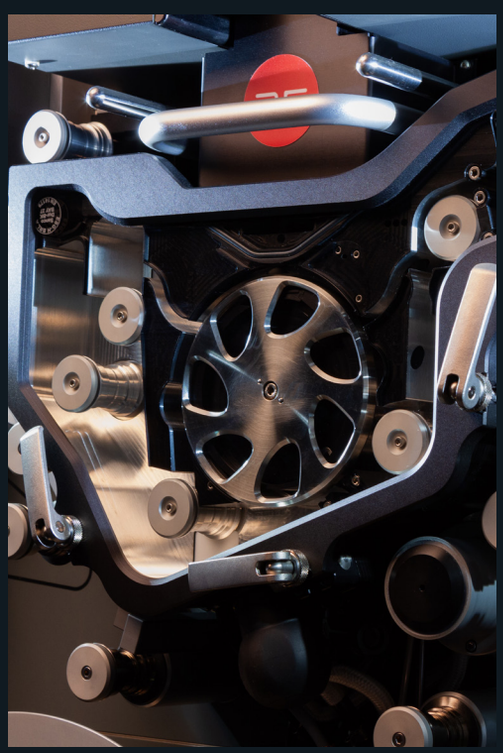
Enhancing Film Restoration

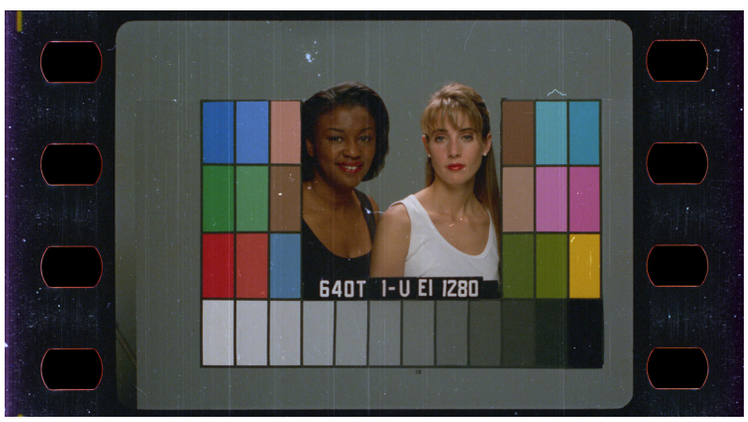
DFT WetGate Systems for film archive preservation

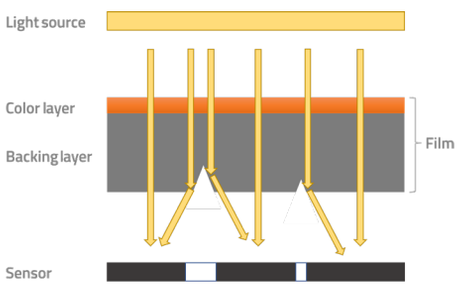


KEY FEATURES

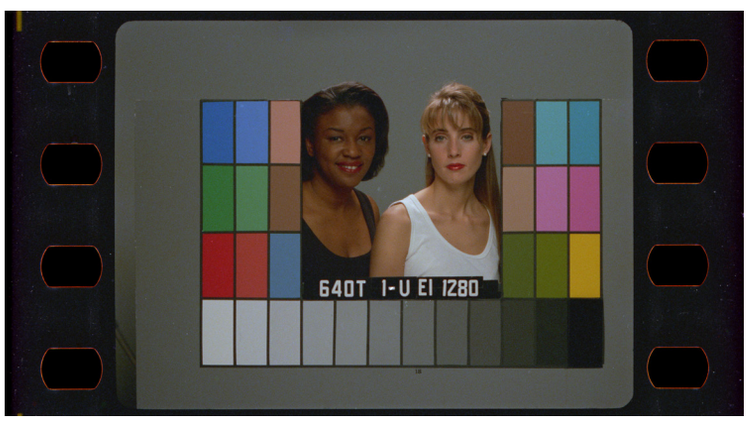
- **Efficient scratch & dirt removal:** Minimize scratches and and imperfections
- **Fully automated process without manual intervention:** Perfect for high-volume projects
- **Time and cost efficient:** Optimize the restoration process
- **The only authentic WetGate system available**

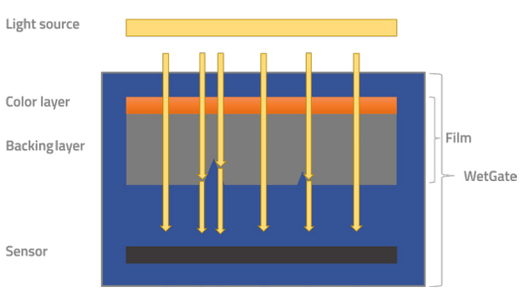
Scan with Dry Gate





Scan with WetGate





DFT WetGate Technology

Experience the ultimate in film restoration with cutting-edge WetGate technology for DFT film scanners Scanity HDR und DFT POLAR HQ

Efficient scratch & dirt removal

Films stored in archives often show signs of wear and tear. When dealing with damaged film, selecting the right film scanner is crucial. Damaged film may exhibit warping, buckling, shrinkage, weakened or damaged splices, missing or broken perforations, notched or broken edges, and vinegar syndrome. Severe scratches on the film require advanced restoration. DFT's film scanners are engineered to address these challenges. They offer a specialized feature set designed for the smooth and gentle handling of damaged film, ensuring your archival scanning needs are met with precision and care. For this reason DFT has created the WetGate system for Scanity HDR and DFT POLAR HQ.

Authentic WetGate System

In contrast to other concepts in the market, where film is sprayed with alcohol or similar, in the DFT WetGate the film gently passes through a fluid tank, submerging the film in a liquid with the same refractive index of the film. The fluid fills in surface imperfections, such as scratches and surface damage, so that when it is scanned these surface imperfections are minimized or will not be visible in the captured image at all.

Optimized Restoration Process

Using a WetGate has several advantages.
Scratch elimination takes place without any manual intervention, which reduces the risk of errors.
The original information of the color layer is restored without adding information by using interpolation or other software algorithms. That means the WetGate system promotes a faithful restoration.
Finally, the WetGate is both time and cost efficient. Using downstream software processes to remove scratches can become a real bottleneck in restoration projects.
The WetGate makes this intervention obsolete, which saves time and protects your budget.

The WetGate System

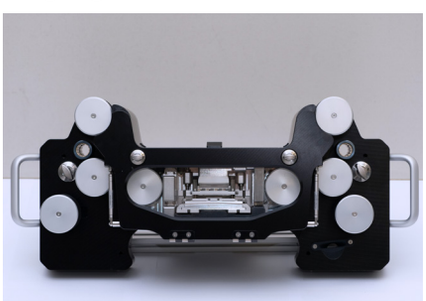
Following the international success of Scanity HDR WetGate, DFT has integrated the same technology for its latest film scanner DFT POLAR HQ. The DFT WetGate system consists of two major components.

The WetGate

Scanity HDR provides a 16mm and 35mm Lens Gate Assembly with WetGate technology.

WetGate 35mm for Scanity HDR

DFT POLAR HQ features a multiformat 16mm and 35mm Smart Motion WetGate, accommodating all formats in a single gate.



Smart MotionWetGate 16/35mm for DFT POLAR HQ

The WetGate Supply Unit

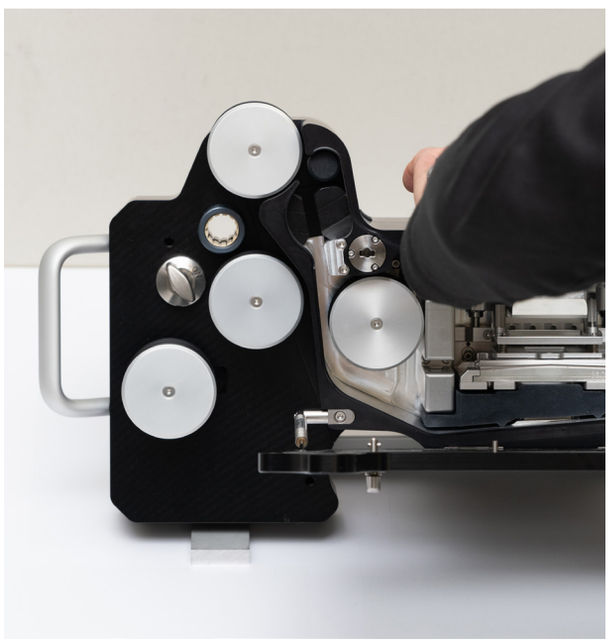
The Supply Unit seamlessly manages all pneumatic, electronic, and fluid-related control and monitoring functions. Alongside the scanner and gate with the liquid chamber, it creates a fully integrated, closed system. The WetGate connects to the Supply Unit, which features a tank, filters, and pumps to manage the fluid and electronics that control the WetGate and fluid stream. All these components are conveniently housed in a standard 19" electronic rack.

Wetgate Supply Unit

What are alternatives to a WetGate?

Although digital processing speed increases year-by-year and powerful restoration algorithms have been developed, some film defects like scrubs, cinch marks, horizontal and vertical scratches are still problematic. Very often they require ongoing and expensive manual intervention, sometimes frame-by-frame repair in post-production, thus offsetting the benefits of a fast film scanner. Scanity HDR and DFT POLAR HQ have built-in features and additional options to address these film surface imperfections:

- The use of diffuse illumination reduces the fine and very difficult software-detectable scratches that often occur even on well-preserved film rolls.
- The optional IR scanning feature for DFT POLAR HQ and Scanity HDR, combined with additional dirt and scratch removal tools for Scanity HDR and user-adjustable automated processing techniques, is designed to minimize and remove undesirable imperfections.
- IR dirt and scratch matte output for downstream software restoration processes. RGBA or RGB+A



file formats replace time-consuming analysis for scratch detection.
These options speed up the post-production process and recreate the original image. However, when being tasked with a high-volume archive restoration project, it is usually inefficient to use several additional software tools in the downstream process. The WetGate is the fastest and most efficient method for eliminating scratches and dirt, as it operates directly during the scanning stage.

Proven and reliable WetGate technology

As the WetGate is a sealed aquarium unit, there is no need to work with complex vacuum systems that are prone to reliability issues, expensive to maintain, difficult to set-up and often introduce further issues such as air bubbles on the film scanning surface.
The DFT WetGate ensures that your film receives the same gentle handling as in dry scanning, with the added advantage of wet scanning when needed. Whether you choose wet or dry scanning, your film is securely and carefully transferred, preserving its quality without any risk of damage.

Fully automated three-stage process

1. Pre-chamber

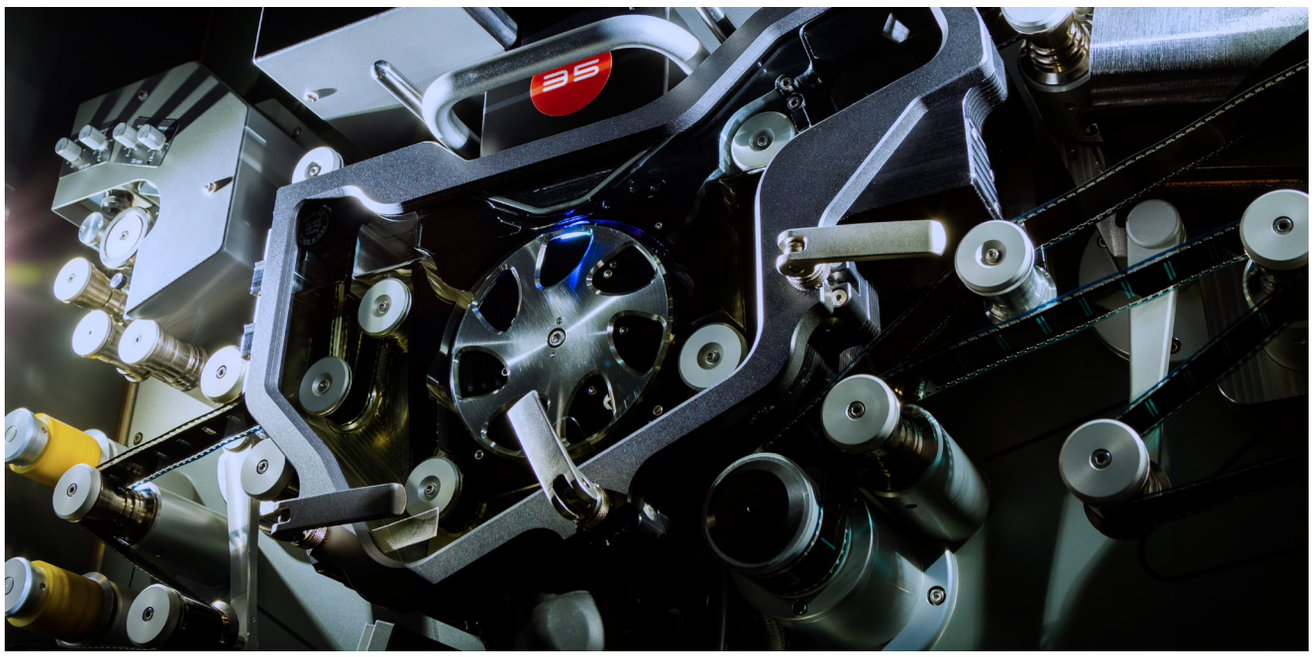
Guided by a precision roller, the film enters the fluid level from the top. Within the fluid, rollers shape the film into a loop, forcing air and dust particles off and preventing air from entering the critical area.

2. Scanning Area

Similar to the dry gate, the fluid-immersed film moves over the roller gate (Scanity HDR) or two contact support plates (POLAR HQ) in the scanning area, avoiding any contact with the image area. The WetGate technology provides structural support to the film, maximizing stability and allowing for a high tolerance for film issues. The sealed WetGate technology ensures that fluids never enter critical parts of the scanner, with an intricately designed leakage drain allowing some fluid to pass through the seal.

3. Drying

Finally, the WetGate technology removes



excess fluid from the film using a drying unit consisting of a series of air knives that eliminate any remaining liquid. Critically, no scrapers are used, so imperfect splices or variations in film thickness, typically found in aged materials, do not pose an issue.

Operation

The WetGate system has been tested and fully qualified with perchloroethylene (PERC). This chemical requires special environmental handling considerations.*
A well proven continuous film drive allows for both high-speed shuttling and for gentle film handling during the scan. This is achieved by using a traditional capstan drive, to capture all the details from the film, whilst still delivering superb film management. The capstan drive is the only part of the film deck that has any direct contact with the image area.

Exhaust Emissions

DFT has designed the film scanners to allow for the extraction of waste exhaust fluid vapor, including adapters for attaching waste hoses both on top of and within the scanner. It is the customer's responsibility to manage and filter these exhaust gases in compliance with local or regional environmental regulations.

Excellence in film restoration

Delivering superb and crisp images at adaptable scanning speeds—faster than any other scanner in wet mode—the unique WetGate option allows for a quick switchover between wet and dry modes simply by exchanging the gate assembly. The WetGate works on both color and black-and-white film.
The DFT film scanner family ensures safe, smooth film handling and operational flexibility. Using WetGate at the point of scan is the best solution to preserve film quality and originality, while also saving time and significantly reducing downstream processing.

"Making sure the past has a future!"

* Please ensure compliance with local health and safety legislation.

DFT POLAR HQ

Native 8K film scanner (9.3 K field sensor)

Universal Smart Motion Gate for both 16mm and 35mm film

Suitable for archive film scanning of sensitive film rolls

Combines a continuous drive with a step drive, maintaining film tension with no stress to the film

Scanning of film rolls with significant damage

Optional infrared (IR) channel

Scanity HDR

Native 4K film scanner (4.3 K line sensor)

Lens Gate Assembly for 35mm and 16mm film with DFT Roller Gate for super steady film transport

Suitable for digitization projects with high throughput requirement

Industry reference for high-quality and high-speed film scanning

Optional infrared (IR) channel

DFT offers a range of film scanner technologies tailored for specific tasks, rather than a universal device that would require compromises in multiple areas. The choice between the Scanity HDR and DFT POLAR HQ depends on your typical workflow and the condition of the film rolls to be scanned. DFT's WetGate technology is the only solution on the market offering a fully immersive mode of operation, ensuring defects on the film material are safely and reliably concealed.
Experience the efficiency of a DFT WetGate with a test scan, including a dry/wet comparison of your material.

Preserve your cultural heritage with film digitization that remains true to the original.

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