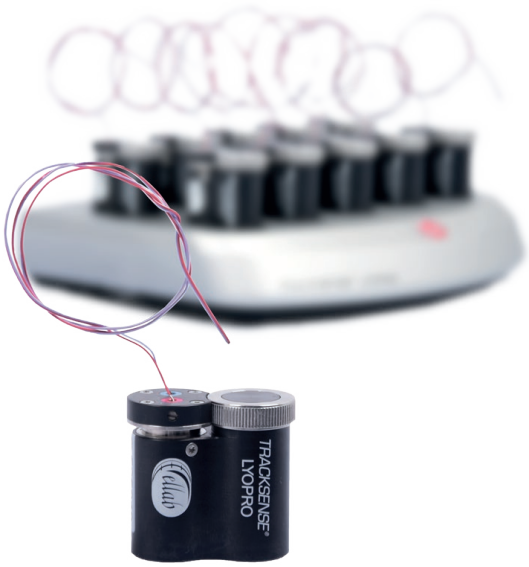
Product NEWS

Validation & Monitoring Solutions

TrackSense® LyoPro Datalogging System for Freeze Drying Validation & Monitoring

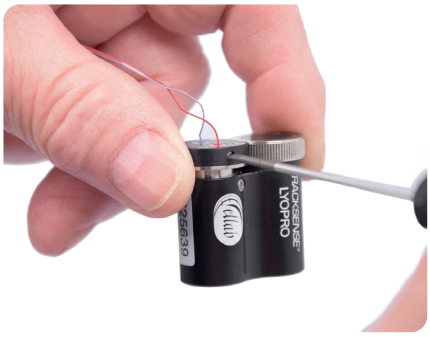
Type Designation	Ordering Code
TS LYOPRO LOGGER (including 30 cm TC sensor)	**31201000**
TS VALPRO LYO (Reader Station & ValSuite Pro Software)	**31200000**
TS LYOPRO AP (Access Point – will be released soon)	**31206000**



We are very proud and happy to introduce you to the new and revolutionary TrackSense® LyoPro wireless data logger system. LyoPro provides a complete solution for qualifying freeze dryers, validating the process itself and monitoring each batch. Safely controlling all aspects of this challenging application.

A complete system consists of a number of LyoPro loggers, a 10-slot LyoPro multi reader station, ValSuite Pro software package version 6.0.16 or newer, a LyoPro Access Point (will be introduced soon) as well as various accessories (LoggerNest, ConnectionClip and LyoStopper). Each setup will be different and adjusted according to the type of vial ranging from size 2R to 100R.

The LyoPro data logger is a completely new design consisting of a 32 mm tall twin housing made of PEEK. One part of the twin housing contains the special green labelled high capacity TSL battery. The other part contains all electronics, including the live data transmitter. On top of the electronics compartment is a screw terminal connection for the 30 cm thermocouple sensor type AWG30 with a dimension of only 0.55 x 0.95mm.



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The overall shape of the LyoPro housing is perfectly adapted to the way vials move in a line on conveyer belts and later placed on shelfs. The height of the LyoPro is fitted for the smallest of vials. For higher vials, the data logger is simply configured with the appropriate LoggerNest and interconnected by the clips.

The LyoPro 10-slot multi reader station also has a completely new design to accommodate for the new data logger. Besides handling up to 10 data loggers at a time, the data transmission is done through Radio Frequency (RF), allowing for a much higher speed. The interface to PC is done by either USB or Ethernet (LAN), while the reader station is equipped with an IP address shown in the window in the bottom plate.

The LyoPro Access Point receives LIVE data from LyoPro data logger to the ValSuite 6 software. This access point is also newly developed, exclusively having an improved signal strength and faster upload speed.

The design has an extra antenna added, offering improved aerial coverage. As with the LyoPro reader station, the LyoPro Access Point offers connection via Ethernet by showing the IP and MAC address through the window in the bottom plate. The LyoPro Access Point is introduced later this year or early next year - awaiting RF communication approvals.

Freeze drying applications in the pharma industry primarily uses glass vials as product containers. These vials are usually processed on conveyer belts onto the freeze dryer shelves. The design of the LyoPro data logger, with its twin housing design and specified accessories, is ideal for this.

The various accessories that have been developed for the solutions include:

- The patent pending LyoStopper that is used for introducing the thermocouple into the vial and keeping it in place
- The LoggerNest that is used to align the LyoPro height and diameter to fit the actual vials
- The Clip and BufferClip used to steer the LyoPro data logger along with the vials

As there are 11 standard vial sizes available in the market today, it would require a lot of space to mention all the individual reference number for all LoggerNests, Clips and LyoStoppers, which is why we wish to point your attention to the LyoPro Pricelist published together with this Product News.

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Main Advantages:

- ✓ The ultimate validation and monitoring system for Freeze Drying
- ✓ Ideal for automatic loading and unloading freeze dryer systems operating under sterile conditions
- ✓ The LyoPro data logger can be adapted to any size vial using the LoggerNest, Clip and LyoStopper accessories
- ✓ Temperature measuring accuracy of +/- 0.3°C
- ✓ Long battery operation and an internal memory of 100,000 samples, covering the process time of 34 days (at a 30 second sample rate)
- ✓ Thermocouple sensor with dimension of only 0.5 x 0.95 mm, reducing the potential impact on measurement to almost zero
- ✓ Data logger and thermocouple sensor can be user calibrated preferably using Dry Block technology

Sensor	Specifications
Temperature Measuring Range:	-62 to +62 °C
Calibrated Temperature Range:	-60 to +60°C
Sensor Element Type:	Thermocouple type T
Temperature Accuracy:	+/- 0.3 °C
Sensor Dimensions:	0.55 x 0.95 x 300 mm
Ambient Temperature Range:	-65 to + 140 °C
Ambient Pressure Range:	0.001 mBar to 4 Bar ABS
Housing Material:	PEEK
Diameter:	18 mm (each compartment)
Height:	32 mm
Weight:	28 Gram
Memory Capacity:	100,000 samples
Minimum Sample Rate:	1 Second
Maximum Sample Rate:	24 Hours
Time Accuracy:	+/- 5 Seconds Per 24 Hours
Battery Type:	TSL 150 Special Battery
Expected Battery Lifetime at -60 °C/30 sec. sample rate:	2,400 hours
Cleaning Method:	H2O2 or sterilization at +121°C for max 30 minutes

Reader Station	Specifications
Cabinet Material:	Anodized Aluminum
Overall Dimensions (H x W x D):	35 x 177 x 148 mm
Weight:	1,100 Grams
Ambient Temperature Range:	5-50 °C
Environmental:	1-90% RH, non-condensing
Power Supply:	Power Supply 5V DC or USB
Interface Connection:	USB or Ethernet (LAN)
Communication:	RF (Radio Frequency) 2.4 GHz
Logger Capacity:	1-10 pcs.