

## What is new in DIAMANT-FILM Restoration V12?

The major innovations of this release compared to the previous V11 are described in the following and targets experienced users of the DIAMANT-FILM Restoration Suite.

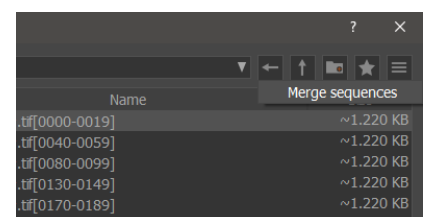
In addition to this printed section, we also offer a YOUTUBE channel with video tutorials. There are tutorials for general usage as well as for specific repair and filter parameters:

<https://www.youtube.com/user/hsartdigital>

### General

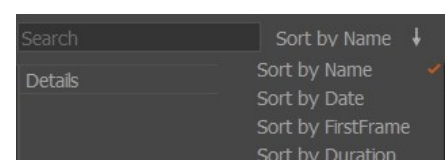
- 8K workflow support
- Improved HDR support
  - HDR display support on Nvidia and DeckLink cards
  - Improved support for HDR EXR files
- Artificial Intelligence (AI) has arrived in DIAMANT-Film Restoration.
- Improved workflow for projects with many clips
- Improved rendering using a scratch-disk.
- Support for A-B reel.

Use “Merge sequences” in the Importer in order to import a reel with gaps. You should import the A and B reel as separate clip into the ProjectManager. DIAMANT will handle the gaps correctly in the renderings, playback and so on.

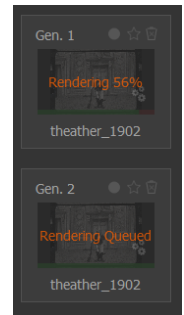


### ProjectManager

- *Change Data Path*  
Allows to move a project from one configured data volume to another. This is possible for the whole existing project or from a selected generation onwards.
- *Change Original Project*  
Allows to relink cropped projects to base project after Backup/Restore. Only necessary if a V10 project is restored.
- *Source Scaling*  
It is now possible to have a different working resolution as the original file format. For example, original file format is 4K and project resolution should be 2K. If this is set, all renderings would be in 2K and the output as well.
- *Sorting of the projects for different criteria*  
This is specifically important for users working with high numbers of different clips in one project. (Hold mouse button on “Sort by ..” for context menu)



- *Rendering status*  
The clips show now the rendering progress of a background batch rendering.
- *Recover Projects*  
If it is not possible to open a project anymore due to corruption for example caused by power loss, it is now possible to restore an automatically made project backup through this function.
- *Multi Report for Projects*  
Multiple project reports can now be exported at the same time (when selected)
- *Manual locking of projects*  
Locking of projects via context menu (right click on project) now possible



## RestorationManager+

- Animated parameters
- HDR support on BlackMagic and monitor output
- Improved 10bit playback speed & smoothness
- Improvements to performance and playback on 4K+ displays
- Improved playback for 8K
- Improved ROI support
  - Splitting ROI border to horizontal and vertical
  - Allow negative border (softness outside of ROI)
- Colour codes can now be assigned to Annotations
- Integrated Density Keyer based on Low/Mid/High Intensity selection as a PostProcess parameter for important filters such as Dust, OmniClean, Noise, DFlicker.
- Additional Source with arbitrary resolution  
This feature goes in-line with the Source Scaling from ProjectManager. It allows to use clips and film material in different resolutions.
- Keyframe indicator for animated ROIs
- Improved Timeline
  - New faster more flexible timeline implementation.
  - New AnimationTimeLine (to change and visualize animated parameters)
  - Show keyframe markers on the timeline
- Activate/Deactivate all filters on a track
- A-B role sequence support. Support for of a sequence with gaps.  
Gaps will be handled correctly while rendering
- Input box (Spinboxes) scrolling can now be refined (choice of decimal digit) by pressing Alt, Shift or Strg while scrolling
- Postprocess opacity option now has sliders for Shadows/Midtones/Highlights
- New shortcuts for lookup tables (Show previous/next recent lookup table)
- Less used Viewing Modes have been moved to a subgroup ('More...' group in viewing options menu) to enhance usability
- Duplicated frame detection option in the cut detection
- Jump to scene #

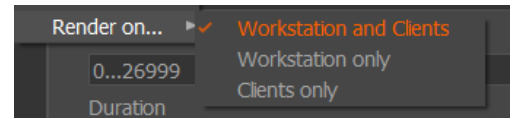
Wie arbeiten aufgrund der Allgemeinen Bedingungen für den Verkauf und die Lieferung von Software - Support Leistungen, sowie für Dienstleistungen in der Informationsverarbeitung durch Rechenzentren und den Verkauf und die Lieferung von Organisations-, Programmierleistungen- und Werknutzungsbewilligungen von Softwareprodukten - empfohlen vom Fachverband Unternehmensberatung und Datenverarbeitung sowie vom Bundesministerium des Maschinenhandels, Berufsgruppe Büromaschinenhandel und bei uns zur Einsicht liegenden Fassung.

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## RenderManager

- Configuration to limit OFX filter renderings to one slot on main workstation
- In RM+ or BatchRender it is possible to decide if a project is rendered on the main workstation only, render client only or everywhere.
- Render clients can now be configured that they accept only jobs from certain workstations. This allows a much more flexible render farm configuration



## ReFrame App



The new Reframe App replaces the former Crop App. Reframe has been redesigned in order to allow optimized ways to crop, pan&scan, add blanking and upscale to deliver the desired final product. A new AI based upscaler and the added PostEnhance ensures the best possible results for finishing your project.

## Dust Filter

A new parameter named "Grain Protection" has been added. This is specifically useful to prevent false detection in very grainy material. The parameter is placed in the "Advanced" parameter group. A 5 frame dust mode detection has been added.

## ImageRegistration (new filter)

This filter allows to align an image exactly to a reference image. The reference image can be either from a previous generation or an additional source. With this filter it is possible to exactly undo any previous stabilization.

## SpliceBump Filter

Interpolation Repair method added

## Invert Filter

Choice between standard 'Invert' and 'Arri Lin to Log' added

## Scratch Filter

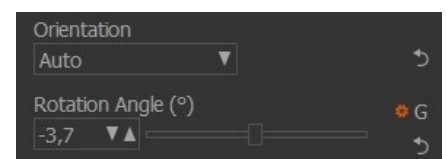
Beyond vertical and horizontal, the orientation of scratches can be of any angle. Feather mask for additional repair added. Special repair mode for very light scratches looking more like a brightness shift.

## DWarp Filter

Improved render speed at higher (up to 8K) resolutions.

## Scratch Tool

Beyond vertical and horizontal, the **orientation** of scratches can be of any **angle**. As the explicit definition of an angle for scratches is powerful, but not efficient it is recommended to use the orientation value "Auto". This new mode proposes the correct angle by itself –



although a manual overrule is always possible. This feature does only work for tools, as it uses the brush stroke information from the operator.

## Distortion Tool and Filter

A new mode to warp the grid has been added. This mode allows to warp parts only inside a grid quadrant.

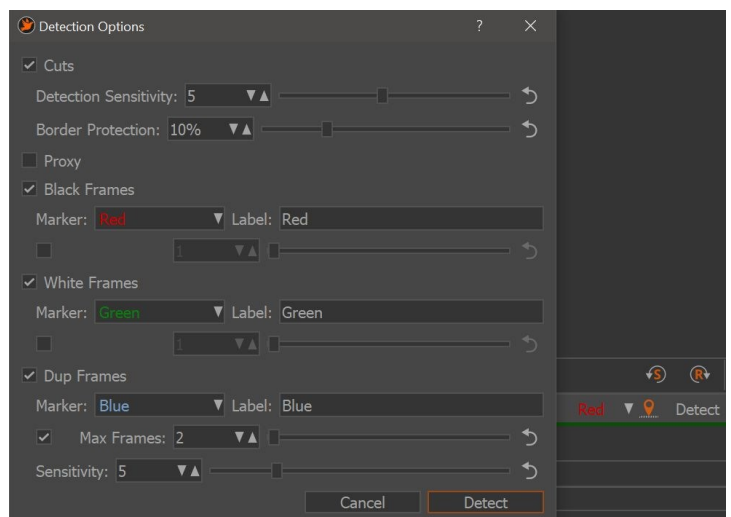
## Scratch Disk / Cache Disk

The optional scratch disk is designed to improve the rendering speed and reduces the re-rendering of projects to a minimum. You can configure the scratch disk in the Configurator and ideally you would select a local SSD disk. More details coming soon.

## Duplicated Frame Detection

Apart from CUT detection there are new detectors Dup Frames, White/Black Frames as well as a possibility to calculate Proxies.

- Scene changes can be determined with an additional Sensitivity parameter. The higher the value, the more CUTS are detected.
- Black and White Frame detection can now be used for different block lengths. Meaning that for example only a defined number of consecutive black/white frames results in a bookmark.
- A new possibility is Dup Frame detection. This allows to detect image repetitions resp. frozen images.



## Spatial Noise Filter

The new filter offers selective de-noising in the spatial domain only. There are different methods available, two are based on the mathematical approach called "Total Variation" (=TV, TV2), the third method is based on the Picture Cooler algorithm. The filter substitutes the older versioned filters NoiseTV and NoisePC.

## Exporter

- *Update Only*  
The new "Update Only" option from the Exporter considers only those images for export, that are of newer dates than those in the target export location. Thus, it improves the export speed considerably as instead of exporting all images again, only newer file timestamp images are exported. Due to its nature the option is only available for single image file formats such as DPX and TIFF.
- *Infrared Mask Preservation*  
When working with RGBA images where the alpha channel holds an IR mask it can happen that during processing the alpha mask gets lost since not all filters are alpha aware. We have added in the

exporter a feature “Preserve IR Mask” which will copy the alpha channel from the source file to the exported file to ensure that the alpha channel is preserved.

- *Scaling and Cropping can now be done at the same time*  
Scaling is based on the cropped sequence, if both are activated
- *New codecs for AVI: YUY2 and V210*
- *DPX 16bit printing density format*
- *New LIN to LOG/LOG to LIN conversion option for exporting to DPX files*
- *Exports via RenderManager can be paused and resumed*

## Importer

- “Merge Sequences” option added to MultiImporter
- Advanced HDR options for EXR

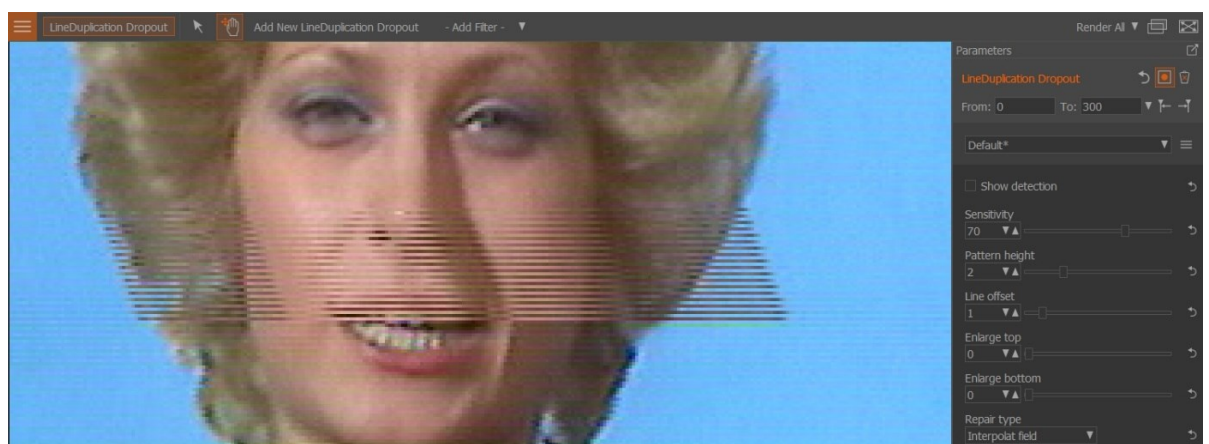
## Video Converter

Speed factor setting added

## Video

There is a series of innovations for video restoration and processing in V12.

- *DInterlace Filter*  
The new DInterlace filter is based on a more efficient mathematical approach that better preserves non-moving objects. Thus the filter DInterlace is able to keep full resolution on all non-moving image parts.
- *LineDuplication DropOut Filter*  
This is a completely new development, dedicated for automatic detection and removal of line duplication dropouts. The parameters invite the operator to set the pattern repetition height (in lines), the horizontal offset from one line to the next and some other practical convenient values.



- *LineSync Filter*

Wie arbeiten aufgrund der Allgemeinen Bedingungen für den Verkauf und die Lieferung von Software - Support Leistungen, sowie für Dienstleistungen in der Informationsverarbeitung durch Rechenzentren und den Verkauf und die Lieferung von Organisations-, Programmierleistungen- und Werknutzungsbewilligungen von Softwareprodukten - empfohlen vom Fachverband Unternehmensberatung und Datenverarbeitung sowie vom Bundesministerium des Maschinenhandels, Berufsgruppe Büromaschinenhandel und bei uns zur Einsicht liegenden Fassung.

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*This is a new filter, that supports automatic detection and correct of synchronisation errors and line shifts.*

- *DropOut Tool*

*A new interactive tool for Dropout repair.*

- *BlackMagic Video Output*

DIAMANT-Film makes perfect use of BlackMagic's video I/O cards and offers HDR, LUT, Blanking and many other display properties on the video monitor. This facilitates the daily work and also allows to make full use of an efficient HDR workflow environment.

- *UHD/HDR metadata support in video export*

## File Format Support

Due to feature requests from various customers, some additional file formats are supported:

- Added full ProRes 4444 XQ format support.
- Added full DNxHR format support
- Speedup of OpenEXR read/write.
- Support of Cintel Raw Image (CRI) file format.

## Baselight Third Party Integration

Apart from the already proved integration of Baselight, there are some new features available such as:

- Support of the Baselight 3D-LUT format .CUB
- Support importing Baselight markers and comments as annotations