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Product Datasheet

Ksep® 400 Virtual Reality Training

On-demand digital training in a safe virtual environment, independent of trainer and system availability.

Benefits

- On-demand training with the flexibility to train operators at their own pace and convenience
- Cost-efficient training alternative, by eliminating the dependancy on trainers, systems and venues
- Accelerated operator qualification with a standardized training
- Safe and controlled environment for operators to practice their skills without risk of contamination or product damage
- Improved engagement and retention for operators through interactive and immersive training
- Decreased carbon emissions associated with training by eliminating the need of travel

Product Information

The Ksep® 400 Virtual Reality Training offers an innovative, on-demand digital training solution designed to equip operators with the skills needed to proficiently use the Ksep® 400 system. This cutting-edge training program leverages virtual reality (VR) technology to create a safe, immersive, and interactive learning environment, ensuring operators can practice and gain confidence before handling the actual equipment.
The training includes modules on starting the system, installing single-use consumable sets, calibrating the pump, creating recipes, and exporting data.

Product Description

The Ksep® 400 Virtual Reality (VR) Training offers an innovative approach to training operators in the use of the Ksep® 400 system. This training program provides a realistic and interactive experience, enabling operators to hone their skills in a virtual environment before handling the actual equipment. By reducing the risk of errors and accidents, the VR training serves as a safe and efficient complement to traditional in-person training methods.

The Ksep® 400 Virtual Reality Training includes the following modules:

- **Installing Single-Use Chamber Set:** Master the installation of single-use chamber set to ensure seamless operation.
- **Installing Single-Use Tubing Set:** Master the installation of single-use tubing set to ensure seamless operation.

The Ksep® 400 Virtual Reality Training provides operators with hands-on experience in an immersive, computer-generated environment that replicates the real-life operation of the Ksep® 400 system. Using a VR headset and controllers, operators can navigate the virtual training room, interact with a simulated Ksep® 400, and complete various training steps. Additionally, they can collaborate with colleagues represented as virtual avatars, working together on the same instrument within the same virtual space. This setup allows operators to practice their skills and build confidence without using actual systems, enabling global collaboration regardless of physical location.

The Ksep® 400 Virtual Reality Training has two interactive training modules that allow operators to practice and assess their skills:

- **Practice mode:** Guiding elements such as highlights, animations, voiceovers, and in-text instructions provide trainees with detailed information on each training step, ensuring comprehensive guidance throughout the training process.

- **Assessment mode:** The assessment mode enables operators to evaluate their knowledge and skills in installing the single-use chamber and tubing set. There are no guiding elements in the assessment mode. A completion certificate can be downloaded upon successful completion of the assessment module.

Benefits of training operators with the Ksep® 400 Virtual Reality Training

Training your operators with the Ksep® 400 Virtual Reality Training comes with several advantages.

- **Reduce operational costs.** The Ksep® 400 Virtual Reality Training provides on-demand training independent of the availability of trainers, systems and venues. It allows you to train your operators without interrupting the production process, reduces the need for expensive equipment, travel costs and venue rentals, making it a cost-effective option for organizations of all sizes.

- **Bring qualified operators faster to the shop floor.** The Ksep® 400 Virtual Reality Training is highly efficient. Operators can practice their skills and gain experience in a fraction of the time it would take using traditional training methods.

- **Increase engagement through fully immersive training.** The Ksep® 400 Virtual Reality Training allows operators to fully immerse themselves in realistic and interactive simulations of operating the Ksep® 400, creating a highly engaging and memorable learning experience which leads to better retention of information.

- **Train your operators in a safe environment.** The Ksep® 400 Virtual Reality Training provides a safe virtual environment for trainees to learn and explore without the risk of contamination or product damage. It minimizes the risk of errors and accidents through safe and controlled training.

- **Get firsthand experience while waiting for your systems to arrive.** The Ksep® 400 Virtual Reality Training allows operators to become familiar with the Ksep® 400 and its consumables, even before your systems are delivered. Your operators will have time to practice, increasing their confidence and competence through realistic simulations and feedback.

- **Evaluate the knowledge of your operators.** The Ksep® 400 Virtual Reality Training enables you to assess knowledge of your operators and create a standardized certification process throughout your organization.

- **Ensure standardized training throughout your organization.** The Ksep® 400 Virtual Reality Training can be accessed from anywhere in the world, ensuring a standardized learning experience for your operators and trainers alike.

- **Decrease carbon emissions associated with training.** Operators can access the Ksep® 400 Virtual Reality Training from anywhere in the world, without the need to travel to production or training sites, reducing the carbon emissions associated with transportation for training.

- **Retrain your operators on a regular basis.** The Ksep® 400 Virtual Reality Training enables you train and qualify your operators at regular intervals ensuring consistent experience with the standardized training.

Training Features

- **The hand menu:** The hand menu offers various functionalities and is always available in the trainings. In order to display the hand menu, look at your left hand while you are in the virtual room. You will see a menu. From the menu, you can mute/unmute yourself, display the guide, take a tutorial, or go back to the main menu easily.

- **Visual guidance*:** Throughout the training, various visual elements assist the learning process. Guidance elements can be disabled in the self-guided training mode.
  - Animations: Highlighted green animations mimic the training interactions, guiding users how to complete a specific training step.
  - Highlights: Blue highlights provide hint regarding where to place a specific object.

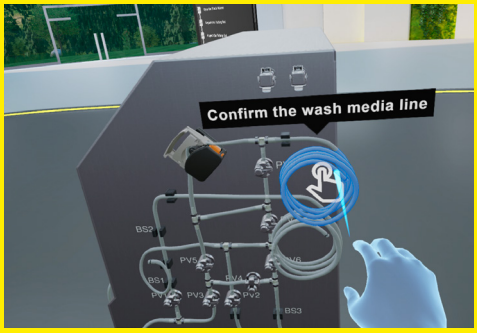
- **Instructions**:** Detailed instructions about training steps are available for users in text and audio format throughout the training.
  - Text flags: Guide users on the specific step by giving brief instructions.
  - Voiceovers: In each step of the training, a voiceover provides users with detailed instructions about the specific training step.

- **Moving between the steps:** Users have the option to complete the training step by step or select and train on individual steps. In the self-guided training mode, users can switch between the steps via the hand menu. In order to do this, simply open the hand menu, click on the guide icon to display training steps, and use the arrow icons to move between steps.

- **Collaboration tool:** Users have access to multiple tools such as a 3D pen, sticky notes, laser pointer, and a measuring tool that streamlines especially group trainings.

- **Special features for the practice training mode:**
  - Guide menu: Any time during the practice mode, you can display detailed text instructions by using the hand menu. In order to do this, open your hand menu, and select the book icon. You can pin this guide menu by clicking the pin icon and placing it anywhere in the virtual room. The guide menu is only available in the self-guided training mode.

- **Special features for the assessment mode:**
  - Certification: Users can download a completion certificate after they complete the assessment mode. The certificate can be found on the desktop on your computer.



*Please note that visual guidance elements are not available in the Assessment mode.
**Please note that instructions are not available in the Assessment mode.

Technical Specifications

For taking the Ksep® 400 Virtual Reality Training, you need:

- A VR headset that is compatible with the VR training software.
- A computer or device* that meets the minimum requirements for running the VR training software.
- A stable internet connection to download and access the VR training software.
- A physical room with sufficient space.

Supported Virtual Reality (VR) Headsets

HP Reverb G2
Meta Quest 3 / Meta Quest 2

* No computer is needed to use Ksep® 400 VR Training with Meta Quest 3.

Physical Room Recommendations

Before use, ensure there is enough space around you. Make sure that there are no other persons near you whom you could injure and that there are no objects around you that can be damaged or injure you.

Size	A physical room with the size at least 2 x2 m is needed for your VR set-up (desk, PC/laptop, head-mounted display). Make sure to mark the individual areas on the floor and to leave some space between each area. It is recommended that the user use these boundaries to set up his/her guardian area to prevent any collisions while using VR.
Floor and ceiling	A room in which the floor doesn't reflect light should be chosen for the sensors of the head-mounted display to function properly. Marble or tiled floors may impact equipment performance. Other reflective surfaces, such as mirrors or windows, may also interfere with the tracking sensors. Make sure that the ceiling is not too low or have low-hanging lamps/fans, so that the user has enough space to move without the danger of collision.
Installation	The PC/laptop requires sufficient air supply while running. Ensure that it is installed in an open area, e.g. on a laptop stand, shelf, table, or similar.
Ventilation	As heat will be generated, the room should have a ventilation system or windows that can be opened.
Cable management	Set up a cable management system to keep the cables in order and prevent any tripping hazards. A ceiling-mounted cable management system is recommended.

Computer Requirements

Component	Recommended specifications
Processor	Quad-core Intel or AMD, 2.5 GHz or faster
Graphics card	NVIDIA RTX 3060 (Alternatives: RTX 2070 / NVIDIA GTX 1080) / NVIDIA Quadro RTX 3000 or greater
Memory	8 GB + RAM (16 GB RAM recommended)
SSD storage	1 TB
Operating system	Windows 11 / Windows 10 (May 2019 update or later for HP Reverb G2)
USB ports**	1 X USB 3.0 TYPE C
Video output**	DisplayPort 1.3

** USB Ports and Video Output depends on the requirements of the used VR headset. The specified requirements match with HP Reverb G2.

Network Requirements

TCP and UDP Ports

IP Addresses	Protocols	Ports	Direction
20.33.6.102 20.33.6.103 20.157.27.72 20.157.27.73 20.33.13.62 20.33.13.63 20.157.23.44 20.157.23.45 20.239.113.10 20.239.113.11 51.138.93.170	TCP, UDP	9000-35000	Outbound

HTTPS URLs

Domain	Protocol	Port
*.realworld-one.com	HTTPS	443
*.rwone.com	HTTPS, HTTP[1]	443, 80[1]
cdn-global.configcat.com	HTTPS	443
o384799.ingest.sentry.io	HTTPS	443

Ordering Information

Order number	Description
S87GTA11KSPVRT	Ksep 400 VR Training - Trial Subscription Plan
S87GTA11KSPVRA	Ksep 400 VR Training - Annual Subscription Plan
S87GTA11KSPVRR	Ksep 400 VR Training - Renewal Subscription Plan

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