

Getting Started with SimSpray®

Components

Mobility

SimSpray is an all-in-one mobile training unit that offers plug and play setup. The case contains all necessary hardware and software for VR training activities. SimSpray can be moved to any new location, provided there is a flat open area in front of it for training activities.

The wheeled case is easy to transport and the provided back plate and shipping rails make it possible to ship the unit over long distances if needed.



Storage

Storing the unit is as simple as shutting down all components, sanitizing the monitor, panels, spray guns, Head Mounted Display, and closing the case.

To shut down the unit, press the central power button on the main panel to turn off the SimSpray monitor. SimSpray can also be shut down using the **SimSpray** menu in the upper left hand corner and selecting the **Shutdown** option. Confirm selection (yes or no), and wait for the screen to go dark. The spray gun and VIVE unit will automatically shut down with the SimSpray unit.

Unplug and secure the power cable. Unpin and lower the camera arms. Secure the Head Mounted Display and training peripherals. Store the unit in a clean, dry location.

Motion Tracking

SimSpray offers real-time motion tracking with minimal setup, along with an HD display with a touchscreen and intuitive controls. When the unit is in place, the camera arms are raised, and the program is on, motion tracking will begin. Motion tracking uses the Head Mounted Display and the spray gun to provide an immersive virtual reality training experience.



The user will be prompted to set the space for camera tracking the first time the unit is turned on.

To set up tracking, place the spray gun on the floor in front of the unit. Position the gun so that it is between the cameras and far enough away from the unit for the cameras to register its location. Select the **Proceed** option and step out of view of the cameras. After the cameras have completed their scan, you will be prompted to select **Next** and pick a room size based on the size of the physical training area. The unit will set the space.

Common hardware issues with motion tracking include incorrect positioning of the SimSpray unit, blockage of the VIVE tracker, and hardware disconnection. If motion tracking errors arise, first check the positioning of the unit. Look for any blocks of the VIVE tracker (commonly an object or the user's hand), and ensure all cables are securely connected.

If errors persist, contact technical support.

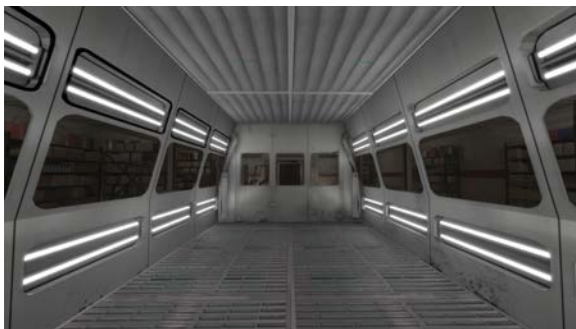
Software Features

SimSpray offers a comprehensive set of software features and training tools for spray painting, powder coating, and abrasive blasting training.

To access the virtual training experience, the user must first select a product option from the main Product Selection page. From there, the user will be prompted to choose an environment, select a process, part, and color, and adjust any equipment settings (including part offsets, air pressure, tip size, and cup configuration) before entering the environment.



Training Simulation: Environment



The user will be prompted to select a virtual training environment first. Users can choose from multiple environment options, including a spray booth (pictured), warehouse, mechanic garage, bridge, conveyor booth, and 'future world'.

The immersive environment is accessed by wearing the Head Mounted Display and using the spray gun training peripheral. The user will see a virtual space that contains the selected setting, part, and tool. The environment and tool will react to the user's physical movements. Additionally, the user will have access to a virtual tablet and a scoreboard that provides live performance feedback and analysis.

The selected part is available for immediate training practice in the virtual environment. The scoreboard provides live performance feedback and analysis and the tablet provides options for changing cues and insight into defects.

The user can begin spraying the part with the gun, using the training peripheral spray gun as it would be used in reality. The environment will provide real-world physics and adjustable cues for training purposes.

Training Simulation: Parts



The parts menu contains all training parts available to the user. There are basic geometric shapes, practice panels, and industry-specific parts to practice and refine coating skills with.

Parts are filtered by categories. Use the arrows on the page to change filters or page through the part list to see all available part options.

The selected part will appear in the middle of the virtual training space, ready for coating. The user can begin spraying the part with the gun, using the training peripheral spray gun or abrasive blasting hose as it would be used in reality. The environment will provide real-world physics and adjustable cues for training purposes.

Training Simulation: Coating Application and Physics

The user will apply coatings by moving the spray gun or hose and pressing the trigger on the training peripheral, and the application will appear on the part in the virtual setting. The virtual experience will mirror real-world application processes and physics.

Users can change cues and settings related to angle, distance, and speed on the virtual tablet.

Point the spray gun at the option on the tablet and press the trigger to select and change the cue. Angle, distance, and speed cues show up in the virtual environment to guide the user's positioning and movements as they build muscle memory.

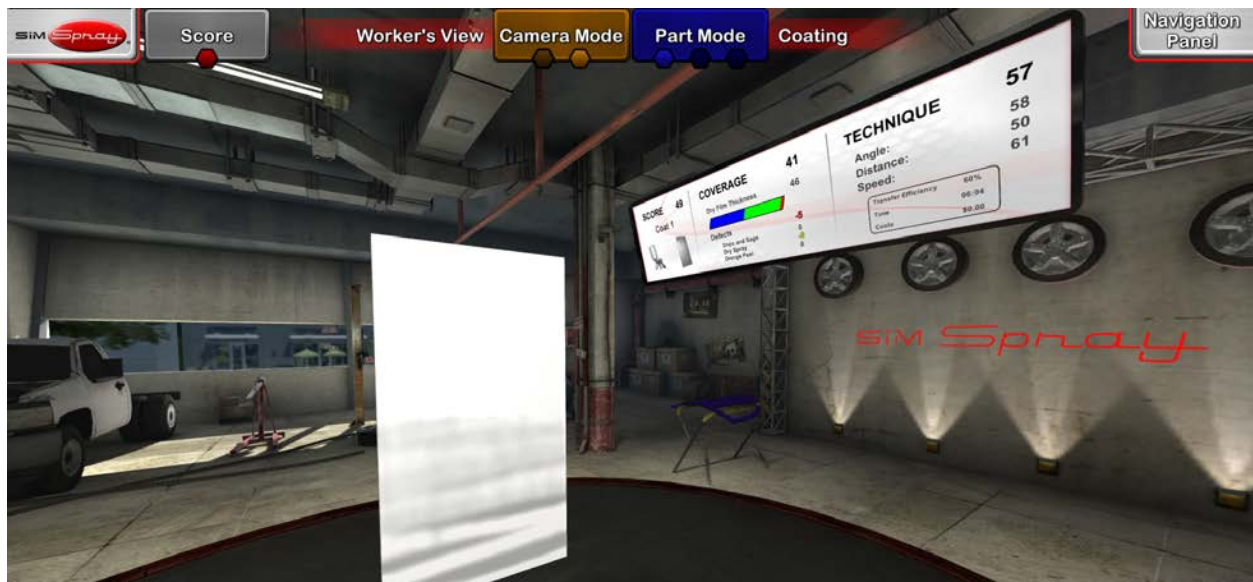


Training Simulation: Performance Analysis and Feedback

The **Tablet** and **Scoreboard** in the virtual environment provide live performance analysis and feedback to the user. In addition to providing angle, distance, and speed cues, the virtual tablet provides coverage map and defect performance analysis options.

Point the spray gun at the coverage map or defect option on the tablet and press the trigger. The coverage map will convert the appearance of the part to **blue**, **red**, or **green** to indicate where the coating is too thin, too thick, or within the target thickness range. The defect analysis indicates dry spray, drips and sags, and orange peel defects.

The **Scoreboard** provides live updates on the overall score, coverage, and technique as the user works on the part. The score includes a weighted average of coverage and technique scores and displays a coverage and technique score breakdown.



The coverage score also offers live insight into film thickness, defects like drips and sags, dry spray, and orange peel. The technique score offers live insight into angle, distance, speed, transfer efficiency, time spent in the booth, and costs.

Curriculum

SimSpray comes pre-installed with a default curriculum of courses and lessons. Each lesson focuses on a specific coating process, material, and part, and includes a target performance score. To pass a lesson, the user must surpass this score.

Instructors can create custom courses with their own lessons. Courses and lessons are managed in the Content Management section of the Admin Portal. Default courses and lessons cannot be changed.

Student progress in the default curriculum will be tracked and shared with **Performance Portal**. SimSpray must be connected to an internet network to share progress information with **Performance Portal**. This connection status is displayed whenever a user logs into **Lesson** mode. Custom curriculum content is tracked within SimSpray, but is not tracked in **Performance Portal**.

Customization

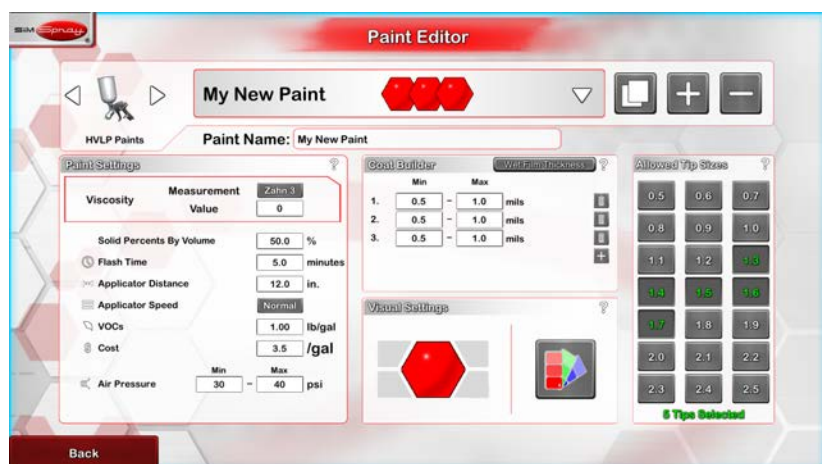
Instructors can customize the curriculum by creating new courses and lessons. To create a new course, navigate to the Content section of the **Admin Portal**.

Use the controls to the right side of the **Courses and Lessons** list to create new courses or lessons. Default content cannot be changed, but may be copied. Selected courses will automatically expand to show their lesson content. Selected lessons will show their target score, if cues are allowed, what part, process, and environment are being used, the number and type of paint coats in the project, and if the lesson is easy or hard.



Paint Types

SimSpray offers paint type customizations that provide additional realism for painting and coating training. Paint type customization supports the key physical traits found on paint material specification sheets and mimic their application visually and physically in the VR simulation environment.



Users can create and save custom paint types for use in Courses and Lessons as well as Free Paint, Coating, or Blasting.

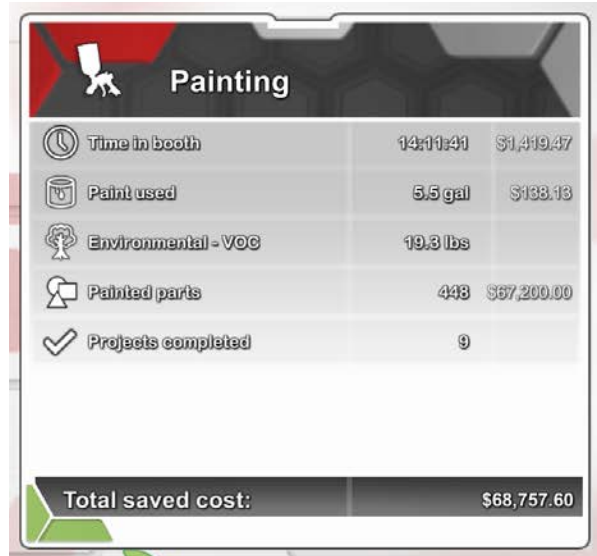
Access the **Admin Portal** and select the **Paint Editor** to edit or create paint types. Choose the process that will use the new paint type, enter its name, and then enter the paint settings. Customization options include viscosity, percent solids by volume, RGB color customization, opacity, gloss, number of coats, equipment pressure settings, equipment tip size requirements, and application parameters like angle, distance, and speed.

Paintometer

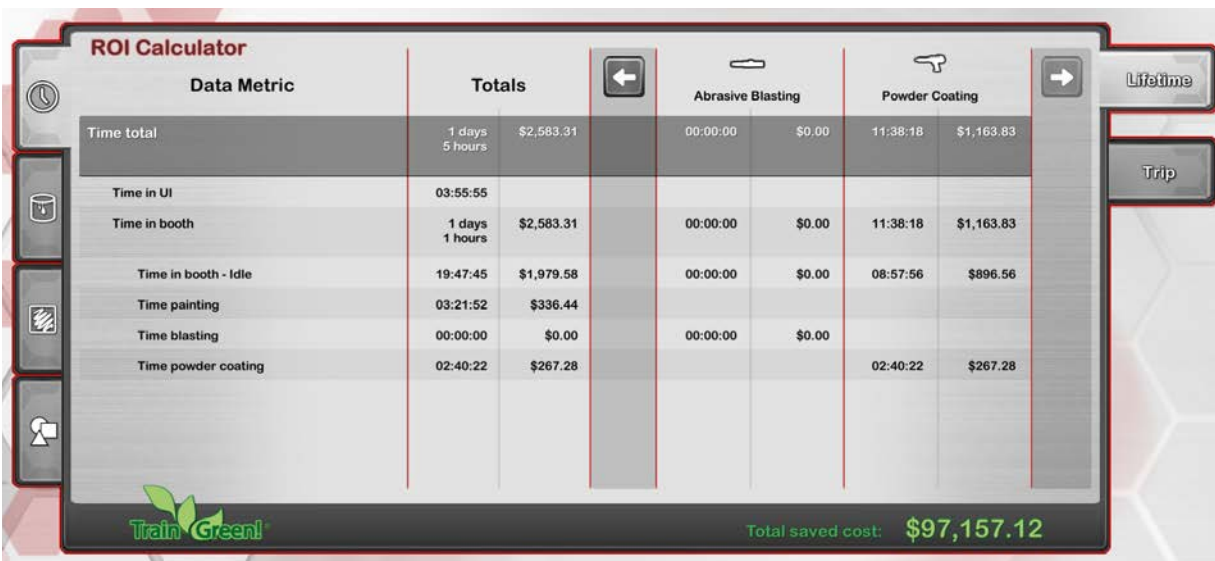
The **Paintometer** tool in SimSpray tracks time and environmental savings that are realized through the use of all SimSpray products. The Paintometer can help users calculate the ROI of using SimSpray.

To access the Paintometer, select the SimSpray menu and choose the Paintometer option.

Select Basic Mode and choose a Product to view a summary of usage for a product. The screen will display the part, usage information, and total saved costs.



Painting		
Time in booth	14:11:41	\$1,419.47
Paint used	5.5 gal	\$188.18
Environmental - VOC	19.3 lbs	
Painted parts	448	\$67,200.00
Projects completed	9	
Total saved cost:		\$68,757.60



Data Metric	Totals		Abrasive Blasting		Powder Coating		Lifetime
Time total	1 days 5 hours	\$2,583.31	00:00:00	\$0.00	11:38:18	\$1,163.83	Trip
Time in UI	03:55:55						
Time in booth	1 days 1 hours	\$2,583.31	00:00:00	\$0.00	11:38:18	\$1,163.83	
Time in booth - Idle	19:47:45	\$1,979.58	00:00:00	\$0.00	08:57:56	\$896.56	
Time painting	03:21:52	\$336.44					
Time blasting	00:00:00	\$0.00	00:00:00	\$0.00			
Time powder coating	02:40:22	\$267.28			02:40:22	\$267.28	
Total saved cost:						\$97,157.12	

Select **Advanced Mode**. Click on the tabs on the advanced Info page to access more detailed information, including time totals, material used, parts used, and per part info. Use the arrows above the table to navigate through all available details.

The **Paintometer** tracks both **Lifetime** and **Trip** information. Select the **Lifetime** option to see overall savings aggregated for all users.

The **Trip** function will track savings until the **Reset** option is selected. Select **Trip** and then choose the **Reset** option to clear tracking related to that product and start a new tracking period. This period will continue until the **Paintometer** is reset.

Paintometer also allows users to customize cost amounts. Select the **Show Unit Costs** option. Enter a new value for the unit cost and click the green checkmark button. Select **Hide Unit Costs** to exit the menu. Custom paint types, blast media, and powder costs need to be changed with the **Paint Editor**.

Paintometer data can also be exported. Plug a USB flash drive into the SimSpray unit and click on Export Data to export the **Basic Mode** information summary. The information can be imported to a spreadsheet program on another computer.

To exit the **Paintometer**, select the red **Back** button.

Admin Portal

The **Admin Portal** is a password protected area of the SimSpray Go unit that allows instructors to perform a variety of administrative functions. From the home page, select the **Admin** button and enter the admin password to enter the portal. Find the default admin password in the printed documentation that came with SimSpray.



The **Admin Portal** provides License information, which offers an overview of the license for the individual unit.

Select the **Content** button to access the content management area of the **Admin Portal**. This area allows instructors to customize courses and lessons for students.

Select the **Score Settings** option to change how scores are weighted. The **Score Settings** option allows instructors to focus scores on technique, coverage, or defects, depending on the skill they want to score.

Select the **Users** option to manage users and allow users to create usernames and passwords.

Select the **Paint Editor** to create, edit, and remove custom paint types. This editor also exists for powder coating and abrasive blasting; look for the **Powder Editor** and **Blast Editor** modes, respectively.

The **Admin Portal** also allows instructors to update software, change the admin password, and revise tracking options.

For additional setup help, please contact support: <https://simspray.net/technical-user-support/>.