KappaVita® Type HM 2/5/10
Scaleable Laboratory Mixers
Laboratory Mixers KAPPAVITA®
Main Features

cGMP-compliant design
- Integrated cleaning-in-place (CIP)
- Sterilizing-in-place (SIP) as an option
- Aseptic design

Scale-up to bigger machines and production plants
- Identical functions of agitator and homogenizer
- Identical tip speeds
- Identical heating and cooling strategies
- Identical vessel/piping/machine design as production machines
- Batches under production conditions
- Optimization of batch times

Vessel design
- Vessel inside pressure (-1/+2 bar)
- Heating jacket pressure (-1/+6 bar)

Lid lifting device

Lid lock
- Clamp lock

Anchor agitator with flow breaker and scrapers
- Automatic shift of sense of rotation
- Vertical mixture
- Scrapers cleanly working on both sides
- Optimal heat transition
- RPM steplessly variable
- Flow breaker with integrated Pt 100
- CFD-optimized

Materials
- AISI 316L

Vacuum system
- Water-ring vacuum pump
- Automatic cooling water control
4-Rim design of homogenizer

- Stepless RPM control
- Rotor tip speeds up to 31 m/sec.
- High shear rates
- High energy input
- Powerful homogenizer
- Thus homogenization of high viscosities up to 400,000 mPas possible
- Water-cooled motor (low noise design)
- Homogenizer mounted at the lowest position in the centre of the vessel bottom
- High-performance homogenization in circulation
Laboratory Mixers KAPPAVITA®

Main Features

- Color touch-panel
- Multilingual design
- Service tools
- RPM and running time entries
- Temperature control
  - Heating – on or hold
  - Cooling – on or hold
- Vacuum draw
- Data storage by SD-card
- Integrated data recording
  - Entry of batch no., product
  - Curves
  - Data protocol
  - Data export function to EXCEL™
- Ideal logging for ambitious developments
- Analysis and reporting via external PCs under Windows™
- Service friendly access to switchboard cabinet

Control and visualization

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<tr>
<th>Time</th>
<th>FIRC 1.5.10</th>
<th>FIRC 1.5.3</th>
<th>FIRC 1.5.6</th>
<th>Temperature</th>
<th>Pressure</th>
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Actual Values
Heating-cooling control

- Secondary circuit with hot water circulation
- Temperature safety limit switch
- Direct cooling with water
- Control strategies such as temperature difference or °C/min.
- Service friendly, modular rack design (exchangeable)

Equipment (Options)

- Dosing reservoirs
- Suction valves
- Special suction valves for powder Suction below liquid level
- Suction lances for liquids
- Suction lances for powder
- Powder suction funnel
- Vacuum compensators
- Automated valves (automatic operation is possible)
- Hot-cold-suction
- Premix vessel
- Electronic FDA-compliant recorder
- Conductimetry
- Ph-probe

Mobile machine design

- Independent operation at several places

Solid machine design (low maintenance)

Available as rental machine

Tests with your product are possible in the NETZSCH laboratory at any time.
## Laboratory Mixers KappaVita®

### Technical Data

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>HM 2</th>
<th>HM 5</th>
<th>HM 10</th>
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<tr>
<td>Working volume</td>
<td>Liter</td>
<td>2</td>
<td>5</td>
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<td>Volume to vessel flange</td>
<td>Liter</td>
<td>2.7</td>
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<td>Total volume</td>
<td>Liter</td>
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<td>Permissible pressure in vessel interior</td>
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<td>-1/+2</td>
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<td>Permissible pressure in heating space</td>
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<td>Max. perm. temperature inside heating jacket</td>
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<td>Agitator</td>
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<td>RPM agitator-alternating operation</td>
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<td>Homogenizer</td>
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<td>Tip speed</td>
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<td>RPM homogenizer</td>
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<td>Secondary heating</td>
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<td>Heat medium</td>
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<td>Temperature probe product</td>
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<td>Temperature probe circuit</td>
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<td>Cooling water requirement</td>
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<td>Water requirement water-ring vacuum pump</td>
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<td>Suction capacity of vacuum pump at 100 mbar</td>
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<td>Weight of the machine</td>
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