

# Water Stills

# GFL®



■ The result of decades of experience and technical innovation: four individually applicable product ranges with 14 different models.



# Quality built on Tradition

Users in research labs, standard and special labs for medicine, science and industry throughout the world have been profiting from the precision and dependability of our products for almost 40 years, all of which comply with valid European standards and bear the CE mark.

In the future, the success of a product spectrum of laboratory devices that meet the toughest demands on material, functioning and design will continue to be ensured by experience of every-day use in detail, ongoing technical advances and an excellent quality approach.

The phrase „Quality built on Tradition“ encompasses more than just the sum of impressive product innovations. It is also an expression of our corporate policy, which includes a high degree of ready-and-waiting service as our primary customer-friendly service goal.

This applies to all of the GFL laboratory products that are produced exclusively at our plant in Germany - Deep Freezers, Shakers, Shaking Water Baths, Water Baths, Incubators or Water Stills alike.



## Secure future

A vested quality demand in accordance with international standards is documented for all GFL laboratory products with the certification to DIN EN ISO 9001:2000, promoting more trust in the permanent high quality level of our products.

In addition to the continuous optimisation of ongoing production processes, the ISO obligation also calls for the commitment to quality awareness of our employees and the continuous development and rapid implementation of preventive measures to ensure quality assurance at a high level.

# Water. The Origin of All life

Water is the origin of all life, an indispensable and irreplaceable natural product for man, beast and plant. Not only is water our most important food, it also possesses the highest solubility of all known substances, a discovery that led to the production of pure water through distillation (lat. destillare / drip down) probably as early as 5,000 years ago.

## Pure water. On the art of distillation.

Distillation is the most effective and reliable way of producing pure water, the exceptional quality being that the only additive required is energy. Compared to other additives, such as e.g. adsorbents or solvents, energy can easily be added to and extracted from a system. Furthermore, Water Stills require very little maintenance. Apart from regular cleaning intervals they are completely maintenance-free.

The distillation process means the phase transformation of liquids (raw water: spring water, tap water or pretreated water) into steam and back to liquids. The transformation of liquids to steam separates effectively water from impurities having a higher boiling point than water. They remain as sediments in the condenser chamber (evaporator). The steam and some very few substances that have a lower or the same boiling point as water are brought to condensation.

Steam condensation produces distilled water, also called Aquadest (lat. aqua destillata). This "pure water" has a purity degree of approx. 99.5% regarding salts, organic substances, micro-organisms, pyrogens and bacteria. The pH value of the produced distillate turns slightly acidic when carbon dioxide from the environmental air dissolves in the distillate. Carbon dioxide is absorbed until a dynamic balance between water and environmental air develops. Pure water should, therefore, be used up quickly or stored under airtight conditions.

The conductivity of distillate mainly depends on the quality of raw water and the construction of the Water Still. By connecting a second distillation stage (bi distillation), respectively by using special materials in the Water Still (glass) the purity of the distillate can be further increased.



### Alambic with water cooling around the distillation helmet.

In the developmental history of distillation equipment, this unconventional model disposes of a cooling basin shaped like an oriental turban.



# 2001/2 - 2001/4

## Specifications and Features

- ▶ good distillate quality, conductivity approx. 2.3  $\mu\text{S} / \text{cm}$  at 20 °C
- ▶ for drainage and cleaning, evaporator is easily accessible by lifting the condenser. Material: stainless steel, material no. 1.4301
- ▶ condenser (cooler) with baffle. Material: stainless steel, material no. 1.4301
- ▶ heating element made of stainless steel, material no. 1.4876
- ▶ thermostatic low water cut-off, to protect the heating element in case of low water
- ▶ thermometer to display the temperature of the cooling water
- ▶ energy-saving through distillation of the heated cooling water
- ▶ distillate withdrawal through drain tube on the front of the unit
- ▶ cooling water inlet and outlet on the right-hand side of the unit
- ▶ water connection: cooling water inlet 1/2 inch (inner  $\varnothing$  12.7 mm), cooling water outlet 1/2 inch (inner  $\varnothing$  12.7 mm)
- ▶ degassing of carbon dioxide through vent in the condenser
- ▶ main switch with pilot lamp on the front of the unit
- ▶ housing electrostatically powder-coated with epoxy resin
- ▶ power connection through mains connection cable with German shock-proof type (Schuko) plug

## Compact and efficient

Product range 2001/2 and 2001/4 comprises two mono water stills without storage tank, for bench mounting, that produce two and four litres of distillate per hour.

Their easy handling makes them an indispensable help in producing high-quality distillate.



**2001/4** Mono Water Still 4 l / h, for bench mounting

## Technical data

Model Order No.	Capacity l / h	Cooling water requirement l / h approx.	Exterior dimensions mm approx.			Electrical connection*	Weight kg approx.		Packing volume approx. $\text{m}^3$
			Width	Depth	Height		net	gross cardboard box	
<b>2001/2</b>	2	20	280	250	490	230 V / 50...60Hz / 2.0 kW	7.5	10	0.10
<b>2001/4</b>	4	40	280	250	490	230 V / 50...60Hz / 3.0 kW	7.5	10	0.10

\* Special voltages available on request

• Tubes for water inlet and outlet can be supplied as accessories.