TECHNICAL INFORMATION

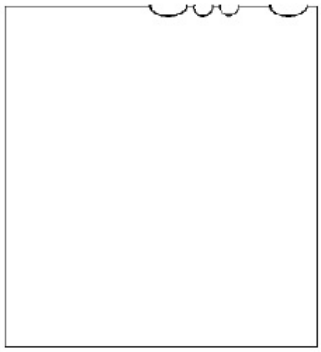
DELTA 100 PROFESSIONAL

ISO 100/21°, FINE GRAIN, BLACK AND WHITE PROFESSIONAL FILM FOR SUPERB PRINT QUALITY

ILFORD Delta 100 Professional is a medium speed, fine grain, black and white film, ideal for pictorial and fine art photography.

Delta 100 Professional 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 30.5 metres (100ft). Delta 100 Professional 35mm film is supplied in DX coded cassettes, suitable for all 35mm cameras.

Delta 100 Professional 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 lengths and is edge numbered 1 to 19.



Delta 100 Professional 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 opposite.

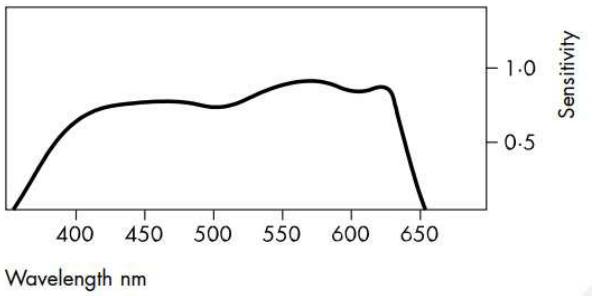
EXPOSURE RATING

Delta 100 Professional has a speed rating of ISO 100/21° to daylight. Best results are obtained at EI 100/21, but good image quality will also be obtained at meter settings from EI 50/18 to EI 200/24.

It should be noted that the exposure index (EI) range recommended for Delta 100 Professional 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

Delta 100 Professional 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 1½ stops.

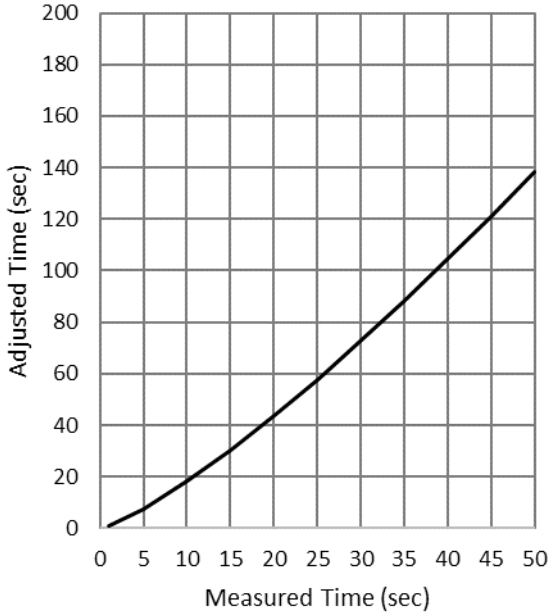
MAKING LONG EXPOSURES

For exposures between 1 and 1/10 000 second, no adjustments are needed for reciprocity law failure.

When exposures longer than 1 second are given, Delta 100 Professional, 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.

The graph is based on the formulae $Ta = Tm^{1.26}$

Ta = Adjusted Time
Tm = Measured Time



CHOOSING THE BEST ILFORD DEVELOPER FOR THE JOB
Manual processing Spiral tank, dish/tray, deep tank
Including rotary processors

	Liquid	Powder
Best overall image quality	ILFOTEC DD-X	ID-11 (stock)
Finest grain (EI 100/21)	ILFOTEC DD-X	PERCEPTOL (1+1)
Finest grain (EI 50/18)	ILFOTEC DD-X	PERCEPTOL (stock)
Maximum sharpness	ILFOTEC HC (1+31)	ID-11 (1+3)
Maximum film speed (EI 200/24)	ILFOTEC DD-X	MICROPHEN (stock)
Economy	ILFOTEC LC29 (1+29)	ID-11 (1+3) MICROPHEN (1+3)
One-shot convenience	ILFOSOL 3 (1+14) ILFOTEC DD-X	ID-11 (1+1) MICROPHEN (1+1)
Replenishable	ILFOTEC DD-X	ID-11

Machine Processing

Dip and dunk	ILFOTEC DD	Best overall image quality (liquid) and long tank life
Short leader	ILFOTEC RT RAPID	Rapid processing, best overall image quality and long tank life
Roller transport	ILFOTEC RT RAPID	Rapid processing

DEVELOPMENT TIMES

The table below gives development times for both manual and machine processing Delta 100 Professional. 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 to15%. A pre-rinse is not recommended as it can lead to uneven processing.

		35mm and Roll Film		
ILFORD developer	Dilution	Meter setting EI 50/18	EI 100/21	EI 200/24
Spiral tank, deep tank, dip and dunk machines (min/20°C/68°F)				
ILFOTEC DD-X	1+4	8	10½	12½
ILFOSOL 3	1+9	–	5	–
	1+14	–	7½	–
ILFOTEC HC	1+31	5	6	8
ILFOTEC LC29	1+19	5	6	8
	1+29	5½	7½	10
ID-11	stock	7	8½	10½
	1+1	10	11	13
	1+3	15	20	–
MICROPHEN	stock	–	6½	8
	1+1	–	10	14
	1+3	–	14	20
PERCEPTOL	stock	12	15	–
	1+1	13	17	–
	1+3	16	22	–
Non-ILFORD Developers				
Acufine	stock	–	–	5½
Rodinal	1+25	7	9	–
	1+50	10	14	–
Kodak D-76	stock	7	9	11
	1+1	9½	12	14
	1+3	14	22	–
Kodak HC-110	B	5	6	8
Kodak T-Max	1+4	6	7	8
Tetenal Ultrafin	1+10	–	6	8
	1+20	–	9½	11½
Tetenal Ultrafin Plus	1+4	–	5	7
Kodak Xtol	stock	6½	7½	9½
Dip and dunk machines (min/24°C/75°F)				
ILFOTEC DD	1+4	8	9½	12½
Kodak T-Max RS	stock	5	6	8
Kodak Xtol	stock	–	6½	9½
ILFOLAB FP40, roller transport and short leader machines (sec)				
ILFOTEC RT RAPID	1+1+2/26°C/79°F	–	40	50
	1+1+5/26°C/79°F	40	56	75

PROCESSING

Development Times

If Delta 100 Professional has been inadvertently exposed at settings below EI 50/18 or above EI 200/24, 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.

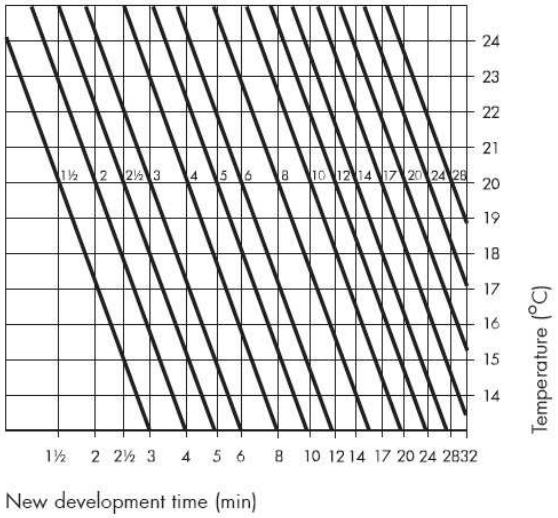
Manual Processing (min @ 20°C/68°F) – accidental exposure only

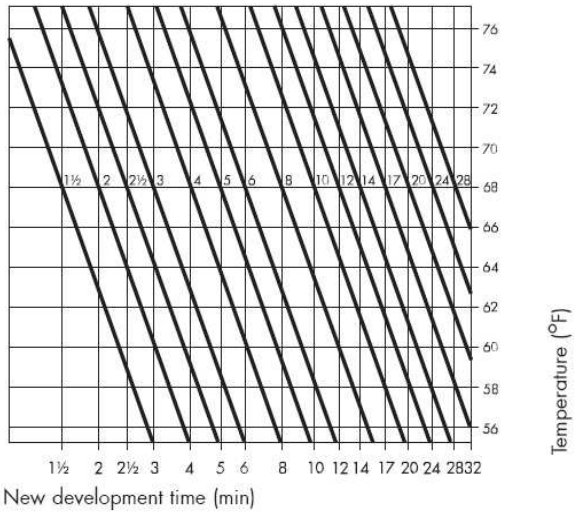
Ilford Developer	Dilution	Meter Setting	
		EI 25/15 and below	EI 400/27 and above
Microphen	Stock	-	10
Perceptol	Stock	9	-

Note Development times may need adjusting to suit individual processing systems and working practices. If an established system is producing good results, adjust the 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.

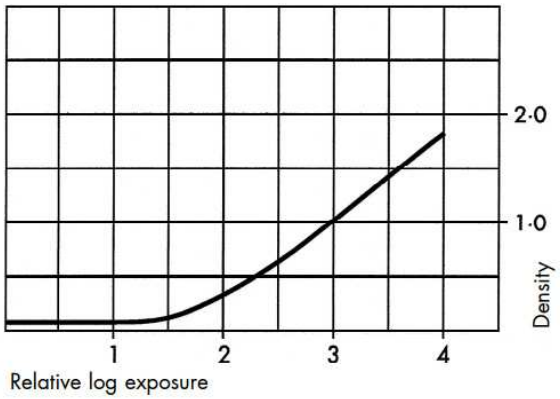
Processing at Different Temperatures

Delta 100 Professional 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.





CHARACTERISTIC CURVE



100 DELTA Professional roll film developed in ILFORD ID-11 stock for 8½ minutes at 20°C/68°F with intermittent agitation. This curve is also representative of the 35mm and sheet film formats.

PROCESSING

DELTA 100 Professional 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. When fixing DELTA 100 Professional however, slightly longer times than used with
conventional film are recommended for best results.

Safelight recommendations

Handle Delta 100 Professional film in total darkness.

Agitation

Intermittent agitation is recommended for use in spiral tanks and deep tanks. With spiral tanks, invert the tank four times during the first 10 seconds, then invert the tank four times again during the first 10 seconds of each further minute. Otherwise, follow the recommendations given by the processing equipment manufacturer.
Continuous agitation is recommended in dishes/trays by rocking the dish/tray.

Stop, fix, wash and rinse

For best results it is recommended that all process solutions are kept at the same temperature or at least within 5°C (9°F) of the developer temperature.

Stop Bath

After development the film can be rinsed in water but we recommend that an acid stop bath is used such as ILFORD ILFOSTOP (with indicator dye). ILFOSTOP is also recommended for all machine processing applications. When tanks or dishes (trays) of process solutions are in use a stop bath immediately stops development and reduces carry over of excess developer into the fixer bath. This helps to maintain the activity and prolong the life of the fixer solution.

ILFORD ILFOSTOP	
Dilution	1+19
Temperature Range	18–24°C (64–75°F)
Time (sec) at 20°C (68°F)	10
Capacity (films per litre, unreplenished)	15x (135-36)

The process time given is the minimum required, if necessary, a longer time may be used and should not cause any process problems provided it is not excessive.

Fix

The recommended fixers are ILFORD RAPID FIXER or ILFORD HYPAM FIXER.

Wash

Wash the films in running water for 5–10 minutes at a temperature within 5°C (9°F) of the process temperature. Or see note below for greater economy when using spiral tanks.

ILFORD RAPID OR HYPAM FIXERS	
Dilution	1+4
Temperature Range	18–24°C (64–75°F)
Time (mins) at 20°C (68°F)	2-5
Capacity (films per litre, unreplenished)	24x (135-36)

Note: For spiral tank use, 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.
After fixing, fill the spiral tank with water at the same temperature, +/– 5°C (9°F), as the processing solutions and invert it five times. Drain the water away and refill. Invert the tank ten times. Once more drain the water away and refill. Finally, invert the tank twenty times and drain the water away.

Rinse
For a final rinse use ILFORD ILFOTOL wetting agent added to water, it helps the film to dry rapidly and evenly. Start by using 5ml per litre of rinse water (1+200), however the amount of ILFOTOL used may need some adjustment depending on the local water quality and drying method. Too little or too much wetting agent can
lead to uneven drying. Remove excess rinse solution from the film before drying.

Drying
To avoid drying marks, use a clean squeegee or chamois cloth to wipe Delta 100 Professional film before hanging it to dry. Dry Delta 100 Professional at 30–40°C/86-104°F in a drying cabinet or at room temperature in a clean dust-free area.

STORAGE
Store Delta 100 Professional in a cool (10–20°C/50-68°F), dry place in its original packaging.
Delta 100 Professional may be stored in a fridge/freezer but allow plenty of time for the film to acclimatise prior to use.

Exposed film
Once exposed, process Delta 100 Professional as soon as practical.
Exposed films should always be stored in cool, dry conditions - as recommended above.

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, paper (pH6.5–7.5) or inert polyester.

A wide range of fact sheets is available which describe and give guidance on using ILFORD PHOTO products.
Some products in this fact sheet might not be available in your country.

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