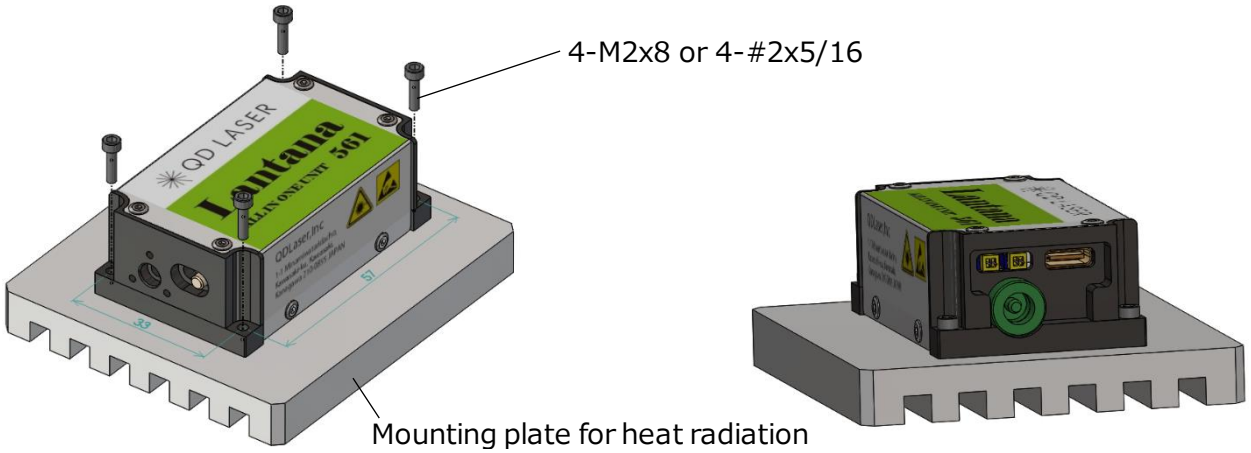
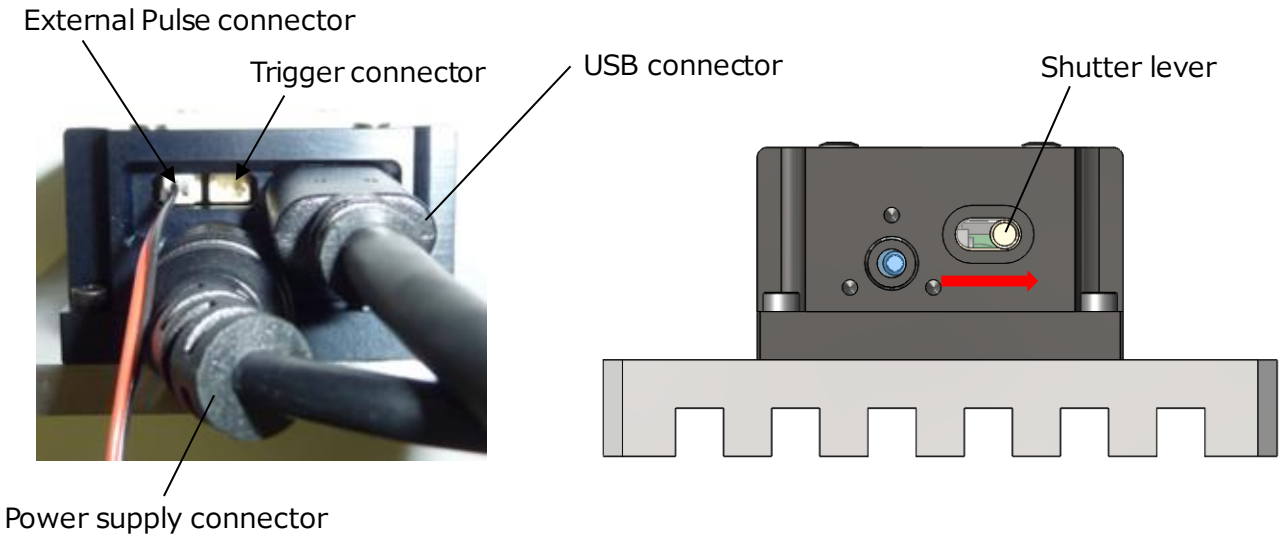
Lantana Installation Guide

1. Preparation and setup

1. Please prepare the following materials in advance.
   PC, mounting plate, 4 screws (M2 or #2) and AC power supply cable.
2. Fix Lantana to Mounting plate using M2 or #2 screw.



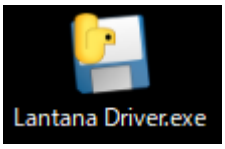
3. Insert the bundled 2 pin cable to the external Pulse connector and the trigger connector.
   * External Pulses : 3.3V CMOS level
   * Trigger Pulse outputs the inverted pulses of the external pulses.
4. Insert the bundled 12V power cable to the power supply connector.
5. Insert the bundled USB cable to USB connector.
6. Insert type-A connector of the USB cable to PC.
7. Connect AC power cable to AC power outlet.
8. Slide the shutter lever to the right.



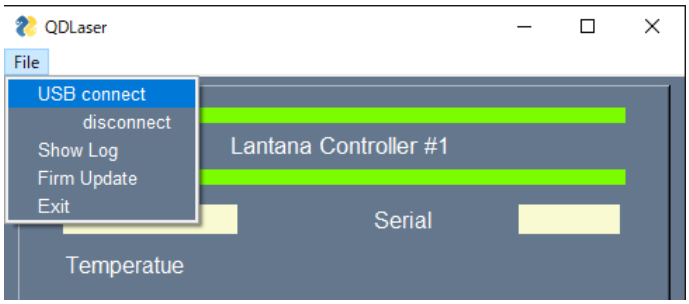
2. Operation with GUI

2-1.Emitting on/off

1. Startup GUI software, Lantana driver, stored on the bundled USB memory.

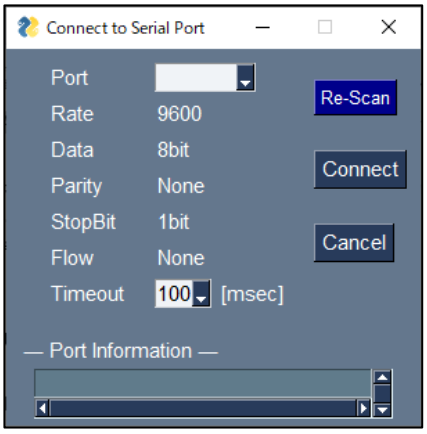


2. Click on “File” and select “USB connect” .

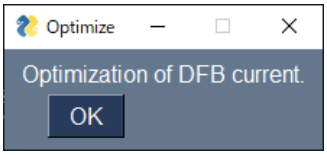


3. Select the serial port which Lantana is connected from the pull-down menu of “Port” .

4. Press “Connect”
   * If the connection is unstable, change the time of “Time out” .

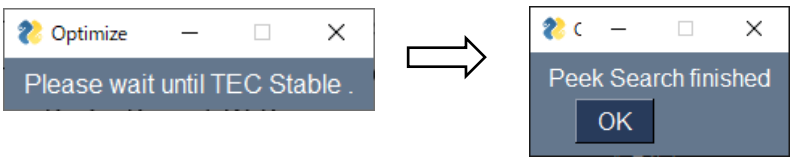


5. Press “OK” after preparing to emit light.

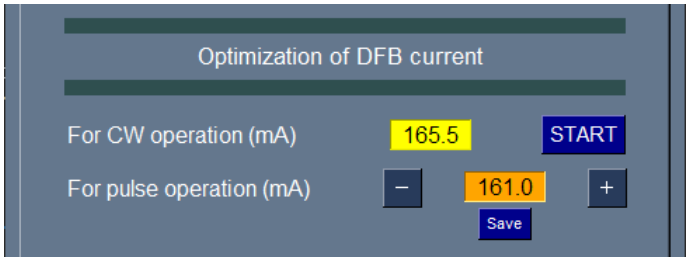


   *“Optimization of DFB current” emits light. If light emission to the outside is not allowed, close the shutter lever before executing.

6. Press OK when “Peak search finished” is displayed.



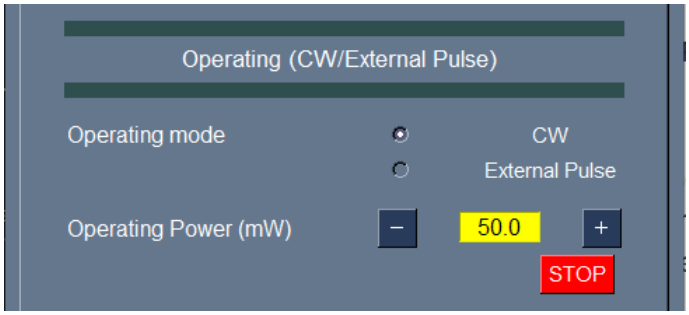
7. The optimum DFB current is displayed on the “Optimization of DFB current” screen.

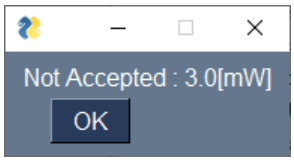


8. (If needed) Press “START” of Optimization of DFB current screen to perform the optimization of DFB current again.

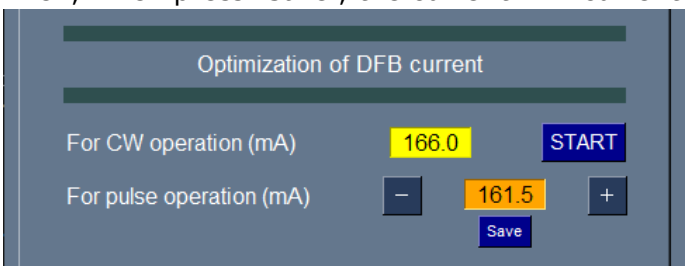
9. Select “Operating mode” of Operating(CW/External Pulse) screen.

10. Input the required optical power to the yellow cell of “Operating power (mW)” and press Enter key.
    Then, Press “START” if emitting ON.
    If pushing “+” and “-” button, optical power is tuned.
    *In the case of pulse operation, “Not accepted: xxx[mW]” is displayed if “Operating power” is set lower than the minimum power, around 3.0mW.

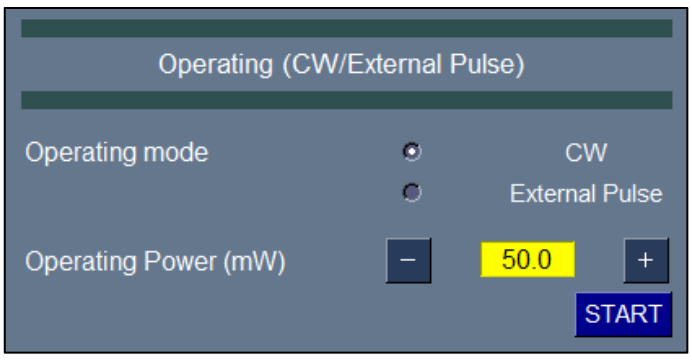




11. Optimization of the pulse waveform
    If the pulse waveform is not stable, tune DFB current with “-” or “+” of Optimization of DFB current screen. Tuning DFB current helps stabilization of the pulse waveform.
    Then, when press “Save”, the current DFB current for pulse operation is saved.

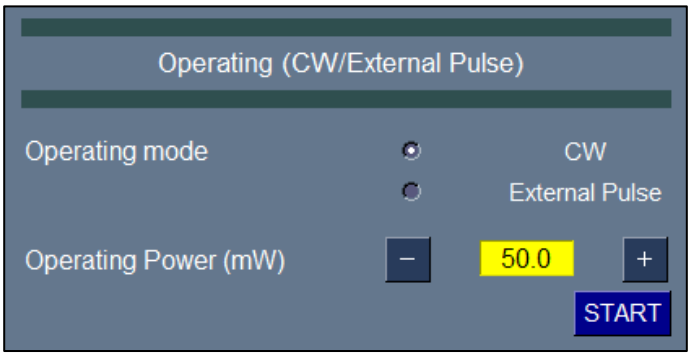


12. Press ”STOP” if emitting OFF.

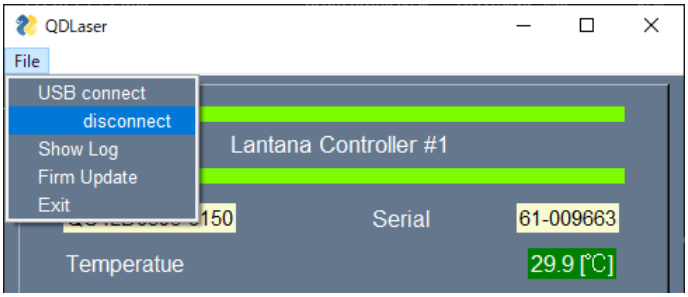


2-2.Disconnection

1.Press ”STOP” of “Operating power (mW)”



2.Click on “File” on menu screen and select “USB disconnect”



3. Remove the cable of USB and 12V power supply connector

3.Serial Communication

3-1.Baud rates and serial port settings

Baud rate	9600
Data	8bit
Parity	none
Stop bit	1bit
flow control	none

3-2. Operation commands

Commands		Argument	Response	Function
1	TEC=	1	Normal: OK / Abnormal: ERR	Turn ON TEC
2	TEC=	0	Normal: OK / Abnormal: ERR	Turn OFF TEC
3	TEC=	R	Normal: Temp. / Abnormal: ERR	Readout of TEC temp.
4	DFB=	S:xxxx	Normal: OK / Abnormal: ERR	SET DFB current (mA) *Range: 0 to 220mA, Res: 0.1mA *DFB current cannot be changed during APC operation
5	DFB=	R	Normal: Current / Abnormal: ERR	Readout of DFB current
6	DFB=	P:xxxx:yyyy:zzzz	Normal: OK / Abnormal: ERR	Set parameters for optimal DFB current search and SOA current for expected optical power under pulse operation. xxxx: SOA current (mA) during DFB scan yyyy: DFB start current (mA) zzzz: DFB end current (mA) *Width of yyyy and zzzz is within 60mA, Res: 0.1mA
7	DFB=	C	Normal: Current / Abnormal: ERR	Detect and set optimal DFB current
8	SOA=	S:xxxx	Normal: OK / Abnormal: ERR	SET SOA current (mA) *Range: 0 to 300mA, Res: 0.1mA *SOA current cannot be changed during APC operation
9	SOA=	R	Normal: Current / Abnormal: ERR	Readout of SOA current
10	POW=	S:xxxx	Normal: OK / Abnormal: ERR	SET optical power (mW) *Range: 0 to maximum power, Res: 0.1mW *Actual minimum optical power is limited to DFB seed light power. DFB seed light power varies by samples.
11	POW=	R	Normal: Power / Abnormal: ERR	Readout of set optical power
12	POW=	J:xxxx	Normal: OK / Abnormal: ERR	If the actual optical power cannot be adjusted to the setting power specified by xxxx, ERR is returned.
13	APC=	1	Normal: OK / Abnormal: ERR	Turn ON APC operation under set optical power *DFB and SOA currents cannot be set during APC
14	APC=	0	Normal: OK / Abnormal: ERR	Turn OFF APC operation
15	ACC=	1	Normal: OK / Abnormal: ERR	Turn ON ACC operation under set optical power *Select ACC when pulse operation
16	ACC=	0	Normal: OK / Abnormal: ERR	Turn OFF ACC operation
17	INI=	1	Normal: OK / Abnormal: ERR	Set optical power before USB communication off
18	SFT=	R	Normal: Version / Abnormal: ERR	Readout of software version
19	CAL=	1	Normal: OK / Abnormal: ERR	Optical power calibration CAL=1, CAL=2; waiting for temperature stability
20	CAL=	2	Normal: OK / Abnormal: ERR	
21	CAL=	S:1:xxxx	Normal: OK / Abnormal: ERR	CAL=S:1:xxxx; xxxx = measured 1st optical power
22	CAL=	S:2:yyyy	Normal: OK / Abnormal: ERR	CAL=S:2:yyyy; yyyy = measured 2nd optical power
23				

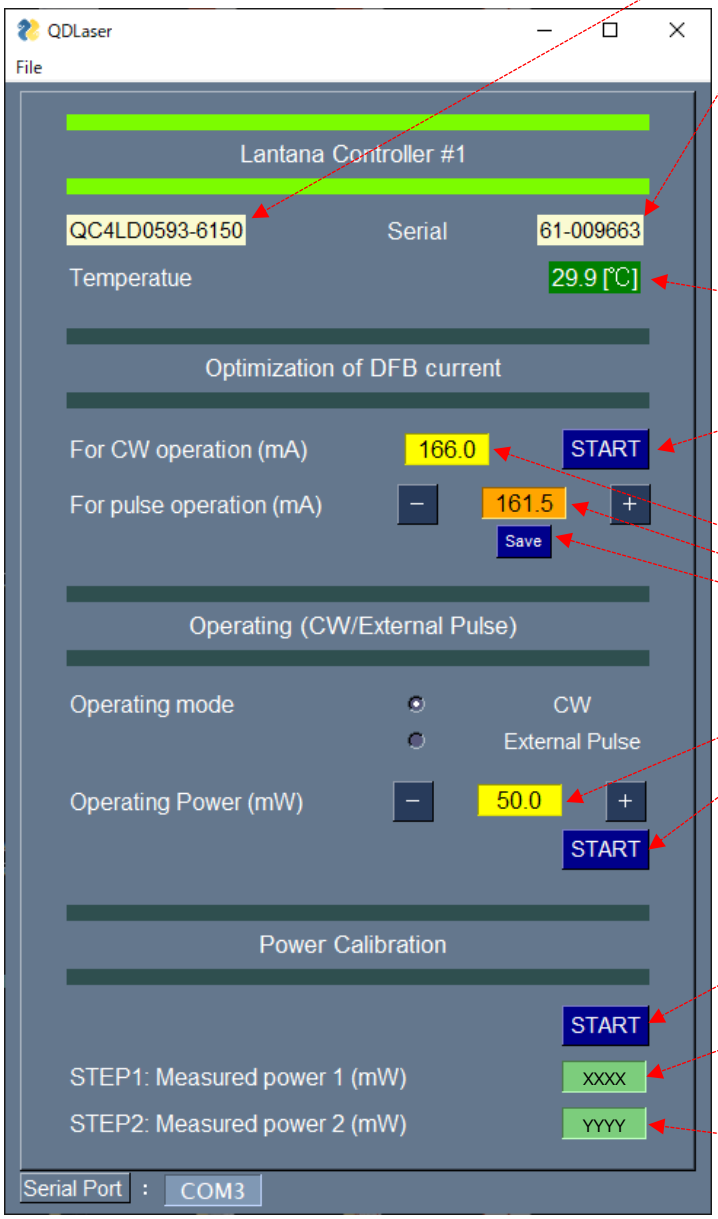
3-3. EEPROM access commands

Commands		Argument	Response	Function
1	E2P=	R:PRD	Normal: Model No. / Abnormal: ERR	Readout “Model No.”
2	E2P=	R:S/N	Normal: Serial No. / Abnormal: ERR	Readout “Serial No.”
3	E2P=	R:WAV	Normal: wavelength / Abnormal: ERR	Readout “Wavelength” (nm)
4	E2P=	R:PTYP	Normal: Typ. power / Abnormal: ERR	Readout “Typ. power” (mW)
5	E2P=	R:PMAX	Normal: Max. power / Abnormal: ERR	Readout “Max. power” (mW)
6	E2P=	R:PMIN	Normal: Min. power / Abnormal: ERR	Readout “Min. power” (mW)
7	E2P=	R:SLOP	Normal: SLOP / Abnormal: ERR	Readout “SLOP efficiency” (mW/mA)
8	E2P=	R:DFB1	Normal: DFB current / Abnormal: ERR	Readout “Optimal DFB current” stored in EEPROM “Optimal DFB current” is Automatically updated when running “DFB=P:xxxx:yyyy:zzzz”
9	E2P=	R:DFB2	Normal: DFB current / Abnormal: ERR	Readout “Starting current for DFB calibration” stored in EEPROM Recommended for “yyyy” in “DFB=P:xxxx:yyyy:zzzz”
10	E2P=	R:DFB3	Normal: DFB current / Abnormal: ERR	Readout “End current for DFB calibration” stored in EEPROM Recommended for “zzzz” in “DFB=P:xxxx:yyyy:zzzz”
11	E2P=	R:SOA1	Normal: SOA current / Abnormal: ERR	Readout “SOA1 current for rated optical power” stored in EEPROM Recommended for “xxxx” in “DFB=P:xxxx:yyyy:zzzz”
12	E2P=	R:SOA4	Normal: DFB current / Abnormal: ERR	Readout “SOA4 current” for current power under pulse operation
13	E2P=	W:DFB5:xxxxx	Normal: OK / Abnormal: ERR	Write xxxxx to DFB5. xxxxx; Correction value of the optimum DFB current under pulse operation to the optimum DFB current under CW operation. DFB current under pulse operation is set to (DFB1 - DFB5), -9.9mA <= xxxxx <= 0mA
14	E2P=	R:DFB5	Normal: correction value / Abnormal: ERR	Readout “DFB5 current”
15	E2P=	R:USGT	Normal: Usage time / Abnormal: ERR	Readout “Usage time”
16				

Notes.

When writing continuously to EEPROM, a minimum wait time of 10msec should be included.

3-4. Relation between GUI and serial commands



Readout parameters from EEPROM
E2P=R:PRD
E2P=R:S/N
E2P=R:WAV
E2P=R:PTYP
E2P=R:SLOP
E2P=R:TEC
E2P=R:PTYP or INI=1
E2P=R:PMAX
E2P=R:PMIN
E2P=R:DFB1
E2P=R:DFB5
E2P=R:DFB2
E2P=R:DFB3
E2P=R:SOA1
E2P=R:SOA4

Temperature
TEC=R

Optimization of DFB current
DFB=P:xxxx:yyyy:zzzz; Returned "OK" after temperature stable
DFB=C
*xxxx = SOA1
*yyyy = DFB2
*zzzz = DFB3

E2P=R:DFB1
E2P=R:DFB5
E2P= W:DFB5:-4.0

Operating (CW)
POW=S:xxxx ;e.g. xxxx=50.0
APC=1; emitting ON
POW=J:xxxx ;e.g. xxxx=50.0
APC=0; emitting OFF

Operating (PULSE)
POW=S:xxxx ;e.g. xxxx=50.0
ACC=1; emitting ON
POW=J:xxxx ;e.g. xxxx=50.0
ACC=0; emitting OFF

Power Calibration
CAL=1; Returned "OK" after temperature stable
CAL=S:1:xxxx
;xxxx are the optical power by external measuring device

CAL=2; Returned "OK" after temperature stable
CAL=S:2:yyyy
;yyyy are the optical power by external measuring device

ACC=0

Notes.

1. After serial connection, perform "Optimization of DFB current" before "Operating CW/PULSE"
2. If the pulse waveform is not stable, tune DFB current by "E2P=W:DFB5:xxxx"
3. "Power calibration" need not be performed unless there are unusual circumstances.

4. Optical and Electrical Safety

1. Lantana does not contain hazardous voltages.
2. Do not disassemble Lantana. Disassembling the enclosure will void the warranty.
3. Lantana is classified as Class 3B laser product.
4. Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.