



picture your future...

FG High Speed Color Print Films



FG400
FG800

Ferrania
Imaging Technologies

introducing the FG generation

Picture your future ... the future of color print films is available today.

Brilliant colors, beautiful tones, fine grain, image perfection ... These are just a few of the qualities which describe the new FG family of films. The result of a multi-million dollar research and development program, these bright, bold, new-generation films represents a major breakthrough in color print film technology.

The technological innovations incorporated in the new FG films include enhanced emulsion stability, optimized spectral sensitivity and new patented silver halide crystal formation techniques yielding faster speeds, finer grain and sharper pictures. Pictures produced from these films today and years from today will exhibit the same true-to-life colors your customers will treasure.

Demanding amateur and professional photographers alike will appreciate FG color print film's brighter, more saturated colors; its excellent image quality, contrast and sharpness; and its forgiving exposure latitude which produces better pictures even when underexposed.

Processors, photofinishers, mini and microlabs will appreciate FG's improved handling characteristics, processing and printing compatibility and excellent enlargement capability.

Ferrania Imaging Technologies FG family of films: quality, consistency, reliability and value. We deliver everything you would expect from a great film.



innovations that will enhance your professional image

Brighter colors, natural skin tones

Advanced silver halide formulations with a high speed-to-grain ratio give FG400 and FG800 color print films superior color and optical qualities. New high-efficiency emulsions with high-performance color formers give you rich, vivid colors.

Excellent color saturation, contrast

New "Extra" Developer Inhibitor Release (DIR) couplers combined with innovative masking and high efficiency light filtration techniques ensure excellent color saturation and contrast making FG400 and FG800 both ideal "all light" condition films, and a perfect choice for use in single-use cameras.

Finer grain, increased sharpness, better enlargements

FG's new, patented core-shell laminar grain, based on special complexes of different halides, balances the highest speed with the smallest grain structures, produces exceptionally clear and sharp images with excellent reproduction of details even when enlarged.

Improved performance, consistent results

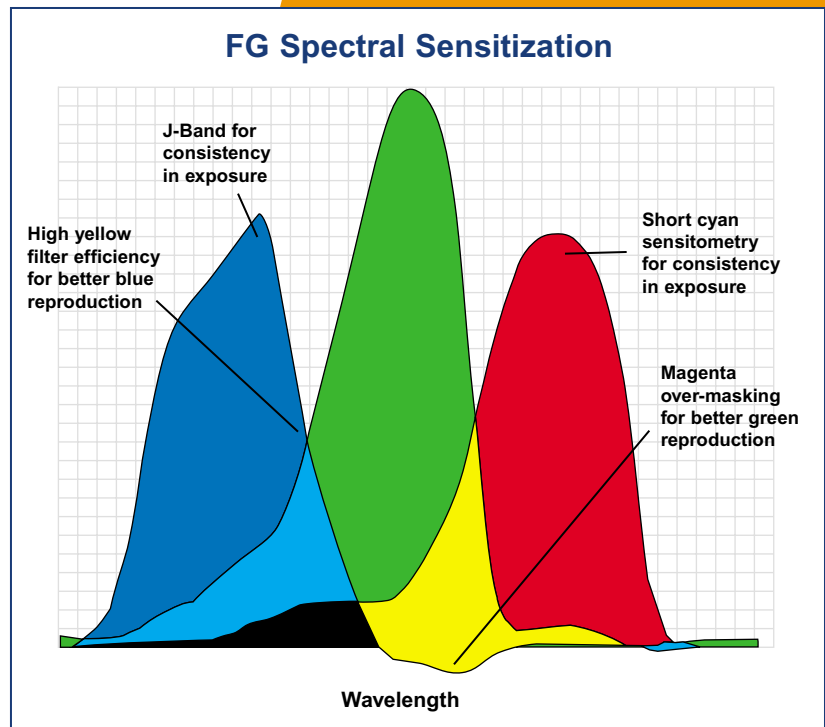
Optimized spectral sensitization provides excellent performance in a wide range of natural and artificial lighting conditions resulting in more consistent color balance in prints.

Wider exposure latitude

Efficient emulsions give FG400 and FG800 color print films a wide exposure latitude that considerably improves results in over or under exposures.

Enhanced processing latitude, dye stability, printing compatibility

FG films are designed to perform well even in marginal processing, environmental or handling conditions. Spectral sensitivities are aligned to current market conditions yielding consistent print quality.



product features

Features	Advantages	Benefits
<ul style="list-style-type: none">• Optimized film speeds	<ul style="list-style-type: none">• Work well in all light conditions — user friendly• Wider exposure latitude• Faster shutter speeds	<ul style="list-style-type: none">• Consumer: fewer underexposed frames; great films for low-light and action photography• Retailer: excellent results in single-use cameras• Laboratory: Increase in saleable prints — less waste
<ul style="list-style-type: none">• Finer grain and increased sharpness	<ul style="list-style-type: none">• Fine grain and detail at all levels of exposure• Good quality enlargements• Excellent reproduction of finer details	<ul style="list-style-type: none">• Consumer: sharper, higher detailed pictures; more opportunities for enlargements• Retailer/Laboratory: increase in reprints and enlargements
<ul style="list-style-type: none">• Enhanced tonal and color reproduction	<ul style="list-style-type: none">• Improved overall contrast• Excellent color saturation• New multi-dimensional depth effect	<ul style="list-style-type: none">• Consumer: superb detail in highlights/shadows; rich tonal range in flash scenes; bright colors and natural skin tones• Retailer/Laboratory: premium quality results
<ul style="list-style-type: none">• Optimized spectral sensitivity	<ul style="list-style-type: none">• Improved performance in a wide range of natural and artificial lighting conditions	<ul style="list-style-type: none">• Consumer: lifelike reproduction of subtle colors under a wide variety of outdoor lighting conditions (skylight, snow, etc.)• Retailer: increased customer satisfaction• Laboratory: good color results in prints from both tungsten and fluorescent illuminants — less waste
<ul style="list-style-type: none">• Improved aging and robustness characteristics	<ul style="list-style-type: none">• Enhanced stability of exposed and unexposed film; greater stability when exposed to vapors, high humidity and high temperatures	<ul style="list-style-type: none">• Consumer: better color consistency; more consistent results in marginal keeping and storage conditions• Retailer: tolerant to consumer mishandling• Laboratory: faster and more uniform printing
<ul style="list-style-type: none">• Greater printing compatibility	<ul style="list-style-type: none">• Closer alignment of spectral dye characteristics to market conditions	<ul style="list-style-type: none">• Consumer: improved picture quality• Laboratory: improved equipment integration for easier printer set-up and printing; consistent quality in minilabs; higher productivity
<ul style="list-style-type: none">• Greater processing latitude	<ul style="list-style-type: none">• Good performance in marginal processing conditions	<ul style="list-style-type: none">• Overall improvement in final product

general technical data

Exposure Characteristics

New emulsion technologies and patented silver crystal formation techniques have been developed and incorporated in these two new color print films; the high speed FG400 and the very high speed FG800. The results are films which will perform superbly in under-exposure situations meeting the high quality demands of general photography. The advanced multi-layered structure ensures an excellent latitude of exposure, good results in the range of -2 to +4 stops, and high image quality for all imaging situations even when used in an inexpensive camera at less than optimal settings. Both FG400 and FG800 are very user-friendly films.

Although the film is balanced for daylight illumination, new advanced spectral sensitization assures good results when exposed under various light sources including electronic flash, tungsten and fluorescent lighting. The film also performs well outdoors under diverse color temperature conditions such as late evenings, early mornings, sky light vs. sun light and snow scenes. These films are perfect for any photographer looking for an "all light conditions" solution.

Image Characteristics

The new patented crystal formation techniques provide much finer grain and increased sharpness. The advanced class of EXTRA-DIR couplers and color formers provide enhanced color saturation while maintaining natural skin tones and neutral gray scale reproductions in various lighting conditions. Advanced tonal linearity provides improved highlight and shadow detail.

New emulsion stabilizers yield improved processed film-keeping properties and provides, during periods of handling and storage, additional protection for the film from heat, humidity, light and damaging chemical fumes.

New printing characteristics match the most common color negative profiles used by processing labs for color and density correction.

Electronic Flash Exposure

Adjust the exposure setting according to the instructions provided with the flash unit. Determine the correct lens aperture (f/stop) by dividing the guide number by the flash — subject distance in feet or meters.

$$\text{Lens aperture (f-number)} = \frac{\text{Guide number}}{\text{Flash - Subject Distance (meters or feet)}}$$

Fluorescent Light Exposure

The light emitted by fluorescent tubes is generally deficient in some wavelengths resulting in prints exhibiting a green balance with standard printing procedures. Consequently, exposures made with fluorescent illumination require color corrections at the time of printing. Due to the variety of fluorescent lighting color temperatures, it is not possible to recommend a particular compensation filter or set of filters.

Reciprocity

This film can be used in the range of 1/10,000 to 10 seconds without changes in speed and color balance. For exposures longer than 10 seconds, exposure compensation and filtration may be required depending on the type of light illuminating the subject.

Processing

Both FG400 and FG800 films are intended for various process C-41 cycles and chemicals. To ensure optimum color negative quality, the process should be monitored carefully using C-41 process control strips.

Printing

Excellent standard size prints and enlargements on color paper can be obtained from FG400 and FG800 films using conventional enlargers or automated printing equipment. For optimal printing results with automatic printers, a dedicated channel set up with a printer control tool manufactured with this film is recommended. The extended DX barcode enables the printer to identify the film and print it on the dedicated channel.

The DX code of FG400 is 87-4 (Product Code = 87, Generation Specifier = 4). The DX code of FG800 is 87-8 (Product Code = 87, Generation Specifier = 8). Processed films may be visually identified by alternating cyan-green dots and pluses (+++++) between perforations and a human readable DX code on the top edge of the film (87-4 or 87-8).

Storage

Before processing

Always store unexposed or exposed films in a cool, dry place in moisture-proof containers, as all color films are sensitive to heat, humidity and fumes emitted from chemicals. In hot humid climates or for long term storage, keep the films in a moisture-proof container at 10°C/50°F or lower.

- Do not open the original sealed container until just before using the film.
- Use film before the expiration date printed on the box.
- Avoid leaving a partially exposed film in the camera for a long period of time.
- Process the film promptly after exposure to avoid any image deterioration.
- Avoid storing unpacked film or loaded cameras in high humidity conditions or where the emission of exhaust gases and formaldehyde fumes may occur, as these are very harmful to photographic films (aldehyde fumes are often emitted from new furniture wood glues, laminate adhesive, foam insulation, sprays, etc.).

After processing

The dyes in FG400 and FG800 films are among the most stable used for sensitized material. Yet, like all organic dyes, they may change with time. Humidity, heat and light are the most critical factors in the storage of processed color negatives. Always keep processed negatives in a cool, dry and dark place. It is advisable to store processed film at a relative humidity not exceeding 40% and a temperature not exceeding 20°C/68°F to avoid film deterioration.

Handling

Always load and unload your camera in subdued light. Loading film in extremely low temperatures may cause the film to break.

Diffuse RMS Granularity

Microdensitometric measurement characteristics:

Aperture diameter: 40µm

Magnification: 12x

Sample Density Level: 1.0 above minimum density

Diffuse Granularity FG400: 4.5 (RMS)

Diffuse Granularity FG800: 5.0 (RMS)

Note: Before using our product please ensure that it is suitable for your intended use. All questions of liability relating to this product are governed by the terms of the sale, subject, where applicable, to the prevailing law. The sensitometric curves and data represent product tested under the conditions of exposure and processing specified. They represent production coatings and, therefore, do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications which must be met by Ferrania Imaging Technologies. Ferrania Imaging Technologies reserves the right to change and improve product characteristics at any time.

specific technical data

FG400

Characteristics

Ferrania Imaging Technologies FG400 is a high speed, daylight balanced color print film with a high nominal speed rating of ISO 400. FG400 is designed for extended picture-taking opportunities in a variety of conditions and situations, and will provide excellent results in compact, SLR and single-use cameras. FG400 color print film has great dimensional depth, exceptional sharpness, fine grain, vivid color saturation, high color fidelity, rich gradation and fine detail.

Speed

ISO 400/27° — FG400 has been designed to provide good picture-taking opportunities in "all light" conditions especially from normal to low "available light" levels and will extend effective flash distance ranges. The film also provides good picture-taking opportunities with subjects requiring high shutter speeds for action photography and hand-held telephotography, and allows for smaller aperture openings for greater depth of field.

FG800

Characteristics

Ferrania Imaging Technologies FG800 is a very high speed advanced technology, daylight balanced color print film with a nominal speed rating of ISO 800. FG800 will provide excellent results in compact, SLR and single-use cameras. The film may be used in a variety of shooting conditions and situations including all light levels. This film incorporates new technologies which will deliver superior grain and image characteristics in the 800 speed class of films.

Speed

ISO 800/30° — FG800 has been designed to provide very good picture-taking opportunities in "all light" conditions with superior performance from normal to low "available light" levels. The film also provides excellent picture-taking opportunities with subjects requiring available light exposure, high shutter speeds, good depth of field or hand-held telephotography.

FG400 & FG800

Exposure

Both FG400 and FG800 films are balanced for daylight or equivalent light conditions (5500K). When exposed under tungsten or fluorescent lighting, the use of an appropriate filter is recommended.

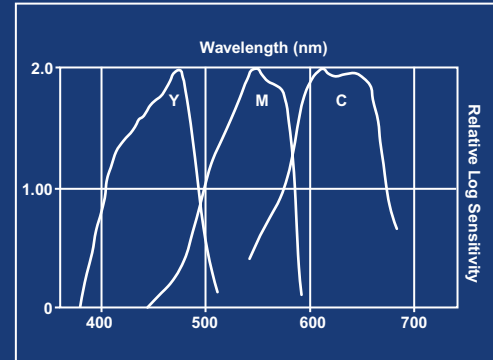
Daylight Exposure

(Exposure time 1/500 sec.)

Use exposures shown in center chart at right from two hours after sunrise to two hours before sunset for average front-lit subjects.

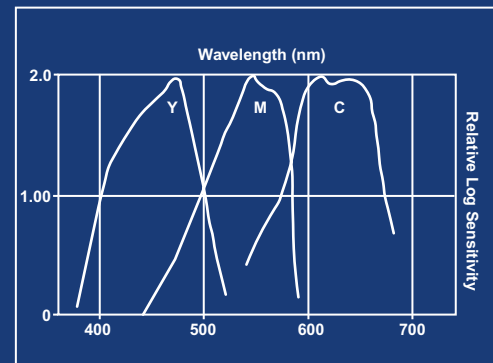
FG400

Spectral Sensitivity Curves



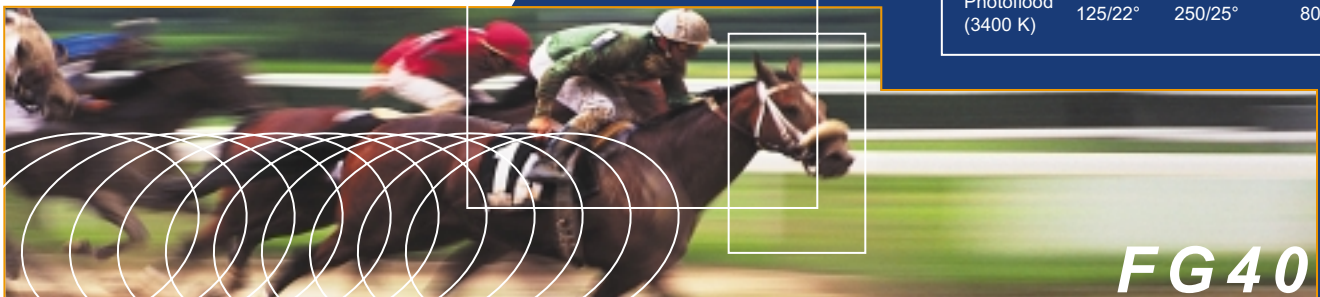
FG800

Spectral Sensitivity Curves



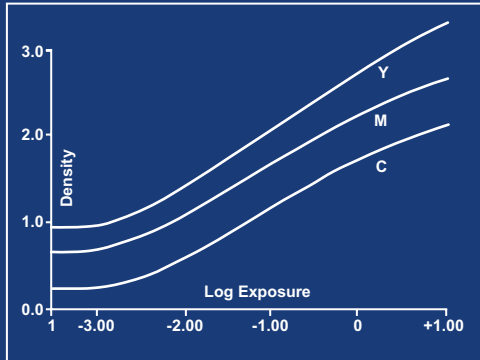
Exposure

Light source	FG400 exposure index	FG800 exposure index	Filter requirements
Daylight or Electronic flash	400/27°	800/30°	none
Tungsten (3200 K)	100/21°	200/24°	80 A
Photoflood (3400 K)	125/22°	250/25°	80 B

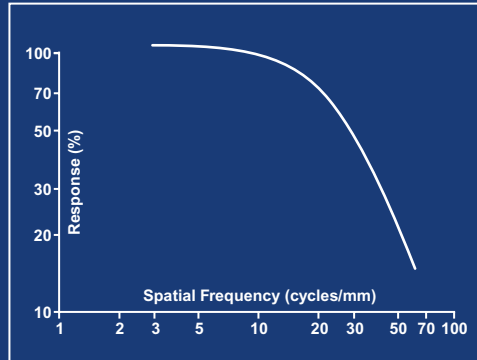


FG400
FG800

FG400
Sensitometric Characteristic Curves

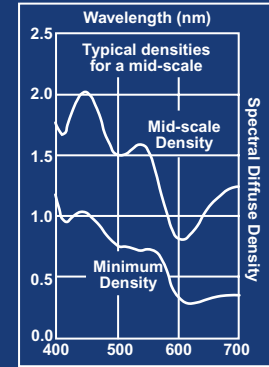


FG400
Modulation Transfer Function

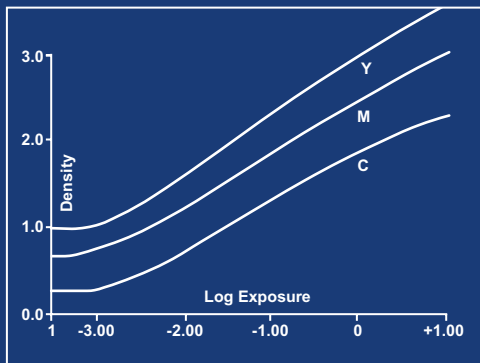


Exposure: Daylight Densitometry: Visual

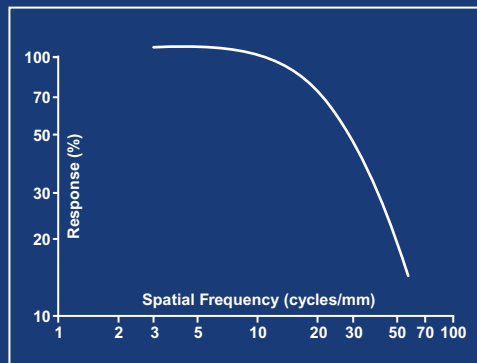
FG400
Spectral Dye Density Curves



FG800
Sensitometric Characteristic Curves

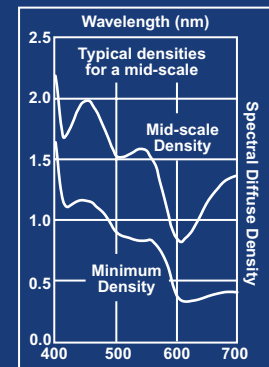


FG800
Modulation Transfer Function



Exposure: Daylight Densitometry: Visual

FG800
Spectral Dye Density Curves



Daylight Exposure (1/500 sec.)

Lighting Conditions	FG400 Lens Aperture	FG800 lens Aperture
Bright sunlight (sand or snow)	f/16	f/22
Bright sunlight (distinct shadows)	f/11	f/16
Weak hazy sun (soft shadows)	f/8	f/11
Cloudy bright (no shadows)	f/5.6	f/8
Heavy overcast	f/4	f/5.6
Open shade	f/4	f/5.6

Note: For side or back-lit subjects with shadow detail, increase lens aperture by 1/2 or 1 f/stop.

Existing Light Exposure

Indoor	Shutter Speed	FG400 Lens Aperture	FG800 Lens Aperture
Available light from window on bright day	1/60	f/2.8	f/4
With bright tungsten light	1/30	f/2.8	f/4
With average tungsten light	1/30	f/2	f/2.8
With bright fluorescent light	1/60	f/4	f/5.6
Circus, sport events in white lights*	1/125	f/2.8	f/4
Museum, auditorium with diffuse low light	1/30	f/2	f/2.8
Outdoor	Shutter Speed	FG400 Lens Aperture	FG800 Lens Aperture
Twilight, scenes with no artificial lights	1/60	f/2.8	f/4
Streets at night with bright light	1/60	f/2.8	f/4
Bright store windows, neon signs at night	1/60	f/4.0	f/5.6
Floodlit sport events*	1/125	f/2.8	f/4
Amusement parks, fairs at night	1/30	f/2.8	f/4
Monuments at night with white floodlights	1/30	f/2	f/2.8

* Use 1/250 second for ice sports.

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