

PROCESS TECHNOLOGY

PHARMAFLOW™ PAT / PARTICLE SIZING SYSTEM

The Canty PHARMAFLOW™ has been engineered to analyze small volume samples for particle size, shape and concentration. The PHARMAFLOW™ easily converts from a lab unit to allow for continuous sampling in-line using sanitary Tri-Clamp™ connections. It offers microscopic, non-destructive viewing and provides particle size analysis with two dimensional results when used in conjunction with the CantyVisionClient™ Software. The vision system, with integral lighting, features precision optics designed to enhance the image prior to display or analysis. The image sensor is a high resolution / high speed CCD camera coupled to a microscopic lens system. The system offers zoom and focus ability, variable lighting, and multiple objective lens packages to cover a range of sizes. The PHARMAFLOW™ features the FUSEVIEW™ window as the flush product contact barrier which ensures laminar flow & eliminates pockets for potential product build-up. Sizing down to 0.7 micron is possible with the high magnification optics and high intensity light source. A variety of pumps can be used in conjunction with the system, including syringe style injection as well as peristaltic pumps.



FEATURES

- Particle Size, Shape and Distribution with Real Time Analysis
- Fused Glass Pressure Barrier Standard
- Quick release Tri-Clamp™ body connections for easy cleaning
- Cold Back Light Eliminates Heating of the Sample Even at High Outputs which are Required for High Shutter Speed Viewing.
- CCD Based High-Speed Imaging Device
- Small sample size analysis down to 5mL
- Syringe pump integration for easy sample circulation
- Easily converts from lab to on-line
- 1/2" Tri-clamp™ / Luer lock connection standard.

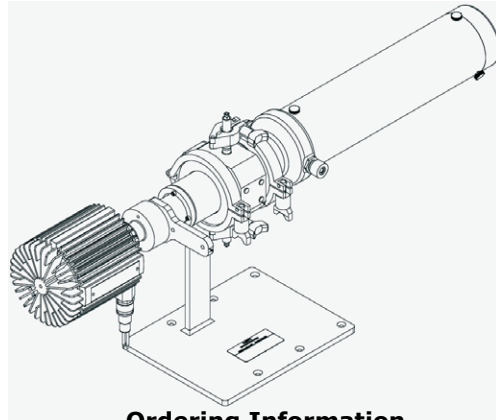
APPLICATIONS

- Crystallization research
- Protein analysis
- Fermentation
- Precipitation
- Cell growth and count
- Amorphous dissolution
- Dissolving and solubility of solids

ADVANTAGES

- Real time measurement, particle size & shape/characterization.
- Visual verification and the ability to timestamp recorded video.
- Lab-friendly design with linear rail stand to allow for ease of cleaning during sample change out.
- Image based microscopy / Two dimensional.
- Multiple flow configurations (on-line, at-line, syringe pump, peristaltic pump).
- Available Tri-Clamp™ connections allow for optimal sanitary conditions, CIP or SIP.

DIMENSIONAL INFORMATION



Ordering Information

HOW TO ORDER: Select the appropriate symbols and build a part number as shown:

EXAMPLE:

PHA - A G 1 K 1 1 B 1 1 A Z

| CONNECTION TYPE A - Luer Lock / 1/2" Sanitary (Tri-Clamp™) | | O-RING MATERIAL A - Viton® B - Buna C - EPDM D - Silicone E - Kalrez® F - Chemraz® | | | | | | | | | |
|---|--|---|--------------|-------------|----------------------|---------------|-------------|----------------------|---------------|-------------|--|
| VIDEO SYSTEM FORMAT G - Gigabit Ethernet (B&W) 1600x1200 H - Gigabit Ethernet (Color) 1600x1200 | | MATERIAL HANDLING 1 - None 2 - Syringe Pumping System (see Fig. A) 3 - Peristaltic Pumping System (see Fig. B) | | | | | | | | | |
| ENVIRONMENTAL RATING 1 - Lab Unit (General Purpose Enclosure) 2 - NEMA 4 Weatherproof, IP 66 | | FLOW PATH SPACING CONTROL 1 - Variable Gap(100µm-8,000µm), Adjustable with Sample Present 2 - Fixed Gap (3,175µm when using Luer Lock and Teflon insert (see Fig. C) Both options can be configured with the unit. The selected option would be factory configured. | | | | | | | | | |
| SYSTEM ILLUMINATION K - Backlight L - Darkfield M - Cross Polarized When picking options K, L, or M, all three are included and the selected option will be factory installed. | | WETTED METAL MATERIAL B - 316L Stainless Steel D - Hastelloy® C276 or equal E - Hastelloy® C-22® or equal | | | | | | | | | |
| PARTICLE SIZE RANGE <table border="1"> <thead> <tr> <th>P.S. View</th> <th>P.S. Measure</th> <th>Pixel Array</th> </tr> </thead> <tbody> <tr> <td>1 - (.2µm* - 2400µm)</td> <td>(.4µm*-480µm)</td> <td>@ 1600x1200</td> </tr> <tr> <td>2 - (.3µm* - 3400µm)</td> <td>(.6µm*-680µm)</td> <td>@ 1600x1200</td> </tr> </tbody> </table> When picking options [1 or 2], the system includes a second lens for the other range in the bracket as well. The selected option will be factory installed. For larger sizes, please refer to the InFlow™ sheet, TA10601-1. | | P.S. View | P.S. Measure | Pixel Array | 1 - (.2µm* - 2400µm) | (.4µm*-480µm) | @ 1600x1200 | 2 - (.3µm* - 3400µm) | (.6µm*-680µm) | @ 1600x1200 | INPUT POWER 1 - 120 V AC / 60Hz 2 - 230 V AC / 50Hz |
| P.S. View | | P.S. Measure | Pixel Array | | | | | | | | |
| 1 - (.2µm* - 2400µm) | | (.4µm*-480µm) | @ 1600x1200 | | | | | | | | |
| 2 - (.3µm* - 3400µm) | | (.6µm*-680µm) | @ 1600x1200 | | | | | | | | |

* Verify Required Wavelength of Light for Application.
 Visible Light Allows for Particles .7 Micron(µm) and Larger.

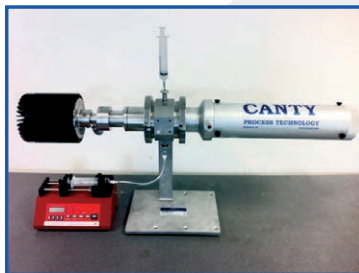


Fig. A



Fig. B



Fig. C

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