

DXM-EST

The tools can be used to measure: crystal orientation angle warp and curvature analysis of the wafer; half-peak width parameter analysis; declination compensation measurement.

Equipment Performance

1. Orientation measurement

Using a high-power oil-cooled X-ray tube, the Bragg diffraction principle of X-rays is used to automatically obtain the crystal orientation angle and crystal orientation deviation angle of the end face of the wafer under test.

2. Thickness measurement

Through high-precision magnetic grid + laser/probe sensor combination verification, the stroke difference is read and the wafer thickness is calculated.

3. Multi-point settings

Wafer can be conveniently set to 1/5/9/13/21 points according to the require, and the data bits such as single-axis, dual-axis or four-axis can be measured at the same time, taking into account both efficiency and accuracy.

4. Stress measurement

Thermal stress will be generated due to the change of temperature gradient during the measurement of crystal growth. Mechanical stress will be generated by external force during mechanical processing, and a visual mapping diagram will be generated.

5. Rocking curve measurement

The half-height width of the rocking curve can be used to assess the crystalline quality of SIC wafers.

6. Radius of curvature measurement

The intersection line between the nominal crystal plane of the substrate and the vertical plane passing through the center point of the substrate can be approximately regarded as a circular arc, and the data corresponding to the radius of the arc are measured.



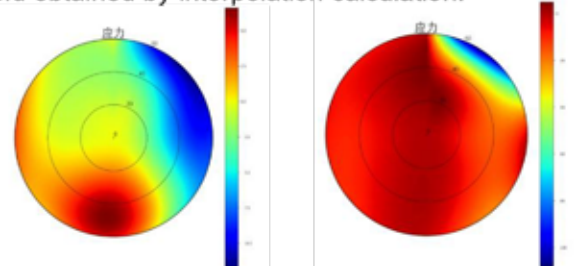
Graphical annotations:

The left vertical bar is the stress difference scale.

Circle on the right is the wafer measurement area.

Concentric circles on the right indicate measurement points.

The colour cloud map is the stress field distribution field obtained by interpolation calculation.



| Item | Specifications |
|-------------------|---|
| Crystal Diameter | Wafer 2~8 inches |
| Crystal length | 0.3~50mm |
| Workbench | Supports $\pm XY$ axis movement, Y axis direction declination |
| Measurement angle | $+12^{\circ}\sim 48^{\circ}$ |
| Accuracy | $\pm 0.005^{\circ}$ |
| Measurement speed | For a single-point scanning range of $\pm 0.08^{\circ}$, the time required is 18 seconds. (Changes in the number of measurement points and range affect the scanning time) |

