

AUTOMATIC LABORATORY model LA02
OPERATING SPECIFICATIONS

Application:	The Analysis System is designed to measure the sugar content and pH value of grape must on delivery to the winery. It is essentially made up of: A UR-30 model Refractometer Unit, analysis cell, electro-pneumatic interconnection box, base unit with microprocessor controller for equipment management and external interfacing, printer unit for printing off multi-dimensional data tickets, remote control panel.
Type of measurement:	<i>For instruments marketed in France, Spain, Portugal or other European Union Member State, or in any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized by the type analysis in France, Spain and Portugal, the Strength by Mass measurement in the sugar of natural grape must is subjected to relative decrees of type analysis approval.</i> - Refractometric measurement of the Refractive Index and display of the Strength by Mass in must sugar expressed in the predefined scale of the relative concentration, with temperature compensation already applied. After a set time an icon is displayed which when pressed switches the value to the alternative scale for as long as the icon is pressed. When the symbol appears, acquisition of the external input is enabled. If a switcher is connected, at each measurement, for the first few seconds, the display is always in the predefined scale. The measurement in the predefined scale is displayed in white on a blue background and the unit of measures is indicated to the top left of the display. The measurement in the alternative scale is displayed in orange on a blue background and the unit of measures is indicated to the top left of the display. The remote display will show a fixed value depending on how the repeater is set, but the value is not legalized. The PC will always acquire a string with the value, again, not legalized. Within the equipment's tolerance limits, the measurement is not affected by the color of the must or its emulsion nor by the presence of suspended solids. - Measurement of the pH value by means of an electrode with polymer electrolyte.
Measurement scales/limits:	0...30° % mass (Brix) alternative 0...18.3° % vol. conventionally calculated based on 16.83 g/l per 1 % in alcohol volume
Accuracy:	±0.1° % mass, the maximum tolerated error is applied to indications which are not rounded up
Measurement scales/limits:	<i>For instruments marketed in countries where type analysis is not envisaged:</i> 1.3403...1.3902 nD Automatic conversion of the indication into the measurement scales listed below, with limits corresponding to: 35 degrees Brix 30.2 degrees Babo 22 degrees ALCOHOL / % vol. on base of 17 and/or 17.5 g/l per 1 % volume of alcohol 153 degrees Oechsle 32 kg/q
Notes:	The comparison in the various measurement scales refers to the nD/Bx ICUMSA conversion tables (1974)
Accuracy:	0.3% of the range Maximum accuracy: >±0.1% mass or equivalent for corresponding scales
pH measurement	Measurement limits: 2...14 pH Accuracy: ±0.05 pH units
Product temperature:	5... 40°C (41 ... 104°F) with automatic compensation of the temperature measured by the internal PT1000 Temperature Probe in AISI 316 stainless steel
Sample quantity required:	(without Transfer Unit) >350 cc in dynamic sampling
Sample quantity required transferred:	~1500cc/analysis cycle (only in the version with Must Transfer Unit)

Transfer Unit bowl capacity:	~5 liters: minimum quantity 2 liters per cycle (only in the version with must transfer unit)
Quantity of sample analyzed:	~700 cc/measurement cycle
Positioning:	The instrument must be protected from sunlight

GENERAL SPECIFICATIONS

Power supplies	<p>Electric: AC85...264V, 47...63Hz, 100W Connection using cable ending in a "2P+T" Schuko CEE 7/7 plug</p> <p>Compressed air: 3 bar (43.5 psi), envisaged consumption ~1.5 l/analysis. Connection using "Quick-fit Attachment" for plastic tube (diameter 6x4 mm)</p> <p>Water: Water 1...4 bar (14.5...58 psi), envisaged consumption ~1 l/analysis. Connection by means of "seal holder" for fabric-finished hose with internal diameter = 15 mm Another connection to the Must Transfer Unit is envisaged (if installed) for daily cleaning purposes, this is to be carried out using a plug-in quick-fit connector for fabric-finished hose (diameter 18 mm).</p> <p>Must: Version with Must Transfer Unit: connection to the tube of the Truck Sampler using a "PVC Seal Holder" for a tube with an internal diameter of 50 mm. The seal holder is secured to the Transfer Unit by means of "Garolla" clamps. Version without Must Transfer Unit: manual priming directly in the bowl.</p>
Interfaces	<p><i>For instruments marketed in France, Spain, Portugal or other European Union Member State, or in any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized, the serial connections are not legalized. Only those indications shown on the display are of legal relevance,</i></p> <p>Digital: RS485 for connection to PC (with special RS485/232 converter). RS485 for connection to the Oenology Remote Indicator. RS485 for connection to external printer (with special RS485/232 converter).</p> <p>Inputs: 1 "External Start" contact input. 1 "Change Measurement Scale" contact input.</p> <p>Outputs: 1 "Measurement Underway" contact output. 1 "External Transfer" contact output. 1 "Measurement End" contact output.</p>

CONSTRUCTION FEATURES

Base unit:	<p>Function: System management, data processing, operator interface, interfacing with additional elements outside the Equipment.</p> <p>Execution: Structure in AISI 304 stainless steel (IP55)</p> <p>Electronic section: Central "CPU" unit with microprocessor with management software on Flash; communication, interfaceability with analysis unit via serial RS485 protocol. Processing and indication of measurements, software menu display, diagnostics menus, error messages and operating status indicator icons on graphic backlit LCD 320x240 pix display with "LCD Saving" function and touch screen. Multi-level programming software complete with password protection for certain functions and check menu. 5 language options (Italian, English, Spanish, French German) for menu and message display.</p> <p>Electronic section: Start switch on the side of the equipment. Movements with low-voltage electro-pneumatic control.</p>
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UR30 Refractometer Unit	<p>Execution: Enbloc housing in AISI 316 stainless steel, AISI 316 stainless steel prism holder with BS 4825 ASME-BPE Tri-Clamp® fitting. <i>For instruments marketed in France, Spain, Portugal or other European Union Member State, or in any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized in France, Spain and Portugal, the UR-30 Refractometer with relative display section is the part of the machine subject to type analysis.</i></p> <p>Measurement section: "Optical glass" measurement prism. Electronically compensated LED light source. CCD sensitive element. Molecular Sieve Cartridge for dehumidifying the Optical Section.</p> <p>Electronic section: Central "CPU" unit with microprocessor</p>
Analysis basin	<p>Execution: plastic bowl</p> <p>Features: Priming with flushing must before carrying out the measurement. Automatic washing using water at the end of each measuring cycle. Automatic "Maximum" level control. Pneumatically operated piston drainage system.</p>
Printer unit	<p><i>For instruments marketed in France, Spain, Portugal or other European Union Member State, or in any State included in the agreement concerning the European economic market or any State which has accepted an agreement of acknowledgement, when the applicable prescriptions provide guarantees which are equivalent to those recognized by the analysis type in France, Spain and Portugal, the printer is not legalized. Only the indications provide on the Receiver's display are of legal relevance and are considered the valid values in the event of discrepancies with the indications given by the printer.</i></p> <p>Execution: One-direction table printer (RS232 interface) with impact printing system with printer ribbon</p> <p>Features: Prints data tickets of variable size (min. 70x75, max 120x220). Option to print multiple tickets (1 original + 2 copies) and/or with cardboard support (1 original + 2 copies) and/or with cardboard support. Fully personalized choice as to the type of data to be printed ("Brix, Date, Time, etc. Fully personalized choice of printing position on the ticket by means of "Row-Column" matrix set-up.</p>
Must Transfer Unit	<p>Execution: Pyrex container installed on a structure in AISI 304 stainless steel</p> <p>Features: Pneumatically operated diaphragm valves. "Overflow" drain to permit the mixing of substantial quantities of must. Automatic control of levels. Priming with flushing must before filling the bowl with product to be measured. Completely automatic filling, drain and transfer cycle (only analysis "Start Consent" needs to be carried out by the operator in charge). External polycarbonate pushbutton panel (IP55) which also provides operational information concerning the transfer cycle.</p>
Parts in contact with the product:	Pt1000, Analysis Bowl and Level Electrode in AISI 304/316 stainless steel and plastic. Optical glass measurement prism. PVC drain unit. Pyrex and PVC transfer device.
Dimensions (mm):	505.5 (w) x 550 (h) x 380 (d)

TECHNICAL-NORMATIVE SPECIFICATIONS

Environmental features	Temperature limits: Environment: 5...45 °C (41...113 °F) Storage: -20...+70 °C (-4...158 °F) Humidity limits: Environment: 5%...95% (R.H without condensate) Storage: 5%...95% (R.H without condensate) Altitude limits: <2000 m a.s.l. Degree of Protection: IP55 in accordance with EN60529
Conformity to Directives:	EC: REGULATION 1935/04/EC MSD: 2006/42/CE LVD: 2014/35/EU EMC: 2014/30/EU CE marking of conformity to EU Directives. Approval no. LNE-29382 rev.0 dated 12 June 2015 issued by the "Laboratoire national de métrologie et d'essais (LNE)". In application: Décret n° 2001-387 du 3 mai 2001 modifié, arrêté du 31 décembre 2001 et arrêté du 14 septembre 2011. Approval n° 160547001 issued by "Centro Español de Metrología / Ministerio de Industria, Energía y Turismo." Approval P ¹⁵ n° 602.12/34 issued by "Instituto Português da Qualidade". The equipment complies with the international OIML R 124 recommendations for instruments which measure the refractive index of must upon delivery before fermentation. The Refractometer Unit is type "I".