

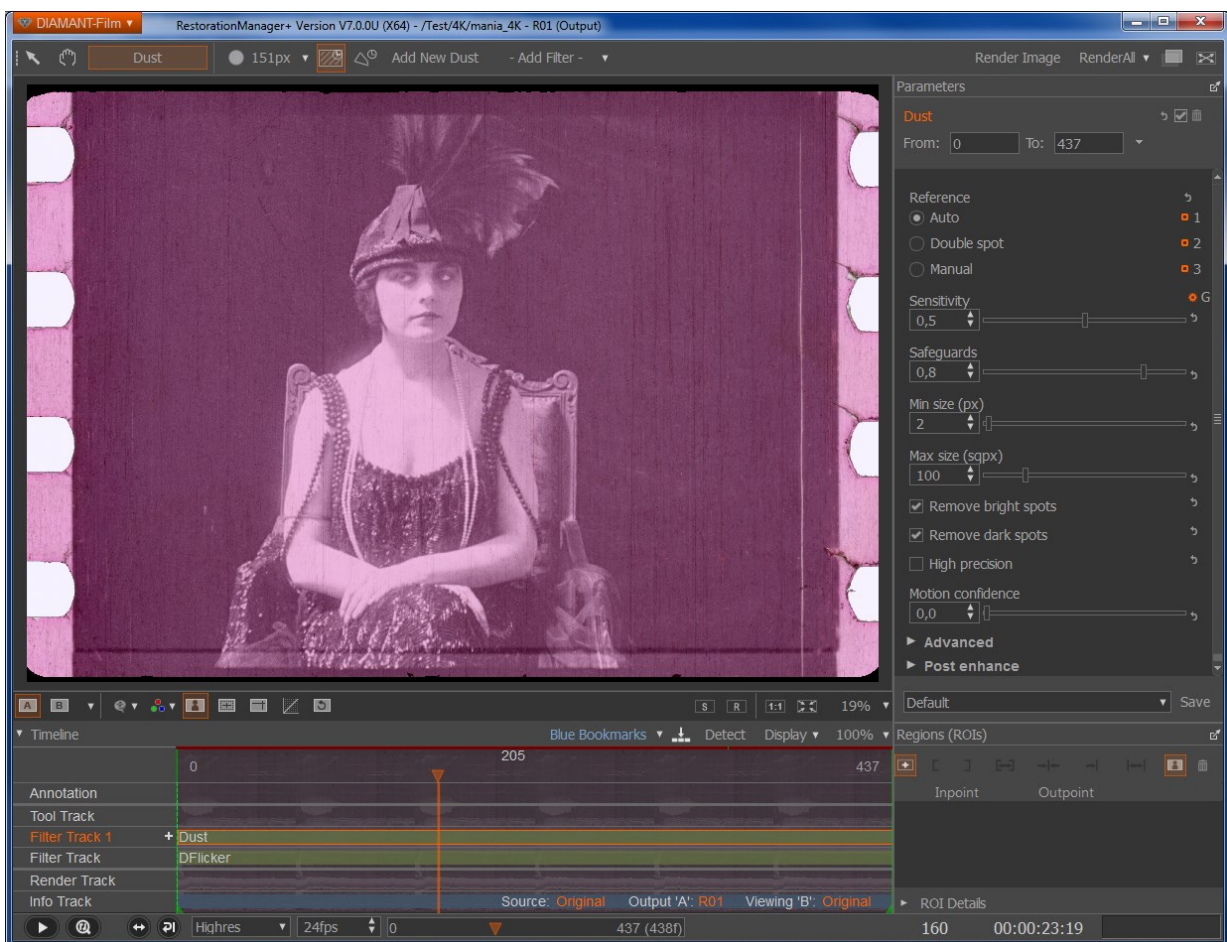
## What is new in DIAMANT-FILM Restoration V8?

This chapter describes the major innovations of this release and is targeted to experienced users of the previous DIAMANT-FILM Restoration Suite

### General

DIAMANT-FILM has been optimized for the latest Windows operating systems Windows 8 64 bit. You need to have a 64 bit operating system in order to run the DIAMANT-FILM system. Internally everything has been brought forward to the latest compiler technologies and library versions.

The use of GPU graphic-card features (NVIDIA CUDA) for high quality and performant automatic object detection and tracking have been further expanded.



### RestorationManager+

The RestorationManager+ has been improved in many ways. Anamorphic display modes have been introduced. Multi-select and content aware snap-ins allow faster filter placements and deletions. The

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playback engine has been speeded up to address faster playback in ultra-high resolutions. Renderings via JobManager have been improved. This allows to balance better the workload between main workstation and additional render client respectively background rendering. Reworking the shortcut editor allows for better individual customisation of shortcuts, like creating shortcuts for filter insertion. The improved Magnifier allows now also a blend A/B view. A new CUT detail navigation provides a better overview of the current shot and allows for better in scene navigation. Many other functions have been improved in speed and usability.

## Noise Management

The noise/grain management function have been completely overworked. A completely new NOISE filter is being introduced in V8. This filter is built on the latest technologies and research results in spatial-temporal de-noising. A new “Grain Sample” tool allows to extract grain templates from any images and stores them in a new built in grain sample library. The Regrain filter and the Regrain function in PostEnhance have access to the template library to make use of it. This allows to add the “right” grain whenever needed.

## Port from Render Track to Filter Track

We are in the middle of the work for porting every filter from the render track to the filter track. The following filters are now deprecated on the render track since the filters have been ported or replaced by new filters. We still keep the old version of those filters in the “Out-Dated” section for backward capability, but it is highly recommended to use the new pendants.

Render Track	Filter Track
DFlicker	DFlicker
Dust	Dust
Zoom	Zoom
DShake	Stabilize
StabPoint	StabROI
DWarp	DWarp
InterpolateSequence	Interpolate Sequence
VerticalLine	Scratch
Linescratch	Scratch
Re-Grain	Regrain
Stab Overscan	Stab Border / Stab Pinhole
Color Registration	Color Registration
SpliceBump	Splice Bump
StabAuto	StabAuto

Please note that by porting we also could achieve some significant speed ups.

## Clone Tool

We have added a shortcut to reset the spatial offset. Also we have created a shortcut to set the relative spatial offset on a keystroke alternatively to ALT+LeftMouseDoubleClick. An Auto Luminance option has been introduced which will automatically apply a luminance correction on every drawn clone. The manual option is still available.

## Crop Tool

The crop tool has been expanded towards a finishing tool. It allows now next to the cropping of the image parts also rescaling and adding pillar-/letter-boxes.

## Batch renderer

There are different ways to use the new batch renderer.

1. Pre-process a sequence to generate shot information and proxies
2. Re-Render project(s) over multiple generations
3. Prepare projects to be rendered and start renderings of several projects at once (including pre-processing)
4. Auto export after rendering

This allows to automatically render several projects over several generations in a batch mode allowing to prepare several jobs and render them automatically for example over night or over the week-end in the background. The batch renderer makes full use of the render farm if available. After the rendering an automatic export to the final destination and format is possible.

## Restoration Reports

A new set of restoration reports have been added. The reports can be used for restoration planning in combination with the Annotation functions or as a log for the restoration work. Reports can be created in HTML, Excel or OpenDocument Spreadsheet format.

## Export

The scale function in the export allows now to select the scaling algorithm. When changing the aspect ratio an automatic letter-/pillar-box can be added.

An automatic export after the rendering is finished can be scheduled in order to export to the final destination and format.

## Video I/O

We have added the support for video output on the BlackMagic DeckLink cards.

## Minor Tools/Filter improvements

### OmniClean

A new method to add a bit from original grain has been added. The parameter is called ReBlend Noise Factor.

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### DFlickerFlow

The automatic reference frame creation has been improved and the performance has been tuned.

### Dust Filter

The new “enlarge dust mask” feature allows to blow up the dust detection mask in order to ensure a complete dust spot removal in the cases where spots were fading on the border. The “non high precision” mode has been optimized for best performance by still delivering very good quality.

### Scratch

The improved blending (feather) for the scratch repair allows a better fitting for the results into the image.

### And many more

In total we have incorporated uncountable new features and improvements.