

GX



THE MOST ACCURATE
AND RELIABLE
INSTRUMENT ON THE
MARKET FOR
MEASURING LIVE CELL
CONCENTRATION OF
SAMPLES OFFLINE

THE CHALLENGE

To design a highly accurate, offline, fast live yeast cell analyser for use by global breweries and lab staff, to help brewers achieve greater production consistency and optimum cost efficiencies.

THE SOLUTION

The product development team at GX worked collaboratively to create a showcase instrument. The GX team designed, tested and manufactured the CLYA using Aber Instruments technology of four 'flush' electrodes, in the stirred sample chamber, to apply an accurate radio-frequency field to measure the capacitance in live yeast cells.

The software design ensured that the HMI PLC user interface provided full user-centric functionality, combining significant ease of use to eliminate time consuming manual operations.

Multiple high quality industrial design concepts resulted in a stylish unit, designed to sit well within the client's product portfolio and brand identity. The team at GX ensured that both functionality and budget were evaluated throughout the project, introducing commercially off the shelf components, alongside low volume manufacturing solutions to achieve the product's specification.

THE RESULT

This market-leading product is still recognised as the most accurate and reliable instrument on the market for measuring live cell concentration of samples offline. It achieves significant production cost and footprint efficiencies, and sales volumes are successively in line with our brief, with future batch productions planned.

QUICK FACTS

CLYA HANDLES UP TO 20
DIFFERENT YEAST STRAINS.

CLYA MEASURES
CONCENTRATIONS UP TO 70%
VIABLE SPUN SOLIDS

CLYA MEASUREMENT UNITS
CAN BE SWITCHED BETWEEN
"VIABLE CELLS/ML" AND
"% VIABLE SPUN SOLIDS".



PRODUCT DESIGN



VALUE ENGINEERING



CONTROL SYSTEM
DEVELOPMENT

TECHNICAL DATA

ELECTRONICS

This compact yeast analyser (CLYA) owes its success to our ability to introduce four flush electrodes into a unit small enough to be used on site or in a lab. Previously these components had been used within the fermentation tanks at large breweries. Our team experimented with several existing models manufactured by the client, to find a way that small samples could be measured using dielectric spectroscopy.

SOFTWARE

To help ensure the success of the CLYA, the team at GX included an electronic control module supplied by the client. This allowed seamless integration with other Aber products to ensure more accurate readings.

MECHANICAL & INDUSTRIAL DESIGN

The premise of the CLYA was to develop a simple machine that would be easy to use, providing quick and accurate samples of yeast to be tested. On site analysis would save time, allowing process operators to make important, instant decisions on yeast pitching rates.

The design the team at GX developed was both sleek and streamline. Using just one tooled component to develop the entire top cover and user interface area helped reduce ongoing manufacturing costs. This smooth and shiny exterior was made using reaction injection molding, allowing for quick and easy production in small quantities of just ten units.

To save ongoing costs, there were no cassettes or slides needed to analyse the samples, instead a yeast chamber was NC milled from solid plastic to avoid tooling.

REGULATORY SUPPORT

To comply with the current regulations, the team at GX supported the client through the approvals and precompliance process by submitting data and documentation. They were also able to supply final production units.

RAPID PROTOTYPING

Since the CLYA was destined to become a showcase product, the look and design of the final product was of prime importance. Using 3D printed SLS parts, NC milled parts and sheet metal parts, the GX design team prepared a working prototype directly from their own data. From this early prototype it was evident that the CLYA would be a robust and useful addition to the brewery industry.

VALUE ENGINEERING

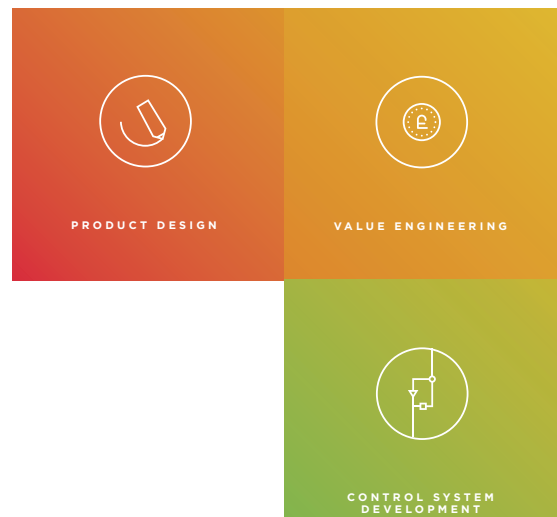
Like many of GX's design projects, the development of the CLYA was value engineering driven; the team created a fully functional and reliable product which was exciting and memorable in appearance.

OUR SERVICES

-  ELECTRONICS
-  VALUE ENGINEERING
-  SOFTWARE DESIGN
-  REGULATORY SUPPORT
-  RAPID PROTOTYPING
-  OPTONICS
-  MECHANICAL ENGINEERING
-  INDUSTRIAL DESIGN



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PRODUCT DESIGN

VALUE ENGINEERING

CONTROL SYSTEM DEVELOPMENT