

Specific analyzers and Specific detectors

Chromatotec®

Outline

- Det THC
- Det TS
- Chroma TID analyzer
- Chroma THC analyzer



- **Det THC**
- **Det TS**
- **Chroma TID analyzer**
- **Chroma THC analyzer**



Det THC

- Monitoring of organic compounds, halogenated, hydrocarbons, ...
- Detection in continuous
 - ↳ One concentration every 5 seconds
- THC : Total HydroCarbons
- NMTHC : Non-Methane Hydrocarbons
- CH₄ : Methane



Det THC

Applications :

- Ambient air Monitoring
- Industrial air monitoring
 - Emissions
 - Clean room
 - Process
- Research and development laboratories



Det THC

Example :

“Mines d’Alès” research center

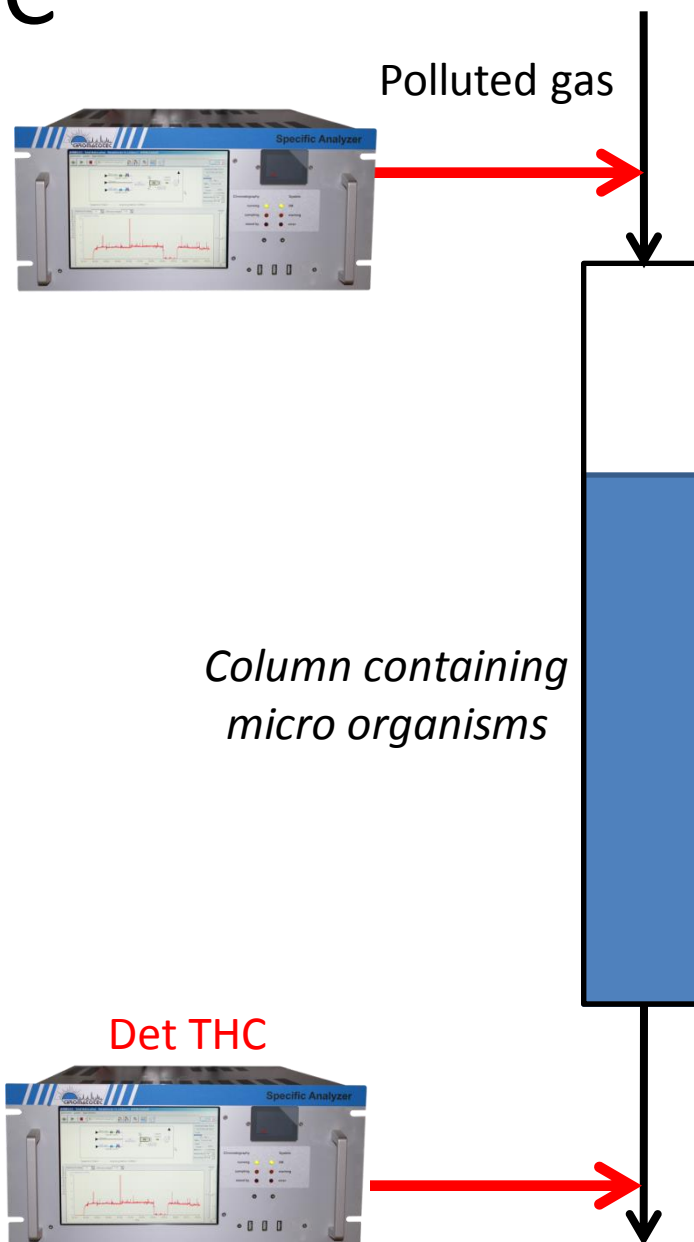
Study of the biodegradation of VOC
compounds by micro-organisms



Need to follow the total VOC
concentration, in continuous, at
column outlet



Understand the kinetics of the
biochemical reactions



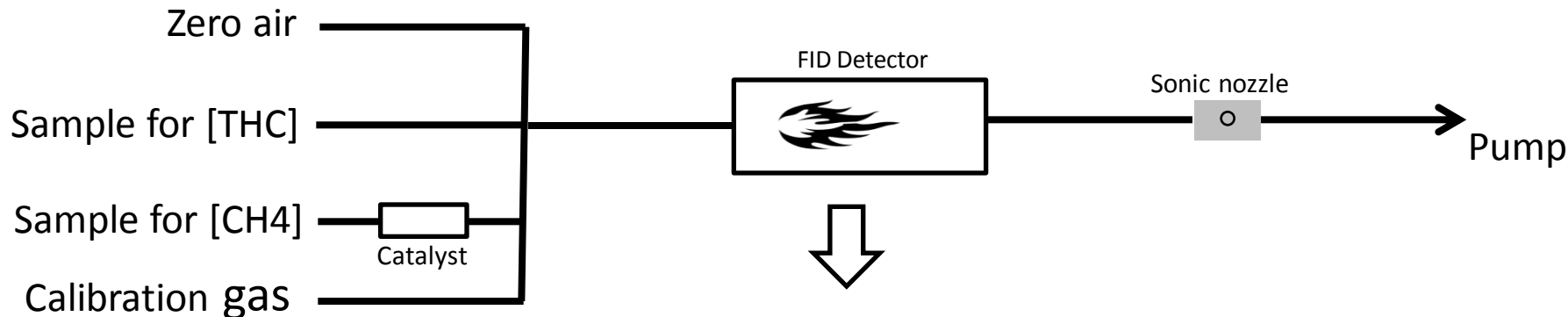
Det THC



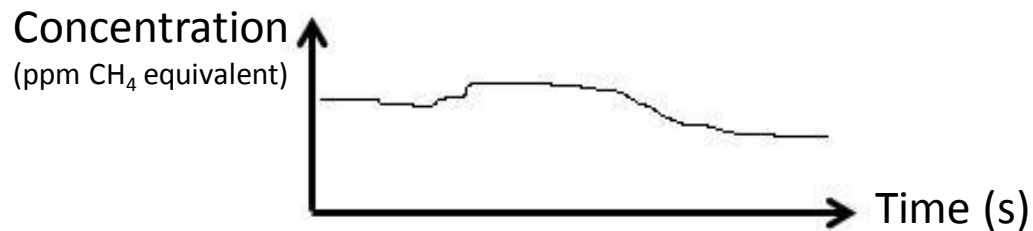
- Detector : Flame Ionization Detector (FID)
- “Vistadetector” : Software designed especially for the continuous detection
- Gas used : Hydrogen and zero air
- Concentration range : From low ppm to 5000 ppm
- Automatic zero air analysis
- Calibration started automatically from the software

Det THC

- Working principle:*



Signal saved in continuous

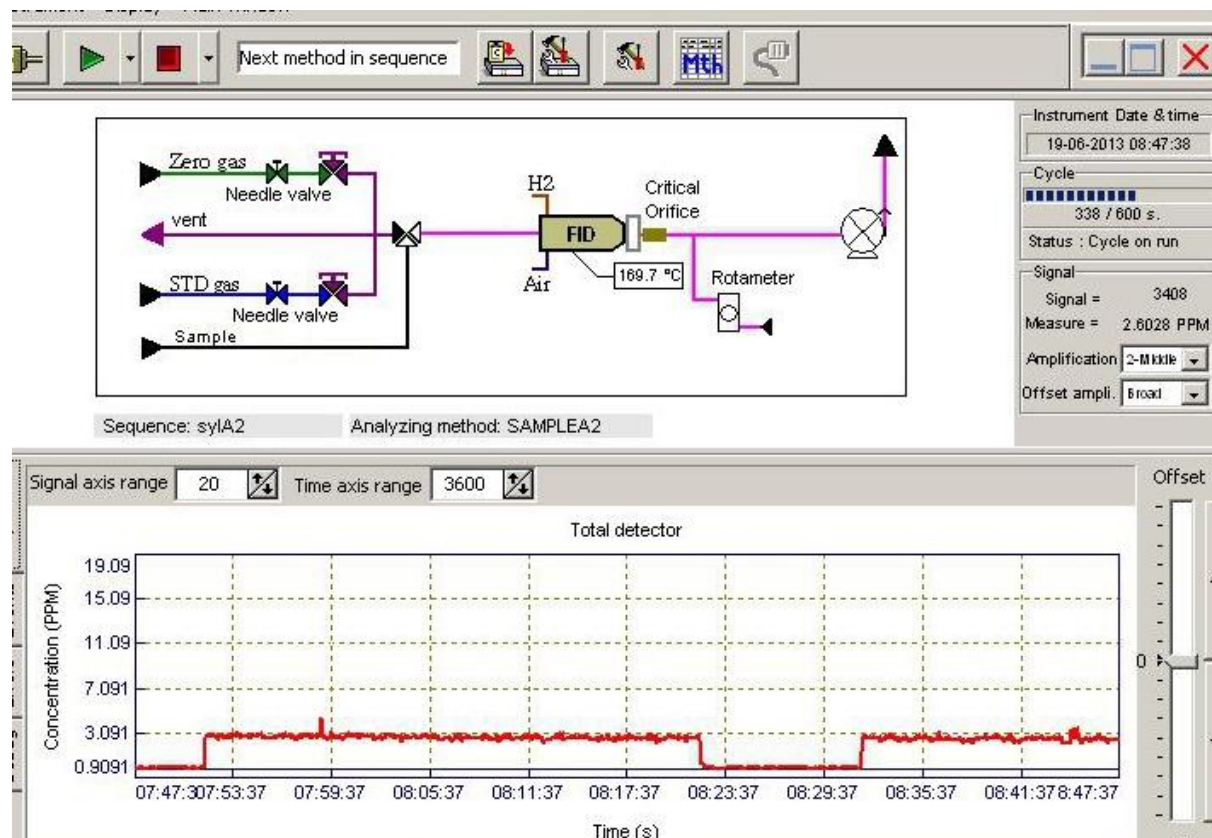


Excel file

Date	Signal	Concentration (PPM)
29/05/2013 00:00	3568	1,49
29/05/2013 00:00	3568	1,48
29/05/2013 00:00	3561	1,42
29/05/2013 00:00	3565	1,46
29/05/2013 00:00	3567	1,48
29/05/2013 00:00	3570	1,51
29/05/2013 00:01	3575	1,56
29/05/2013 00:01	3571	1,52
29/05/2013 00:01	3569	1,50
29/05/2013 00:01	3566	1,47
29/05/2013 00:01	3563	1,44

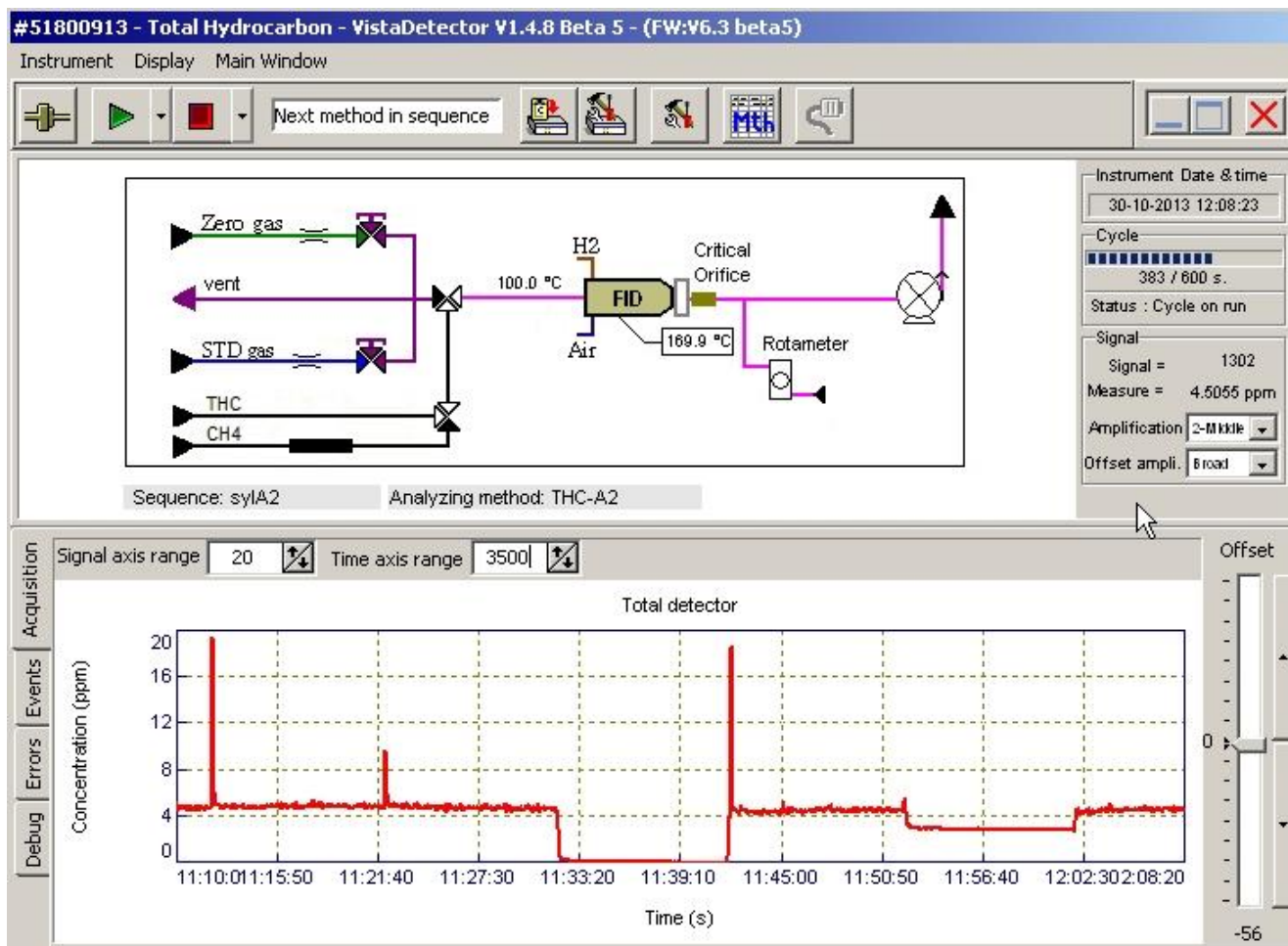
Det THC

- Automatic Zero air analysis



Det THC

- Sample analysis: ambient air



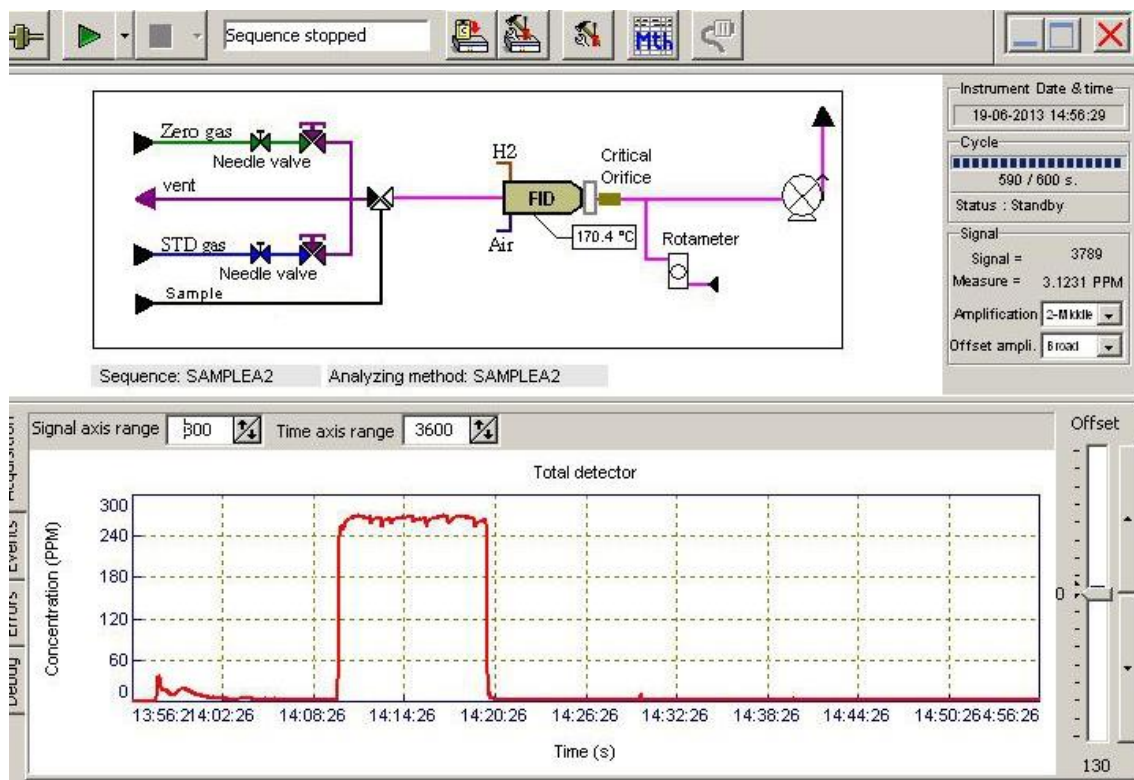
[THC] in ambient air Zero air

[CH4] in ambient air

Det THC

- Automatic Calibration gas analysis

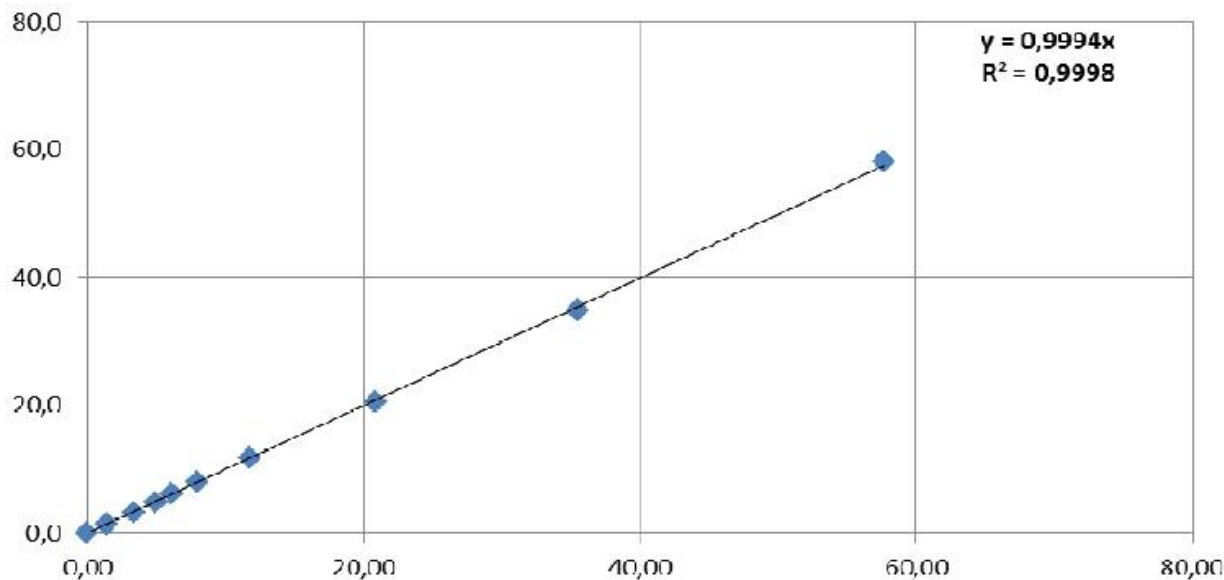
Example ; external cylinder containing CH₄ in N₂



Det THC

- Stable and linear answer of the FID Detector:

Concentrations
given by the
software (ppm)



Real concentrations (ppm)



Easy calibration

Price list

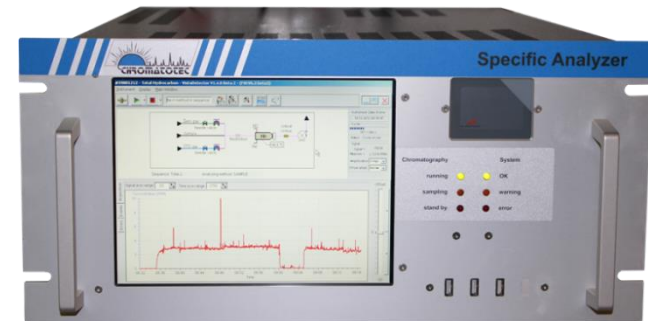
Analyzer

Reference	Description	Price EUR
D 24000-1	Det THC with 1 FID – VistaDetector needed	13 500
XXX022	Electronic and LCD display with VistaDetector software	2 900

Options

Reference	Description	Price EUR
XXX031-D	AirmoPURE - Zero air generator	4 800
XXX916	Hydroxichrom USB: hydrogen generator	6 200
XXX931	Calib with 1 permeation tube as standard	3 600
XXX901	AirmoPUMP – analyzer sampling pump	460

- Det THC
- **Det TS**
- Chroma TID analyzer
- Chroma THC analyzer



Det TS

- Monitoring of total sulfur concentration
- Detection in continuous
 - ↳ One concentration every 5 seconds
- Applications :
 - health safety
 - olfactory nuisance
 - water treatment plants, ...



Det TS

- Double Flame Photometric Detector (FPD) specific to sulfur compounds
- “Vistadetector” : Software designed especially for the continuous detection
- Gas used : Hydrogen and zero air
- LDL: 1 ppb
- Calibration started automatically from the software

Price list

Analyzer

Reference	Description	Price EUR
D 26000	Det TS– VistaDetector needed	24 800

Options

Reference	Description	Price EUR
XXX031-D	AirmoPURE - Zero air generator	4 800
XXX916	Hydroxichrom USB: hydrogen generator	6 200
XXX931	Calib with 1 permeation tube as standard	3 600
XXX901	AirmoPUMP – analyzer sampling pump	460

- Det THC
- Det TS
- **Chroma TID analyzer**
- Chroma THC analyzer



chromaTID analyzer

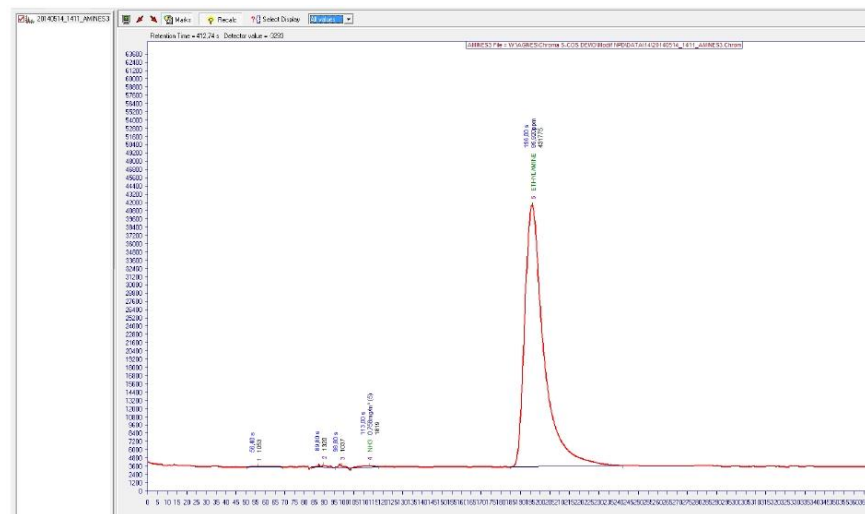
- Monitoring of nitrogenous or phosphorous compounds
↳ Using a Thermionic Ionisation Detector (TID)
- Industrial areas :
 - wastewater treatment plants (N-compounds) R-NH_2 , NH_3 , ...



- Fertilizer production plants (P-compounds), ...

chromaTID analyzer

- Analytical method:
 - Chromatographic separation
 - Gas used : N₂, H₂, Air
 - Specific detector : TID
 - Sampling loop
 - Isothermal oven
 - Automatic calibration with permeation tube
 - Concentration range : 0 -10 ppm
 - One analytical cycle every 10 min



Price list

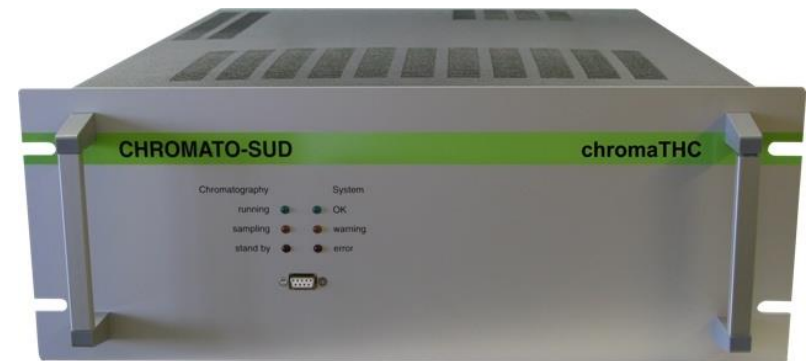
Analyzer

Reference	Description	Price EUR
C 32022	chromaTID with internal calibration	28 000

Options

Reference	Description	Price EUR
XXX031-D	AirmoPURE - Zero air generator	4 800
XXX916	Hydroxichrom USB: hydrogen generator	6 200
XXX901	AirmoPUMP – analyzer sampling pump	460

- Det THC
- Det TS
- Chroma TID analyzer
- **Chroma THC analyzer**



chromaTHC analyzer

- Separation between Methane and Non-Methane HydroCarbons (organic compounds, halogenated, hydrocarbons, ...) and quantification
- $[CH_4] + [NMTHC] = [THC]$: Total HydroCarbons
- Ambient air monitoring
- Impurities in Pure gases

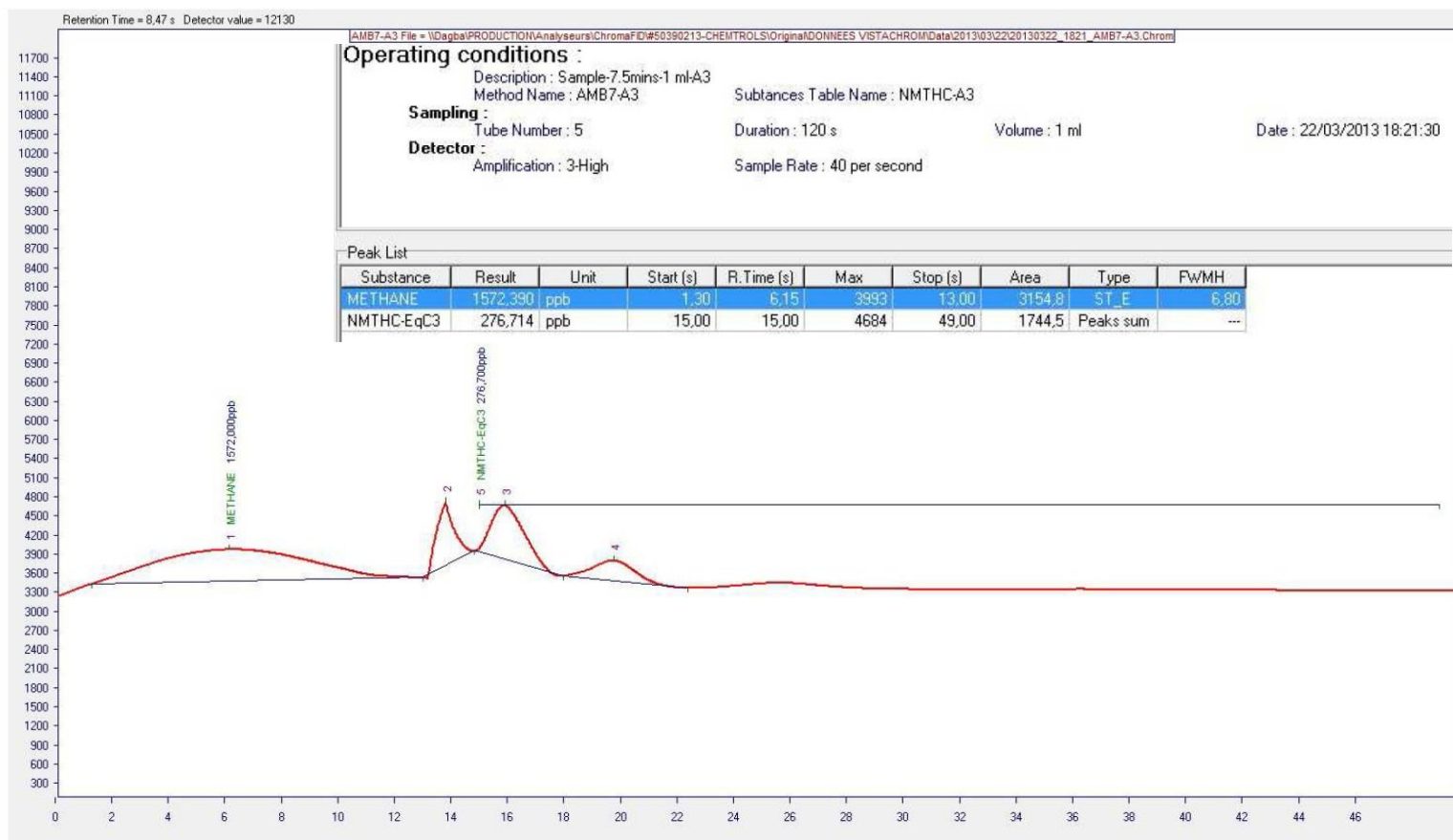


chromaTHC analyzer

- Analytical method:
 - Flame Ionization Detector (FID)
 - Sampling loop
 - Isothermal oven (80°C in standard)
 - Automatic calibration with permeation tube
 - One analytical cycle every 5 min



chromaTHC analyzer



Standard LDL: 20ppb for methane and 50 ppb for NMTHC such as propane

Price list

Analyzer

Reference	Description	Price EUR
C 24000	chromaTHC (CH ₄ /NMTHC)	13 500
XXX022	Electronic and LCD display with Vistachrom software	2 900

Options

Reference	Description	Price EUR
XXX031-D	AirmoPURE - Zero air generator	4 800
XXX916	Hydroxichrom USB: hydrogen generator	6 200
XXX931	Calib with 1 permeation tube as standard	3 600
XXX901	AirmoPUMP – analyzer sampling pump	460

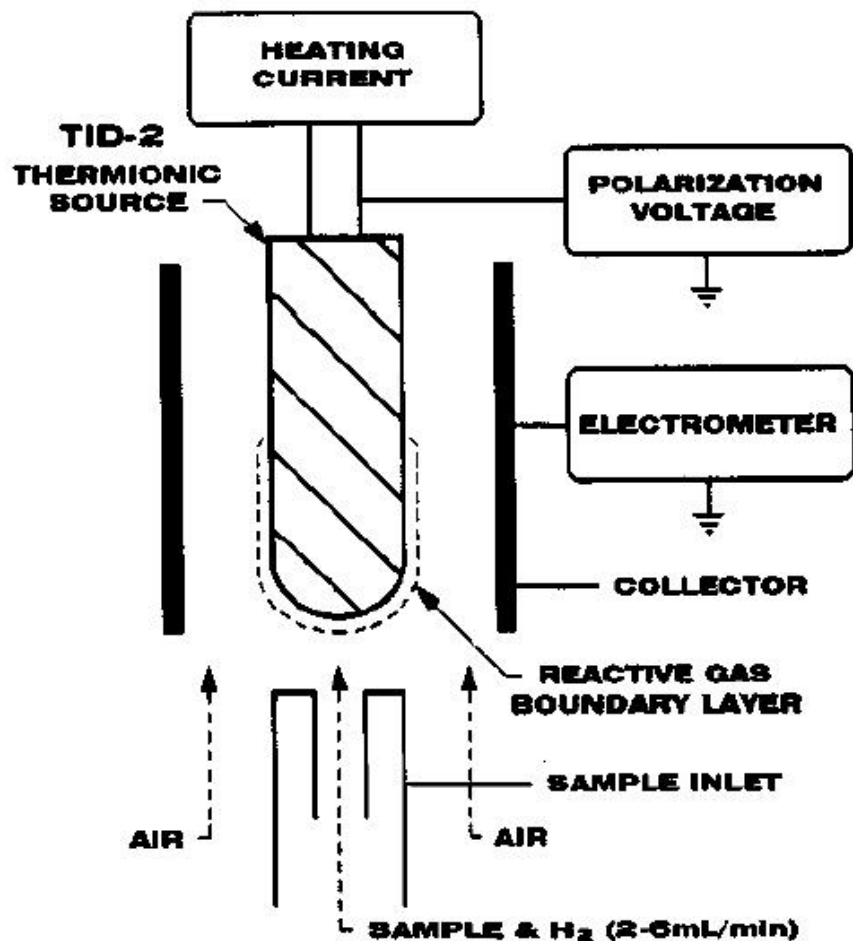


Thank you for your attention !



Specific analyzers and Specific detectors

Thermolonic Detector



- Ignition of H₂ and O₂ → gas boundary layer, containing H, O, HO
- Compounds impact this layer → are decomposed
- Sample containing N form electronegative decomposition products
- Converted to negative ions (electrons extraction from the thermionic phase)