

FACT SHEET

HP5 *Plus*

ISO 400/27° BLACK AND WHITE PROFESSIONAL FILM FOR HIGH PRINT QUALITY AND FLEXIBILITY IN USE

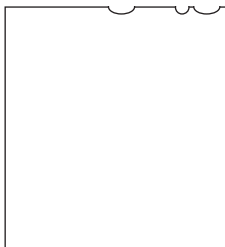
ILFORD HP5 Plus is a fast black and white film. It is ideal for action, available light and general purpose photography. HP5 Plus is compatible with all major processing systems, including those which give the standard short fixing and washing times.

Although rated at ISO 400/27°, HP5 Plus can produce high quality prints when exposed at meter settings up to EI 3200/36 and given extended development in ILFORD ILFOTEC DD-X, ILFOTEC HC, MICROPHEN or ILFOTEC RT RAPID developers.

HP5 Plus 35mm film is coated on 0.125mm/5-mil acetate base and is available in 24 or 36 exposure cassettes, or in bulk lengths of 17 and 30.5 metres (55 and 100ft). HP5 Plus 35mm film is supplied in DX coded cassettes, suitable for all 35mm cameras.

HP5 Plus rollfilm is coated on 0.110mm/4-mil clear acetate base with an anti-halation backing which clears during development. It is available in 120 and 220 lengths and is edge numbered 1 to 19 (120) and 1 to 40 (220).

HP5 Plus sheet film is coated on 0.180mm/7-mil polyester base with an anti-halation backing which clears during development. It is available in a wide range of standard sizes. The emulsion faces the user when sheet film is held in the position shown.



EXPOSURE RATING

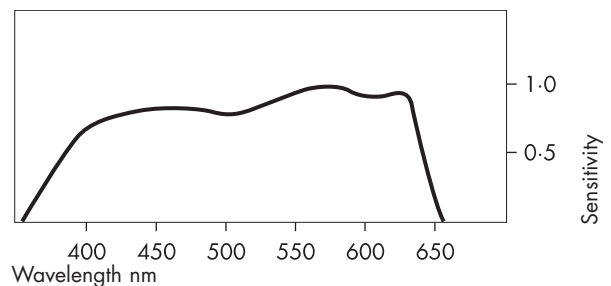
HP5 Plus has a speed rating of ISO 400/27° (400ASA, 27DIN, EI 400/27) to daylight. The ISO speed rating was measured using ILFORD ID-11 developer at 20°C/68°F with intermittent agitation in a spiral tank.

Best results are obtained at EI 400/27, but good image quality will also be obtained at meter settings from EI 400/27 to EI 3200/36.

It should be noted that the exposure index (EI) range recommended for HP5 Plus is based on a practical evaluation of film speed and is not based on foot speed, as is the ISO standard.

SPECTRAL SENSITIVITY

Wedge spectrogram to tungsten light (2850K)



FILTER FACTORS

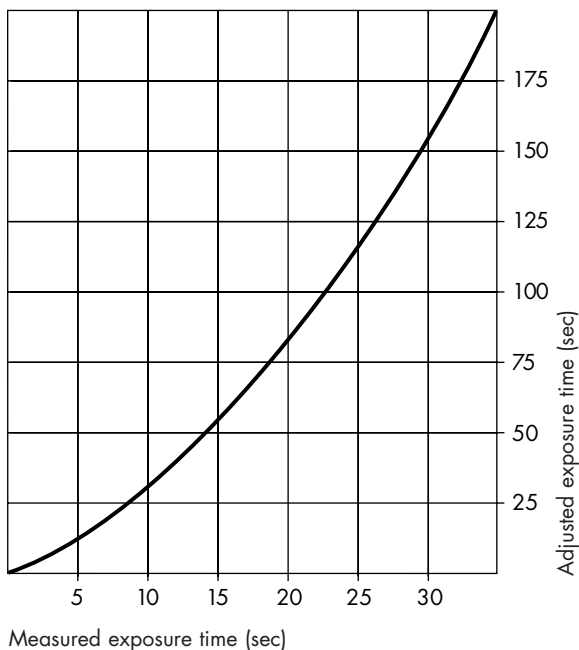
HP5 Plus film may be used with all types of filters (eg colour, polarising and neutral density filters) in the usual way. Follow the instructions given by the filter manufacturer.

The exposure increase in daylight may vary with the angle of the sun and the time of day. In the late afternoon or the winter months, when daylight contains more red light, green and blue filters may need slightly more exposure than usual.

Cameras with through-the-lens metering will usually adjust the exposure automatically when using filters. With some automatic exposure cameras, the correction given for deep red and orange filters can produce negatives under exposed by as much as 1 1/2 stops.

MAKING LONG EXPOSURES

For exposures between 1/2 and 1/10 000 second, no adjustments are needed for reciprocity law failure. When exposures longer than 1/2 second are given, HP5 Plus, along with other films, needs to be given more exposure than indicated by a meter. Use the graph to calculate the increased exposure time which should be given once the measured time is known.



CHOOSING THE BEST ILFORD DEVELOPER FOR THE JOB

Manual processing (eg spiral tank, dish/tray, deep tank) and rotary processors

	Liquid	Powder
Best overall image quality at meter setting		
EI 400/27	ILFOTEC HC (1+31)	ID-11 (stock)
EI 800/30	ILFOTEC HC (1+31)	ID-11 (stock)
EI 1600/33	ILFOTEC HC (1+15)	MICROPHEN (stock)
EI 3200/36	ILFOTEC HC (1+15)	MICROPHEN (stock)
Finest grain	ILFOTEC HC (1+15)	PERCEPTOL
Maximum sharpness	ILFOSOL S	ID-11 (1+3)
Maximum film speed	ILFOTEC HC (1+15)	MICROPHEN (stock)
One-shot convenience	ILFOSOL S ILFOTEC LC29	ID-11 (1+1) MICROPHEN (1+1)
Economy	ILFOTEC LC29 (1+29)	ID-11 (1+3) MICROPHEN (1+3)
Rapid processing	ILFOTEC HC (1+15)	
Replenishable	ILFOTEC HC	ID-11

Machine processing

Dip and dunk	ILFOTEC DD ID-11 ILFOTEC HC	Best overall image quality (liquid) and long tank life Best overall image quality (powder) and long tank life Flexible process time, range of dilutions and economy
Short leader	ILFOTEC RT RAPID ILFOTEC HC	Rapid processing, best overall image quality and long tank life Range of dilutions, flexibility and economy
Roller transport	ILFOTEC RT RAPID	Rapid processing

Some products in this fact sheet might not be available in your country

DEVELOPMENT TIMES

The table gives development times for both manual and machine processing HP5 Plus. These times will produce negatives of average contrast suitable for printing in all enlargers. The development times are intended as a guide and may be altered if a different result is needed.

For manual processing in spiral tanks and deep tanks, the development times are based on intermittent agitation. Where continuous agitation is used for manual processing (as in a dish/tray or with some types of developing tank), reduce these times by up to 15%. For use in rotary processors without a pre-rinse, reduce the spiral tank development times by up to 15%. A pre-rinse is not recommended as it can lead to uneven processing.

35mm film, Rollfilm & Sheet film

Dilution

Meter setting

EI 400/27 EI 800/30 EI 1600/33 EI 3200/36

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

ILFORD developer

ILFOTEC DD-X	1+4	9	10	13	20
ILFOSOL S	1+9	7	8½	14	–
	1+14	9½	14	–	–
ILFOTEC HC	1+15	3½	5	7½	11
	1+31	6½	9½	14	–
ILFOTEC LC29	1+9	3½	5	7½	11
	1+19	6½	9½	14	–
	1+29	9	–	–	–
ID-11	stock	7½	10½	14	–
	1+1	13	16½	–	–
	1+3	20	–	–	–
MICROPHEN	stock	6½	8	11	16
	1+1	12	15	–	–
	1+3	23	–	–	–
PERCEPTOL	stock	11	–	–	–
	1+1	15	–	–	–
	1+3	25	–	–	–

Non-ILFORD developer

Acufine Acufine	stock	4½	6½	9½	–
Agfa Refinal	stock	6	8½	–	–
Agfa Rodinal	1+25	6	8	–	–
	1+50	11	–	–	–
Kodak D-76	stock	7½	9½	12½	–
	1+1	11	13	–	–
	1+3	22	–	–	–
Kodak HC-110	A	2½	3¾	5½	9½
	B	5	7½	11	–
Kodak T-Max	1+4	6½	8	9½	11½
Paterson Acutol	1+10	7	–	–	–
Tetenal Ultrafin	1+10	7½	10	–	–
	1+20	16	–	–	–

Dip and dunk machines (min/24°C/75°F)

ILFOTEC DD	1+4	5½	6	7	–
Kodak T-Max RS	stock	4½	5	7	–

ILFOLAB FP40, roller transport and short leader machines (sec)

ILFOTEC RT RAPID	stock/26°C/79°F	60	81	120	166
ILFOTEC HC	1+11/24°C/75°F	55	70	90	130
Kodak Duraflo RT	stock/26°C/79°F	60	81	120	166

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DEVELOPMENT TIMES

If HP5 Plus has been inadvertently exposed at settings below EI 400/27, the following guide will ensure usable negatives are obtained. Obviously, the quality of negatives processed in this way will not be so high as conventionally processed ones.

Manual processing (min/20°C/68°F) - accidental exposure only

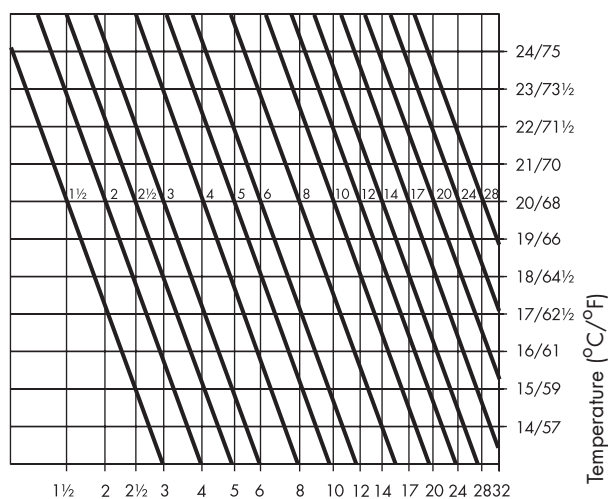
ILFORD developer	Dilution	Meter setting		
		EI	EI	EI
		50/18	100/21	200/24
PERCEPTOL	stock	9	9	11

Note Development times may need adjusting to suit individual processing systems and working practices. If an established system is producing good results, adjust the recommended development times until the desired contrast level is obtained. Development times in other manufacturers' developers are included for your convenience, and are only a general guide. Other manufacturers can and do change their product specifications from time to time, and the development times may change as a result.

PROCESSING AT DIFFERENT TEMPERATURES

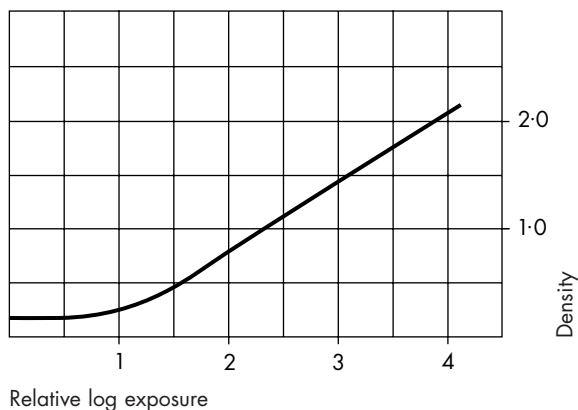
HP5 Plus film can be processed over a range of temperatures. Development times at temperatures other than 20°C/68°F may be calculated from the chart below.

For example, if 4 minutes at 20°C/68°F is recommended, the time at 23°C/73°F will be 3 minutes and the time at 16°C/61°F will be 6 minutes.



New development time (min)

CHARACTERISTIC CURVES



HP5 Plus 35mm film developed in ILFORD ILFOTEC HC (1+31) for 6 1/2 minutes at 20°C/68°F with intermittent agitation. This curve is also representative of the rollfilm and sheet film formats.

PROCESSING

HP5 Plus can be processed in all types of processing equipment including spiral tanks, rotary processors, dishes/trays, deep tanks and automatic processors. Standard capacity figures and replenishment rates can be maintained. HP5 Plus is very robust in processing and will tolerate less than ideal processing conditions. Also, it will not contaminate the processing chemicals.

Safelight recommendations

Handle HP5 Plus film in total darkness. For very brief inspections during processing, use the ILFORD 908 (very dark green) safelight filter, with a 15W bulb, fitted in a darkroom lamp (such as the ILFORD DL10 or DL20). Do not allow direct lighting from the safelight to fall on the film.

Agitation

Intermittent agitation is recommended for use in spiral tanks and deep tanks. Continuous agitation is recommended in dishes/trays (by rocking the dish or by interleaving the sheets). As a general rule, follow the recommendations given by the processing equipment manufacturer.

Fixation

After development, rinse the film in water or an acid stop bath (ILFORD ILFOSTOP or ILFOSTOP PRO) and fix in ILFORD HYPAM or ILFORD UNIVERSAL RAPID fixer (1+4) for 2–4 minutes at 20°C/68°F. A hardener is recommended only when processing at high temperatures (above 30°C/86°F) or in a roller transport processor.

Washing

Where a non-hardening fixer, such as HYPAM or UNIVERSAL RAPID fixer, has been used, wash the film in running water for 5–10 minutes at a temperature within 5°C/9°F of the processing temperature.

For spiral tank use, when a non-hardening fixer has been used, the following method of washing is recommended. This method of washing is faster, uses less water yet still gives negatives suitable for long term storage.

- 1 Process the film in a spiral tank.
- 2 Fix it using HYPAM or UNIVERSAL RAPID fixer.
- 3 After fixation, fill the tank with water at the same temperature as the processing solutions, and invert it five times.
- 4 Drain the water away and refill. Invert the tank ten times.
- 5 Drain and refill it for the third time and invert the tank twenty times. Drain the water away.

A final rinse in water to which a few drops of ILFORD ILFOTOL wetting agent have been added will aid rapid and uniform drying.

Drying

To avoid drying marks, use a clean squeegee or chamois cloth to wipe HP5 Plus film before hanging it to dry. Dry HP5 Plus at 30–40°C/86–104°F in a drying cabinet or at room temperature in a clean dust-free area.

STORAGE

Store HP5 Plus in a cool (10–20°C/50–68°F), dry place in its original packaging.

Exposed film

Once exposed, process HP5 Plus as soon as practical. Images on exposed but unprocessed film will not degrade for up to several months when stored as recommended.

Negatives

Store processed negatives in a cool (10–20°C/50–68°F), dry place, in the dark. Suitable storage sleeves include those made of cellulose triacetate, Mylar or paper (pH6.5–7.5) or inert polyester.