



2 Unpack the Camera

Camera	Essentials			Cables		
 iKon-XL CCD Camera (SO model)	 USB 3.0 PCIe Card	 Fibre Optic PCIe Card	 Anti-Static Strap	 USB 3.0 Cable	 Camera Control Cable*	 Country Specific Power Cord
 Documentation scan or visit: andor.oxinst.com/ welcome	 Software (copy supplied)	 CCU-500A Camera Controller*	 Fibre Optic (LC-LC)	 Trigger Cable* 3 x BNC to SMB	 Power Supply	

* CCU-500 units are configured to operate only with the supplied CCU-500 to camera control cable.

1 Prepare your Facility



Handle the camera and accessories with care. iKon-XL SO weighs approx 11 kg [24 lb 4 oz] inc. shipping cover.



Use correct power supply and cables.



REMOVE PROTECTIVE COVER BEFORE USE. Take care during installation as delicate components are exposed. Camera must be attached to a vacuum chamber and pumped down to $<10^{-4}$ mBar before being connected to a power supply and turned on.



Keep dry, $<70\%$ non condensing.



Observe anti-static precautions when installing the camera.



Operate between -30°C and 30°C
Store between -30°C and 50°C
Max. sustainable bake-out temperature is $+55^{\circ}\text{C}$



Ensure 100 mm clearance around camera and power supply vents (Do **not** block vents when operating on benchtop).



If using liquid cooling the liquid cooler must be connected and running before switching on the camera. Refer to Section 5 for further guidelines.



Operation of the camera close to intense pulsed sources (e.g. plasma and X-ray sources) may compromise performance.



This is a Class 1 laser product.

Refer to the hardware guide for further guidelines.

3 Install Software (Solis or SDK3)

You must have administrator access on your PC to perform this installation.

These instructions cover installation of both Andor Solis and Andor SDK if ordered. A copy of the software is provided within the camera box. Additionally, the latest software files are available to download on request, please sign in or create an account at andor.oxinst.com/downloads

Windows: Switch on the PC, run the setup exe from the supplied copy or the downloaded file: e.g. AndorSDKSetup- $<version>$.exe


1. Confirm the version of software (minimum is v2.1x)
2. Follow the on screen prompts. Select the installation directory when prompted.
3. If prompted for camera type select **iKon-XL**.
4. On the final window click on "Install". Continue to follow the on screen prompts.
5. To complete the installation, when prompted select "Yes, restart the computer now" and click on the finish button.

Linux: Switch on the PC, unpack the archive that you have received. In the following steps replace $<version>$ with the version number of the archive you have. e.g. 2.102.30000.0

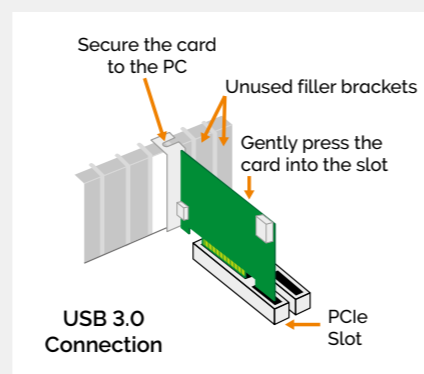
1. Open a terminal. Change the directory to where the andor- $<version>$.tar.gz file is located. Type "tar -zxvf andor- $<version>$.tar.gz". A new directory named "andor" is created.
2. To install the SDK run the script "install_andor" from the andor directory and follow the on screen prompts. (See the INSTALL file located in the same directory for further information).



4 Install the Fibre Optic Adapter or USB 3.0 Card

 **Ensure your PC is powered off. Ensure anti-static precautions using the anti-static strap provided. Keep all screws safe.**

1. Unplug all cables from the rear of the computer.
2. Open the PC enclosure to gain access to the expansion slots.
3. Locate a suitable PCIe slot for either **fibre optic** or **USB 3.0** cards: *If you are unsure which slot is correct, please consult the PC user manual. Note that x1 slots may be shared with other devices resulting in reduced system performance.*
4. Remove the filler bracket corresponding to the slot you intend to use.
5. Remove the PCIe card carefully from its protective ESD packaging and insert the card connector fully into the expansion slot.
6. Ensure the card's mounting bracket is flush with any other mounting or filler brackets to either side of it, then secure the controller card in place.
7. Fit the computer cover and any accessories that you were using previously.



Installing the Fibre Optic or USB 3.0 Card Drivers

1. Install the supplied drivers to ensure that the latest supported drivers are used.
2. Fibre optic adapter card drivers need to be installed before the PC is connected to the camera. These are not part of the Solis/SDK installation and need to be installed manually from the supplied software copy, refer to the iKon-XL Hardware Guide Section 3.10 to 3.12 for further information.
3. Once the drivers are installed, the fibre optic adapter card should be detected automatically.

Disable Power Management for the USB 3.0 Host Controller

It is recommended that power management should be disabled to ensure optimum camera response and performance. **Note you will need administrator access to perform these steps.**

1. Navigate to 'USB 3.0 Host Controller' properties menu in Device Manager (Control Panel>Device Manager> Universal Serial Bus Controllers).
2. Select the Advanced tab.
3. Check the Disable USB 3.0 power management functions checkbox.

5 Best Practice Guidelines



Contamination & Damage

When not in use, the sensor chamber should be covered and sealed. Due to the exposed nature of the sensor, extreme care should be taken with the camera, as damage can easily occur through mishandling or by contamination. If the sensor becomes contaminated, due to accident or misuse, please contact Andor immediately for advice on cleaning.



Vacuum Operations

Ensure that the vacuum environment to which the camera is fitted is free of water vapour and other contaminants. Care should also be taken to control pressure change, as sudden pressure changes can potentially cause damage to the sensor assembly.



Cooling Guidelines

Condensation: It is strongly advised that the camera should not be used in a condensing atmosphere. If used in a condensing atmosphere, the sensor MUST be protected and the use of a cold finger is strongly recommended.

Air cooling: Ensure 100 mm clearance around vents. For best cooling performance ensure the camera is operating within the environmental conditions stated in the Technical Specifications of the iKon-XL Hardware Guide.

Water cooling: The camera must be connected to the liquid cooling system before switching on. **Ensure coolant is above the dew point of the ambient environment to prevent condensation from occurring** (To achieve -70°C cooling coolant should be <16°C). Recommended coolant: water or water/glycol mix depending on the ambient environmental temperature. Remove all coolant after operation if the camera is to be stored.

6 Connect your Camera and Switch it on

Please refer to the iKon-XL Hardware Guide for mounting instructions. **Ensure that the power to the camera and PC is switched OFF.**

1. Attach the camera control cable between the camera and the CCU-500 camera controller. **Use only the supplied cable - each CCU-500 is configured specifically for use with the supplied cable. Also ensure the power cable is fully inserted into the camera power socket.**

2. Connect by either:
 - **Fibre optic** - connect the cable between the camera and the PC's fibre optic adapter port.
 - **USB 3.0** - connect the cable between the camera's USB 3.0 port and a USB 3.0 port on the PC.

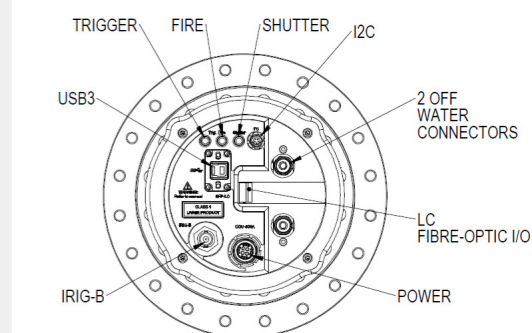
3. Camera must be attached to a vacuum chamber and pumped down to <10⁻⁴ mBar before being turned on.

4. Switch the power supply on using the on/off switch at the rear of the camera controller (You should hear a long beep from the CCU-500). This is followed by a long beep, followed by two short beeps to indicate the camera has configured successfully. Now turn on the PC.

Note: If this is the first time the camera has been connected, please install the fibre optic or USB 3.0 card drivers.

5. Start your software.
6. Check the acquisition settings and adjust as required.
7. Start acquiring data.
 - Ensure that the iKon-XL is powered on and connected to the PC via the fibre optic cable or USB 3.0 before the PC is switched on.
 - Ensure that all cables have adequate strain relief/support, especially the fibre optic connection.
 - Remote power down is activated by applying 5 volt @ 10 mA to remote BNC at front of the CCU-500.

iKon-XL SO Rear Panel



CCU-500 Front Panel



? Troubleshoot

Camera start-up tone does not sound on start-up

- The camera start-up tone (a long beep, followed by two short beeps) should be audible momentarily when the camera is powered up.
- If this does not occur, ensure that the camera is connected to the CCU-500.

Support Device not recognised when plugged into PC

- Check that the card and driver(s) have been installed correctly (Devices and printers) in Windows, Control Panel. The camera will show under the Devices list. (see also Section 4 for installation procedure).

Water cooled models: Temperature Trip Alarm sounds (continuous tone)

Should the buzzer sound ensure the following:

- Check that the cooling system is operating correctly.
- **Always use coolant that is above the dew point of the ambient environment to prevent condensation from occurring.**

Lights not showing on CCU-500

- A switch enables lights to be on for diagnostic purposes or switched off for low-light applications- check if this is activated.

Please see the Hardware Guide for further information on Troubleshooting.

Online access to technical documentation and software downloads is available at:

andor.oxinst.com/downloads