

PCX5200 DERIVATIZATION INSTRUMENT

Post-column derivatization provides the selectivity, sensitivity and the chromatographic reproducibility often lacking in direct UV-Vis or pre-column derivatization methods. When combined with a standard HPLC system, the PCX5200, along with chemicals and post-column protocols, provides a reliable and precise means for selectively derivatizing and detecting analytes of interest.

The PCX5200 is a versatile post-column derivatization instrument which can be configured for a variety of post-column methods and chemistries. It replaces the earlier PCX5100 and PCX3100, which were designed for, respectively, two post-column reagents and a single post-column reagent.

With the PCX5200 it is easy to convert to other applications, whether using single or two-step post-column derivatization, by the addition of one or more Applications Kits. These Kits include columns, and might include Pickering's Chromatographic Grade™ eluants and post-column reagents. You may also add or substitute a Flow-conditioner Panel and (possibly) a Reactor with a desired dwell volume, or configure a system tailored to your own methodology and chemicals for applications not yet available from Pickering.

PCX Control software for Windows PC is included with the system for optional Windows PC control of the PCX system. [Can be ordered separately.](#)



PCX5200 SPECIFICATIONS

- Dimensions: (h × w × d): 37 × 38 × 38 cm (14.5 × 15 × 15 inches)
- Weight: 13 to 15 kg (28 to 33 lb.) depending upon configuration
- Electrical: 100–120 V, 50/60 Hz, 1.7 A, 200 W or 200–240 V, 50/60 Hz, 0.8 A, 200 W (Mains voltage ± 10% of nominal) Installation (overvoltage) category II, pollution degree 2, 240 V, CE certified
- Environmental: Indoor use only. Altitude up to 2000 m; Ambient temperature 5–40 °C; Relative humidity up to 80% at 31 °C.

REAGENT PUMPS

- Independently adjustable, low-pulsation, phase-locked
- Flow rates factory pre-set at 0.3 mL/minute; adjustable from 0.05 to 0.7 mL/minute against back-pressures of up to 410 bar (6000 psi)
- Sapphire pistons
- Liquid ends, including check valve housings, type 316 stainless steel (PEEK available)
- Piston wash

GAUGES AND FLOW CONDITIONING PANELS

- Independent 210 bar (0–3000 psi) pressure gauges for each pump
- 70 bar (0–1000 psi) gauge displays post-column system pressure
- Diamond-packed restrictors, matched to flow rate and viscosity of reagents
- Bypass/purge valves
- Replaceable reagent and pre-column filters

REACTOR

- Heated reactor controls at ± 0.4 °C for temperatures from 5 °C above ambient to a maximum temperature of 130 °C. Range of reactor dwell volumes, depending upon application
- LCD display of actual temperature or set point
- Thermal safety switch cuts power to heater if temperature exceeds safety limits

COLUMN HEATER

- Heater accepts 6 or 8 mm OD (0.25 or 0.31 inch) × 50, 100, 150, or 250 mm-length column and guard
- Temperature holds within ± 0.4 °C of set point; can be set with 1 °C resolution from 5 °C above ambient to 75 °C
- Solvent preheater eliminates temperature gradient through column
- LCD display of actual temperature or set point
- Insulated, hinged cover allows access to column

GAS PRESSURE MANIFOLD AND REGULATOR

- Regulator maintains 0.3 bar (3–5 psi) on reagent reservoirs with 3–5 bar (45–75 psi) source pressure
- Pressure-relief valve opens at 0.6 bar (8 psi)
- Manifold with anti-siphon valves has four 1/4-28 tubing connections

PRESSURIZED REAGENT RESERVOIR

- One liter capacity (2 and 5 L reservoirs available)



- Maintained under inert gas pressure to inhibit oxidation of OPA or other oxygen-sensitive reagents
- Valve built into reservoir cap permits sparging during reagent preparation
- Reagent reservoirs fitted with 3.1 mm OD oxygen-impermeable Saran® tubing for oxygen-sensitive reagents and/or with 3.1 mm OD FEP tubing

SAFEGUARDS TO PREVENT:

- **Post-column reagent backflow**
 A pressure transducer installed between LC (eluant) pump and sample injector turns off power to reagent pumps and reactor when the eluant pump pressure drops to below 35 bar (500 psi), ensuring that reagent will not flow upstream and damage the analytical column. Low eluant pressure can result from power failure, eluant pump malfunction, automatic or intentional shut-down, or an empty reservoir. The PCX5200 will not restart automatically. Anti-siphon valves in reagent supply lines prevent pressurized reagents from continuing to flow through the pump and into the column when the reagent pump is off.
- **Post-column system over-pressure**
 A relief valve pre-calibrated to open at 35 bar (500 psi) prevents rupture of the post-column reactor tubing in the event of downstream blockage, and reduces the possibility that all or part of the reagent flow will be diverted to the column.
- **Detector noise, precipitation**
 Back-pressure regulator applies 7 bar (100 psi) to the detector flowcell outlet (waste) to prevent detector noise and precipitation due to solvent out-gassing or boiling.

SUGGESTED STOCKING LEVELS FOR POST-COLUMN APPLICATIONS

- [You can find Suggested Stocking Levels for Post-column Applications information here](#)

PCX5200 CATALOG INFORMATION

CATALOG NO.	TYPICAL APPLICATIONS	REAGENT PUMPS	REACTOR VOLUME	VOLTAGE
1152-1111				120V
1152-1112	Amino Acids (OPA detection), Aminoglycoside Antibiotics, Biogenic Amines, Polyamines, Paraquat/Diquat, & Fumonisin	Single	0.15 mL	240V
1152-1221	Amino Acids (TRIONE® Ninhydrin detection), Ochratoxin A	Single	0.5 mL	120V
1152-1222				240V
1152-1241				120V
1152-1242	Formaldehyde	Single	0.5 mL	240V
1152-1411				120V
1152-1412	Aflatoxins	Single	1.4 mL	240V
1152-1511				120V
1152-1512	Cholesterol	Single	Knitted 2.8 mL	240V
1152-2211				120V
1152-2212	Carbamate Pesticides & Glyphosate Herbicide	Dual	0.5 mL	240V
1152-2811	Micro System for Carbamate Pesticides &	Dual	0.1 mL	120V

1152-2812	Glyphosate Herbicide			240V
1152-5211	Streptomycin	Dual	0.5 mL	120V
1152-5212				240V
1152-2341	Paralytic Shellfish Toxins	Dual	1.0 mL	120V
1152-2342	Sullivan Method			240V
1152-1021	Paralytic Shellfish Toxins	Dual	2.0 mL	120V
1152-1022	Oshima Method			240V
1152-2611	Trichothecene Mycotoxins	Dual	Knitted 1.2 and 1.6 mL	120V
1152-2612				240V
1152-4431	Polyether Antibiotics	Inert PEEK	1.4 mL	120V
1152-4432		Dual		240V

Note: Please contact Pickering for assistance in configuring a custom PCX5200 that will meet your specific analysis needs. All configurations include gas manifold, accessories, spares, reservoir(s), power cord and operation manual. Columns and chemicals sold separately.

