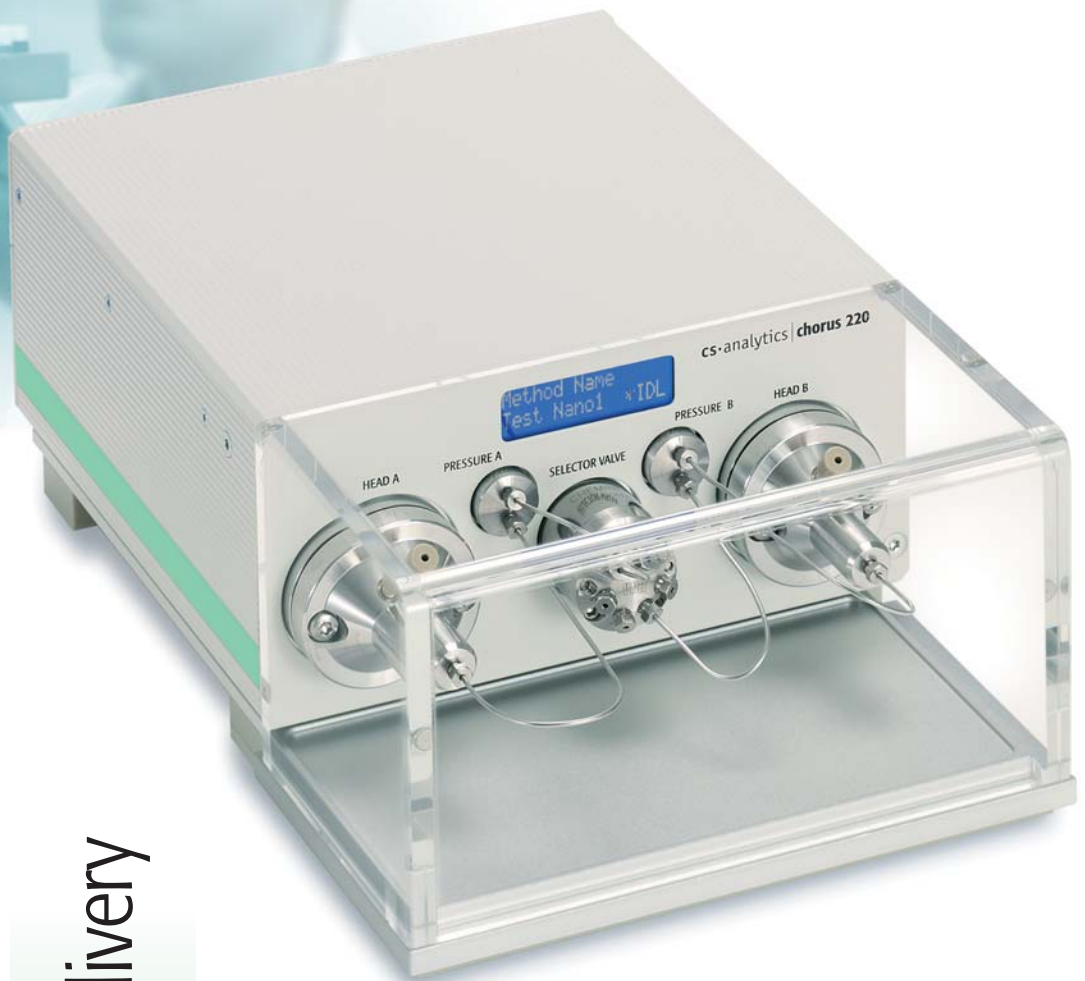


cs-analytix

Chorus 220

High Pressure Solvent Delivery system



Nanoscale Solvent Delivery

Capillary and Nano LC

Preparation/Collection of MALDI Targets

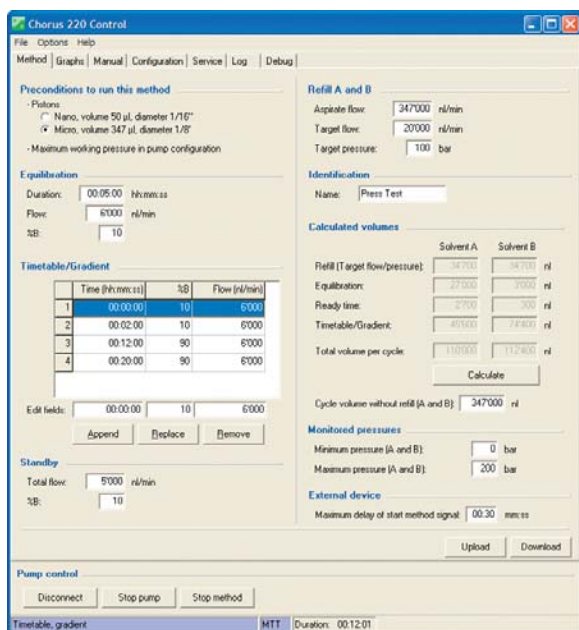
Multidimensional Chromatography

Front-end separation for MS proteomics

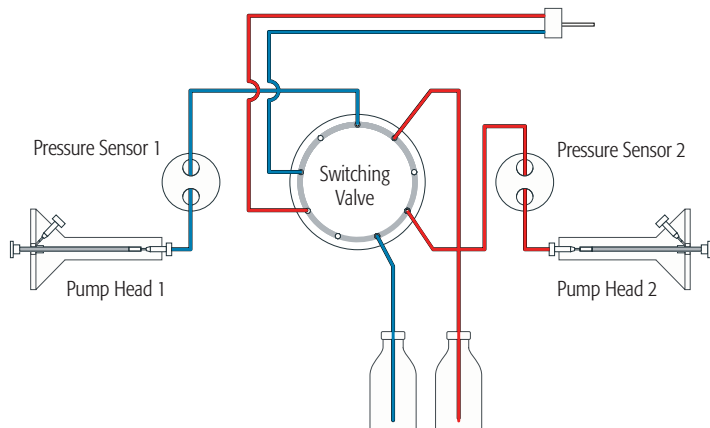
- Isocratic or gradient high pressure pumping system for precise, pulse-free nanoliter fluid delivery
- High performance pressure monitored zirconium pistons
Direct solvent delivery without flow splitting
- Micro version gradient flow range 1 μ l - 70 μ l
Nano version gradient flow rate 200nl - 10 μ l
- Independent solvent channel outlets for low dead volume and rapid gradient equilibrium
- Ultra compact design saves valuable benchspace
Complete LC-MS Front-End together with any CTC PAL sampler loader
- Easy to use graphical software package controls gradient formation and monitors flow rate, pressure and system status



Chorus 220 and CTC Analytics HTC PAL sample loader



Chorus 220 software enables rapid gradient programming



Chorus 220 Flow diagram including unique piston switching valve* (simplified schematic)

* Patent Pending

Unique Design

The Chorus 220 solvent delivery system achieves precise, pulseless fluid delivery at flow rates as low as 200nl/min. required in today's nanoscale and capillary LC. It's unique design incorporating two high pressure syringe pumps connected to a proprietary piston switching valve* delivers accurate gradients that are ideally suited for high sensitivity UV, Fluorescence or electrospray mass spectrometry using capillary column. Both motor-driven and software controlled syringe pumps maintain constant, pulse-free solvent delivery. High pressure mixing and short tubing paths reduces gradient delay and achieves a low overall dwell volume.

Splitless Nano Gradient Delivery

The Chorus 220 system provides true nanoliter solvent delivery without flow splitting often used in conventional low flow LC pumps. This approach avoids unintentional changes in flow rate due to split ratio fluctuations caused by e.g. increased column resistance or viscosity changes during gradient formation. Furthermore splitless operation results in a real reduction of solvent consumption without recycling costs.

Software control

The Chorus 220 system is operated by a dedicated Windows XP solvent delivery software. Intuitive graphical method editing, flow rate and pressure diagnostics, time programmable valve switching features makes it easy to setup, run and monitor the whole chromatographic process. In manual mode important parameters can easily be varied during system start-up or method development. Third party devices like detectors, autosamplers or column switching valves are straightforward combined by various digital outputs.

Complete CTC Analytics LC-MS Front-End

Despite of it's high performance the Chorus 220 measures just 225mm in width. This compact size makes it an ideal companion of any LC-MS system. All Chorus systems can easy be placed underneath of one of CTC's PAL sample loaders. The short tubing distance between sample injection valve and Chorus pump results in an optimized ultra low delay volume.

Chorus 220 Specifications

Dimensions:

W: 225mm D: 360mm H: 135mm, Weight 9.5kg

Piston Temperature Control

ambient +5°C - 50°C selectable in 0.1°C increments

Power Requirements / Electrical control

100 - 240 Volt 50/60Hz
1pc RS 232C serial port
1pc 25 pin Interface for Remote Start/Stop Synchronisation

Wetted Parts

316 stainless steel, PEEK, Valcon H, Fused Silica

Software Control

Chorus 220 software, (requires PC with 1 RS 232C port and Windows XP)

Flow Rate in binary Gradient Mode

Model 220-Nano (piston size 50µl): 200nl - 10µl/min.*
Model 220-Micro (piston size 347µl): 1µl - 70µl/min.*
(*upper flow rate for linear gradient 0 -100% and run time of 10 minutes)

Gradient Resolution

typically 0.5%

Flow Reproducibility

typically + - 0.5%

Piston Refill time

max. 60 seconds

Pressure Limit

250 bar

Specifications are subject to change without notice

Distributed by:

cs-analytix

CS Analytics AG
Obere Allmend
CH-6375 Beckenried
Switzerland

...CTC ANALYTICS
Where design meets performance

CTC Analytics AG
Industriestrasse 20
CH-4222 Zwingen
Switzerland

Tel: +41 61 7658100
Fax: +41 61 7658199
E-mail: info@ctc.ch
Web: www.ctc.ch