

**TECHNICAL INFORMATION****KENTMERE 400****A FAST SPEED BLACK AND WHITE CAMERA FILM****DESCRIPTION**

Kentmere 400ASA is a fast speed black and white camera film which is suitable for all aspects of general purpose photography, and is capable of generating high quality images.

Being rated at 400ASA, it makes it particularly suitable for working with action shoots and available light situations.

**AVAILABILITY**

The film is available in 35mm format in 24 and 36 exposure lengths, and in bulk lengths of 30.5m.

**KEY PROPERTIES**

- High speed film – rated at ISO 400 / 27°.
- Good film flexibility that copes with a wide range of general purpose photography.
- Good sharpness.
- Fine grain.
- Broad tonal range with good contrast.
- Broad exposure latitude.
- Compatible with many developers.

**USER ADVICE****STORAGE OF UNEXPOSED, AND EXPOSED/UNPROCESSED FILMS**

We advise films be stored in a cool dry place, and when possible (prior to exposure) in its original packaging. Advisable temperatures – between 10-20°C / 50-68°F.

**FILM HANDLING**

Kentmere 400 film should be handled in total darkness. During processing, it is possible to briefly view the film using a very dark green safelight filter (15W bulb), but such lighting should only be extremely brief, and never in direct contact with the film.

**EXPOSURE**

Kentmere 400 has a speed rating of ISO 400 / 27° (400ASA, 27DIN, EI 400/27°) to daylight. Although it is possible to rate the film at 320/26° and 800/30°, the film performs at its optimum when rated at 400ASA.

When rated at any alternate suggested ASA ratings, quality does diminish in terms of grain and sharpness. If any alternate speed settings to 400ASA are to be used, it is therefore advisable that tests be carried out first to ensure these alternate speeds are suitable.

The films 400 ISO speed rating was established from processing in ID-11 developer at 20°C / 68°F with intermittent agitation in a spiral tank.

Once a film is exposed, we advise to have it processed as soon as practical. However, images on exposed but unprocessed films will not degrade for several months provided they are stored as we advise in cool, dry conditions.

**FILTER FACTORS**

Kentmere 400 can be used with all standard types of filters (colour, polarising and neutral density filters). It is advised that the filter manufacturers instructions are followed in terms of any exposure compensation factors needed.

For eg, it is likely that red or orange filters will require compensation, or they are likely to result in under-exposed negatives (by up to 1 1/2 stops) if the cameras automatic exposing is used alone.

Filter manufacturers do usually indicate what correction factor will be needed, but failing that, it would be advisable that a user bracket exposes/tests - when using filters.

# KENTMERE 400

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## **PROCESSING / AGITATION**

Kentmere 400 is suitable for processing in most types of processing equipment – including spiral tanks, rotary processors, dishes/trays, deep tanks and automatic processors.

**Developers.** A wide range of developers are suitable to use. Developer choices and their guide process times / temperatures and dilutions are all shown in the table on page 3.

**Stop bath.** After development, although it is possible to simply rinse the film in water, we advise using a stop bath such as ILFORD ILFOSTOP (This contains an indicator dye in it).

ILFORD ILFOSTOP is suitable for both machine and manual processing applications.

When stop bath is used, it immediately stops development and reduces carry-over of excess developer into the fixer bath. This will help to maintain the activity and prolong the life of the fixer solution.

When using ILFORD ILFOSTOP bath, we advise it be used as follows:- **Ilfostop at 1+19 dilution / temperature range of 18-24°C (64-75°F) - for 10 seconds.**

Note, this 10 second time is the minimum time required. If a longer time is used, it is not anticipated that it will lead to any processing problems provided the time increase is not excessive.

We advise processing a maximum of 15 x 35mm 36 exposure films in 1L unreplenished stopbath.

**Fixers.** We recommend using either ILFORD HYPAM or RAPID liquid fixers. ILFORD RAPID fixer must not be used with fix hardeners as it is not compatible with them, but ILFORD HYPAM fixer is compatible with fix hardeners.

Generally for most applications, modern camera films are sufficiently hardened at manufacture, so additional hardening from a fixer hardener is not usually needed or recommended for processing in spiral tanks, dishes/trays, deep tanks, rotary processors, dip and dunk (hanger) machines and short leader card processors, unless the processing temperature is above 30°C (86°F), or poor drying performance is being experienced.

But, to minimise the risk of physical damage, a fixer hardener may be needed when using roller transport processors. Use of a fix hardener requires recommended fix and wash times to be extended - so depending on film / processing conditions, hardened fix times need to be between 4-10 minutes followed by a wash time of 10-20 minutes in running water.

When using ILFORD fixers as non hardening fixers, we advise they be used as follows:- **ILFORD HYPAM or RAPID at 1+4 dilution / temperature range of 18-24°C (64-75°F) - for 2-5mins.**

We advise processing a maximum of 24 x 35mm 36 exposure films in 1L unreplenished fixer.

**Washing.** If ILFORD HYPAM or ILFORD RAPID fixers have been used, we advise the films be washed in running water for 5 - 10 minutes at a temperature of within 5°C (9°F) of the process temperature.

When spiral tank processing, if possible it is advisable to drain the tank and replace it with fresh water several times (inverting with each filled tank) in the 5-10 minute wash time period. This ensures a fast, efficient wash which helps ensure negatives will be suitable for long term storage.

**Final rinse.** We advise using ILFORD ILFOTOL WETTING AGENT in the final seconds of washing as this helps to ensure the film will dry rapidly and evenly.

We suggest adding 5ml of wetting agent per litre of rinse water (equates to 1 part wetting agent - to 100 parts water).

The amount needed may vary very slightly depending on the local water quality (hard/soft water), but care needs to be taken as both too little or too much wetting agent can lead to uneven drying.

Remove excess rinse solution from the film before drying.

**Drying.** To help avoid and minimise the presence of drying marks, we advise using a clean squeegee or chamois cloth to wipe the film before hanging it to dry. We advise drying the film in a drying cabinet with temperatures of between 30-40°C / 86-104°F, or at room temperature in a clean dust-free area.

## **STORAGE OF NEGATIVES**

We advise storing processed negatives in a cool, dry place in the dark, and in suitable sleeves. Advised temperatures of between 10-20°C / 50-68°F.

Suitable negative sleeves include those made of cellulose triacetate, paper (pH6.5-7.5), or inert polyester.

## **DEVELOPMENT TIMES**

The table on page 3 shows our advised 'guide' times for both manual and machine processing Kentmere 400 film.

These times are deemed appropriate for generating negatives of average contrast, and enable good printing in most enlargers. Since they are intended as a 'guide' only, they may require very slight adjustments to enable them to closer match what a user requires.

All quoted 'guide' times are based on intermittent agitation in spiral and deep tanks. If continuous agitation is to be given, we advise reducing these times by up to 15%. Also, for rotary processors (without a pre-rinse), it is likely that these times need to be reduced by up to 15%. Note, we do not advise pre-rinsing – as it can lead to uneven processing.

## KENTMERE 400

### Spiral tank, deep tank, dip and dunk machines (min/20°C/68°F)

ILFORD developer	Dilution	Meter setting - 320/26	Meter setting - 400/27	Meter setting - 800/30
ILFOTEC DD-X	1+4	-	11 ½	13
ILFOSOL S	1+9	-	9	11
	1+14	-	12	18
ILFOSOL 3	1+9	-	6 ½	15
	1+14	-	11	25
ILFOTEC HC	1+15	-	4 ½	6 ½
	1+31	-	8	12 ½
ILFOTEC LC29	1+9	-	4 ½	6 ½
	1+19	-	8	12 ½
	1+29	-	11	-
ID-11	Stock	-	9 ½	13
	1+1	-	16 ½	20 ½
	1+3	-	25 ½	-
MICROPHEN	Stock	-	8	10
	1+1	-	15	19
	1+3	-	-	-
PERCEPTOL	Stock	-	-	-
	1+1	23	-	-
	1+3	-	-	-

### Non-ILFORD developer

Kodak D-76	Stock	-	9 ½	12 ½
	1+1	-	14	17
	1+3	-	28	-

### Dip and dunk machines (min/24°C/75°F)

ILFORD developer	Dilution	Meter setting - 320/26	Meter setting - 400/27	Meter setting - 800/30
ILFOTEC DD	1+4	-	9	13

### ILFOLAB FP40, roller transport and short leader machines (sec/26°C/79°F)

ILFORD developer	Dilution	Meter setting - 320/26	Meter setting - 400/27	Meter setting - 800/30
ILFOTEC RT RAPID	1+1+2	-	75	95
	1+1+5	-	85	120

### ILFOLAB FP40, roller transport and short leader machines (sec/24°C/75°F)

ILFORD developer	Dilution	Meter setting - 320/26	Meter setting - 400/27	Meter setting - 800/30
ILFOTEC HC	1+11	-	70	85

A wide range of information sheets are available which describe and give guidance on using any of the above mentioned ILFORD products. Some products in this information sheet might not be available in your country.

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