

Gallery Plus Beermaster discrete analyzer

Fully-automated photometric analyzer for beer, malt, and wort analysis

The Thermo Scientific™ Gallery™ Plus Beermaster is a fully-automated, discrete photometric analyzer dedicated to beer, malt, and wort quality control and analysis. Many different applications, like automated bitterness, beta-glucan, pH, and SO₂ can be run simultaneously from a single sample. Panels of system applications are predefined into the analyzer. Moreover, new user-specific applications can be defined.

The Gallery Plus Beermaster analyzer employs colorimetric end-point and kinetic, as well as turbidimetric and bichromatic reactions, with or without sample blanking. The system supports automated standard addition measurement method for complex sample matrices. The Bitterness Column Module (BCM) in the Gallery Plus Beermaster analyzer includes extraction column for bitterness measurement. In the automated process, prior to photometric analysis at 275 nm, the beer bittering substances are extracted from interfering compounds present in the sample matrix.

Measurement

Single channel interference filter photometer with beam splitting reference, 12 filter positions.

Filter range	275, 340-880 nm
Incubation temperature	Controlled at 25-60 °C, no cooling, preset to 37 °C
Light source	Xenon flash lamp
Absorbance range	0-3.5 A, resolution of 0.001 A, reproducibility of SD <0.005 A at 2 A



BCM unit combining solid phase extraction and colorimetric detection for bitterness measurement. Bitterness units (BU) are automatically calculated from absorbance results. The result levels are optimized to the international reference methods like ASBC, EBC and MEBAK.

Measurement range	5-100 BU
Bitterness tests per hour	Typically 8

Reaction vessels

Thermo Scientific™ DECACELL™ discrete disposable cuvettes. Continuous access to cuvettes without interrupting test processing.

On-board capacity	360 measurement cells, 36 cuvettes with 10 reaction cells, 1 to 3 hours walk-away time depending on workload
Reaction end volume	120-300 µL

Samples and reagents

Continuous access to samples and Thermo Scientific™ Gallery™ system reagents without interrupting test processing. Automatic identification via internal barcode reader. Clearly displayed real-time reagent volume and remaining test capacity. Up to four reagent additions per test.

On-board capacity	9- or 18-position sample rack, 60-position block for automated sample pretreatment in bitterness measurement and 6-position rack for bitterness liquids, max. 6 racks, 42 reagent positions in the cooled disk
Sample volumes	2-120 µL, possibility to extend up to 240 µL
Sample containers	0.5 mL, 2.0 mL, 4.0 mL cups and sample tubes (diameter 12-16 mm, length 75-100 mm)
Sample barcodes*	Code 128 and barcodes USS Codabar, Interleaved 2 of 5 and Code 39 with a check digit
Reagent volumes	2-240 µL
Reagent containers	10 mL and 20 mL vials
Sample and reagent dispensing	CV ≤2% for volumes ≥2 µL

*Used with sample tubes in a 9-position sample rack.

Calibration

Factor, bias, linear, logit-log, spline, second order, and point-to-point calibration. Method-dependent use of individual calibrators or automatically diluted series from a stock calibrator. Previous curve comparison available.

Quality control

Real-time QC program with multiple, user-definable Westgard rules. Control frequency user-definable. Out-of-specification control results flagged. QC chart printouts, daily and cumulative reports.

Dilutions

Automatic sample pre-dilution. Automatic dilution of over-range tests with automatic rerun. Addition of manual pre-dilution value for result calculation.

Data management

Microsoft® Windows® 10 workstation with graphical user interface. Data input online, via mouse, touchscreen, keyboard, and barcode reader. Different user groups can have different access rights. Different user interface language versions available.

LIS interface	CLSI LIS02-A2
Hardware interface	RS-232 or TCP/IP
Result reports	Collated by sample, manual entry of off-line results allowing for fully-collated result reports, results calculated from both measured and off-line results. Spreadsheet reporting for further calculations possible.
Traceability	Full traceability with long term storage of results including associated calibrations and reagent lot data.
Capacity	Up to 350 tests/hour with one-reagent method.
Dimensions and weight	94 cm (width) × 70 cm (depth) × 62/130 cm (height/with open cover), 110 kg (weight). Separate workstation.
Power requirements	100-240 VAC ±10%, 50-60 Hz ±5%, 300 W
Deionized water consumptions	2.5 litres/ hour
Average noise level at 1 meter	<60 dB(A)
Environmental conditions	Operating temperature range of 18-30 °C, humidity 40-80% (non-condensing)
Regulatory	<p>Conforms to</p> <ul style="list-style-type: none"> • CAN/CSA-C22.2 No. 61010-1-12, 61010-2-081:15, 61010-2-010:15 • UL Std. No. 61010-1:2012, 61010-2-081:2015, 61010-2-010:2015 • FCC CFR 47 Part 15, subpart B • 2011/65/EU RoHS Directive • 2006/42/EC Machinery Directive • 2014/30/EU Electromagnetic Compatibility (EMC) Directive
Ordering code	MG98622001 Gallery Plus Beermaster Discrete Analyzer (with BCM)

Find out more at thermofisher.com/discreteanalysis