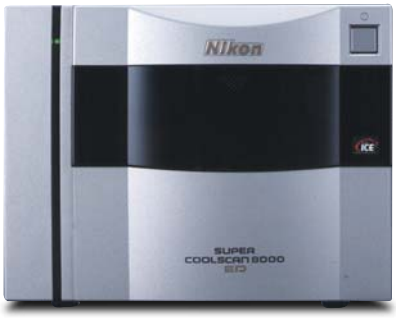
Nikon

- Multiple film format (120/220, 35mm, etc.)
- 4,000 dpi true optical resolution
- 14-bit A/D, 16-/8-bit output
- Large-diameter SCANNER NIKKOR ED lens
- Rod dispersion LED illumination
- New setup function for color negative film
- Multi-sample scanning
- Quick AF & Quick Preview
- High-speed IEEE 1394 interface
- Digital ICE$^{3}$™ (Digital ICE cubed)
  - Digital ICE™ (Image Correction & Enhancement)
  - Digital ROC™ (Reconstruction of Color)
  - Digital GEM™ (Grain Equalization & Management)




Film Scanner

# SUPER COOLSCAN 8000 ED

## The multi-format, multipurpose scanner that rivals drum scans

# Simply Stunning

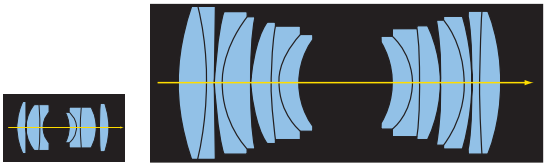
**Nikon's SUPER COOLSCAN 8000 ED 120/220-format Film Scanner delivers true 4,000 dpi and 16-/8-bit data output, sending it straight to the top of its class. Enjoy new levels of image definition as well as accuracy and brilliance in color reproduction. Playing a huge role in the supreme quality of this new SUPER COOLSCAN 8000 ED is Nikon's new SCANNER NIKKOR ED lens — born, naturally, of the most advanced optical technology anywhere. What's more, the SUPER COOLSCAN 8000 ED is the 120/220-format film scanner that incorporates Digital ICE3™.**

## 4,000 dpi, 120 million pixels/color, 14-bit A/D converter

The SUPER COOLSCAN 8000ED is a full-range 4,000 dpi optical resolution film scanner that can scan 35mm, medium-format (120/220) and other types of film. The image data is sent through a 14-bit A/D converter which features a 16-/8-bit output and 120 million pixels/color ($4x10^{12}$ colors) for realistic color representation.

## Large-diameter SCANNER NIKKOR ED lens

Nikon's revolutionary new lens incorporates 14 elements in 6 groups, including 6 ED (Extra-low Dispersion) glass elements. As Nikkor lenses before it, the SCANNER NIKKOR ED lens greatly reduces chromatic aberration and image distortion, and delivers sharp images. The lens brings out the true brilliance of the image.



Conventional 35mm film scanner

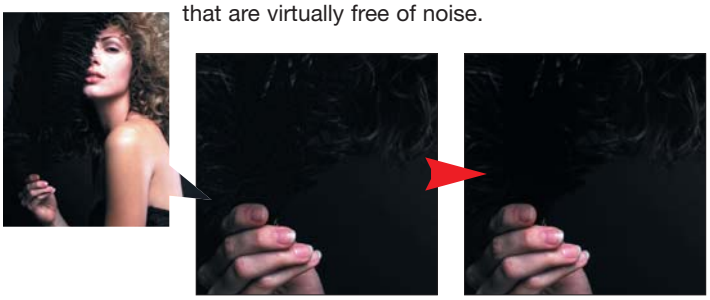
Lens cross-sectional view

## New setup function for color negative film

This new scene analysis function, featuring intelligent tone and color auto-correction, enables quality reproduction of orange-tinted negative film.

## Multi-sample scanning

Film images comprise such a large amount of data that one scan may not be sufficient to bring out their true color and detail. The Nikon SUPER COOLSCAN 8000 ED offers multi-sample scanning capability of up to 16 times, ensuring beautifully reproduced images that are virtually free of noise.



Multi-sample scanning OFF

Multi-sample scanning (16 times)

*In order to clearly present the benefit of the function, the gamma value of the images have been adjusted.*

## 10,000-pixel, three-line, monochrome linear CCD

This low-noise, 10,000-pixel, three-line, monochrome CCD offers a wide dynamic range that supports high-resolution performance.

## Rod dispersion LED illumination

The combination of LED and a rod causes dispersed lighting, which enables the reproduction of smoother picture grain.
Unlike halogen or fluorescent lamp lighting, the LED only illuminates during scanning, protecting the film from heat-related damage.

# Fascinatingly Flexible

## Multiple holders

An impressive array of versatile film holders enables users to scan a variety of film formats:

**35mm STRIP FILM HOLDER FH-835S**

**Strip type**
- 35mm strip film with 1 to 12 frames, up to 2 strips

**35mm MOUNTED FILM HOLDER FH-835M**

**Mount size**
Width: 49–50.8mm (1.9–2.0 in.)
Thickness: 1.0–3.2mm (0.04–0.13 in.)

**120/220 STRIP FILM HOLDER FH-869S**

**Strip type**
- 6 x 4.5 strip film with 1 to 4 frames
- 6 x 6 strip film with 1 to 3 frames
- 6 x 7/8/9 strip film with 1 to 2 frames
- 59 x 82mm electron microscope film

**120/220 MOUNTED FILM HOLDER FH-869M *(optional)***

**Film type**
- 6 x 4.5/6 film with 1 frame
- 6 x 7/8/9 film with 1 frame

**120/220 STRIP FILM HOLDER WITH GLASS FH-869G *(optional)***

**Strip type**
- 6 x 4.5 strip film with 1 to 4 frames
- 6 x 6 strip film with 1 to 3 frames
- 6 x 7/8/9 strip film with 1 to 2 frames
- 59 x 82mm electron microscope film

**120/220 FILM ROTATED HOLDER WITH GLASS FH-869GR *(optional)***

**Strip type**
- 6 x 4.5 strip film with 1 to 4 frames
- 6 x 6 strip film with 1 to 3 frames
- 6 x 7/8/9 strip film with 1 to 2 frames
- 59 x 82mm electron microscope film
- 24 x 58mm panoramic film
- 24 x 65mm panoramic film

**16mm FILM HOLDER FH-816 *(optional)***

**Film type**
- 16mm film up to 3 strips

**MEDICAL SLIDE HOLDER FH-8G1 *(optional)***

**Slide glass type**
- 26 x 76mm preparates (slide glass) up to 3 frames

# Surprisingly Swift

## Quick AF & Quick Preview

Quick AF is automatically initiated once the appropriate film format for scanning has been detected, and image preview and image exposure correction capabilities are made possible by Quick Preview.

## Enhanced scanning speed

Scanning is accelerated by the incorporation of an ASIC (Application Specific Integrated Circuit). The 3-line monochrome CCD reads three lines simultaneously, significantly quickening the scanning process.

## Batch scanning

The ability to scan multiple frames in one shot will save you the time it used to take to set the film.

## IEEE 1394 interface

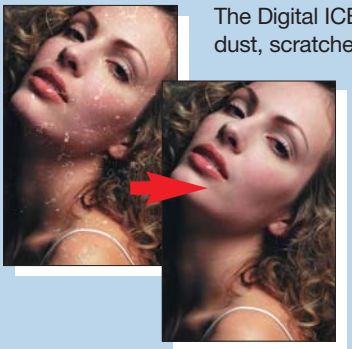
The Nikon SUPER COOLSCAN 8000ED uses the IEEE1394 interface, enabling transfer of data at up to 400Mbit/sec. (max.). And the interface is designed for “Plug-and-Play” simplicity, making setup a breeze.

## Digital ICE³™ (Digital ICE cubed)

Professionals, and anyone who has positive or negative images that are faded or scratched, now have the power to bring them back to life. Digital ICE³™ is a suite of digital tools designed for color correction and enhancement of images. Digital ICE™, Digital ROC™ and Digital GEM™ work to reconstruct original color and equalize image grain.
You can use all functions together, combine any two, or use any of them independently.

*Europe 1963* — **with ICE³**

### 1 Digital ICE™ (Image Correction & Enhancement)



The Digital ICE™ rids images of fingerprints, dust, scratches and more. In addition to the three RGB channels that pick up the colors of the image, there’s a fourth defect channel that detects damage on the surface of the film and makes necessary repairs digitally.

**with ICE**

*Digital ICE™ applies to color film and color process monochrome film, but is not recommended for use with Kodachrome or monochrome film.*

### 2 Digital ROC™ (Reconstruction of Color)

This function brings faded color back to life, determining the ideal color tone for each individual image. You can set the degree to which the color is adjusted to suit your personal preference.

*Amsterdam 1963* — **with ROC**

### 3 Digital GEM™ (Grain Equalization & Management)

Digital GEM™ equalizes the image grain and smooths out the overall tone of the image. You can set the degree of grain equalization to suit your personal preference.

**with GEM**

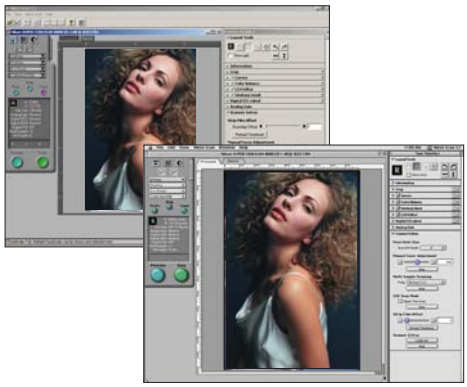
*Digital ICE³ (Digital ICE cubed) is Digital ICE, Digital ROC and Digital GEM.*
*Digital ICE³ (Digital ICE cubed), Digital ICE, Digital ROC and Digital GEM are trademarks of Applied Science Fiction Inc.*
*Digital ICE³ (Digital ICE cubed) are technologies developed by Applied Science Fiction Inc.*

## Driver software Nikon Scan 3

The SUPER COOLSCAN 8000 ED is an easy scanner to use, giving you the comprehensive control you need for professional results. A completely redesigned Photoshop™ plug-in for Mac OS™, and a TWAIN source for Microsoft® Windows® users are bundled with the scanner. The new Nikon Scan 3 driver runs with any Photoshop™ or TWAIN-compatible image-editing software, as well as stand-alone.

**Easy Scan**
From simple scanning to advanced editing, even a beginner can use Nikon Scan 3 thanks to the easy-to-understand GUI (graphical user interface). The image display can be resized and drag-and-drop can be performed. Preview, rotation, reversal, enlargement/reduction display, trimming, resolution setting, and various adjustments can also be done.

**Thumbnail Scan**
Nikon Scan 3 is capable of scanning sheet films as well as strip films. It can display thumbnails at high speed, enabling the selection of any frame or continuous scanning of all frames. You can select and display any frame by entering frame numbers. Batch scanning is also available for any number of frames.



# Film Scanner LS-8000 ED Specifications

## Reading system/Optics

**Film type**
- Medium (120/220) format
  Positive and negative, color and monochrome, 6 x 4.5, 6 x 6, 6 x 7, 6 x 8, or 6 x 9 film may be scanned in strips of four (6 x 4.5), three (6 x 6) or two (6 x 7, 6 x 8, 6 x 9) frames, or as 1.0 – 3.2mm mounted slides.
- 35mm (135) format
  Positive and negative, color and monochrome. Film maybe scanned in one or two trips of up to six frames each, or as 35mm slides using 1.0 – 3.2mm mounts. Up to three frames of panorama film with frame sizes of 24 x 58mm or 24 x 65mm can also be scanned.
- 16mm
  Positive and negative, color and monochrome
- Electron microscope
  Positive and negative, color and monochrome, 59 x 82mm
- Preparates (slide glass for microscope)
  Prepared slides 26 x 76mm

**Reading resolution** 4,000 dpi (max.)

**Types of film adapter and holder**
35mm STRIP FILM HOLDER FH-835S
35mm MOUNTED FILM HOLDER FH-835M
120/220 STRIP FILM HOLDER FH-869S
120/220 MOUNTED FILM HOLDER FH-869M (optional)
120/220 STRIP FILM HOLDER WITH Glass FH-869G (optional)
120/220 FILM ROTATED HOLDER WITH Glass FH-869GR (optional)
16mm FILM HOLDER FH-816 (optional)
MEDICAL SLIDE HOLDER FH-8G1 (optional)

**Scanning area (max.)** 63.5 x 88mm (10,000 x 13,860 pixels)

**Effective area (size/pixels)**

| | |
|---|---|
| FH-835S: | 25.4 x 37.5mm (4,000 x 5,904) |
| FH-835M: | 37.5 x 25.6mm (5,905 x 4,032) |
| FH-869S/FH-869G: | |
| (6 x 4.5) | 56.9 x 42.5mm (8,964 x 6,696) |
| (6 x 6) | 56.9 x 56.9mm (8,964 x 8,964) |
| (6 x 7) | 56.9 x 70.0mm (8,964 x 11,016) |
| (6 x 8) | 56.9 x 77.5mm (8,964 x 12,204) |
| (6 x 9) | 56.9 x 83.7mm (8,964 x 13,176) |
| (Electron microscope film) | 56.9 x 83.7mm (8,964 x 13,176) |
| FH-869GR: | |
| (6 x 4.5) | 60.3 x 45.0mm (9,496 x 7,092) |
| (6 x 6) | 61.6 x 61.7mm (9,700 x 9,720) |
| (6 x 7) | 62.8 x 74.5mm (9,889 x 11,736) |
| (6 x 8) | 63.4 x 80.0mm (9,984 x 12,600) |
| (6 x 9) | 63.5 x 88.0mm (10,000 x 13,860) |
| (Electron microscope film) | 56.9 x 83.7mm (8,964 x 13,176) |
| (24 x 58mm panoramic film) | 31.0 x 61.7mm (4,876 x 9,720) |
| (24 x 65mm panoramic film) | 31.6 x 68.8mm (4,972 x 10,836) |
| FH-869M: | |
| (6 x 4.5, 6 x 6) | 56.9 x 56.9mm (8,964 x 8,964) |
| (6 x 7, 6 x 8, 6 x 9) | 56.9 x 83.7mm (8,964 x 13,176) |
| FH-816: | 15.0 x 21.5mm (2,362 x 3,384) |
| FH-8G1: | 46.0 x 24.0mm (7,248 x 3,780) |

**Scanning system** Fixed-optical, movable-media parallel single-pass scanning system
**Light source** R, G, B, and D-LED Array
**Sensor** 10,000-pixel, three-line, monochrome linear CCD image sensor
**Imaging optics** SCANNER NIKKOR ED lens (14 elements in 6 groups including 6 ED glass elements)
**Focus** Autofocus and Manual focus

## Scanning/Signal processing

**Scanning time**
Approx. 55 sec. at 4,000 dpi (35mm, FH-835M)
Approx. 170 sec. at 4,000 dpi (6 x9, FH-869S)
(typical scanning time with display, Windows, 8bit, CMS on, positive film)

**Density range** 4.2
**Thumbnail scanning and batch scanning**
35mm strip film: 1 to 12 frames (2 strips)
35mm mount film: 1 to 5 frames
120/220 strip film (6 x 4.5 size): 1 to 4 frames
120/220 mount film: 1 to 2 frames
16mm film: 1 to 60 frames (3 strips)

**A/D conversion** 14 bits per color (RGB)
**Output data** 16 bits, 8 bits per color channel (user selectable)
**Digital ICE³™** Digital ICE™, Digital ROC™, Digital GEM™
**Multi-sample scanning** 2, 4, 8, 16 times (user selectable)
**Color Management System** Built-in

## Data transfer

**Interface** IEEE1394 (6 pin)

## Operating conditions

**Power requirements** 100~240VAC, 0.3~0.2A, 50/60Hz
**Environmental**
**Temperature:** 10~35°C (50~95°F)
**Relative humidity:** 20~60% RH (non-condensing)
**Dimensions (W x D x H)** 245 x 485 x 200mm (9.6 x 19.1 x 7.9 in.)
**Weight (approx.)** 9kg (19.8 lbs.)

## Others

**Accessories included*** 35mm STRIP FILM HOLDER FH-835S,
35mm MOUNTED FILM HOLDER FH-835M,
120/220 STRIP FILM HOLDER FH-869S,
IEEE 1394 board, IEEE 1394 cable (6 pin-6 pin),
Nikon Scan 3 Driver Software,
AC power cord, Manual

**** Accessories may differ in each country or region.***

## Nikon Scan 3 Driver Software Requirements

| | For Macintosh® | For Windows® |
|---|---|---|
| **CPU** | Power PC G3 or later (Power PC G4 or later recommended) | MMX Pentium 166 MHz or better (Pentium II or better recommended) |
| **OS** | System 8.6 to 9.1 | Windows 98 Second Edition (SE)*, Windows Me, Windows 2000 Professional |
| **RAM** | 128 MB (256 MB or more recommended)** | |
| **Hard-Disk Space** | 20 MB free for installation with additional 20 MB available while Nikon Scan is running (200 MB or more recommended, or 400 MB or more when using Digital ROC™ or Digital GEM™) | |
| **Video Resolution** | 640 x 480 pixels or greater with 16-bit RGB color (thousands of colors) or more | |
| **Interface** | FireWire® Support 2.3.3 or later recommended †<br>Built-in ports supported from FireWire® Support 2.0.<br>If you are using an old-model (beige) G3 desktop computer not equipped with an IEEE 1394 board, you can install the board that is provided. | Only boards compliant with Open Host-Controller Interface (OHCI) are supported.†<br>If your computer has an empty PCI slot and is not equipped with a suitable board, you can install the board that is provided. |
| **Miscellaneous** | CD-ROM drive required for installation | |

* The IEEE 1394 driver update provided with Nikon Scan is required when using with Windows 98 SE.

** Memory requirements may increase depending on scanning conditions (e.g. holders, scanning images, scanning size, resolution, bit rate, batch scanning, use of Digital ROC, and other digital processing settings). Keeping available as much memory as possible is recommended.
Additional memory is required to run the host application when Nikon Scan functions as a TWAIN source or as an acquire plug-in. See the manual for further details.

† The scanner may not function as expected when connected to an IEEE 1394 hub.



**WARNING** TO ENSURE CORRECT USAGE, READ MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT. SOME DOCUMENTATION IS SUPPLIED ON CD-ROM ONLY.

ISO 9001 Certified
NIKON CORPORATION Imaging Company

**NIKON CORPORATION**
FUJI BLDG., 2-3, MARUNOUCHI 3-CHOME, CHIYODA-KU, TOKYO 100-8331, JAPAN
***www.nikon-image.com/eng/***

Printed in Japan Code No. 6CE53070 (0106-96.6)K

E