

COMBI DANCER

INFRARED VORTEX EVAPORATOR

HIGH SPEED
EVAPORATING
SYSTEM



HETTICH
LABORAPPARATE

COMBIDANCER

COMBIDANCER – NEW IMPULSES FOR YOUR LAB

Evaporation of residual solvents is a most significant step involved in many sample preparation methods, e.g. for solid phase extraction in the analytical laboratory or when employing new technologies, such as combinatorial chemistry or HTS (High Throughput Screening). The efficient processing of large sample series requires a method that is **quick, flexible, able to be automated, reproducible, gentle and ecologically friendly**. The CombiDancer is the perfect solution whether you want to evaporate hundreds of milliliters or just a few microliters. It does not matter either what you want to evaporate, from the light volatile ether derivative to aqueous or high boiling solvents, such as dimethylformamide (DMF) or dimethylsulfoxide (DMSO). Boiling delay phenomena that are often observed when freezing sensitive samples such as Acetonitril-water solutions now belong to the past.



THE SYSTEM COMBIDANCER

The evaporation process can be precisely controlled thanks to a perfected pump-technology. The chemical-proof diaphragm-pump is oil and hysteresis-free. The vapor pressure sensor allows to record and control all boiling points for solvent mixtures. The frequency of the pump can be set independently of time. Together with the intelligent PoleStar cold-trap, they form the ideal team to achieve optimum working conditions.

The ecologically friendly PoleStar cold-trap allows to freeze the evaporated solvents down to -45°C , so there can be no solvent vapors released in the lab. The temperature measured on the cooling coil can be used to control the CombiDancer. At the end of a sample series, the PoleStar cold-trap enters the defrost mode and is automatically drained (optional) and dried. An ideal solution for fully automated sample preparation.

ANCER

VORTEXING – HEATING – VACUUM HIGH EFFICIENT SOLVENT EVAPORATION

Vortexing, heating and **vacuum** are the keywords to a high efficient evaporation of solvents.

Through **orbital shaking** (vortexing) of the samples their evaporating surface is substantially increased and they are kept in constant movement. The advantages over centrifugation are obvious. There is no problem in vortexing evaporating sample at different speeds. Imbalance is a foreign word for the CombiDancer.

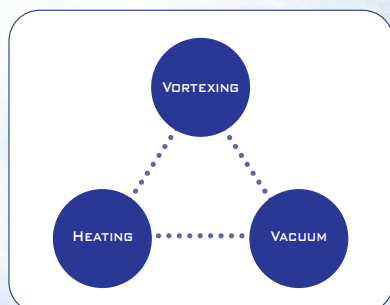
Even heat distribution accelerates the **evaporation process**, minimizing bumping. Gentle **heating** counteracts a potential freezing of samples.

There are 3 solutions available for heating:

- Heating the surface of the sample with halogen rods, located in the upper part of the sample chamber, in the lid
- A compartment heater prevents the condensation of solvents in the sample compartment.
- Temperature sensors of the **NEW** heated shaker plate of the CombiDancer at the bottom of the sample rack. An additional temperature sensor can also be installed directly in the sample rack. This allows a control of the heat provided for the evaporation process.

There is no problem for light or heat sensitive samples, since all heating solutions can be controlled separately and precisely to achieve a gentle heating.

The vacuum system Vacuubrand Vario™ produces optimum vacuum to work with the CombiDancer. Intelligent control minimizes boiling delay by adapting the pumping speed to the evaporation process. It automatically detects varying vapor pressure of the evaporating solvents and optimizes the operating parameters of the pump.



EFFICIENT

VORTEXING

- No balancing of the samples –
- No compression of the gas-phase –
- No rotating parts –

HEATING

- Individual heating of
- Vacuum chamber –
- Racks –

VACUUM

- Perfected pump-technology –
- Chemical-proof diaphragm-pump –
- automatic vapor sensor –

COMBI INNOVATIVE

The CombiDancer impresses with its numerous n

– Evaporation of solvents can now be so simple and so
orbital shaking (vortexing), heating and vacuum subst
processes.

WATCH THE SAMPLES

You can now observe your sample at any time through a window.
The light in the vacuum chamber can be switched off for light-
sensitive samples.

- No interruption during evaporation
- Ideal for the development of new methods



KEY POSITION

Determine user level by changing the position of the key.

- Pos. 1: Start current program
- Pos. 2: Recall an existing program
- Pos. 3: Edit a program

DANGER- TECHNOLOGY

Plus new ideas

and so fast. The smart combination of
substantially accelerates evaporation

HEATED SHAKER PLATE

A heated shaker plate allows temperature to be evenly distributed.
The temperature sensor directly measures and controls temperature
in the samples.

- No more freezing of the sample
- No boiling delay
- Gentle heating
- Ideal for sensitive products



MAGNETIC LINKAGE

A patented magnetic linkage links the rack to the bottom
of the vacuum chamber:

- No contact with the motor
- Faster replacement of sample racks
- Easy installation of the racks
- No tightness problems

LARGE DISPLAY

With the large display you will be able to monitor even complex
evaporation processes.

- Overview of all relevant parameters
- Easy parameter input
- Up to 99 evaporation programs can be stored



COMBIDANCER

NEW IMPULSES FOR YOUR LAB

WHY?

COMBIDANCER – NEW IMPULSES FOR YOUR LAB

The CombiDancer...

...is fast. It is 3 to 10 times faster than conventional evaporators/concentrators, and it has no rotating parts. Therefore, there is no need to balance the samples. It could not be easier.

... is flexible. You can use whatever sample container you like: large tubes, HPLC vials, Falcon tubes, deep well or microtiter plates. Even numerous samples are not a problem.

...is able to be automated. All samples can be easily accessed from above. The lid of the CombiDancer slides to the side and can be software-controlled via ASCII-code. There is no limit to automation.

...works reproducibly. Together with a perfected vacuum-pump technique and the possibility to control all processes via a PC, even complex evaporations become simpler.

...gently handles the samples. Thanks to a special sensor, the sample temperature can be directly measured and control the heating process. 3 different heating modes can be programmed separately.

...is ecologically-friendly. Unlike other evaporation methods, no vapors are released in the air. The PoleStar cold-trap even makes it possible to recycle solvents.

**COMBIDANCER –
THE COMPACT SOLUTION THAT
YOU HAVE ALWAYS BEEN
SEARCHING FOR!**

SAMPLE RACKS

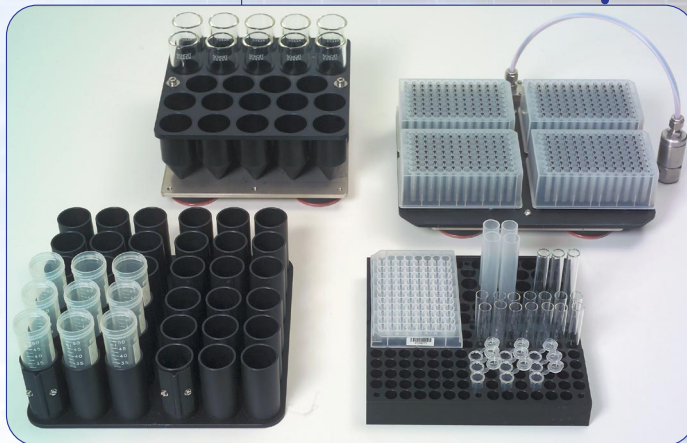
Various accessories can be chosen to work with the CombiDancer and ensure the highest flexibility. All types of containers can be used, ranging from test tubes to deep well or microtiter-plates.

All racks are made out of anodized aluminum, i.e. a light material with high heat conductivity.

Standard racks can be used, among others, with following containers:

- Microtiter containers
- Microtiter and deep well plates
- Falcon tubes (15 and 50 ml)
- HPLC-vials
- Eppendorf containers
- Scintillation vials

Sample racks can also be customized to fit your specific containers or container combinations.



POLESTAR COLD-TRAP

The PoleStar cold-trap is outstanding because of its numerous particular features. A fully inert 3.3-liter container allows one or several simultaneous evaporation processes. Defrost is achieved by a specific device that quickly removes ice that form during evaporation of aqueous solutions on the cooling coil. It is also equipped with a stopcock to permit easy draining of the container. PoleStar cold-trap and CombiDancer can be controlled via the interface RS232 (optional).



INSTRUMENT SPECIFICATIONS

COMBIDANCER

(Art. Nr.: CD.3002)

Dimensions

Width:	765 mm (lid closed) 930 mm (lid open)
Depth:	695 mm
Height:	470 mm
Weight:	approx. 80 kg
Power source:	230 V, 50 Hz / 110 V, 60 Hz
Power consumption:	1,8 kVA
Interface:	RS232
Maximum load:	80 kg
Vacuum chamber	
Material:	high-grade steel V4A
Diameter:	360 mm
Height:	180 mm
Connector vacuum pump:	DN25
Vortexing speed:	200–1,200 rpm
Temperature control range:	ambient to 80 °C
Maximum load:	6 kg

POLESTAR COLD TRAP

(Art. Nr.: POL.2301)

Dimensions

Width:	520 mm
Depth:	430 mm
Height:	530 mm
Weight:	51 kg
Power source:	230 V, 50 / 110 V, 60 Hz
Power consumption:	660 VA (3.15 A)
Capacity:	3.3 Liter
Cooling temperature:	-45°C

TYPICAL APPLICATION EXAMPLES

Solvent	Sample volume (ml)	Tube type	Number of tubes	Temperature (°C)	Evaporation time
Hexane	20	50-ml cone tube	36	40	20
Water	0.5	1.5-ml microliter tube	256	40	56
Ether derivatives	3.5–4	10-ml tube	96	30	40
Methanol	8	20-ml scintillation vial	69	40	40
Water/Ethanol 50/50	4	16 x 100 mm tube	144	40	120

FOR FURTHER INFORMATION PLEASE CONSULT YOUR LOCAL RETAILER OR DIRECTLY CONTACT THE MANUFACTURER.

