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DATASHEET

Talos F200S G2 S/TEM

Highest performance imaging and precise compositional analysis for dynamic microscopy

The Thermo Scientific Talos F200S G2 200 kV Field Emission Scanning/Transmission Electron Microscope (S/TEM) combines fast, multichannel, high resolution S/TEM imaging and precise compositional analysis to enable dynamic microscopy applications. With innovative features designed to increase throughput, precision and ease of use, Talos is ideal for advanced research and analysis across academic, government and industrial research environments.

High resolution imaging for better-quality data

The Thermo Scientific™ Talos™ F200S G2 S/TEM combines outstanding high-resolution STEM and TEM imaging with industry-leading energy dispersive X-ray spectroscopy (EDS). A Smart Scanning engine with four-channel integration of multiple STEM detectors achieves significantly improved STEM image quality and throughput. Discover new applications, like Differential Phase Contrast (DPC) imaging for resolving electro-magnetic structures.

The Talos F200S G2 S/TEM is designed to support a variety of dynamic experiment applications. The fast HRTEM camera, large 5 mm gap objective lens, +/-90° stage tilt range and large stage Z height adjustment (+/-0.375 mm) combine to offer "space to do more" and enable the use of specialized holder solutions.

See more, faster

Fast TEM imaging with the Talos F200S G2 S/TEM supports high-resolution and *in situ* dynamic observations. The Thermo Scientific Ceta™ 16M camera displays a large field of view and captures images at a fast rate of up to 25 fps.

Accelerate nanoanalysis for faster answers

The Talos F200S G2 S/TEM includes a patented, integrated EDS system with two silicon drift detectors (SDD) for superior sensitivity and elemental mapping capabilities of up to 10^5 spectra/sec. Integration with the X-TWIN objective lens maximizes collection efficiency while delivering outstanding output count rates for a given beam current—even for low intensity EDS signals.

Make research easier

The Talos F200S G2 S/TEM makes imaging and analysis workflows accessible to a broader community of scientists, with a friendly digital user interface and class-leading ergonomics. Fast image acquisition combined with the easy-to-use operating platform allows even less-experience operators to collect results quickly. Implement full remote operation for greater ease of use and enhanced environmental stability. And to assure that productivity is maintained, Talos is equipped with the new Thermo Scientific Health Monitor that collects key instrument parameters to facilitate remote diagnostics and support.

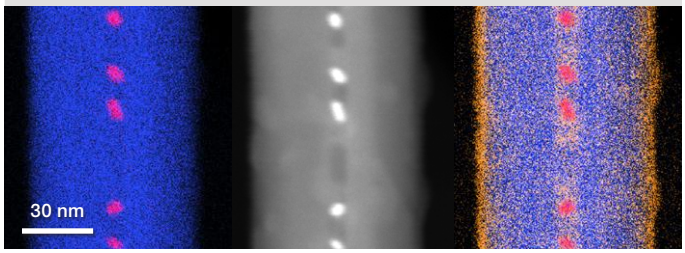
Key benefits

Better image data. High throughput S/TEM imaging with simultaneous, multiple signal detection delivers better contrast for high quality images

Precise chemical composition data. Rapid, precise quantitative EDS analysis reveals nanoscale details

Space for more. Add application-specific *in situ* sample holders for dynamic experiments

Increased stability. Enhanced environmental immunity with instrument enclosure and remote operation



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Features

- Class-leading optical performance: Constant-power X-TWIN objective lens
- Maximized ease-of-use: Fast, easy operational parameter switching for multi-user environments
- Ultra-stable platform: Constant power objective lens, robust system enclosure, and remote operation ensure maximum stability
- SmartCam camera: Digital search-and-view camera offers a large field of view for all applications and allows operation in normal room light
- Fully integrated fast detector: Ceta 16M pixel CMOS camera provides large field of view and high read-out speed (25 fps @ 512 × 512)
- Full remote operation: Automatic aperture system in combination with the Ceta camera supports full remote operation

Installations requirements

Refer to preinstall guide for detailed data.

Talos F200S G2 S/TEM	
Total beam current FEG	> 150 nA
Probe current	0.6 nA @ 1 nm probe (200 kV)
EDS system	2 SDD windowless design, shutter-protected
Energy resolution	≤136 eV for Mn-Kα and 10 kcps (output)
Fast EDS mapping	Pixel dwell times down to 10 µs

X-Twin	
S/TEM HAADF resolution	0.16 nm
EDX solid angle	0.45 srad
TEM Information limit	0.12 nm
Maximum diffraction angle	24˚
Maximum tilt angle with double tilt holder	α±35˚ β±30˚
Maximum goniometer (stage) tilt angle	±90˚

Find out more at **thermofisher.com/EM-Sales**

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