# Neo® 450

**stratasys®** | **RPS**

## A versatile printer with flexible options to suit all needs

Reliable, productive and efficient, the Neo450 series is designed and engineered for industrial-grade performance.

Based on the proven Neo800, the compact Neo450 series has a 450 × 450 × 400 mm platform and builds prototypes, rapid tooling and master patterns with exceptional surface quality, accuracy and detail.

Designed for greater flexibility and versatility, the Neo450 series is available in two models with different performance and functionality depending on your needs.

### Neo® 450 e

The Neo450e is an affordable industrial-grade 3D printer producing small to medium parts with consistent accuracy and repeatability. Dependable and reliable the Neo450e is designed for non-stop printing of industrial production parts.

### Neo® 450 s

The Neo450s offers performance and versatility along with all the benefits of Neo450e. Producing superior quality parts, the Neo450s is up to 40% faster and offers standard and high definition build modes.

# Why choose the Neo® 450?

### Exceptional part sidewall quality
Outstanding scanning resolution reduces finishing time by up to 50%.

### Compact design, versatile performance
Print single large-sized or many smaller detailed parts on the 450 x 450 x 400 mm build volume.

### Open resin system
Compatible with all 355nm SL resins, allowing the freedom of material selection.

### Intuitive Titanium™ software
Easy-to-use software optimises build time and part quality with build history, parameter detail, hardware usage and part traceability data reporting.

### Customer-driven development
Customer suggestions and feedback are encouraged, driving user-focused software updates.

### Accessible support
Remote diagnostics or convenient on-site support from our exceptional service team.

### Quality assurance
The Neo450 series is carefully designed and engineered throughout, using premium components, parts and finishes.

### Connected services
Stay connected and keep updated with the built-in camera, emailed progress reports and status updates.

# Titanium™ Software

All Neo® systems operate with industry-leading Titanium™ software.

**Titanium has been carefully designed with both the user and department manager in mind. Many options are user definable as defaults, enabling simple click-and-print operation.**

**Automated communications assist department efficiency and field service response. Part traceability and hardware utilisation is facilitated by excellent reporting capability.**

## Build Options & Features

- Build validation
- Build time estimator
- Material usage estimator
- On-the-fly parameter adjustment and part deletion
- Upper surface build quality optimisation
- Bubble remover with automated option
- Scheduled start

## Build Status Notification Emails

Build progress emails can be sent to users at any point during a build. This assists department efficiency optimising machine utilisation. Titanium can also be configured so users can receive emails for: Build Start, Pause, Completion or Alert Progress.

## On Board Camera

Each Neo system is installed with a built-in camera, offering users the potential to keep track of builds remotely, at any stage.

## Resin Viscosity

In busy departments it's often easy to forget to take regular viscosity readings. Viscosity monitoring is key to material longevity. Titanium prompts the user for readings at pre-determined intervals, logging the results. This information could be relayed to RPS for monitoring, enabling preventative action when necessary, helping to protect vat fill material.

## Industry 4.0

The Neo stereolithography system range can be integrated into an Industry 4.0 system.

Integration is available through multiple mechanisms including a RESTful API and shared file access. The data provided includes progress details of the current build.

Neo uses industry standard formats (e.g. XML). The RESTful API supplies the data using JSON.

RPS is open to work with customers in developing the remote access interface and RESTful API to provide additional functionality.*

## Reporting Tools

Titanium features a range of reporting tools and dashboards to help users capture build history, parameter detail, hardware usage and part traceability data. This data can assist operators and managers analyse utilisation of the Neo to help meet business objectives.

## Part Traceability

In many industries part traceability is paramount. With Titanium software, parts are easily traced to a build with all parameters recorded.

## Hardware Utilisation

A complete insight on hardware usage hours can be easily obtained to determine hardware productivity.

## System Alerts

In the event the Neo has a problem mid-build, users will receive a system alert email.

## Report Export

Using Titanium, data is easily accessed with a click of a button and can be exported as a formatted Microsoft® Excel spreadsheet, via email or to a USB drive. Data can cover a range of timeframes and builds including:

- Build reports
- Monthly / Yearly / Custom period reports

## Service & Support Reporting Tools

Neo systems have outstanding reliability. When support is needed, Titanium assists fast, efficient response from the RPS support team.

## Job Diagnostic Packs

To help identify an issue, users can easily export a Job Diagnostic Pack specific to an individual build via email or USB drive. This data can be used to assist with remote diagnosis and to be used to assist RPS service engineers when on site.
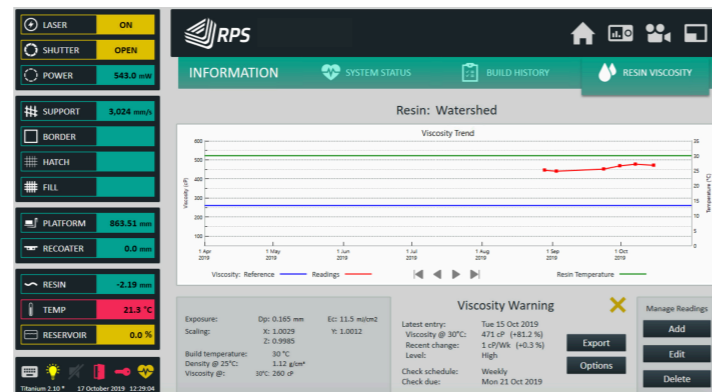
## Laser Monitoring and Calibration

Titanium software constantly monitors the laser output and will alert users if recalibration is necessary. Recalibration of the laser can be performed by the users with a simple one-click operation.
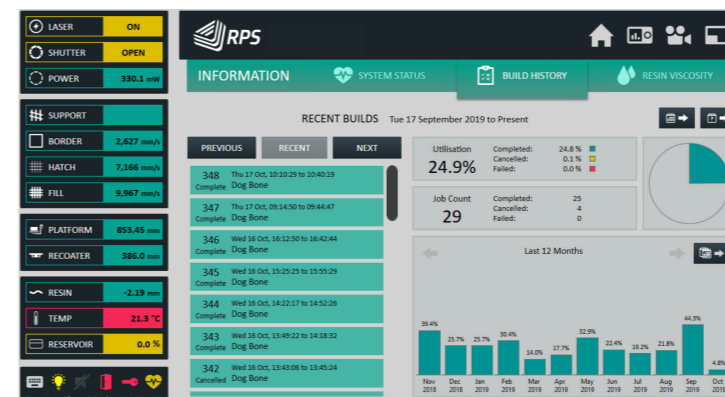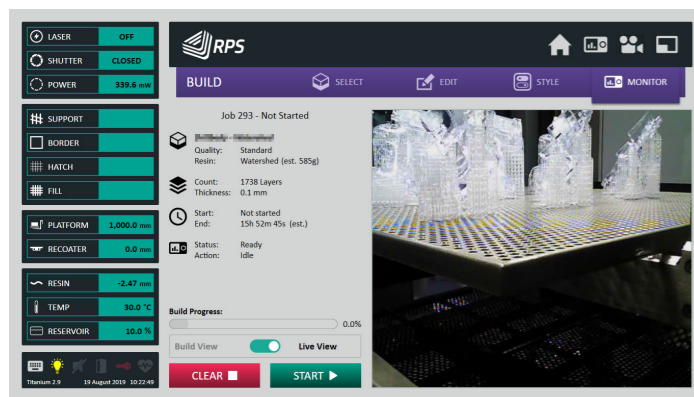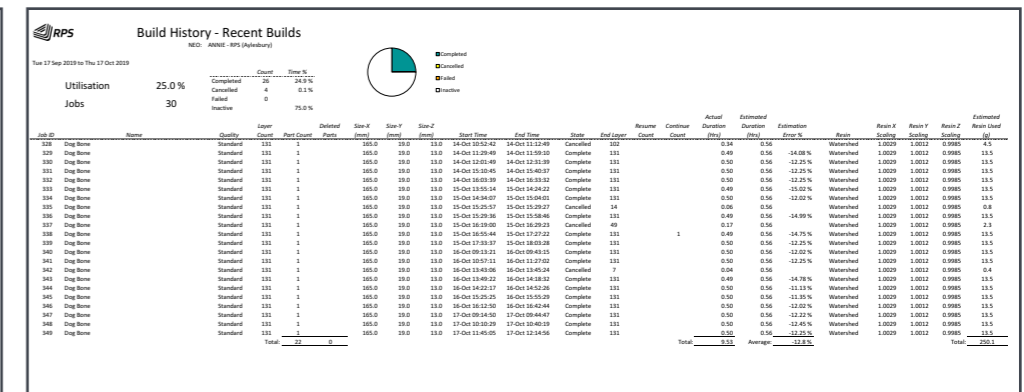




Each NEO system is installed with a built in camera, offering users the potential to keep track of builds remotely, at any stage.

Intuitive Titanium software is developed for simplified daily operation or more functionality for detailed builds when required.

Viscosity monitoring is key to material longevity. Titanium prompts the user for readings at pre-determined intervals, logging the results.



Titanium features a range of reporting tools and dashboards to help users capture build history, parameter detail, hardware usage and part traceability data.

# Specification‡‡

| | | **Neo®450e** | | **Neo®450s** |
|---|---|---|---|---|
| **Laser & Scanning System** | Laser | 1 Watt | | 2 Watt |
| | | 355 nm, solid-state frequency tripled Nd: YV0$_4$ | | 355 nm, solid-state frequency tripled Nd: YV0$_4$ |
| | Beam Focus | Dynamic | | Dynamic & Variable |
| | Beam Size | 250 µm | | 80 to 750 µm |
| | Scanning Speed | Up to 10 m/s | | Up to 10 m/s |
| **Layer Resolution** | | 50 to 200 µm* | | 50 to 200 µm* |
| **Minimum Feature Size** | | 0.3 mm in X & Y† / 0.4mm in Z† | | 0.15 mm in X & Y† / 0.4mm in Z† |
| **Build Modes** | | SD | | HD & SD |
| **Build Speed** | | In like-for-like comparisons, build times are up to 40% shorter with the Neo™450s† ◊ | | |
| **Accuracy** | | Dimension <100 mm ±0.1 mm. Dimension >100 mm ±0.1%† | | |
| **Material Compatibility** | | Open resin system - compatible with 355 nm stereolithography resins | | |

| **Capacities** | | Short: ** | Half: ** | Full: |
|---|---|---|---|---|
| | Build (XYZ) | 450 × 450 × 50 mm | 450 × 450 × 200 mm | 450 × 450 × 400 mm |
| | Vat Fill | 38 ltr (43kg‡) | 82 ltr (92kg‡) | 141 ltr (158 kg‡) |

| | | | |
|---|---|---|---|
| **Software** | Operating System | Windows 10 Pro | |
| | Input File Format | SLC | |
| | Control Software | Titanium™ | |
| | Remote Editor | Titanium Assistant™ (Optional) | |
| **Connectivity** | Ethernet | Fully compliant with IEE 802.3, IEEE 802.3u, IEEE 802.3ab | |
| | USB Port | USB 3.1 | |
| **Features & Build Options** | | Build validation / Build time estimator / Material usage estimator / Open build parameters enabling any material to be processed / On-the-fly parameter adjustment & part deletion / Upper surface build quality optimisation / Bubble remover with automated option / Scheduled start | |
| **Advanced Services & Reporting Tools** | | Industry 4.0 compliant / Full part traceability / Logging of machine utilisation; build history; parameters; material usage; formatted data export / System & build status email notification§ / On-board camera / Resin viscosity tracking / User level access control / Scheduled lighting | |
| **Support** | | 1-click 'snapshot' job diagnostic pack for remote support / Remote diagnostics§ | |
| **Electrical Requirements** | 110 ~ 120 Volt, 60 Hz | 300 W Typical operation, 550 W Max | |
| | 220 ~ 240 Volt, 50 Hz | 700 W Typical operation, 1300 W Max | |
| **UPS** | | 10 ~ 20 mins of system up-time with Intelligent Control (not sold with the Neo450 series, please contact Stratasys for recommended suppliers) | |
| **Environmental Requirements** | | Temperature range: 20-23°C, max rate change ±1°C/hr. Relative humidity 20-50% non-condensing. | |
| **Dimensions (WxDxH)** | | 1050 × 1225 × 1900 mm | |
| **Weight** | Printer | 600 kg | |
| | Vat (empty) | 100 kg | |
| **Warranty** | System | 12 months on-site service and support, as per RPS conditions of sale | |
| | Laser | Replacement <400 mW after 10,000 hours or 18 months (whichever is sooner) | Replacement <800 mW after 10,000 hours or 18 months (whichever is sooner) |
| **Regulatory Conformity** | | CE   FC   UK CA | |

* 100µm layer parameters are supplied for RPS certified materials. Parameters for alternative thicknesses may be available. Layer thickness range is material dependant. Contact RPS for more detail. †Accuracy & minimum feature size will vary depending on material, parameters, part geometry and size, pre & post-processing methods and environment. ‡Based on typical material density 1.12kg/ltr @ 26°C. §Internet connection is required for full or partial functionality. ◊ Based on internal testing October 2019. **Available 2021 Q4. ††Ethernet connection recommended to ensure all functionality, please contact RPS for more details. ‡‡Specification can be subject to change without prior notice.