



Dark Energy[®]
By Cinnafilm[®]

YOUR ANSWER FOR TEXTURE MANAGEMENT

Combining leading degrain and noise removal technology with the most cutting-edge color conversion tools, Dark Energy is the motion picture industry's go-to solution for texture management.

Dark Energy Professional

As a premier spatial processing platform, Dark Energy Professional produces impeccable denoise results on image-sequence-based projects with scene-by-scene control and provides the most believable film grain texture ever to be generated by a computer-based process.

Dark Energy for Transcoders

Designed for the processing of large libraries of compressed content, we have taken the essence of Dark Energy Professional and wrapped it in an automated/semi-automated plug-in for enterprise-

grade transcoders, allowing broadcasters, OTT providers, and content distributors to have the GPU-based power of Cinnafilm's flagship Dark Energy Professional during the transcoding process.

Dark Energy Xenon

Xenon combines Dark Energy for Transcoders with the state-of-the-art Advanced HDR by Technicolor solution. What you get is an enterprise-grade, HDR conversion system that provides an incomparable file-based solution for automated, high-quality HDR conversions from SDR source material and cross conversion between different HDR standards.



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Dark Energy Xenon

A cherry on top? Yes, please. SDR-HDR upconverts using Technicolor's advanced Intelligent Tone Management technology to generate 2,000 NIT assets from Standard Dynamic Range sources to FINALLY provide an automated solution for archived content to be seen on today's latest home theater technology.

It is impossible to take an SDR asset and tone-map it to the color space of HDR10 without addressing noise. We've all seen HDR upconverts where the dark sections of the image are crawling, or the sky has a strange pattern or shimmer that just isn't natural. For this reason, we have added Technicolor's highly coveted advanced Intelligent

Tone Management (ITM) algorithms as an option in Dark Energy. Using an automated process, users can take standard definition/dynamic range material, upres it to HD or UHD, and tone-map with Technicolor HDR ITM to 2,000 nits of HDR brilliance! The simplicity of the Technicolor advanced ITM process gives new options to efficiently convert your libraries of SDR into high-quality HDR content. Do your part to bring trillions of archived content hours into the millions of living rooms equipped with HDR televisions.

The automated, Technicolor advanced ITM process will first be available in Dark Energy for Transcoders and quickly thereafter in Dark Energy Professional.

Dark Energy Professional

Starting with an intuitive, real-time feedback GUI, users can immediately see the results of their adjustments without waiting for a render, without "hoping" the adjustments will be what they want.

- Any-to-any resolution interchange
- Leverage multiple GPUs for background rendering and farm-based rendering
- Real-time performance for 2K images using a single GPU
- Utilizes 6 filters for addressing nearly any kind of noise
- Upres/downres with the highest accuracy available
- Match any image texture — no more film-outs with the best-looking film grain on the market
- Dustbusting, Dead Pixel Healing
- Manipulate noise in RGB color channels, divided into 16 frequency ranges per channel

Dark Energy for Transcoders

The noise analysis brain of Dark Energy Professional was transplanted into a plug-in for many enterprise-grade transcoding solutions. Telestream Vantage, Root6 ContentAgent, Imagine SelenioFlex File, and Cinnafilm RadiantGrid are a part of our growing transcoder family. Working in an automated, semi-automated, and even template-based fashion, users have the following at their fingertips:

- Same independent color channel and frequency ranges as Dark Energy Professional
- One size does not fit all, so noise is analyzed on a scene-by-scene basis to ensure camera and lighting changes are always taken into account
- Upres from SD to UHD and beyond. Resolution limits are based solely on the capability of the encoder. If the encoder supports it, so does Dark Energy for Transcoders
- Tailor the processing method to the type of footage being processed. Operators can choose from fully automated, semi-automated, or template-based modes to ensure the denoise meets customer expectations
- Dustbusting, Dead Pixel Healing
- Manipulate noise in RGB color channels, divided into 16 frequency ranges per channel