

## **KDL 2**

### **Your Modular Thin Film and Short Path Distillation Unit for the Laboratory**



Keep the approved and improve the details. With this motto UIC specialists have developed a new Thin Film and Short Path Distillation plant for laboratory use: **The KDL 2**

All the experience with successful previous plants has been used for this development. KDL 1 and KDL 5 have been sold many times before, they are in operation for various applications at numerous customers.

Beside many improvements in details UIC set great value on proved standard components. With the KDL 2 mechanical assembly technique we will put together the tailor-made plant for your special application.

Or your decision is to buy a basic plant with auxiliary equipment - especially selected for you - and you have the flexibility of modifications for various applications. Additional instrumentation can be added later.

With our mechanical assembly technique we also have the chance to design an individual plant for special operating conditions. With the KDL 2 system you will always have the appropriate plant.



#### **Main Features of the KDL 2:**

- **The glass made apparatus is of the same design as the pilot- and production units.** This is important for the scale-up of the process to a production plant.
- **Evaporator and cold trap are made of Borosilicat-glass.** they are corrosion proof, the process can be observed.
- **Vacuum nozzle on the side-top of the distiller-** Maximum yield and smooth operating conditions of the vacuum system.
- **Internal condenser as a spiral tube guarantees:** complete condensation, all vapors and non condensable have to pass the low temperature coil on their way to the vacuum pump set.
- **External condenser as Thin Film Evaporation mode.**
- **Design in mechanical assembly technique,** all components can be replaced and the plant can be extended very easily.

## Characteristics KDL 2

<b>Product quantity</b>		
Minimum feed	g	10-200
Throughput, max.	Kg/h	3
<b>Heat exchange surface</b>		
Evaporator	dm <sup>2</sup>	2.8
Internal condenser	dm <sup>2</sup>	1.7
External condenser	dm <sup>2</sup>	4.0
Cold trap	dm <sup>2</sup>	2.0
<b>Heating</b>		
For distillation unit	°C	up to 250
For feeding system	°C	up to 90
For internal condenser	°C	up to 90
For external condenser	°C	up to 90
For residue discharge section	°C	up to 150
<b>Vacuum pumps</b>		
Rotary-vane pump	m <sup>3</sup> /h	2
Oil-diffusion pump	l/s	40
<b>Working pressure</b>		
without diffusion pump up to	mbar	0.05
with diffusion pump up to	mbar	0.001
<b>Dimensions</b>		
L x W x H	M	1.2 X 0.6 X 1.0
<b>Electrical values</b>		
Voltage at 50 Hz	V	220
Power requirement	kW	3 - 6

## Short-Path Distillation Process Technique

Vacuum Short Path

Distillation is the advanced process. All products that can be treated by other technology can be separated. But Short Path Distillation the process is much smoother. The technology can be used even when others will fail.

Tender separation is attained by:

- short residence time on the heated evaporator surface
- short distance for the vapors to the condenser
- low pressure on the film surface until 0,001 mbar
- indirect heating with continuous heat distribution

### Wiper roller system:

with self cleaning characteristic for best film homogeneity and distribution.

**Improved vacuum pump set with bypass around the diffusion pump for protection during start up** - Diffusion pump will be in operation only when needed.

**Main part of the plant** is the distiller with internal condenser, external condenser, which are surrounded by the concentric evaporator surface.

The feed product will be distributed to the evaporator wall by a rotating plate. The product can be fed by a graduated dosing vessel or by a dosing pump.



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