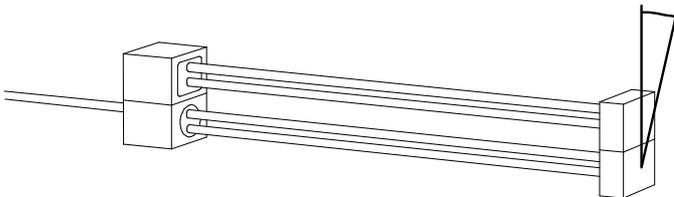


## E "ZLM Angle" - Dynamic Measurement Software

The operation of the "ZLM Angle" program module differs little from that of "ZLM Distance". Normally, users of "ZLM Angle" also use "ZLM Distance", which is described in detail in section D. Please read this before the present section, which only describes the few differences between the two modules.

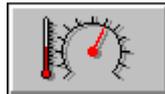
In angle measurement, the two partial laser beams, separated by a polarizing beam splitter, are directed at a double reflector. One of the partial beams has to be deflected. The path difference between the two partial beams is used for computing the angle.



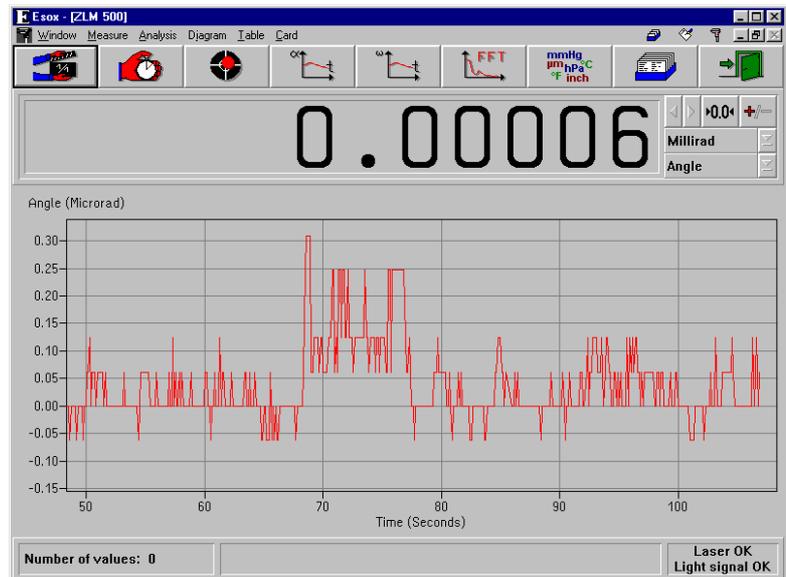
The double reflector may be of either the cube corner or the plane mirror type.

The path difference resulting from the tilting of the reflector and used for determining the angle is minimal, so that changes in the refractive index of the ambient air have no appreciable influence on the result of measurement. Therefore the "ZLM Angle" measurement program has no facility for entering environmental parameters.

Except that the

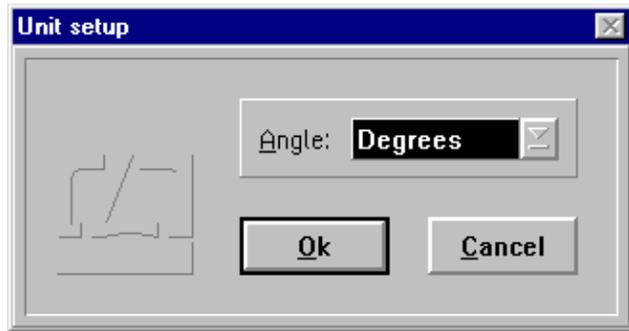


button is missing and that the diagram control buttons concern angular quantities, the "ZLM Angle" window is equal to the "ZLM Distance" window.



## E 1 Preparation for a measurement

Click the  button or select the "Units" option from the "Measure" menu to open the window for selecting the unit of measurement. In the "ZLM Angle" module you only need to select the angle unit (rad, degrees, minutes or seconds of arc).



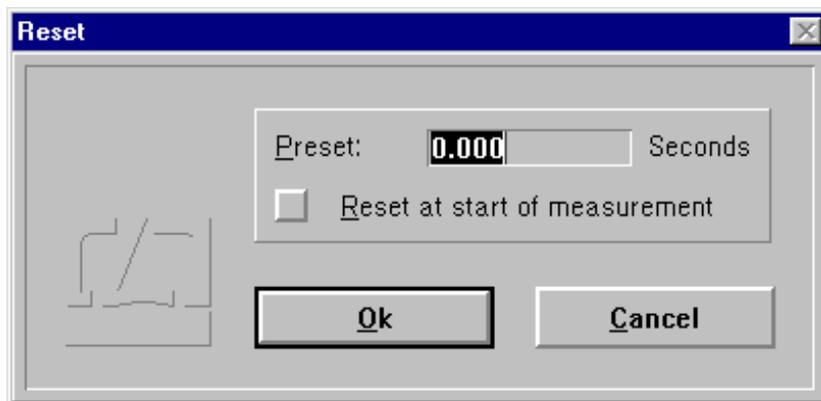
In preparation for a measurement (same as in the "ZLM Distance" program module), you need to specify

- the time at which the readings are to be taken,
- the type of interferometer used, and
- the maximum number of readings to be taken.

For this purpose, use the "Configuration" dialog box. Proceed as described in section D 3 for the "ZLM Distance" program module.

## E 2 Measurement

To define the zero point, move the test object so that the line connecting the two reflectors is at right angles to the laser beams. Then click the  button or select the "Reset" option from the "Measure" menu to open the "Reset" dialog box.



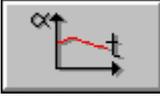
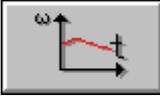
In this dialog box you can enter a preset value, which from now on will be added to the angle determined from the counter value. The addition then supplies the "reading". As the angle has to be determined via a sine function, it is imperative for the line connecting the two reflectors to be at right angles to the laser beams, or else the setting of the zero point will introduce an error resulting from the non-linearity of the sine function.

The entry of a dead distance as in the "ZLM Distance" program module is neither possible nor necessary.

The operation of the program during a measurement is not different from that of "ZLM Distance".

### E 3 Analysing the measurement

The measurement is analysed in the form of diagrams with angle-specific units.

Type of diagram	Activation
Angle-vs.-time diagram	 button or "Angle-time diagram" option of "Analysis" menu
Angular velocity-vs.-time diagram	 button or "Angular velocity-time diagram" option of "Analysis" menu
Fourier analysis (amplitude-vs.-frequency diagram)	 button or "Fourier analysis" option of "Analysis" menu

The operation of the "ZLM Angle" program during diagram presentation does not differ from that of "ZLM Distance".