

**CAMSIZER L Digital Image Processing Particle Size And Shape Analyzer****SPECIFICATIONS**

PRINCIPLE OF OPERATION: The instrument employs Digital Image Processing to measure physical properties of solid particles. Both the Particle Size Distribution and the Particle Shape of free flowing particles can be measured.

GENERAL: The instrument consists of a Pentium IV Computer that controls the fully integrated system using Microsoft Windows. Results are displayed in a wide variety of formats for both particle size and particle shape. The fully integrated system comprises a measuring unit incorporating a high intensity, strobing LED lightsource and two high resolution Full Frame CCD cameras with progressive scan technology and matched scales of reproduction, which form an intelligent measuring system. The particles of solid material fall from a Vibratory Feeder System and are analyzed during free fall by the cameras in real time.

OPERATIONAL:

- § Recommended Measurement range is 30 to 30,000 micrometers (30 mm).
- § Measuring limits are 15 and 90,000 micrometers (90 mm).
- § Measuring time is 0.5 to 3 minutes, from start of sample to data presentation, depending upon required statistics.
- § Sample requirement is approximately 20 g – 1000 g per measurement, depending upon sample density and particle size.
- § Sample introduction automatic speed-controlled vibratory feeder, model DR-100 (width of chute is 60mm).
- § Fast, 60 images/second framegrabbing,
- § Real time particle scanning in 32 or 64 segments per particle for very accurate data
- § Continuous cleaning of the camera and lightsource windows is achieved with sheeting air flow during measurement.
- § Measurement zone vacuum is also available to ensure constant particle speed and to avoid velocity biasing.
- § Automatic particle threshold search
- § Data presentation is via a Pentium IV Computer, LCD monitor and an HP Color Deskjet Printer (models subject to change without notice).
- § Presentation of results over the full size distribution without any need for hardware changes for range.
- § Operation interface uses Microsoft Windows and presents the following information (and much more):
- § Measurement parameters and conditions
 - CCD image displays with automatic or manual image storage.
 - High-resolution analysis in more than 1000 size classes
 - Software available in English, French, Japanese and many more international languages.
 - Shape characteristics include: Aspect Ratio Symmetry, Sphericity, Convexity.
 - Date and time of analysis
 - Name and sample ID
 - Results presented in graphical and tabular formats include cumulative and frequency percentage, median, mean, mode and standard deviation values based on volume, based on area or based on number.
 - Trend Analysis and daily summary reporting
 - 10 measurement models available including minXc, minMa, MinFe, MaRec, for particle width, maxFe, xLength, xStretch, for particle length, xArea, for equivalent area.
 - Attachable algorithms for perfect matching results to results from other measuring methods (e.g. sieving, microscopy, hand caliper).
- § Communications are via system-specific interface.
- § Data export function in .xle format
- § Automatic calibration of optical system and lightsource
- § Self-maintenance and automatic system checking software
- § Optional autosampler for unattended operation of up to 15 samples with programmable run conditions for each, along with the ability to interrupt and reschedule.

PHYSICAL:

- § The instrument operates, and meets all specifications, on a power source of 100-115 Volts / 60 Hz.
- § The instrument operates under conditions of 5C to 40C and humidity conditions of less than the relative humidity.
- § The instrument weighs approximately 88 lbs. (excluding the computer), and has dimensions of 390 x 850 x 220mm (without hopper).