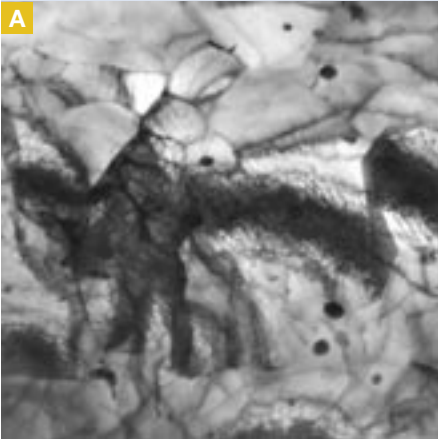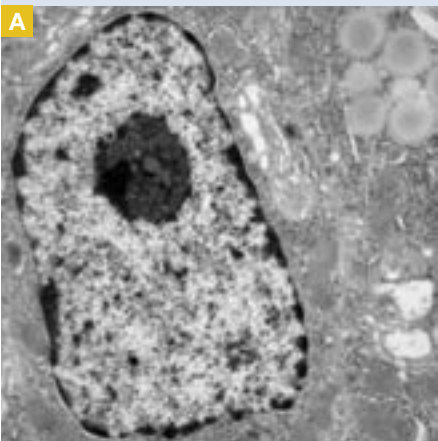# Soft Imaging System

Veleta – 2k x 2k side-mounted TEM CCD Camera

Dislocations in a low-angle grain-boundary (aluminium)

Liver cell- nucleus

Diffraction image of aluminium

A **Field of View**

Frame shows camera field of view within TEM fluorescene screen
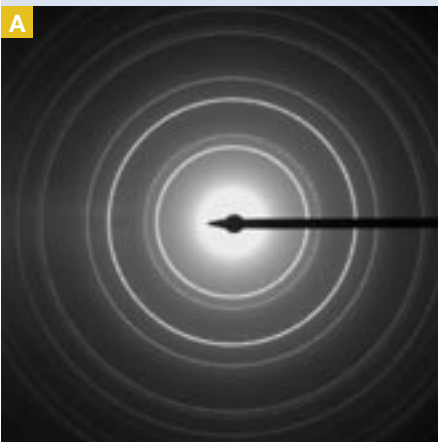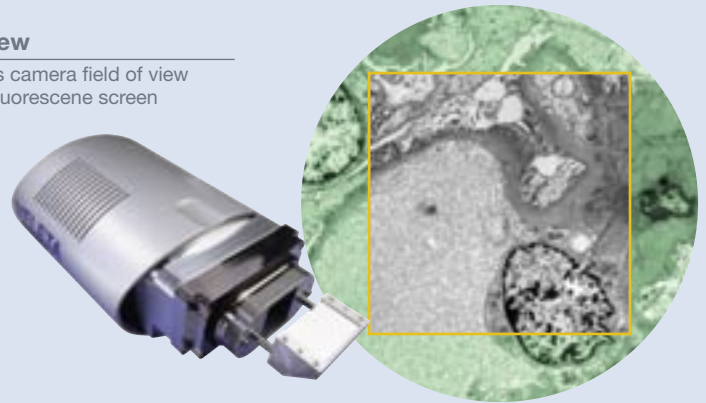

VELETA - 2K X 2K SIDE-MOUNTED TEM CCD CAMERA SOLUTION

Veleta is a side-mounted TEM camera offering a peltier-cooled CCD chip with 2k x 2k MegaPixels and a dynamic range of 14 bits. The new camera fits perfectly into our product line of sophisticated, side-mounted TEM cameras – the successful and highly recommended MegaView III and the 11 MegaPixel Morada. Veleta reflects current life science, bio-medicine, materials science and industrial requirements.

Efficient and precise design

A The camera system has a highly efficient lens-optical design coupled with a highly sensitive phosphorous scintillator, custom-developed and unique lens as well as highly precise mechanics. The electronic shutter ensures perfect acquisition of your images no matter whether conditions require long or very brief exposure time.

Fast and sensitive

The camera also supports various binning modes. Noise is reduced via innovative digital read-out technology resulting in high sensitivity and efficiency as well as an extraordinary signal-to-noise ratio.

Ideal for tomography purposes

B The Veleta is fully integrated in iTEM, the universal TEM imaging platform. And this new camera works perfectly in conjunction with the new tomography software, iTEM Solution Tomography.

Features

Up to 2048 x 2048 pixels

Peltier cooled

Lens-optically coupled

14 bit

Applications

Tomography

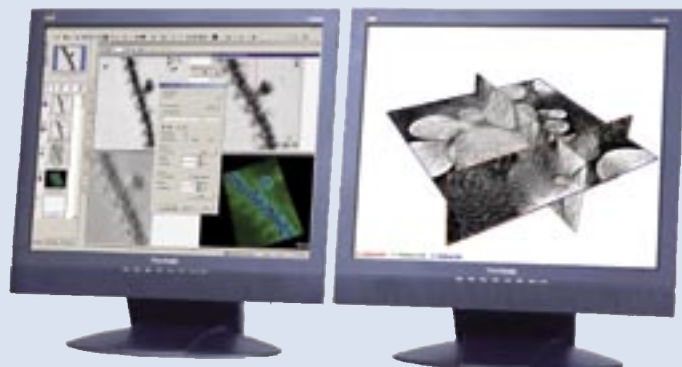Diffraction

Pathology

Digital Documentation

Specifications

	MegaView III	Veleta	Morada
Chip type	10.2 mm x 8.3 mm (2/3") interline CCD image sensor	16,67 x 16,67 mm interline CCD image sensor	24 mm x 36 mm interline CCD image sensor
Effective pixels (pixel)	1392 x 1040	2048 x 2048	4032 x 2688
Resolution (pixel)	1376 x 1032	2048 x 2048	4008 x 2672
Binning 2x (pixel)	688 x 516	1024 x 1024	2004 x 1336
Pixel size (µm²)	6.45 x 6.45	7.4 x 7.4	9.0 x 9.0
Effective pixel size (µm²)	~ 20.0 x 20.0	~ 13 x 13	9.0 x 9.0
Binning	2x, 4x and 8x	2x, 4x and 8x	2x, 4x and 8x
Pixel clock rate (MHz)	20	24.6	24.6 (live)
Digitization (bit)	12	14	14
Exposure time	100 µs - 160 s	100 µs - 160 s	1 ms - 60 s
Display	Full image in real time	Full image in real time	Full image in real time
Chip temperature	10° C @ 25° C ambient temperature	10° C @ 25° C ambient temperature	15° C @ 25° C ambient temperature
Noise reduction	Correlated double sampling	Correlated double sampling	Correlated double sampling
Camera mount	at wide angle port	at wide angle port	at wide angle port
Camera positioning	PC controlled pneumatic movement / control box	PC controlled pneumatic movement / control box	PC controlled pneumatic movement / control box
Anti blooming	> 300x	300x	> 100x
PC interface	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)
Camera coupling	Lens-optically coupled	Lens-optically coupled	Lens-optically coupled
Trigger Option	no	yes	yes
Partial Readout	no	yes	yes
Full Well Capacity (e-)	18000	40000	~ 60000
Scinitillator	High sensitive phosphor optimized for accelerating voltage for 100 keV / 200 keV	High sensitive phosphor optimized for accelerating voltage for 100 keV / 200 keV	High sensitive phosphor optimized for accelerating voltage for 100 keV / 200 KeV

Active Area

B Perfect for tomography

Veleta is a perfect camera solution for tomography applications

C MegaView III
Fast side-mounted TEM CCD camera

D Veleta
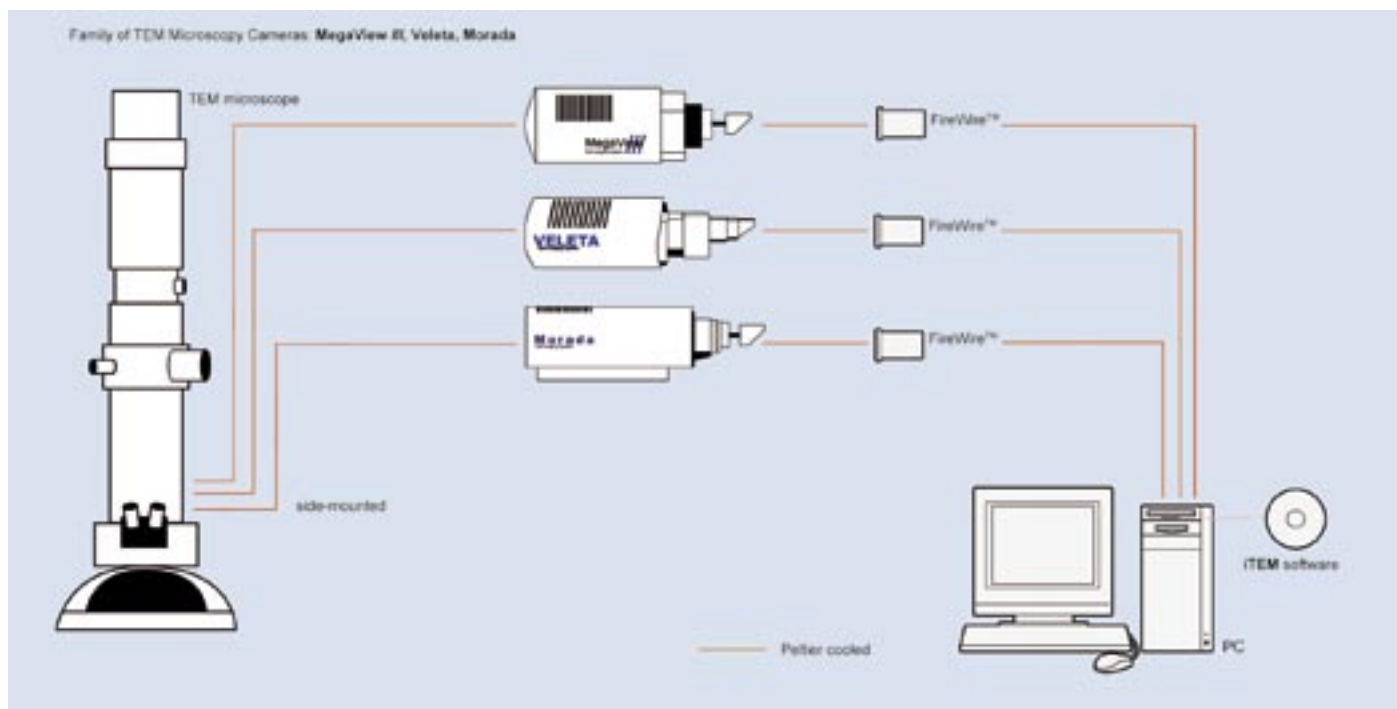2k x 2k side-mounted TEM CCD camera

E Morada
11 MegaPixel side-mounted TEM CCD camera

Overview

Application	MegaView III	Veleta	Morada
Convergent Beam Diffractiom Analysis	(+)	(+)	(+)
Immunogold Labeling	(+)	+	++
Tomography	+	++	(+)
Cryo microscopy	(+)	(+)	-
EFTEM	-	-	-
Virology	(+)	+	+
Pathology	+	++	++
Materials Sciences	(+)	(+)	(+)
Digital Documentation	++	++	++
Low Dose Imaging	(+)	(+)	-
Holography	-	-	-
HRTEM	(+)	(+)	(+)
Diffraction	+	+	+

System Diagram

Family of TEM Microscopy Cameras: **MegaView III, Veleta, Morada**

TEM microscope

side-mounted

FireWire™

Peltier cooled

iTEM software

PC

www.olympus-sis.com
www.soft-imaging.net

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