



Accelerate development for blend uniformity  
NIR methods

## SentroBlender

### Supporting method development

SentroBlender is a laboratory scale system dedicated to the development of NIR methods using very low amounts of material.

The development of NIR PAT methods can be time consuming and expensive. The amount of API required, as well as the overall time including preparation, discharging and cleaning can be excessive, depending on the size of the blender.

Using mainly NIR spectra from mixtures taken under static conditions without rotation for the method development is often not representative of a scalable blender.

### Shorten development time

SentroBlender helps shorten the development time to a minimum while minimizing the amount of required material. It will take only 1-2 days to get NIR data of 30–40 small batches (50–100 g each) covering all the required composition variation needed to build robust NIR methods.

The system can be used with any Sentronic PAT NIR for container blending (SentroPAT BU and SentroPAT DA). The method transfer to large scale can be accomplished by adding data from a small number of batches acquired at the larger scale into the NIR method. Due to the small size of the overall system it is possible to insert the system optionally into a glove box to allow

handling of highly potent products. The sample holder is designed for using a wide range of different sample bins or bottles.

### Flexible use of dedicated bins or plastic containers

Optimized 2" squared bins are available as an accessory for the SentroBlender. Alternatively sample containers with an opening of up to 124 x 124mm and a height of up to 175mm can be used.

### Easy to operate

The holder can be pre-adjusted to a given bin height. The sample containers

are pressed against the sapphire window with a spring, enabling fast and easy replacement of samples.

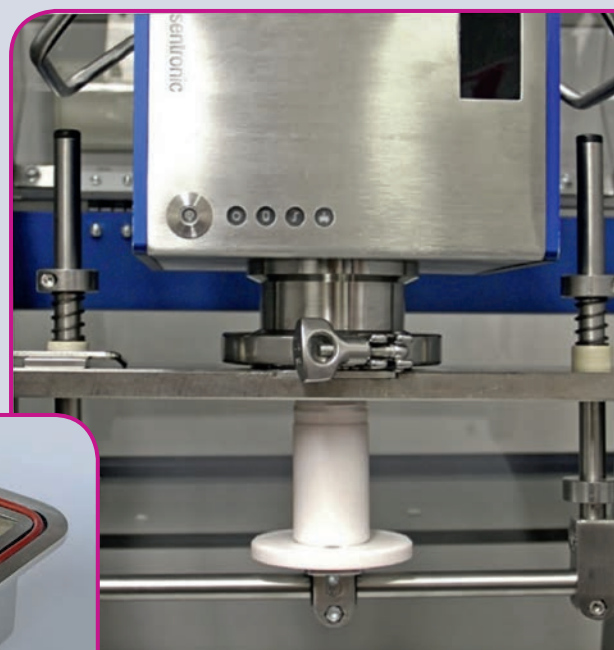
The system can be operated at a speed of up to 30 rpm. A predefined position moves the SentroBlender with the bin down to replace it with the next sample. The opposite orientation can be used to acquire a reference spectrum.

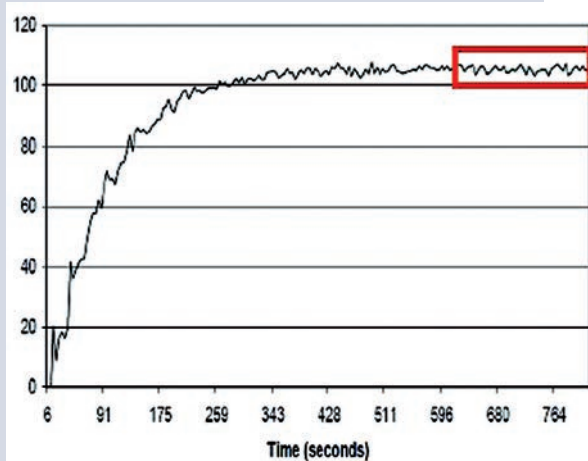
### Touch panel control

A touch panel is used to operate the SentroBlender. The program is intuitive and is quick and easy to use. During the blending process a counter displays the remaining time or number of revolutions.

Shown here is the attachment of the SentroPAT BU system using the 4" flange and a plastic bottle containing a small volume to be blended and analyzed in the spring load adapter.

Optimized 2" square bins can be provided as an alternative for a more optimized blending process.



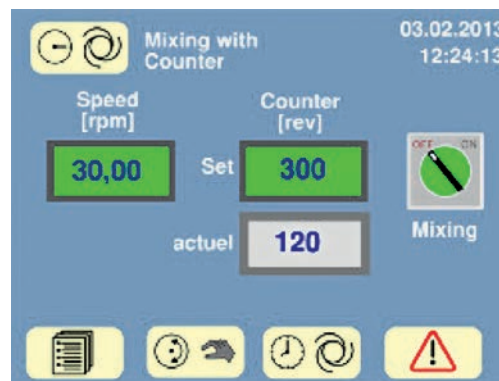


The usual blend time is between 2 and 15 minutes and depends on the formulation properties, rotation speed and the sample container characteristics. The process is usually monitored during the operation using the software interface of the SentroPAT system.

For method development the spectra taken at the end of the process are used. At this point, the material is expected to be homogeneously mixed. In case of pre-mixed blends it is sufficient to run the SentroBlender with a few rotations only to get enough sample spectra.

## Technical Parameters

Flange	2" or 4" sanitary connection with 8.5mm thick sapphire ensures the same optical properties to flanges used on production bins
Sample adapter	Flexible connector for different bins and bottles Quick and simple replacement of sample bins 2" square bins available as accessory
Sample container size	max. height 175 mm, max. diameter or length 124 mm
Control	Touch panel for control and configuration
Process control	Configurable for time and number of rotations
Rotation speed	Selectable, up to 30 rpm
Safety	Emergency stop connected to housing / protection cover Complies with Machinery Directive EC 2006/42/EC
Power supply	90-260 VAC
Dimensions incl. cover	700 x 700 x 640 mm (H x W x D)
Weight	90 kg



Operator view of control software



The operator interface is kept simple and can be used in an intuitive way. All relevant parameters can be configured and operation can be monitored easily.

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Since 1993, **Sentronic** is successfully developing and manufacturing optical sensors and analyzers, primarily for chemical parameters. With our core competence in photonics, the combination of optical technologies and microelectronics, we supply high-tech products combined with comprehensive services. Our focus is on the development and manufacturing of complete optical sensor and analyzer solutions for the pharmaceutical, chemical and life science industry. We provide flexibility in customizing as well as OEM products. The business unit analyzer is a partner for NIR based PAT solutions in the pharmaceutical industry with a strong focus on solid dose manufacturing processes.

## Partnership with Sentronic

Sentronic has implemented end-to-end, fully compliant documentation across the entire product life cycle for many customers and for many projects. We are an experienced, flexible partner. We understand that each customer has specific needs and imperatives, and we develop made-to-measure answers to the challenges of each PAT project. We are happy to play a supporting role within your existing organizational structures, providing vital input. You can be sure of effective communications and quick, easy access to expert advice.

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Technical specifications are subject to change without notice.