

BWSpec[™] Software and Hardware Installation Guide

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290020239-D (2016/09/19)

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1. Introduction

These instructions will guide you through the software installation of BWSpec 4.04 and the driver/hardware installation of your spectrometer onto your Windows-based computer.

2. Supported Operating Systems

Windows XP* (32 bit) Windows Vista (32 bit & 64 bit) Windows 7 (32 bit & 64 bit) Windows 8 / 8.1 (32 bit & 64 bit) Windows 10* (32 bit & 64 bit)

*Note although the above operating systems are supported, Windows 7 and 8 / 8.1 are recommended. Microsoft have ended official support for Windows XP, and it is only listed here to provide information to support for legacy PC system. B&W Tek therefore no longer guarantee Windows XP support.

Some screenshots below indicate the 32-Bit software and 64-Bit software versions are being installed. The same windows apply for both Bit operating systems versions, except where noted.

3. Minimum System Requirements

Meets or exceeds the System Requirements for your PC's Operating System respectively Processor: 1.5GHz or faster RAM: 1GB or more Hard disk space: 250MB available or more*

* Excluding additional hard disk space required to store generated data by the application.

4. Software Installation

- Open the BWSpec folder located on your CD or downloaded .zip file.
- Open the Install folder:
- Open the appropriate Folder for your appropriate Bit Operating System:
 If you are not sure if you have a 32-Bit or 64-Bit OS, check with your IT Dept.



Name		
퉬 32bit		
퉬 64bit		

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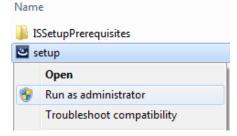


4.1 Running the 'setup.exe' file and Prerequisites

Find the section below which matches the Operating System on your computer: Sections include: Windows XP, Vista, Windows 7, Windows 8, Windows 8.1, and Windows 10.

4.1.1 Windows XP, Vista, or 7

• Right Click on the 'setup.exe' file and select 'Run as Administrator'



• A Security Warning window will appear.



Click 'Run'



• An InstallShield Wizard may appear for C++ 2008 SP1 to be installed. Click 'Install'

	BWSpec4_64bit - InstallShield Wizard	
BWSpec4_64bit requires the following items to be installed on your computer. Click Insta to begin installing these requirements.		
Status	Requirement	
Pending	Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)	
	Install Cancel	

	BWSpec4_64bit - InstallShield Wizard				
	BWSpec4_64bit requires the following items to be installed on your computer. Click Install to begin installing these requirements.				
Status	Status Requirement				
Installing	Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)				
Installing N	Installing Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)				
	Install				

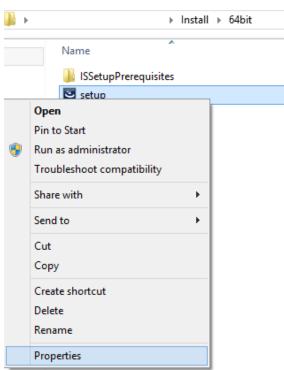
• Go to the 'Preparing to Install' Section 5.



4.1.2 Windows 8 and 8.1 Pro

• Right Click on the setup file.

Select Properties





• In the Properties window, select the 'Compatibility' tab.

ٹ		setup Prop	oerties			x
General	Compatibility	Digital Signatures	Security	Details		
		king correctly on th bility troubleshoote		of Windows	8,	
Ru	n compatibility tro	oubleshooter				
How d	lo I choose com	patibility settings ma	nually?			
	patibility mode					
		in compatibility mo	de for:			
VVir	idows 7		~			
Setti	ngs					
F	Reduced color m	ode				
8-bi	t (256) color	\sim				
F	Run in 640 x 480	screen resolution				
)isable display so	aling on high DPI :	settings			
Privi	ege level					
	-	as an administrator				
	Change settings	for all users				
		ОК		ancel	Apply	
		UN			CPP0	



• Under 'Compatibility mode', enable 'Run this program in compatibility mode for:"

In the dropdown menu, select 'Windows 7'

setup Properties ×
General Compatibility Digital Signatures Security Details
If this program isn't working correctly on this version of Windows, try running the compatibility troubleshooter.
Run compatibility troubleshooter
How do I choose compatibility settings manually?
Compatibility mode Run this program in compatibility mode for:
Windows 7 V
Settings Reduced color mode 8-bit (256) color
Run in 640 x 480 screen resolution
Disable display scaling on high DPI settings
Privilege level
Change settings for all users
OK Cancel <u>A</u> pply



• Under 'Privilege level', Enable 'Run this program as an administrator' Click 'Apply', then the 'OK' button

setup Properties ×
General Compatibility Digital Signatures Security Details
If this program isn't working correctly on this version of Windows, try running the compatibility troubleshooter.
Run compatibility troubleshooter
How do I choose compatibility settings manually?
Compatibility mode Run this program in compatibility mode for:
Windows 7 V
Settings Reduced color mode
8-bit (256) color V
Run in 640 x 480 screen resolution
Disable display scaling on high DPI settings
Privilege level Run this program as an administrator
P Change settings for all users
OK Cancel Apply

• Double-click the 'seup.exe' file to begin the installation process:

▶ Install ▶ 64bit		v Ċ Sear	ch 64bit
Name	Date modified	Туре	Size
\mu ISSetupPrerequisites	6/26/2013 9:38 AM	File folder	
🔄 setup	6/25/2013 3:22 PM	Application	66,840 KB



• An InstallShield Wizard may appear for C++ 2008 SP1 to be installed. Click 'Install'

	BWSpec4_64bit - InstallShield Wizard
	WSpec4_64bit requires the following items to be installed on your computer. Click Install o begin installing these requirements.
Status	Requirement
Pending	Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)
	Install Cancel

	BWSpec4_64bit - InstallShield Wizard				
BWSpec4_64bit requires the following items to be installed on your computer. Click Install to begin installing these requirements.					
Status	Status Requirement				
Installing	Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)				
Installing M	licrosoft Visual C++ 2008 SP1 Redistributable Package (x64)				
Installing M	licrosoft Visual C++ 2008 SP1 Redistributable Package (x64)				
Installing M	licrosoft Visual C++ 2008 SP1 Redistributable Package (x64)				

• Go to 'Preparing to Install' section 5.



4.1.3 Windows 10

- Before running the setup.exe file, open the ISSetupPrerequisites Folder
- Run the installation files inside each of the sub-folders; 64-bit is shown on the left, 32-bit on the right.
 - Iangpack.exe
 NetFx20SP2_x64.exe
 NetFx64.exe
 Vcredist_x64.exe



- When prompted, download and install the latest Net 3 files.
- After all the Prerequisites are installed, follow the installation for Windows 8, Section 4.1.2.



5. Preparing to Install

WSpec4_32bit - InstallShield Wizard			
	Preparing to Install		
C	BWSpec4_32bit Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.		
1000	Extracting: BWSpec4_32bit.msi		
	Cancel		

Extracting

BWSpec4_32bit - InstallShield Wizard		
	Preparing to Install	
	BWSpec4_32bit Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.	
2 100	Decompressing: BWSpec4_32bit.msi	
	Cancel	

Decompressing



6. InstallShield Wizard

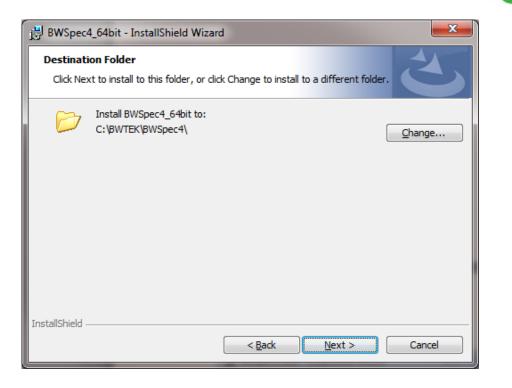
BWSpec4_32bit - InstallShield Wizard		
	Welcome to the InstallShield Wizard for BWSpec4_32bit	
	The InstallShield(R) Wizard will install BWSpec4_32bit on your computer. To continue, dick Next.	
	WARNING: This program is protected by copyright law and international treaties.	
	< Back Next > Cancel	

• Welcome Screen: Click "Next"

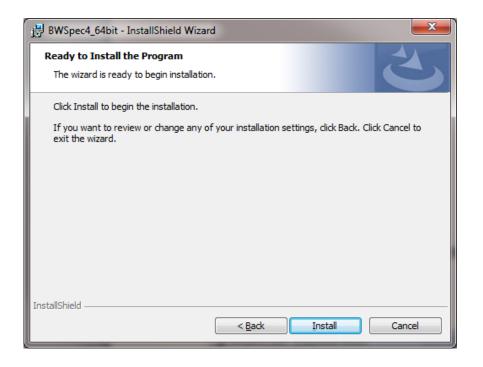
BWSpec4_32bit - InstallShield Wizard	x
License Agreement Please read the following license agreement carefully.	5
B&W Tek, Inc. Software License Agreement	* 11
PLEASE READ THIS SOFTWARE LICENSE AGREEMENT CAREFULLY BEFORE DOWNLOADING OR USING THIS SOFTWARE. BY INSTALLING, COPYING, OF OTHERWISE USING THE SOFTWARE, YOU AGREE TO BE BOUND BY THE TERMS OF THIS END USER LICENSE AGREEMENT ("EULA"). YOU AGREE THAT YOUR USE OF THE SOFTWARE ACKNOWLEDGES THAT YOU HAVE READ THIS AGREEMENT UNDERSTAND IT, AND AGREE TO BE LEGALLY BOUND BY ITS TERMS AND CONDITIONS.	R S E
 I accept the terms in the license agreement: □ I do not accept the terms in the license agreement 	
InstallShield < <u>B</u> ack Cancel	

- License Agreement page: Read the license agreement.
- Select, "I accept the terms in the license agreement" to continue with installation.
- Click "Next"

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- Destination folder where BWSpec will be installed: C:\BWTEK\BWSpec4
- Click "Next"



Click "Install"

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BWSpec4_32bit - InstallShield Wizard		
	BWSpec4_32bit ram features you selected are being installed.	
P	Please wait while the InstallShield Wizard installs BWSpec4_32bit. This may take several minutes.	
	Status:	
	Publishing assembly information	
InstallShield -		
	< <u>B</u> ack Next > Cancel	

Installation progress bar:

BWSpec4_32bit - InstallShield Wizard		
2	InstallShield Wizard Completed	
	The InstallShield Wizard has successfully installed BWSpec4_32bit. Click Finish to exit the wizard.	
4		
	< Back Finish Cancel	

• Installation is completed. Click "Finish"

<u>Do Not</u> open the software program at this time! First install the Hardware

Drivers for the spectrometer.



7. Open the Device Manager

7.1 Windows XP, Vista, 7, 8, 8.1, or 10:

- In the Search Bar type **Device Manager**, and click Enter.
- Or Press 'Windows Key + R', in the 'Run' window type: mmc devmgmt.msc, and Press OK
- The Device Manager window will open
- In the Device Manager window expand the "Universal Serial Bus controllers" [USB] section.
- Plug the spectrometer or Raman unit USB cable into the computer and power on the unit (if applicable).

着 Device Manager	x
<u>File Action View H</u> elp	
a 🏺 Universal Serial Bus controllers	*
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2934	
🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2935	
🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2936	
🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2937	
🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2938	
🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2939	
🟺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A	
🟺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C	
🟺 Realtek USB 2.0 Card Reader	
🟺 USB Root Hub	
🏺 USB Root Hub	
🟺 USB Root Hub	=
🟺 USB Root Hub	
📖 🏺 USB Root Hub	-

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8. Hardware Installation

Below there are several different installation guides for 32-Bit OS, 64-Bit OS, US2.0 and USB 3.0, and Windows 8/8.1 Pro/10. Normally the drivers will install automatically when the unit is powered on and plugged into the USB slot. If the drivers do not install automatically a manual driver installation may be attempted.

Find and follow the appropriate installation guide for your computer and spectrometer hardware. If you are not sure of your computers settings or capabilities, check with your IT Department.

Definitions:

Spectrometers which have USB 3.0 capabilities we refer to as 'USB 3.0' Spectrometers which have only USB 1.1/2.0 capabilities will be referred to as 'USB 2.0' spectrometers.

8.1 USB 2.0 Ported Spectrometer Hardware Driver Installation for

32-Bit OS and 64-Bit OS

- If your spectrometer has a Power Supply, properly connect to an outlet and the spectrometer.
- Connect the USB 2.0 Cable to any USB Port on your computer and then to your spectrometer.

The spectrometer will first show up as an 'Unknown device"

Bevice Manager	- • ×
<u>File Action View H</u> elp	
Other devices	*
🛄 📠 Unknown device <	
Processors	
Sound, video and game controllers	
Storage controllers	
▶ -1. System devices	
a 🚽 Universal Serial Bus controllers	
🔤 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2934	
🔤 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2935	
🔤 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2936	
🔤 🔤 Intel(R) ICH9 Family USB Universal Host Controller - 2937	



After about 30 seconds the 'Unknown device' will change to 'B&W-USB201' automatically.

🚊 Device Manager
<u>File Action View H</u> elp
Other devices
📠 B&W-USB201 🗲
Processors
Sound, video and game controllers
Storage controllers
🔈 🚛 System devices
a 🏺 Universal Serial Bus controllers
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2934
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2935
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2936
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2937
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2938
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2939
📖 🏺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A
🟺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C
🟺 Realtek USB 2.0 Card Reader

After about 30 seconds the 'B&W-USB201' will change to 'B&W TEK Spectrometer' automatically.

🚔 Device Manager	×
<u>File Action View H</u> elp	
🖌 🏺 Universal Serial Bus controllers	-
B&W TEK Spectrometer 🗲	
📕 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2934	
🔤 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2935	
🔤 🚽 Intel(R) ICH9 Family USB Universal Host Controller - 2936	
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2937	
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2938	
📖 🏺 Intel(R) ICH9 Family USB Universal Host Controller - 2939	
📖 🏺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293A	
📖 🏺 Intel(R) ICH9 Family USB2 Enhanced Host Controller - 293C	

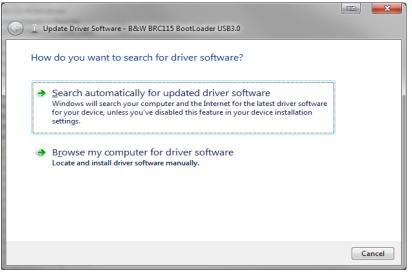
You are now ready to Open BWSpec 4 and run the spectrometer.



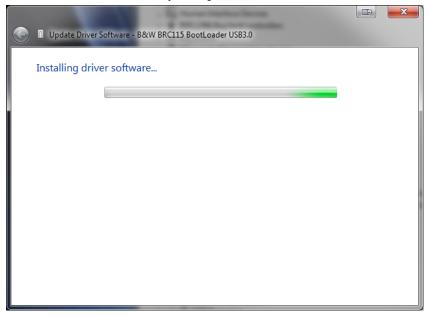
8.1.1 Manually Install USB 2.0 Driver for 32-Bit OS and 64-Bit OS

If your driver installation was unsuccessful, you may attempt to manually install the drivers. For more assistance feel free to contact our customer support team at <u>bwtek.com/support/</u>.

- Right Click on "Unknown Device" and select "Update Driver Software..."
- Search Options:



• Select "Search automatically for updated driver software"





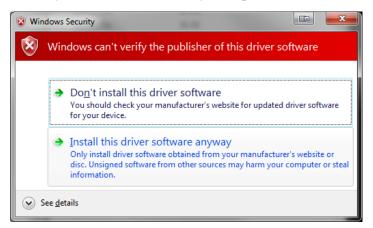
- If "Search automatically for updated driver software" was unsuccessful, select "Browse my computer for driver software" and select this location: C:\BWTEK\BWSpec4\USB Drivers
 - In the USB Drivers folder, select the sub folders for 32bit or 64bit depending on your computer, the sub folder USB2, and the sub folder for your windows version.
 - Windows 10 users, please select the Windows 8 folder.
 - For example on a 64 bit Windows 7 computer, the pathway would be: C:\BWTEK\BWSpec4\USB Drivers\64bit\USB2\win7.
 - Warning! Be sure to select the path that applies to your computers settings!

		×
\bigcirc	Dupdate Driver Software - B&W TEK Spectrometer	
	Browse for driver software on your computer	
	Search for driver software in this location:	
	C:\BWTEK\BWSpec4\USB Drivers\64bit\USB2\win7 Browse	
	☑ Include subfolders	
	Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.	
	Next Ca	ancel

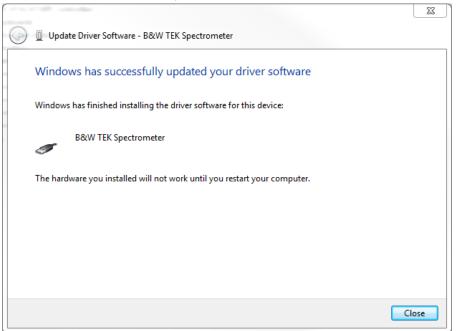
Click "Next"



- Installation will begin
- You may see a Windows Security Prompt:



- Select "Install this driver software anyway"
- Driver will install successfully



• Click "Close"

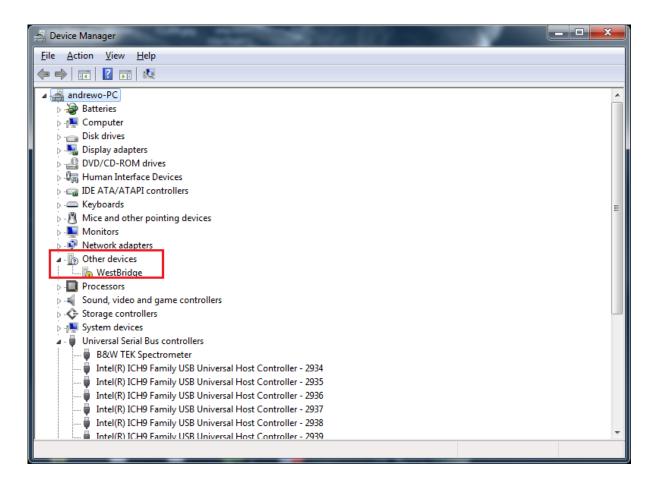


8.2 USB 3.0* Ported Spectrometer Hardware Driver Installation for

32-Bit OS and 64-Bit OS

If your spectrometer has a Power Supply, properly connect to an outlet and the spectrometer.
 Connect the USB 3.0 Cable to any USB Port on your computer and then to your spectrometer.

*The USB Port on the PC does *Not* need to be a USB 3.0 port for the spectrometer to operate. Using less than a USB 3.0 port will simply reduce the transfer speed between the spectrometer and PC.



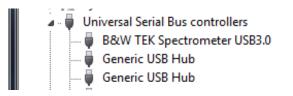
• After about 30 seconds the "WestBridge" driver will appear in the Device Manager.



 After about 30 seconds the "WestBridge" will change to "B&W BTC665N BootLoader USB3.0" or "B&W BTC655N BootLoader USB3.0" or "B&W BRC115 BootLoader USB3.0" or similar and will then appear under USB Controllers in the Device Manager.

 Un Un	iversal Serial Bus controllers
	B&W BRC115 BootLoader USB3.0
🖣	Generic USB Hub
🏺	Generic USB Hub
İ	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B34
🖣	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B3C

 After about 30 seconds, "B&W (model number) BootLoader USB3.0" will change into "B&W TEK Spectrometer USB3.0" under USB Controllers.



You are now ready to Open BWSpec4 and run the spectrometer.

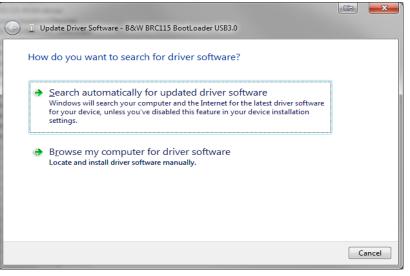


8.2.1 Manually Install USB 3.0 Driver for 32-Bit OS and 64-Bit OS

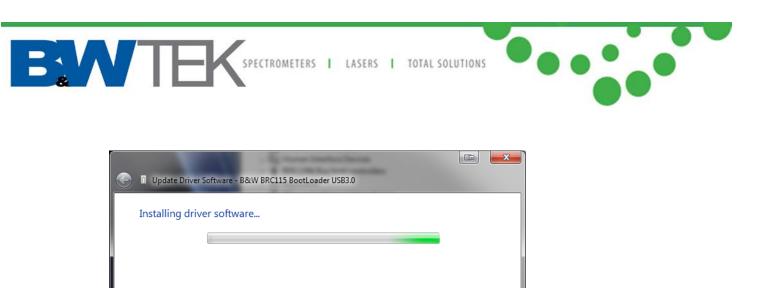
If your driver installation was unsuccessful, you may attempt to manually install the drivers. For more assistance feel free to contact our customer support team at <u>bwtek.com/support/</u>.

🚔 Device Manager				
File Action View Help				
	× 15			
 Sound, video and game controller Storage controllers System devices Universal Serial Bus controllers 	rs			
B&W BRC115 BootLoader				
Generic USB Hub	Update Driver Software			
Generic USB Hub Intel(R) 5 Series/3400 Serie Intel(R) 5 Series/3400 Serie	Disable Uninstall	ller - 3B34 ller - 3B3C		
P1100 USB EWS Device Dri	Scan for hardware changes			
Renesas Electronics USB 3.	Properties			

- Right Click on "WestBridge" or "B&W (model number) BootLoader USB3.0" and select "Update Driver Software..."
- Search Options:



• Select "Search automatically for updated driver software"



- If "Search automatically for updated driver software" was unsuccessful, select "Browse my computer for driver software" and select this location: C:\BWTEK\BWSpec4\USB Drivers
 - In the USB Drivers folder, select the sub folders for 32bit or 64bit depending on your computer, the sub folder USB3, and the sub folder for your windows version.
 - Windows 10 users, please select the Windows 8 folder.
 - For example on a 64 bit Windows 7 computer, the pathway would be: C:\BWTEK\BWSpec4\USB Drivers\64bit\USB3\win7.
 - Warning! Be sure to select the path that applies to your computers settings!

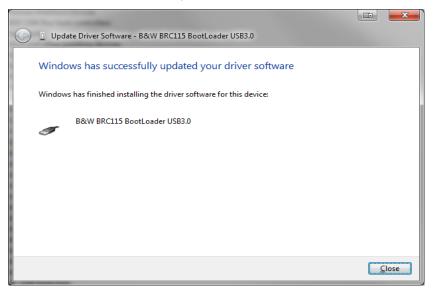
\bigcirc	Update Driver Software - B&W TEK Spectrometer USB3.0
	Browse for driver software on your computer
	Search for driver software in this location:
	C:\BWTEK\BWSpec4\USB Drivers\64bit\USB3\win7
	✓ Include subfolders
	Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
	Next Cancel



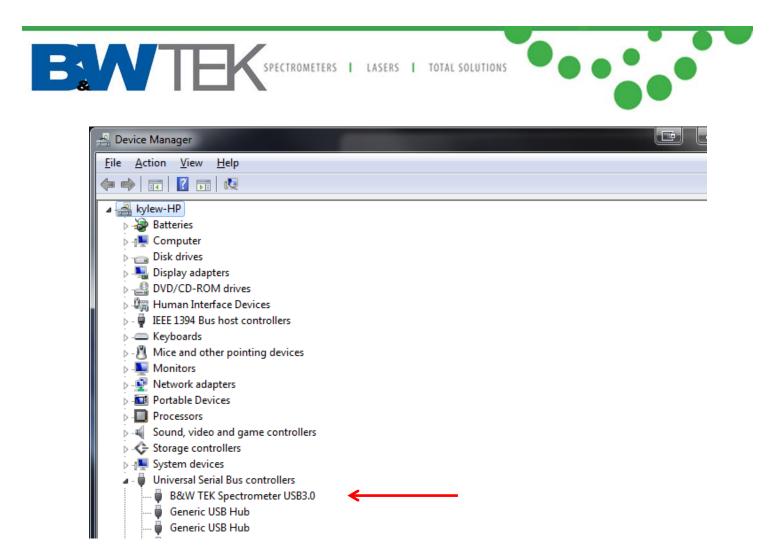
- Click "Next
- Installation will begin
- You may see a Windows Security Prompt:



- Select "Install this driver software anyway"
- Driver will install successfully



• Click "Close"



• B&W TEK Spectrometer USB3.0 will appear under USB Controllers.

You are now ready to Open BWSpec 4 and run the spectrometer.

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8.3 Windows 8/8.1 Pro Driver Installation

For certain updates in Windows 8/8.1 Pro there are incompatibilities with the "Digital Driver Signatures". By disabling this "feature" you can correctly install the spectrometer unit's drivers. Apply these steps after you have properly installed the BWSpec4 software, and changed the Compatibility Mode to Windows 7 in <u>Section 4.1.2</u>. Your Windows 8 computer may restart during this procedure. Please save all your work and close any open programs or applications.

• You may also receive the following "Program Compatibility Assistant" message concerning an unsigned driver:



• Click "Close".

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- Unplug spectrometer unit from PC
- Perform a Swipe action on your screen/touchscreen from the right side to the left to bring up the "Charms Bar". Go to Settings and choose "Change PC Settings"
- For Windows 8:
- Choose "General" and go to Advanced startup. You will have to Restart during this option
- For Windows 8.1 Pro: (and some Windows 8 computers depending on which updates have been made)
- Choose "Update and Recovery" => "Recovery" and then go to Advanced startup. You will have to Restart during this option
- Choose "Troubleshoot" => Advanced options => Startup Settings
- Press the 7 or F7 key when prompted to **Disable driver signature enforcement**
- Your computer will restart.
- Plug in Spectrometer unit to PC
- The unit will show "Unknown Device" or "Westbridge". Continue the installation instructions in <u>Section</u> 8.1 for USB 2.0 or <u>Section 8.2 for USB 3.0</u>.