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## ***CTO-20A/20AC/10ASvp***



Large-capacity, forced hot-air circulation units, the CTO-20A/20AC HPLC column ovens precisely regulate the temperature around the column. Automatic fan-speed control varies with the set temperature to provide stable analysis that is not influenced by the ambient temperature.

### **CTO-20A - Precise Temperature Control**

A forced-air circulation-type column oven, the CTO-20A can regulate the temperature from 10°C above room temperature to 85°C. Rapid temperature equilibration allows complex temperature programs incorporating linear and/or step-wise increases and decreases in temperature.

### **CTO-20AC - Column Cooling Supported**

The CTO-20AC can heat and cool the column compartment, utilizing a Peltier cooling device to provide sub-ambient conditions. Temperature control is regulated over a wide range, from 10°C below room temperature to 85°C, for increased reproducibility and separation performance.

### **CTO-10ASvp**

A compact block-heating column oven that provides a wide temperature range of (ambient - 15°C) to (ambient + 60°C) for maintaining the column environment. Preheater flow lines are included to regulate mobile phase temperature. The CTO-10ASvp can house two 25cm columns and has a width of only 130mm.

## Features

**Precise Temperature Regulation** The interior of the oven is precisely regulated with a high-performance thermistor. The temperature is calibrated at two different temperatures to ensure a high level of temperature accuracy.

### Large Inner Space

In addition to the column, other system parts can be accommodated.

These include:

- Manual injector
- Gradient mixer
- High-pressure flow-line selection valves (2-position/6-port valves or position/7-port valves, two in total)
- Conductivity-detection cell block
- Pre-or post-column reaction coil

**Column Management Device (CMD)** Both the CTO-20A and 20-AC support the CMD. The CMD provides:

- Recorded information about column usage
- Amount of mobile phase delivered
- Composition of the last mobile phase used
- Number of samples injected

This information is managed through an LC workstation (with LCsolution) or a PC in the network using the CBM-20A System Controller's Web-control function.

**Optional Flow-Line and Column Selection Valves** The FCV-20AH2/20AH6 valves are stand-alone, high-pressure, flow-line or column selection valves. The valve position is controlled by event signal input. Direct control is also possible from the unit itself.

## Specifications

	<b>CTO-20A</b>	<b>CTO-20AC</b>	<b>CTO-10ASvp</b>
<b>Temperature-control method</b>	Forced-air circulation	Forced-air circulation	Block heater with solvent preheater
<b>Cooling method</b>	None	Electronic cooling	Electronic Cooling
<b>Temperature-setting range</b>	4°C to 85°C	4°C to 85°C	4°C to 80°C
<b>Temperature-control precision</b>	0.1°C max.	0.1°C max.	0.1°C max.

<b>Temperature-control range</b>	10°C above room temperature to 85°C	10°C below room temperature to 85°C	Ambient (-15°C to +60°C)
<b>Storage capacity</b>	10 columns, max 25 cm length	10 columns, max 25 cm length	2 columns, max 25 cm length
<b>Storable devices</b>	2 manual injectors, gradient mixer, 2 high pressure flow-line selection valves, etc.	2 manual injectors, gradient mixer, 2 high pressure flow-line selection valves, etc.	2 manual injectors, gradient mixer
<b>Time program</b>	Linear temperature programs supported	Linear temperature programs supported	Temperature settings change; OVEN ON/OFF; 320 steps, 0-999.9 minutes
<b>Safety measures</b>	Solvent sensor, temperature fuse, temperature upper limit	Solvent sensor, temperature fuse, temperature upper limit	Solvent sensor, temperature fuse, temperature upper limit
<b>Operating temperature range</b>	4°C to 35°C	4°C to 35°C	4°C to 35°C
<b>Dimensions, weight</b>	260 (W) x 415 (H) x 415 (D) mm, 20 kg	260 (W) x 415 (H) x 415 (D) mm, 23 kg	130 (W) x 415 (H) x 415 (D) mm, 12kg
<b>Power requirements</b>	100 VAC, 500 VA, 50/60 Hz	100 VAC, 500 VA, 50/60 Hz	110-120VAC, 120VA, 50/60Hz



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