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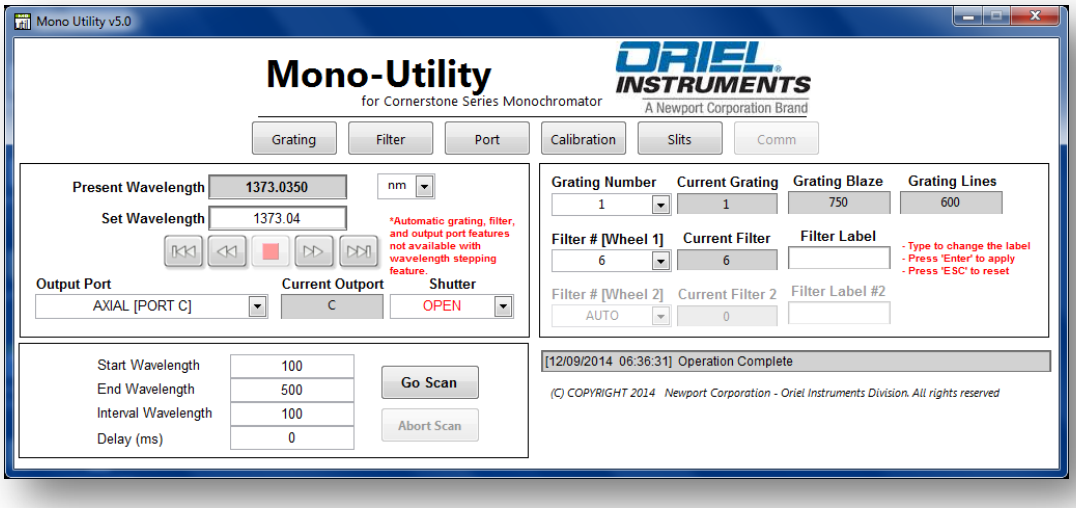
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Mono-Utility v5.0

Oriel® Utility Software For Monochromators and Spectrographs







Quick Start Guide

ORIEL INSTRUMENTS
A Newport Corporation Brand

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1 INTRODUCTION

Thank you for your purchase of this spectroscopy instrument from Oriel Instruments. Please read this Quick Start Guide prior to installing the utility software and operating the monochromator or spectrograph. For additional important information regarding this instrument, refer to the complete User's Manual. Do not attempt to operate the system without reading all the information provided with each of the components.

This utility software allows users to control the following:

- Cornerstone 130 Monochromators
- Cornerstone 260 Monochromators
- MS260i Spectrographs

Instruments are available with either USB or RS232/GPIB connections. The following communication methods are compatible with the utility software:

- USB
- RS232
- IEEE-488 (GPIB)

Utility software instrument control features:

- Set wavelength
- Set wavelength units
- Open/close shutter
- Select grating
- Select Filter
- Select output port [dual output port instruments only]
- Automatic grating, filter and port changeover setup
- Set slit widths [motorized slits only]
- Automatic bandpass adjustment [motorized slits only]
- Set up scan parameters
- Run/abort scan
- Adjust calibration factors during field recalibration

Utility software instrument monitoring features:

- Present wavelength
- Wavelength units
- Output port selected
- Shutter position
- Grating in use, blaze wavelength and line density
- Filter in use, filter label
- Calibration parameters

2 REQUIREMENTS

2.1 SOFTWARE INSTALLATION

The computer user performing the software installation must be logged on with Administrator privileges. Computer requirements:

Operating System	Windows 7, 32-bit and 64-bit
Memory	2 GB minimum
Free Hard Disk Space	800 MB

The computer on which the utility software is to be installed on must have a USB port in order to access the software contained on the USB drive provided with the instrument.

> NOTE:
> A legacy version of the utility software is available for Windows XP users.

The following procedure does not apply for monochromators or spectrographs that are to be used with the optional Oriel TracQ™ Basic software.

If a prior version of the utility software has been installed onto the computer, it must be uninstalled prior to installation of the newest version of software. The uninstallation procedure is covered in the Appendix at the back of this Quick Start Guide.

2.2 SOURCE CODE

This program is a closed executable file written in National Instrument's LabVIEW™. LabVIEW developers may access example VIs through the MonoTERM program. Refer to the API document for more information.

2.3 IEEE-488 (GPIB) COMMUNICATION

Before installing the utility software, it is required to have a National Instrument's IEEE-488 controller card or a GPIB/USB converter cable. In either case, its associated drivers must be installed on the computer.
It is important to configure the computer and establish communications before proceeding with any application software. The GPIB board index and instrument address assigned should be noted for establishing communication when running the utility software.

2.4 RS232 COMMUNICATION

It is important to configure the computer and establish communications before proceeding with the installation and use of the utility software. The COM PORT should be noted for establishing communication when running the utility software.

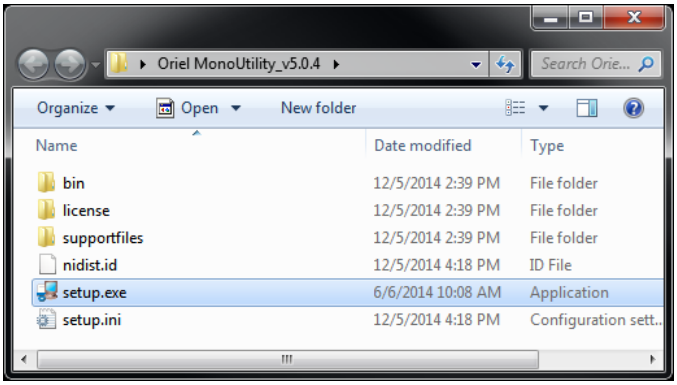
2.5 USB COMMUNICATION

A USB2 port must be available on the PC. The ORIEL_USB.SYS driver must be installed before the instrument can be controlled via a computer.

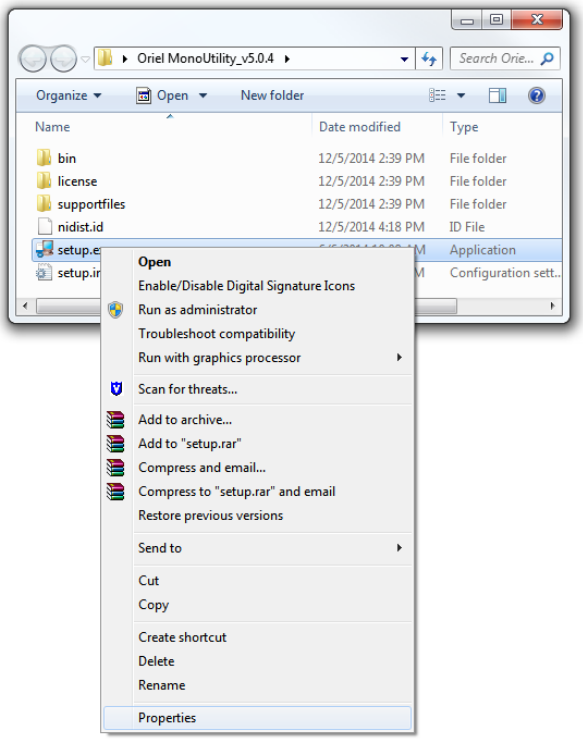
3 SOFTWARE INSTALLATION

The software installation screens shows are applicable to a Windows 7, 32-bit operating system. The screens shown may differ slightly, depending on the operating system type and whether any versions of the National Instruments LabVIEW Runtime Engine had been installed previously. Do not connect the instrument to the computer until the software installation is complete and the computer has been restarted.

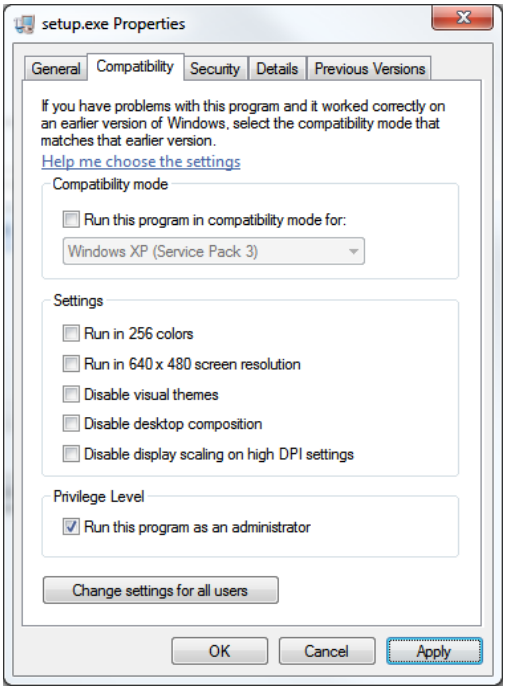
Insert the USB drive that came with the instrument and open it to view the contents.



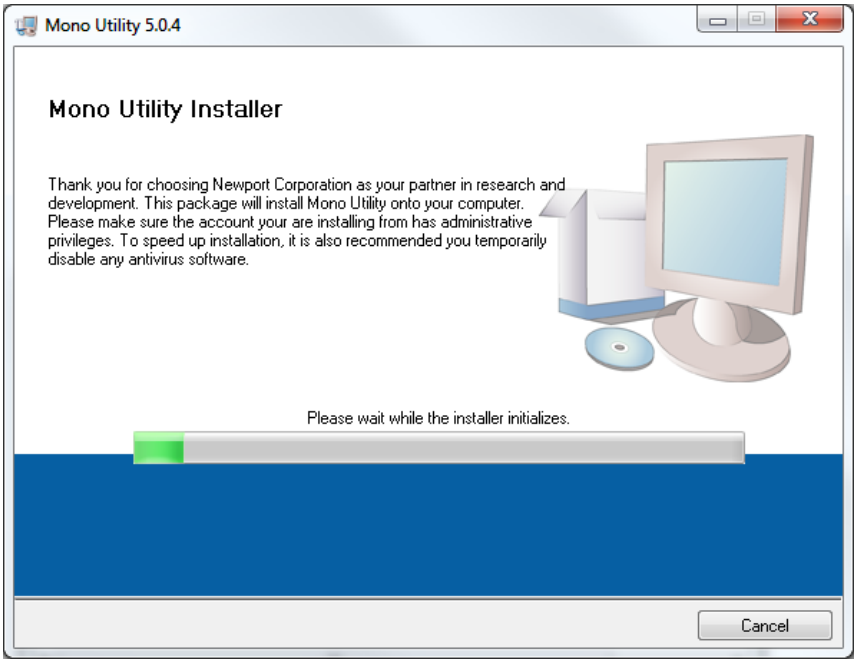
Right click on the setup.exe application and select Properties.



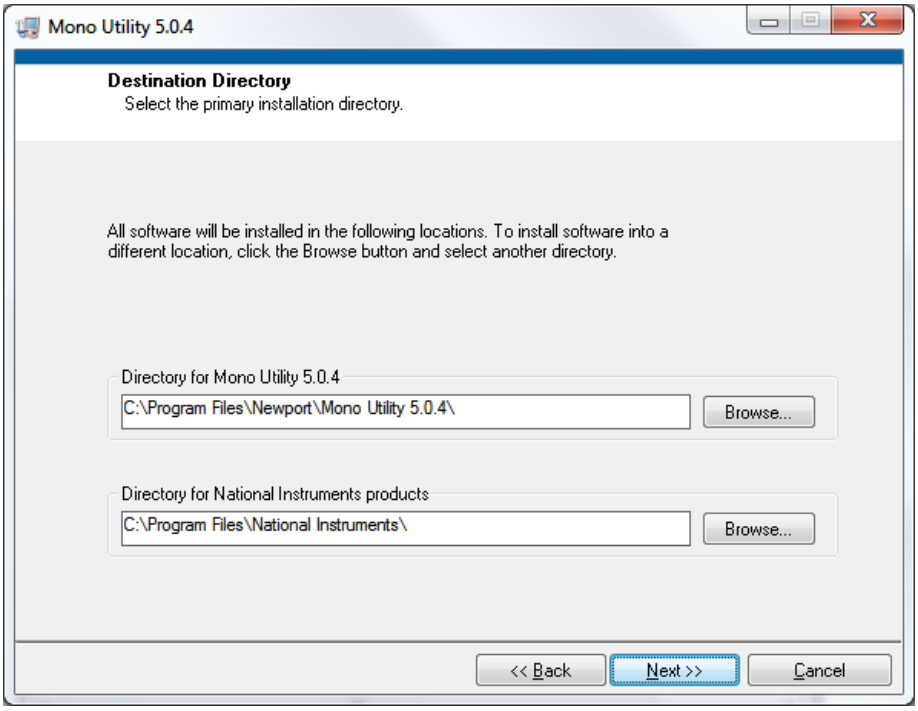
Click on the Compatibility tab. Check “Run this program as an administrator.” Click “Apply” and “OK”.



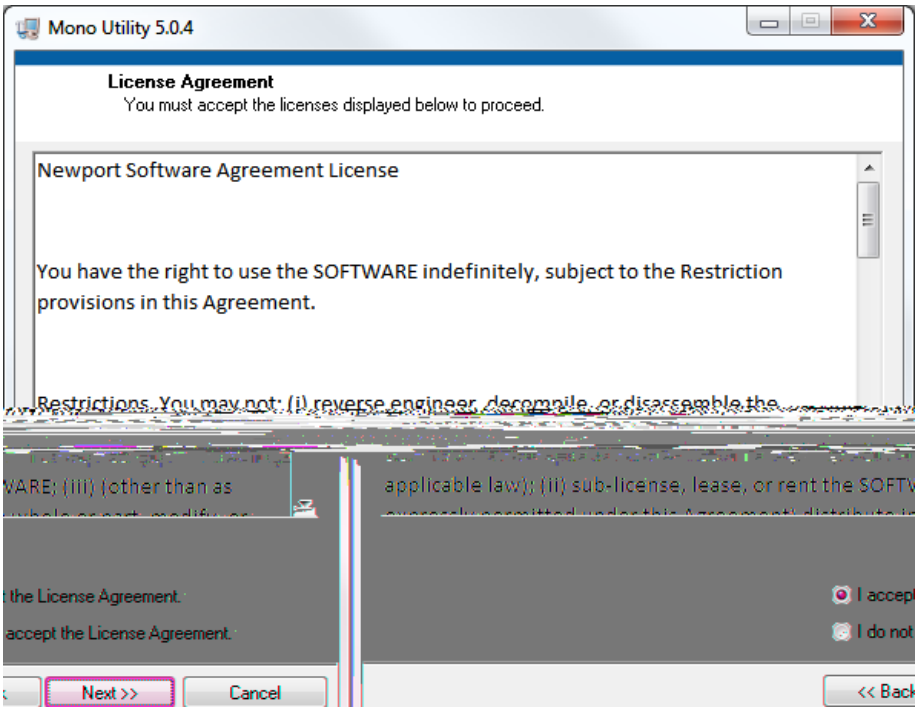
Double click the setup.exe application to begin the utility software installation.



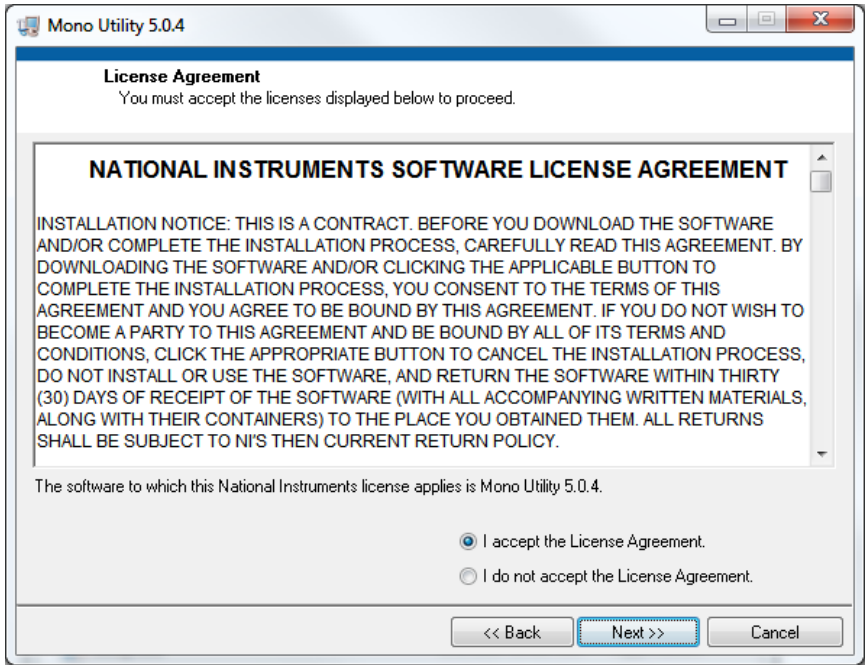
Select the destination directories and click “Next”.



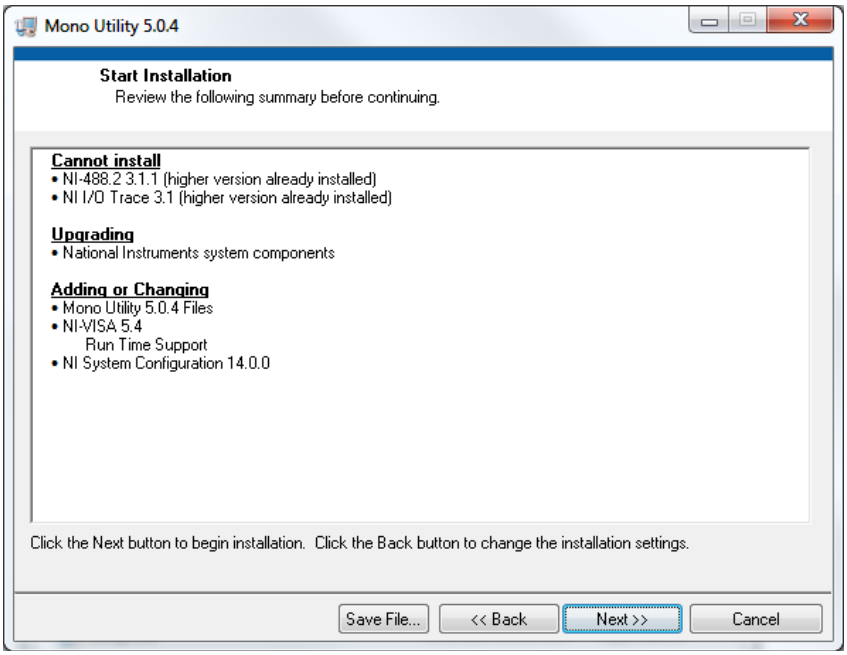
Accept the Newport License Agreement and click “Next.”



Accept the National Instruments License Agreement and click “Next.”



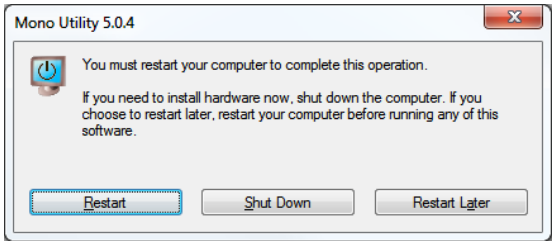
The following screen indicates which software is to be installed. This screen’s appearance may vary if other National Instruments software is already installed on the computer.



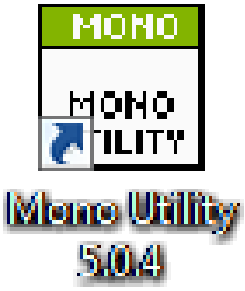
When the software installation is complete, click “Next”.



When prompted, select “Restart” to finish the software installation.



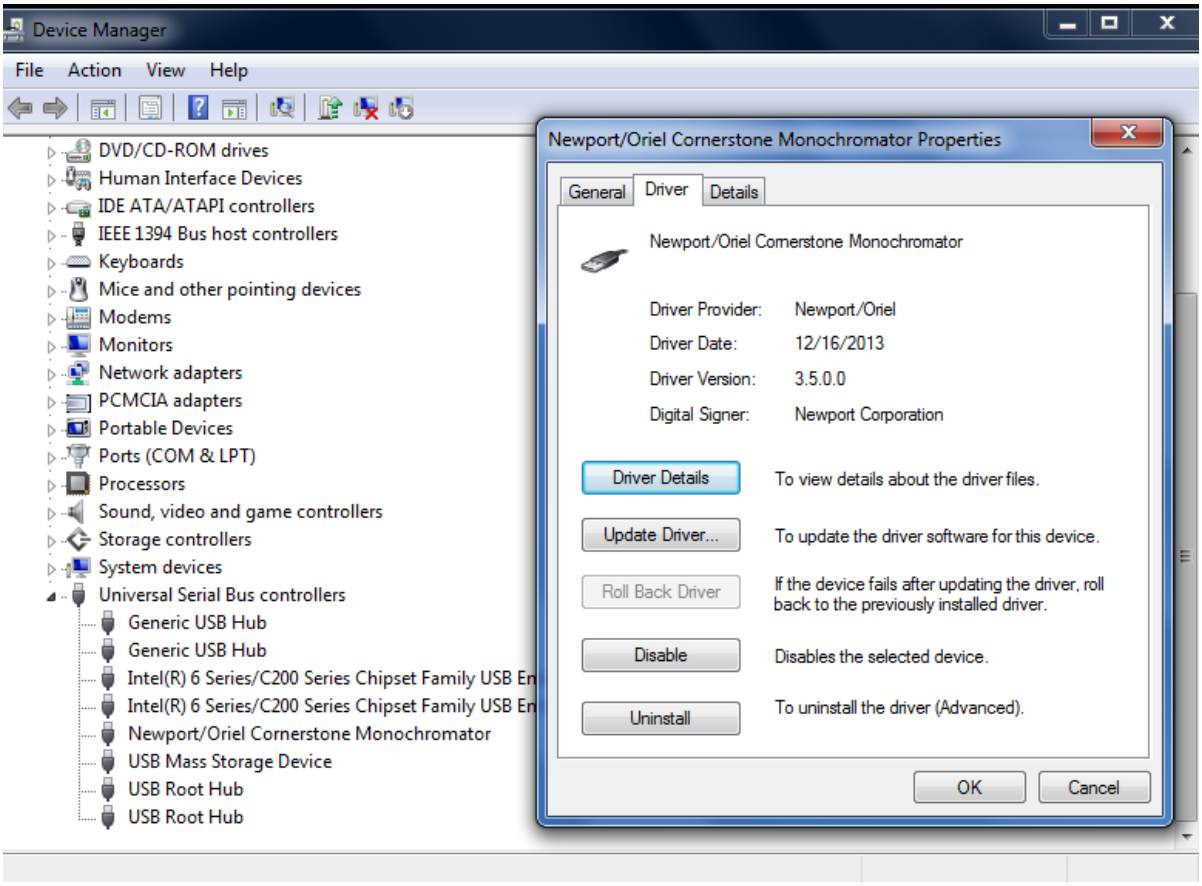
The installation software will have placed a shortcut onto the desktop, as shown below. The program may also be accessed through Start → Newport → Mono Utility 5.0.x.



4 ESTABLISHING COMMUNICATION

All instruments that communicate via USB interface must have the driver installation verified prior to using the Mono Utility software. The instrument must finish the startup routine prior to connecting the USB to computer.

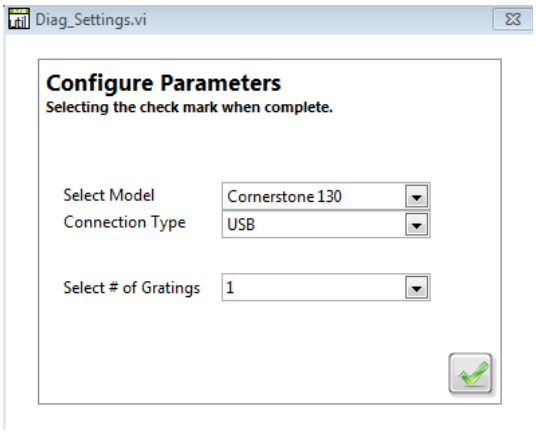
Connect the instrument to the computer, turn it on and allow it to finish its startup routine. Once the instrument is ready, ensure through the Windows Device Manager that communication has been successfully established. Below is a screen capture showing the USB driver correctly installed.



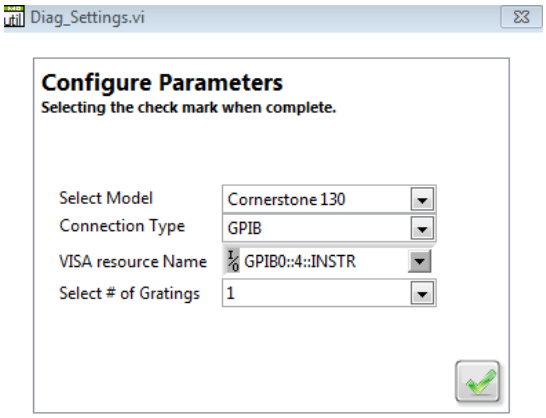
Double click on the shortcut icon on the desktop to start the Mono Utility software. A window will appear allowing the software to be configured for the instrument being utilized.

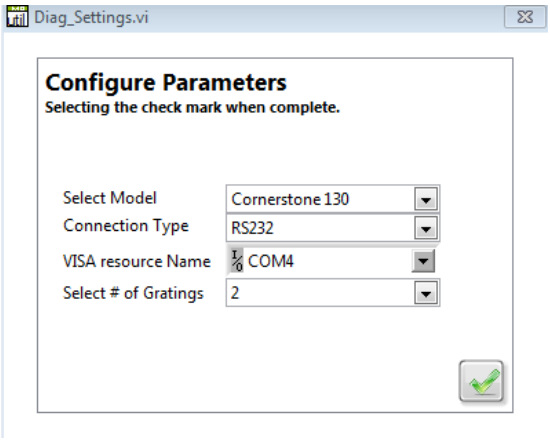
NOTE:
Always ensure the instrument has completed its startup routine before opening the software application. The startup routine is complete when the gratings, filters, port selection mirror and motorized slits are in position and no further noises are made by the instrument.

Being by selecting the instrument model first. Available choices are the Cornerstone 130 or Cornerstone 260/MS260i models.



The default connection type is USB. The GPIB or RS232 options may be selected. The VISA resource Name field allows the GPIB board index and address to be selected, or the RS232 COM Port.



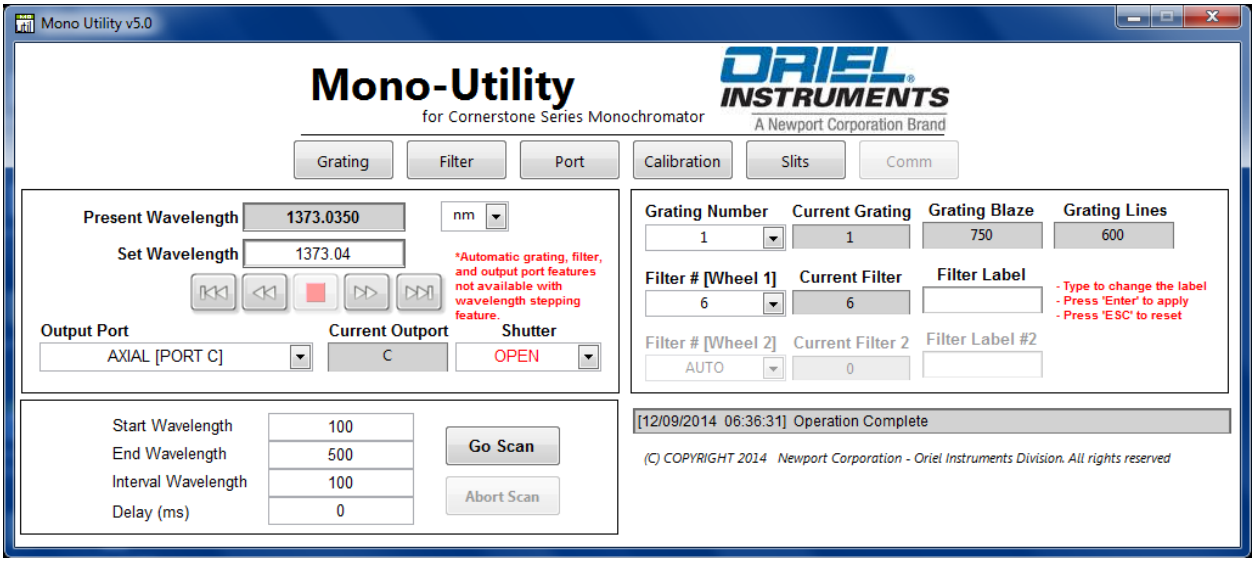


Select the number of gratings installed in the instrument. If unsure, refer to the calibration parameters supplied with the instrument on the USB drive. Then click the green check mark to proceed to the main application window.

5 USING THE UTILITY SOFTWARE

5.1 FRONT PANEL PARAMETER SETTINGS

The main application window, shown below, provides easy access to most of the Cornerstone functions.



Present Wavelength/Set Wavelength: "Present Wavelength" indicates the wavelength position of the monochromator. "Set Wavelength" allows the user to change "Present Wavelength" to different wavelength value. The wavelength units indicators on the right allows user to set different wavelength units. Choices for units are nanometers (nm), micrometers (µm) or wavenumber (cm^{-1}).

Step Wavelength/Stop: The icons under the "Set Wavelength" field may be used to step the monochromator wavelength forwards or backwards. Choices are single step or continuous steps. Continuous steps continue to change the wavelength until the Stop icon is clicked.

Output Port: For instruments with dual output ports, this selection allows users to choose either the "Axial" [C] or "Lateral" [B] port. The "Current Output" field displays the selected port.

Shutter: Indicates and allows changing the shutter status. Choices are open or closed.

Go/Abort Scan: Once the Start Wavelength, End Wavelength, Interval Wavelength (step size) and Delay field are filled in with the desired scan parameters, the Go Scan icon allows the scan to begin. Click the Abort Scan icon to stop the scan at any time.

Grating Number: shows the currently selected grating position, in addition to its blaze wavelength and groove density in lines per millimeter. Using the pull-down menu, the active grating may be changed or the auto grating selection feature may be enabled.

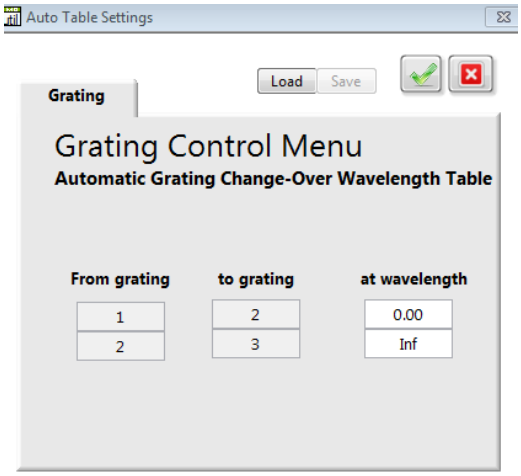
Filter #: shows the currently selected filter, and the filter wheel number. Note that the Cornerstone and the MS260i models only support a single filter wheel. Using the pull-down menu, the active filter may be changed or the auto filter selection feature may be enabled.

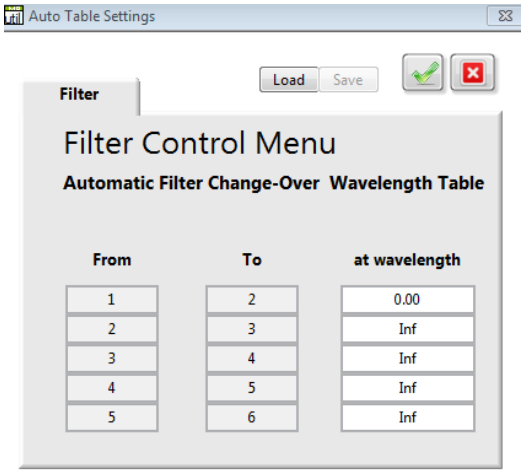
Filter Label: Allows up to eight characters to be entered for labeling the active filter. If the automatic filter selection is enabled, this feature is not enabled. All characters (upper case, lowercase, letters, numbers and symbols) may be entered. Labels greater than eight characters are truncated.

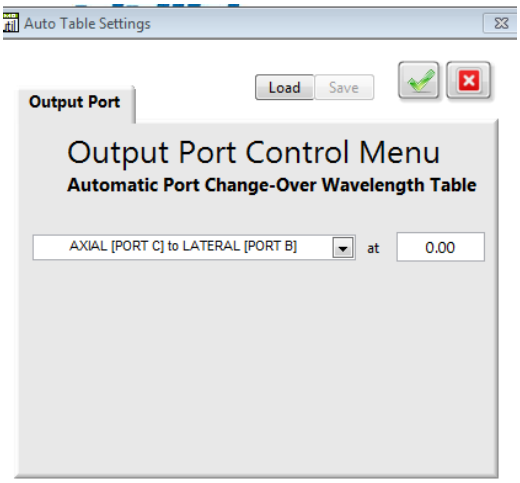
5.2 GRATING, FILTER, OUTPUT PORT SETTINGS

The following control menus allow users to set up tables that determine the filter, grating and output port in use over specific wavelength ranges. The uppermost wavelength is entered as “Inf”, which is an abbreviation for Infinity. To activate these settings, the selected grating, filter and/or port need to be set to “Auto” in the main application window.

The settings may be saved and re-loaded as needed. Type the desired file name and file extension as appropriate for the parameter table. Use file extension .grt (gratings), .flt (filters) or .prt (port).



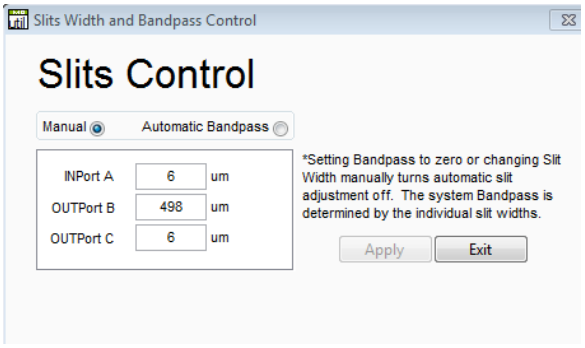




5.3 MOTORIZED SLIT SETTINGS

The Utility Menu also allow users to control or change motorized slits width in “Manual” mode by setting the width (in micrometers) for each slit at the input and output ports.

In “Automatic Bandpass” mode, the user may allow the software to set all input and output port slit widths. The user enters the desired bandpass, and the software adjusts the slit widths to maintain that bandpass at all wavelengths. The desired bandpass is entered in the same units as was selected in the main application window.

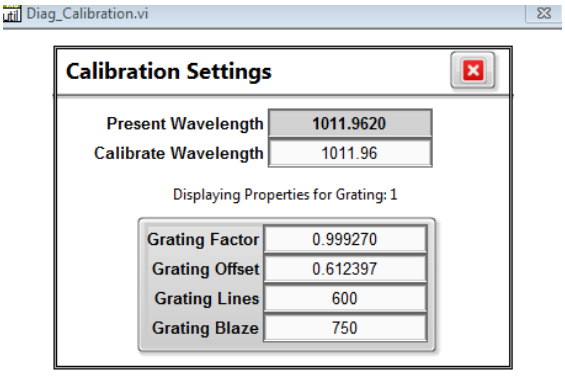




5.4 CALIBRATION PARAMETERS SETTINGS

The Parameters icon in the main application window allows the calibration parameters to be displayed and changed, if desired, for the active grating. Additionally, the grating line density and blaze wavelength may also be viewed or updated.

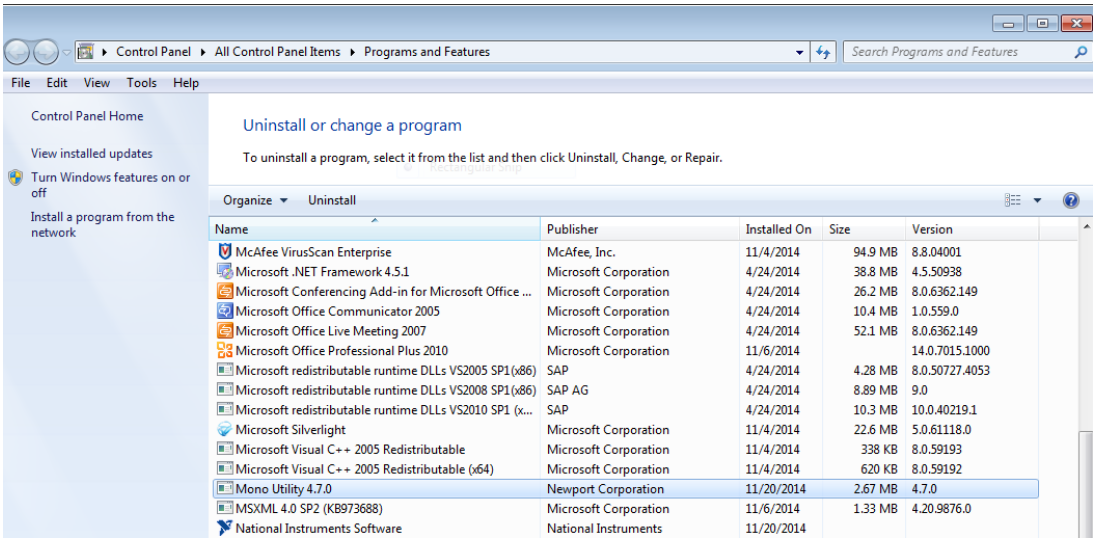
Use caution when changing grating factors or offsets. Refer to the instrument’s user manual for more information.



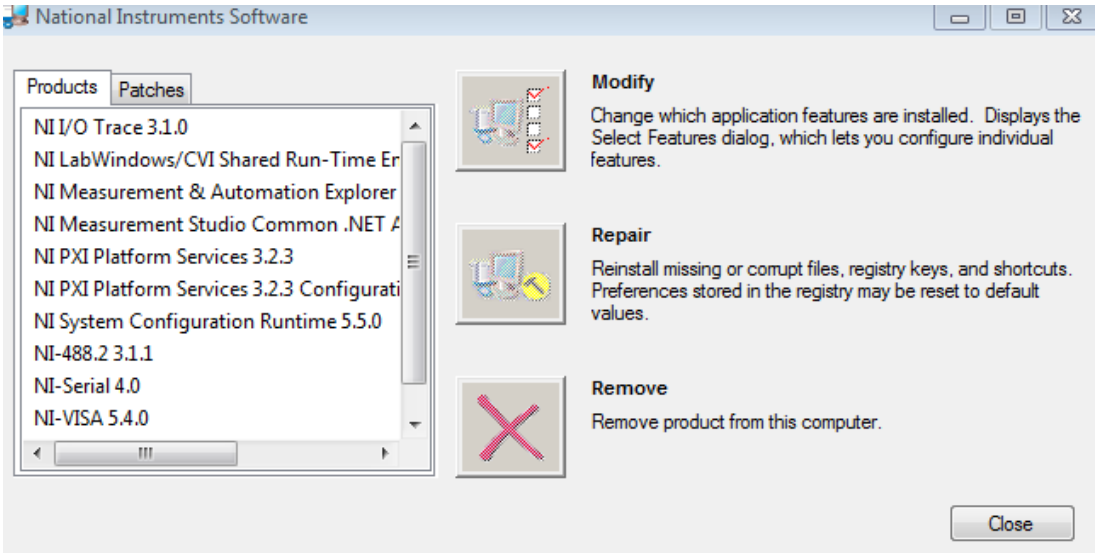
6 APPENDIX: UNINSTALLING PREVIOUS SOFTWARE VERSIONS

1. Connect the monochromator or spectrograph to the computer and power it up.

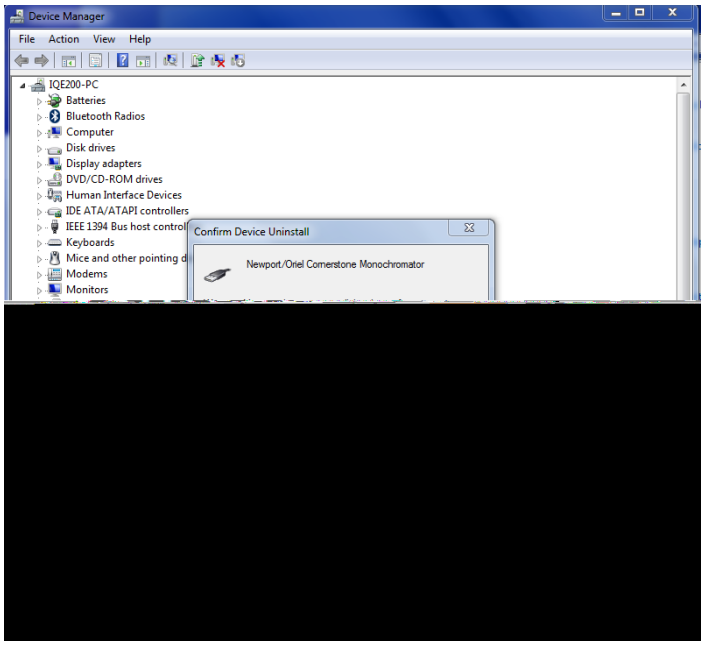
2. In the Windows Start menu, click on Control Panel, and then select Program and Features. This shows a list of all software currently installed on the system, including the version numbers. Select and uninstall Mono Utility version x.x.x and National Instrument Software. Uninstallation will take approximately 10 minutes total.



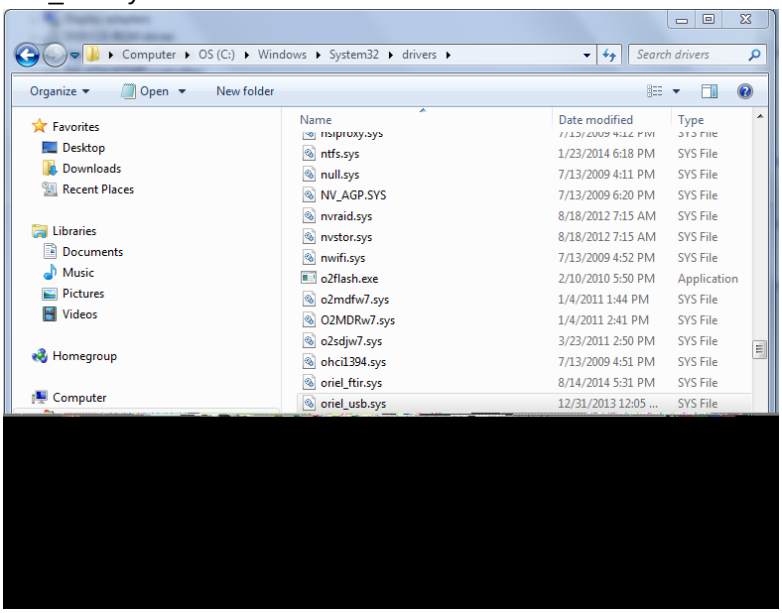
NOTE: Removing National Instruments software requires user interaction to select all NI programs as displayed under the “Products” tab. After selecting all products, click “Remove”.



3. If the instrument is connected by a USB cable to the computer, go to the Windows Device Manager. Open the Universal Serial Bus controllers category. Right click “Newport/Oriel Cornerstone Monochromator” to display the option menu dialog box. Select “Uninstall”. A confirmation dialog box will appear next. Check the box to “Delete the driver software for this device” and click OK. Refresh the Device Manager to ensure the e “Newport/Oriel Cornerstone Monochromator” driver was removed.



4. In Windows Explorer, navigate to the following directory: C:\Windows\System32\drivers. Delete the file named “oriel_usb.sys”.



5. Navigate to C:\Windows\inf directory and perform the following steps:
    - Locate and delete the “Cornerstone drivers” directory (if this directory cannot be found, it was removed automatically by Windows in step 2).
    - Search for and delete both “x64” and “x86” directories (if these directories cannot be found, it was removed automatically by Windows).

6. If Mono Utility 4.7 was installed, delete files “oriel_cs.cat” and “oriel_usb.inf”. If these files cannot be found, they were removed automatically by Windows

7. Disconnect the monochromator or spectrograph from the computer and proceed with installation of the latest utility software as noted in this Guide.

7 WARRANTY AND SERVICE

7.1 CONTACTING ORIEL INSTRUMENTS

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To obtain information regarding sales, technical support or factory service, United States and Canadian customers should contact Oriel Instruments directly.

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949-863-3144

Fax: 949-253-1680

Sales: oriel.sales@newport.com
Technical assistance: oriel.tech@newport.com
Repair Service: rma.service@newport.com

Customers outside of the United States must contact their regional representative for all sales, technical support and service inquiries. A list of worldwide representatives can be found on Oriel's website: http://www.newport.com/oriel.

7.2 REQUEST FOR ASSISTANCE / SERVICE

Please have the following information available when requesting assistance or service:

Contact information for the owner of the product.
Instrument model number (located on the product label).
Product serial number and date of manufacture (located on the product label).
Description of the problem.

To help Oriel's Technical Support Representatives diagnose the problem, please note the following:

Is the system used for manufacturing or research and development?
What was the state of the system right before the problem?
Had this problem occurred before? If so, when and how frequently?
Can the system continue to operate with this problem, or is it non-operational?
Were there any differences in the application or environment before the problem occurred?

7.3 LOANER / DEMO MATERIAL

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First printing 2014

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