FOMABROM VARIANT IV 123

BLACK-AND-WHITE VARIABLE-CONTRAST ENLARGING FB PHOTOGRAPHIC PAPER

In general

FOMABROM VARIANT IV 123 is a black-and-white, variable-contrast enlarging photographic paper on a baryta paper base. Its contrast can be varied in a large extent from extra soft up to ultra hard by using colour filters at exposure. The paper is designed for amateur, commercial and artistic photography as well as for other applications.

FOMABROM VARIANT IV 123 features a very rich half-tone scale over all contrast grades, a slightly cream-coloured tone base and saturated blacks. The paper is manufactured using silver chlorobromide emulsion that gives neutral-to-medium warm tone to the silver image.

FOMABROM VARIANT IV 123 is manufactured using a heavy spar loaded paper base material (unprepared photographic paper), with square weight of 280 g/m^2, surface finish of fine-grain type and of semi-mat gloss degree.

Packaging

FOMABROM VARIANT IV 123 is available in sheets sized from 17.8x24 cm, 24x30.5 cm, 30.5x40.6 cm and 50.8x61 cm and other sizes according to an agreement with manufacturer.

Safelighting

FOMABROM VARIANT IV 123 should be handled and processed under yellow-brown, red or orange safelighting with filters (for instance Ilford 902, Osram Duka 50, Durst Sanat, Kodak OC, Agfa G7, Agfa Y7J, etc.) in combination with a 15 watt lamp. Direct light must be diffused by inserting a matt glass. Because of its high speed, FOMABROM should not be exposed to this safelighting for longer than 2–4 minutes at a distance of 1 meter respectively.

Exposure

FOMABROM VARIANT IV 123 can be exposed in all types of enlargers and printers equipped with tungsten or tungsten halogen lamps. Particularly suitable are devices with a special colour mixing head for multi-contrast papers. Other erlargers can also be used, but separate correction filters should be inserted during exposure.

Contrast control

The contrast can be continuously varied from extra soft (contrast grade 000) to ultra hard (contrast grade 5). FOMABROM VARIANT IV 123 being orthochromatically sensitized, its contrast is controlled using yellow and magenta filters during exposure. If only the blue sensitized part of the emulsion is exposed (under magenta filters), the contrast will increase; if the green sensitized part of the emulsion is exposed (under yellow filters), the contrast will reduce. The following methods and devices are recommended for contrast control:

– standard sets of filters for variable-contrast papers (e.g. Foma Variant Filters, Ilford Multigrade Filters, etc.)

– magenta and yellow filters in colour mixing heads

– special enlarging heads for variable-contrast papers

– colour printing filters (yellow and magenta)

– colour printers with a programme for variable-contrast papers

– black-and-white printers with an inserted magenta filter for hard and ultra hard contrast grades

Filtration with colour printing filters or colour mixing heads

Contrast control filter	Filtering whit Kodak CP or CC-filters */	Filtering whit Durst colour mixing head */**/
0	80Y	60Y
1/2	55Y	45Y
1	30Y	30Y
1 1/2	15Y	10Y
2	–	–
2 1/2	25M	20M
3	40M	30M
3 1/2	65M	50M
4	100M	70M
4 1/2	150M	100M
5	200M	130M

*/ Exposure factors must be individually found by test exposures

**/ Our tests were carried out with Durst CLS 501

Constant exposure times for gradations from 0 to 5 (The second filter server to balance the density)

Contrast control filter	Filtering white Durst colour mixing head */**	
0	80Y	10M
1	48Y	20M
2	32Y	40M
3	16Y	45M
4	5Y	88M
5	–	130M

*/ Our tests were carried out with Durst CLS 501

These figures are guides only, and may vary with the mixing head used.

Processing

FOMABROM VARIANT IV 123 can be processed both manually in trays and automatically in roller developing machines approved for photographic papers on baryta paper base. Suitable are common neutral-working, sofr-working or contrast-working developers as well as special developers for variable-contrast papers. The resulting image tone is influenced by developers used.

For common work over all contrast grades and a neutral image tone, Fomatol LQN or Fomatol P developers are recommended. Using a special Fomatol PW developer, brown-green image tones can be obtained. From developers of foreign manufacturers, developers such as Kodak Polymax or Dektol, Tetenal Variospeed, Ilford Multigrade, etc. are recommended. For fixing, a common acid fixer (e.g. Fomafix P) or Fomafix rapid fixer should be used.

Manual processing in trays

Processing step	Processing bath	Time	Temperature (°C)
Development	Fomatol LQN (1+7)	110–150 sec.	20
Stopping	2 % acetic acid or Fomacitro (1+19)	20–30 sec. 20–30 sec.	20 20
Fixing	Fomafix (1 + 5) Fomafix P	3 min. 5 min.	20 20
Washing	running water	30 min. 45 min.	above 12 below 12

Drying: FOMABROM VARIANT IV 123 is reccomended for beeing dried freely leid at room temperature, eventually by hot air in maximum of 85°C and subsekquently pressed or dried stretch at maximal temperature of 35° C.

Development time – temperature curves (manual processing)

Temperature (°C)	Time (seconds)
20 °C	110–150
25 °C	70–110
30 °C	50–70
35 °C	30–45

Toning

FOMABROM VARIANT IV 123 can be toned using a direct toning method (the one-bath one, e.g. by Fomatoner Indigo), or an indirect toning method (the two-bath one, e.g. by Fomatoner Sepia). For a standard process, the indirect method is recommended. The brown image tone is particularly very popular, being obtained using Fomatoner Sepia Set. By changing the temperature of the toning bath, a wide scale of shades from light yellow-brown to dark-brown or violet-brown can be obtained.

Temperature (°C)	Image tone
up to 20	light, yellow-brown
20 - 30	warm, neutral-brown
above 30	dark-brown to violet-brown

A blue tone can be obtained using the Fomatoner Indigo Set. The resulting image tone depends on dilution, temperature and toning time.

Relation between selected type of filtration and light exposure length or spectral sensitivity of paper emulsion.

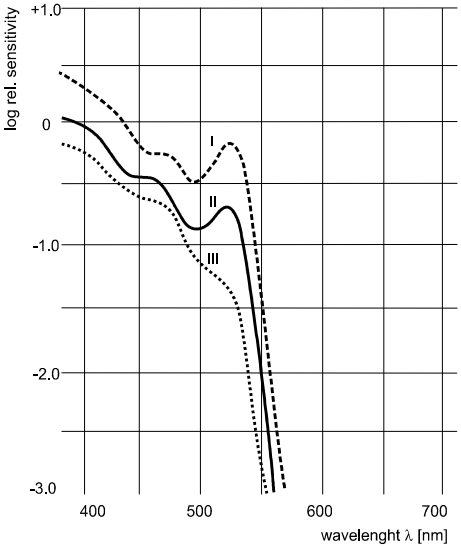
Exposing and filtering (ISO 6846)

Gradation and gradation numbers for graded papers	Real Speed	Contrast control filters	Effective speed
EW 0	ISO P 400	0	ISO P 160
	ISO P 400	1/2	ISO P 160
W 1	ISO P 400	1	ISO P 160
	ISO P 400	1 1/2	ISO P 160
S* 2	ISO P 400	2	ISO P 160
	ISO P 400	2 1/2	ISO P 160
N 3	ISO P 400	3	ISO P 160
	ISO P 400	3 1/2	ISO P 160
H 4	ISO P 400	4	ISO P 80
	ISO P 400	4 1/2	ISO P 80
EH5	ISO P 400	5	ISO P 80
**/ Basic gradation which can also be archieved without filtering. The effective speed is then ISO P400.*			

Useful exposure range ISO R, depending on the selected degree of gradation or on the degree of correction filter as applied for modification of the resulting gradation:

filter/gradation	0	1	2	3	4	5
	R140	R120	R100	R85	R70	R55

Relative spectral sensitivity



The values stated show the densities of 0.5 (I), 1,0 (II) and 1,5 (III) measured in reflection. The sensitivity is the reciprocal of the exposure in (mJ/m^2) needed to produce the relevant densities.

Maximum optical density of photographic paper FOMABROM VARIANT IV 123: D_{max} = 1,65

Storage

FOMABROM VARIANT IV 123 should be stored in an intact original packaging in a dry, cold place (temperatures of up to 5 – 21 °C and relative humidities ranging 40 – 60 %), out of reach of harmful vapours, gases and ionizing radiation.

The product has been produced and marketed in conformity with a quality system according to the international standard EN ISO 9001:2000.

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