

**Specification for Retsch Mixer Mill (Model: MM400):-**

Benchtop Ball Mill for Mechanochemistry and chemical synthesis.

Main Instrument with Grinding Jar Zirconia with Steel Protected Casing 10 ml-2 No.

Grinding Balls of Zirconium Oxide Balls: 5 mm - 200 Pcs, 10 mm - 6 Pcs.

A minimum of 10 Installations should be there in India for the same Instrument, Vendor must submit a Copy of the Installation report/PO Minimum of 10 Customers and a list of remaining customers. Minimum 5 Instruments should be installed in IITs /IISERs. 2 Performance Certificate of Ball Mill minimum 3 Year of Operation.

The instrument should be On the Self; R & D stage Instrument will not be accepted. Demo of the instrument can be ask stage of Tender.

The vendor must provide a Printed Catalogue and Web Link of the Product with the specifications given below:

Size reduction principle	impact, friction
Grinding parameter	Dry/Wet/Cryogenic Grinding
Material feed size*	<= 8 mm
Final fineness*	~ 5 µm
Batch size / feed quantity*	max. 2 x 20 ml
No. of grinding stations	2
Setting of vibrational frequency digital,	3 – 30 Hz (180 – 1800 min-1)
Typical mean grinding time	30 s – 2 min
Dry grinding	Yes
Wet grinding	Yes
Cryogenic grinding	Yes
Cell disruption with reaction vials	yes, up to 20 x 2.0 ml
Self-cantering clamping device	yes
Type of grinding jars should be available with Vendor	Material of grinding tools hardened steel, stainless steel, tungsten carbide, agate, zirconium oxide, PTFE
Special Jar and setup	Vendor should have PMMA, Transparent Jars and setup for Raman spectroscopy
Grinding jar sizes should be available	1.5 ml / 5 ml / 10 ml / 25 ml / 35 ml / 50ml
Setting of grinding time digital,	10 s – 99 min
Display	Touch Screen Colour Display
Storable SOPs	Storable SOPs - 12 and Editable programs- 6 Memory for 12 Standard Operating Procedures (SOP) and 6 program cycles
Calibration Feature	Calibrated facility should be available with Instrument
Electrical supply data	100-240 V, 50/60 Hz

Power connection	1-phase
Protection code	IP 30
Power consumption	150 W
Net weight	Table Top ~ 28 kg or less
Standards	CE and UKCA Safety Documents (Instrument should comply BS EN ISO 12100 Safety of machinery - General principles for design BS EN 61010-1 )