

# Gas Chromatography - Olfactometry (GC-O or Sniffer)

## New for 2020, PHASER Pro

The human nose is an incredible detector for aroma/mal-odor components. The sensitivity and selectivity are equal or better than the available GC detectors. Gas Chromatography - Olfactometry (GC/O) is the collection of techniques that combine Olfactometry or the use of human detectors to access odor activity in defined air streams with the Gas Chromatographic (GC) separation of volatiles.



**sharp smelling with PHASER, GC-O**



# PHASER Pro – Gas Chromatography Olfactory Port

PHASER Pro is an advanced sniffing port, through which an analyst using his/her sense of smell can efficiently sense and identify flavor and fragrance components separated by a gas chromatographic column. A column effluent is directly transferred to a PHASER Pro nose cone through deactivated fused silica tube allowing the operator to smell the compounds that exit the column.



## Why PHASER Pro?

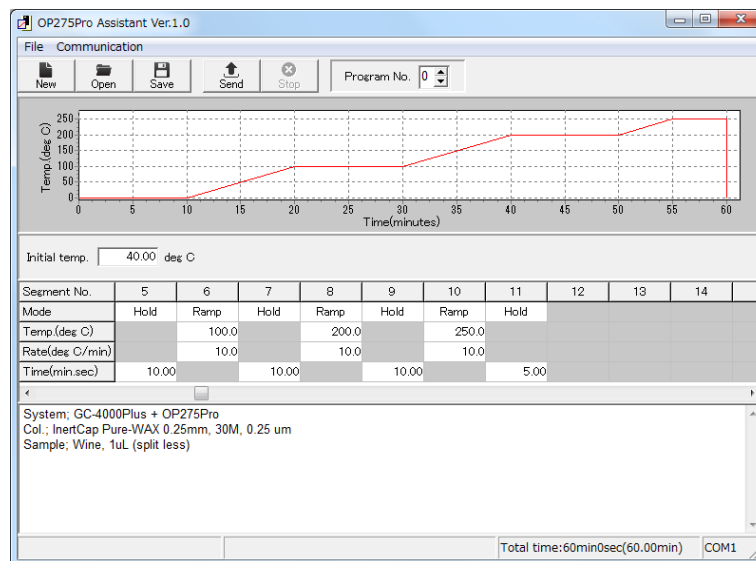
- ▶ No-cold-spot design provides possibility to sniff high boiling compounds
- ▶ Transfer line temperature up to 300 °C
- ▶ Programmable transfer line.
- ▶ Operator nose protection by adding moisturized air to sniffing port
- ▶ Easy-connect SilFlow™ micro-channel device as column flow splitter
- ▶ Sitting or standing while sniffing
- ▶ Compact and easy-to-install on any type of GC
- ▶ Voice recording with replay function and voice recognition
- ▶ With or without MS detector



# PHASER Pro – Programmable Transfer line

The PHASER Pro is the latest edition of the sniffing port.

A **temperature-programmable transfer line** is introduced in this instrument, that can be programmed as the GC oven. This results in a stable split ratio (sniffing flow rate/detector flow rate). Heat stress at the nose and thermal degradation of the compounds are prevented, making it possible to perform olfactory detection with higher accuracy and sensitivity.



# PHASER Pro – Gas Chromatography Olfactory Port

## Why PHASER Pro?

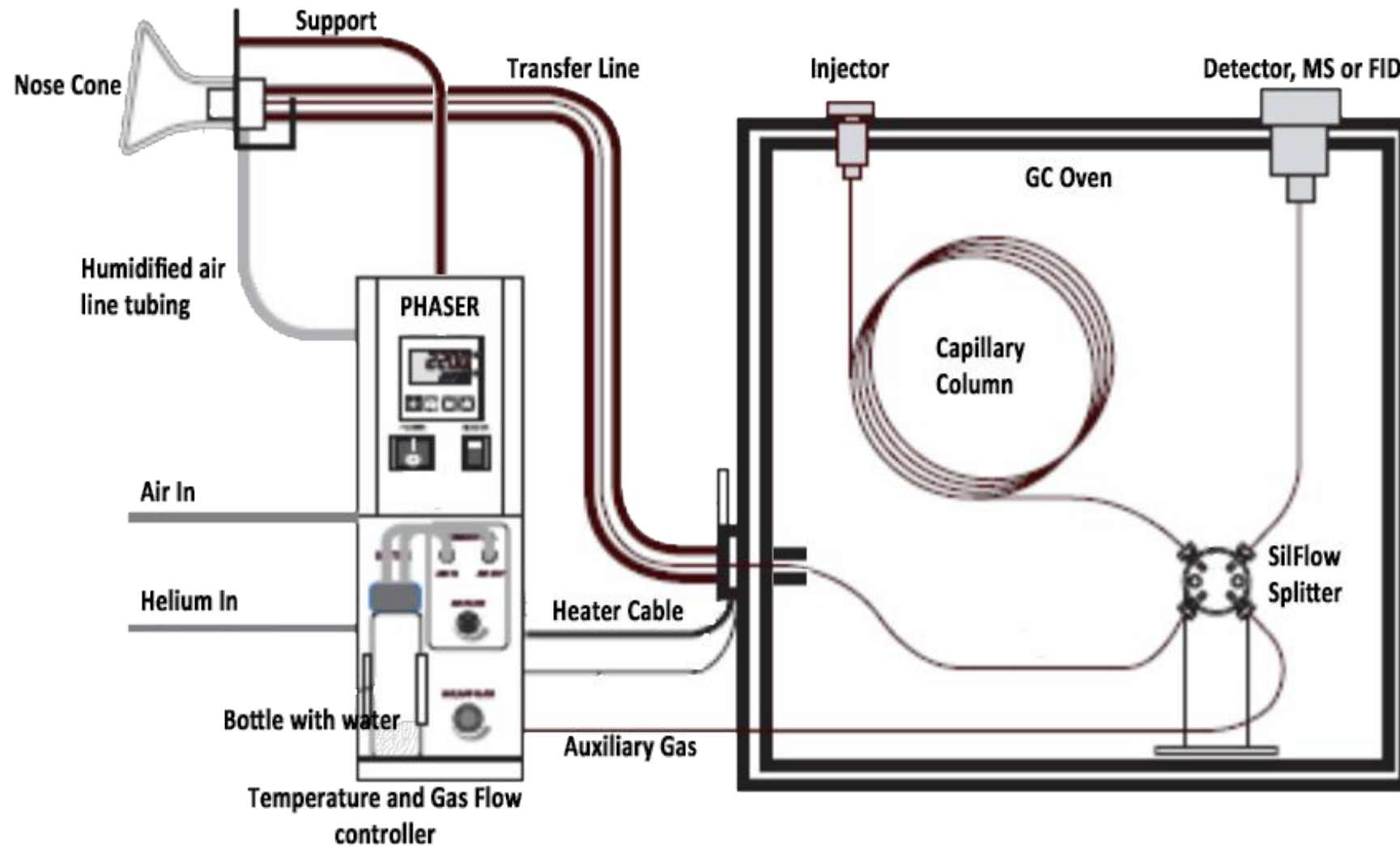
- ▶ No-cold-spot design provides possibility to sniff high boiling compounds



PHASER with 100 cm transfer line and Shimadzu 2010 GC

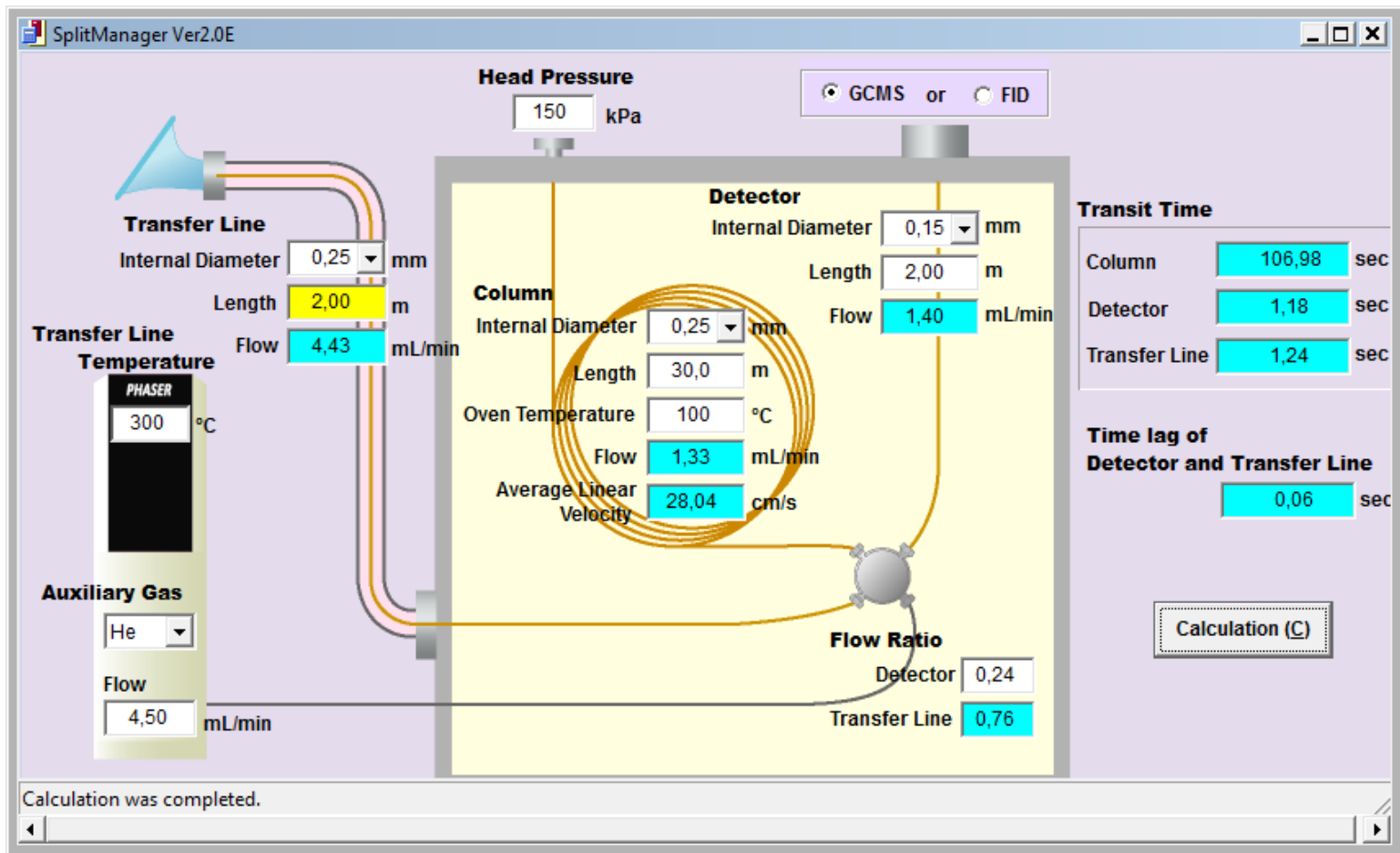


# System setup



# Split Manager Software (standard supplied)

Standard supplied with the PHASER Pro comes the SplitManager software. This software helps to make a good and easy installation. All flows and split ration can be calculated.



The screenshot shows the SplitManager Ver2.0E software interface. It features a central diagram of a gas chromatography system with various components and their associated parameters. The interface is divided into several sections:

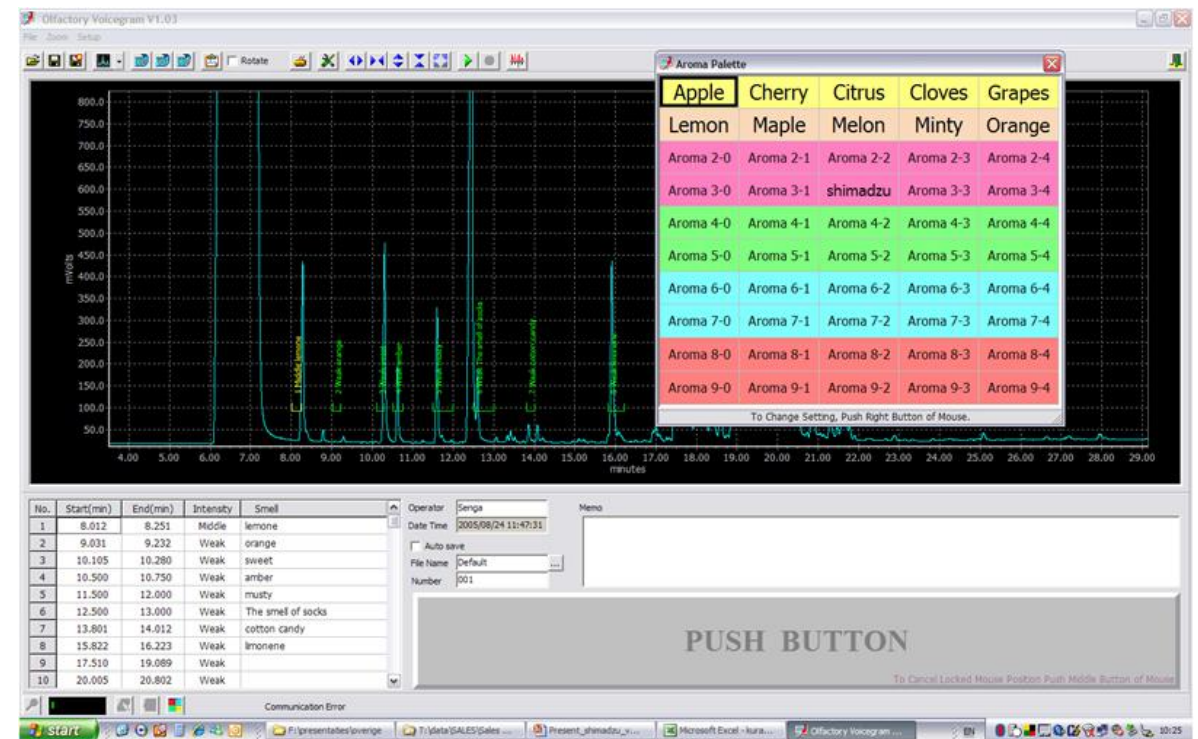
- Head Pressure:** 150 kPa. Mode selection: GCMS (selected) or FID.
- Transfer Line:** Internal Diameter: 0,25 mm; Length: 2,00 m; Flow: 4,43 mL/min.
- Transfer Line Temperature:** PHASER 300 °C.
- Auxiliary Gas:** He; Flow: 4,50 mL/min.
- Column:** Internal Diameter: 0,25 mm; Length: 30,0 m; Oven Temperature: 100 °C; Flow: 1,33 mL/min; Average Linear Velocity: 28,04 cm/s.
- Detector:** Internal Diameter: 0,15 mm; Length: 2,00 m; Flow: 1,40 mL/min.
- Flow Ratio:** Detector: 0,24; Transfer Line: 0,76.
- Transit Time:**
  - Column: 106,98 sec
  - Detector: 1,18 sec
  - Transfer Line: 1,24 sec
- Time lag of Detector and Transfer Line:** 0,06 sec.
- Calculation (C):** A button to perform calculations.

At the bottom of the window, a status bar indicates: "Calculation was completed."



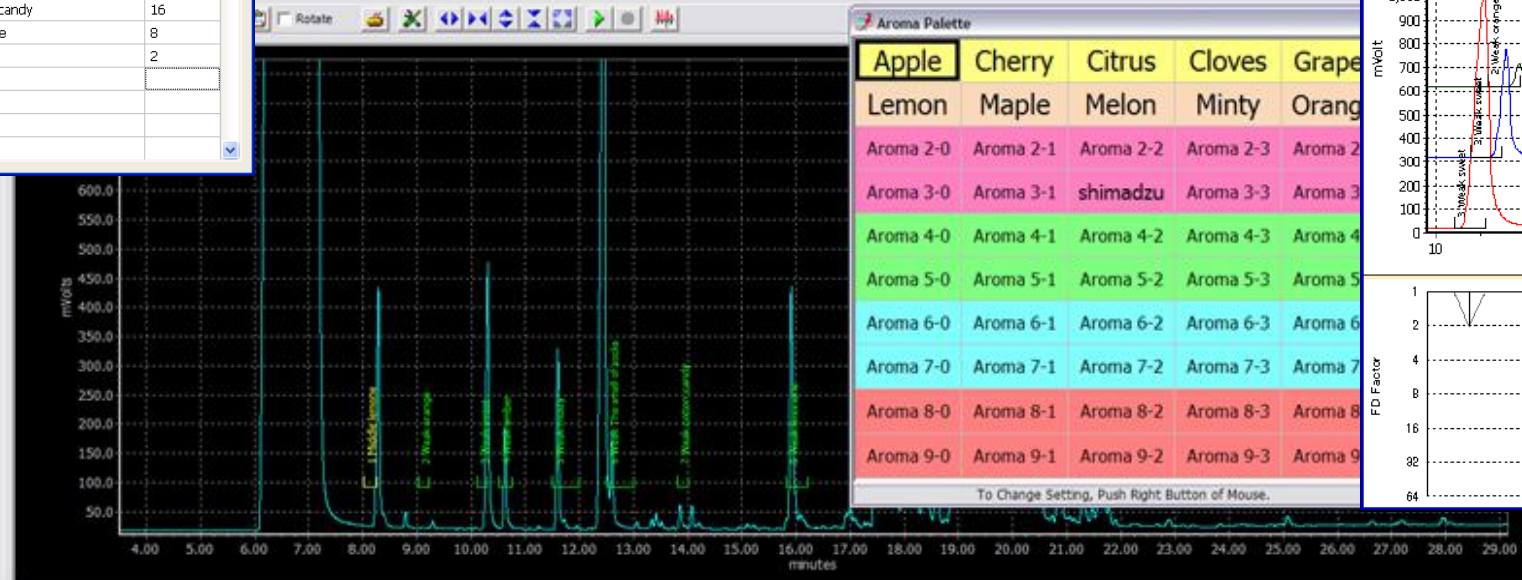
## Olfactory Voicegram software features:

- ▶ Recording analog detector data during run
- ▶ Import MS chromatograms
- ▶ Clickable aroma palette (configured by the user)
- ▶ Voice recognition
- ▶ Voice recording and replay function on each peak
- ▶ Odour intensity can be set with the mouse buttons
- ▶ Free software updates



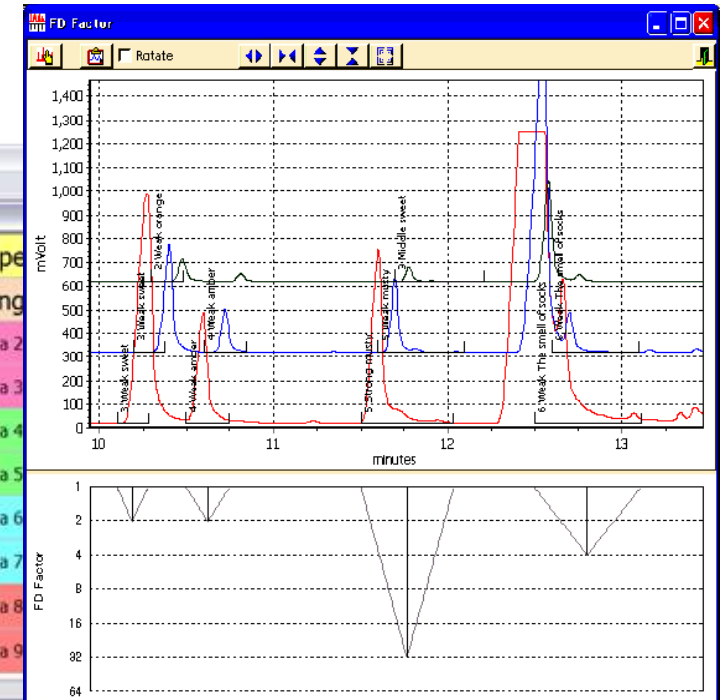
# Olfactory Voicegram Software for PHASER Pro

No.	Start(min)	End(min)	Intensity	Smell	FD Factor
1	8.010	8.251	Middle	lemone	8
2	9.012	9.253	Weak	orange	4
3	10.105	10.280	Weak	sweet	2
4	10.502	10.752	Weak	amber	2
5	11.506	12.036	Strong	musty	32
6	12.501	13.108	Weak	The smell of socks	4
7	13.806	14.036	Middle	cotton candy	16
8	15.802	16.203	Middle	limonene	8
9	17.502	18.006	Weak	vaniline	2
10	18.207	19.003	Weak		
11	19.101	19.806	Middle		
12	20.006	20.806	Middle		
13	21.005	21.203	Strong		



Apple	Cherry	Citrus	Cloves	Grape
Lemon	Maple	Melon	Minty	Orange
Aroma 2-0	Aroma 2-1	Aroma 2-2	Aroma 2-3	Aroma 2-4
Aroma 3-0	Aroma 3-1	shimadzu	Aroma 3-3	Aroma 3-4
Aroma 4-0	Aroma 4-1	Aroma 4-2	Aroma 4-3	Aroma 4-4
Aroma 5-0	Aroma 5-1	Aroma 5-2	Aroma 5-3	Aroma 5-4
Aroma 6-0	Aroma 6-1	Aroma 6-2	Aroma 6-3	Aroma 6-4
Aroma 7-0	Aroma 7-1	Aroma 7-2	Aroma 7-3	Aroma 7-4
Aroma 8-0	Aroma 8-1	Aroma 8-2	Aroma 8-3	Aroma 8-4
Aroma 9-0	Aroma 9-1	Aroma 9-2	Aroma 9-3	Aroma 9-4

To Change Setting, Push Right Button of Mouse.



No.	Start(min)	End(min)	Intensity	Smell
1	8.012	8.251	Middle	lemone
2	9.031	9.232	Weak	orange
3	10.105	10.280	Weak	sweet
4	10.500	10.750	Weak	amber
5	11.500	12.000	Weak	musty
6	12.500	13.000	Weak	The smell of socks
7	13.801	14.012	Weak	cotton candy
8	15.822	16.223	Weak	limonene
9	17.510	19.089	Weak	
10	20.005	20.802	Weak	

Operator: Senga  
Date Time: 2005/08/24 11:47:31  
File Name: Default  
Number: 001

**PUSH BUTTON**

To Cancel Locked Mouse Position Push Middle Button of Mouse

File List	Operator
sample1.chr	Senga
sample2.chr	Date Time: 2005/08/24 11:47:
sample3.chr	Memo:

Color: [Blue]  
 Display Chromatogram  
 Display Smell data  
 Offset: 0.1  
 Display Offset: 300 mV  
 Buttons: Open, Delete, Open Group, Save Group, Edit FD Factor, Close



# Aroma Palette for PHASER Pro



With a touchscreen and the Aroma Palette (part of the software) it is very easy for the operator to set the recognised smell.

The Aroma Palette must be configured to your own taste.

# Different items for the PHASER Pro

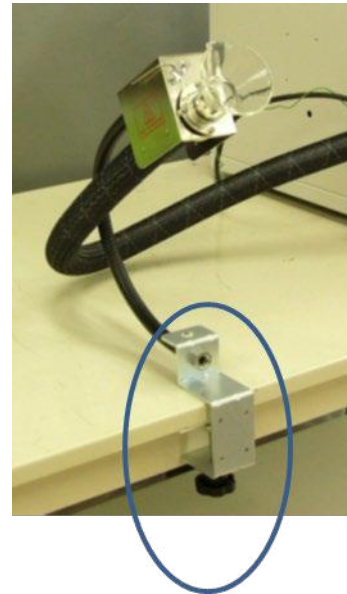
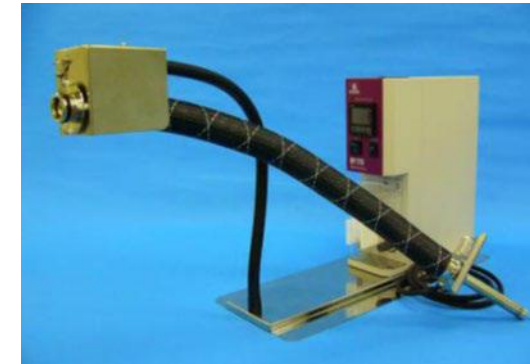
The installation can be done in different ways



Y type nose cone



R type nose cone  
(standard)



Please visit [www.glsciences.eu](http://www.glsciences.eu) for more information

