

# AccuSizer<sup>®</sup> Sensors

## CHOOSE THE RIGHT SENSOR FOR YOUR APPLICATION

Entegris offers a range of sensors based on the single particle optical sizing (SPOS) technique to measure particle size and concentration. Over thirty years of development and advancement has created a unique series of sensors designed for specific applications.

Large particle sensors use light extinction only to count and size particles from 2 – 2500  $\mu\text{m}$  in either liquid or air (powders).

The LE-400-05 sensor includes both extinction and scattering detectors to measure particles in liquid from 0.5 – 400  $\mu\text{m}$ . Figures 1 and 2 show how the combination of extinction and scattering is used to provide this wide dynamic range. The upper concentration (coincidence) limit of the LE-400-05 sensor is 9000 particles/mL. This sensor can be used for both contamination monitoring and for high concentration particle size analysis when coupled with one of our many auto-dilution samplers such as the AccuSizer<sup>®</sup> AD or AccuSizer APS.

The FX sensor uses a focused laser beam (Figure 3) and extinction detecting to reduce the inspection zone, thus greatly increasing the upper concentration limit to  $\sim 10^6$  particles/mL. This is the preferred sensor for higher concentration samples like CMP slurries.

The FX Nano sensor uses a high power focused laser beam and scattering detecting to extend the dynamic range down to 0.15  $\mu\text{m}$ . This sensor can be used stand alone or in conjunction with the LE-400-05 sensor to provide an exceptionally wide dynamic range for samples like aggregated proteins.

The FX and FX Nano sensors are not used for low concentration contamination applications such as pure water/chemicals. These sensors are used for particle size analysis at higher concentrations but still provide highly accurate concentration data in particles/mL. A de-convolution algorithm is used to generate results since the focused laser beam does not measure 100% of the flow through the sensor.

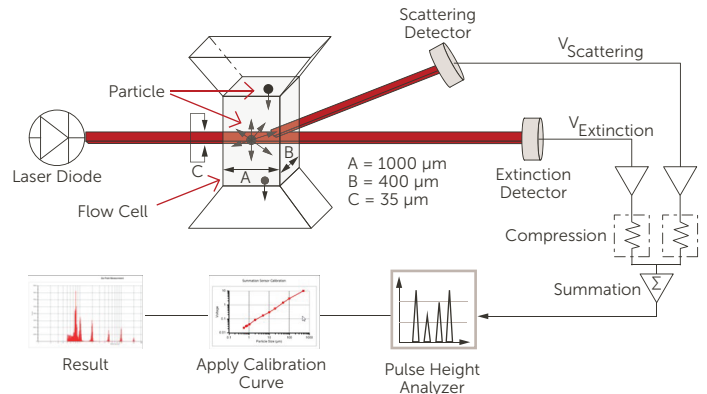


Figure 1. LE-400-05 sensor operation



Figure 2. Inside the LE-400-05 sensor

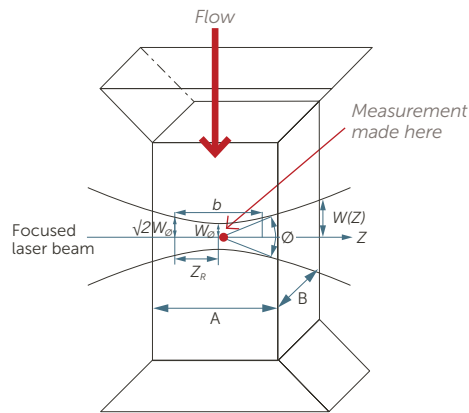
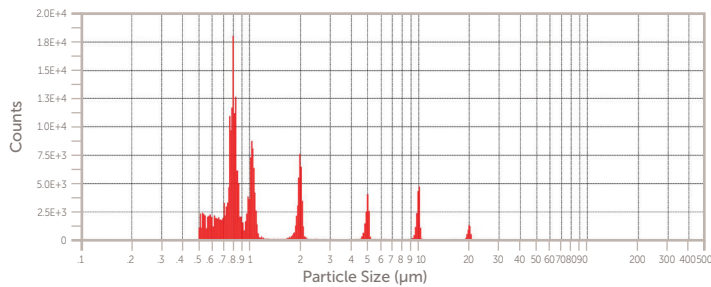


Figure 3. Focused beam FX sensor

## SPECIFICATIONS\*

<b>LE1000-2</b> <i>(large particle sensors)</i>	Extinction only, 2 – 1000 $\mu\text{m}$ , suspensions or powders
<b>LE2500-20</b> <i>(large particle sensors)</i>	Extinction only, 25 – 2500 $\mu\text{m}$ , suspensions or powders
<b>LE-400-05</b>	Extinction + scattering, collimated laser beam (100% inspection) Range: 0.5 – 400 $\mu\text{m}$ Concentration limit: 9000 particles/mL Sensitivity to 10 PPT Size Accuracy: 2% Count accuracy: 10% Flow rate: 60 mL/min or custom calibration
<b>FX</b>	Extinction only, focused laser beam Range: 0.7 – 20 $\mu\text{m}$ Concentration limit: $\sim 10^6$ particles/mL
<b>FX Nano</b>	Extinction + scattering, focused laser beam Range: 0.15 – 10+ $\mu\text{m}$ Concentration limit: $\sim 10^6$ particles/mL

### Six Point Measurement



\* Sample dependent and may require hardware options, subject to change without notice.

### FOR MORE INFORMATION

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Corporate Headquarters  
129 Concord Road  
Billerica, MA 01821  
USA

Customer Service  
Tel +1 952 556 4181  
Fax +1 952 556 8022  
Toll Free 800 394 4083

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