

The Tiama Cold Lab delivers an automatic cold end sampling solution.



## An automatic sampling solution

As Sébastien Beltran explains, Tiama is moving forward on production-oriented sampling measurements by completing its product range with an automatic cold end sampling solution.

The production of container glass is a very complex and demanding process that requires quality control and high productivity to satisfy the most demanding customers and maintain glassmakers' competitiveness in the market. Meeting both requirements is not an easy task. Therefore, in order to better understand glassmakers' needs and issues and the difficulties to achieve these goals, Tiama has conducted many on-site visits, conference calls and an online survey in recent years.

The results of these investigations showed that most glass plants reported that existing quality control

processes are already difficult to achieve due to higher production capacity, higher production speed per line and the evolution of quality requirements. Available budgets for new equipment and the high constraints on human resources were also pointed out as key issues, since sampling operations and routine diagnostics are still made manually in most cases.

To reduce this human factor and to increase the efficiency of cold end sampling operations, budget-performed automation is the key. In 2017, therefore, Tiama took the decision to complete its product range with an automatic cold end sampling solution called Tiama Cold Lab.

### Automatic sampling solution

This Tiama solution is a laboratory machine that can be integrated in the production line for automatic sampling.

Designed for round and non-round containers, Tiama Cold Lab presents two main advantages. First, the automatic loading will remove the low value of manual sampling operations. It will also reduce the workload and increase glassmakers' profitability. Then, automation of the measurements, by reducing the human factor, makes the machine less dependent on an operator's level of expertise. These two advantages make the Tiama Cold Lab a reliable machine, increasing the overall sampling frequency, precision and efficiency of the procedure. It will resolve one of the main issues that glassmakers encounter, since it will remove the high constraint on quality human resources.

As its name suggests, Tiama Cold Lab can also be used as an off-line laboratory machine. Infeed and outfeed conveyors are designed for a full range of samples, with no need to position the bottle by hand. For the last three years, the equipment has achieved reliable sampling operations in standard cold end environments on four continents, especially at four leading glass groups and six factories.

### A full range of measurements

The multi-station solution delivers a full range of precise and accurate ▶



Non round article measurement by the Tiama Cold Lab.



## Refractories specialist :

- Forehearth and working-end
- Furnace bottom paving
- Feeder expendables



Example of an in-line Tiama Cold Lab.

measurements, including the finish and body measurements such as D angle, sunk and bulge, verticality and bent neck. Optional features can be added. This includes internal bore gauge by compass and laser (13mm-32mm depth, up to 47mm), weight by high precision weighting scale (0-2kg) or thickness by chromatic probe (0.5mm-8mm). Tiama also wanted to add a series of complementary, optional measurements such as pressure, volume, capacity and impact, which is possible thanks to its collaboration with Somex Innovation.

Measurements can be taken on a wide assortment of round or non-round containers (square, rectangular, oval, flask) as long as the container height is between 40mm and 400mm and its diameter is between 40mm and 120mm.

### Smart factory compliant machine

In recent years, Tiama has developed its YOUiverse smart factory concept, where its five areas of expertise (monitoring, inspection, traceability, service and intelligence) all work together to move towards Industry 4.0. With sensors displayed in its machines, Tiama's goal is to retrieve and analyse all available data to have a better view of the process and improve production efficiency.

It is with this goal that the Tiama Cold Lab was designed. Each and every measurement, result, warning and error threshold operated by the system will be registered and compiled into reports, removing another monotonous task for operators. These reports can then be sent into the company's intelligent systems such as Tiama IQ Scan, allowing users to have a full vision of their performance.

Aware of the specific constraints of automatic cold end sampling, Tiama has oriented its latest product as a real Industry 4.0-compliant alternative to existing solutions in terms of performance, optimised budget for complete solutions per line, compatibility with most existing cold end lines, easy-to-use procedures for operators who are unused to inspection machines, responsive R&D and service. ●

#### About the author:

Sébastien Beltran is Laboratory Product Manager at Tiama

#### Further information:

Tiama, Vourles, France  
 tel: +33 4 372 01500  
 email: [marketing@tiama.com](mailto:marketing@tiama.com)  
 web: [www.tiama.com](http://www.tiama.com)



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