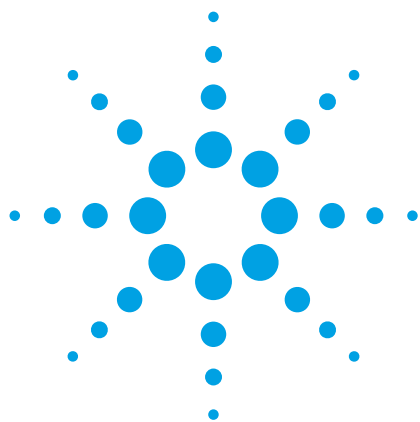




Agilent OpenLAB ELN Small Instrument Module

Technical Overview

Direct capture of data from balances and pH meters eliminates errors and enables the paperless lab

For analytical chemists that traditionally use paper based notebooks, OpenLAB ELN is a workflow application that allows the creation and delivery of analytical test requests between the chemistry, biology, and analytical departments. The analytical laboratory can also send results back to researchers, in whatever format works best: images, chromatograms, tables, or audio reports, all stored and searchable in OpenLAB ELN.

Key features of OpenLAB ELN for analytical chemists

- Predefined methods and protocols with built-in calculations
- Electronic capture of all experimental details:
 - Insert files, images, chromatograms, and spectra directly
 - Include searchable annotations
 - Import results data from chromatography data systems, as well as small instruments like balances and pH meters (see attached detailed list)
- Detailed analysis reports across samples or analytical techniques

With the addition of the new Small Instrument Module (SIM) for OpenLAB ELN, critical information can be automatically incorporated into the notebook's dynamic forms and can be used for calculations of final results, thereby eliminating transcription errors. SIM provides integration to serial measurement devices such as balances, titrators, or pH meters. Through Agilent's business relationship with VelQuest Corporation, the leader in capturing electronic serial instruments values, we are able to provide the Small Instrument Module for any OpenLAB ELN system.



Agilent Technologies

Instrument Types

- Balances
- Calipers (Digital)
- Colorimeters
- Coulometers
- Conductivity Meters
- Dissolution Baths
- Melting Point

Apparatus

- Micro-Osmometers
- Moisture Analyzers
- Particle Size

Analyzers

- pH Meters
- Polarimeters
- Refractometers
- Spectrophotometers
- Tablet Hardness

Testers

- Titrators
- Turbidimeters

The OpenLAB ELN SIM is a simple add-on to your IT infrastructure. The server installation brings several components:

- The Instrument Manager to configure and authorize instrument data capture
- A Web Services interface that lets the ELN access measurements performed through instruments
- One of the largest libraries of standard instrument interfaces in the industry

The screenshot displays the OpenLAB ELN interface for entering results. On the left is a navigation pane with 'Main', 'Protocol', 'Results' (selected), and 'Analysis' options. The main area is titled 'Results Description' and includes fields for 'Project', 'Work Package', 'Line Item', and 'Target'. Below these are sections for 'Buffers' and 'Measurements'. The 'Buffers' section shows two entries: 'Std 4' with Lot # K456 and pH reading 4.01, and 'Std 7' with Lot # K380 and pH reading 6.98. The 'Measurements' section contains a table with columns 'Sample' and 'pH'. It lists three measurements for 'Sol1' with pH values 5.67, 5.45, and 5.58. Each measurement has an 'Add' button and a red 'X' icon. Below the table is a 'Summary report' section with an 'Update' button. The summary text reads: 'For sample Sol1, measurements vary from 5.45 to 5.67 with an average value of 5.57'. At the bottom, there is a 'Conformity' dropdown menu set to 'Pass'.

Sample	pH
Sol1	5.67
Sol1	5.45
Sol1	5.58

OpenLAB ELN, the ideal complement to your LIMS or LES

Most commercial laboratory information management software (LIMS) products have core capabilities in sample tracking, specification management, and final results reporting. LIMS and Laboratory Execution Software (LES) run primarily in highly-structured, quality control environments. However, managing analytical experiments in a development lab requires more flexibility. Tasks such as instrument calibrations, incorporating data from analytical instruments, method development changes, or data review and approval also have need to be captured in electronic format.

Turning on your paperless lab

The last step in fully using the system is to configure the templates you need to match the workflow in your laboratory. The unmatched flexibility and ease of use of the OpenLAB ELN dynamic forms lets you decide your preferred approach and workflow.

Agilent can help with its Professional Services team. Our ELN experts can assist you or train your internal IT resources or preferred partner. Agilent is a global leader in systems integration and consulting services resulting from decades of experience partnering with many of the world's leading Life Sciences and Chemical Analysis companies.

Instruments Suitable for OpenLab ELN via the RS-232 Interface

A

Accumet AR15 pH Meter
Accumet 25 pH Meter
Advanced Instruments 3D3 Osmometer
Anton Paar DMA4500 Density Meter

B

Beckman 45 pH Meter
Beckman 310 pH Meter
Beckman 360 pH Meter
Beckman F350 pH Meter
Brinkmann 713 KF Titrator
Brinkmann 701 Titrimo
Brinkmann Metrohm 736 GP Titrator
Brinkmann Metrohm 737
Titroprocessor Titrator
Brinkmann 756 KF Titrator
Brinkmann 784 KF Titrator
Brinkmann 794 KF Titrator
Brookfield DVII+ Viscosity Meter

C

Corning 540 pH Meter
Corning 350 pH Meter
Corning 355 pH Meter
Corning 440 pH Meter
Corning 450 pH Meter

D

Denver Instruments A-200DS Balance
Dr. Schleuniger 8M Tablet
Hardness Tester
Distek 2100B Dissolution Bath
Distek 2100C Dissolution Bath
Distek 5100 Dissolution Bath
Distek 6100 Dissolution Bath
Distek 6300 Dissolution Bath

E

Electrothermal 9300 Melting
Point Apparatus

F

Fiske 210 Micro-Osmometer

H

Hanson Research SR-6
Dissolution Bath
Hanson Research SR-8 Plus
Dissolution Bath
Hach 2100AN Turbidimeter
HIAC Royco 8000A Particle
Size Analyzera
Holland C50 C50 Tablet
Hardness Tester

I

Index instruments GPR 11-37
Refractometer
inoLab pH 730 pH Meter

L

Leica Auto Abbe Refractometer

M

Mettler AE240 Analytical Balance
(requires external interface)
Mettler AG204 Analytical Balance
Mettler AG245 Analytical Balance
Mettler AG285 Analytical Balance
Mettler AT20 Analytical Balance
Mettler AT200 Balance
Mettler AT201 Analytical Balance
Mettler AT250 Analytical Balance
Mettler AT261 Analytical Balance
Mettler AX105 Analytical Balance
Mettler AX205 Analytical Balance
Mettler AX26DR Analytical Balance
Mettler B1302 Top Loading Balance
Mettler DL-18 KF Titrator
Mettler DL-37 KF Coulometer
Mettler DL-38 KF Titrator
Mettler DL-39 Coulometer

Mettler DL53 KF Titrator
Mettler FP62 Melting Point Apparatus
Mettler HR-83 Moisture Analyzer
Mettler MP230 pH Meter
Mettler MT5 Micro Balance
Mettler MX5 Micro Balance
Mettler PB3002-S Top Loading Balance
Mettler PB602S Top Loading Balance
Mettler PB1501-S Top Loading Balance
Mettler PG1003-S Top Loading Balance
Mettler PG2002-S Top Loading Balance
Mettler PG4002-S Top Loading Balance
Mettler PG5002-S Top Loading balance
Mettler PL-1501-S Top Loading Balance
Mettler PM2000 Top Loading Balance
Mettler PM4000 Top Loading Balance
Mettler PM460 Moisture Balance
Mettler PR2002 Top Loading Balance
Mettler PR2003DR Top Loading Balance
Mettler PR5002 Top Loading Balance
Mettler PR5003 Top Loading Balance
Mettler SB16001 Top Loading Balance
Mettler SevenEasy pH Meter
Mettler SevenMulti pH Meter
Mettler SR16001 Top Loading Balance
Mettler UMT2 Micro Balance
Mettler UMX2 Micro Balance
Mettler XP205DR Analytical Balance
Mettler XP205DU Analytical Balance
Mettler XP6002S Top Loading Balance
Mettler XS204 Analytical Balance
Mettler XS205 Analytical Balance
Mettler XS603S Balance
Mettler XS3200L Top Loading Balance
Metrohm 720 KF Titrator
Metrohm 841 KF Titrimo
Metrohm 684 KF Coulometer
Metrohm 701 KF Titrimo
Mitutoyo 500-170 Digital Caliper
Mitutoyo CD-4 C Digital Caliper
Mitsubishi CA-100 Moisture Analyzer

O

Ohaus AP250D Analytical Balance
Ohaus MB200 Analytical Balance
Ohaus TP400 Balance
Ohaus Voyager Analytical Balance
Ohaus VORW60 Analytical Balance
Optical Activity AA-10 Polarimeter
Orion EA940 KF Titrator
Orion 162A Conductivity Meter
Orion 350 pH Meter
Orion 370 pH Meter
Orion 611 pH Meter
Orion 210A pH Meter
Orion 210A pH Meter
Orion 290A pH Meter
Orion 520 pH Meter
Orion 710 pH Meter
Orion 720A pH Meter
Orion SA720 pH Meter

P

Parr DMA48 Density QSC
Perkin Elmer 3100 Atomic Absorption Spectrophotometer
Perkin Elmer 341 Polarimeter
Pharmatron 6D Tablet Hardness Tester
Photovolt Aquatest
10 Moisture Analyzer
Photovolt Aquatest
2010 Moisture Analyzer

R

Rudolph Instruments
DPIA31 Polarimeter
Rudolph Instruments
DigiPol Polarimeter
Rudolph Instruments
781-38U Polarimeter

S

Sartorius 160D Balance
Sartorius 17RMP8 Balance
Sartorius A120S Balance
Sartorius A200-S Balance
Sartorius AC211S Analytical Balance
Sartorius BA4100S Top Loading Balance
Sartorius BP211D Analytical Balance
Sartorius BP210D Analytical Balance
Sartorius BP221S Analytical Balance
Sartorius BP3100S Top Loading Balance
Sartorius BP4100S Top Loading Balance
Sartorius CP224S-OCE Balance
Sartorius CP225D Analytical Balance
Sartorius CP2202S Top Loading Balance
Sartorius LA230S Analytical Balance
Sartorius LC12001S Balance
Sartorius LE26P Balance
Sartorius LP3200D Top Loading Balance
Sartorius LP4200S Top Loading Balance
Sartorius M2P Balance
Sartorius MC210P Analytical Balance
Sartorius MC210S Analytical Balance
Sartorius MC5 Micro Balance
Sartorius ME2155 Balance
Sartorius ME215P Analytical Balance
Sartorius ME215S Analytical Balance
Sartorius ME235P Analytical Balance
Sartorius ME235S Analytical Balance
Sartorius ME5 Micro Balance
Sartorius R160P Balance
Sartorius R200D Balance
Sartorius RC210P Balance
Sartorius SE2 Micro Balance
Scaltec SBC31 Balance
Scaltec SBA41 Balance
Shimadzu RF-1501 UV/Vis Spectrophotometer
Shimadzu AUW1200 Balance
Sotax HT1 Dissolution System
Sotax AT7 Smart Dissolution System

T

ThermoOrion 250A pH Meter
ThermoOrion 320 pH Meter
ThermoOrion 350 pH Meter
ThermoOrion 420A pH Meter
ThermoOrion 520A Plus pH Meter
ThermoOrion 720A pH Meter
ThermoOrion 3Star pH Meter
ThermoOrion 4Star Conductivity Meter
ThermoOrion 5Star pH Meter

V

VanKel 25-1000 Dissolution Bath
Vankel VK8000 Dissolution Controller
Vankel VK7000 Dissolution Bath
Vankel VK7010 Dissolution Bath
Varian VK7025 Dissolution Bath
Varian VK7030 Dissolution Bath
VWR 8000 pH Meter
VWR Symphony pH Meter
VWR Symphony Conductivity Meter

W

Wescor 5520 VP Osmometer

Z

Zeiss MCS311 Colorimeter (capture and parse printer output)

www.agilent.com/chem/openlabeln

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