

MiniLes 2.3 – documentation

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1. Introduction

MiniLes 2.3 is the datatransfer software for the Mini-KLA and also can be used for showing, printing and saving in ASCII-format of curves measured with the Mini-KLA.

2. System Requirements

IBM compatible PC, 5MB free harddisk space, one free RS232 port, Windows 95/98/2000/XP.

3. Software Installation

Execute the file *setup.exe* and follow the instructions.

If the LabVIEW RunTimeEngine V5.1.1 not exists, it will be installed on your system. This is necessary for executing MiniLes 2.3 and other LabVIEW-RunTimeApplications.

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To uninstall MiniLes and the LabVIEW RunTimeEngine go to *Preferences – Software – Remove* of your operating system. The file *<MiniLes-path>\miniles.ini* and the directories *MiniLes 2.3\Data*, *MiniLes 2.3\Curves* and *MiniLes 2.3* have to be erased manually (caution: save curve data before!).

4. Connecting the Mini-KLA to the COM Port

Before turning on the PC connect the Mini-KLA with the cable to a COM port (RS232). To communicate with the PC the Mini-KLA has to be in sleeping mode (see manual of Mini-KLA).

5. Using MiniLes 2.3

To start MiniLes 2.3 execute the file *MiniLes.exe*. The following window appears:

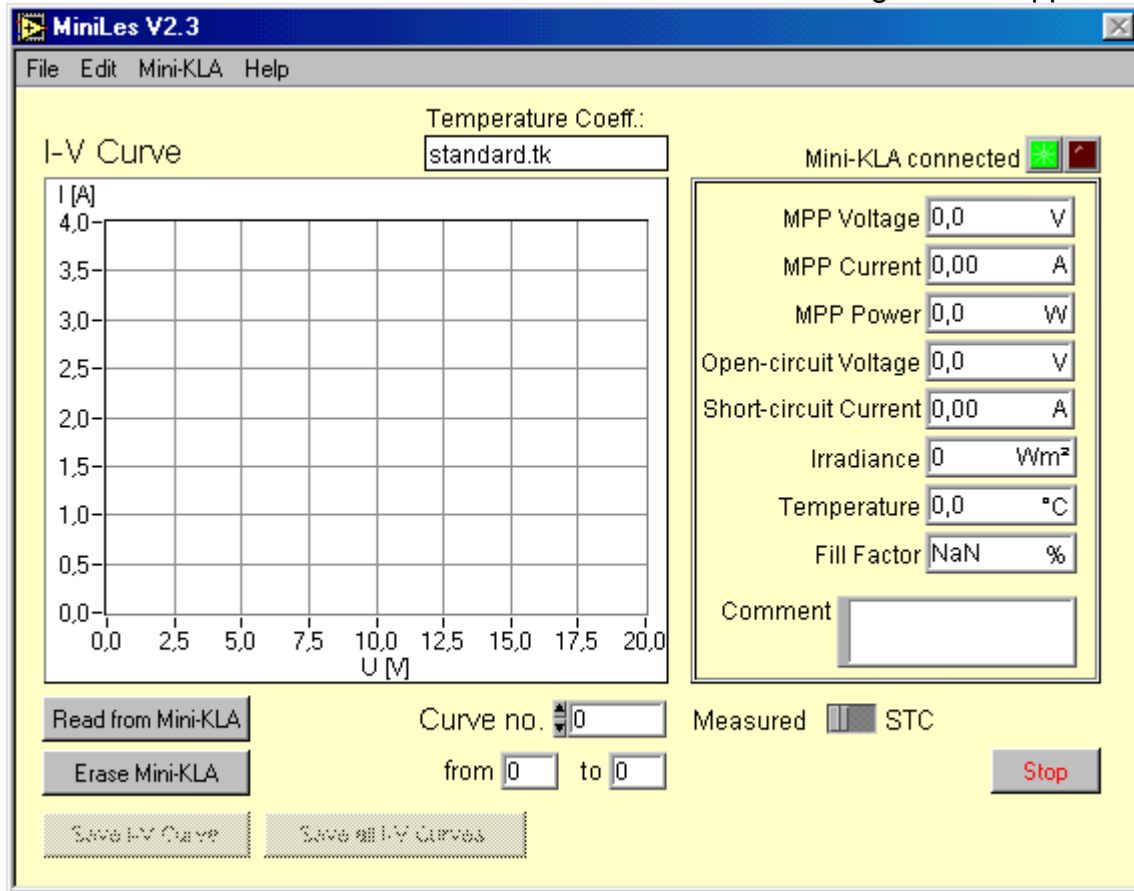


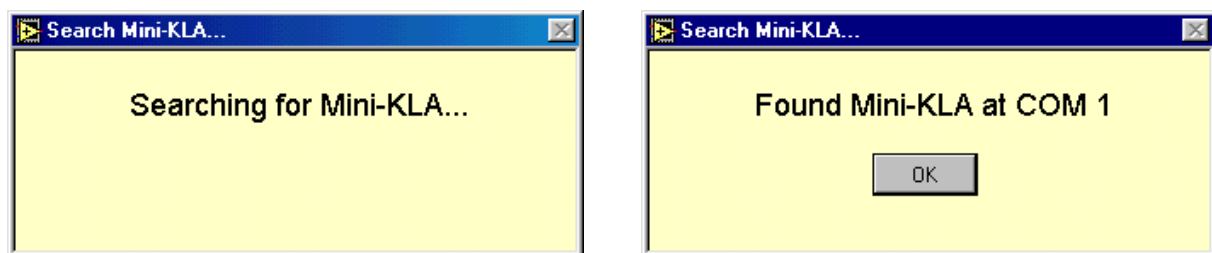
Fig. 1:

MiniLes

5.1 Searching for Mini-KLA / Setting of COM Port

Before reading out data the Mini-KLA has to be searched (menu: *Mini-KLA – Search Mini-KLA*). This function can happen automatically, if it is enabled in *Edit – Preferences...*

Fig. 2: Searching for Mini-KLA



By using corrupted ports or ISA port card used with IRQ sharing it could happen, that the program exits. In this case the automatic search of the Mini-KLA is disabled at the next program start.

Alternatively the COM port, to which the Mini-KLA is connected to, can be set manually (menu: *Mini-KLA – Set COM Port...*).

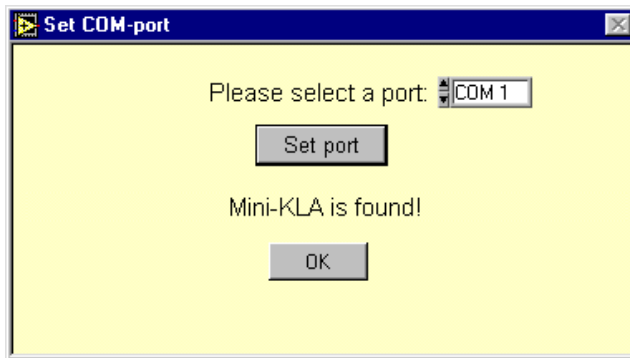


Fig. 3: set COM-Port

After selecting a port and clicking *Set port* you get a message if the Mini-KLA has been found.

The selected COM port is watched continuously and the state is indicated by the LED *Mini-KLA connected* within the window *MiniLes* (s. fig. 1).

5.2 Read data from Mini-KLA

When a connection to the Mini-KLA is established (green LED), data can be read out by pressing the button *Read from Mini-KLA* or menu *Mini-KLA – Read from Mini-KLA*. All curve data are automatically saved in the file `<MiniLes path>\Data\pvXXXX.mk2`, where the files are counted by `XXXX=0001` continuously.

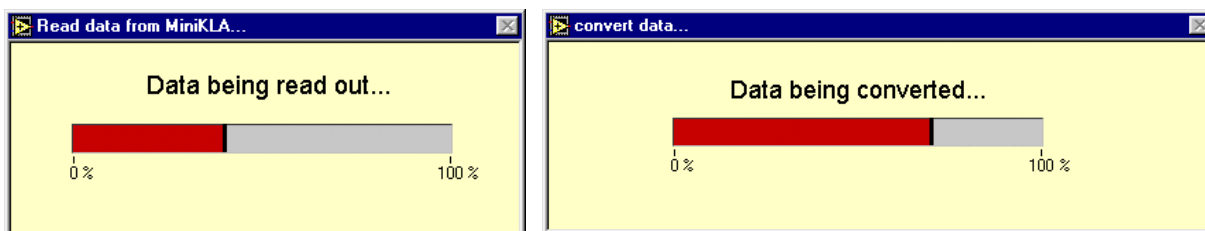


Fig. 4: Read and convert data from Mini-KLA

If an error occurs during saving the file `<MiniLes path>\Data\pvXXXX.mk2` following error message appears:

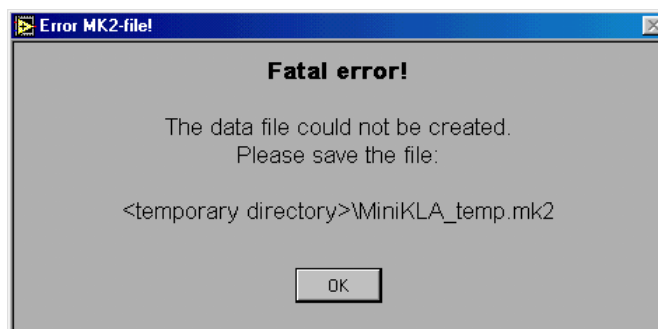


Fig. 5: error saving MK2-file

In this case the datafile can be saved by copying the file `<temporary path>\MiniKLA_temp.mk2` (default: `c:\windows\temp\MiniKLA_temp.mk2`).

If an error occurs during saving the temporary datafile, no data of the Mini-KLA is saved.



Fig. 6: Error during saving the temporary datafile

5.3 Show curves and parameters

After reading data from the Mini-KLA the curves are shown in the I-V curve. The measured parameters are shown right beside the curve.

In the field *comment* a text, which is saved in the header of the curve-file (see cap. 5.5) could be written.

By the control *curve no.* can be selected, which curve should be shown. The curve no. is the same as is shown in the display of the Mini-KLA directly after the measurement.

If other curves have to be shown than the actual reading, they can be loaded with *File – Convert Datafile...*

5.4 STC-values

Due to the switch *Measured/STC* can be changed between measured parameters and calculated STC parameters (STC: T=25°C, G=1000W/m²). The calculation affects linear in consideration of the measured temperature and irradiance and the temperature coefficients edited in *Edit – Preferences*. The temperature coefficients have to be edited as 1/°C, so that values as mV/°C or %/°C have to be converted to 1/°C.

(e.g. -0,4 %/°C equivalents -0,004 1/°C, TK_Uoc=-90 mV/°C and Uoc=20,9 V equivalents -0,0043 1/°C)

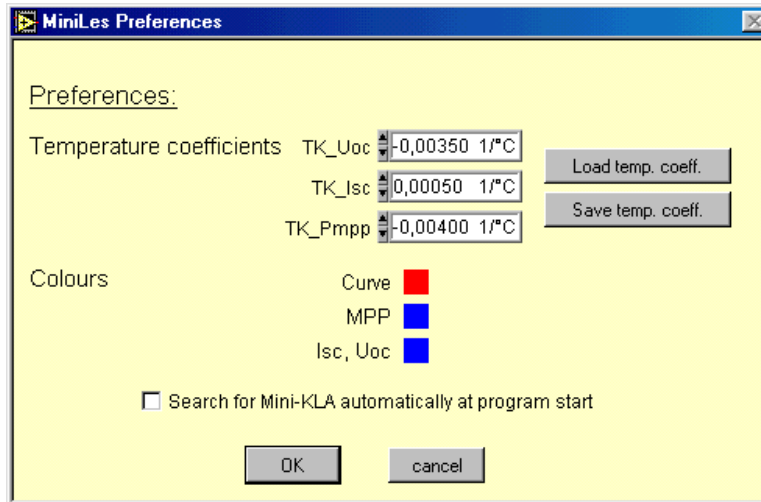


Fig. 7: preferences

The edited temperature coefficients can be saved and loaded. If a value is changed, the OK-button is disabled until the temperature coefficients are saved.

The file of the actually loaded temperature coefficients is displayed on top of the I-V curve (fig. 1).

Attention! Converted STC parameter measured at irradiances of $G < 750 \text{ W/m}^2$ can be very inaccurate.

5.5 Save and open curves

By the button *save I-V curve* the actual shown I-V curve can be saved in ASCII format. Following informations are saved:

- Curve number
- Date and time of saving
- comment
- measured values of U_{mpp} , I_{mpp} , P_{mpp} , U_{oc} , I_{sc} , G , T , fillfactor
- The voltage and current values of the I-V curve

By default the curves are saved in $\langle \text{MiniLes-path} \rangle \backslash \text{Curves}$.

As decimal separator the setting of you operating system is used, separator between the values is tabulator.

The saved curves can be opened by *File – Open Curve....*

By pressing the button *Save all I-V curves* all curves are saved. The filename automatically is expanded by $_ \langle \text{curve-no.} \rangle$ (e.g. *modulXY_1.asc*, *modulXY_2.asc*, ...). In this case the comment in all files is the same.

5.6 Printing curves

By menu *File – Print* the actual I-V curve, including the parameter set can be printed. For using black/white-printers the colors of the curve can be changed in *Edit – Preferences* (fig. 7).

See *File – Printer Setup...* for printer preferences.

5.7 MiniLes help

By *Help – Show Help* a window with short information is opened, showing some help to the objects the cursor is moved over.

5.8 Exit MiniLes

By menu *File – Exit* or pressing the button *Stop* MiniLes exits.

5.9 Data archive

In the directory *<MiniLes path>\Data* all read data *pvXXXX.mk2* are saved by continuously counting. If the counter should start at *XXXX=0001*, the directory *<MiniLes path>\Data* has to be renamed or moved and the file *<MiniLes path>\miniles.ini* **must** be erased. In this case at the next program start the MiniLes preferences are set to default and a new directory *<MiniLes path>\Data* will be created.

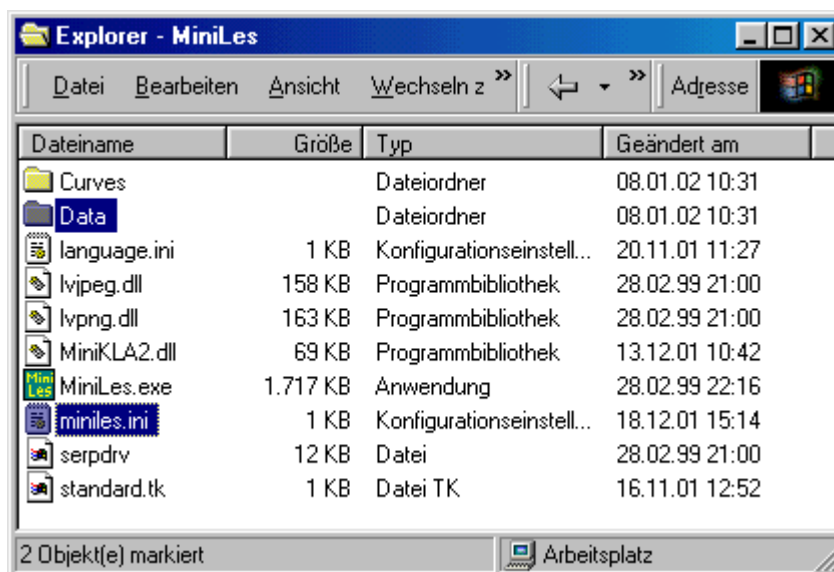


Fig. 8: directory *Data* and file *miniles.ini*