

April 2023

Subject: **Launch of Cytiva Image Integrity Checker**

Dear Sir/ Madam,

I am pleased to announce the launch of Cytiva's new software to check image integrity - **Cytiva Image Integrity Checker**, compatible with **Amersham Typhoon laser scanners**.

Cytiva Image Integrity Checker is a simple tool to verify authenticity in images generated by Cytiva Molecular Imaging Instruments. It is designed to be fully compatible with files generated by Amersham™ Typhoon™ systems from control software version 4.0 onwards.

Cytiva Image Integrity Checker features

- ✓ **Detect image fraud** in Peer Reviews
- ✓ **Verify whether an image has been modified** after quantification analysis or any other eventual manipulation
- ✓ **Clean up folder space** with certainty of distinguishing among original and subsequent data

How it works

The Secure Hash Algorithms (SHAs) are a family of standard cryptographic hash functions which are published by the National Institute of Standards and Technology (NIST). SHAs are commonly used to ensure that digital information has not been altered, deliberately or accidentally. In Cytiva, images with SHA-256 digital fingerprints were first introduced in Amersham™ ImageQuant™ 800 GxP imaging systems. Cytiva Image Integrity Checker is the next development in Image Data Security with a stand-alone software that reads digital fingerprints generated in Amersham™ Typhoon™ Laser Scanner systems (from control software version 4.0 onwards) to help both scientists and reviewers to confirm that raw data is intact and correct.

How to start using Cytiva Image Integrity Checker

1. Download for free the installation package from www.cytiva.com/ImageIntegrity
2. Install the .exe file
3. You're ready to use it!

Software package and where to find it

Please download the software package from here www.cytiva.com/ImageIntegrity. It contains the following items:

-  **Image Integrity Checker:** It's the standalone software that is used to check integrity of images generated in Typhoons controlled by software version 4.0 from the Cytiva website www.cytiva.com/ImageIntegrity
-  **Control software version 4.0:** It's the software that controls the Amersham Typhoon laser scanner. This is the version that generates the Security Hash Tags in the images so that the Image Integrity Checker may read them. Previous control software versions don't generate these Hash Tags; thus, it is not possible to evaluate the authenticity of images generated in these earlier versions.

File format compatibility

File types	Image integrity result	Comments
Amersham Typhoon version 4.0 scanner files (TIF, GEL, IMG)	Pass or Fail	If there are no changes in the image the result is Pass .
Amersham Typhoon scanner files, without security from earlier versions of control software (version 1 to 3)	Non-compatible version	If the Amersham Typhoon control software is older than version 4, contact a Cytiva representative to update the software.
Amersham ImageQuant 500 and ImageQuant 800 cameras	Not supported	Cytiva cameras are not compatible with the Image Integrity Checker software yet.
Amersham Imager 600, Amersham Imager 680, and FLA scanners	Not supported	Discontinued imaging instruments are not supported.
TIF, GEL, and IMG files generated in instruments other than Cytiva	Not supported	N/A.
Other image file types than TIF, GEL, and IMG	Not supported	Cytiva Image Integrity Checker only supports verification of raw data files (TIF, GEL, IMG). File types used for presentation purposes are not compatible, e.g. JPEG, BMP, and PNG.

Image operations

Certain preprocessing of images can cause failure in analysis. See the table below for compatible image operations:

Operation in software	Pass	Fail
Amersham Typhoon control software 4.0 and later versions	<ul style="list-style-type: none"> Change color display Modify histogram contrast Flip Rotate 	<ul style="list-style-type: none"> Changes to the image after saving might cause a Fail result.
In ImageQuant TL Image Analysis software modules	<ul style="list-style-type: none"> Change color display Modify contrast Zoom and pan Analyze the image Invert 	<ul style="list-style-type: none"> Original image files are not affected by analysis in ImageQuant TL analysis module.
In ImageQuant TL Image Editor function	<ul style="list-style-type: none"> Change color display Modify display contrast Zoom and pan 	<ul style="list-style-type: none"> Crop Rotate Flip
In Windows file explorer	<ul style="list-style-type: none"> Rename Copy image file Cut image file Save image file with new name 	Save an image file in a different format than the original one.
In any other analysis software (PhotoShop, ImageJ, etc.)	Not supported	Any edits made in other software results in a Fail result. Opening, viewing, or re-saving an image file might also cause a Fail .

Computer compatibility

Cytiva Image Integrity Checker is compatible with the following Windows OS versions:

- Windows 10 and 11 Pro
- Windows 10 Enterprise

Software information

Cat no.	Description	Price
29727780	Cytiva Image Integrity Checker	Free of charge
NA	Amerhsam Typhoon control software 4.0	Free of charge

For more details, please visit www.cytiva.com/ImageIntegrity

Please do not hesitate to contact me or your local Cytiva representative for more information.

Best Regards,



Carmen Lozano Abellán

Global Product Manager- Imaging

Cytiva