FOMA ORTHO 400 – NEW!

BLACK-AND-WHITE NEGATIVE FILM

In general

FOMA Ortho 400 is a special orthochromatically sensitized black and white negative film. It is characterized by good resolving power and contour sharpness, fine grain and high maximum density of the silver image. Its high optical sensitivity enables to take photographs even in adverse light conditions and using shorter exposure times. The nominal optical sensitivity of the film is ISO 400/27°, but its wide exposure latitude provides very good results even when overexposed by 1.5 EV (ISO 160/23°) and underexposed by 2 EV (ISO 1600/33°). In case of exposure by lower chromaticity temperature (2700-2400 K) than daylight is recommended moderate adjustment of the exposure by 0,1-1 EV, especially by underexposure of the film (EI 800 ISO and higher) with an absence of modification of development time (push process). Thanks to its typical tonal character, this orthochromatic type of the film is particularly suitable for artistically stylized portrait photography. FOMA Ortho 400 has a high level of the spectral sensitivity in green part of the visible spectrum, which is particularly advantageous when taken photographs of the landscape motifs and sceneries (forest greenness of the leaves of trees, bushes, etc.).
For making positives, the enlarging and contact copying black-and-white papers are recommended, e.g. Fomabrom Variant, Fomaspeed Variant, Fomatone MG Classic, Retrobrom Sp, etc.

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

Safe lighting: it is possible to handle the film of FOMA Ortho 400 for a short time under indirect safe lighting with the wavelength of 585 nm and higher, the corresponding colour of the protective lighting - orange. Attention! The green or dark olive green light or filter can´t be used in any case.

Development

FOMA Ortho 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)	8.5 – 10	4
Fomadon R09 (1+50)	10 – 12	–
Fomadon P	9.5 – 10.5	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 Plus (1+4)	7 – 8	2.5
Tetenal Ultrafin Liquid (1+20)	13 – 14,5	4.5

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 11 minutes in any common type of an acid fixing bath, or for at least 3.5 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.
From reason of elimination of the potential stains after the dried drops it is recommended to immerse the washed film into the wetting agent solution of Fotonal, and that with a minimum double concentration, than by other films´ types: 10-20 ml/1 litre of preferably distilled water.

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.

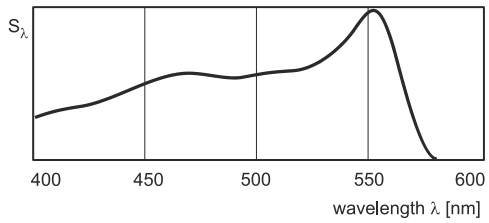
Reversal processing

It is possible to process FOMA Ortho 400 also by reversal process, manualy or mechanically (processor of JOBO CPA-2, etc.) for example in a „Processing set for FOMAPAN R-100". For required transparency of the final slides the rollfilms and sheet films are the most suitable ones for this way of processing.

Packaging

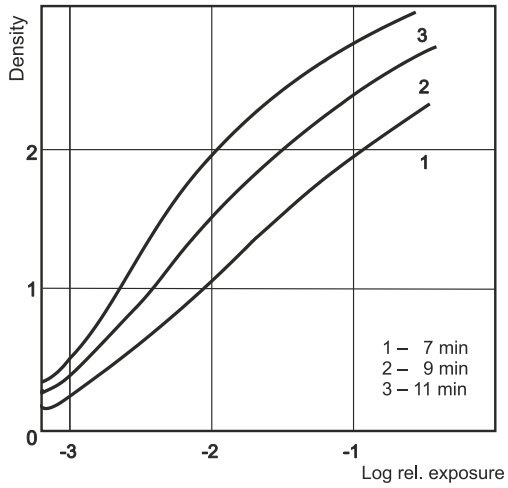
FOMA Ortho 400 is available in the following sorts:
- 120 rollfilm 60 mm wide, exlusively on a 120 spool
- double-edge perforated 35 mm film in 135-36 cartridges for 36 exposures 24x36 mm, bulk lengths of 30.5 m in a darkroom packaging
- sheet film

Relative spectral sensitivity



Characteristic curves

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



Resolving power

85 lines per mm

Granularity

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

Base

The following base is used for manufacture the particular sort of film:

- 120 rollfilm - a bluish polyester base 0.1 mm thick without antihalo layer
- 35 mm film – a gray or gray-blue cellulose triacetate base 0.125 mm thick
- sheet film – a clear polyester base 0.175 mm thick furnished with at antihalo colour backing which will decolourize during processing

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

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