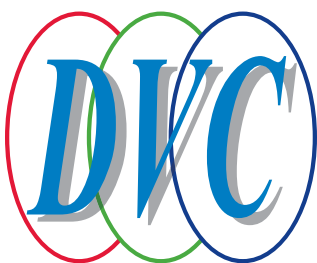
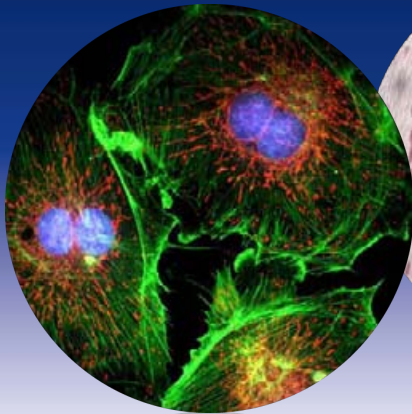
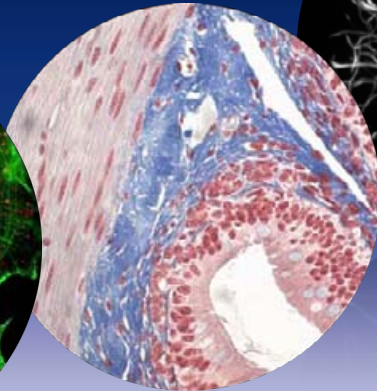
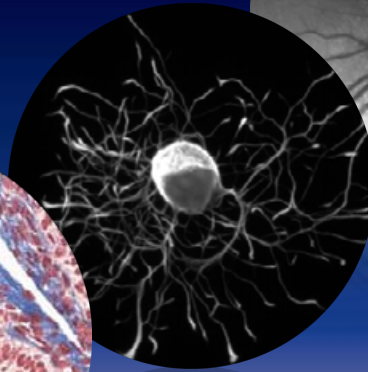
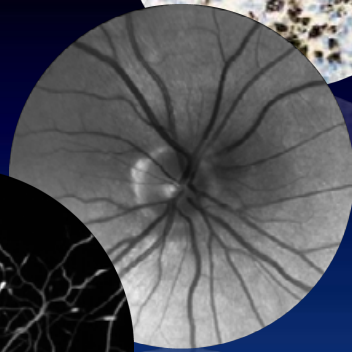
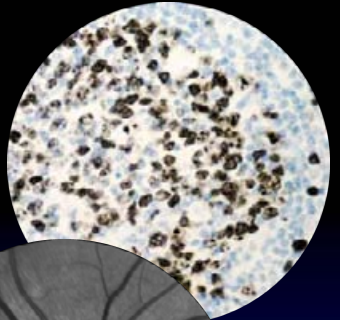


HYPERSPECTRAL IMAGING SOLUTIONS



proprietary
acousto-optical
tunable filter
(AOTF)

**VERSATILE,
HIGH-QUALITY,
DIFFRACTION-
LIMITED
HYPERSPECTRAL
IMAGING**

scientific-grade,
low-noise,
high-QE
CCD

hardware solutions

AOTF Wavelength Selector

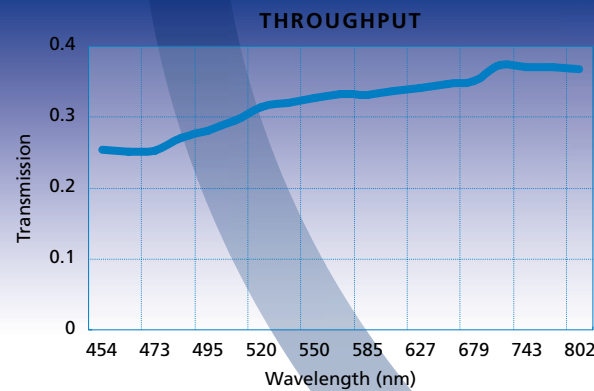
- High-speed, random access, solid-state optical filter
- Adjustable optical pass band
- Diffraction-limited image quality

AOTF Specifications

Tuning	VIS: 450 – 800 nm, NIR: 500 – 900 nm, custom ranges available
Bandwidth	1.5 nm (@ 450 nm), 3.5 nm (@ 800 nm) variable (1 to 16x) at each center wavelength
Out-of-band rejection	1:10 ⁻³
Numerical Aperture	0.05
Imaging (entrance aperture to CCD image plane)	1:1 image
Optical Output Polarization	linearly polarized
AOTF Switching Speed	< 100 μs
AOTF Control Interface	PC-USB
Operating Temperature Range	15°C to 35°C

Control Parameters

- Wavelength (in nanometers)
- Bandwidth (in nanometers)
- Non-destructive equalization of the 12-bit grayscale pixel range in an image to maximize the entire range possible for optimum brightness and contrast. (Users can also choose to do their own brightness and contrast operation.)
- Settings: auto equalize/ auto contrast
- Adaptive feed back looping or single snapshot
- Averaging up to 32 scans



CCD

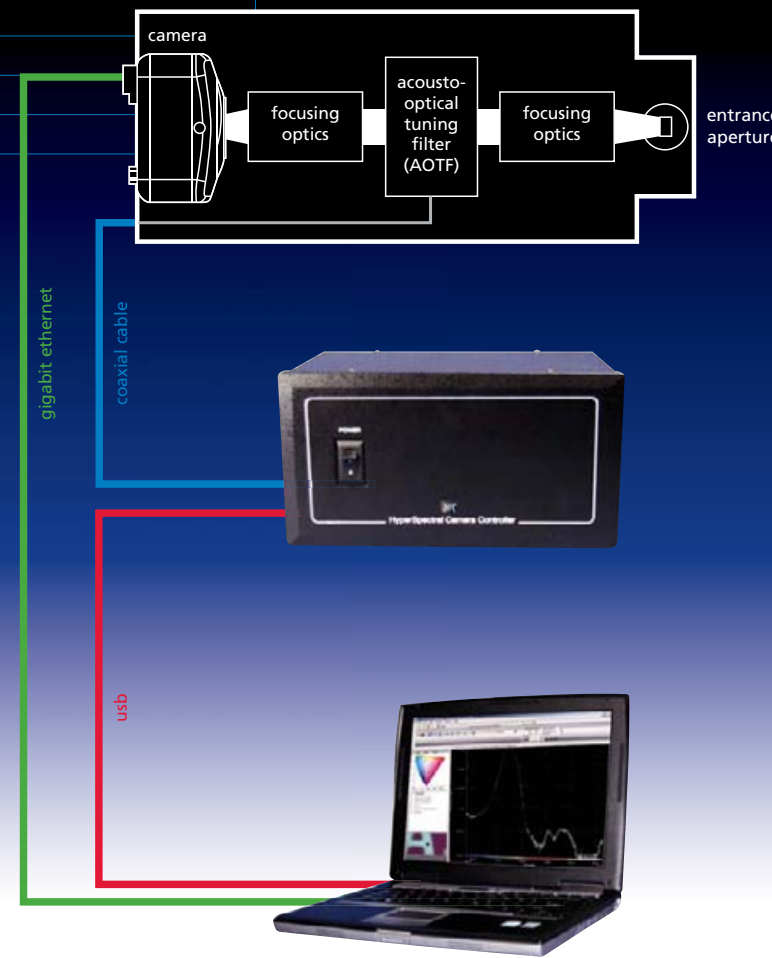
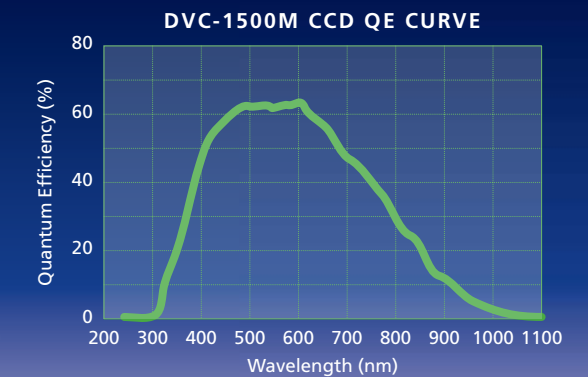
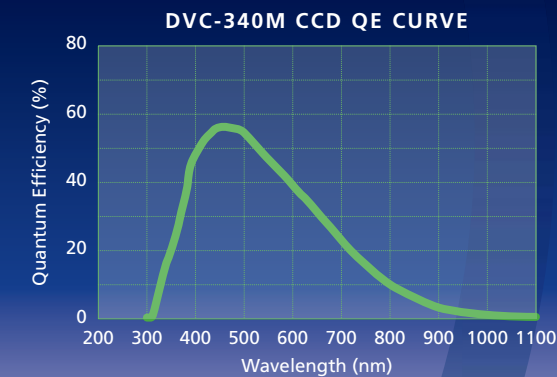
- Low noise and high quantum efficiency
- Range of resolutions available
- Software selectable modes, including 20/40 MHz clocking, binning and ROI

CCD Specifications

	DVC-340	DVC-1500
Optical format	1/3 in	2/3 in
Resolution & max 1x1 frame rate	640 x 480 @ 109 f/sec	1392 x 1040 @ 23 f/sec
Bit depth	12 bits	12 bits
Pixel size	7.4 μ x 7.4 μ	6.45 μ x 6.45 μ
Quantum efficiency	55% peak @ 500 nm	62% peak @ 550 nm

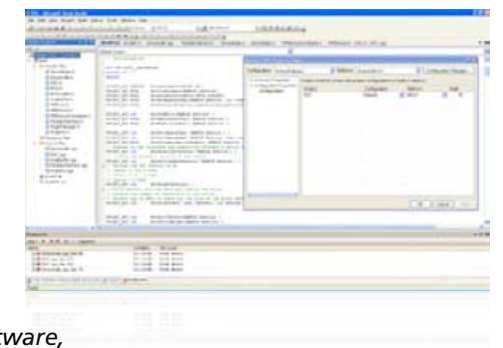
Control Parameters

- Exposure
- Gain
- Binning
- ROI user defined areas within image to speed up readout of Regions of Interest
- Readout rate and trigger



API/SDK for Developers & OEM

- Windows & Linux support
- DLLs for AOTF and camera control
- Support for image acquisition, and unmixing



AOTF and CCD parameters may be set via software, to optimize the performance for each application.

End User

- Micromanager
- ImageJ
- DVCView



software solutions

configure a solution...

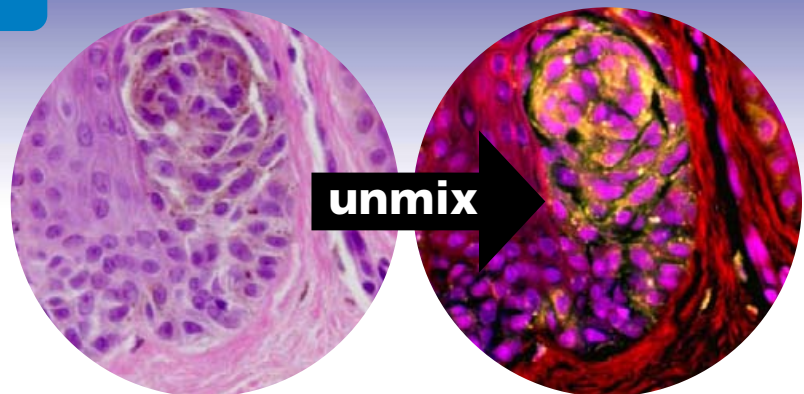
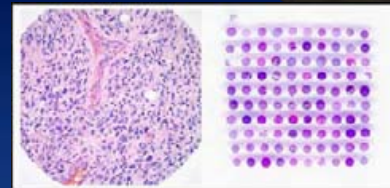
CCD Type	AOTF Spectral Range	Interface	Accessories
DVC340M 640 x 480 x 12 bits @109 f/sec	VIS (visible)	GE (gigabit ethernet)	S (system) System includes camera, power supply, AOTF driver, cables, and software.
DVC1500M * 1392 x 1040 x 12 bits @23 f/sec	NIR (near infrared)		

* Contact the factory about the enhanced QE option.

...for your hyperspectral application

Our hyperspectral imaging technology is used for remote sensing and monitoring in a variety of industries, including biomedical, food production, military, and defense. A number of microscopy research techniques benefit from the speed and resolution of the system:

- Immunohistochemistry
- Quantum dots (Q-Dots)
- Fluorescence in-situ hybridization (FISH)
- Fluorescence resonance energy transfer (FRET)
- Spectral karyotyping (SKY)
- Tissue micro arrays
- Pharmaceutical drug discovery



40x objective

pigment is displayed in yellow



For more information: www.dvcco.com phone (512) 301-9564 email sales@dvcco.com