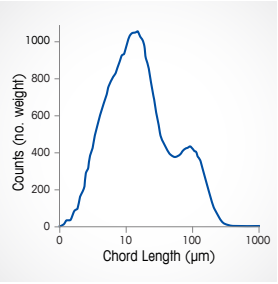
Particle Characterization

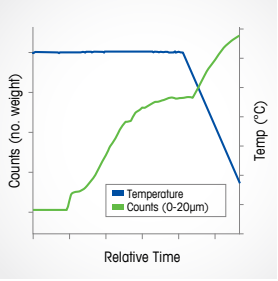
Inline Particle Measurement with FBRM®

Monitor and Control from Lab to Plant



Track Inline Particle Dimension, Shape, and Count

FBRM® G600 measures changes in particle dimension, shape and count. Real-time trends and distributions track changes to particles as they naturally exist in the process – eliminating the need for offline sampling.



Understand, Optimize and Transfer

Understand how the particle system responds to changing operating conditions. Optimize the particle distribution to improve process performance and product quality. Scale-up and transfer the process to ensure batch repeatability and process stability.

Ideal for Larger Vessels

When mounted in a dip pipe or extension tube, FBRM® G600R reaches to the ideal insertion depth in large process vessels. Dip pipe adapter kits include detailed installation instructions.

Flexible Mounting System

The FBRM® Flexible Mounting System is designed to enable easy probe installation in a variety of pipelines or vessels without permanent modification of the probe. Options include the use of industry standard ANSI, DIN, JIS, or TriClamp flanges, as well as the FBRM® Ball Valve Assembly.

FBRM® G600 (R, T, P and X versions)

FBRM® (Focused Beam Reflectance Measurement) provides the unique ability to measure particles and droplets inline in concentrated suspensions and emulsions, without the need for sample extraction or sample preparation. FBRM® is an inline process analytical tool tracks the rate and degree of change to particles and particle structures as they naturally exist in-process. FBRM® enables scientists and engineers to relate particle system dynamics to critical product quality parameters and to optimize the efficiency of crystallization, filtration and other particulate processes.

METTLER TOLEDO

Inline Particle Measurement with FBRM®

Monitor and Control from Lab to Plant

METTLER TOLEDO FBRM® is the world leading Process Analytical Technology (PAT) for inline particle characterization in the bio-pharmaceutical and chemical industries.

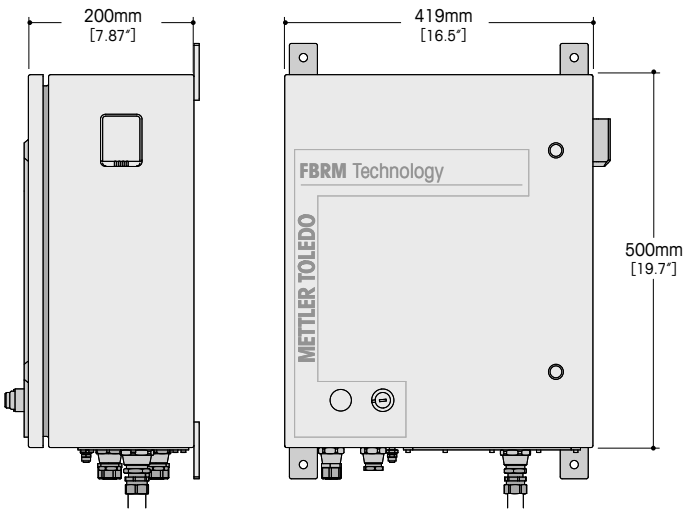
Technical Data

Probe Wetted Alloy	SS316L (standard), C22 (optional), Other alloys available as custom
Probe Window	Sapphire with Kalrez 6375 O-rings (standard), TM (optional)
Conduit Length	15m
Detection Range	0.5µm - 3000µm
Probe Tip Temp Range	-10°C to 120°C (standard)*; -80°C to 150°C (custom)
Probe Pressure Rating	10bar* (standard); up to 300bar (custom)
Field Unit Temp Range	0°C to 45°C (below 0°C custom available)
Field Unit Material	316 Stainless Steel
Field Unit Temp Range	0°C to 45°C (standard); below 0°C available (custom)
Air Supply Pressure	Min: 4 barg (60 psig)
Air Supply Flow	Max: 28.3 NL/min (1.0 SCFM)
Power	100–240VAC (auto-switching), 50/60Hz, 0.5A

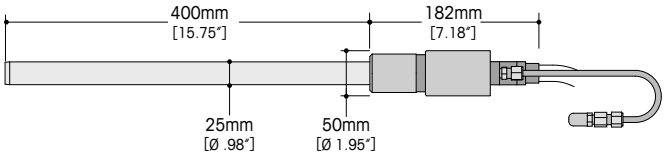
*Temp and Pressure specifications are conservative ratings, but should not be exceeded unless specific exceptions upon installation. Contact METTLER TOLEDO for information about extreme-temperature or high-pressure applications.

Certification	NRTL Certificate U8 11 08 72618 006; CE Approved, Class 1 Laser Device, Compliant with 21CFR1040.10 and 1040.11 and IEC60825-1

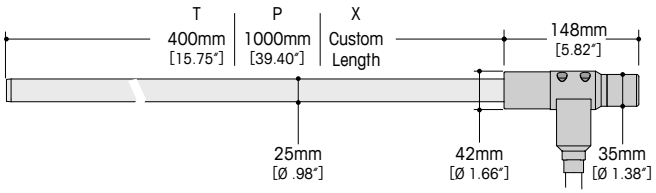
Base Unit Dimensions



G600R Probe Dimensions



G600T/G600P/G600X Probe Dimensions



Probe Specifications

					Flexible Mounting Options				Custom Mounting Options		
	Diameter	**Length**	**Standard Pressure Limit**	**Compression Fitting (3bar limit)**	Dip Pipe Installation	Ball-valve Assembly	Flange Mounting (ANSI/DIN/JIS)	Threaded Tri-clamp Flange	Custom Probe Pressure Limit	TM Window and Welded Triclamp (100 bar limit)	Tapered High-Pressure Flange (300 bar limit)
G600R	25mm	400mm	10bar	•	•	•	•	•			
G600T	25mm	400mm	10bar	•		•	•	•			
G600P	25mm	1000mm	10bar	•			•	•			
G600X	25mm	Custom	10bar	•			•	•	300bar	•	•

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For more information