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ProLase XP Software Update for LMV1000(G)(E) Laser Markers

The procedure written below assumes that the person performing the software upgrade has working knowledge of the Windows Operating System and knows all of the basic commands and operations necessary to perform this install. An incorrect install is the responsibility of the computer operator and is in no way the responsibility of the Miyachi Unitek Corporation. Perform this upgrade at your own risk. If you are unsure about any step in the installation procedure, please contact Miyachi Unitek or refer to a qualified computer technician to perform the upgrade. Please read the entire procedure first, before attempting to upgrade the software.

Introduction

We recommend all customers update their ProLase XP software to enable new features and eliminate all known software bugs. This procedure addresses how to update all versions of *ProLase XP* including; *ProLase XP*, *ProLase XP Plus*, *ProLase XP Server* and *ProLase XP Plus Server*.

To date Miyachi Unitek has released 4 different versions of the ProLase XP software. The overall hierarchical structure of each software revision is slightly different; therefore it is important to follow the instructions written below explicitly for a trouble-free upgrade.

A summary of all released ProLase XP software revisions is listed below. There are basically two ways to determine the version: (1) from the **Help** pull-down menu choose **About ProLase...** or (2) note the “modified date” of the *LasePS.exe* file properties using *Windows Explorer*.

(the LasePS.exe file is located in the C:/Program Files/American LaserWare/ProLaseXP subdirectory)

MUC Revision	ProLase XP Version	ProLase XP build date	LasePS.exe modified date
A	4.23	3-27-04	3-26-04
B	4.23	3-27-04	3-26-04
C	4.710	12-15-05	12-15-05
D	4.854	1-23-07	1-23-07
E (update)	4.901	10-26-07	10-26-07

In all cases, once the software update is complete, the revision will be version 4.901.

As with all software upgrades it is best to record and back-up your current software system. This not only provides a path back to the factory original condition, but also maintains the integrity of your original files. Once the upgrade is complete, all associated ProLase system files will be modified and will no longer operate properly if your system is restored back to the factory original condition. (i.e. once the upgrade version of *ProLase XP* is started, these system files will not be backward compatible).

Update Procedure



Note: Before starting this procedure, be sure to turn off power to the Laser Marker.

If ProLase is not operating correctly...

If ProLase XP is not operating correctly, delete the *default.pre* & *lasexp.ini* files, located in:

C:/Program Files/American LaserWare/ProLaseXP/**default.pre**
C:/Windows/**LaseXP.ini**

Then change the PC date back one month, before proceeding. Try to get ProLase XP to operate correctly before continuing with this procedure. If you cannot get ProLase to run, skip to **step 5**.

1. Save your current system configuration (.cfg) file

The configuration file stores the lens field information, system delays, LD power table values, Q-Switch values, I/O Driver information, and the basic system parameters. Save the current (default) system configuration using the **Marking** pull-down menu:

- (1) *Marking* > *Config* > *Save As*
- (2) Navigate to the ProLaseXP subdirectory (*C:/Program Files/American LaserWare/ProLaseXP*).
- (3) Save as **default.cfg**. If the file already exists, choose **Yes** to replace it.

2. Record the LD Current Power Values

The LD Current Power Values prevent the Laser Diode Module for being over-powered. An over-powered LD Module will have a significant decrease in useable lifetime. In older versions of the ProLase XP software, the LD Power values are stored in a separate calibration file. In the new version, the LD power values are integrated into the configuration file.

Therefore as a precaution, the current LD Power Table Values should be recorded to ensure that these data values get updated properly in the new software version.

- a. Select the *Marking* > *Config* > *Calibrate* pull-down menu.
- b. When the Calibration window appears, choose the **Power** button. When a window appears warning that the “Laser may output”, choose **OK**.
- c. Record each of the **PWR** values and the associated **DAC** voltage for each data entry.
- d. Select **OK**, followed by **OK** once again when finished.

DAC Voltage Volts	Laser Power PWR
0.000	0
0.500	4.724
1.000	9.119
1.500	13.515
2.000	17.909
2.500	22.305
3.000	26.7
3.148	28
4.000	10000
4.500	100000
5.000	1e+006

Edit DAC Voltage values
Edit Unit Labels

OK Cancel

A typical screen shot of the Laser Power Table is shown on the right. The table values in your system may be significantly different.

3. Record the Material File (.mat) Values

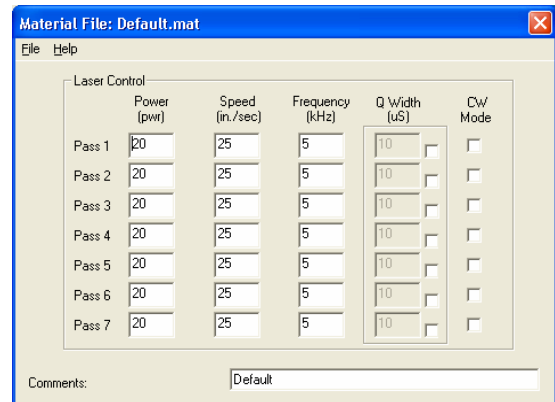
The Material Files are responsible for specifying the marking parameters. The material properties can be viewed by;

- Selecting the *Marking > Material* pull-down menu, or
- place your mouse cursor over the **Material** parameter in the *Layer / Object Layout Window*, then select your right mouse button to view the material properties.

In both cases the Material Properties window will display (as shown below). The majority of *ProLase XP* users have a single default material file for all of their marking files. This default material file is saved as **default.mat** and it resides in the *ProLaseXP* subdirectory.

A smaller portion of *ProLase XP* users create custom material files. In order to ensure a smooth transition, all of these material files need to be opened up in the new version of ProLase in order to be re-formatted to the new software revision.

Before performing the software upgrade, be sure to record each of the data values shown in this table as a precaution to recover from corrupt files. Repeat this same process for all other material files that have been created.



4. Record the Fixture File (.fx2) Parameters

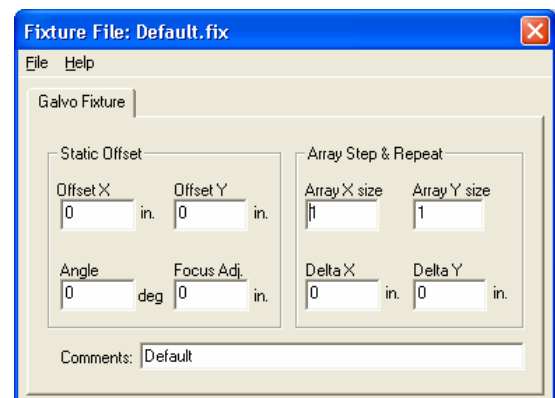
The Fixture Files are responsible for specifying mechanical offsets in the mark field fixtures. The fixture properties can be viewed by;

- Selecting the *Marking > Fixture* pull-down menu, or
- place your mouse cursor over the **Fixture** parameter in the *Layer / Object Layout Window*, then select your right mouse button to view the fixture properties.

In both cases the Fixture Properties window will display (as shown below). The majority of *ProLase XP* users have a single default fixture file for all of their marking files. This default fixture file is saved as **default.fx2** and it resides in the *ProLaseXP* subdirectory.

A smaller portion of *ProLase XP* users create custom fixture files. In order to ensure a smooth transition, all of these fixture files need to be opened up in the new version of ProLase in order to be re-formatted to the new software revision.

Before performing the software upgrade, be sure to record each of the data values shown in this table as a precaution to recover from corrupt files. Repeat this same process for all other fixture files that have been created.

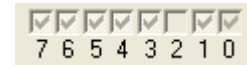
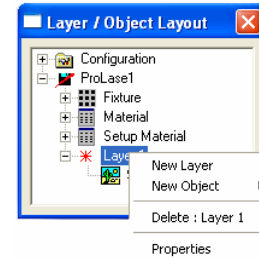


5. Record the System I/O Bit Properties

For customers that use the External I/O to control their marking process, you should record the current I/O bit selection to verify that the upgrade is performed properly. If your system does not use I/O control, then proceed to the next step.

Record the I/O Control bit values for each layer within each ProLase .laz file that was created. Place your mouse cursor over the *Layer* in the **Layer / Object Layout** window and choose **Properties**.

Note: Some customers customize the name of each layer. Choose the custom name of the layer in this case.



When the **Layer Control Sequence** window appears, record each I/O bit value for the **Start Mark Input I/O** setting. There are three choices:

- Logic Low
- Logic High
- Don't Care (dithered check mark)

Repeat this same procedure for each Layer listed in the **Layer Control Sequence** window. Open any other .laz marking files that were created and record the values for each of these layers as well.

6. Back-up the Original System Software

Shutdown ProLase XP.

In order to provide a Restore Point, all; system files, configuration files, executables, laser marking files, material files and fixture files should be backed-up. Copy all of the files located in the **C:/Program Files/American LaserWare/** directory to a separate back-up directory.

7. Delete the ProLase initialization files

Whenever ProLase XP is started, two files are automatically created, *default.pre* and *LaseXP.ini*. In order to provide a smooth software upgrade, both of these files should be deleted (*note: if these files do not exist, that is OK. Continue with the procedure*). The files are located at:

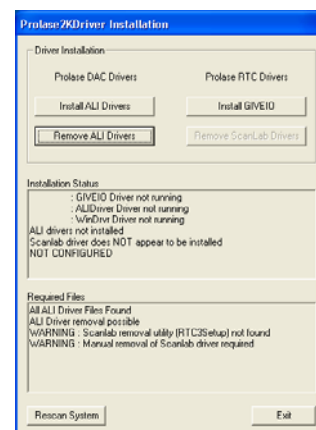
C:/Program Files/American LaserWare/ProLaseXP/**default.pre**
C:/Windows/**LaseXP.ini**

8. Remove the current ProLase 2k Drivers

Navigate to the ProLase 2k Driver Utility;
Start > (All) Programs > ProLaseXP > ProLase2kDriver

Select the **Remove ALI Drivers** button. When all drivers are removed the *Installation Status* will report **Not Configured**.

Choose **Exit** when finished.



9. Update the ProLase XP files.

Download the update file to your local PC (note the location of the file). Unzip the contents of the update file, then copy all of the files to the *C:/Program Files/American LaserWare/ProLaseXP* subdirectory. When prompted to overwrite files, choose **Yes to All**.

10. Install the new ProLase 2k Drivers.

Navigate to the ProLase 2k Driver Utility;
Start > (All) Programs > ProLaseXP > ProLase2kDriver

Select the **Install ALI Drivers** button. When all drivers are installed the *Installation Status* will report **CONFIGURED for Prolase DAC Control**.

Choose **Exit** when finished.



11. ProLase XP Server & ProLase XP Plus Server.

If your system operates with either *ProLase XP Server* or *ProLase XP Plus Server*, there are some additional steps required to complete your software upgrade as outlined below. If your system does not operate on either of these two software platforms, continue with the next step.

- Locate the folder on the PC where the pre-existing ProLase header (*.h) files and the *prolase.lib* are located. (Example: *C:/yourcustomizedsoftware/prolasedll/*)
- Extract the contents of the *hfiles.zip* file located in the *C:/Program Files/American LaserWare/ProLaseXP* directory into the folder identified in the previous step. Replace all *.lib* and *.h* files. In addition, if the *prolase.dll* file exists in your *C:/Windows/System32* folder, it will also need to be replaced by the new *prolase.dll* file.
- Check the customized software project properties and verify that the correct library directories link path is referenced. This will prevent linking to an incorrect version of the *prolase.lib* file.
- Recompile the customized software program to link with the latest *.h and *prolase.lib* files. Make sure that you link to the correct version of the *prolase.lib* file (dated 10-26-07).
- If you are running *ProLase XP Plus Server*, you must also rename the following files: Rename *prolase.dll* to *proplus.dll* and rename *prolase.lib* to *proplus.lib*.
 If you are not running *ProLase XP Plus Server*, skip this step.

12. Start ProLase XP.

Start the version of ProLase XP that your system operates with:

Start > (All) Programs > ProLaseXP > ProLase_____

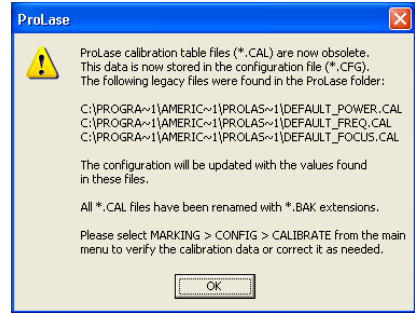
If you select the incorrect ProLase XP version, you will receive a pop-up window that indicates that the **Security Key not Found**. This simply means that the hardware key (dongle) that you have does not match the version of software that you are trying to run.



When the updated version of ProLase XP runs for the first time, it will convert any of the older system files as necessary. A typical screen will appear as shown on the right. Select **OK** to continue.

Note: The contents of the screen may appear differently (or not at all) depending on the version of software that was installed prior to the upgrade.

When the **Using Standard Preference Settings** window appears, choose **OK**.



13. Verify the software update.

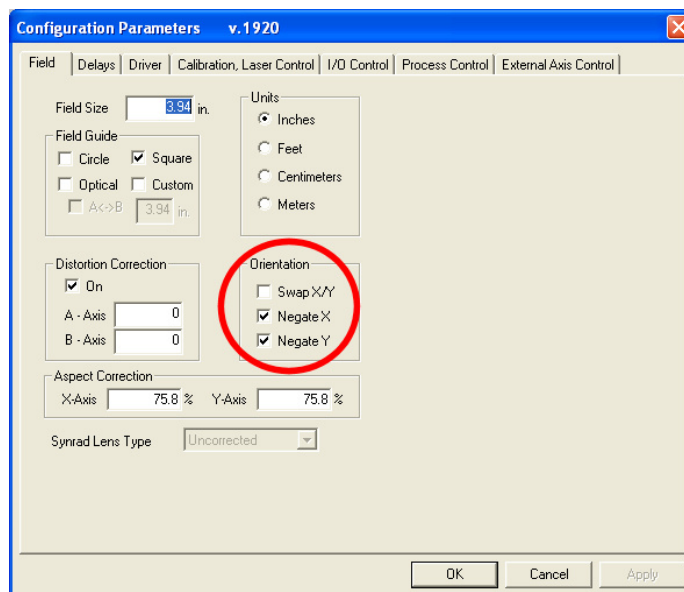
With ProLase XP running, verify that all of the configuration parameters were updated properly as noted below.

- a. Verify the Field Parameters match the lens that is installed: *Marking > Config > Field*

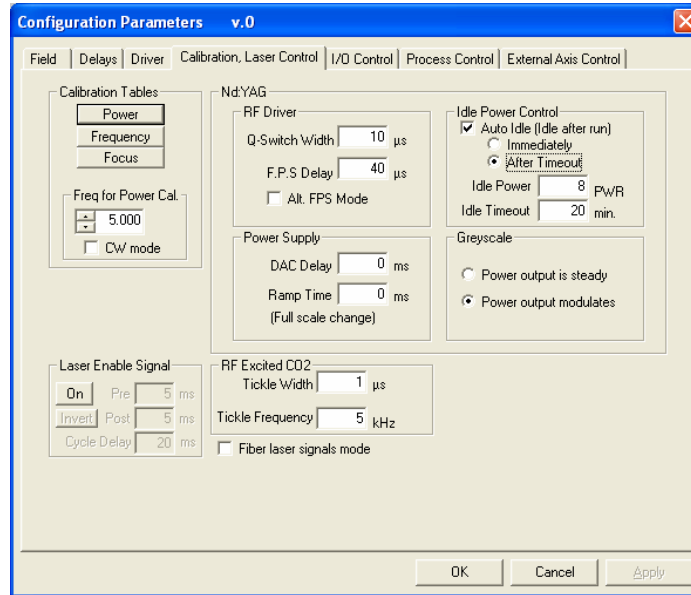
Model	Lens	Field Size	Field Guide
LMV1000	75mm	1.54in / 3.9cm	Circle
	100mm	3.15in / 8.0cm	Circle
	150mm	4.72in / 12.0cm	Circle
	160mm	3.94in / 10.0cm	Square
	254mm	5.91in / 15.0cm	Square
	270mm	8.50in / 21.6cm	Circle
	300mm	8.27in / 21.0cm	Square
420mm	11.57in / 29.4cm	Square	

Model	Lens	Field Size	Field Guide
LMV1000G	100mm	3.15in / 8.0cm	Circle
	160mm	3.94in / 10.0cm	Square
	254mm	5.91in / 15.0cm	Square
	300mm	6.89in / 17.5cm	Square

- b. Select the **Delays** tab and verify that the **Center Galvos After Mark** option is checked (☑).
- c. Select the **Driver** tab and verify that the **DDA – 16bit** option is selected and that both the **PCIM-DDA06/12** and **PCI-CTR05** PCB's both show a status of *Found*.
- d. Select the **Field** tab and verify the orientation options are the same as shown below. The other options and parameters are f-theta lens dependent. There is no need to modifying any of the other items on this screen.

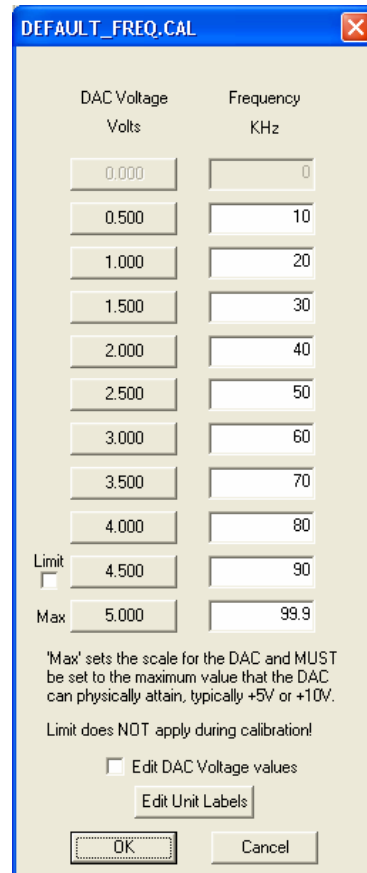
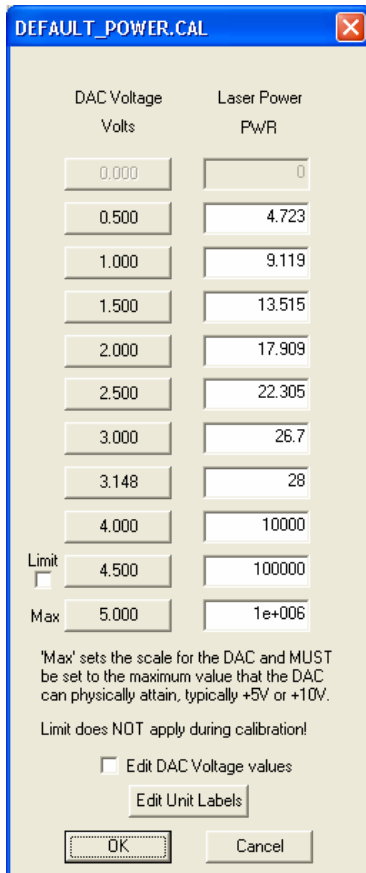


- e. Select the **Calibration, Laser Control** tab and verify each of the values as shown in the screen image below (especially the values in the *Idle Power Control* section). Change any data field that does not match the screen image below.



- f. Select the **Power** button and verify the table data values are the same as in *Step 2*. Select **OK** when finished.

- g. Select the **Frequency** button and verify the table data values are the same as shown below. Select **OK** when finished.

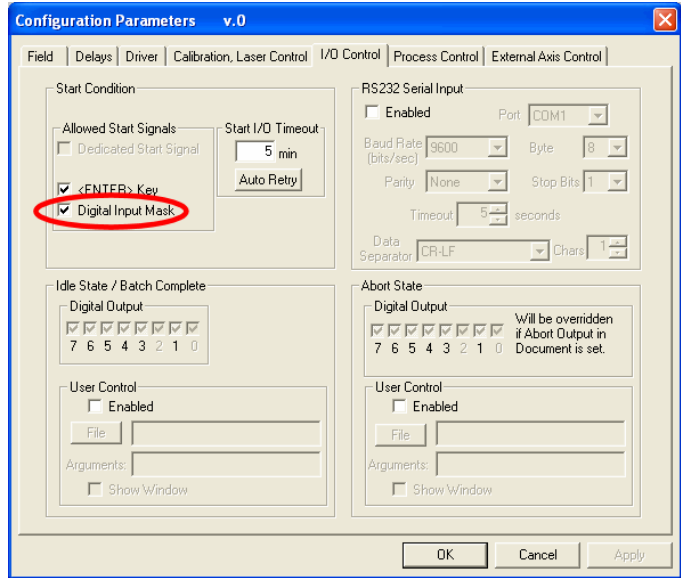


- h. In the I/O Control window, verify that the **Digital Input Mask** is selected.

View the I/O Control window by selecting:

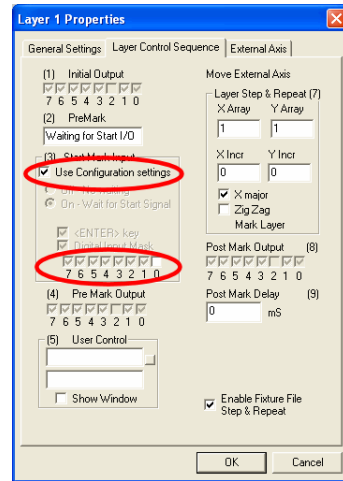
Marking > Config > I/O Control

For customers that use the External I/O to control their marking process, you need to verify that the I/O bit selection was performed properly. If your system does not use I/O control, then proceed to the next step



- i. Place your mouse cursor over the *Layer* in the **Layer / Object Layout** window and choose **Properties**. Verify that the **Use Configuration Settings** option is selected for each Layer property within each .laz marking file that was created.

Verify the **Start Mark Input** I/O settings to the values recorded in step 5. Change any I/O setting that does not match.



- j. If all configuration parameters look correct, select **OK** to close the *Configuration Parameters* window. Save the current (default) system configuration using the **Marking** pull-down menu:
 - a. *Marking > Config > Save As*
 - b. Navigate to the ProLaseXP subdirectory (*C:/Program Files/American LaserWare/ProLaseXP*).
 - c. Save as **default.cfg**. If the file already exists, choose **Yes** to replace it.
- k. Verify that the *Material* data values are the same as the values recorded in **Step 3**. Change any data field that does not match. Save the Material data by selecting the *File > Save As* from the pull-down menu from within the Material File window. Save as **default.mat** and save it in the ProLaseXP subdirectory (*C:/Program Files/American LaserWare/ProLaseXP*).
- l. Verify that the *Fixture* data values are the same as the values recorded in **Step 4**. Change any data field that does not match. Save the Fixture data by selecting the *File > Save As* from the pull-down menu from within the Fixture File window. Save as **default.fix** and save it in the ProLaseXP subdirectory (*C:/Program Files/American LaserWare/ProLaseXP*).

Once all configuration parameters are verified, close ProLase XP and open it back up. Verify no errors exist.

14. Power on the Marker and verify operation.

Once all software upgrades are complete and verified, turn on the Laser Marker power and verify operation. If all software updates were completed properly, the transition should be seamless.



Software Revision differences:

If you are using the ProLase XP command line interface, please contact Miyachi Unitek for additional instructions. The following table defines the differences in software revisions. This information is only provided as a reference.

	Rev A /B	Rev C	Rev D	Rev E (upgrade)
	4.23 (3-27-04)	4.710 (12-15-05)	4.854 (1-23-07)	4.901 (10-26-07)
LD Power Values	Separate .cal file	Separate .cal file	Integrated into .cfg file	Integrated into .cfg file
Q-Switch Values	Separate .cal file	Separate .cal file	Integrated into .cfg file	Integrated into .cfg file
Default Material file	Saved as <i>default.mat</i>	Saved as <i>default.mat</i>	Saved as <i>default.mat</i>	Saved as <i>default.mat</i>
Setup Material file	<i>does not exist</i>	<i>does not exist</i>	Saved as <i>setup.mat</i>	Saved as <i>setup.mat</i>
Fixture file	.fx2 extension	.fx2 extension	.fx2 extension	.fix extension
Auto Idle	After: timeout	After: - immediately - timeout	After: - immediately - timeout	After: - immediately - timeout