



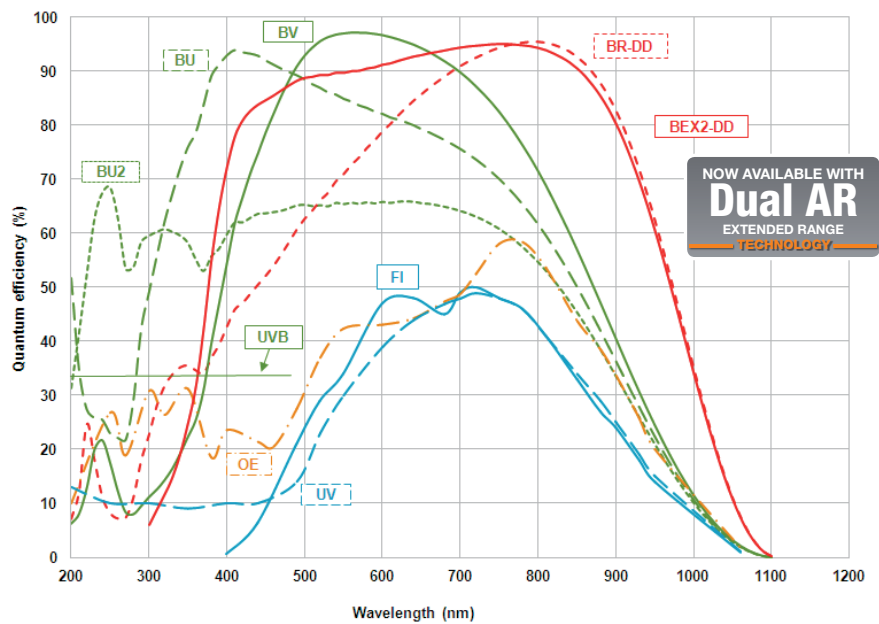
Spectroscopy Solutions

Highlights

- Multi-megahertz readout
- TE cooling to -100°C
- UltraVac™ - guaranteed hermetic vacuum seal technology
- $13.5 \times 13.5 \mu\text{m}$ pixel size option
- Crop Mode Operation
- Simple USB 2.0 Connection
- NIR-optimized Deep-Depletion sensor option
- Simple opto-mechanical coupling interface to Shamrock spectrographs
- 16 bit digitization

Key Applications

- Absorption - Transmission - Reflection
- Raman (244, 532, 785 and 833 nm)
- Fluorescence - Luminescence
- Plasma studies
- Fast Transient phenomena study
- Chemical mapping



Newton CCD

Market-leading platform for ultrafast Spectroscopy

This high-end USB 2.0 Newton CCD series brings together Andor's ultra fast, low noise electronics platform and market-leading deep thermo-electric cooling to -100°C , complemented by Andor's Ultravac™ technology with its un-matched reliability track record in the scientific and industrial community.

Broadband detection rates of up to 1,600 spectra per second are enabled with intelligent Crop Mode operation. The Newton CCD is an ideal tool for ultrafast UV, VIS or NIR spectroscopy (or all the above with the Dual AR-coating BEX2-DD technology!), such as 2D chemical mapping, online process monitoring or non-invasive medical diagnosis.

The Newton 940 series offers $13.5 \times 13.5 \mu\text{m}$ pixels for the highest UV to VIS resolution spectroscopy, while the 920 series and its $26 \times 26 \mu\text{m}$ offers the highest dynamic range for UV to NIR applications. Both $> 6.6 \text{ mm}$ high sensors are ideally suited for multi-track spectroscopy or hyper-spectral imaging.

Spectroscopy Solutions



Features	Benefits
• Multi-megahertz readout	High repetition rates achievable with low noise electronics - ideal for transient phenomena study
• TE cooling to -100°C	Negligible dark current without the inconvenience of LN ₂
• UltraVac™ - guaranteed hermetic vacuum seal technology	Permanent vacuum integrity, critical for deep cooling & best sensor performance access
• Down to 13.5 x 13.5 μm pixel size	Optimized pixel size for achievement of high resolution Spectroscopy
• Crop mode operation	Achieve the highest possible spectral rates of over 1600 spectra per second
• Deep-depletion sensor options	High NIR QE, virtually etalon-free - ideal for NIR Raman. Superior broadband detection with Dual-AR technology option (BEX2-DD)
• Software-selectable output amplifiers (DU940)	Choice of High Dynamic Range (HDR) or High Sensitivity (HS)
• Simple opto-mechanical coupling interface	Readily integrate with Andor Shamrock spectrograph series
• Simple USB 2.0 connection	User friendly plug-and-play connection directly to the back of the camera

Model	Active pixels (μm)	Pixel Size (μm)	Sensor Options
DU920	1024 x 255	26 x 26	BU, BU2, BV, OE
DU920-Bx-DD	1024 x 256	26 x 26	BR-DD, BEX2-DD
DU940	2048 x 512	13.5 x 13.5	BU, BU2, BV, FI, UV

Option	Description
BEX2-DD	Back-Illuminated, Deep Depletion CCD with fringe suppression, extended range dual-AR coating
BR-DD	Back-Illuminated, Deep Depletion CCD with fringe suppression
BU	Back-Illuminated CCD, UV-Enhanced, 350 nm optimized
BU2	Back-Illuminated CCD, UV-Enhanced, 250 nm optimized
BV	Back-Illuminated CCD, VIS optimized
FI	Front-Illuminated CCD
UV	Front-Illuminated CCD with UV coating
OE	Open-Electrode CCD



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