

Low Energy 4Q BSE (LE 4Q BSE) Detector (Optional)

Detected particles	BSE
Imaging contrast	topography, compositional
Vacuum mode	HighVac, LowVac , SingleVac

Low Energy 4-Quadrant BSE (LE 4Q BSE) detector is retractable detector designed for acquisition of back-scattered electrons (BSE). The retraction mechanism is motorized or manual. The detector is located under the objective and composes of 4 diodes, that symmetrically surround the central opening for the electron beam pass. All four diodes have the same shape and area, therefore are called quadrants. To distinguish the quadrants, they are numbered in clockwise order and noted as Q1, Q2, Q3, Q4.

The detector allows to obtain information about both: sample composition and topography. Obtained information depends on the way how is the signal from all four quadrants mixed (adding and/or subtracting diode signal) into a resulting image. The signal is processed in the TESCAN Essence software offering four detector modes:

1. **COMPO** for composition
2. **TOPO** for topography
3. **Custom** for manual diode signal addition / subtraction
4. **Color** for color acquisition in HSV (hue, saturation, value) color model

To learn more see [4Q_BSE Mixer](#).

Note: Chamber view is unavailable when using the LE 4Q BSE detector.

Note: In case the detector was reinitialized (e.g. after leaving Power save mode), its preamplifier needs some time to stabilize. Wait few minutes before using.

