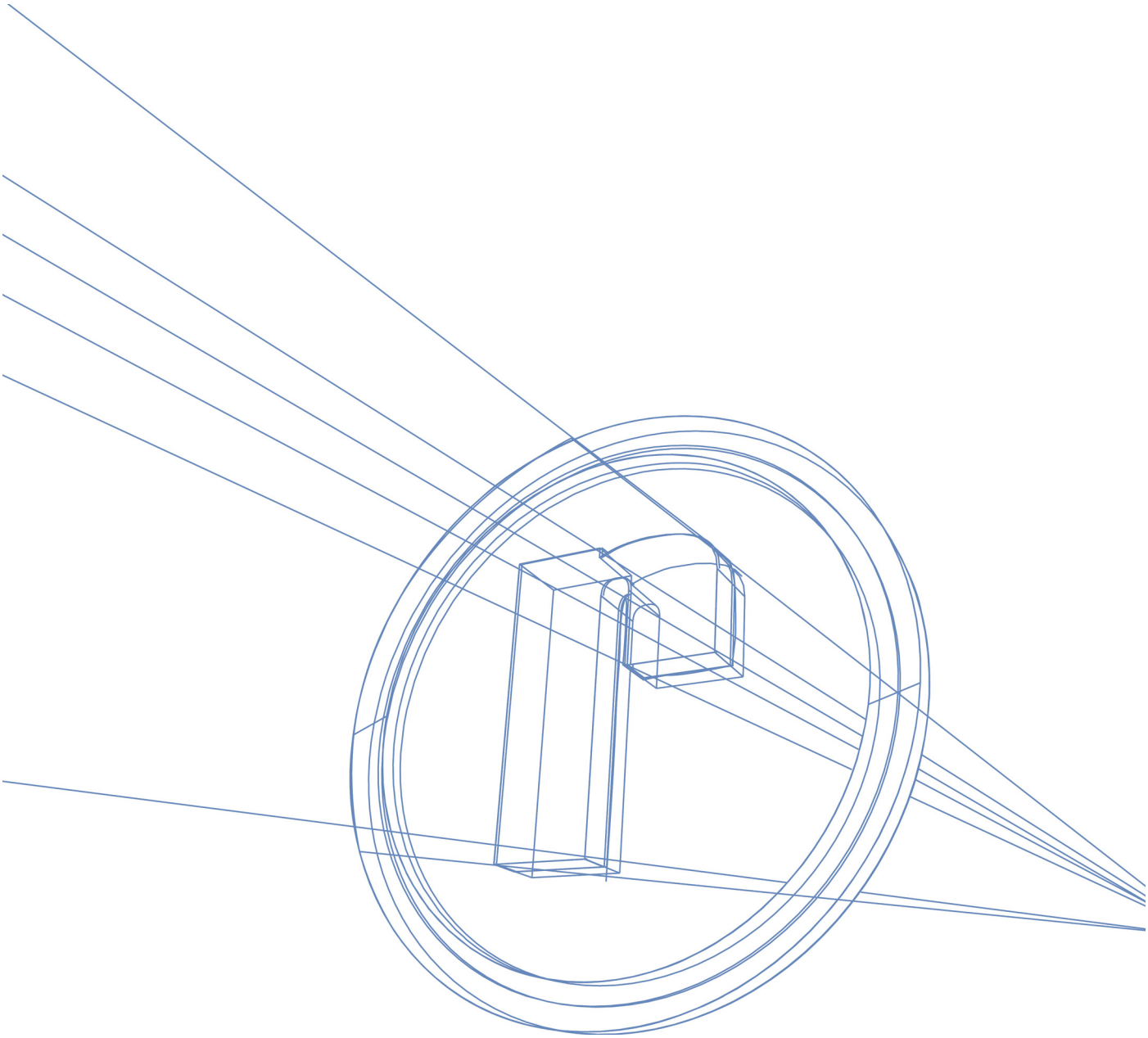
LB10-D200 Quick Start Guide



Raymetrics S.A
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Connection and Start-UP

1. Plug your Lidar's line cord female blue colored socket into the blue appliance inlet at the left side of your instrument

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2. Plug your Lidar's line cord into an electrical outlet

2

3. Turn on the Main Switch at Power box (see Electrical wiring figure)

3

4. First Power up Laser Power Supply Unit

4

5. Power up Panel PC
Power switch is located at the rear side at the right bottom corner.
Can be reached easily without open Panel door from the right open space.

5

6. Power up Transient Recorder

7

7. Power up PMT Power supply unit. Move the Switch up (Manual possition)

Set Units

1. Check signal, HV power supply and trigger cables.

2. Turn on the HV by switching the HV switch to the manual position at each HV power supply that you are willing to work with.

3. Turn the HV potentiometer counterclockwise into the desired position.
Suggested values: 750-850 Volts

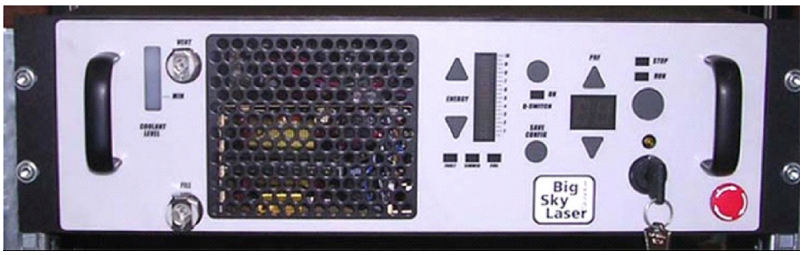
Info: *The above suggested values correspond to the linear operational region for the PMT. Adjust HV values until to maximize the signal, while trying to avoid saturation of the signal*

Power and Fire up laser

1. Turn the key switch ON (Ensure the Emergensy Stop Switch is in the OUT position. If not, rotate the nod in direction of arrows to release). The pump will turn on automatically. The power indicator located directly above the Key Switch, illuminates to indicate AC power is ON. During power-up, all indicators and displays are illuminated momentarily to identify possible faulty LED's

2. Use Energy UP and DOWN keys to adjust the pump energy at desired position.

Is recommended to use slightly below the highest energy.



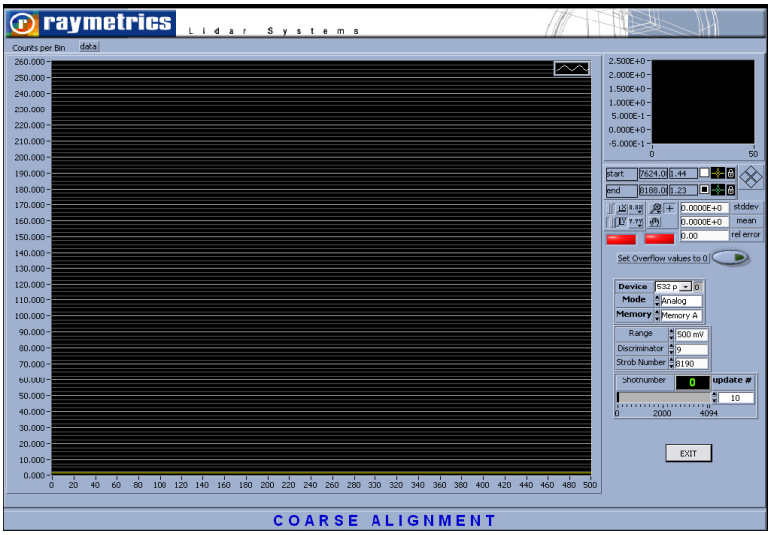
3. Increase the flashlamp pulse repetition frequency (PRF) at 15 Hz by using PRF Up key

4. Run the laser, by momentary press the Fire key. The Run LED will illuminate to indicate that high voltage is active and laser flashlamp will flash at the selected PRF. To stop the laser, press the Fire key again to disable high voltage. In this mode the Stop LED will illuminate and the Run LED will extinguishes.

5. Toggle the Q-Switch and shutter ON by momentarily pressing the Q-Switch key. The QSwitch LED illuminates when the Q-Switch and shutter are activated.

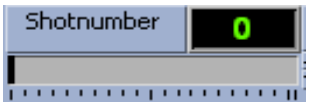
Aligning the system - use the coarse software

Raymetric's Lidar systems are supplied with a computer system which has already installed all the necessary software for apparatus alignment, data acquisition and data preview.

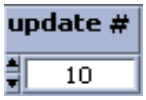


1. Locate at the desktop the "Coarse Alignment" icon and double click on it. During this step (coarse alignment), the far-range signal is monitored and the optical axes are fixed in a position where far-range signal is maximum.

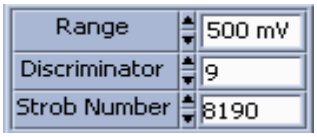
Assuming that all cable connections have been done and the system is triggered successfully when the "Coarse Alignment" is opened, the software try to locate TR at the default IP address (10.10.10.234). If the connection is successfully done a dedicated led indicator turn to green (If there is a problem with the connection the indicator turn to red) then immediately shotnumber indicator starts increasing for every trigger pulse transient recorder receives (or a laser pulse if the recorder is triggered from the laser source).



2. Set the update # to 15.
If your trigger is operating at 15Hz, the data display will now be updated ever fifteen seconds. By changing this value, you decide how many shots will be taken (averaged) between updates of the display.

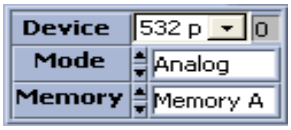


3. Set the *Strob Number* to 200 and try to increase the signal by adjusting the reflecting mirror



4. Increase *Strob Number* to see the rest of the signal. Proceed to final microalignmnent if it is nessesary.

5. Select devise, mode and memory bank.
(With some LB models this step is not necessary)



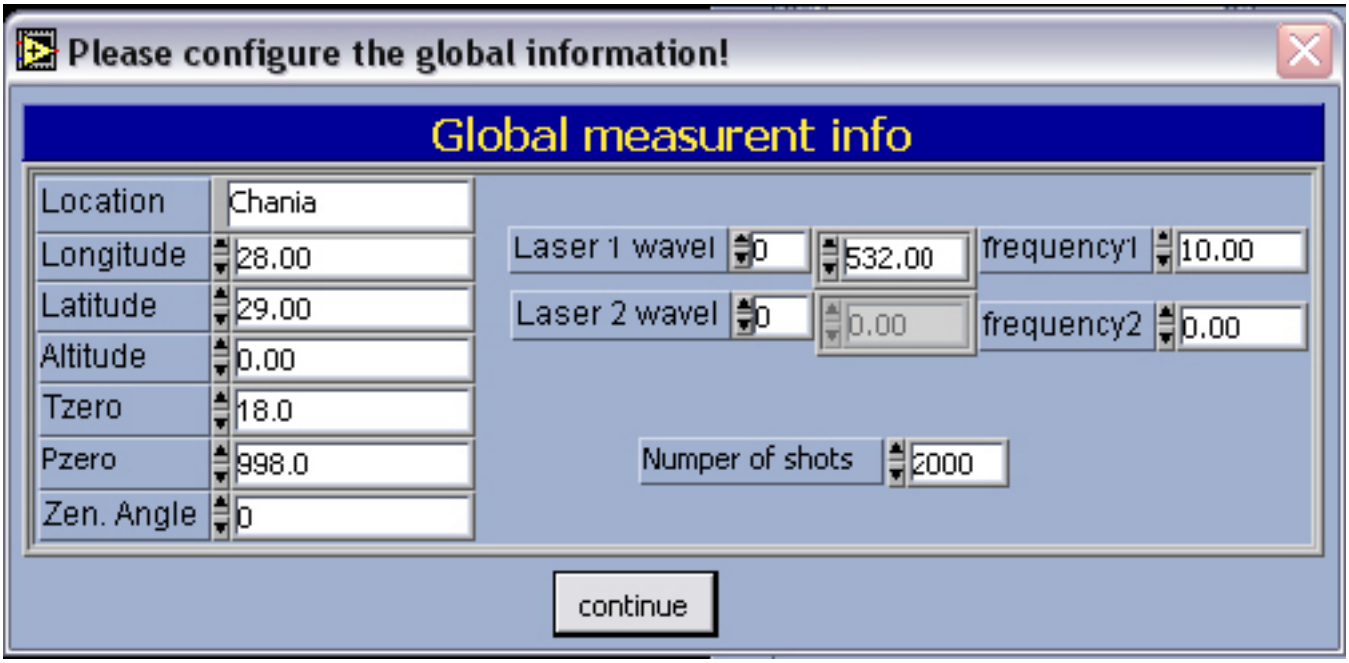
The small graph at the right corner of the interface shows the average of the region of interest on the waveform graph that is selected by using the cursors. The cursors at the right of the waveform graph allow for the selection of a region to average over. The average of the region selected is displayed in small graph at the right upper corner. The x and y controls at the left allow the user to allow for autoscaling of the x or y axis. Default is autoscaling for the y axis and fixed values for the x axis. These can be changed by sliding the controls. The x.xx and y.yy controls allow for the specification of the format precision and mapping modes of the x and y axis. For further information refer to electronic form of this manual and to Licel's documentation.

First Acquisitions

1. Close Coarse Alignment Interface and click on “Data Acquisition” button

2. Program try to connect to default IP address which corresponds to the TR, if this is successfully done two led indicators turn to green.

3. Click on “Config” button. Select “Global Measurement Info” and the following screen appears



The global information allows you to set values that are stored in the data file headers which will tell you later about what sort of conditions were existent during the measurement

The most important parameter one has to set at this interface is the Number of shots. This parameter determines the number of laser shots which will be averaged before a new datafile will be created. This number can not be larger than 4065. Increasing this number the duration of each individual datafile is increasing but on the other hand the Noise to Signal Ration is decreasing.

Suggestion: *For very fast atmospheric phenomena set this number to 1000 shots (for a lazer operating at 20 Hz each datafile will acquired every 50 secs) for normal operation an average of 3000-4000 shots is strongly suggested).*

4. After setting global measurement information, click on the “continue” button and then click again the “c fig” button to select the “DataSet” button. The following interface appears

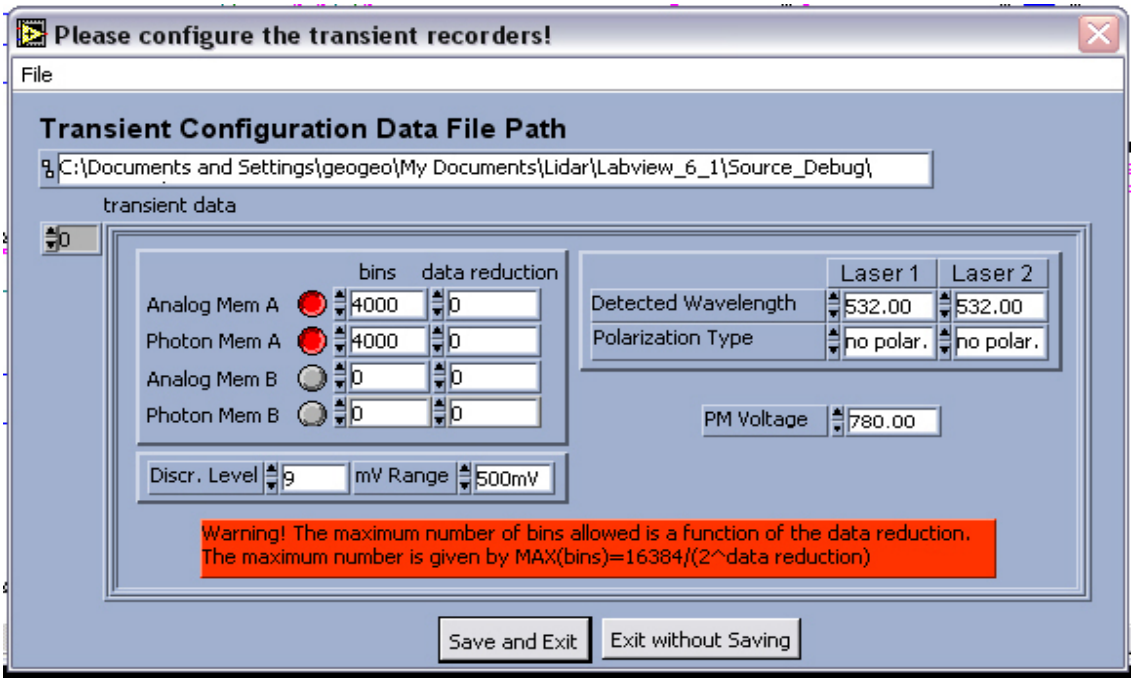
5. Configure each transient recorder device by change the index number for “Transient Data” array.

a. Activate the desired memory bank (A, B and Analog, photon).

b. Set the number of bins (strob number) to read out from the memory bank. The maximum number of bins is given by 16384/(2^data reduction).

c. Set the data reduction which allows for binning. Suggested value to zero

d. Set the discriminator level for the transient recorder. Suggested value 9.
e. Set the range values of the transient recorder. Valid values are 0-20mV, 0-100mV and 0-500mV.
f: Set parameters which indicate the type of equipment that is used in channel.



This information is stored as a header in the data files, so that the user (or whoever has to evaluate the data) can see what parameters were used to take the data. The fields are used for the Channel A and B descriptions, the detected laser wavelengths and the corresponding polarization, the filter number of central wavelength, the photomultiplier voltage, the photomultiplier number and the type of photomultiplier used. The information entered in these fields has no effect whatsoever upon the data acquisition. It is used purely to store information about the experimental setup in the data files.

6. To start a single acquisition press the “start” button at Single Shot Section. For multiple acquisitions press the “start” button at Multiple Acquisition Section

General and Contact Information

This Guide is for a quick reference use only. It is strongly suggested to read carefully all user manuals supplied with your lidar instrument before operate it.

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