

VWR Collection Chillers

A perfect match for Rotary Evaporators

Tap water, which is the most common coolant used in laboratories, is not a medium that can give reproducible results because of fluctuations in the ambient temperature. It is also an expensive resource which is continually wasted. The solution is the VWR Chiller range. Optimised for use with rotary evaporators these recirculating chillers are economic and ensure constant, reproducible cooling conditions.

- Temperature setpoint can be adjusted by using the keys on the command panel (except Basic which has a fixed setpoint at 7 °C)
- The Duo Chiller can cool two cooling cycles directly connected on the double out and inlets
- Regulates the temperature of the cooling cycle between -10 °C and +40 °C. (Use water and glycol mixture (70-30) for temperatures below +5 °C)
- Indicator on front panel for perfect visualization of liquid level
- Easy accessible filling port on top of the unit
- Drain tap at the back
- Includes EU, UK and CH power cable



	RC-10 Basic Recirculating chiller	RC-10 Digital Recirculating chiller	RC-10 Duo Recirculating chiller
Cat. No	462-0137	462-0138	462-0139
Temperature range	7 °C fixed	-10 °C...+40 °C	-10 °C...+40 °C
Temperature stability	+/- 2 K	+/- 0,5 K	+/- 0,5 K
Cooling capacity @15 °C	500 Watt	500 Watt	950 Watt
Maximum pump flow (with no counter pressure)	14 l/m	8 l/m	11 l/m
Maximum pump pressure (at zero flow)	0,4 bar	0,6 bar	1,0 bar
Refrigerant	R 134 a	R 134 a	R 134 a
Permitted ambient temperature	+15 °C ... +32 °C	+15 °C ... +32 °C	+15 °C ... +32 °C
Dimensions (WxDxH)	280 x 360 x 520 mm	280 x 370 x 490 mm	350 x 420 x 600 mm
Reservoir volume	3,5 l	3,5 l	3,5 l
Reservoir material	stainless steel V2A	stainless steel V2A	stainless steel V2A
Weight (net)	26,5 kg	27,6 kg	39,9 kg
Electrical connection	230 V, 50 Hz	230 V, 50 Hz	230 V, 50 Hz
Max consumption	600 Watt	600 Watt	1.100 Watt
Delivered with	2 x hose connections dia. 8 mm 2 x screw nut M 16 x 1 2 x PVC hose 1500 mm 2 x hose clamps	2 x hose connections dia. 8 mm 2 x screw nut M 16 x 1 2 x PVC hose 1500 mm 2 x hose clamps	4 x hose connections dia. 8 mm 4 x screw nut M 16 x 1 4 x PVC hose 1500 mm 4 x hose clamps

Comparing the cost of an environmental friendly re-circulating chiller to expensive tap water cooling.



Savings based on a sample calculation

A typical application of the VWR Chillers is the cooling of rotary evaporators. An average 3 litres rotary evaporator, for example, needs around 230,000 litres of cooling water per year. This corresponds roughly to the amount of consumption of a household with four people!

The following example calculation refers to the cooling of two rotary evaporators.

The required capacity and payback period can be determined as follows:

Application Parameters	Determining the cooling capacity
Cooling water inlet: 15 °C Cooling water outlet: 17 °C Water flow: 4 litres per minute	$P = \Delta T \times c \times m / t$ $\Delta T = 2 \text{ }^\circ\text{C}$ (temperature difference) $c = 4.18 \text{ kJ / kg} \times \text{K}$ (specific heat capacity for water) $m / t = 0.066 \text{ l / sec}$ (water flow) The required cooling capacity is 560 watts.

Cooling Costs for tap water	Operating cost for a re-circulating chiller
 4 litres per minute = 240 litres per hour Operating time per year = 240 days x 8 hours Consumption per year = 461 m ³ Cost per m ³ = 4,00 EUR * Cost per year = 1844,00 EUR * Average prices in Germany in September 2006	 Power = 1.05 kW Operating time per year = 240 days x 8 hours Consumption per year = 2112 kWh Cost per kWh = 0,15 EUR * Cost per year = 316,80 EUR

This calculation example gives an annual cost saving of €1527. Under these conditions a re-circulating chiller will pay for itself within two years!

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