

Kori-xr™

Specification sheet

Kori-xr aids the analysis of humid air using Markes' TD equipment, by removing water from on-line and canister samples and allowing the simultaneous analysis of ultra-volatiles, polar species, oxygenates and pinenes.



1. System features

- **Electrically cooled water-removal trap** selectively removes water from the sample stream without affecting target analytes and without extending the overall cycle time.
- **Trap heated and flushed** with carrier gas between samples to remove water collected.
- **Compatible with gas-phase samples** ranging in pressure from below atmospheric pressure to 50 psig.
- **Integrates with:** UNITY–Air Server-xr and UNITY–CIA Advantage-xr systems, with or without ULTRA-xr. Also compatible with UNITY 2–Air Server and UNITY 2–CIA Advantage.

2. System controls

2.1 Control software

- **Markes Instrument Control (MIC):**
 - Please refer to the UNITY–Air Server-xr or UNITY–CIA Advantage-xr specification sheets for software features.
 - When installing Kori-xr on a UNITY 2–Air Server or UNITY 2–CIA Advantage, the instrument controls must be upgraded to the included MIC software.

2.2 Modes of operation for analysis

- Please refer to the UNITY–Air Server-xr or UNITY–CIA Advantage-xr specification sheets for desorption modes.

2.3 Water removal trap

- Constructed from quartz (3 mm i.d.).
- Trap low temperature:
 - Range: –30°C to 50°C.
 - Adjustable in 1°C increments.
 - Uniform electrical cooling applied over full length of ice deposit zone.
- Trap high temperature:
 - Range: 35°C to 425°C.
 - Adjustable in 1°C increments.
 - Uniform heating applied over full length of ice deposit zone.

2.4 Sample flow path

- Temperature range: 50°C to 210°C.
- Adjustable in 1°C increments.
- Uniform heating.
- Constructed entirely of inert materials: PTFE, quartz, inert-coated stainless steel.
- Flow capabilities: Independent, manual flow control between 25–100 mL/min.

2.5 Pneumatics

- Requires a pressurised supply of dry air or nitrogen (dewpoint below –50°C) at 50–60 psig (340–415 kPa). The dry gas is used for both pneumatic actuation of the valve and for purging the focusing trap box.

- Supplied with a fitting to attach to the pneumatic control accessory (U-GAS01) on UNITY-xr or UNITY 2.
- Note that helium cannot be used as the dry gas supply.

3. System specification

3.1 Dimensions and weight

- Height: 46 cm (18.1").
- Width: 16 cm (6.3").
- Depth: 54 cm (21.3").
- Weight: 16 kg (35 lb).

3.2 Ambient operating conditions

- Temperature: 15°C to 30°C.
- Relative humidity: 5–95% RH (non-condensing).

3.3 Power requirements

- 100–240 V, 50/60 Hz, 650 W (Kori-xr self-adjusts to local voltage input).

3.4 Gas consumption

- Dry air or nitrogen: ~100 mL/min.

3.5 Minimum PC specification

For TD control:

- CPU: 1 GHz 64-bit dual-core or better.
- RAM: 4 GB.
- Hard disk space: 2 GB.
- Graphics card: DirectX 9 or later.
- Display: 1024 × 768 display.
- Operating system: Windows 10 or 11, 64-bit, English.
- Other requirements: Windows-compatible keyboard and mouse; one free USB connection (in addition to those required for the UNITY-xr).

3.6 Safety and regulatory certifications

- The instrument is designed and manufactured under a quality system registered to ISO 9001.
- The instrument complies with the essential requirements of the following applicable European Directives, and carries the CE mark accordingly:

- Low Voltage Directive 2014/35/EU.
- EMC Directive 2014/30/EU.
- ROHS Directive 2011/65/EU.
- The instrument conforms to the following product safety standards:
 - IEC 61010-1:2010/EN 61010-1:2010.
 - IEC 61010-2-010/EN 61010-2-010:2014.
 - IEC 61010-2-081/EN 61010-2-081:2015.
 - Canada: CSA C22.2 No.61010-1-12:2012.
 - USA: ANSI/UL 61010-1:2012.
- The instrument conforms to the following regulation on electromagnetic compatibility (EMC):
 - IEC 61326-1/EN 61326-1:2013.

For more information about our products and services, please visit www.markes.com.

Trademarks

Kori-xr™, Air Server-xr™, CIA Advantage-xr™, ULTRA-xr™ and UNITY-xr™ are trademarks of Markes International.

DirectX® and Windows® are trademarks of Microsoft Corporation.

Markes International shall not be liable for errors contained in this specification or for incidental or consequential damages in connection with the supply, performance or use of this equipment.

Markes International reserves the right to change information, descriptions and specifications within this document without notice.

Kori-xr was developed in collaboration with the National Centre for Atmospheric Science (NCAS) at the University of York. It was co-funded by the UK's innovation agency (Innovate UK), the Natural Environment Research Council (NERC) and the Welsh Government under the Knowledge Transfer Partnership program.