# **KODAK TRI-X**

## Reversal Film 7266



# TECHNICAL DATA / BLACK-AND-WHITE REVERSAL FILM

KODAK TRI-X Reversal Film 7266 offers fine grain and excellent sharpness and includes EASTMAN KEYKODE Numbers for easy cross-reference of shots.

KODAK TRI-X Reversal Film 7266 (16 mm) is a high-speed, panchromatic black-and-white film with an antihalation undercoat that makes it suitable for general interior photography with artificial light. It can also be used in daylight and is particularly useful for sports pictures taken at regular speed or slow motion in weak light (overcast sky or late in the day). This film is characterized by excellent tonal gradation and sharpness.

When processed as a reversal film, the resulting positive can be used for projection or for duplication. If processed as a negative material by conventional methods, the film will yield satisfactory results, although there will be some loss in speed and an increase in granularity.

#### **Base**

KODAK TRI-X Reversal Film 7266 has a grey acetate safety base with an additional anti-halation undercoat. The back side of the base contains a process surviving anti-static layer with a carnauba wax lubricant.

#### Storage

Store unexposed film at 13  $\,$  C (55  $\,$  F) or lower. For extended storage, store at -18  $\,$  C (0  $\,$  F) or lower. Process exposed film promptly.

Store processed film according to the recommendations in ISO 18911:2010, Imaging Materials - Processed Safety Photographic Films - Storage Practices.

	Short Term (less than 6 months)	Long Term (more than 6 months)
Unexposed film in original, sealed package	13 C (55 F) RH below 60%	-18 C (O F) RH below 50%
Exposed film, unprocessed	-18 C (O F) RH below 20%	Not recommended. Process film promptly.
Process film	21 C (70 F) RH 20 to 50%	2 C (36 F) RH 20 to 30%

This relates to optimized film handling rather than preservation; static, dust-attraction and curl-related problems are generally minimized at the higher relative humidity. After usage, the film should be returned to the appropriate medium- or long-term storage conditions as soon as possible.

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## **Warm-up Times**

To prevent film telescoping, moisture condensation, and spotting, allow your film to warm to room temperature (21C/70F) before use:

	Recommended Warm-up Time (Hours)					
Film Package	8 C (15 F) Rise	39 C (70 F) Rise				
8 mm	1	1½				
16 mm	1	1 ½				
35 mm	3	5				

For more information about film storage and handling, see ANSI/PIMA ISO-18911, SMPTE RP131-2002, and KODAK Publication No. H-845, The Essential Reference Guide for Filmmakers, available online at <a href="https://www.kodak.com/go/referenceguide">www.kodak.com/go/referenceguide</a>.

## **Darkroom Recommendations**

#### **Reversal Processing**

All processing operations should be carried out in total darkness until the bleaching step has been completed. If necessary, the film can be examined (for a few seconds only) after development is 50 percent complete. Use a KODAK 3 Safelight Filter / dark green, with a 15-watt bulb, no closer to the film than 1.2 meters (4 feet). Following bleaching, normal room lighting can be used.

#### **Negative Processing**

No safelight is recommended until after the stop bath. Unprocessed films must be handled in total darkness.

#### **Exposure**

#### **Exposure Indexes**

Tungsten (3200K) - 160 Daylight - 2001

Use these indexes with incident- or reflected-light exposure meters and cameras marked for ISO or ASA speeds or exposure indexes. These indexes apply for meter readings of average subjects made from the camera position or for readings made from a gray card of 18-percent reflectance held close to and in front of the subject. For unusually light- or dark-colored subjects, decrease or increase the exposure indicated by the meter accordingly.

## **Exposure Table-Tungsten Illumination**

At 24 frames per second (fps), 170-degree shutter opening:

EXPOSURE TABLE FOR TUNGSTEN LIGHT						
Lens Aperture	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8
Footcandles Required*	16	32	64	125	250	500

<sup>\*</sup>At 18 frames per second, use 3/4 of the footcandles (fc) shown. When the film is used as a negative material, the values specified should be doubled.

## **Lighting Contrast**

The recommended ratio of key-light-plus-fill-light to fill light is 2:1 or 3:1. However, you may use 4:1 or greater when a particular look is desired.

Filter Factors Change to KODAK WRATTEN2 Filter No								
KODAK WRATTEN 2 Filter No.	3	8	12	15	21	25	29	96*
Filter Factor for Daylight	1.5	2	2	2.5	3	10	40	8

<sup>\*</sup> For use in bright sunlight to reduce the exposure without modifying color rendering or depth of field. This filter which has a neutral density of 0.90 provides a reduction in exposure equivalent of 3 full stops.

## **Reciprocity Characteristics**

You do not need to make any filter corrections or exposure adjustments for exposure times from 1/1,000 of a second to 1 second. If your exposure is in the 1/10,000 second range, it is recommended that you increase your exposure by 1/2 stop.

## **Reversal Processing**

#### **KODAK B&W Reversal Process**

This film should be processed with KODAK B&W Reversal Process Kit Chemicals or with solutions prepared according to the formulas presented in KODAK Publication No.H-24.15, Manual for Processing KODAK Motion Picture Films, Module 15.www.kodak.com/go/h24

Note: KODAK B&W Reversal First Developer and Replenisher (D-94A) and KODAK B&W Reversal Bleach and Replenisher (R-10) should be used with this film.

The recommended starting points for processing times and temperatures are shown in the table below. Actual processing times may differ from the ones shown because of machine design variables, such as film transport speed, degree of solution agitation, amount of solution carry-over, etc.

Processing Step	Time 24.4°C (76°F)		
First Developer KODAK B&W Reversal First Developer and Replenisher (D-94A)	60 sec		
Wash	30 sec		
KODAK B&W Reversal Bleach and Replenisher (R-10)	60 sec		
Wash	30 sec		
Clearing Bath	30 sec		
Wash	30 sec		
Re-exposure	800 footcandle seconds		
Second Developer KODAK B&W Reversal Developer and Replenisher (D-95)	30 sec		
Wash	30 sec		
Fixer	30 sec		
Wash	2 min		

Notice: Observe precautionary information on product labels and on the Material Safety Data Sheets.

### Identification

After processing, the product code numbers 7266 emulsion, roll, and strip number identification, KEYKODE Numbers, and manufacturer/film identification code (ED) are visible along the length of the film.

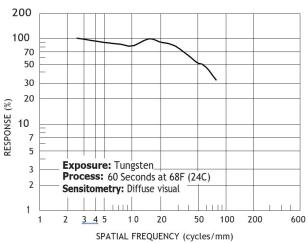
## **Image Structure**

The modulation-transfer curves and the diffuse rms granularity were generated from samples of 7266 Film exposed with tungsten light and processed in the recommended reversal process at 24.4 C (76 F). For more information on image-structure characteristics, see KODAK Publication No. H-845, The Essential Reference Guide for Filmmakers available online at <a href="https://www.kodak.com/go/referenceguide">www.kodak.com/go/referenceguide</a>.

#### **Modulation Transfer Function**

The "perceived" sharpness of any film depends on various components of the motion picture production system. The camera and projector lenses and film printers, among other factors, all play a role. But the specific sharpness of a film can be measured and is charted in the Modulation Transfer Function Curve.

#### Modulation Transfer Function Curve

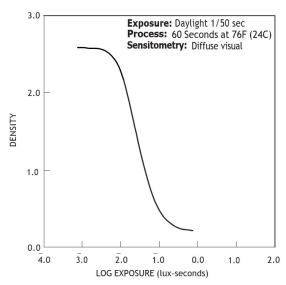


This graph shows a measure of the visual sharpness of this film. The x-axis, "Spatial Frequency," refers to the number of sine waves per millimeter that can be resolved. The y-axis, "Response," corresponds to film sharpness. The longer and flatter the line, the more sine waves per millimeter that can be resolved with a high degree of sharpness — and the sharper the film.

## Sensitometry

Sensitometric curves determine the change in density on the film for a given change in log exposure.

#### Characteristic Curve

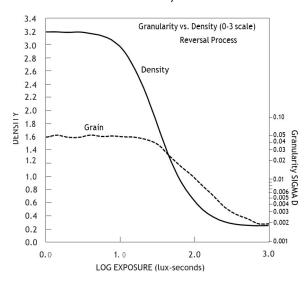


## rms Granularity

Read with a microdensitometer using a 48-micrometer aperture.

The "perception" of the graininess of any film is highly dependent on scene content, complexity, color, and density. Other factors, such as film age, processing, exposure conditions, and telecine transfer may also have significant effects.

#### rms Granularity Curve



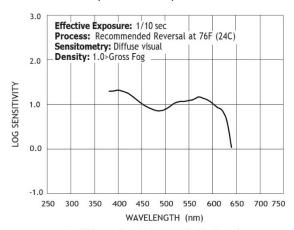
To find the rms Granularity value for a given density, find the density on the left vertical scale and follow horizontally to the characteristic curve and then go vertically (up or down) to the granularity curve. At that point, follow horizontally to the Granularity Sigma D scale on the right. Read the number and multiply by 1000 for the rms value. Note: This curve represents granularity based on modified measuring techniques.

Note: Sensitometric and Diffuse RMS Granularity curves are produced on different equipment. A slight variation in curve shape may be noticed.

## **Spectral Sensitivity**

These curves depict the sensitivity of this film to the spectrum of light.

#### **Spectral Sensitivity Curve**



\*Sensitivity = reciprocal of exposure (erg/cm²) required to produce specified density

**Note:** The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications that must be met by Eastman Kodak Company. The company reserves the right to change and improve product characteristics at any time.

## **Available Roll Lengths and Formats**

See Kodak Motion Picture Products Catalog at <a href="www.kodak.com/go/mpcatalog">www.kodak.com/go/mpcatalog</a>
To order film in the United States and Canada, call 1- 800-356-3259, prompt 3.
Worldwide customers can find the nearest sales office at <a href="www.kodak.com/go/salesoffices">www.kodak.com/go/salesoffices</a>

