FOMAPAN Cine 400

BLACK-AND-WHITE NEGATIVE FILM

In general

FOMAPAN Cine 400 is a panchromatically sensitized, black-and-white negative film. It is primarily intended for shooting with a film camera, negative processing and subsequent digitization (scanning, post-production). It is characterized by slightly pronounced graininess, good resolution and contour sharpness. The film is also suitable for filming in adverse lighting conditions. FOMAPAN Cine 400 has a nominal speed rating of ISO 400/27°, but due to its wide exposure latitude the film gives good results even when overexposed by 1 EV (exposure value) (as ISO 200/24°) or underexposed by 1 EV (as ISO 800/30°), depending on the type of developer used and the method of development (see pull and push process).

Speed

ISO 400/27°, 27° ČSN

Schwarzschild effect

Exposure (seconds)	*1/1000–1/2*	*1*	*10*	*100*
Lengthening of exposure	1x	1.5x	6x	8x
Correction of aperture number	0	-1	-2.5	-3

Processing

Safelighting: total darkness or infrared light

Development

FOMAPAN Cine 400 can be processed in all common negative developers. Recommended development times are shown in the table below (the development times are related to development in a spiral developing tank – agitation or turning over continuously during the first 30 seconds, then during the first 10 seconds in every minute). In this way, medium-contrast negatives can be obtained.

Developer	*Development time (minutes)*	
	20 °C	*30 °C*
Fomadon LQN (1+10)	9 – 10	4
Fomadon R09 (1+50)	11 – 12	–
Fomadon P	10 – 11	6
Fomadon Excel	7	2
Kodak Xtol	7	2
Ilford Microphen–stock	8 – 9	3.5
Ilford Perceptol–stock	9 – 10	4
Ilford ID 11/ Kodak D76–stock	7 – 8	2.5
Tetenal Ultrafin T-Plus (1+4)	7.5 – 8	–

When the development time has elapsed, the film is recommended to be shortly rinsed in distilled water or dipped in a 2 % acetid acid solution for 10 seconds.

Fixing

At a temperature ranging from 18 to 25 °C for 10 minutes in any common type of an acid fixing bath, or for at least 3 minutes in Fomafix rapid fixer.

Washing

The film should be washed in running water: for 30 minutes and 15 minutes the temperature of water being below 15 °C and over 15 °C respectively.
It is recommended to finish the processing with the film being rinsed in distilled water, or dipped in a wetting agent solution.

Storage

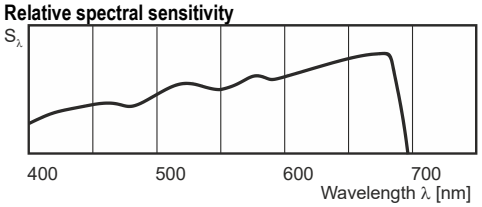
Unexposed films should be stored in the original packaging in a cool, dry place (temperature ranging from 5 to 25 °C, relative humidity from 40 to 60 %), out of reach of harmful vapours, gases and ionizing radiations. Films stored in a refrigerator and a freezer should be acclimatized to room temperature for approx. 2 and approx. 6 hours respectively. Exposed films should be processed as soon as possible.

Packaging

FOMAPAN Cine 400 is produced and supplied in the following sorts:

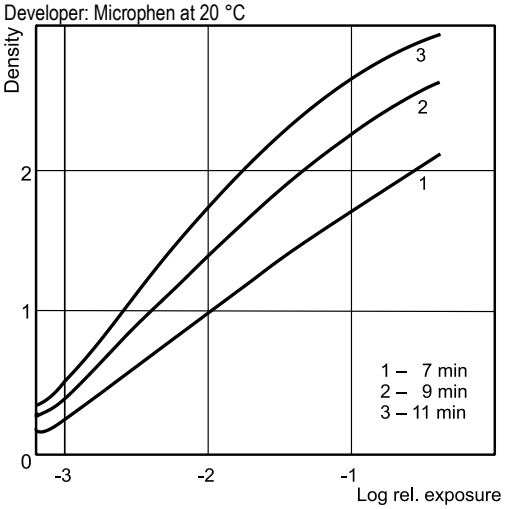
- in the width of 16 mm one-edge perforated, in the length of 30.5 m; perforation type: 1R-3000 (long pitch)
- in the width of 16 mm both-edge perforated, in the length of 30.5 m; perforation type: 2R- 3000 (long pitch)
- in the width of 16 mm, type 2x8 mm (standard), in the length of 10 m; perforation type: 2R-1500
- in the width of 16 mm, type 2 x DS 8 mm (super), in the length of 10 m; perforation type: 5R-1667 (long pitch)

Relative spectral sensitivity



Characteristic curves

Exposure: Daylight (5500 K), 1/20 s
Developer: Microphen at 20 °C



Resolving power

90 lines per mm

Granularity

RMS = 17.5 (Microphen at 20 °C, developed to γ = 0.6 (measured at D = 1.0)

Base

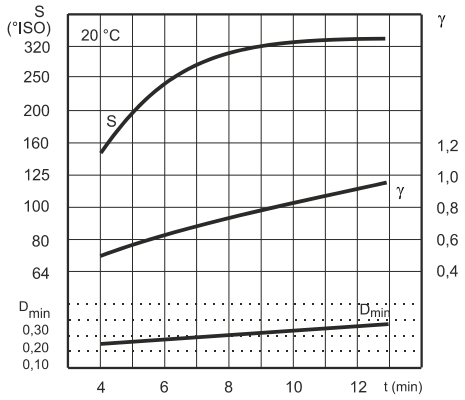
FOMAPAN Cine 400 is produced on a grey or grey-blue cellulose triacetate (TAC) backing with a thickness of 0.125 mm.

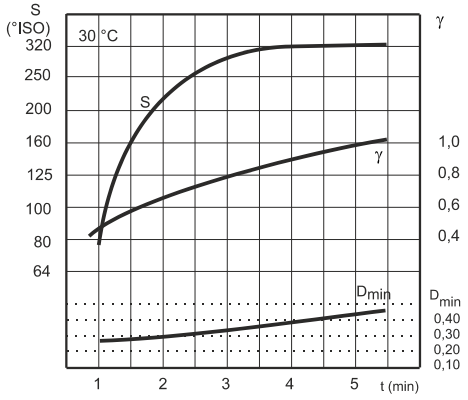
The product has been produced and marketed in conformity with a quality system according to the international standard EN ISO 9001.

DEVELOPMENT CURVES FOR FOMAPAN Cine 400

Ilford Microphen – stock

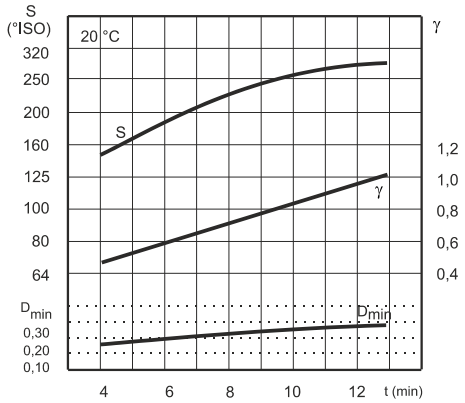
D_{min}/S/γ – development time curves at 20 and 30 °C
- daylight Tc = 5500 K
- spiral developing tank - agitation or turning over continuously during the first 30 seconds, then during the first 10 seconds in every minute.

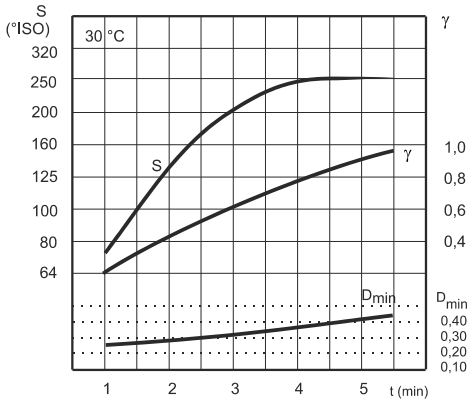




Ilford ID 11 – stock
Kodak D 76 – stock

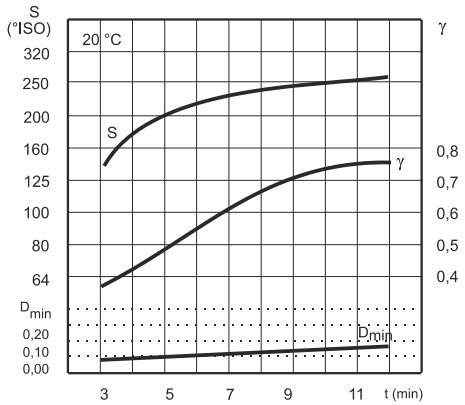
D_{min}/S/γ – development time curves at 20 and 30 °C
- daylight Tc = 5500 K
- spiral developing tank - agitation or turning over continuously during the first 30 seconds, then during the first 10 seconds in every minute.

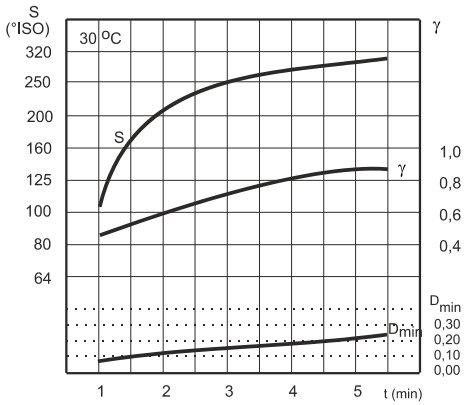




Fomadon Excel – stock
Kodak Xtol – stock

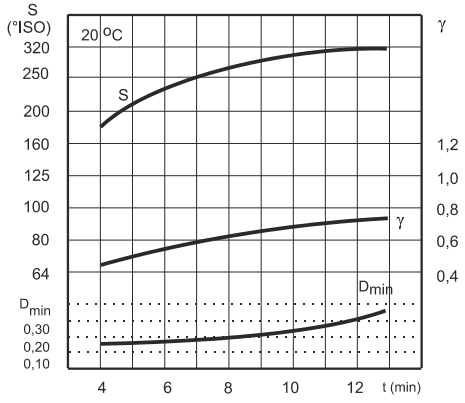
D_{min}/S/γ – development time curves at 20 and 30 °C
- daylight Tc = 5500 K
- spiral developing tank - agitation or turning over continuously during the first 30 seconds, then during the first 10 seconds in every minute.

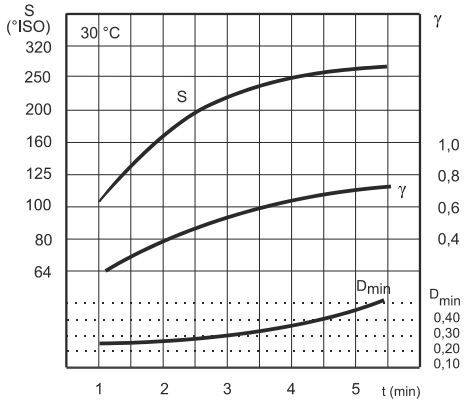




Fomadon LQN developer (1+10)

D_{min}/S/γ – development time curves at 20 and 30 °C
- daylight Tc = 5500 K
- spiral developing tank - agitation or turning over continuously during the first 30 seconds, then during the first 10 seconds in every minute.





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