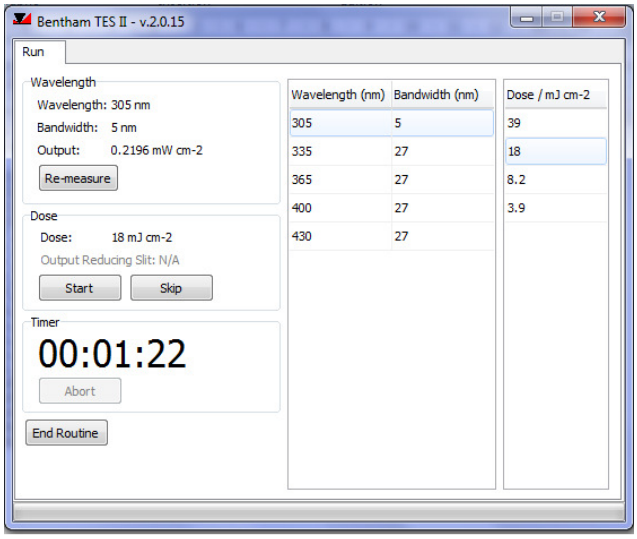




10 The shutter will open and the count-down will commence.



11 At the end of the present exposure, the next dose will be highlighted in the right hand table and in **Dose** shall be seen the next exposure. After having moved the liquid light guide, click on **Start**.

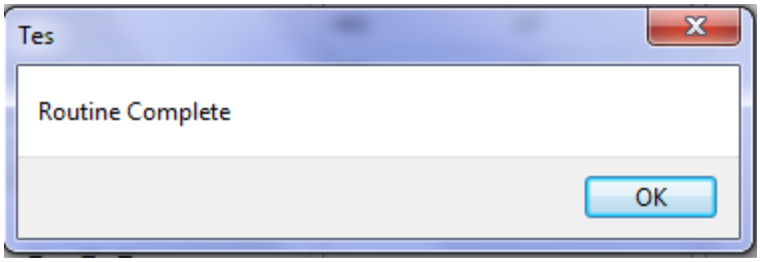


12 One can stop the current exposure in selecting **Abort**.

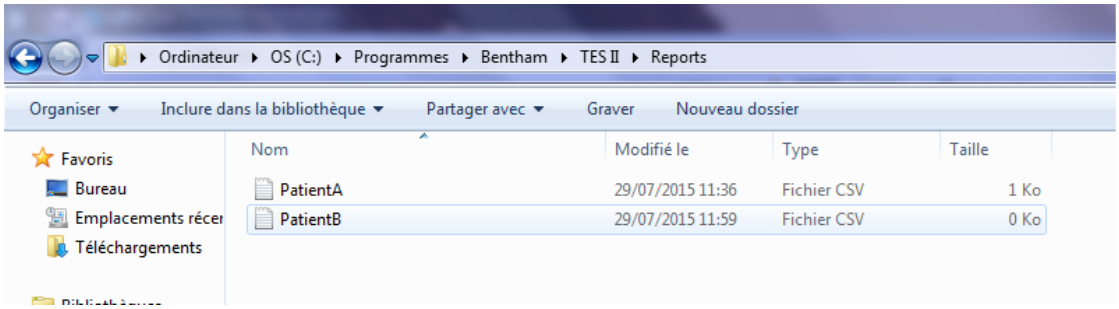
13 One can choose not to expose at the following dose (s) in selecting **Skip**.

14 One can stop the current routine in selecting **End Routine**.

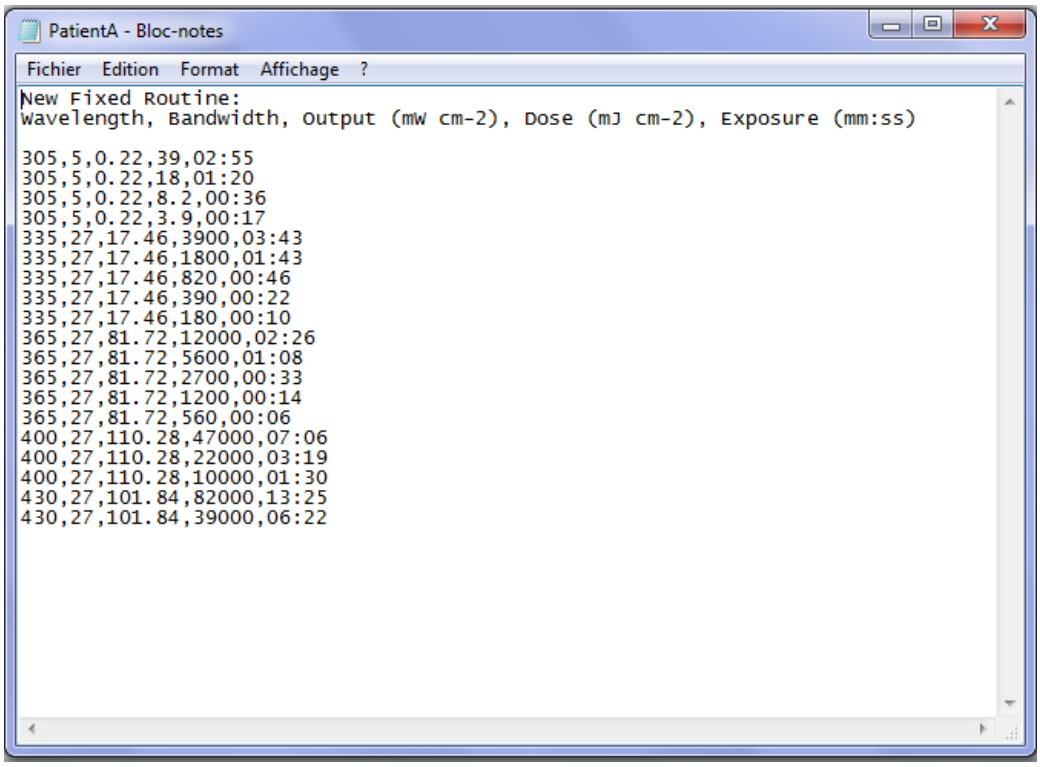
15 One will be informed of the end of the routine.



16 The exposure report will be found in c:\program files\Bentham\TES\Reports

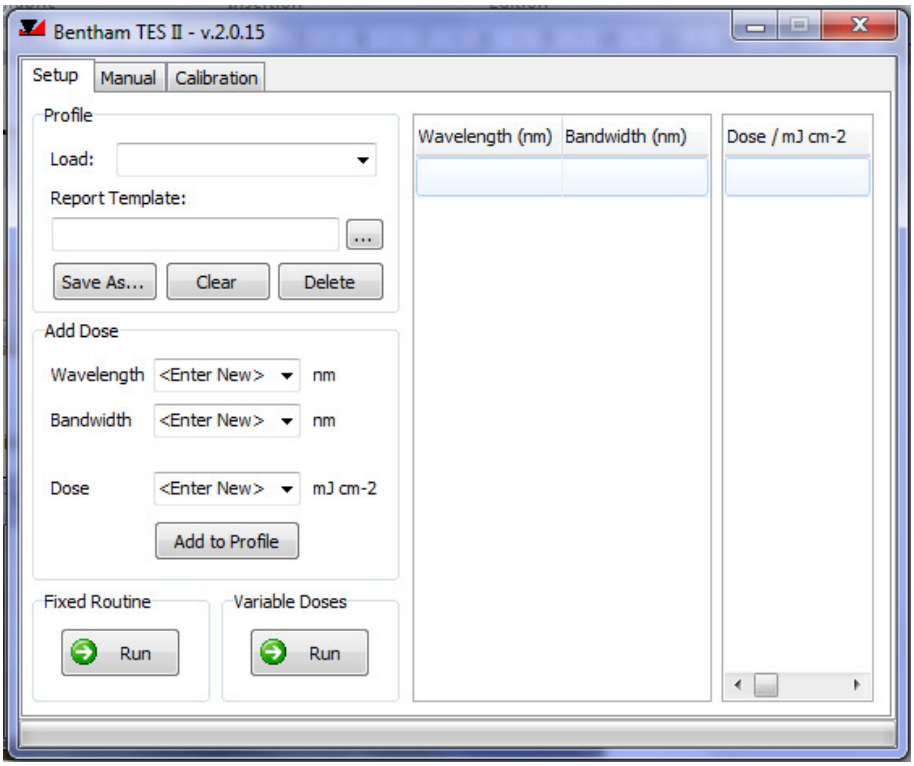


17 The csv file is easily read in Excel, giving details of each dose delivered to the patient.

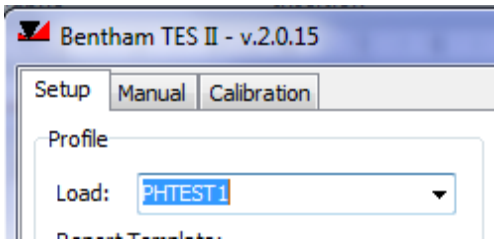


3 RUN A VARIABLE ROUTINE

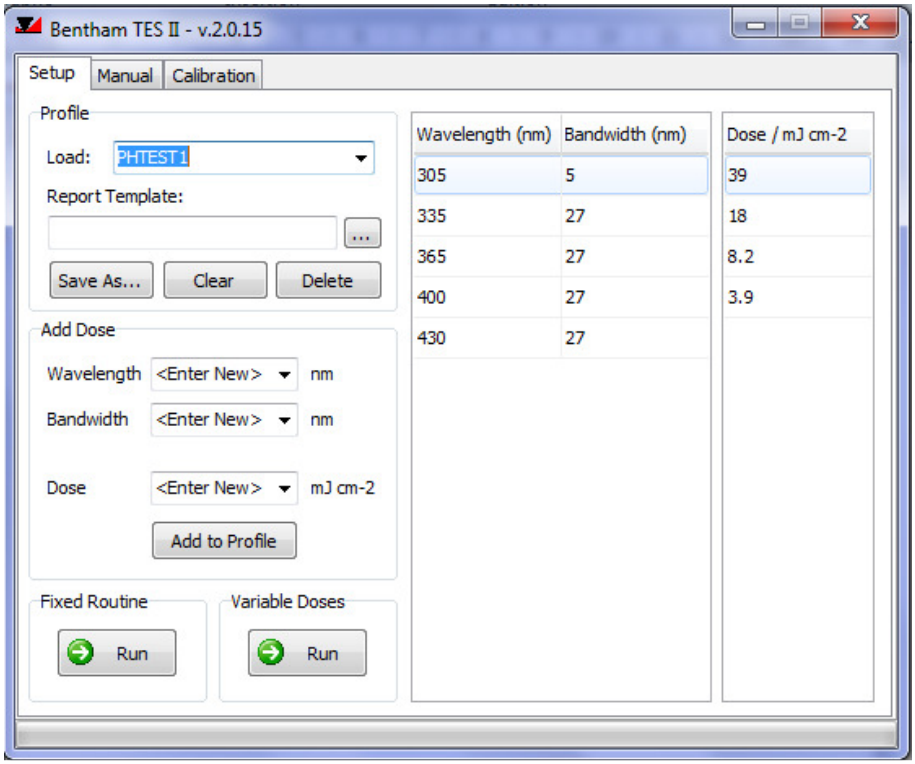
***Setup** Tab*



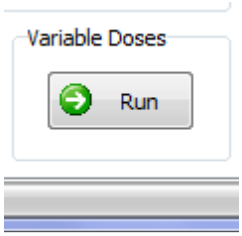
1 Choose the required routine from the list of pre-defined profiles in **Profile/ Load**



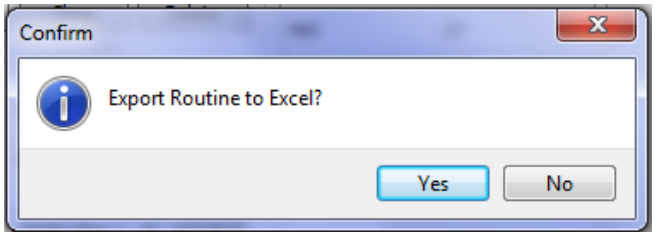
2 The parameters of the profile will be seen to the right.



3 To run a variable routine, select **Variable Doses/ Run**

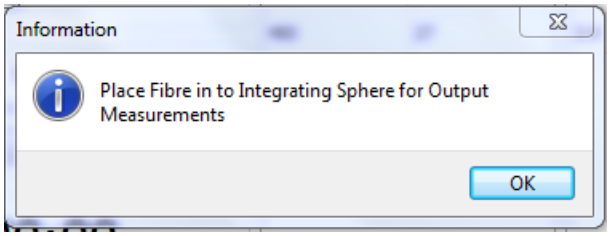


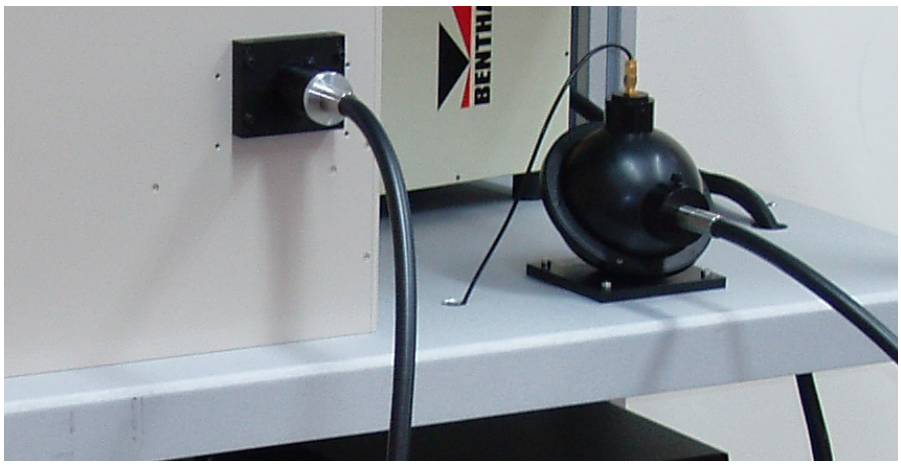
4 Click **Yes** to save the routine to csv file. This will permit saving all parameters relative to the adopted routine for a given patient.



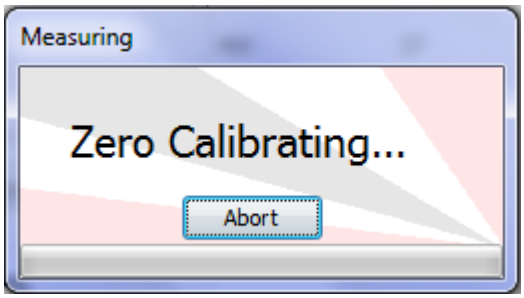
5 Save the csv file under a name making reference to the patient (date, name etc).

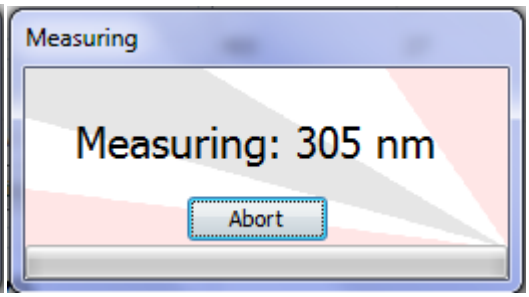
6 Install the liquid light guide to the integrating sphere, click on **OK**.



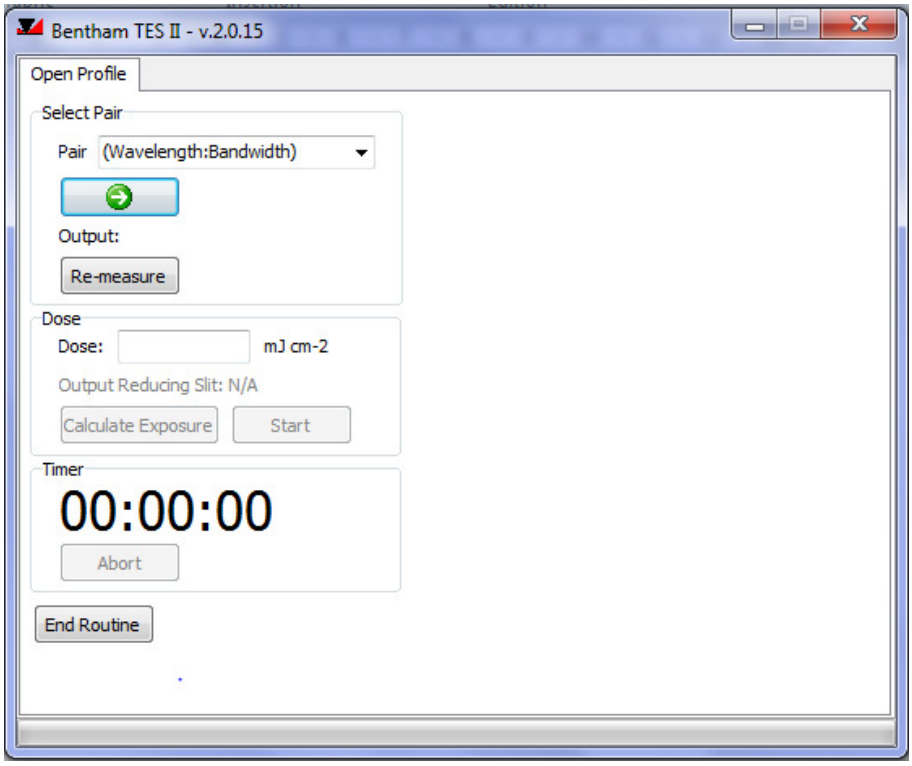


7 An automatic procedure will measurement the power at each wavelength/ bandwidth pair defined in the routine, opening and closing the shutter as required to measure the optical power in the beam.

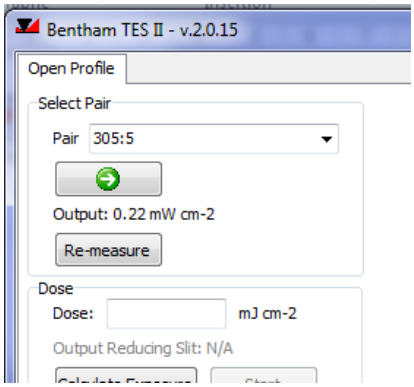




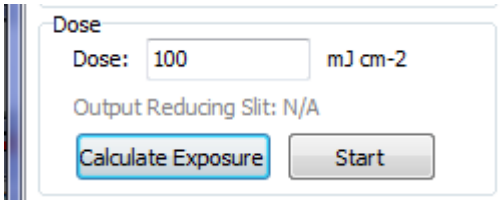
8 At the end of this procedure, the software will wait to start a variable routine.



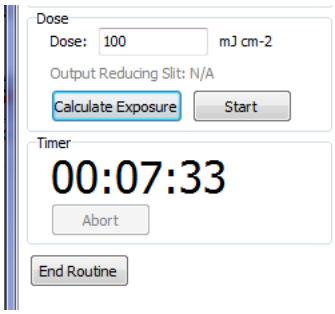
9 Choose a pair of wavelengths/ bandwidths from the list of pairs available.



10 Input the required dose, click on **Calculate exposure** to determine the exposure time.



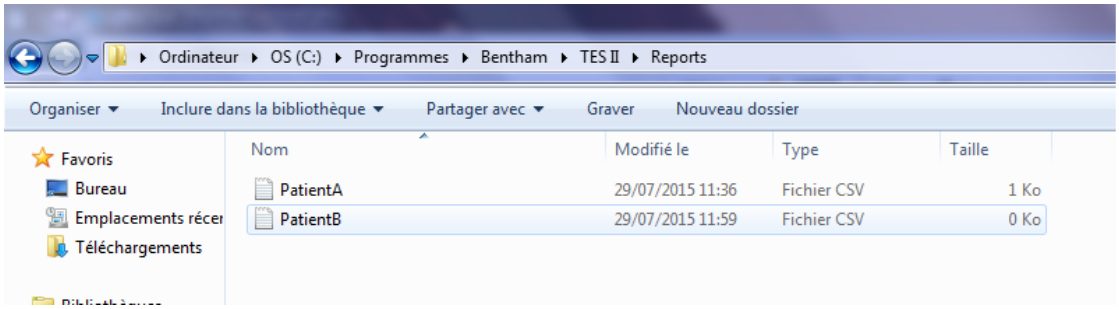
11 The liquid light guide is then positioned in the zone marked on the patient corresponding to the exposure parameters, in contact with the skin. Click on **Start**.



12 One can stop the current exposure in selecting **Abort**.

13 One can stop the current routine in selecting **End Routine**.

14 The exposure report will be found at c:\program files\Bentham\TES\Reports

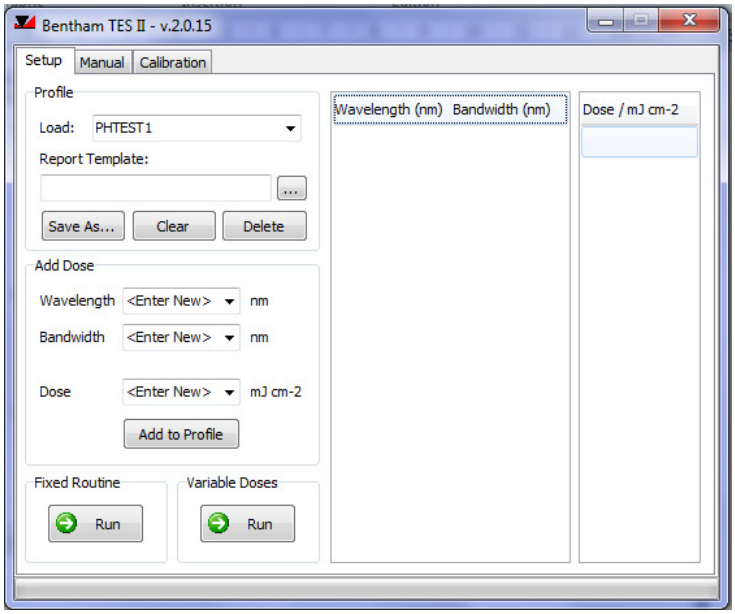


15 The csv file is easily read in Excel, giving details of each dose delivered to the patient.

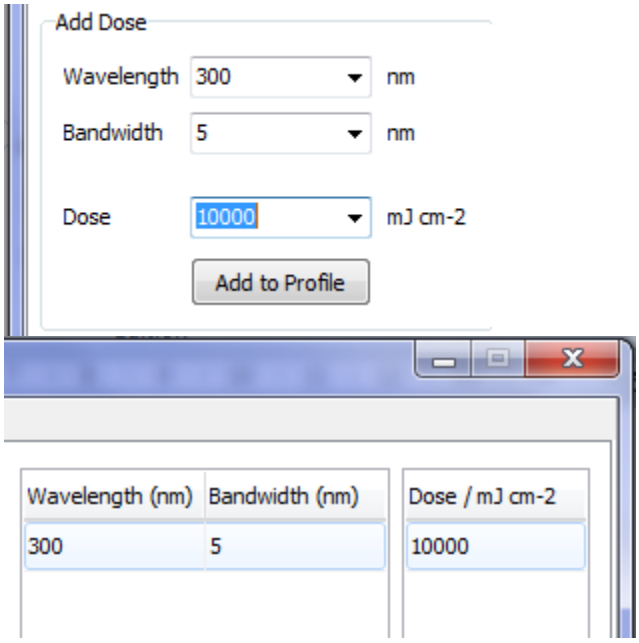
4 DEFINE A NEW ROUTINE

***Setup** Tab*

1 If no routine has been loaded, the right hand table will be empty. Otherwise, highlight the various stages of the loaded profile and hit delete to empty the right hand table.

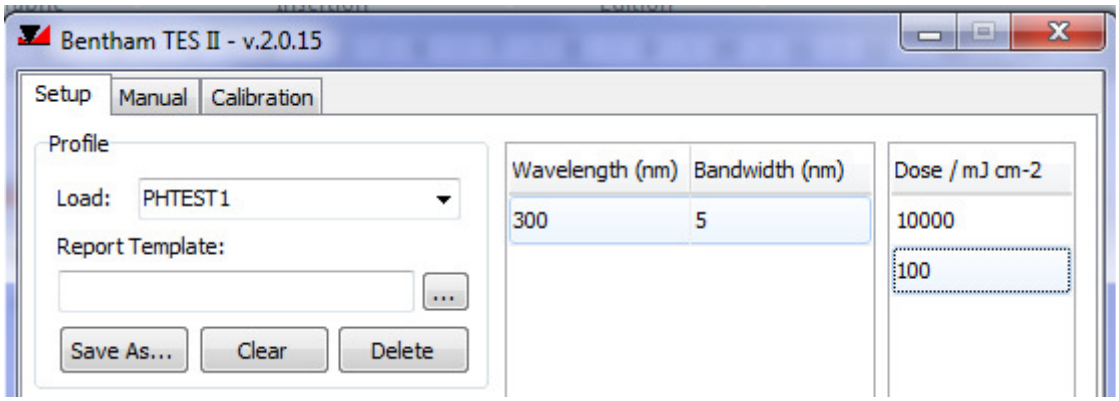


2 In **Add Dose**, define wavelength, bandwidth and dose. If the desired value is not in the list of previous values, one can simply type directly. Click on **Add to profile**. The new entry will be seen in the right hand table.

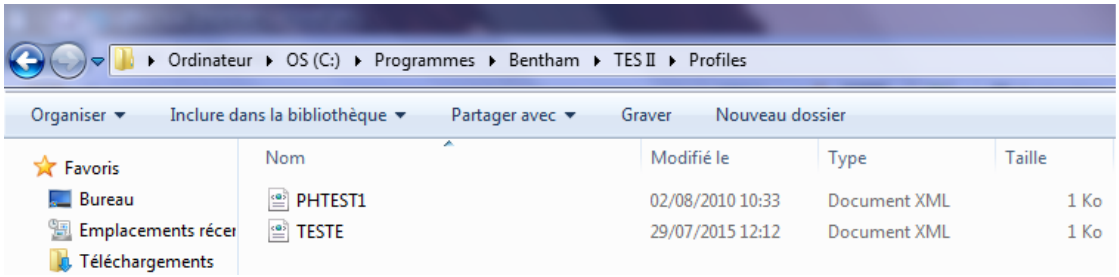


3 Note that for wavelengths < 330nm, the maximum bandwidth 13.5nm, otherwise it is 27nm.

4 Once the routine is defined, click on **Save as** to save, providing a pertinent name.



5 Routines are saved in c:\program files\Bentham\TES\Profiles

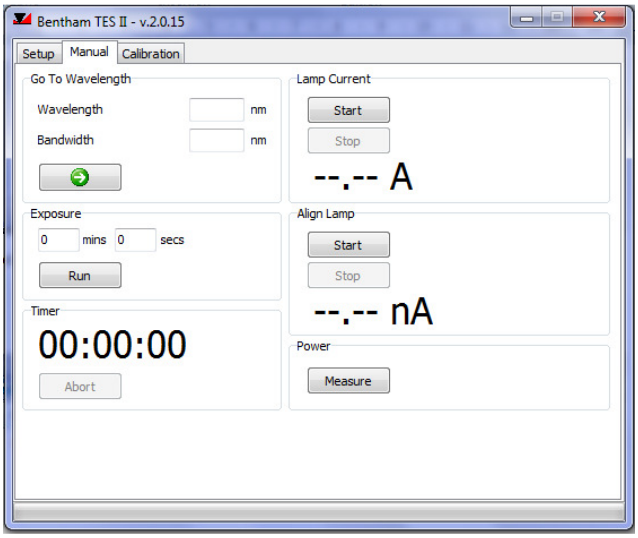


6 One can also copy protocols used by other centres having the PhotoTest450, in this folder, which will be seen in the list of profile the next time TES is run.

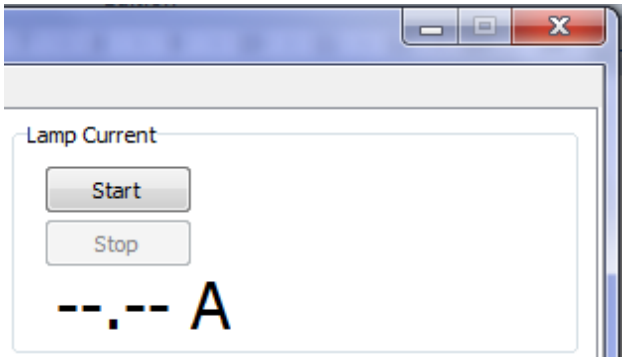
5 VERIFICATION OF LAMP CURRENT

***Manual** Tab*

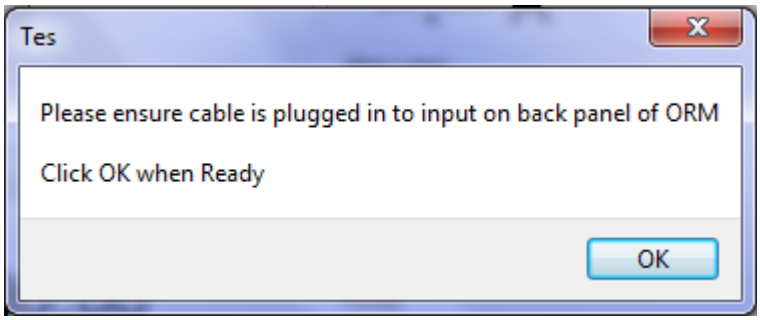
The adjustment of current delivered to the lamp based on the display of the iREM EX is sufficient here. The precise value is not important since before all exposures the optical power is measured. This procedure allows measuring the lamp current more precisely.



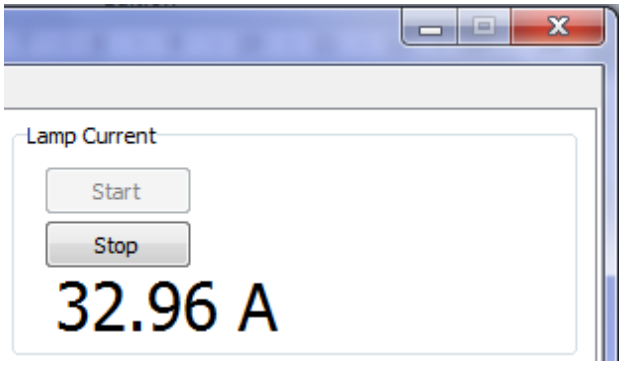
1 Click **Lamp Current/Start**



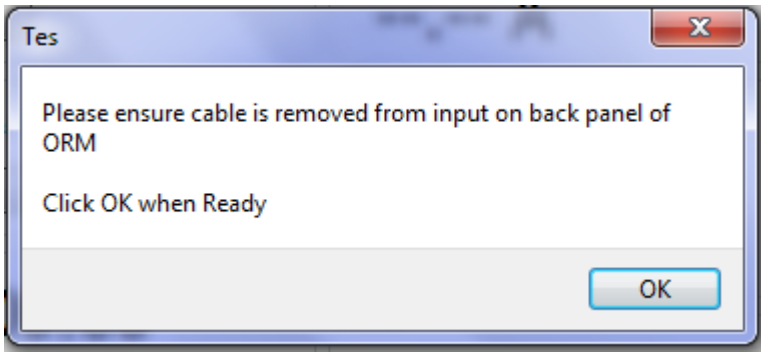
2 The software will request that a cable from the IREM EX be connected to the rear input of the ORM400.



3 One can then view the actual lamp current on screen, and adjust the iREM EX where desired.



4 At the end of this procedure, click on **Stop**. One will be requested to remove the installed cable from the rear of the IREM EX à l'ORM400.

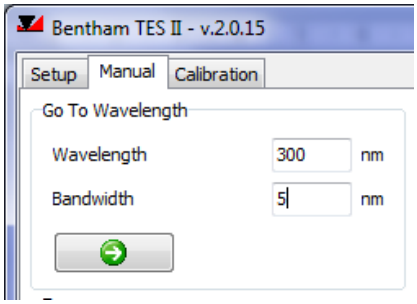


6 LAMP REPLACEMENT PROCEDURE (SOFTWARE)

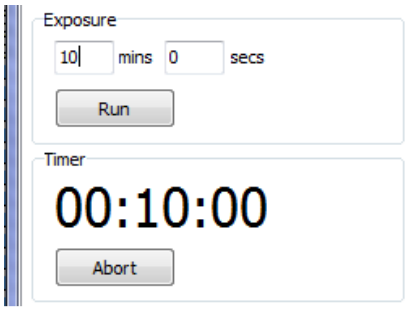
Manual *Tab*

The lamp replacement procedure is provided elsewhere. Here reference is made to the procedure employed through the TES software to verify lamp alignment.

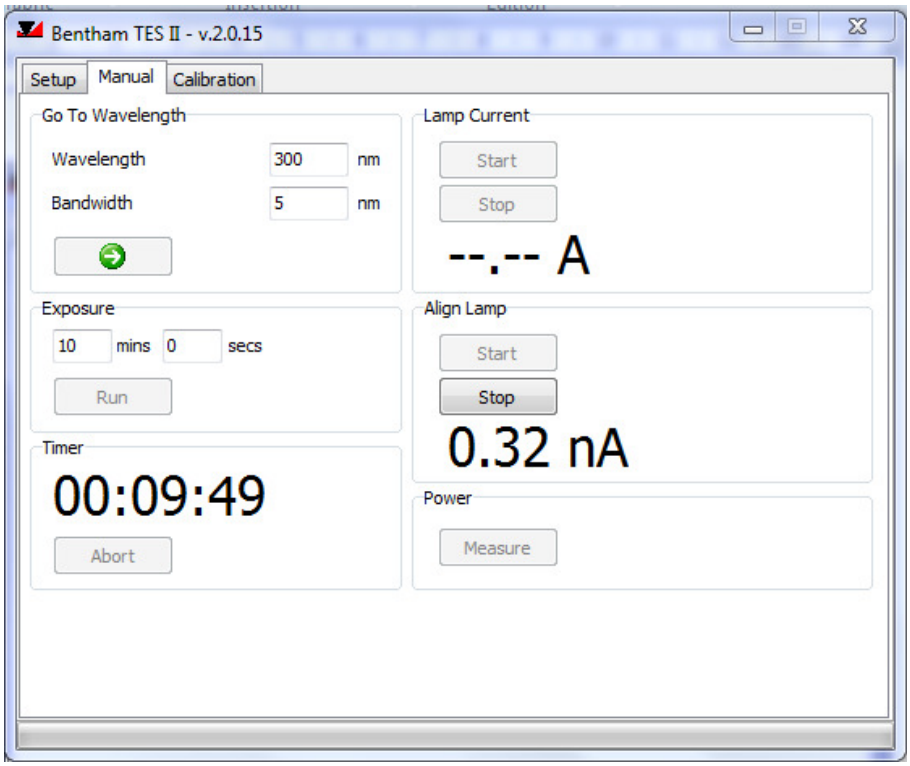
1 In **Go to Wavelength** define a wavelength and bandwidth required (such as 300nm, 5nm). Click on the arrow to select the wavelength.



2 Define an exposure period in **Exposure** and hit **Run** to open the shutter.



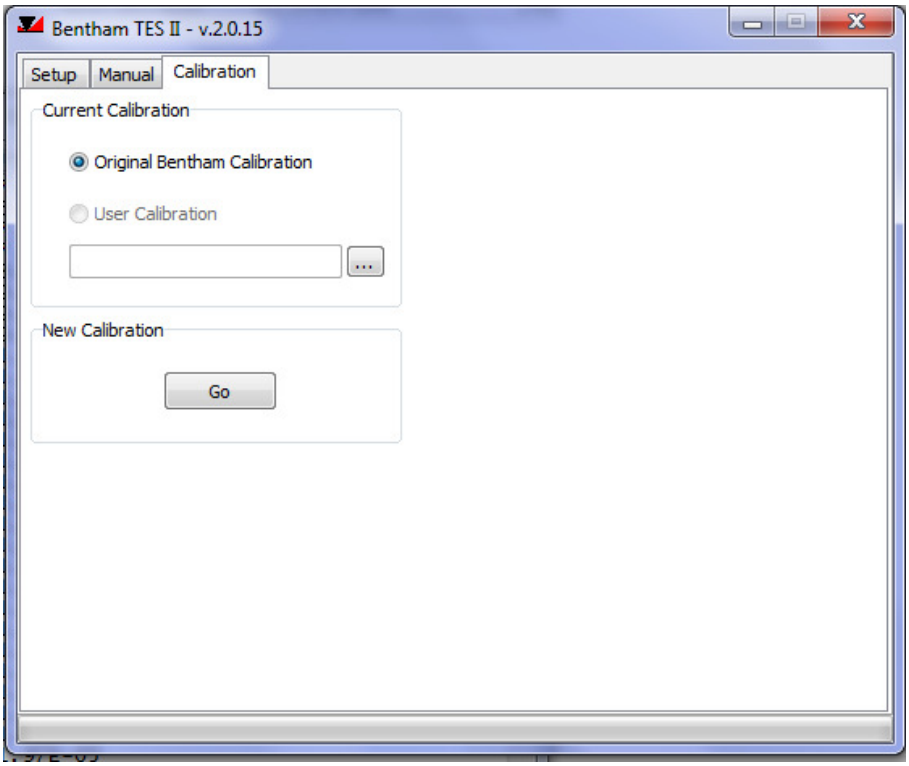
3 In **Align Lamp**, click on **Start .** The photo-current will be shown. It is of question to maximise this value.



4 Click on **Stop** to arrest displaying the photocurrent.

7 SPHERE-DETECTOR CALIBRATION

Calibration *Tab*

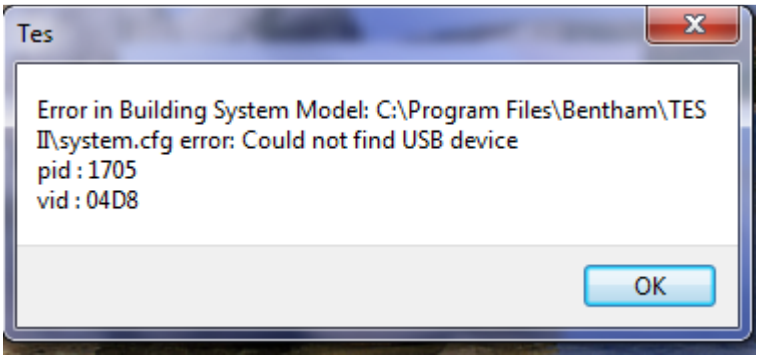


This tab makes reference to the calibration of the sphere – detector ensemble in spectral responsivity (A.W.nm^{-1}). The calibration file is found in c:\program files\Bentham\TES\Calibrations

A 3-5 yearly re-calibration is recommended.

ANNEX 1 MONOCHROMATOR & ORM400 CONNECTIONS

Before running the TS software, one should ensure that the TMS300 and ORM400 are powered on and connected to computer by USB, otherwise an error such as the following will be returned.



TMS300 Monochromator

ORM400