Application software to perform gas monitoring tasks in up to 24 locations with Innova Photoacoustic Gas-Monitors and Multi Point Samplers

LumaSoft Gas Multi Point 7880

- Synchronizes the sampling functions of the sampler units to the measurement cycle of the Photoacoustic Gas-Monitors

- For each location, the LumaSoft Gas Multi Point 7880 stores up to five gas concentrations, humidity, and air pressure

- Displays measurement data in either a table or a graphical window; data can be displayed in a Channel or Gas view mode

- Easy exchange of displayed data for different measurement locations

- Measurement data stored in SQL Server 2014 database

- Online access to the measurement data via built in OPC Server

- Login-secured access to measurement data

- Alarm reporting for each gas at each measurement location
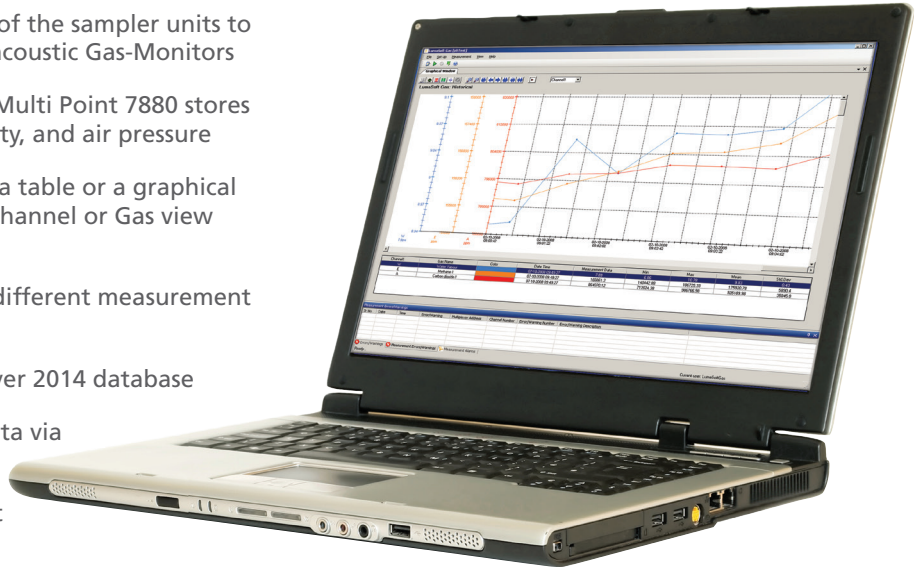
The LumaSoft Gas Multi Point 7880 enables remote control from a personal computer of the following gas monitors: Photoacoustic Gas Monitor – INNOVA 1512, 1412i, 1314i, or SF$_6$ Leak Detector - 3434i, and one Multipoint Sampler – INNOVA 1409.

The software coordinates the functions of the instruments to form a monitoring system which, via tubing, can perform gas-monitoring tasks in up to 24 different locations.

When a user sets up a measurement task using the software, the task is performed automatically and measurement data is collected and displayed on the screen.

Getting Started
The Monitor and the Sampler unit are connected to the computer via RS232 Serial, USB, or via Ethernet and the Local Area Network (LAN). The user decides where the measurements should be taken, and connects the

Sampler unit to these locations with tubing. Air-samples are then drawn from the locations and analyzed by the Gas Monitor.

The user starts the 7880 and opens a database to receive the data from the new task and then configures the 7880 to the desired task. When the configuration is complete, the task can be started and the 7880 is in control of the instruments.

Application areas:
- Remote-control of a system comprising: one Gas Monitor and one Multipoint Sampler - INNOVA 1409 with 6, 12, or 24 channels depending on the configuration.

- Enables multi-gas sampling in up to 24 locations

Multipoint Sampler – **INNOVA 1409**

Sampling point
Up to 24 channels

Gas sample
for analysis

USB

**LumaSoft
Gas MultiPoint**

USB

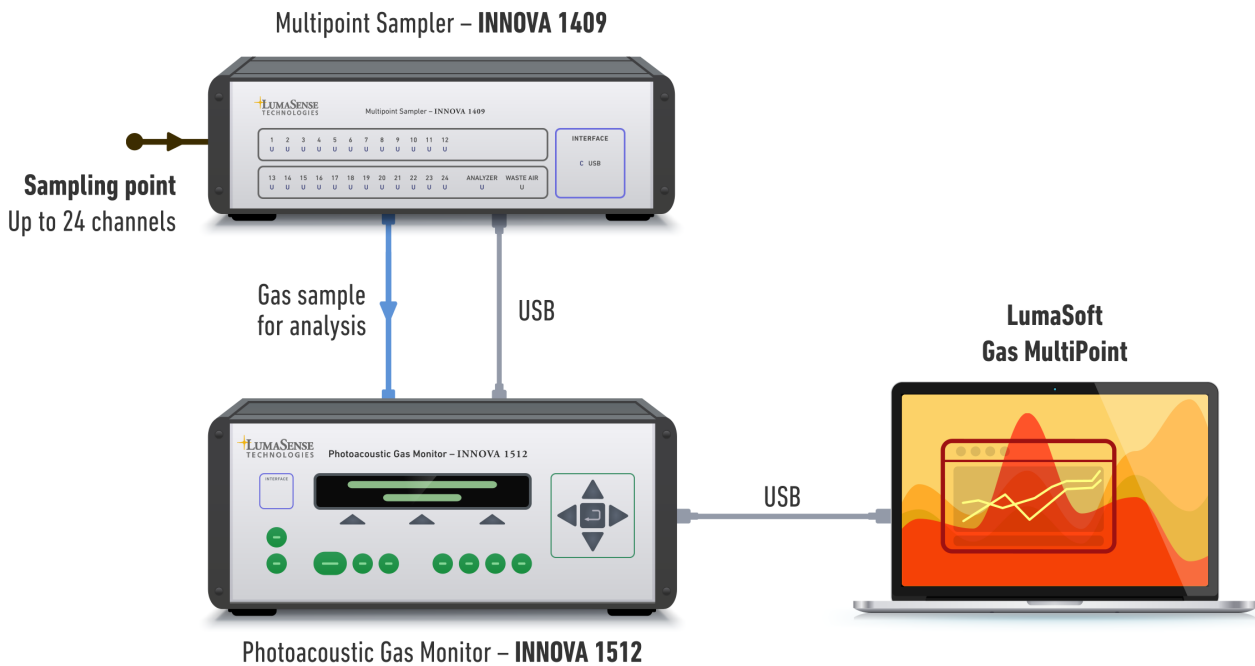Photoacoustic Gas Monitor – **INNOVA 1512**

Figure 1: The Innova 1512 monitor and 1409 Multipoint Sampler unit are connected to the computer via RS232, USB, or Ethernet. The user decides where the measurements will be performed and connects the sampler to the multiple locations with tubing.

Software Features

Multipoint Gas Monitoring
The 7880 comprises a powerful multi-point, multi-gas monitoring system. Air-samples can be drawn from up to 24 sampling points and delivered to the Monitor.
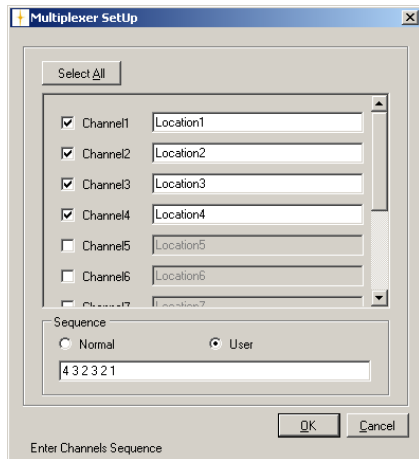

Figure 2: Multiplexer Setup dialogue. This dialogue enables the user to set up the measurement sequence and the chosen sequence (illustrated) allows the user to define which channels the samples are taken from and the order the samples are delivered to the Monitor.

The Monitor can then measure the concentrations of up to five gases, water vapor and air pressure in each sample.

The user sets the Monitor by choosing the gases that will be monitored during the measurement. The Sampler units are set up for monitoring by selecting the sampling channels to be used and the type of measurement sequence to be used.

There are two measurement sequences available: the user sequence and the normal sequence. The user sequence allows combining the selected sampling channels in a defined sequence of up to 255 entries (see Fig.2).

The normal sequence lets the Monitor measure the sample channels in their basic order. When the last entry is reached the software loops back to the first channel.

Data Exchange Capability
Measurement data stored in SQL Server 2014 database gives easy access to measurement data during a

measurement task. The user has online access to measurement via the build in OPC Server while a task is running. The data can also be exported to Microsoft Excel during a measurement task to produce tailor made reports.

Data Display and Output
Measurement data, and the running status of the instruments, are displayed on screen.

Measurement data can be presented as a graphical window (Fig.3) or in table form (Fig.4); each is updated as new data is received. When using the graphical window in Channel view mode, up to seven curves (gas-concentration/time, humidity/time and pressure/time) can be shown simultaneously. When using the Gas view mode, one gas can be displayed simultaneously for up to 24 channels in the graphical window.

Statistical Data

In the graphical window (Figure 3) statistical data can be shown next to the measurement results for each channel. Within a certain time span: min, max, mean and standard deviation for the gases measured in the selected task are shown.

Alarm Features

The function is used to define software alarms for each gas on each channel when the concentration reaches either a minimum or a maximum level. There are four different alarms that can be configured: Low, Low-Low, High, and High-High.

The low alarm can be set to give a warning when the concentration of the gas is dropping below the normal level. The low-low alarm can be configured to give an alarm whenever the gas concentration drops below the lowest allowable concentration.

The High and High-High alarm levels are set to give alarm for a concentration above a certain limit and when the maximum allowable concentration is exceeded.

OPC Interface

The LumaSoft Gas Multi Point 7880 is supplied with a build in OPC Server to give access from an OPC Client. The OPC Server/Client system enables transfer of Setup, Measurement Data and Alarms.

Event Marks

While running a measurement task it is possible to mark individual measurements with an event mark to attach a description of a certain event occurred at that particular time.

Error and Warnings

Measurement error and warnings from the attached Gas Monitor and Samplers are reported and displayed in the 7880 Sampler Software. Error and warnings during handling of the software are also displayed.
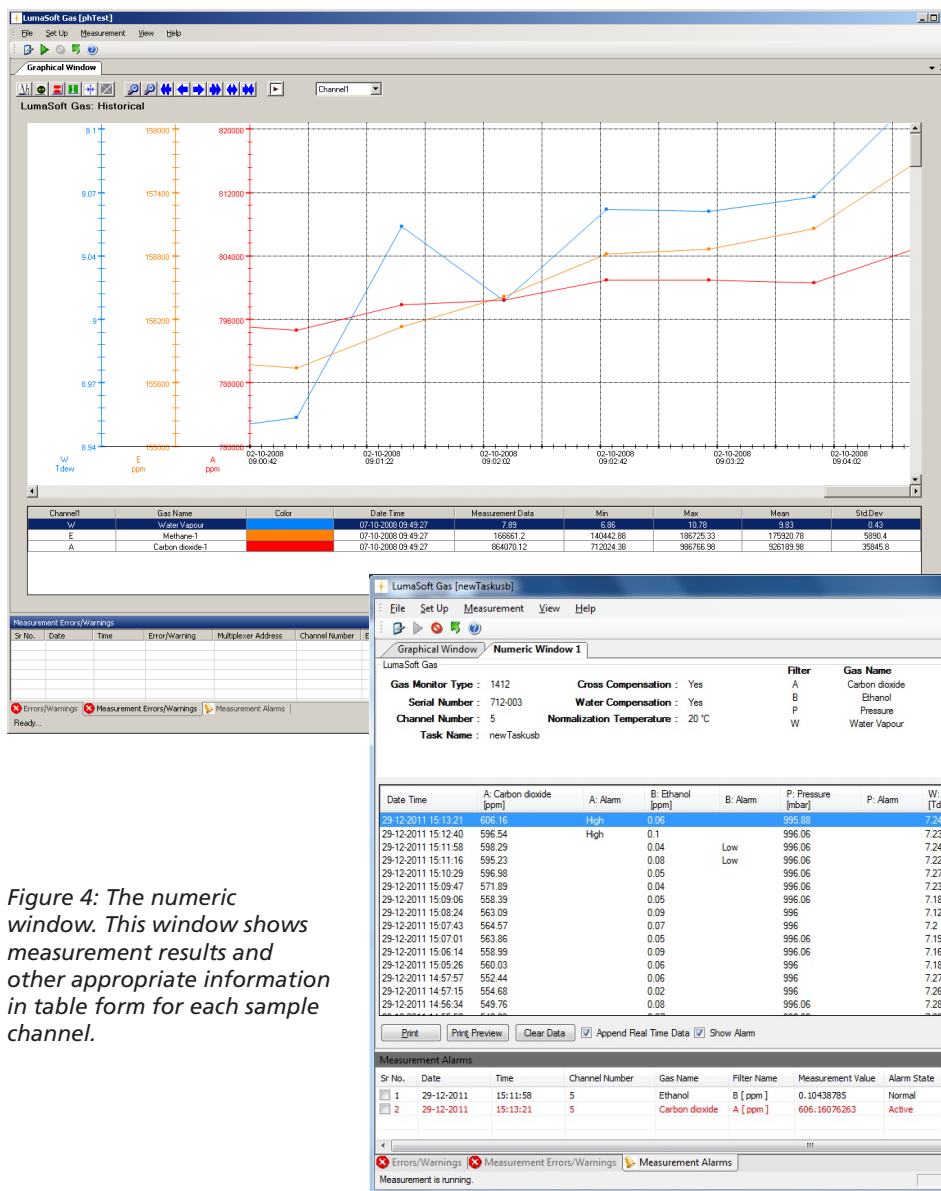

Figure 3: In the channel view mode, the graphical window shows up to seven graphs. The user selects the data plotted, the scaling, the style and the color of the lines and the background to build the graphical window.

Figure 4: The numeric window. This window shows measurement results and other appropriate information in table form for each sample channel.

The 7880 software and manual is supplied on a USB Memory key and comes complete with a dongle, which ensures that only authorized users can perform measurements. Data analysis on existing data files can be done without the dongle.

System Requirements

Photoacoustic Gas-Monitor – INNOVA 1512, 1412i or 1314i

LumaSense SF$_6$ Leak Detector - 3434i

One Multipoint Sampler - INNOVA 1409 with 6, 12, or 24 channels.

Cables:

Computer to Monitor (alternatives):

USB cable (included)   AS0001

RS232 9/9 pin cable (optional)
                                WL0950-003

From monitor to sampler
USB cable AS0001

Computer Requirements

Hardware:
2 GHz Dual-core i3 processor or compatible

Min. 4096 MB RAM

Min. 500 MB free space available on hard-disk

2 USB ports or 1 USB and 1 Ethernet or 1 USB and one RS232 port

Software:
Windows 7, Windows 8.1, and Windows 10

Data Exchange Capability

Data can be exported to Microsoft Excel.

Data can be transferred via online access to the built-in OPC Server

Calculation of Values

The 7880 can calculate the following parameters from the curves printed from measurement results:

- Mean value of curve points
- Spread of curve points
- Minimum/maximum values on curve
- Rolling average values in numerical and graphical window

Ordering Information	Basic System Requirements	
LumaSoft Gas Multi Point 7880	Photoacoustic Gas Monitor – INNOVA 1512	Cables:
Includes the following accessories:		From computer to Monitor (alternatives):
• Instruction Manual		USB cable (included) AS0001
• Dongle	Photoacoustic Gas Monitor – INNOVA 1412i	RS232 9/9 pin cable (optional) WL0950-003
	Photoacoustic Gas Monitor – INNOVA 1314i	From Monitor to Sampler
	or	USB AS0001
	LumaSense SF$_6$ Leak Detector - 3434i	
	Multipoint Sampler - INNOVA 1409	
	Teflon Tubing. AF0614	

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