

pilot scale rotary evaporator with set speed and temperature

Pilot scale rotary evaporator is a solvent distillation equipment suitable for small-scale industrial validation, process amplification and laboratory results.

Pilot Scale Rotary Evaporator

Main Features

1. High-performance glassware: Core components (evaporation flask, collection flask, condenser) are made from 3.3 borosilicate glass—excellent thermal shock resistance and chemical stability for acids, alkalis, and organic solvents.
2. LCD operation interface: High-definition display, encoder-based temperature and speed setting—responsive and intuitive for precise control.
3. Three-stage high-efficiency condensing system: Main cooling, sub-cooling, and three-way buffer condenser—significantly boosts recovery efficiency and prevents solvent escape.
4. Intelligent sealing: PTFE + Viton seals—corrosion-resistant, excellent vacuum performance for long-term stable operation.
5. Electric/manual dual lift bath: Liquid level monitoring and dry burn protection—ensures safe, convenient operation.



6. Flange connection: Easy disassembly, cleaning, and fast maintenance.
7. PTFE discharge valve: Corrosion-resistant and durable—suitable for strong acids/alkalis.
8. Lockable casters: Flexible movement and stable installation.

Working Principle

- Decompression lowers boiling point: Vacuum reduces pressure, allowing solvents to boil at lower temperatures—protects heat-sensitive substances.
- Rotary thin film evaporation: Tilted, rotating flask spreads liquid into a thin film—maximizes evaporation rate.
- Constant temperature heating: Bottom-heated bath with dry burn protection/liquid level control—stable, safe heat source.
- Multi-stage condensation: Vapor passes through three condensers and collects in the flask—high recovery, minimal loss.
- Tee buffer: Prevents liquid from directly entering condenser—protects condensation effect and system stability.

Application Areas

1. Chemical development and pilot certification: Solvent recovery, concentration, and refining of intermediates post-reaction.
2. Pharmaceuticals: API concentration and flammable solvent recovery (ethanol, acetone, DMF).
3. Plant extraction/natural products: Solvent removal after volatile oil extraction, mild concentration of heat-sensitive natural substances.
4. Materials science/polymer engineering: Removal of low-boiling by-products in nanomaterials, resin, and monomer synthesis.
5. Environmental/testing labs: Water sample concentration, VOC recovery, hazardous waste pretreatment.

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Model	R-05	R-10	R-20	R-50
External dimensions	840Wx520Dx1140H mm	1040Wx580Dx1760H mm	1120Wx680Dx1900H mm	1345Wx770Dx2230H mm
Weight includes glass	35kg	61kg	90kg	140kg
Power supply	110Vac, 60Hz 或 220-240Vac,		380Vac, 50Hz, 3 phase	

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Model	R-05	R-10	R-20	R-50
	220-240Vac, 50Hz, 60Hz	50Hz, 60Hz		
Rotary motor power	250W			
Overall power	2300W	3800W	6300W	6300W
protection class	IP20			
contamination level	2			
Speed range	20rpm 140rpm	to 20rpm to 130rpm	20rpm to 130rpm	20rpm to 110rpm
Bath temperature control range	ambient+5°C to 95°C			
Nominal adjustment accuracy	±1.5°C			
Bath liquid	deionized water			
System seal leakage	≤0.03kPa per minute			

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Model	R-05	R-10	R-20	R-50
rotary control	Electronic			
Heating rated power	2000W	2300W	6000W	
Bath Temperature Sensors	PT100, three lines			
Maximum evaporation capacity, water	2L per hour	3.2L per hour	5L per hour	9L per hour
Condensing area	about 0.278 square meters	Primary 0.39, Secondary 0.253 square meters	Primary 0.948, Secondary 0.358 square meters	Primary 1.15, Secondary 0.4 square meters
Rotary Bottle Volume	5L	10L	20L	50L
Rotary Bottle diameter	flanged diameter 50mm	flanged diameter 125mm		
Collection bottle volume	3L	5L	10L	20L

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Model	R-05	R-10	R-20	R-50
Collection bottle diameter	flanged diameter 40mm	flanged diameter 50mm		flanged diameter 60mm
Rotation speed display method	LCD			
Temperature display mode	LCD			
environmental temperature	5°C to 35°C			
Environmental relative humidity	≤ 70%			
Bath size	diameter 300mmx170mm	diameter 370mmx220mm	diameter 450mmx260mm	diameter 550mmx320mm
glass	3.3 Borosilicate Glass			
contact with material	3.3 Borosilicate glass, PTFE			
bath cover	Optional			