

# Increased productivity and active noise reduction

## ZEISS Vac ECO Quiet Mode

For the operation of a SEM electron microscope, cathode head, column and sample chamber all have to be under vacuum. This vacuum condition is essential to prevent the collision of electrons with gas molecules. The sample chamber is pumped to a vacuum state using the pre-pump and turbo pump. By using ZEISS Vac ECO Quiet Mode and with the help from a vacuum reservoir, the pre-pump is automatically switched off after reaching a factory pre-set vacuum level. The vacuum reservoir allows the system to be operated for hours without need for pre-pump which results in reduction of noise levels and energy consumption.



### Highlights

#### Time-saving

Benefit from a reduced period run time of the pre-pump once it is in ECO quiet mode and no sample exchanges are proceeding. The run time will be significantly shortened

#### Service-saving

Benefit from extended recommended service intervals. The replacement of the scroll pump tips could be reduced from an annual replacement to typically every 3-4 years

#### Energy-saving

Since the Vac ECO Quiet Mode reduces the amount of time the pre-pump is running, it is a perfect option to reduce energy costs, heat transmitted in the room and green-house gas GHG emissions

#### More comfortable application

Work more comfortably at half the noise level. The running pre-pumps can generate 65dB of noise in a recommended laboratory noise level of 45-50dB level

### Upgrade your ZEISS microscope

Upgrade your ZEISS microscope with the Vac ECO Quiet Mode upgrade and benefit from active noise reduction and reduced cost.

As technical requirements may apply on some systems, please contact us to learn more about the Vac ECO Quiet Mode upgrade and how your processes will benefit: [microscopy@zeiss.com](mailto:microscopy@zeiss.com)



Seeing beyond

# ZEISS Vac ECO Quiet Mode

## Active noise reduction

### Case example

A typical pre-pump consumes approximately 360 Watt (500 VA) whilst pumping a SEM chamber. If left running for 24 hours, the total energy used is a minimum of 8,6 kWatt. (12 kVA of billable energy). With an example of 5 sample exchanges per 8 hour working day, in ECO quiet mode, the pre-pump may only run for a total of 2-3 hours of the full 24 hour day.

The total energy consumed in Eco Quite mode would then be around 0,72 to 1 kWatt. An Energy and Green house gas saving of approximately 90%.

In VP mode, where the pre vacuum pumps do not switch off, the total energy saved may drop to approximately 55% by only engaging ECO Quite mode during the night.

### Availability

- Crossbeam series
- GeminiSEM series
- MERLIN series
- Sigma series
- EVO series\*
- AURIGA series
- ULTRA series
- SUPRA series
- NVision series
- NEON series
- 15xx XB series
- 15xx series

*\*technical limitations may apply, feasibility check required.*

