



# FUJICHROME 64 Professional T RTP

## NEW IMPROVED TYPE

FUJICHROME 64 Professional T RTP <NEW IMPROVED TYPE> is a tungsten type coupler incorporated color reversal film with an ISO speed of 64. The former RTP highly saturated color reproduction characteristics and excellent extended exposure time suitability have been retained while gray gradation reproduction has been improved as has suitability to push-processing.

- **High Clarity Highlights and Subtly Differentiated Gray Gradation**

Highlight to deep shadow area gray gradation reproduction results in the highest fidelity. Further because of enhanced color reproduction brilliance, this film is optimally suited to the subtle texture and image expression requirements of product photography as well as illustration and duplication copy work while at the same time being highly appropriate to the broad needs of commercial photography.

- **Excellent Push-Processing Suitability**

Because color balance changes have been greatly reduced even with a full stop of push-processing, such allows for the fine contrast adjustments required of distinctive photographic situations.

- **Excellent Extended Exposure Suitability**

As with the former RTP, because this material retains excellent extended exposure time reciprocity characteristics resulting in highly limited speed losses and color balance changes, lowered level illumination photography as well the requirements of greater depths of field in product and interior photography, can all be met. However, for long exposures of greater than 32 seconds, speed and color balance compensations will be required.

- **Excellent Suitability to Photomechanical Reproduction and Color Print Sensitized Materials**

The same color dye spectral absorption characteristics and grain quality of the RTP material have been retained but because of the smooth gray gradation reproduction characteristics, very high quality printing materials and color prints will result.

This film retains characteristics which are optimally suited to the requirements of product photography, interior and other forms of architectural photography, as well as to the needs of illustration and close-up copy work. Further these characteristics are also highly suited to the requirements of science, medicine, and industrial research representing the photomicrography field.

### FILM SIZES AND BASE MATERIAL

<b>Roll Film</b>	120 135 36-exp. Cartridge Contained 35 mm 30.5 m (100 ft), Darkroom Loading	Cellulose Triacetate
<b>Sheet Film</b>	4 × 5 in. (10 sheets and 50 sheets) 8 × 10 in. (10 sheets)	

**SPEED****ISO 64/19° Tungsten Type (3100K), 4 Second Exposure Time**

For the sheet film version of this film, the recommended speed and color compensation filtration values for tungsten (3100K) light source exposure are printed on the box, but because of differences in photographic equipment and processing conditions, there will be cases where optimum results will not be derived. When optimum results are required, make use of these initial values as a basis for a series of test exposures.

**LONG-EXPOSURE CORRECTION**

No exposure or color balance reciprocity compensation is required if exposure times remain within the 1/15 to 16 second range. However, in cases where 32 seconds or more are necessary, reciprocity related color balance and exposure compensation are required to reduce the adverse effects of such extended exposures.

**Exposure and Color Balance Corrections for Reciprocity Failures**

Exposure Time (sec.)	1/4000 to 1/30	1/15 to 4	8	16	32	64	256
Color Compensating Filters	Not Recommended	None	None	None	None	2.5B	2.5B
Exposure Corrections*					+1/3 stop**	+1/2 stop**	+2/3 stop**

\*Exposure correction values include color compensating filter exposure factors.

This table provides compensation values relative to unfiltered exposure meter readings.

\*\*The "+" designations mean the lens diaphragm should be opened by the indicated f values.

**EXPOSURE UNDER VARIOUS LIGHT SOURCES**

This film is designed to render optimum results when exposed under photographic tungsten lamp illumination. If the use of differing light sources is unavoidable then the following compensation orientations will have to be provided.

**Compensations for various light sources**

Light Sources	Color Compensating Filters	Exposure Corrections	
Tungsten (3100K)	None	None	
Clear Photo Lamps	LBA-2* <sup>1</sup> (No. 81A)* <sup>2</sup>	+ 1/3 stop	
Daylight (5500K)	LBA-12 + LBA-2* <sup>1</sup> (No. 85B)* <sup>2</sup>	+ 1 stop (+ 2/3 stop)	
Flourescent Lamps	Warm White (WW)	20R	+ 1/2 stop
	Cool White (CW)	LBA-12* <sup>1</sup> (or 85B)* <sup>2</sup> + 30M* <sup>3</sup> + 20R* <sup>3</sup>	+ 1 1/2 stops
	Daylight (D)	LBA-12* <sup>1</sup> (or 85B)* <sup>2</sup> + 40R* <sup>3</sup> + 10M* <sup>3</sup>	+ 2 stops
Clear Flushbulbs	LBA-4* <sup>1</sup> (No. 81C)* <sup>2</sup>	+ 1/3 stop	

\*<sup>1</sup> Fuji Light Balancing Filter

\*<sup>2</sup> Kodak Wratten Filter

\*<sup>3</sup> The use of Fuji Color Compensating Filters (or Kodak CC Filters) is recommended.

\*<sup>4</sup> Exposure correction values include color compensating filter exposure factors.

### Tungsten Lamps

Photographic tungsten lamps and clear photo lamps are to be used at specified electrical voltages. The color quality of incandescent lamps will vary with manufacture and operating voltages while color and intensity changes will vary with total operating periods and with the diffusers and reflectors used, thereby requiring test exposures.

Since household tungsten lamps have generally low color temperatures, it will be necessary to use color temperature conversion filters such as LBB-2 or No. 82A.

### Daylight

Daylight and general electronic flash exposures can be made utilizing the compensation orientations indicated in the table above. However, for high color temperature exposures such as those made under bright sun or open skies, LBA-16 (or No. 85B + No. 81A) filters must be used, while for low color temperature conditions such as exposures made under morning or evening twilight conditions, an LBA-12 (or No. 85) filter should be used.

### Fluorescent Lamps

Even for fluorescent lamps of the same type, color renditions may differ with manufacture, use duration, reflector, diffuser and lamp fixture type difference.

### Mixed Light Sources

Exposures under mixed light sources (especially mixed daylight and tungsten sources) are not recommended but should such be unavoidable, the basic orientation is to provide compensation filtration relative to the predominant light source.

### Other Light Sources

When using metal halide lamps, mercury lamps, and fluorescent lamps other than those listed in the preceding table, provide for initial test exposures so as to determine the best filter and exposure time compensation combinations.

## EXPOSURE PRECAUTIONS

When using artificial light from such sources as electronic flash, photoflood lamps, fluorescent lamps, tungsten lamps, mercury lamps and the like, it should be remembered that effective light intensity and color quality vary with the type or brand of lamp or lighting unit, the operating voltage, and with cumulative use durations. It is also well to remember that similar changes in effective light intensity or color quality may be caused by characteristic differences in auxiliary lighting equipment such as reflectors and diffusers.

## FILM HANDLING

- Film should be exposed before the expiration date indicated on the film package and then processed promptly.
- Film that has been placed in cold storage should be allowed to stand for at least one hour after removal to reach room temperature. If the film package is opened before room temperature is reached, condensation will degrade the film.
- When loading or unloading roll film, care should be exercised in avoiding exposure to direct sunlight. If there is no shade where film can be loaded or unloaded in subdued light, turning one's back toward the sun will allow loading and unloading under one's own shadow.
- Camera loaded film or film holder should be exposed and processed as promptly as possible.

- Under certain conditions the X-rays equipment used to inspect carry-on baggage at airport terminals will adversely affect photographic film (causing fogging). The adverse effects of this are increased with the intensity of the X-rays, the sensitivity of the film, and the cumulative number of inspection exposures.  
Therefore it is recommended that at each inspection the film be removed from the baggage and that airport security personnel be asked to inspect the film visually.
- Film fogging may occur in hospitals, factories, laboratories, and other locations using X-rays and other radiation sources.

## FILM STORAGE

### Unprocessed Film Storage

When exposed or unexposed film is stored under high temperature and humidity conditions, it will not only sustain changes in such photographic properties as film speed and color balance but also certain physical changes. Formalin vapors or other harmful gases can also produce undesired changes, in photographic properties. If proper care is not exercised when storing unprocessed film, satisfactory performance may not be realized even when used before the expiration date. To avoid such problems, care should be exercised as suggested below.

- **Storage Locations and Temperatures**

- Refrigerator : Below 15°C (59°F)
- Extended Term Storage
- Freezer : Below 0°C (32°F)

For purposes of refrigerated storage, opened film should be placed in polyethylene or vinyl bags.

- Film loaded cameras should not be left in hot, humid locations or in places where they may be exposed to harmful gases. Formalin vapors may be released from the bonding agents used in new building materials and furniture. Care is required in avoiding such surroundings.

### Processed Film Storage

Processed films are subject to color fading and discoloration from light (especially ultra-violet rays), high temperatures and humidity. To avoid the adverse effects of light, heat and moisture, it is recommended that processed film should be kept in mounts or sleeves and stored in dry, cool and dark locations where there is good ventilation.

- **Recommended Storage Conditions**

- Temperature: Below 25°C (77°F), Humidity: 30 to 60% RH
- Extended Duration Conditions
- Temperature: Below 10°C (50°F), Humidity: 30 to 50% RH

- Avoid direct sunlight and store the film in a dark place.

**NOTE** As with all color dyes, those used in this film will discolor or fade with time.

## PROCESSING

This film is intended for processing in Fuji Film Process CR-56, or Process E-6.

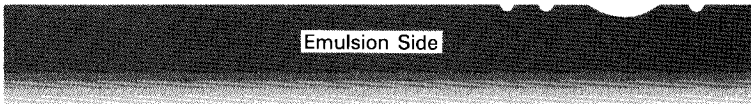
## CHECKING FILMS

A color viewer with and ISO adjusted light source should be used for checking original and duplicate films because the characteristics and brightness levels of the viewer substantially influence discernment accuracy.

**NOTE** The ISO standard (ISO/DP3664.2) requires that the reference light chromaticity be CIE illuminant D50 (D: Daylight), and that the relative color temperature be 5000K, the average luminance be  $1300 \text{ cd/m}^2 \pm 300 \text{ cd/m}^2$ , the luminance uniformity be 75% or more, the light diffusion be 90% or more, and the average color rendition value be Ra90 or more, as measured at the viewer surface. For accurate checking of color transparency films, the use of a reliable manufacturer's viewer, and/or preliminary confirmation of the above conditions are recommended.

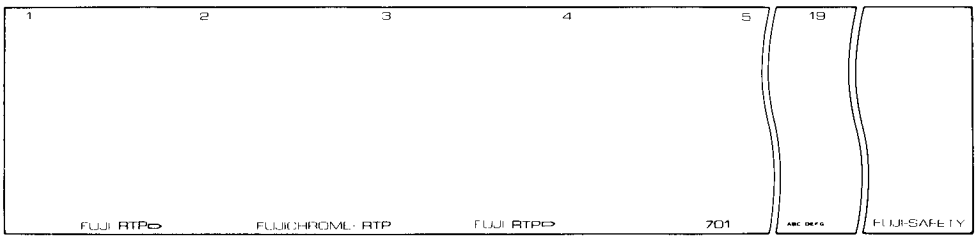
**SHEET FILM  
CODE NOTCH**

A code notch is cut into the sheet film edge for differentiating sheet film under total darkness conditions. When sheet film is placed so that the code notch is located in the upper right-hand corner, emulsion side will be facing forward.



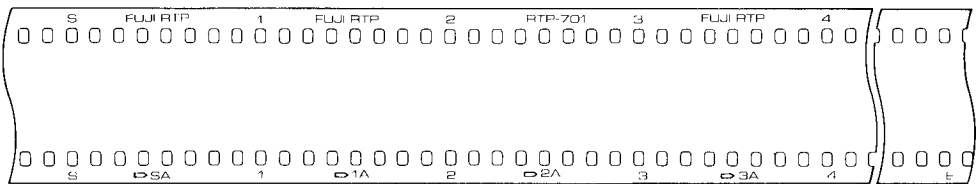
**ROLL FILM  
EDGE MARKINGS**

**120 Size Film**



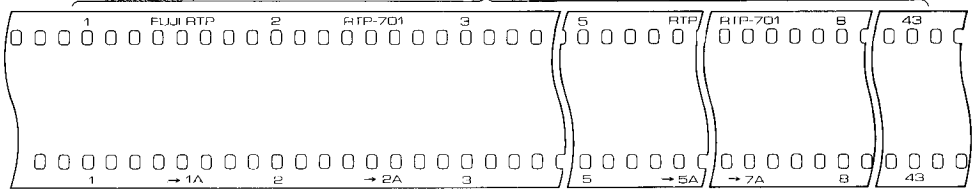
These designations are repeated along the film edge.

**135 Size Film**



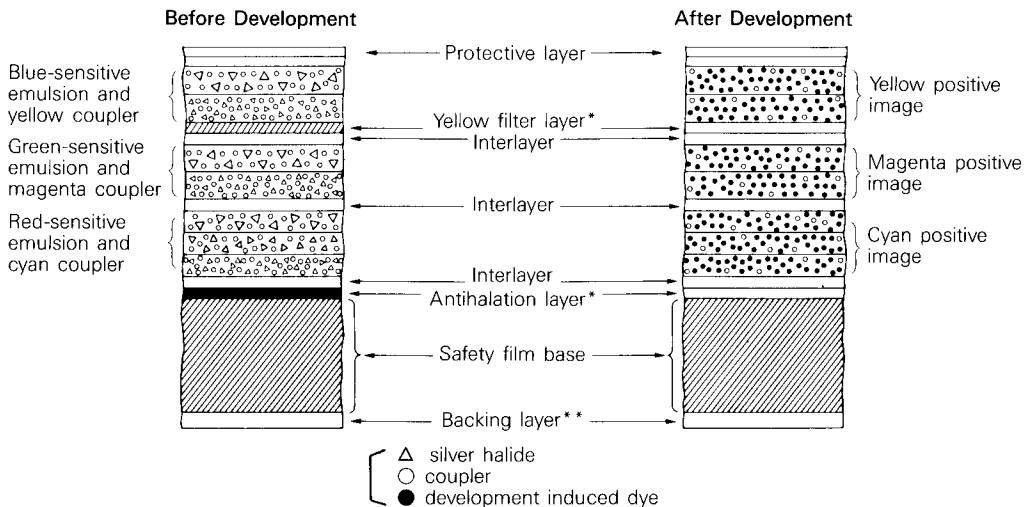
These designations are repeated along the film edge.

**35 mm Roll Film** The frame number series is repeated along the film edge.



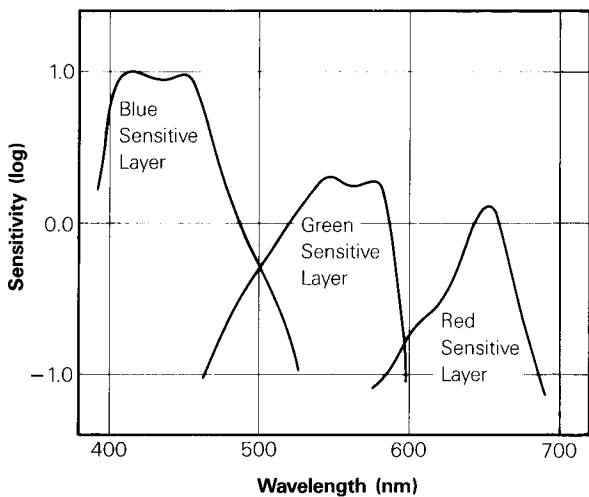
These designations are repeated along the film edge.

**FILM STRUCTURE**



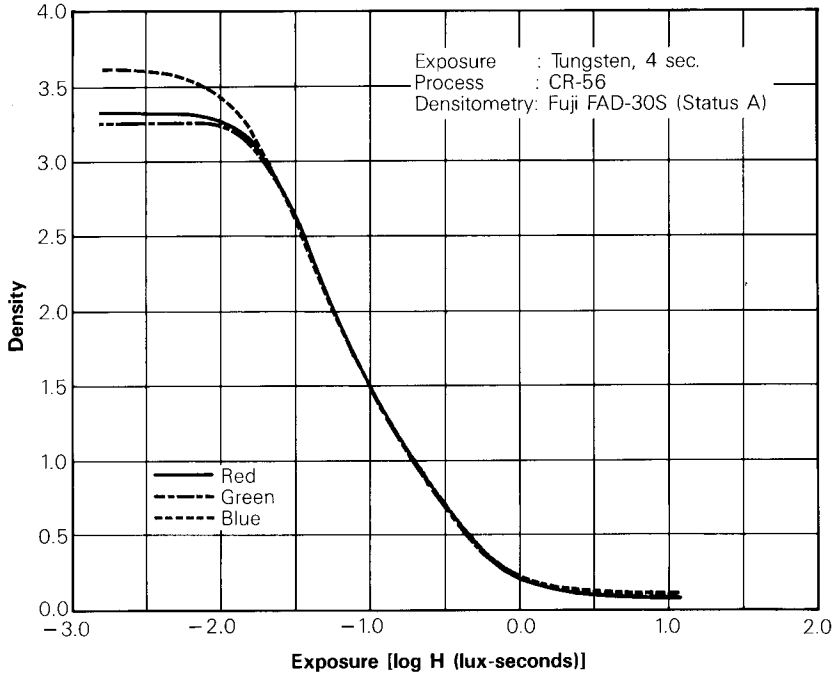
\* These layers become colorless and transparent after processing.  
 \*\* The backing layer is colorless and transparent both before and after processing.

**SPECTRAL SENSITIVITY CURVES**

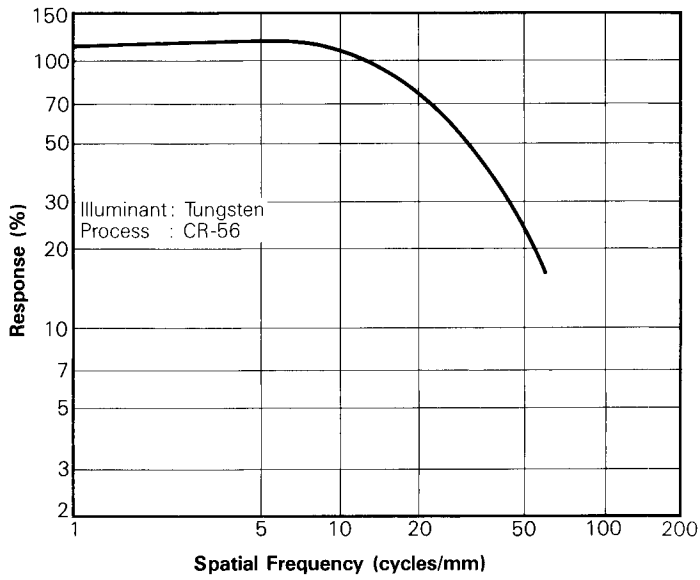


Process : CR-56  
 Densitometry : Fuji FAD-30S (Status A)  
 Density : 1.0 above D-mm  
 Sensitivity equals the reciprocal of the exposure (ergs/cm<sup>2</sup>) required to produce a specified density.

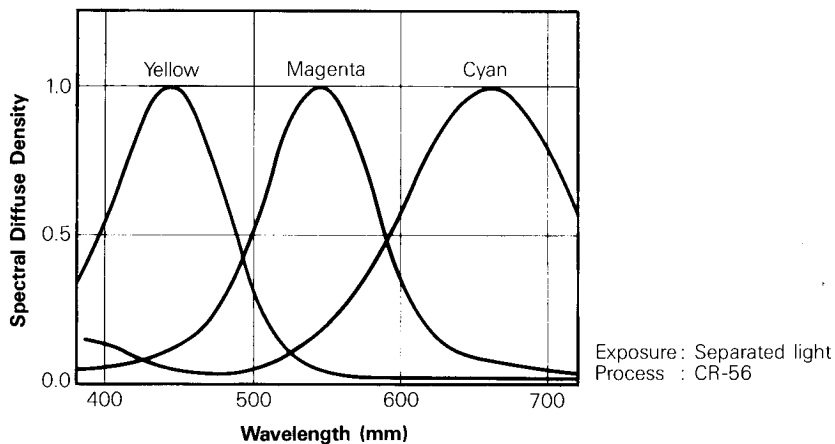
**CHARACTERISTIC CURVES**



**MTF CURVE**



**SPECTRAL DYE  
DENSITY CURVES**



**DIFFUSE RMS  
GRANULARITY  
VALUE**

**11**  
Micro-Densitometer Measurement Aperture:  $48\mu$  in diameter  
Sample Density: 1.0 above minimum density

**RESOLVING  
POWER**

Chart Contrast 1.6 : 1 — **50** lines/mm  
Chart Contrast 1000 : 1 — **125** lines/mm

**NOTICE**

The sensitometric curves and other data herein published were derived from particular materials taken from general production runs. As such they do not represent in exact duplication the characteristics of every lot produced nor a standard for Fuji Film products. Further, Fuji Film is in a constant process of upgrading quality which may result in data changes.