

Hitachi TM3030 Tabletop Scanning Electron Microscope Standard Specifications



1. Magnification

- Magnification: 15~30,000x (Digital zoom : ×2,×4)
 - (Minimum magnification is subject to change depending upon the observation condition, distance between sample and detector, and monitor size)

2. Accelerating Voltage:

- 5kV : 3 stages (Low Mag., Mid. Mag., & High Mag.)
- 15kV
- 15kV High Contrast (Higher Current)

3. Electron Optics

- Electron beam source: Pre-centered Cartridge filament
- Condenser lens: Permanent magnet lens + electromagnetic lens
- Objective lens: Electromagnetic lens
- Astigmatism correction coil: Octa-pole electromagnetic coil, XY method
- Scanning coil: Double deflection electromagnetic coil
- Image shift: More than $\pm 50\mu\text{m}$ (D=4.5mm、observation mode : normal mode)

- Detector: High sensitivity four-segment semiconductor BSE detector
- Image variety: BSE image (Standard (COMPO), shadow1, shadow2, TOPO)

4. Specimen Stage

- Traverse: X-axis 35 mm, Y-axis 35 mm
- Maximum sample size for whole area observation: 35 mm x 35 mm
- Maximum specimen size: 70 mm diameter
- Maximum specimen height: 50 mm height (D=4.5mm)

5. Evacuation System

- Vacuum control : Fully automated electromagnetic valve type
- Vacuum gauge: Pirani gauge
- Vacuum time: Less than three minutes from atmosphere pressure to be EVAC ramp on
- Specimen chamber pressure: Standard mode, Charge-up reduction mode
- Vacuum pump
 - Turbo molecular pump (TMP) 30 l/s
 - Diaphragm pump (DFP) 1 m³/h

6. Display

- Operating method
 - Graphic User Interface (GUI), Japanese/English switchable
 - OS Microsoft^(R) Windows^(R) 7 Professional (32/64bit)
- Operation: Mouse, Key board
- Scanning mode (Scan speed) :
 - Scan for searching the field of view (1s/ frame)
 - Image confirmation (10s/ frame)
 - Image adjustment (0.25s/ frame)
 - Frozen frame
 - Simplified save
 - Scan mode for save (40s/ frame)
- Auto image adjustment function: Auto Start (Filament auto-heating + Auto-brightness + Auto-focus)
- Image data save
- Frame memory: 640×480 pixel (simplified save), 1280×960 pixel (save)
- Image format: BMP, TIFF, JPG
- Image Optimization function : Raw Data, Fine, Fine & High Contrast
- Other function :
 - Raster rotation

- Magnification preset (two steps)
- Data display (Micron marker, micron value, magnification, date and time, image #, D, comments, Image mode, Observation condition)
- Digital zoom (×2、×4)

7. Safety Device

- Protection against over current, built-in ground-fault circuit interrupter

8. Dimensions and Weight

- Main unit: 330 (W)×606 (D)×565 (H) mm, 63.0 kg
- Diaphragm-pump: 145 (W)×256 (D)×217 (H) mm, 4.5 kg