The following shows the effective features of the Upper detector (secondary electron detector: SED), Lower detector (LDD) and the various modes. Select the most appropriate mode for your needs.

| WD | Selecting energy range (specimens that do not charge) | | Measures for charged specimens | | | |
|---|---|---|---|---|---|---|
| | SEI | | SEI | | GB | |
| | SE | BE | E | EV | GB-High | GB-Low |
| Upper<br>1.5-5 mm | Secondary electron<br>(Pure SE)<br>**Topographic image** | Backscattered electron<br>(Pure BE)<br>**Composition image** | Energy filter<br>**Capture parts of the secondary electron and eliminate unevenness in the image.**<br>• Sensitive to localized electric fields in the specimen.<br>• Irradiation current cannot be increased.<br>• Sensitive to current density.<br>• Some specimens cannot be viewed in Fine View.<br>→ **This is a compensatory method.**<br>**Measures against charge by secondary electrons** | | **(High BIAS)**<br>**1.5kV-2kV**<br>**GB mode for capturing information on the extremely shallow surface of the specimen. (inclination not allowed)**<br>For extremely-low acceleration and high resolution (0.1kV)<br>Dynamic imaging of topographic images<br><Reference><br>GB is a type of lens based on electromagnetic field superposition. | **(Low BIAS)**<br>**100-400V**<br>**GB mode for eliminating charge (inclination allowed)**<br>* Charge can be suppressed by inclining the specimen.<br>• Reduced diffusion domain<br>• Electron extrusion effect due to the electric field.<br>• Due to combined effects such as capturing the high-energy secondary electrons.<br>**Measures against charge by secondary and backscattered electrons** |
| | Sb | Bs | | | | |
| | Secondary electron prioritized | Backscattered electron prioritized<br>**Composition image + Topographic image** | | | | |
| Lower<br>4-12 mm | LEI | | | | LEI | |
| | | | | | **Acquisition of high-energy secondary electron.**<br>**(Low-angle backscattered electrons)**<br>-> Sensitive to localized electric fields on the specimen.<br>The irradiation current (PCc) can be increased.<br>Slow Scan is possible.<br>Image quality: Composition image + Topographic image<br>**Creates a better topographical image than SEI (Upper detector).**<br>Supports the Bs of the upper detector.<br>• Measures against charge up to x100K<br>• Effective during analyses.<br>**Measures against charge by backscattered electrons** | |