

Newton CCD & EMCCD Quick Start Guide



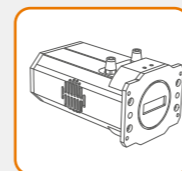
ANDOR

For Newton CCD 920 & 940 and EMCCD 970 & 971 models



2 Unpack the Camera

Camera



Newton Camera
(model as ordered)

Essentials



Hex Key Set



Coolant Pipes
(hose inserts)



Documentation
scan or visit:
andor.oxinst.com/welcome



Software
(copy supplied)

Cables



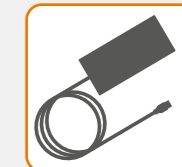
USB 2.0 Cable



Trigger Cable
1 x BNC to SMB



Country Specific
Power Cord



Power Supply

1 Prepare your Facility



Handle the camera and accessories with care.



Use correct power supply and cables.



Observe anti-static precautions when installing the camera.



Keep dry, <70% humidity non-condensing.



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



Operate between 0°C and 30°C.
Store between -25°C and 50°C.



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



Refer to the cooling guidelines in your user manual for further information on use of optional water/coolant systems.

Refer to the user manual for further information

3 Install Software (SDK2 or Solis)

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. AndorSDK2Setup-<version>.exe

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

Linux:

For detailed instructions on how to install the SDK drivers on Linux please refer the Andor SDK2 Manual, available at andor.oxinst.com/downloads.

For Andor spectrographs, please see the quick start guide for specific spectrograph model software requirements.



4 Connect the Camera to an Andor Spectrograph



Refer also to your Spectrograph User Guide

Attach the Newton to the Spectrograph:

1. Carefully remove the protective film from the front face of the camera.
2. Ensure spectrograph mounting interface is freely accessible to position camera at the focal plane of the instrument.
3. Ensure O-ring is correctly positioned at the front of the camera to prevent light leakage.
4. Align the camera to the mounting plate of the Spectrograph.
5. Secure the camera to the Spectrograph, using the 4 screws provided.

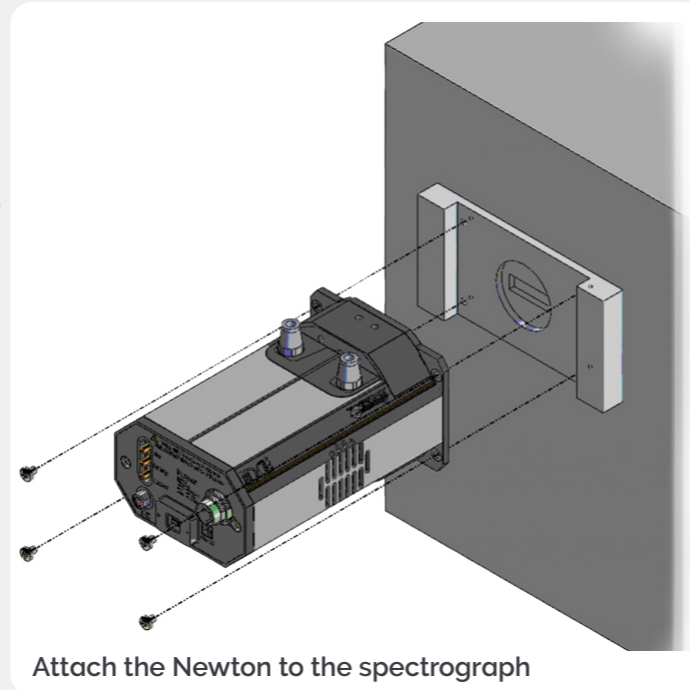
The Spectrograph shutter can be controlled through either the SMB or I²C (where available) connections.

SMB Connection

Secure SMB-to-BNC cable between camera SMB connector and spectrograph BNC shutter connector.

I²C (e.g. Kymera Series) Connection

Secure I²C cable between camera I²C connector and spectrograph I²C shutter connector. Note that I²C connection is also used to control the spectrograph **instead** of its USB connection. Note that the SMB-to-BNC cable is not required.



Attach the Newton to the spectrograph

6 Connect your Camera



Ensure the mains power cable is not inserted before attaching the PSU to the camera.

1. Connect the USB cable to the camera and an available USB port on the PC.
2. Insert the power cable from the power supply into the 5-way DIN power connector at the rear of the camera. Secure in position using the screw-lock.
3. Insert the mains cable into the camera power supply unit.
4. Ensure input/output cables have been secured in the appropriate labelled connectors at the back of the camera.

Note: the PC is connected to both the Spectrograph and the camera by USB connections.

5. If using an Andor Kymera spectrograph, ensure I²C cable is secured and that USB cable to the spectrograph is disconnected.
6. Power the spectrograph (if applicable).
7. Start your software.
8. View and adjust the acquisition settings as required.
9. Start acquiring data.

Using Optional Liquid Cooling

- Refer to user manual for connection information and guidelines (including flow rates and dew point).
- Always ensure that the temperature of the liquid coolant circulated through the camera head is above the dew point of the camera ambient.
- Use of coolant at or below the dew point will result in permanent damage to the camera head, due to formation of condensation on internal components.

Newton Rear Panel Connections

TTL/Logic SMB Connections



I²C Connection

USB Connection

Power

5 Align the Camera to an Andor Spectrograph



Refer also to your Spectrograph User Guide

If an Andor spectrograph was also ordered with your Newton, the camera should be already attached and aligned to the instrument. Please consult the spectrograph user manual for final setup steps.

If you want to attach your Newton camera to a standalone Andor or third party spectrograph, please refer to the appropriate manual supplied with the instrument for further information on alignment and focusing optimisation.

Please refer to guidance from your spectrograph manufacturer when attaching your camera.

? Troubleshoot

Camera is not recognized by PC

- Check that the camera power and USB cables are connected securely and the mains power cable is inserted.
- Ensure the Spectrograph is powered up before the camera is powered up (when applicable i.e. Andor spectrograph has been ordered, other spectrograph manufacturer operation may vary).
- Check that the drivers have been installed properly.
(Control Panel – System – Hardware – Device Manager – libusb-win32 devices).

Temperature Trip Alarm sounds (continuous tone)

Air Cooling

- Check that the air vents on the camera are not blocked and there is sufficient clearance (100 mm).
- The ambient air temperature is not above 30°C.
- The fan has not been deactivated (or the speed set too low) in software.

Water Cooling

- Check that the cooling system is operating correctly.

Please see the Hardware Guide for further information on Troubleshooting.

Online access to technical documentation is available at: andor.oxinst.com/downloads