

Mettler Toledo ParticleTrack G400

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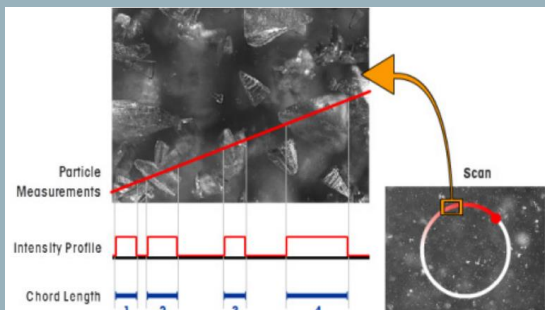
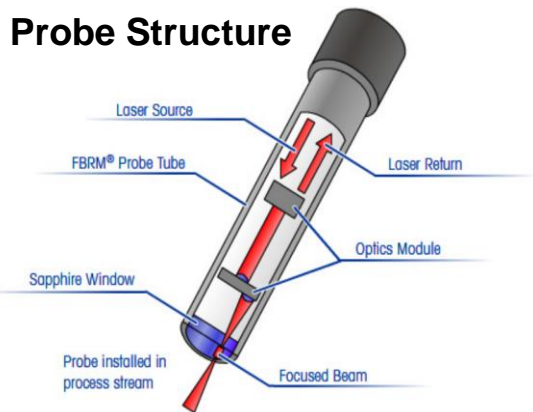
Applications

- Probe-based instrument for direct use in laboratory reactors
- Tracking particle size and count in real time at full process concentrations
- Monitoring particle phase, particle structures and droplets as well as their variation over time during the process
- Typical application in multiphase processes like crystallization, emulsification and flocculation
- Currently used for the monitoring of crystallization processes
- Operating range probe tip: 10 to 90 °C
- Measuring range: 0.5 to 2000 μm

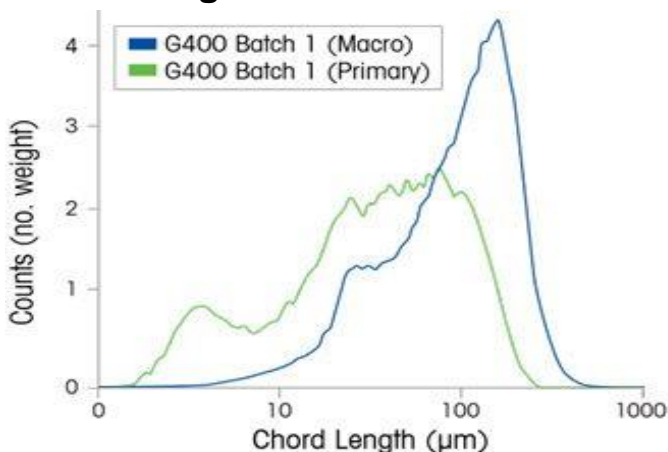
Measurement Principle

- The probe is composed of a stainless steel body, solid-state laser light source, set of optics and a sapphire window at the tip.
- Through this window a 780 nm rotating laser beam with a velocity of 2 m/s is transmitted to the sample.
- This beam is focused on a small spot close behind the window and scans across the particle system in a circular path.
- As the beam intersects a particle structure the backscattered laser light is detected as a pulse signal.
- Finally the Focused Beam Reflectance Measurement (FBRM) technology translates the pulse signals into chord lengths by multiplying by the scan speed.

Probe Structure



Chord Length Distribution



Chord Selection Models

- Primary – maximum sensitivity to individual crystals, particles and droplets
- Macro – enhanced sensitivity to macro-structures, such as flocs and agglomerates



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Images taken from: mt.com/FBRM-PVM-Particle-System-Characterization



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