

RESHAPE IMAGING SYSTEM SPECIFICATIONS

PLATE COMPATIBILITY AND CAPACITY:

90mm petri dishes

Microtiter plates including omnitray and 4/6/8/12/24/96-well

Each machine is capable of imaging 10 microtiter plates or 15 petri dishes simultaneously (Only one format of plates in the same job)

RUNTIME AND IMAGING INTERVAL:

From a single image up to 180 days runtime

60 minutes between images as standard. Depending on plate formats and assay type, this can potentially be reduced to 10 minutes or prolonged to 12 hours.

IMAGE SENSOR:

The Reshape Imaging System uses a 12.3 MP Sony imaging sensor with motorized focus and zoom integrated into the imaging head. The Reshape Imaging System has on-board image processing and temporary storage before images are sent to the Amazon S3 servers. The imaging head is moved around for scanning by a proprietary motion system.

SOFTWARE:

Data storage is subject to additional charges based on usage, please request a quotation based on your specific usecase. We are happy to discuss specific assays and compression levels to calculate expected costs. We also offer unlimited data storage plans at fixed costs.

Image analysis and quantification is available as a separate subscription service.

INTERFACE:

All data is uploaded to secured Amazon S3 servers and accessible through Reshape Biotech's web-based cloud interface. From this interface, data can be viewed, annotated and downloaded as desired.

Outputs are given as mp4 files (timelapse videos) with timestamps or as individual frames.

LIGHTING:

All Reshape Imaging Systems are equipped with a proprietary backlight panel which is used for general illumination of transparent or semi-transparent media. This backlight panel is also used for fluorescent excitation.

A top-light module is installed as standard as well for illuminating plates from the top. This is usually used for opaque colony formation or opaque media such as yoghurt. The backlight and toplight can be used in conjunction for optimal lighting quality.

Two types of trays are available for holding plates for imaging in black and white materials. The white trays allow diffused backlighting and is suitable for most types of plate imaging. The black trays are optimal for maximizing contrast and minimizing stray light for example when using fluorescence imaging.

FLUORESCENCE:

Qualitative GFP and RFP supported as standard if the fluorescence module is purchased.

Assay results depend heavily on specific fluorescent proteins and promoters. Please discuss specific assays with us so we can help evaluate the fluorescent activity of your specific reporter. Depending on the signal strength, some fluorescent reporters may not be suitable. Filters customized to your application may be available (up to 3 simultaneously), but might add additional cost, leadtime and require an application test to determine sensitivity.

Quantification and normalization are expected to be possible but will require additional data processing and reference samples/ladders for the specific proteins. We are happy to discuss specific assays and proteins.

See the dedicated fluorescence datasheet for examples and specifications on the standard filters we use for GFP and RFP.

EXTERNAL DIMENSIONS:

Robot itself: W x D x H: 65 cm x 60 cm x 28 cm

Robot with power cable (for clearance in incubator): W x D x H: 70 cm x 60 cm x 28 cm

WEIGHT:

12 kg

INCUBATOR COMPATIBILITY AND TEMPERATURE RANGES:

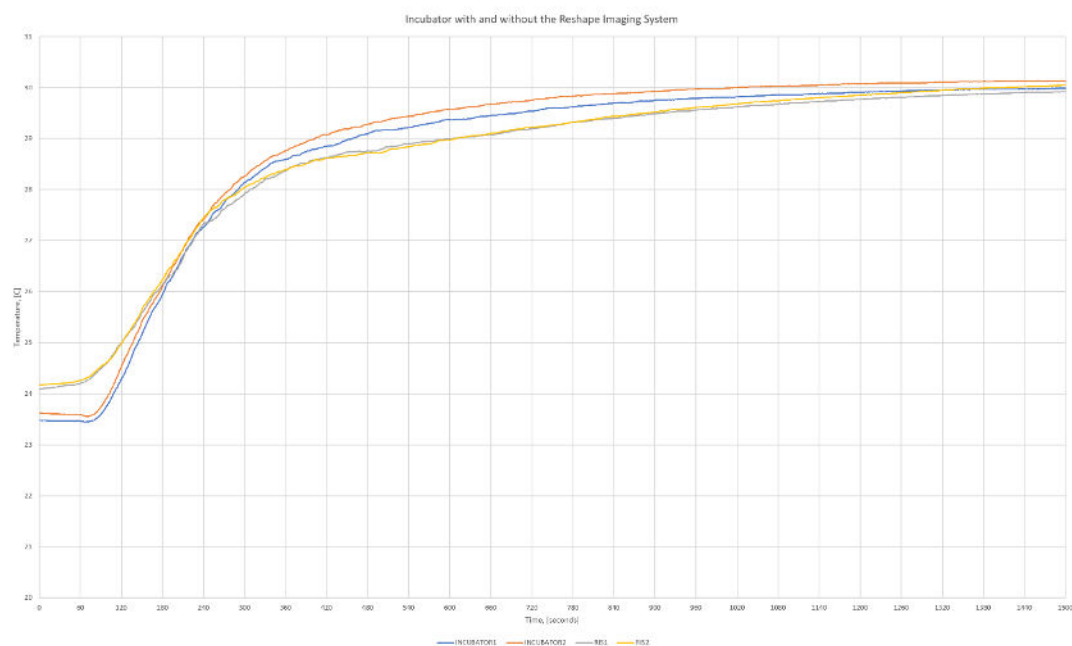
Compatible with incubator rooms

Compatible with specific incubators depending on make, internal dimensions and airflow dynamics. We are happy to discuss, evaluate and support other incubators when possible. Refer to the external dimensions of the RIS and contact us to help evaluate incubator suitability. Also, for stand-alone incubators, ethernet and power must be available inside the incubator, for example via a pass-through.

The Reshape Imaging System does NOT have any internal temperature control – only fans to help control distribution of heat from external sources.

Temperatures from 20 to 40 degrees Celsius supported. We are happy to discuss cases outside this range but cannot guarantee application-specific issues will not arise (condensation etc.)

Temperature rise time/homogeneity in Binder BF260 with/without the RIS installed can be seen in the graph below. As can be seen, there is only a negligible effect on rise time and temperature homogeneity.



CLEANING AND STERILITY:

The trays and equipment can easily be cleaned and sterilized with ethanol or soap-based cleaning agents. The interior of the machine can be wiped down while the door is open. The actual imaging head, lens and motion system should NOT be cleaned, and is never in contact or close proximity to any plate.

The lids are not removed from the plates during imaging.

POWER AND CONNECTIVITY REQUIREMENTS:

Ethernet connectivity required for operation and data off-loading. If using a stand-alone incubator, it must be possible to feed ethernet cables into the incubator using a pass-through or similar. Incubator rooms must have ethernet access.

Each Reshape Imaging System unit requires a regular 220v outlet. Peak power usage is less than 100W.

DATA SECURITY:

Reshape Biotech utilize Amazon S3 storage, which is designed for 99.999999999% data durability with automatic backup across several sites (source: <https://aws.amazon.com/s3/faqs/>).

Authentication and access to generated results is dependent on the security requirements of the individual customer. Amazon S3 and the Reshape cloud interface allow various levels of encryption and security, but per default, logins will be provided to the customer for access. Reshape Biotech does not require access to the data but will not be able to provide any sort of analysis, troubleshooting or assistance with data processing if this is the case. Any data which is shared with Reshape Biotech will never be shared

with 3rd parties unless explicitly agreed upon in writing with the customer who owns the stored data.

SERVICE AGREEMENT:

Reshape Biotech offers service agreements for full coverage of any potential malfunctions and replacement maintenance parts. The service agreement is billed annually.

HARDWARE UPDATE AND UPGRADE PROGRAM

The Premium Update and Upgrade Program includes access all future hardware upgrades for the Reshape Imaging System. The robots are updated regularly to improve the robot's capabilities and features.