



GIF QuantumSE™

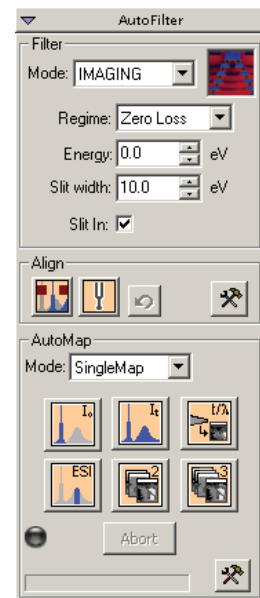
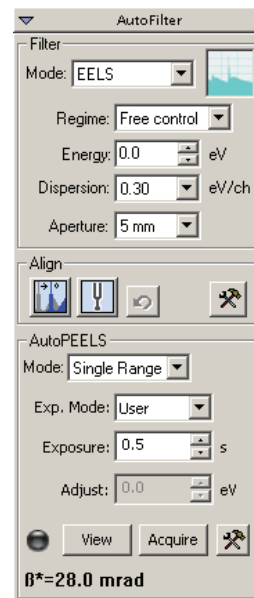
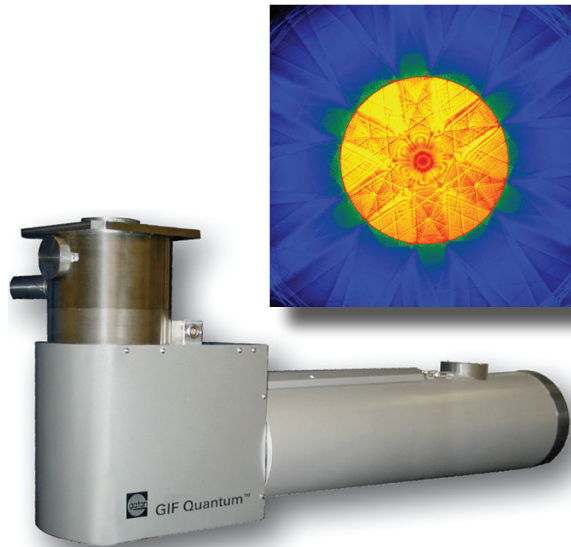
Model 963

The GIF QuantumSE™ imaging filter provides the outstanding imaging performance you've come to expect from GIF Tridiem while providing a performance leap in spectroscopy, automation and ease of use.

Thanks to improved optical design and powerful new software, the GIF QuantumSE™ imaging filter is able to excel both as an imaging filter and a high performance EEL spectrometer. The basic package provides 100 spectra per second EELS with a 2keV energy field-of-view. With a 2.5mm EELS aperture, the spectral resolution of the GIF QuantumSE™ imaging filter is well below the energy spread of LaB₆ and Schottky sources ensuring no spectral information is lost. The 100 spectra per second spectroscopy rate is fully supported by Gatan's STEMPack spectrum imaging option and represents a 300% speed increase over the GIF Tridiem system. This speed increase together with the new 5mm EELS collection aperture allows the production of high-resolution STEM EELS maps in a fraction of the time.

In filtered imaging mode, the GIF QuantumSE™ imaging filter utilizes a 5mm imaging aperture which is well suited to the GIF mode lens series provided with most modern TEMs. The new streamlined AutoFilter® for GMS 1.9 filter interface provides a new level of simplicity for EFTEM alignment and data acquisition. Our patented filter tuning system ensures the filter is operating at peak performance both the day it is installed and every day after. High-resolution EFTEM maps can be acquired in just a few key strokes. For difficult samples with overlapping edges, EFTEM spectrum imaging is provided allowing the creation of a complete data cube rather than just three windows permitting advanced spectral processing tools to be applied.

The standard features of the GIF QuantumSE™ imaging filter can be upgraded to allow microsecond exposure times, high-speed imaging and 1000 spectra per second EELS acquisition. This package along with the integrated BF/DF STEM detector is recommended if the GIF QuantumSE™ imaging filter will be used substantially for STEM EELS data acquisition.



Features	Benefits
AutoFilter for GMS1.9	All new filter interface for unparalleled ease of use
Advanced auto tuning	Confidence your imaging filter is and remains at peak performance
100 spectra per second	Fast, dose-efficient STEM EELS spectrum imaging for detail rich mapping
5 mm imaging aperture	Simple operation on most modern TEMs
2.5 & 5 mm entrance apertures	Improved collection efficiency for fast STEM EELS mapping
Cinema mode readout	High duty cycle live viewing for quick sample navigation and focusing even at high energy losses.
60 kV to 300 kV operation	Broad range of operating modes and configurations
2000 eV EELS range	Capture a broader range of edges in a single spectrum for simplified quantification
Extendable capabilities	Easily add features and components to extend system functionality

Specifications and features are subject to change.

Image Captions

Top: Energy-filtered LACBED pattern of Si(111) recorded at 200kV with $\pm 5\text{eV}$ energy window.

Bottom: New AutoFilter for GMS1.9 interface. A unified and simple approach to EELS (left) and EFTEM (right) data acquisition.

Filter performance specifications

	Model 963 GIF QuantumSE™		
Primary setup energy (keV)	80	200	300
Entrance aperture sizes (mm)	5.0 / 2.5		
Slit width minimum (eV)	0.9	2.0	2.9
Slit width maximum (eV)	43	100	143
Imaging mode			
Mask image distortion RMS (%)	0.75		
Mask image distortion max (%)	1.50		
Non-isochromaticity (at selected energy)			
Residual energy variation RMS (eV)	0.38	0.50	0.69
Non-isochromaticity max (eV)	1.50	2.00	2.75
Chromaticity / Aberration (over energy range)			
Chromatic distortion RMS (% over 50 eV)	0.80	0.50	
Chromatic distortion max (% over 50 eV)	1.00	1.00	
Spectroscopy mode			
Maximum range on detector (eV)	810	2048	2048
Maximum spectrum channels	2048		
Energy Resolution / Stability			
Filter resolution at zero loss (eV)	0.25		
Filter resolution at 500 eV loss (eV)	0.28		
Filter thermal energy drift coefficient (eV/°C)	1.5	1.5	2.0

Note: Specifications are subject to change.

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Ordering information

Part Number	Description
963	GIF QuantumSE™

Please contact your Gatan sales representative for complete ordering information.

Primary applications

- Materials research
- Failure analysis
- Catalyst research



we get it!

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Certified Quality Management System

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