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Laboratory Planetary Grinder

XQM laboratory platform comparison

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A comparison of TENCAN laboratory planetary milling platforms, from micro assemblies to benchtop and cabinet-style XQM units.

Overview

A comparison of TENCAN laboratory planetary milling platforms, from micro assemblies to benchtop and cabinet-style XQM units. Use it to identify a practical platform before reviewing a specific model.

How it works

The listed platforms use planetary revolution and jar rotation. Housing, jar envelope, capacity, power and controls differ; a shared milling principle does not make their operating limits interchangeable.

Key features

- The Chinese comparison separates platform structure from model number.
- Capacity, electrical supply, speeds and physical dimensions are provided in separate

specification tables.

- Laboratory selection should focus on sample requirements rather than treating the largest listed platform as the best choice.

Specifications

Published catalog references are reproduced below. Nominal volume is not a sample-mass rating. Confirm the selected model, material grade, electrical supply and complete supplied configuration in the quotation.

Model specifications — 1

Platform	Model	Nominal capacity	Configuration class	Compatible jar volume	Jar positions
Micro / standard	XQM-0.2	—	—	—	—
Micro / glovebox	XQM-0.2S	—	—	—	—
Vertical cabinet	XQM-0.4	0.4L	Laboratory	25-100mL	4
Benchtop A-series	XQM-0.4A	0.4L	Laboratory	25-100mL	4
Vertical cabinet	XQM-1	1L	Laboratory	50-500mL	4
Benchtop A-series	XQM-1A	1L	Laboratory	50-500mL	4
Vertical cabinet	XQM-2	2L	Laboratory	50-500mL	4
Benchtop A-series	XQM-2A	2L	Laboratory	50-500mL	4
Vertical cabinet	XQM-4	4L	Laboratory	250-1000mL	4
Benchtop A-series	XQM-4A	4L	Laboratory	250-1000mL	4
Vertical cabinet	XQM-6	6L	Laboratory	1-1.5L	4
Benchtop A-series	XQM-6A	6L	Laboratory	1-1.5L	4
Vertical cabinet	XQM-8	8L	Laboratory	1-2L	4
Benchtop A-series	XQM-8A	8L	Laboratory	1-2L	4
Vertical cabinet	XQM-10	10L	Laboratory	1-2.5L	4
Benchtop A-series	XQM-10A	10L	Laboratory	1-2.5L	4
Vertical cabinet	XQM-12	12L	Laboratory	1-3L	4
Benchtop A-series	XQM-12A	12L	Laboratory	1-3L	4
Vertical cabinet	XQM-16	16L	Laboratory	2-4L	4
Benchtop A-series	XQM-16A	16L	Laboratory	2-4L	4

Platform	Model	Nominal capacity	Configuration class	Compatible jar volume	Jar positions
Vertical cabinet	XQM-20	20L	Production	2-5L	4
Vertical cabinet	XQM-40	40L	Production	5-10L	4
Vertical cabinet	XQM-60	60L	Production	10-15L	4
Vertical cabinet	XQM-80	80L	Production	15-20L	4
Vertical cabinet	XQM-100	100L	Production	20-25L	4
Vertical cabinet	XQM-200	200L	Production	50L	4

Model specifications — 2

Platform	Compatible vacuum jar volume
Micro / standard	—
Micro / glovebox	—
Vertical cabinet	50mL vacuum jar
Benchtop A-series	50mL vacuum jar
Vertical cabinet	50-250mL vacuum jar
Benchtop A-series	50-250mL vacuum jar
Vertical cabinet	50-250mL vacuum jar
Benchtop A-series	50-250mL vacuum jar
Vertical cabinet	50-500mL vacuum jar
Benchtop A-series	50-500mL vacuum jar
Vertical cabinet	50-1000mL vacuum jar
Benchtop A-series	50-1000mL vacuum jar
Vertical cabinet	50-1500mL vacuum jar
Benchtop A-series	50-1500mL vacuum jar
Vertical cabinet	1-2L vacuum jar
Benchtop A-series	1-2L vacuum jar
Vertical cabinet	1-2L vacuum jar
Benchtop A-series	1-2L vacuum jar
Vertical cabinet	1-3L vacuum jar
Benchtop A-series	1-3L vacuum jar

Platform	Compatible vacuum jar volume
Vertical cabinet	2-4L vacuum jar
Vertical cabinet	5L vacuum jar
Vertical cabinet	10L vacuum jar
Vertical cabinet	15L vacuum jar
Vertical cabinet	20L vacuum jar
Vertical cabinet	25L vacuum jar

Model specifications — 3

Platform	Model	Jar holder internal diameter (mm)	Maximum permitted jar height (mm)	Electrical supply	Supply phase
Micro / standard	XQM-0.2	50	60	220V/50Hz; 110V/50Hz / 60Hz optional	Single phase
Micro / glovebox	XQM-0.2S	50	60	220V/50Hz; 110V/50Hz / 60Hz optional	Single phase
Vertical cabinet	XQM-0.4	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-0.4A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-1	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-1A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-2	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-2A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-4	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-4A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-6	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-6A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-8	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-8A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-10	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-10A	—	—	220V 50Hz	Single phase
Vertical cabinet	XQM-12	—	—	220V 50Hz	Single phase
Benchtop A-series	XQM-12A	—	—	220V 50Hz	Single phase

Platform	Model	Jar holder internal diameter (mm)	Maximum permitted jar height (mm)	Electrical supply	Supply phase
Vertical cabinet	XQM-16	—	—	380V 50Hz	Three phase
Benchtop A-series	XQM-16A	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-20	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-40	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-60	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-80	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-100	—	—	380V 50Hz	Three phase
Vertical cabinet	XQM-200	—	—	380V 50Hz	Three phase

Model specifications — 4

Platform	Motor power	Speed control
Micro / standard	90W	—
Micro / glovebox	90W	—
Vertical cabinet	0.25kW	Variable-frequency control
Benchtop A-series	0.25kW	Variable-frequency control
Vertical cabinet	0.75kW	Variable-frequency control
Benchtop A-series	0.75kW	Variable-frequency control
Vertical cabinet	0.75kW	Variable-frequency control
Benchtop A-series	0.75kW	Variable-frequency control
Vertical cabinet	0.75kW	Variable-frequency control
Benchtop A-series	0.75kW	Variable-frequency control
Vertical cabinet	0.75kW	Variable-frequency control
Benchtop A-series	0.75kW	Variable-frequency control
Vertical cabinet	1.5kW	Variable-frequency control
Benchtop A-series	1.5kW	Variable-frequency control
Vertical cabinet	1.5kW	Variable-frequency control
Benchtop A-series	1.5kW	Variable-frequency control
Vertical cabinet	1.5kW	Variable-frequency control

Platform	Motor power	Speed control
Benchtop A-series	1.5kW	Variable-frequency control
Vertical cabinet	3kW	Variable-frequency control
Benchtop A-series	3kW	Variable-frequency control
Vertical cabinet	4kW	Touchscreen
Vertical cabinet	5.5kW	Touchscreen
Vertical cabinet	7.5kW	Touchscreen
Vertical cabinet	11kW	Touchscreen
Vertical cabinet	11kW	Touchscreen
Vertical cabinet	22kW	Touchscreen

Model specifications — 5

Platform	Model	Programmable run time (min)	Reversing interval (min)	Revolution speed (rpm)	Jar rotation speed (rpm)
Micro / standard	XQM-0.2	—	—	60-580	120-1160
Micro / glovebox	XQM-0.2S	—	—	60-580	120-1160
Vertical cabinet	XQM-0.4	1-9999	1-999	0-435	0-870
Benchtop A-series	XQM-0.4A	1-9999	1-999	0-435	0-870
Vertical cabinet	XQM-1	1-9999	1-999	0-405	0-810
Benchtop A-series	XQM-1A	1-9999	1-999	0-405	0-810
Vertical cabinet	XQM-2	1-9999	1-999	0-405	0-810
Benchtop A-series	XQM-2A	1-9999	1-999	0-405	0-810
Vertical cabinet	XQM-4	1-9999	1-999	0-405	0-810
Benchtop A-series	XQM-4A	1-9999	1-999	0-405	0-810
Vertical cabinet	XQM-6	1-9999	1-999	0-335	0-670
Benchtop A-series	XQM-6A	1-9999	1-999	0-335	0-670
Vertical cabinet	XQM-8	1-9999	1-999	0-290	0-580
Benchtop A-series	XQM-8A	1-9999	1-999	0-290	0-580
Vertical cabinet	XQM-10	1-9999	1-999	0-290	0-580
Benchtop A-series	XQM-10A	1-9999	1-999	0-290	0-580
Vertical cabinet	XQM-12	1-9999	1-999	0-290	0-580

Platform	Model	Programmable run time (min)	Reversing interval (min)	Revolution speed (rpm)	Jar rotation speed (rpm)
Benchtop A-series	XQM-12A	1-9999	1-999	0-290	0-580
Vertical cabinet	XQM-16	1-9999	1-999	0-255	0-510
Benchtop A-series	XQM-16A	1-9999	1-999	0-255	0-510
Vertical cabinet	XQM-20	1-9999	1-999	0-215	0-430
Vertical cabinet	XQM-40	1-9999	1-999	0-195	0-390
Vertical cabinet	XQM-60	1-9999	1-999	0-174	0-260
Vertical cabinet	XQM-80	1-9999	1-999	0-151	0-242
Vertical cabinet	XQM-100	1-9999	1-999	0-151	0-242
Vertical cabinet	XQM-200	1-9999	1-999	0-143	0-215

Model specifications — 6

Platform	Revolution : rotation ratio	Published noise level (dB)
Micro / standard	—	—
Micro / glovebox	—	—
Vertical cabinet	1:2	58±5
Benchtop A-series	1:2	58±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	60±5

Platform	Revolution : rotation ratio	Published noise level (dB)
Benchtop A-series	1:2	60±5
Vertical cabinet	1:2	65±5
Benchtop A-series	1:2	65±5
Vertical cabinet	1:2	65±5
Vertical cabinet	1:2	68±5
Vertical cabinet	1:1.5	68±5
Vertical cabinet	1:1.5	68±5
Vertical cabinet	1:1.5	68±5
Vertical cabinet	1:1.5	68±5

Model specifications — 7

Platform	Model	Net mass (kg)	Dimensions (mm)
Micro / standard	XQM-0.2	25	420×260×310
Micro / glovebox	XQM-0.25	29	Mill: 390×220×270 ; control box: 200×180×240
Vertical cabinet	XQM-0.4	35	550×300×360
Benchtop A-series	XQM-0.4A	29	500×300×340
Vertical cabinet	XQM-1	100	760×470×580
Benchtop A-series	XQM-1A	85	760×470×600
Vertical cabinet	XQM-2	100	760×470×580
Benchtop A-series	XQM-2A	85	760×470×600
Vertical cabinet	XQM-4	100	760×470×580
Benchtop A-series	XQM-4A	85	760×470×600
Vertical cabinet	XQM-6	100	760×470×580
Benchtop A-series	XQM-6A	85	760×470×600
Vertical cabinet	XQM-8	168	900×600×640
Benchtop A-series	XQM-8A	150	880×560×642
Vertical cabinet	XQM-10	168	900×600×640
Benchtop A-series	XQM-10A	150	880×560×642
Vertical cabinet	XQM-12	168	900×600×640
Benchtop A-series	XQM-12A	150	880×560×642

Platform	Model	Net mass (kg)	Dimensions (mm)
Vertical cabinet	XQM-16	203	950×600×710
Benchtop A-series	XQM-16A	205	950×600×710
Vertical cabinet	XQM-20	392	1200×790×930
Vertical cabinet	XQM-40	656	1400×880×1070
Vertical cabinet	XQM-60	950	1600×1070×1250
Vertical cabinet	XQM-80	1300	1750×1140×1330
Vertical cabinet	XQM-100	1300	1800×1150×1140
Vertical cabinet	XQM-200	2725	2670×1600×2804

Applications

Research equipment selection, method development and comparisons between micro, benchtop and cabinet-style laboratory setups.

Suitability depends on the actual sample, process and analytical requirements; a listed application is not a guaranteed final-particle-size result.

Accessories and options

Discuss compatible jars, media, sealed/vacuum arrangements and controls. Cooling or ultrasonic assistance should be evaluated as a separate configuration requirement, not assumed from the platform chart.

- Jar and media: confirm material, volume, holder fit and the complete working load.
- Vacuum or gas requirements: specify the complete jar, lid and seal arrangement; no pressure rating is assumed.
- Utilities and supply scope: state voltage, frequency, phase, destination and required documents; confirm included versus optional items.

[Compare milling jars](#) · [Compare grinding media](#) · [Air-cooled systems](#) · [Ultrasonic-assisted systems](#)

Selection guidance

Compare required sample quantity, number of samples, jar size, contamination limits and installation space. Follow the dedicated product pages when moving from a platform comparison to

a specific configuration.

[Work through the selection guide](#) · [Request a configuration quotation](#)

Trials and comparisons

Equipment-family reference

Silica

XQM; exact model not recorded · Dry milling

- Sample: 176 g
- Jar: 500 mL alumina/corundum jar
- Recorded sampling / duration: 45 min

Recorded observations

Observation	Sampling time	D50 (μm)	D90 (μm)
Starting sample	Before milling	26.15	58.62
Recorded sample	45 min	1.77	3.69

This is an XQM-family record, not verification of every XQM model. The requested 1 μm target was not demonstrated. Exact ceramic/media grades and measurement/dispersion methods are not supplied.

Equipment-family reference

Copper powder

XQM-0.4A · Wet milling

- Sample: 51 g
- Jar: 100 mL
- Recorded sampling / duration: 60 min

Recorded observations

Observation	Sampling time	D50 (μm)	D90 (μm)
Recorded sample	60 min	9.88	15.28

The exact XQM-0.4A model is recorded. No starting distribution or measurement method is supplied. D90 15.28 μm does not demonstrate that all particles were below the requested 10 μm limit.

How to plan a fair comparison

Compare the same material on candidate platforms with documented jars, media and analytical

methods. Family-level workbook examples help frame a test but do not rank all platforms.

These anonymous records are not operating instructions. Measurement and dispersion methods are not fully specified in the test summaries; results apply to the reported samples and conditions.

Discuss a matched sample evaluation

Plan your milling configuration.

TENCAN develops and manufactures planetary milling equipment, with application support in Changsha and a production base in Wushi, Hunan.

Share your material, batch size, target particle size and contamination limits. Our team can help confirm the mill, jars, media and electrical requirements, or arrange a sample grinding evaluation.

Reference information applies to the described models and conditions. Confirm the final specification and supplied accessories with TENCAN before ordering.

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Product page <https://www.planetaryballmill.com/planetary-ball-mills/laboratory-milling-platforms.html>

Sample grinding www.planetaryballmill.com/sample-testing/