KODAK PRIMETIME 640T Teleproduction Film / 5620,7620

1) Description
KODAK PRIMETIME 640T Teleproduction Film / 5620,7620 is a low-contrast, high-speed, tungsten-balanced color negative camera film. This film has microfine grain, high resolving power, and extremely wide transfer latitude, making it more tolerant of uncontrolled lighting. It is specifically designed for television production. PRIMETIME Film will help deliver excellent images with the highest productivity on the set, and in the telecine transfer process. PRIMETIME Film is optimized for the characteristics of the video transfer system, and is not suitable for situations requiring prints for projection.

2) Base
KODAK PRIMETIME 640T Teleproduction Film / 5620,7620 has an acetate safety base with rem-jet backing.

3) Darkroom Recommendations
Do not use a safelight. Handle unprocessed film in total darkness.

4) 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 NAPM IT9.11-1992: for medium-term storage (minimum of ten years), store at 10 C (50 F) or lower at a relative humidity of 20 to 30 percent; for extended-term storage (for preservation of material having permanent value), store at 2 C (35 F) or lower at a relative humidity of 20 to 30 percent. For active use, store at 25 C (77 F) or lower, at a relative humidity of 50 +/- 5 percent. 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.


5) Exposure Indexes
Tungsten (3200K) - 640 Daylight\(^1\) - 400

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.

\(^1\)With a KODAK WRATTEN Gelatin Filter No. 85.
6) Color Balance

These films are balanced for exposure with tungsten illumination (3200K). You can also expose them with tungsten lamps that have slightly higher or lower color temperatures (+/- 150K) without correction filters. For other light sources, use the correction filters in the table below.

<table>
<thead>
<tr>
<th>Light Source</th>
<th>KODAK Filters on Camera ¹</th>
<th>Exposure Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tungsten (3000 K)</td>
<td>WRATTEN Gelatin No. 82B</td>
<td>400</td>
</tr>
<tr>
<td>Tungsten (3200 K)</td>
<td>None</td>
<td>640</td>
</tr>
<tr>
<td>Tungsten photoflood(3400 K)</td>
<td>None</td>
<td>640</td>
</tr>
<tr>
<td>Daylight (5500 K)</td>
<td>WRATTEN Gelatin No. 85</td>
<td>400</td>
</tr>
<tr>
<td>White-Flame Arcs</td>
<td>WRATTEN Gelatin No. 85B</td>
<td>250</td>
</tr>
<tr>
<td>Optima 32</td>
<td>None</td>
<td>640</td>
</tr>
<tr>
<td>Vitalite</td>
<td>WRATTEN Gelatin No. 85</td>
<td>400</td>
</tr>
<tr>
<td>Fluorescent, Cool White ²</td>
<td>WRATTEN Gelatin No. 85 + 10M</td>
<td>250</td>
</tr>
<tr>
<td>Fluorescent, Deluxe Cool White ²</td>
<td>WRATTEN Gelatin No. 85C + 10R</td>
<td>400</td>
</tr>
<tr>
<td>Metal Halide</td>
<td>WRATTEN Gelatin No. 85</td>
<td>400</td>
</tr>
</tbody>
</table>

¹ These are approximate corrections only.
² These are starting-point recommendations for trial exposures. If the kind of lamp is unknown, a KODAK Color Compensating Filter CC 40R can be used with an exposure index (EI) of 320.

NOTE: Consult the manufacturer of high-intensity ultraviolet lamps for safety information on ultraviolet radiation and ozone generation.

7) Exposure Table-Tungsten Light

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

<table>
<thead>
<tr>
<th>Lens Aperture</th>
<th>f/1.4</th>
<th>f/2</th>
<th>f/2.8</th>
<th>f/4</th>
<th>f/5.6</th>
<th>f/8</th>
<th>f/11</th>
<th>f/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footcandles Required</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>32</td>
<td>63</td>
<td>125</td>
<td>250</td>
<td>500</td>
</tr>
</tbody>
</table>

Use this table for average subjects that contain a combination of light, medium, and dark colors. When a subject includes only pastels, use at least 1/2 stop less exposure; dark colors require 1/2 stop more exposure.

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.
8) **Reciprocity Characteristics**
   You do not need to make any filter corrections or exposure adjustments for exposure times from 1/1000 to 1 second.

9) **Processing**
   Most commercial motion picture laboratories provide a processing service for these films. See KODAK Publication No. H-24.07, Manual for Processing EASTMAN Motion Picture Films, Process ECN-2 Specifications, Module 7, for more information on the solution formulas and the procedure for machine processing these films. There are also pre-packaged kits available for preparing the processing solutions. For more information on the EASTMAN ECN-2 Kit Chemicals, check Kodak's Motion Picture Films for Professional Use price catalog.

10) **Identification**
   After processing, the product code numbers 5620/7620, emulsion and roll number identification, KEYKODE numbers, and internal product symbol (Y) are visible along the length of the film.

11) **Laboratory Information**
   PRIMETIME Film/5620,7620 is optimized for video transfer performance. It is not recommended for use with any color print film for the purpose of making projection prints. However, inter-positives, inter-negatives, prints, and low-con prints can be made from PRIMETIME Film as long as the intended use is for video transfer. If you would like more information regarding this, contact your Kodak sales representative.

12) **Film-To-Video Transfers**
   When you transfer the film directly to video, you should set up the telecine using the negative Telecine Analysis Film (TAF) exposed on KODAK PRIMETIME 640T Teleproduction Film/5620, available from Eastman Kodak Company. The TAF consists of a neutral density scale and an eight-bar color test pattern with a LAD gray surround.

   The TAF gray scale provides the telecine operator (colorist) with an effective way to adjust subcarrier balance and to center the telecine controls before timing and transferring a film. The TAF color bars provide the utility of electronic color bars, even though they do not precisely match the electronically generated color bars. Using the TAF will help obtain optimum quality and consistency in the film-to-video transfer. For more information regarding TAF, see KODAK Publication No. H-222, User's Guide for KODAK Telecine Analysis Film.

13) **Image Structure**
   The modulation-transfer curves, and the diffuse rms granularity, and the resolving-power data were generated from samples of PRIMETIME Film exposed with tungsten light and processed as recommended in Process ECN-2 chemicals. For more information on image-structure characteristics, see KODAK Publication No. H-1, EASTMAN Professional Motion Picture Films.

   **MTF** -
   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 charted in the Modulation Transfer Curve.

   **rms Granularity**
   Refer to curve.

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2Read with a microdensitometer, (red, green, blue) using a 48-micrometre 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. In PRIMETIME Film, the measured granularity is very low. During film-to-tape transfer of this film on telecine equipment, the very low granularity is amplified by the electronics. The result is a level of graininess (or noise) similar to that of other high-speed EXR Films in the shadows, and, by design, improved levels of noise in the highlights.

**Resolving Power**

<table>
<thead>
<tr>
<th>ISO RPL</th>
<th>50 lines/mm</th>
<th>(TOC 1.6:1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO RP</td>
<td>100 lines/mm</td>
<td>(TOC 1000:1)</td>
</tr>
</tbody>
</table>

**14) Available Roll Lengths**

For information on film roll lengths, contact your Kodak sales representative.

**15) Graphs**

**MTF**

A) (7-96)

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

**NOTE:** These photographic modulation-transfer values were determined by using a method similar to the one described in ANSI Standard PH2.39-1977(R1990). The film was exposed with the specified illuminant to spatially varying sinusoidal test patterns having an aerial image modulation of a nominal 60 percent at the image plane, with processing as indicated. In most cases, the photographic modulation-transfer values are influenced by development-adjacency effects and are not equivalent to the true optical modulation-transfer curve of the emulsion layer in the particular photographic product.

**Characteristic**

B) Log Exposure  (7-96)

C) Camera Stops  (7-96)

The center point ("0") on the x-axis corresponds to a normal exposure of an 18-percent grey card in the red, green, and blue layers of this film. A white card is 2 1/3 stops higher than normal exposure. Anything more is overexposure latitude. A 3-percent black card is 2 2/3 stops below normal exposure. Anything less is underexposure latitude. PRIMETIME Film captures approximately 10 stops of usable information.

**Spectral Sensitivity**

D) (7-96)

Spectral Sensitivity curve - These curves depict the sensitivity of this film to the spectrum of light. They are useful for adjusting optical printers and film recorders, and for determining, modifying, and optimizing exposure for blue- and green-screen special-effects work.
Spectral Dye Density  
E) (7-96)

Spectral Dye Peaks  
F) (7-96)

Granularity  
G) (10-96)

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:** The Kodak materials described in this publication for use with KODAK PRIMETIME 640T Teleproduction Film/5620,7620 are available from dealers who supply Kodak products. You can use other materials, but you may not obtain similar results.

The contents of this publication are subject to change without notice.

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Professional Motion Imaging  
EASTMAN KODAK COMPANY - Rochester, NY 14650

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End of Data Sheet
Notice: While the data presented are typical of production coatings, they do not represent standards which must be met by Eastman Kodak Company. Varying storage, exposure and processing conditions will affect results. The company reserves the right to change and improve product characteristics at any time.
KODAK PRIMETIME 640T Teleproduction Film/5620,7620
Process ECN-2; Typical densities for a midscale neutral subject and D-min

TI2299E 7-96
SPECTRAL DYE DENSITY, For Publication

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