

830 Vacuum Quality Monitor System

FROM THE GRANVILLE-PHILLIPS® PORTFOLIO

PRODUCT HIGHLIGHTS:

- 1-135 amu total and partial pressure measurement information in 100ms
- Instant information: 10 most prevalent gases in normalized, percentage and absolute, total pressure & partial pressure trend graphs
- Accurate low mass hydrogen and helium measurements (no zero blast)
- Data logging at full 100 ms sample rates
- Easy single-gas calibration using a gas already in your vacuum system
- Low power 15W partial pressure system
- Compact design and remote mount gauge using 1-meter or 3-meter long cable

Simplicity Solutions™ by Granville-Phillips® combine the highest performance gas analysis technology with intelligent instrumentation functional design that transforms complex measurement into actionable information. The Simplicity Solutions 830 Vacuum Quality Monitor (VQM) system is the world's fastest, lowest power gas compositional analysis instrument with full data collection, spectral decomposition, and data logging at 100ms capture rates over the full 1-135 amu measurement range.

Out-of-the-box you get your 10 most prevalent gases, total pressure trending, partial pressure trending, spectral display, data logging, data (screen) capture, and leak check with alarm — all at the full 100ms sampling rate. The low power Controller and Gauge system requires only 15W to operate and offers the flexibility to remotely mount the 830 gauge using a 1-meter or 3-meter long cable.

A Revolutionary Approach to Vacuum Quality Measurement

Simplicity Solutions introduces the next generation mass separation technology based on the electrostatic ion trap which:

- is more than 15 times faster
- requires 1/5 the power
- and is significantly smaller than legacy quadrupole or mass-sector technologies.

Simplicity Solutions represents exceptional end-to-end customer experience — from hassle-free sales and delivery through connect-and-go equipment installation, and responsive worldwide service and support. All Simplicity Solutions are backed by global Sales, Service, and Support teams, including GUTS™ (Guaranteed Uptime Support) emergency support. When you call a GUTS Service Center you are guaranteed immediate response by a vacuum expert from our worldwide technical support staff. We are at work for you 24 hours a day, 365 days a year at +1-800-FOR GUTS (+1-800-367-4887).



830 Vacuum Quality Monitor System Features

Super fast Vacuum Quality Measurement with full data collection, spectral decomposition, and data logging at 100ms capture rates over the full 1-135 amu measurement range.

Ultra low power VQM Controller and Gauge system that requires only 15 Watts to operate.

Out-of-the-box functionality provides unparalleled ease of use with a clear listing of the 10 most prevalent gases (Top 10) by ratio (normalized), percent (%), or absolute amplitudes that are listed by amu or from a library of over 75 NIST-Traceable Reference Gases. You also get total pressure and partial pressure trend graphs, and full spectral data. A few mouse clicks gives you histogram data at 100ms acquisition rates that are readable using Microsoft® Excel® or other common data analysis programs.

Simple calibration using any single gas (1-135 amu), including what's already in your vacuum system. Complete calibration in seconds with just a few clicks of the mouse.

Hassle-free installation with remote mounting of the mass spectrometer gauge using interconnect cables up to 3 meters long. The VQM Controller can be used as a bench-top, rack-mount, or custom-mount solution.

Intuitive operation with the easy-to-use 830 VQM Viewer application that provides a full set of features and functions to enable quick vacuum quality measurement and data logging, flexible data presentation and viewing options, leak detection mode, and system configuration options.

Easy maintenance with field replaceable filaments and electron multipliers (Nude version). Simple maintenance and single-gas calibration combine to ensure maximum uptime of your 830 VQM system.

Series 830 Controller Specifications

Parameter	Specification
Mass Range/Scan Time	1 - 135 m/z in 100 msec
Resolution (M/DM)	150 minimum
Total Pressure Range (Torr)	1 x 10 ⁻⁹ to 5.5 x 10 ⁻⁵ Torr, 830 Partial Pressure Gauge 1 x 10 ⁻⁹ to Atmosphere with optional TPMK
Minimum detectable partial pressure (MDPP)	1 x 10 ⁻¹¹
Sensor I/O, Mass Spectrometer	830 VQM Sensor, rear panel, 1 meter or 3 meter cable
Sensor I/O, Total Pressure Module	802 Total Pressure Module, 1 meter or 3 meter cable
Inputs and Outputs:	
Data I/O, USB (Type B)	USB 2.0, full speed, 12 Mb/sec
Trigger In (BNC)	50 ohm, positive TTL edge trigger, 1 ms minimum
Trigger Out (BNC)	50 ohm, active high, TTL frame scan
Analog In (BNC)	10K ohm, 0-10 V, 16 bit resolution
Analog Out (BNC)	0 to +5 V with 30 KHz 3 db bandwidth
LEDs, Front Panel	EXT TP, USB, Trigger IN, Trigger OUT, Analog IN, Analog OUT, (OFF = disabled, ON = enabled, Blinking = active, Yellow = locked out, Red = error)
Power, Controller and MS Gauge Only	24 Vdc, 15 Watts
Power, with optional Total Pressure Module	24 Vdc, 75 Watts
Input Power Plug	DC power jack, 5.5 mm OD x 2.5 mm ID x 11 mm long
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Non-operating Temperature	0 °C to 80 °C (32 °F to 176 °F)
Relative Humidity	< 90%, non-condensing
Physical Dimensions	15.64 cm long x 10.49 cm wide x 4.01 cm. high
Weight	720 grams (25 ounces)

Specifications and dimensions are subject to change without notice.

Series 830 Mass Spectrometer Gauge Specifications

Parameter	Specification
Measurement Range	1 x 10 ⁻⁹ to 5.5 x 10 ⁻⁵ Torr
Accuracy	±20%
Mass Range	1 to 135 amu
Mass Separator Type	Anharmonic Resonant Ion Trap
Resolution	150 m/Δm minimum
Dynamic Range	2 decades for single scan, 3 (or more) with averaging
Response Time	100 msec (1-135 amu @ 1 x 10 ⁻⁷ Torr)
Filament	Single Yttria coated Iridium, field replaceable
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F), non-condensing
Detector Type	Electron Multiplier
Detector EM Gain	1000X typical
Bakeout Temperature	200 °C maximum, non-operating, cable disconnected
Mounting Flange	NW35CF 2.75 Inch ConFlat type
Interconnect cable	1 meter long, 11.6 oz. / 3 meters long, 28 oz.
Physical Dimensions	16.81 cm long x 3.81 cm dia.
Weight	420 grams (14.8 ounces)
Materials exposed to process environment	304 L Stainless Steel, 316 L Stainless Steel, Alumina Ceramic, Al ₂ O ₃ 98% Min., Nickel, Molybdenum, Ag/Cu eutectic braze, Gold, Iridium, Yttria, Y ₂ O ₃ 99.95%, Lead Glass (multiplier body), Chromium

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Series 830 Viewer Software Specifications

Parameter	Specification
Supported Hardware:	
830 VQM Controller	all versions
830 VQM Gauge	all versions
802 Micro-Ion ATM, Total Pressure Monitor	all versions
Interface, USB Port	USB 2.0, full speed (12 Mb/s)
Vacuum Quality Monitor:	
Top Ten Gases Display Table	Automatic listing by amu or NIST Correlation, user selectable by amu or NIST Correlation
Gas Recipe Fit	Correlation fit against expected gas spectrum 10 user selectable from 50+ NIST Gas Library or amu
Gas Recipe Fit, Response Time	100 ms, 1-135 amu, 10-Gases, recommended PC
Vacuum Quality Index (VQI)	VQI based on user specified script
Total Pressure Trend Graph (1)	Range: ATM to 10 ⁻⁹ Torr (1)
Total Pressure, Response Time	100 ms with VQM Mass Spectrum readings 50 ms overpressure protection (830 VQM internal)
Pressure Trend of User Selected Gases	10 maximum, user selection in display table
Sensor Spectrum	Displayed, 1-135 amu
Data Capture & Logging	
Capture, Display Information	1-135 amu scan, total pressure, timestamp, status
Logging, VQM Data	Comma delimited text format (MS Excel Compatible) \1-135 scan, total pressure, timestamp, status per scan 100 ms logging rate using recommended PC
830 VQM Controller Configuration	Power Modes: ON/OFF/SLEEP (wake via comm.) Mass Spec Mode: ON / OFF Acquisition Modes: single, continuous, count Trigger Modes: internal, external, manual trigger Input/Outputs Modes: enable/disable Mass Spectrometer Calibration: single gas
Other Features	
Leak Detection	User assigned detection mass/gas, audible alarm

(1) Requires Total Pressure Measurement Kit (TPMK)

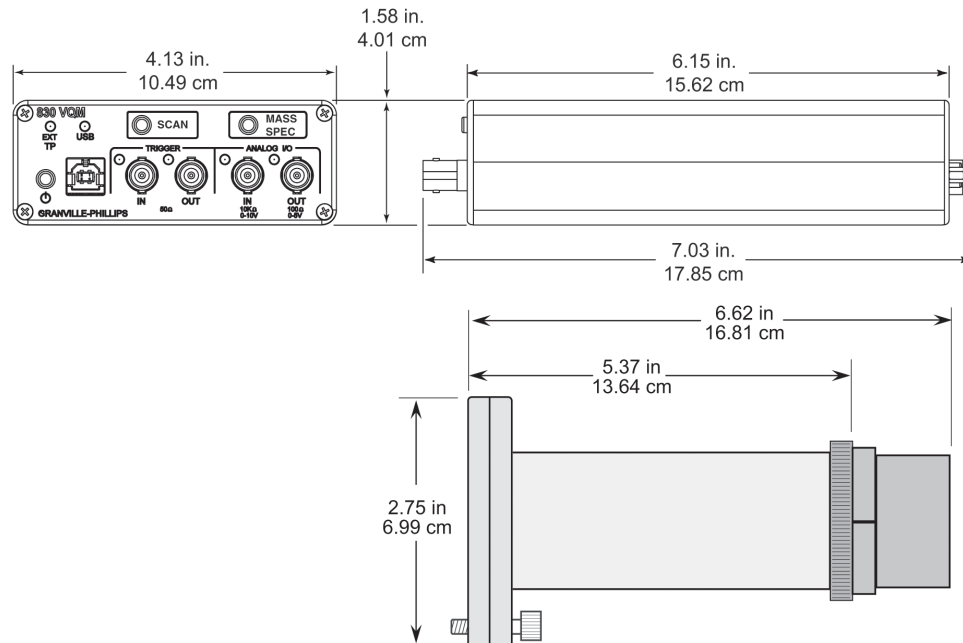
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Series 830 Viewer Software Computer Requirements

Parameter	Minimum
Processor	Intel®: Core™ Duo AMD: Athlon™ 64
RAM	2 GB
Operating System	Windows® XP, Vista, or 7
Communications	USB 2.0
Disk Space	2 GB
Display Resolution	1280 x 1024 pixels
Recommended (full speed data processing)	
Processor	Intel®: Core™ 2 Quad, Core™ i7 or later AMD: Athlon™ 64, Phenom™ X3 or later
RAM	4 GB or better
Operating System	Windows® XP, Vista, or 7
Communications	USB 2.0
Disk Space	2 GB, 7200, SATA 4Gb/s or better, 64MB buffer
Display Resolution	1280 x 1024 pixels

Specifications and dimensions are subject to change without notice.

Dimensions



Backed by Guts®

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