

Filmscanner

Englisch: Film Scanner

KAMERA/TECHNIK

Ein Filmscanner ist spezialisierte Ausrüstung zum Digitalisieren von Kinofilm Bild für Bild in hoher Auflösung. Moderne Scanner wie ARRISCAN und Scanity bieten 4K-6K+ Scanning mit frame-genauer Positionierung und umfassender Farbverwaltung.

Film Scanner A film scanner represents modern digitization technology, capturing motion picture film frame-by-frame at high resolution (typically 4K-6K+). Unlike real-time telecine, film scanners perform offline scanning with precise color management and superior resolution capability, making them ideal for archival and digital intermediate (DI) workflows. Scanner vs. Telecine Film Scanner Advantages : Offline scanning enables thorough quality control 4K-6K+ resolution (vs. 2K-4K telecine typical) Frame-accurate positioning and color management Post-production color grading more flexible Better suited for archival and preservation Telecine Advantages : Real-time transfer with live color correction Faster transfer process Broadcast/streaming optimized Less expensive per-minute scanning Modern Scanner Models ARRISCAN : Arri's professional film scanner 4K scanning capability Professional-grade color management DCI and archive-compatible output Scanity : Spectra's advanced film scanner 6K+ scanning capability Premium resolution archive scanner Advanced color and density control Other Scanners : Kodak Scanner technology Various specialized scanners Declining availability of older equipment Modern scanners consolidate toward ARRISCAN/Scanity Scanning Process Frame-by-Frame Operation : Film secured in scanner gate Frame advance mechanism positions each frame High-resolution optical scanning Digital image capture Advance to next frame Automated or manually-operated systems Scanning Time : Slower than real-time (offline process) 4K scanning typically 24fps equivalent or slower Labor-intensive but unattended operation possible Professional colorist not required (unlike telecine) Resolution Options Common Scanning Resolutions : 4K DCI (4096×2160) : Professional theatrical standard 2K DCI (2048×1080) : Legacy theatrical, broadcast 6K+ : Premium archive resolution ProRes : Intermediate format alternatives Various Frame Rates : 24fps, 30fps, up to 60fps Color Management in Scanning Scanner Color Correction : Density measurement throughout scan Color balance correction capability Scene-to-scene optimization possible White balance and exposure adjustment Post-Production Grading : Scanner output as starting point Professional DI color grading follows Creative color work in post-production More flexible than telecine-only workflow Output Formats Common Scanner Outputs : DPX Sequence : Industry-standard uncompressed format ProRes : Intermediate codec option OpenEXR : Professional rendering format Various Codecs : ProRes, DNxHD, others Color Space : Rec.709, DCI-P3, Log, or linear Film Type Compatibility Scanner Capability : 35mm motion picture film 16mm film 8mm (older scanners) Color negative Black and white negative Reversal film Some scanners limited to specific formats Wet Gate Scanning Enhanced Quality Option : Temporary liquid fills minor scratches Significantly improves damaged film appearance Premium service with substantial cost Effective for restoration projects Limitations : Severe damage not correctable Temporary improvement only Still-frame scratches more visible Requires additional handling Quality Control Scanner QC Features : Automated frame detection Density monitoring Color accuracy checks Defect detection systems Archive certification

possible Film Scanner Applications Primary Uses : Archival Preservation : High-resolution preservation scanning Digital Intermediate : Professional DI workflow creation Festival Distribution : DCP creation from film Home Video : Archival scanning of family film Restoration : Damaged film recovery and preservation Professional Scanning Facilities Facility Services : Archive Labs : Preservation-focused scanning DI Centers : Color grading facility scanning Post Houses : Comprehensive scanning services Specialty Facilities : Restoration and archival focus Scanning Specifications Professional Standards : Resolution : 4K minimum for modern archival Color Space : DCI-P3 or Rec.2020 Bit Depth : 10-bit or 12-bit Frame Accuracy : ± 1 frame tolerance Quality : Calibrated equipment, regular maintenance Film Preparation Pre-Scanning Requirements : Film inspection and cleaning Gate and transport path clean Proper film splicing if needed Wet gate preparation (if applicable) Density measurement (white balance) Scanning Economics Cost Factors : Facility Rates : Professional labs \$50-200+ per reel Resolution : 4K more expensive than 2K Wet Gate : Premium service adds significant cost Rush Service : Expedited scanning premium Format Complexity : Specialty formats cost more Archive Scanning Standards Preservation Scanning : Resolution : 4K minimum recommended Color Space : Wide color gamut (DCI-P3 or Rec.2020) Bit Depth : 12-bit preferred Metadata : Comprehensive documentation Copies : Multiple safety copies generated Future-Proofing : Higher resolution than current needs Preserves maximum information Enables future re-mastering Archive quality standards Film Scanner Future Current Trends : ARRISCAN and Scanity dominate professional market Increasing 4K archive adoption Consolidation of scanning facilities Film scanner essential for film preservation Outlook : Professional scanners likely to advance in capability Archival standards increasingly favor high-resolution Cost may decrease with technology advances Essential tool for film preservation Film scanners represent the cornerstone of modern film archival and professional DI workflows.