

# Pictures by Existing Light



Photographers have always been fascinated by the opportunities and challenges of taking pictures in subdued lighting without over-powering the scene with flash or photolamps. These natural-looking photos are easy to take when you know how: Modern cameras equipped with fast lenses and loaded with high-speed film enable you to take pictures virtually anywhere you can see the subject, under almost any lighting conditions.

The term “existing light” is difficult to define because it encompasses so much and because its definition is arbitrary. Technically, it covers all natural lighting—from moonlight to bright sunshine. However, for photography, we limit the definition to illumination that exists naturally in the scene. The only light sources that don't qualify are bright daylight and artificial lights used as primary sources of illumination. Living-room lamps, fluorescent lights in offices, arc lights at a circus or an ice show, vapor lamps on streets, lighted signs, light from a campfire, skylight through a window, and candles flickering on a table are all examples of existing-light sources.

Existing-light photography produces pictures that appear natural. Even a skillfully lighted flash or photolamp picture may look artificial and contrived compared to a good existing-light picture. Existing-light photography gives you the opportunity to make pictures that are dramatic, creative, romantic, or even harsh and severe. Existing-light photography also allows you greater freedom of movement because you don't use extra lighting equipment. You can easily photograph distant subjects because camera-to-subject distance does not affect exposure as it does when you are using flash on your camera.

## EQUIPMENT

You will need an adjustable or automatic camera. For some photos, you will need a shutter that you can hold open for a time exposure. Long exposures are required for some existing-light subjects, such as fireworks displays. For exposures longer than 1/30 second, you must put your camera on a firm support. A tripod is very useful, but you can use a tabletop, hand railing, wall, or similar steady surface. It's also a good idea to use a cable release to prevent jiggling the camera when you press the shutter release.

When you use a camera with an  $f/2.8$  or faster lens and a high-speed film, you can photograph many subjects without a camera support. You can hand-hold many cameras at shutter speeds of 1/30 second or faster. For sharp pictures, hold your camera steady as you squeeze the shutter release gently. This minimizes camera movement. Picture-taking with a hand-held camera gives you more flexibility than you have with a camera support. You can shoot more rapidly, more easily, and less obtrusively to capture natural, candid expressions.

## FILM CHOICES:

### Medium-Speed Films

Since many existing-light scenes have low light levels, you'll often need high-speed film. However, if you take photos where the existing light is brighter—such as near windows—or if you put your camera on a tripod, you can use a slower film. For situations that do not require a high-speed film, you can successfully use these KODAK Films—

#### For color slides

- ELITE Chrome 100 (Daylight)
- ELITE Chrome Extra 100 (Daylight)
- ELITE Chrome 160T (Tungsten)\*
- ELITE Chrome 200 (Daylight)
- KODACHROME 200 (Daylight)
- KODACHROME 64 (Daylight)

#### For color prints

- GOLD 100
- ROYAL GOLD 100
- GOLD 200
- ROYAL GOLD 200
- ADVANTIX 200

#### For black-and-white prints

- T-MAX 100 Professional
- PLUS-X Pan (ISO 125)

\* Tungsten films are designed for use with 3200 K tungsten lamps, but are also good for use with other common tungsten-light sources, such as household lamps with regular light bulbs.

## High-Speed Films

Using a high-speed film for existing-light photography offers many additional advantages. More film speed helps you get enough exposure for hand-held shots of dimly lighted scenes; lets you use faster shutter speeds for stopping action; enables you to use telephoto lenses, which require higher shutter speeds for hand-held picture-taking; and permits you to use a smaller lens opening to gain greater sharpness of near and far objects in the same picture—in other words, more depth of field. Use these high-speed KODAK Films—

### For color slides

- ELITE Chrome 200
- ELITE Chrome 400

### For color prints

- GOLD MAX 400
- ROYAL GOLD 400
- ADVANTIX 400
- GOLD MAX 800
- ROYAL GOLD 1000

### For black-and-white prints

- T-MAX P3200 Professional
- T-MAX 400 Professional
- TRI-X Pan (ISO 400)
- KODAK PROFESSIONAL T-MAX Black-and-White T400 (Process C-41)

## Push-Processing Color Slide Films

When you need more film speed than the standard-speed rating provides, you can obtain good results with KODACHROME 200 Film (Daylight) and most KODAK ELITE Chrome Films by doubling the ISO speed and extending the development time. This is generally referred to as giving the film a “1-stop push.” Increased graininess and contrast result from push processing, but this compromise is generally acceptable in existing-light applications. Push-processing is not recommended for color-print film.

## TAKING PICTURES INDOORS

KODAK GOLD, GOLD MAX, ROYAL GOLD and ADVANTIX Films are designed for exposure by daylight or electronic flash. However, you can get good results in many kinds of existing light.

For color slides of indoor existing-light scenes that are illuminated by tungsten light, use a tungsten film (i.e., KODAK ELITE Chrome 160T Film).

For color slides of indoor scenes when windows or skylights are providing the main light, use a daylight-balanced film such as KODAK ELITE Chrome 200, KODAK ELITE Chrome 400 or KODACHROME 200 Film.

If you prefer a black-and-white film, T-MAX 400 Professional Film and TRI-X Pan Film are excellent choices.

Use your camera's exposure meter to determine exposure, especially in a home or museum where you can easily approach your subject to make a meter reading. If the background includes a bright window or light that will influence your meter reading, make a close-up reading of the principal subject.

Pictures taken indoors in existing daylight can be especially pleasing because of the soft, diffuse quality of the lighting and the squint-free expressions of your subjects. These pictures are easy to take because existing daylight is usually brighter than other kinds of existing light. Open all the draperies in the room, and pose your subject so that diffuse daylight (not direct sunlight) illuminates the front or side of your model's face. Avoid poses that put too much of the face in shadow, unless you want a special effect such as a silhouette. You can also photograph your subject in direct sunlight coming through a window. This type of lighting is bright, but it is also contrasty. Watch out for deep shadows on your subject.

Some artificial lighting is also quite contrasty. For pictures in existing tungsten light at home, household lamps with translucent shades are best. Translucent shades let light through and provide more uniform illumination for picture-taking than darker or opaque lampshades. Pose your subject so that light illuminates the front or side of the face.

You can reduce excessive contrast by adding light to the shaded areas of the subject by bouncing light where it is needed. You can improvise reflectors by using a projection screen; large sheets of neutral-colored card stock, such as photographic mounting board; crumpled, flattened aluminum foil; or white sheets or pillow cases. The more efficient the reflector and the closer it is to the subject, the more shadows will be filled with light.

Fluorescent lamps in a room can cause odd color rendition in your color pictures because most fluorescent illumination is deficient in red light. Daylight-type color films used under fluorescent light produce greenish results, while tungsten film results are decidedly blue. Films exposed under fluorescent lighting require special printing unless you use filters during exposures.

Regardless of your film choice, use shutter speeds of 1/60 second or less under fluorescent lighting to avoid uneven exposure and underexposure. This is necessary because fluorescent lights do not emit light steadily; they flicker rapidly with pulses of alternating current. This flicker is not apparent to the eye, but it is to the camera and film.

When an indoor subject includes both very bright areas and large, very dark areas, such as an indoor ice show or any other event where spotlights are used, an ordinary exposure meter is not much help. However, the “matrix” or “evaluative” meters in new autofocus SLR cameras will usually give good results. An ordinary exposure meter sees the large dark areas surrounding the bright areas, and the meter needle barely moves. Actually, there is plenty of light on a spotlighted subject. Try an exposure of 1/250 second at *f*/2.8 with GOLD MAX 400 Film or ROYAL GOLD 400 Film for color prints, ELITE Chrome 400 Film for color slides, or TRI-X Pan Film or T-MAX 400 Film for black-and-white prints. Or you can use ROYAL GOLD 1000 Film with 1/250 second at *f*/4. Another good choice would be 1/250 second at *f*/5.6 with T-MAX P3200 Professional Film (the nominal speed of T-MAX P3200 Film is EI 1000 when it is processed in KODAK T-MAX Developer). These films will give you good results with the carbon-arc spotlights usually used at ice shows, in theatre stage shows, and in auditoriums.

## TAKING PICTURES OUTDOORS AT NIGHT

An excellent time to shoot night color pictures outdoors is just before complete darkness, when rich colors from a sunset still remain in the sky. The deep color of the sky at dusk provides a dramatic background for slides and prints.

Outdoors at night you can use GOLD MAX, ROYAL GOLD and ADVANTIX Films for color prints under a variety of lighting conditions. For color slides, your choice of a daylight film or a tungsten film is a matter of personal choice. Slides taken on tungsten film may look more natural, while pictures taken on daylight film will have a warmer, more yellow-red appearance. Both kinds of film produce pleasing results.

Mercury-vapor lamps illuminate outdoor playing fields in many modern sports stadiums. These lights have a blue-green appearance compared with conventional tungsten lamps. With mercury-vapor lighting, you will get better color pictures on daylight film, although they will probably look bluish-green because the lights are deficient in red.

When your subject is unevenly illuminated and you can get close enough to take an exposure-meter reading, do so. Such subjects include many floodlighted buildings, statues, and store windows. Many night sporting events are evenly illuminated. Before you take your seat at the event, make an exposure-meter reading from a position near where the action will take place, and set the lens opening and shutter speed on your camera. Use as high a shutter speed as possible to help stop action in your pictures. Higher-speed films, such as GOLD MAX 800 Film, ROYAL GOLD 1000 Film, KODACHROME 200 Film (push-processed to EI 400), and T-MAX 400 or P3200 Film, will help you obtain the necessary shutter speed.

A fireworks display can be one of the most exciting and colorful subjects to photograph outdoors at night. Put your camera on a tripod, aim it at the display, and focus the camera on infinity. Set the lens opening according to the table on page 4, and with the shutter set on “bulb,” keep the shutter open for several bursts.

## EXPOSURE TABLE

The suggested exposures in the table on page 4 are based on pictures taken by experienced photographers. The exposures are typical for the subjects listed. Because specific conditions vary, the data in the table are only approximate. Color negative films, in particular, can tolerate a fairly wide range of exposures, and will usually yield pleasing results in night existing-light pictures.

When using color slide films, you may want to modify these exposures to get the effect you prefer. The less exposure you use, the darker the shadows will be. With more exposure, your pictures will show more detail in the shadows, but the brightest areas, such as neon signs, may be too light.

## Suggested Exposures for Existing-Light Exposures with KODAK Films\*

Picture Subjects	KODACHROME64 (Daylight) ELITE Chrome 100 (Daylight) ELITE Chrome Extra Color 100 (Daylight) GOLD 100 ROYAL GOLD 100 T-MAX 100 Professional	ELITE Chrome 200† (Daylight) ELITE Chrome 160T (Tungsten) ROYAL GOLD 200 ADVANTIX 200 KODACHROME 200 GOLD 200 PLUS-X Pan	ROYAL GOLD 400 ADVANTIX 400 GOLD MAX 400 TRI-X Pan T-MAX 400 Professional ELITE Chrome 400† (Daylight) ELITE Chrome 160T† (Tungsten) at EI 320 KODACHROME 200† (Daylight) at EI 400	GOLD MAX 800 ROYAL GOLD 1000 ELITE Chrome 400† (Daylight) at EI 800 KODAK PROFESSIONAL T-MAX Black-and-White T400 (Process C-41)	T-MAX P3200 Professional
Home interiors at night—Areas with average light Areas with bright light	1/4 sec f/2.8 1/15 sec f/2	1/15 sec f/2 1/30 sec f/2	1/30 sec f/2 1/30 sec f/2.8	1/30 sec f/2.8 1/30 sec f/4	1/30 sec f/4 1/60 sec f/4
Candlelight close-ups	1/4 sec f/2	1/8 sec f/2	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8
Indoor/outdoor holiday lighting at night, Christmas trees	1 sec f/4	1 sec f/5.6	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8
Interiors with bright fluorescent lights‡	1/30 sec f/2.8	1/30 sec f/4	1/60 sec f/4	1/60 sec f/5.6	1/60 sec f/8
Brightly lighted downtown street scenes (Wet streets add interesting reflections)	1/30 sec f/2	1/30 sec f/2.8	1/60 sec f/2.8	1/60 sec f/4	1/125 sec f/4
Brightly lighted nightclub or theatre districts— Las Vegas or Times Square	1/30 sec f/2.8	1/30 sec f/4	1/60 sec f/4	1/125 sec f/4	1/125 sec f/5.6
Neon signs and other lighted signs	1/30 sec f/4	1/60 sec f/4	1/125 sec f/4	1/125 sec f/5.6	1/125 sec f/8
Store windows	1/30 sec f/2.8	1/30 sec f/4	1/60 sec f/4	1/60 sec f/5.6	1/60 sec f/8
Subjects lighted by street lights	1/4 sec f/2	1/8 sec f/2	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8
Floodlighted buildings, fountains, monuments	1 sec f/4	1/2 sec f/4	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8
Skyline—10 minutes after sunset	1/30 sec f/4	1/60 sec f/4	1/60 sec f/5.6	1/125 sec f/5.6	1/125 sec f/8
Skyline—distant view of lighted buildings at night	2 sec f/2	1 sec f/2	1 sec f/2.8	1 sec f/4	1 sec f/5.6
Moving auto traffic on expressways—light patterns	20 sec f/16	10 sec f/16	10 sec f/22	10 sec f/32	5 sec f/32
Fairs, amusement parks	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8	1/60 sec f/2.8	1/60 sec f/4
Amusement-park rides—light patterns	4 sec f/16	2 sec f/16	1 sec f/16	1 sec f/22	—
Fireworks—displays on the ground	1/30 sec f/2.8	1/30 sec f/4	1/60 sec f/4	1/60 sec f/5.6	1/60 sec f/8
Fireworks—airial displays (Keep shutter open on Bulb for several bursts.)	f/8	f/11	f/16	f/22	f/32
Lightning (Keep shutter open on Bulb for one or more streaks of lightning.)	f/5.6	f/8	f/11	f/16	f/22
Burning buildings, campfires, bonfires (flames)	1/30 sec f/2.8	1/30 sec f/4	1/60 sec f/4	1/125 sec f/4	1/125 sec f/5.6
Subjects lighted by campfires, bonfires	1/8 sec f/2	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8	1/30 sec f/4
Night football, soccer, baseball, racetracks§	1/30 sec f/2.8	1/60 sec f/2.8	1/125 sec f/2.8	1/250 sec f/2.8	1/250 sec f/4
Baseball, hockey, bowling	1/30 sec f/2	1/60 sec f/2	1/125 sec f/2	1/125 sec f/2.8	1/250 sec f/2.8
Boxing, wrestling	1/60 sec f/2	1/125 sec f/2	1/250 sec f/2	1/250 sec f/2.8	1/250 sec f/4
Stage shows—Average Bright	1/30 sec f/2 1/60 sec f/2.8	1/30 sec f/2.8 1/60 sec f/4	1/60 sec f/2.8 1/125 sec f/4	1/125 sec f/2.8 1/250 sec f/4	1/125 sec f/4 1/250 sec f/5.6
Circuses—Floodlighted acts Spotlighted acts (carbon-arc)	1/30 sec f/2 1/60 sec f/2.8	1/30 sec f/2.8 1/125 sec f/2.8	1/60 sec f/2.8 1/250 sec f/2.8	1/125 sec f/2.8 1/250 sec f/4	1/250 sec f/2.8 1/250 sec f/5.6
Ice shows—Floodlighted acts Spotlighted acts (carbon-arc)	1/30 sec f/2.8 1/60 sec f/2.8	1/60 sec f/2.8 1/125 sec f/2.8	1/125 sec f/2.8 1/250 sec f/2.8	1/250 sec f/2.8 1/250 sec f/4	1/250 sec f/4 1/250 sec f/5.6
School—stage and auditorium	—	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8	1/60 sec f/2.8
Swimming pool—tungsten light indoors, above water	1/15 sec f/2	1/30 sec f/2	1/60 sec f/2	1/60 sec f/2.8	1/60 sec f/4
Hospital nurseries	1/30 sec f/2	1/30 sec f/2.8	1/60 sec f/2.8	1/60 sec f/4	1/125 sec f/4
Church interiors—tungsten light	1/8 sec f/2	1/15 sec f/2	1/30 sec f/2	1/30 sec f/2.8	1/30 sec f/4

\* These suggested exposures apply to daylight and tungsten color films. When you take color pictures under tungsten illumination, they look more natural when you use tungsten film. Daylight film produces pictures more orange, or warm, in color. You can use KODAK GOLD, GOLD MAX, ROYAL GOLD or ADVANTIX Films in both kinds of light.

† You can double the speed of KODACHROME 200 Film (Daylight) and most KODAK ELITE Chrome Films by having them push processed. See page 2 for details.

‡ Tungsten color-slide film is not recommended for use with fluorescent lighting. Use shutter speeds of 1/60 second or longer for uniform and adequate exposure.

§ Use shutter speeds 1/125 second or longer for uniform and adequate exposure with lighting from multi-vapor or mercury vapor high-intensity discharge lamps.

**Note:** With shutter speeds slower than 1/30 second, use a tripod or other film support.

## Bracketing

When you want to be sure to get a properly exposed picture of an especially important subject, bracket the exposure. Take one shot at the suggested exposure, one at 1 lens opening smaller, and another at 1 lens opening larger. If it is a case of now or never, take two *more* pictures—one at 2 stops more and one at 2 stops less than the suggested exposure.

After you have had some experience in taking existing-light pictures, you will be more confident in determining correct exposures. You may want to record your exposure data for various subjects—especially unusual ones—and then refer to this information when you need it again. In existing-light photography, it is often a good idea to experiment. Judge the exposure as accurately as you can, and then shoot the pictures. You will often be pleased with the spectacular results.

## MORE INFORMATION

Kodak has many publications to assist you with information on Kodak products, equipment, and materials.

Additional information is available on the Kodak website and through the U.S.A./Canada faxback system.

### **Kodak Information Center's Faxback System**

**—Available 24 hours a day, 7 days a week—**

Many technical support publications for Kodak products can be sent to your **fax** machine from the Kodak Information Center. Call:

**U.S.A. 1-800-242-2424, Ext. 33  
Canada 1-800-295-5531**

*If you have questions about Kodak products, call Kodak.*

*In the U.S.A.:*

*1-800-242-2424, Ext. 25, Monday–Friday  
9 a.m.–7 p.m. (Eastern time)*

*In Canada:*

*1-800-465-6325, Monday–Friday  
8:30 a.m.–5 p.m. (Eastern time)*

*Or contact Kodak on-line at:  
<http://www.kodak.com>*

# Pictures by Existing Light

---

Consumer Imaging  
**EASTMAN KODAK COMPANY • ROCHESTER, NY 14650**

