

# LASOS Commander

Version 0.9

Manual

Distribution in the UK & Ireland



**Lambda Photometrics Limited**

Lambda House Batford Mill

Harpenden Herts AL5 5BZ

United Kingdom

**E: [info@lambdaphoto.co.uk](mailto:info@lambdaphoto.co.uk)**

**W: [www.lambdaphoto.co.uk](http://www.lambdaphoto.co.uk)**

**T: +44 (0)1582 764334**

**F: +44 (0)1582 712084**

## 1 General

The LASOS Commander allows operating laser models of the LASOS DPSSL, LDM and System series.

 For the LASOS LDM laser series the software is only usable when the laser module is ordered with the stand alone option. The ComBox CLD 1000 is required. For details refer to the manual of the laser.

 Not all functions are supported by all laser models.

Table 1 Overview on availability of software and interface

Product	USB	RS232
LASOS LDM laser series with ComBox CLD 1000 Models *LD xxxx TS and *LD xxxx FS	Connector at ComBox CLD 1000	Connector at Multi-IO interface of ComBox CLD 1000
LASOS DPSS laser series with controller CKL 1000 Models *LK xxxx TS	Available at controller CKL 1000	Available with Stand alone kit (optional)
LASOS DPSS laser series with controller CKL 2400 Models *LK xxxx TS	Not available	Available at controller CKL 2400
LASOS MCS Series	Available	

## 2 Getting started

### 2.1 Installation of the software

The software and all required modules will be delivered on a data carrier (USB stick or CD) with the shipment. Executing the file setup.exe starts the installation. Please follow the instructions. The installation routine installs the LASOS Commander, the required National Instruments Products and FTDI drivers are necessary to communicate with the laser. After successful installation a folder "LASOS" in the Start Menu and an icon on the desktop is generated.



The laser or laser system must not be connected during installation of the software. Please connect the laser only after the software has been installed



To run the LASOS Commander the installation of a National Instruments runtime environment is required. You have to agree to the National Instrument license agreement during installation of the software.



The installation routine installs FTDI drivers necessary to communicate with the lasers. You have to agree to the Future Technology Devices International license agreement during installation of the software.



After installation you have to restart your computer

### 2.2 Connecting to the laser module

For availability of the interfaces refer to table 1 of this manual and the manual of the particular laser model.

#### 2.2.1 Connecting by USB

Connect the laser module and the USB interface by a standard USB cable.



When the laser is connected for the first time Windows will install the required drivers. Please wait until the procedure has finished.

#### 2.2.2 Connecting by RS232

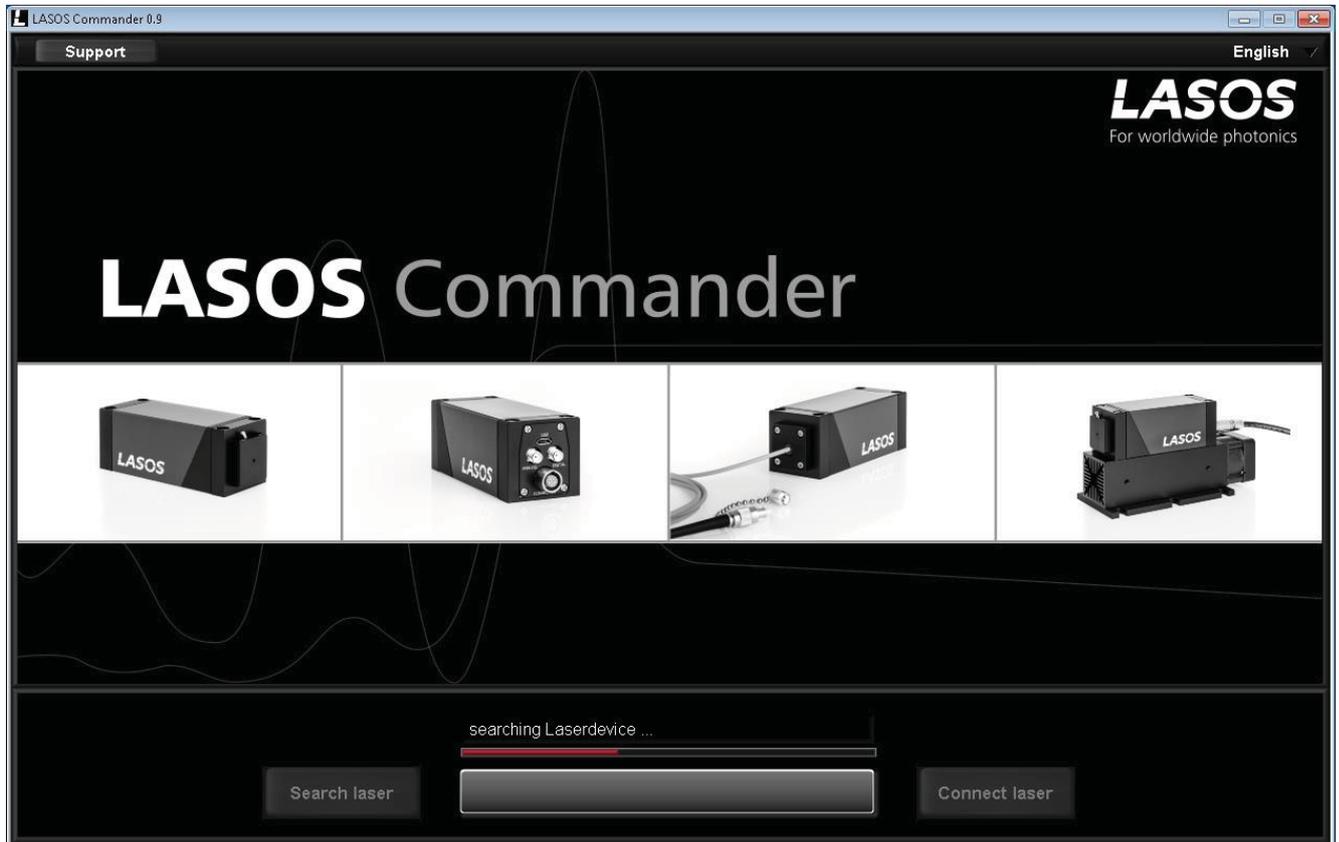
Connect the RS232 connector of the computer with the interface connector of the laser system. Refer to Table 1 for the location of the interface.

### 3 Using the LASOS Commander

#### 3.1 Start screen

After starting the software the start screen will appear.

Figure 1 Start screen of the LASOS Commander



The LASOS commander will automatically search for connected laser modules. The lasers will appear in a drop down list. Use the button "connect laser" to connect a particular laser module.

- ☞ When a Multi Color System (MCS) is connected the laser system will appear in the list.
- ☞ When no laser device is found an error message is displayed. Please check the connections and start again by pressing the button "Search laser". If there is still no laser found contact the LASOS support.

## 4 Operating the laser

### 4.1 General

You can choose between two screens "Basic view" and "Expert view". "Basic view" gives information on the status of the laser and allows tuning the output power. In "Expert view" you find more detailed information and have the possibility to save customized settings. Switch the screen by selecting the button at the bottom of the screen.



In any screen you have access to contact data of the LASOS support by pressing the "Support Button".



You can choose the program language by clicking on the language displayed in the upper right corner of the screen. English and German are available.



Indicators, displayed values and controls depend on the particular laser system which is connected (refer to Table 2)



Information on the laser or laser system like model number and serial number are displayed in the lower part of the screen. Use these data when you contact the LASOS support.



For DPSS lasers the specified values are guaranteed for the nominal value of the output power only. Tuning the wavelength may lead to unstable operation. Use this option only to lower the power temporarily e.g. for adjustment

4.2 Basic view

Figure 2 Screen of "Basic view" for LASOS DPSS laser series



Table 2 Functions in Basic view

Window	Display	Function		
		DPSS	LDM	MCS
Select wavelength	Wavelength [nm]	Wavelength of the selected laser		Select the wavelength of the laser to control
Laser status	Power on/off	Red when laser is on		
	Power [mW]	Actual output power		
	Current [mA]	Pump laser diode current	Laser diode current	Depends on particular model
	Resonator T [°C]	Internal temperature of resonator	Not available	
Laser diode T [°C]	Internal temperature of pump laser diode	Internal temperature of laser diode		
Output control	Laser off/on	Switch the selected laser on and off		
	Set power	Slider to control output power		
	Presets	Sets output power to the dedicated value		

Window	Display	Function		
		DPSS	LDM	MCS
Information	Type	Model number of the selected laser		
	Serial number	Serial number of the selected laser		
	Wavelength	Wavelength of the selected laser		
	Operating hours	Counter of operating hours	Not available	Depends on particular model
Key switch	Indicator	Green on, Red off		
Interlock	Indicator	Green closed, Red open		

 When laser are added or removed use "Change laser" to search for devices.

### 4.3 Expert view

#### 4.3.1 Submenu „Power“

Figure 3 Screen of "Expert view", submenu "Power" for LASOS DPSS laser series



Table 3 Functions in "Expert view", submenu "Power"

Window	Display	Function		
		DPSS	LDM	MCS
Select wavelength	Wavelength in nm	Wavelength of the selected laser		Select the wavelength of the laser to control
Power [mW]	Actual value	Actual output power		
	Set point	Desired output power value		
	Slider to control output power	Set the desired output power value		
	Noise	RMS noise in %	Not available	Depends on particular model
Graph	Diagram	Shows the course of the output power		
	Clear chart	Reset starting point of the graph		

#### 4.3.2 Submenu Current

Figure 4 Screen of "Expert view", submenu "Current" for LASOS DPSS laser series

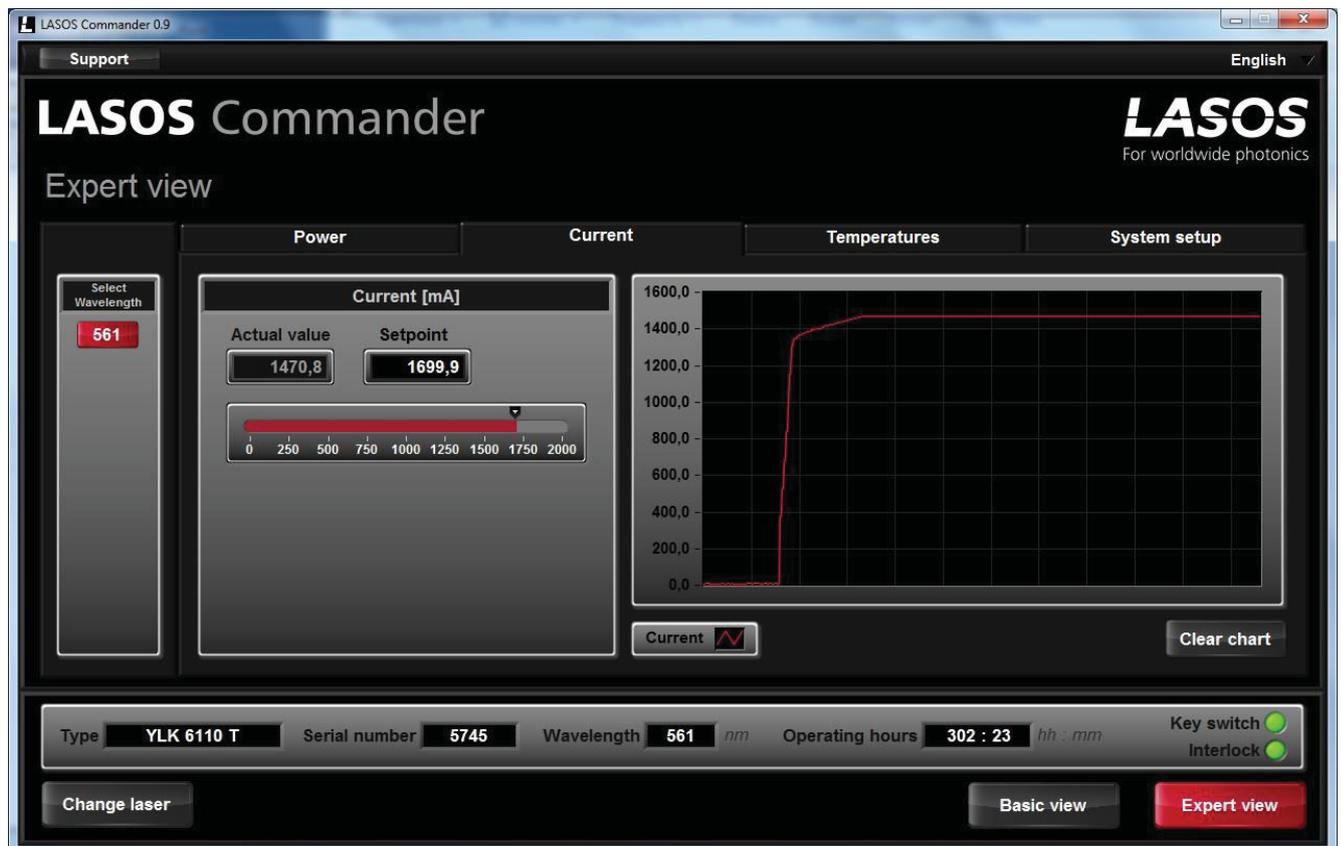


Table 4 Functions in "Expert view", submenu "Current"

Window	Display	Function		
		DPSS	LDM	MCS
Select wavelength	Wavelength in nm	Wavelength of the selected laser		Select the wavelength of the laser to control
Current [mA]	Actual value	Actual value of pump diode current	Actual value of laser diode current	Depends on particular model
	Setpoint (For information only)	Factory set value of pump diode current	Factory set value of laser diode current	Depends on particular model
	Slider		Controls the current (current control mode only)	Depends on particular model
Graph	Diagram	Shows the course of the pump diode current	Shows the course of the laser diode current	Depends on particular model
	Clear chart	Reset starting point of the graph		

4.3.3 Submenu Temperatures

Figure 5 Screen of "Expert view", submenu "Temperatures" for LASOS DPSS laser series

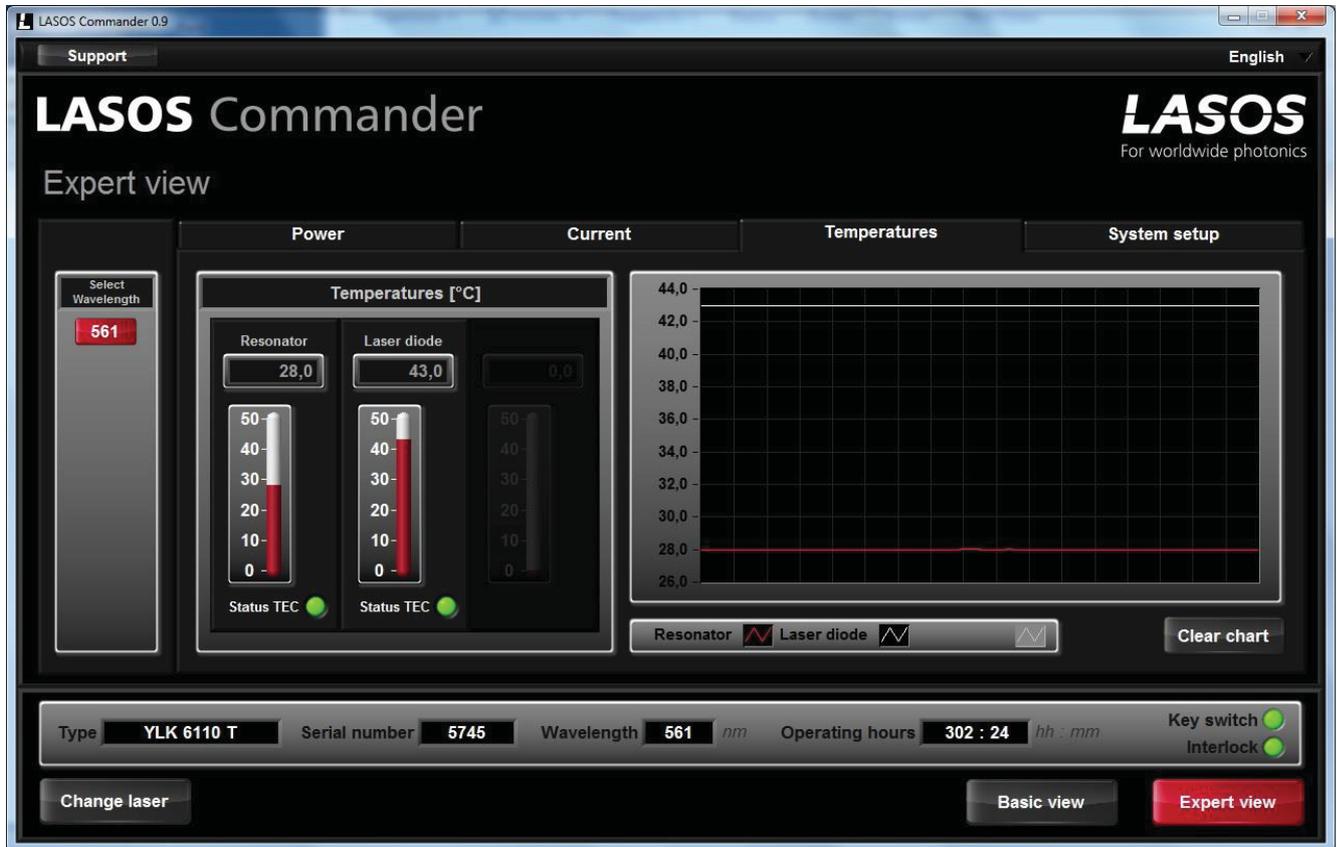


Table 5 Functions in "Expert view", submenu "Temperatures"

Window	Display	Function		
		DPSS	LDM	MCS
Select wavelength	Wavelength in nm	Wavelength of the selected laser		Select the wavelength of the laser to control
Temperatures [°C] (Information only)	Resonator	Actual value of resonator temperature	Not available	Depends on particular model
	Laser diode	Actual value of pump diode current	Actual value of laser diode current	Depends on particular model

Window	Display	Function		
		DPSS	LDM	MCS
	Status TEC Resonator	Green when TEC voltage is in the limit		
	Status TEC laser diode	Green when TEC voltage is in the limit		
Graph	Diagram	Shows the course of the resonator and pump diode temperature	Shows the course of the laser diode current	Depends on particular model
	Clear chart	Reset starting point of the graph		



If any of the TEC status indicators turns from green to red the laser may overheat. Switch off the laser, check the environmental conditions and if the heat sink has sufficient capacity.

#### 4.3.4 Submenu System Setup

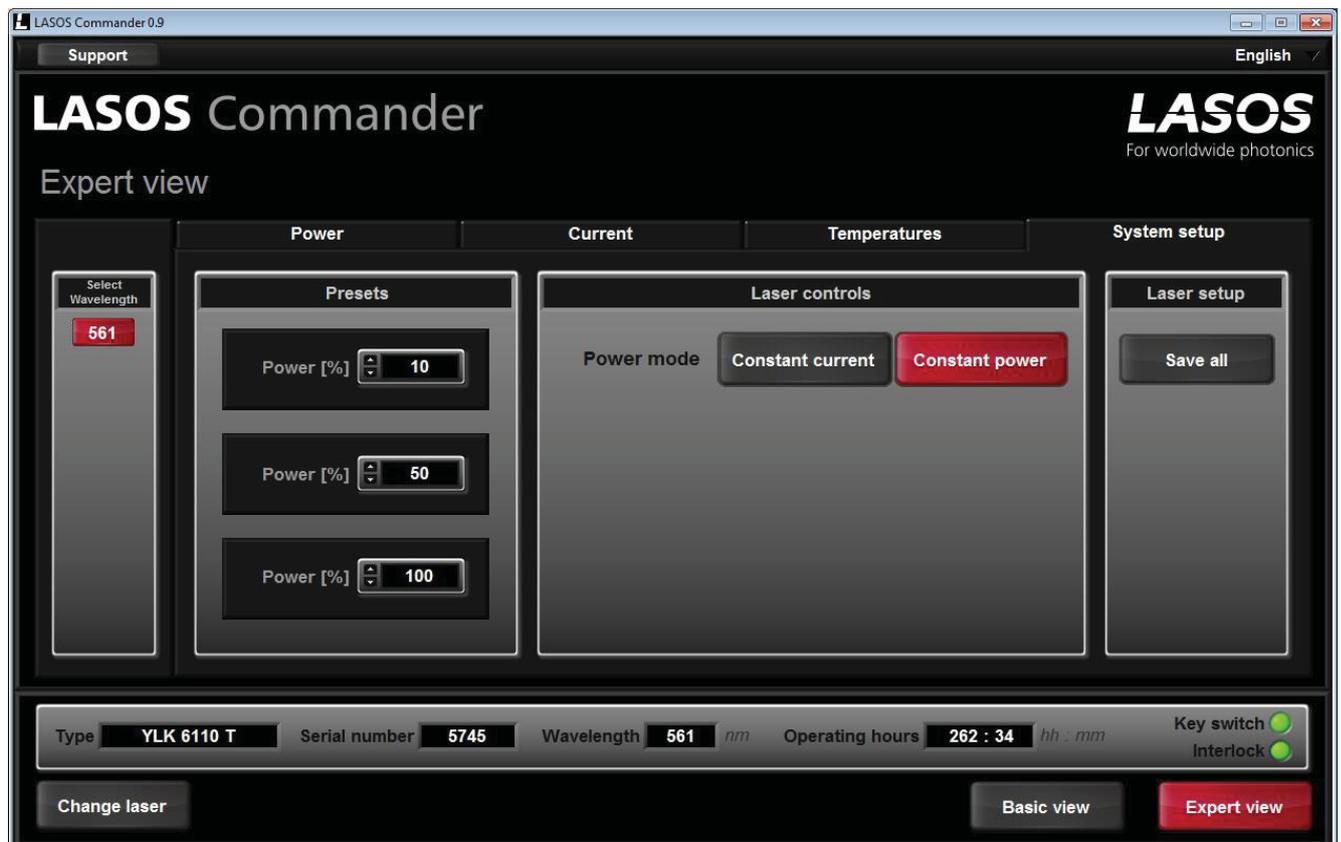


Figure 6 Screen of "Expert view", submenu "System setup" for LASOS DPSS laser series

Table 6 Functions in "Expert view", submenu "System Setup"

Window	Display	Function		
		DPSS	LDM	MCS
Select wavelength	Wavelength in nm	Select the wavelength of the laser to control		
Presets	Power [%]	Preset values for power control in "Basic view" (see 4.2)		
Laser Controls	Constant current	Not available	Available with special models (refer to laser manual)	Depends on particular model
	Constant power	Active power control		
Laser setup	Save all	All settings in the system setup will permanently saved		



The "save all" button also saves changes of the output power which you may have made in other screens

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**Characterisation,  
Measurement &  
Analysis**

**E: [info@lambdaphoto.co.uk](mailto:info@lambdaphoto.co.uk)**

**W: [www.lambdaphoto.co.uk](http://www.lambdaphoto.co.uk)**

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