

### Cryostats application and selection

Very low temperatures are best reached with both P2-CT90L and -W, the P1/P2-C75P and the DC50-K75 cryostats. The P2-CT50L and -W both deliver a high cooling capacity.

The cryostats are cooled by powerful, quiet compressors. The cooling circuits are either air-cooled (K75, C75P, CT50L, CT90L) or water-cooled (CT50W, CT90W).

The powerful, water-cooled units are equipped with a water flow limiter. The water consumption is kept low, thus considerably reducing operating costs.

The cooling capacity for all HAAKE Phoenix II cryostats is controlled by a fuzzy logic-supported energy management system.

The floor-based units are fitted with stable, adjustable castors.

The cryostats HAAKE DC50-K75 and P1/P2-C75P are suitable for location either under or on the lab table.

### HAAKE Phoenix II cryostats

The most user-friendly cryostat baths available to handle a wide range of applications.

The Phoenix II cryostats come equipped with a powerful pressure and suction pump, feature a cooling capacity of up to 5000 W, and are thus ideally suited to meet the extreme technical specifications that many applications require. Phoenix II circulators are available in two versions:

- Basic version Phoenix II P1 with a 1 kW heating capacity
- Full version Phoenix II P2 with 1 to 3 kW heating capacity and with additional functional features

#### HAAKE Phoenix II P1-C75P / P2-C75P

- Compact cryostat down to -75°C
- Unit can be placed on the lab table
- 280 W cooling capacity at 20°C

#### HAAKE Phoenix II P2-CT50L

- Cryostat with high capacity down to -50°C
- Air-cooled floor-based unit
- Ideal for direct temperature control in the bath
- 2500 W cooling capacity at 20°C
- Large bath volume (24 l)

#### HAAKE Phoenix II P2-CT50W

- Cryostat with big power down to -50°C
- Water-cooled floor-based unit
- 5000 W cooling capacity at 20°C
- Large bath volume (24 l)

#### HAAKE Phoenix II P2-CT90L

- Cryostat with high capacity down to -90°C
- Air-cooled floor-based unit
- Ideal for direct temperature control in the bath
- 1650 W cooling capacity at 20°C

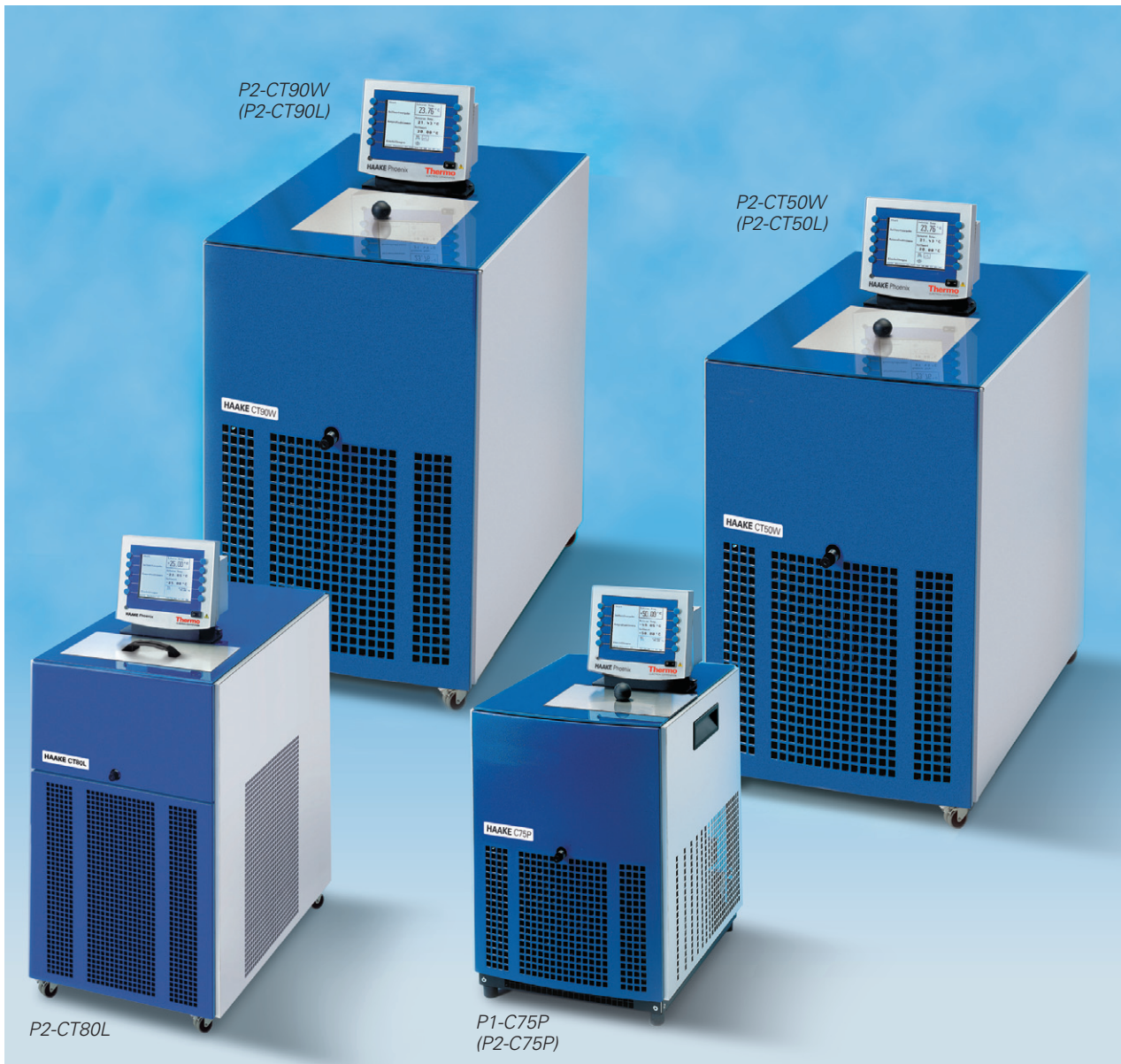
#### HAAKE Phoenix II P2-CT90W

- Cryostat with big power down to -90°C
- Water-cooled floor-based unit
- 1900 W cooling capacity at 20°C
- 200 W cooling capacity at -80°C

#### HAAKE Phoenix II P2-CT80L

- Compact cryostat down to -80°C
- Excellent price-performance ratio
- 800 W cooling capacity at 20°C

Technical specification acc. to DIN 12876		DC50-K75	P1-C75P	P2-C75P	P2-CT80L	P2-CT50L
Working temperature range	°C	-75..100	-75..100	-75..100	-80..100	-50..100
Temperature accuracy	+/-K	0.05	0.02	0.02	0.1	0.1
Heater capacity	kW	1.5	1.0	1.0	1.0	2.0
Cooling at 20°C / 0°C at -20°C / -40°C at -60°C / -80°C	W	280/220	280/220	280/220	800/750	2500/1750
	W	180/130	180/130	18 /130	700/600	1100/300
	W	50/-	50/-	50/-	500/50	-
Pump: Pressure / Flow rate max. Suction / Flow rate max.	mbar/l/min	300/12.5	560/24	560/24	560/24	560/24
	mbar/l/min	-/-	380/22	380/22	380/22	380/22
Bath opening: WxLxD	cm	13x10x20	13x10x20	13x10x20	22x14x20	22x27x20
Bath volume	l	6	6	6	12	24
Overall dimensions: WxLxH	cm	38x46x72	40x51x77	40x51x77	42x66x102	50x75x109
Net weight	kg	65	68	68	107	125
Total wattage	VA	2450	2500	2500	2500	3300
Order-No. for 230V / 50Hz for 220V / 60Hz for 380V / 3Ph / 50Hz for 220V / 3Ph / 60Hz		426-5751	440-0751	441-0751	441-0801	-
		-	440-0759	441-0759	441-0809	-
		-	-	-	-	446-0503
		-	-	-	-	446-0504
ExtraPlus-Rating (see page 35)		++++	+++++	++++++	++++++	++++++



P2-CT50W	P2-CT90L	P2-CT90W
-50..100	-90..100	-90..100
0.1	0.1	0.1
3.0	2.0	2.0
5000/3000 1900/800 -	1650/1500 1300/1150 600/170	1900/1700 1500/1300 700/200
560/24 380/22	560/24 380/22	560/24 380/22
22x27x20	22x15x20	22x15x20
24	15	15
50x75x109	50x90x109	50x90x109
180	190	185
5800	5300	5300
-	-	-
-	-	-
447-0503 447-0504	448-0903 448-0904	449-0903 449-0904
+++++	+++++	+++++

HAAKE DC50 cryostats are used for a wide range of standard applications.

A powerful pump enables the temperature control of small, closed external systems.

The unit can be set by a push-button keypad. The read-out is shown via two separate display panels.

**HAAKE DC50-K75**

- Compact cryostat down to -75°C with a temperature accuracy of ± 0.05 K
- Unit can be placed on the lab table
- 280 W cooling capacity at 20°C
- 130 W cooling capacity at -40°C



**HAAKE DC50 Highlights**

- Powerful pumps with Turbulence Reduction System (TRS)
- Simple operation due to separate display panels for menu selection and temperature
- Microprocessor control with PID control
- Resolution of the digital display for the set and actual temperature optionally 0.1 or 0.01°C
- Real Temperature Adjustment (RTA)
- Ability to save 3 user-defined fixed temperatures with their respective RTA values
- The reason for a unit fault is shown on the display via the Fault Identification System (FIS)
- RS232C interface, optional RS485
- External Temperature Compensation (ETC) for controlling external systems with connection for an external Pt100 sensor

**HAAKE Phoenix II Highlights**

- FuzzyStar control with neuronal adaptation
- Easy operation of the units due to a large monitor with plain text display and direct value setting
- Very powerful combined pressure and suction pump with automatic speed recognition for the precise temperature control of external objects
- 4 savable fixed temperatures
- Flexible interface concept: RS232C (standard), multifunctional output (standard), RS485 (for P2), Profibus (optional for P2)
- External Temperature Control (ETC) with connection for an external Pt100 sensor as standard
- User can choose from 6 different dialog languages
- Permanent display of date and time
- Up to 10 ramp programs with a maximum of 30 segments (for P2)
- 3-point calibration function (for P2)

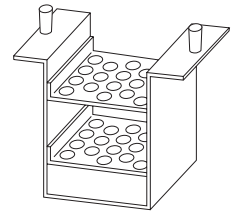
**Comes with**

Each 2 **nozzles** for tubings with 8 and 12 mm i. Ø

**Reservoir drain** for CT50L, CT50W, CT80L, CT90L and CT90W

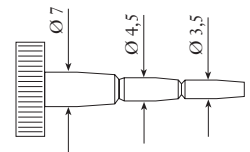
**Optional accessories Order-No.**

<b>Rack</b> for DC50-K75, P1-C75P and P2-C75P for:	
18 tubes, 16 mm Ø	<b>333-0500</b>
26 <b>micro centrifuge tubes</b> , 1.5 ml, 10 mm Ø	<b>333-0501</b>
6 <b>centrifuge tubes</b> , 50 ml, 30 mm Ø	<b>333-0502</b>



**Universal hose nozzle** for tubing of 3 bis 6 mm i. Ø

for Phoenix II-Cryostats **001-3718**



**Software ThermStar95plus**

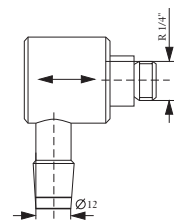
Programming temperature set values and ramp programs for cryostats via PC under Win95, 98 or NT

**091-2950**

**Universal hose nozzle** for tubing of 3 bis 6 mm i. Ø

for DC50-K75 **832-0275**

**Reservoir drain** for DC50-K75, P1-C75P and P2-C75P **333-0499**



**Trolley with castors**

for DC50-K75 **333-0508**

**Trolley with castors** for P1-C75P and P2-C75P **333-0678**

Choose the necessary tubes, bath liquids and Pt100 sensors on pages 30, 31 and 33.

