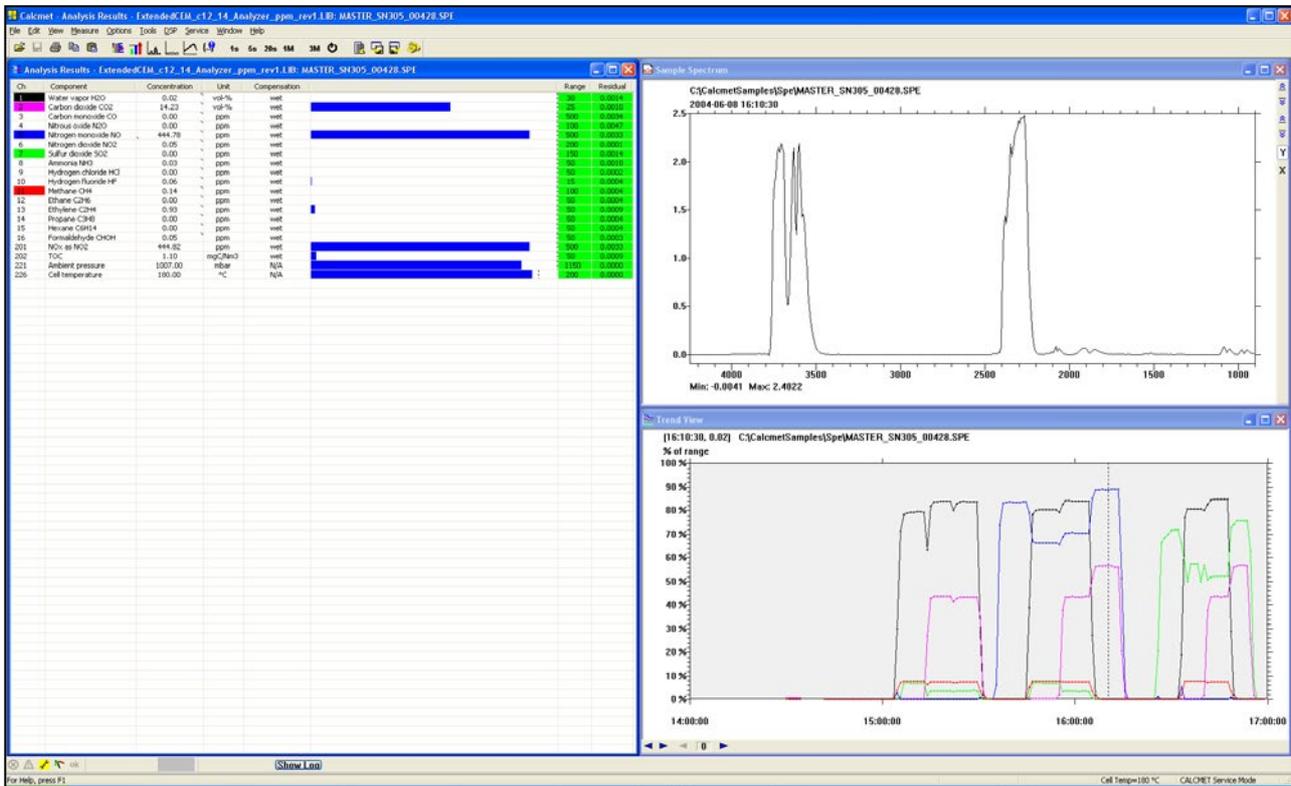


# Calcmeter 4040 Pro Analysis Software



## Analysis and Control Software for DX4040 FTIR Gas Analyzers

Calcmeter provides an easy to use interface to the FTIR gas analyser, stores and visualises the sample spectra, and performs the multicomponent analysis using Gasmet Technologies Oy's patented modified classical least squares algorithm.

Calcmeter 4040 comes with Calcmeter 4040 Professional software, which is installed into external computer. Calcmeter 4040 PRO version is connected to Gasmet DX4040 gas analyzer with RS-232 port and it can be used to measure and analyse sample spectra on-line with DX4040 models.

### General parameters

- Operating system:** Windows 7 (32-bit) operating system.
- Hardware requirements:** 512 MB Memory, > 40 GB hard disk, > 2.4 GHz Intel Pentium IV processor, DVD-RW, Modem, Network card, RS-232, and USB ports
- Analysis principle:** Modified classical least squares
- Performance:** Simultaneous analysis of up to 50 gas compounds. Data Acquisition, analysis of 20 gases and output in < 1000 ms
- Data storage:** Automatic saving of sample spectra with options for saving only when a specific condition is met (concentration / residual)  
Spectrum file size 4.3 kb in Calcmeter spectrum file format

### Input/output options

<b>Analyzer control:</b>	RS-232 COM port
<b>Expansion cards:</b>	AdLink PCI expansion cards (up to a total of eight cards) <ul style="list-style-type: none"> <li>- PCI-6208 analog output</li> <li>- PCI-7230 digital input /output</li> <li>- PCI-7250/51 relay output</li> <li>- PCI-9112 analog input</li> </ul> AdLink ISA expansion cards (up to a total of three cards) <ul style="list-style-type: none"> <li>- ACL-7225 relay output</li> </ul> Advantech DA&C unit via Ethernet (up to eight modules) Beckhoff TwinCAT (up to 255 modules)
<b>Serial output:</b>	MODBUS (other FieldBus formats as an option) COMLI ASCII (proprietary format)

### Analytical performance

<b>Data acquisition time:</b>	1 – 500 seconds, time weighted average of individual scans lasting 100 ms each. The acquisition time may be shortened to under one second.  Data acquisition may be configured for any interval or for sampling from multiple sample streams
<b>Detection limit:</b>	< 3 x spectral baseline noise
<b>Linearity deviation:</b>	< 2 % of reference concentration
<b>Linearity correction:</b>	Automatic, multi-point fitting of calibration curve
<b>Cross interference:</b>	< 4 % of reference concentration, cross-interfering components are included in multicomponent analysis
<b>Quality assurance:</b>	Residual absorbance from analysis is monitored and results invalidated if residual is too high
<b>Supported file formats:</b>	Gasmet sample spectra (.spe) Gasmet reference spectra (.ref) Gasmet background spectra (.bkg) Gasmet interferogram file (.ifg) ASCII x-y table (.txt) JCAMP-DX (.dx)

### Properties of the Calcmnet 4040 Pro version

Calcmnet 4040 Professional version is used only with Gasmet DX4040 models

	<b>4040 Pro</b>
Analyzer specific software (Serial number identification)	<b>X</b>
FTIR measurement by external computer	<b>X</b>
50 gas multicomponent analysis	<b>X</b>
Support for inputs and outputs	<b>X</b>
Identification of gas components using Library Search routine	<b>X</b>
Identification of gas components using Advanced Library Search routine	<b>X</b>
250 component spectra library CWA not included	<b>X</b>
English language	<b>X</b>
Simple mode	<b>X</b>
Possibility to use NIST library (requires a separate NIST library option)	<b>X</b>
Match functions & Logic functions	<b>X</b>
Peak marking, Savitsky-Golay smoothing, deconvolution	<b>X</b>

### End user licence

<b>Pro version:</b>	Single user licence, protected with a HASP USB key. Analyzer specific software according to analyser serial number and protection code.
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