
TECHNICAL INFORMATION**VC SELECT RC**

VC SELECT – VARIABLE CONTRAST BLACK AND WHITE PAPER, ON A RESIN BASE.

Offering commercial and creative printers a premium quality, high speed, variable contrast resin coated paper, VC SELECT gives the busy professional printer the quality alternative - superb image rendition with high speed emulsion one stop faster than most. By cutting exposure times by 50%, VC SELECT can significantly reduce valuable production time.

Deep, rich, neutral blacks, excellent tonal separation and crisp whites characterise VC SELECT.

VC SELECT is coated on a thicker base, with an extended contrast range including Grade 00; burning in overexposed skies has never been easier.

VC SELECT offers image excellence, high emulsion speed, crisp sparkling prints, backed by the quality and consistency of an ISO 9002 accredited manufacturer.

Product Description

VC SELECT is a medium weight black and white enlarging paper with a polyethylene coated base, coated with a variable contrast emulsion. Using standard colour filtration or proprietary filter sets such as ILFORD Multigrade or Kodak Polymax, contrast grades from 00 to 5 are achievable in half grade steps.

The paper is equally suitable for dish and machine processing.

Surfaces

- **Glossy:** This paper has built-in glaze to provide the maximum black density and overall print brilliance. Maximum gloss is achieved through hot air drying.
- **Fine Lustre:** An attractively textured surface which combines the depth of image and blacks normally only found with glossy papers, with the subtlety and handling advantages of a semi-matt.

Packaging

Kentmere black and white photographic papers are packed in a black plastic bag, then an outer cardboard box or envelope and finally sealed with a label and tape. The plastic bag helps protect the paper from humidity and fumes as well as being light proof.

Although the black plastic bag is light proof, we would recommend that it is also returned to the outer cardboard container before exposure to white light as small holes can develop in the plastic bag with use.

Storage

All Kentmere black and white photographic papers should be stored in their original packaging, including the black plastic bag. The plastic bag protects the paper from harmful darkroom fumes and humidity. Ideally the paper should be stored in a cool dry environment preferably at temperatures below 20°C. For prolonged storage, a freezer can be used. In either case, allow sufficient time for warming up and do not allow condensation to form on the paper.

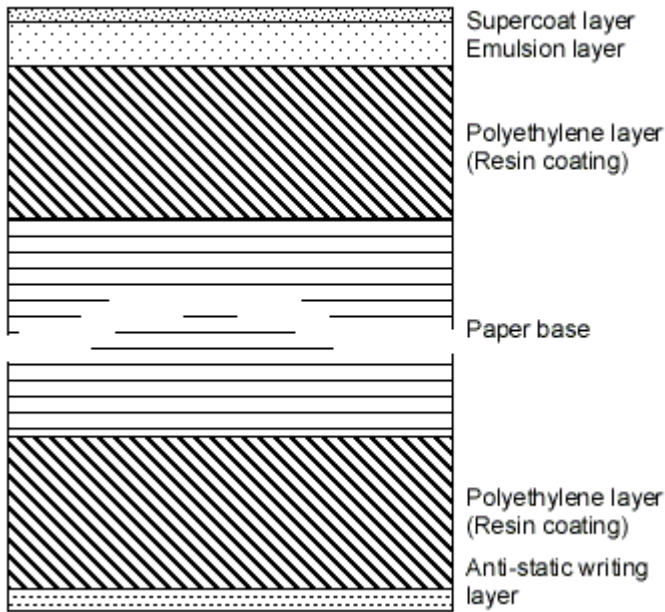
Paper Structure**Paper Base (medium weight)**

The paper is 190 g/m² coated on both sides with 40 g/m² of polyethylene giving a base weight of approximately 270 g/m² and a thickness of approximately 245 µm.

Coated emulsion layer

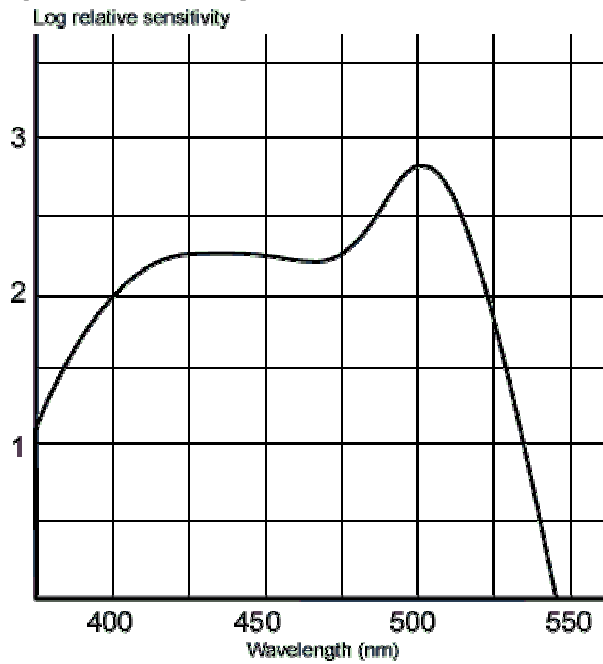
The light-sensitive silver halide emulsion layer has a silver content of approximately 1.5 g/m². This is covered with a gelatine supercoat which protects the emulsion from stress fogging and physical damage and also contains a developing agent.

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(Not to scale, for information only)

Spectral Sensitivity



Sensitivity

ISO Paper Speed (ISO speed to ISO 6846 - 1992)

When exposed to unfiltered white light, VC SELECT has a speed of ISO P 640 and a contrast of approximately grade 2.

When exposed using ILFORD Multigrade filters, grades 00 - 3½ have the same speed (ISO P 320) and grades 4 - 5 require approximately twice the exposure (ISO P 160).

Exposure

VC SELECT is designed for use with tungsten or tungsten halogen light sources.

Cold light source enlargers can be used, but they may limit the contrast range achievable.

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Contrast Control

Contrast as a range approximately equivalent to grades 00 to 5 is achievable from VC SELECT by means of colour filters used in the enlarger.

Proprietary filter sets such as ILFORD Multigrade or Kodak Polymax are suitable, as are modular and automatic enlarger heads featuring proprietary filters; otherwise the magenta and yellow filters of colour enlarging heads can be used.

Below are tables of enlarger colour filter settings recommended for use with VC SELECT. Filter settings recommended by other manufacturers will also give a similar range of contrasts; there may be slight differences in grade spacings. The contrast of the paper is continuously variable so that the grades are fixed only by the filter settings used, and thus fractional grade changes can be achieved.

Filters of colour enlargers from different manufacturers fall into three categories as follows:-

Durst: Dunco, Durst, Kaiser, Keinzle, Leitz, Lupo.

Kodak: Beseler, De Vere, Chromega, Fujimoto, IFF, Jobo, LPL, Omega, Paterson, Vivitar, Simmard.

Agfa: Agfa, Krokus, Meopta.

Table A shows the single filtration settings to enable grade selection. Speeds of grades are not the same. These are guide settings only – some additional slight alterations to quoted values may be required.

Grade	Durst	Kodak	Agfa
00	120Y	199Y	150Y
0	70Y	90Y	90Y
1	40Y	50Y	55Y
2	0	0	0
3	30M	25M	40M
4	75M	80M	85M
5	130M	199M	-

Table B shows the dual filtration settings to enable grade selection. Speeds of grades are not the same. These are guide settings only - some additional slight alterations to quoted values may be required.

Grade	Durst	Kodak	Agfa
00	120Y/0M	162Y/0M	135Y/6M
0	88Y/6M	90Y/0M	105Y/12M
1	64Y/12M	68Y/10M	67Y/17M
2	45Y/24M	41Y/32M	39Y/43M
3	24Y/42M	23Y/56M	23Y/62M
4	10Y/69M	6Y/102M	10Y/95M
5	0Y/130M	-	0Y/200M

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Contrast Range (ISO range to ISO 6846 - 1992)

Filter	00	0	1	2	3	4	5
ISO Range	150	130	110	95	80	70	60

These figures represent an average of the achievable results. A small amount of production tolerance is included. Actual results achieved may differ depending on processing, paper age and storage conditions.

Maximum density

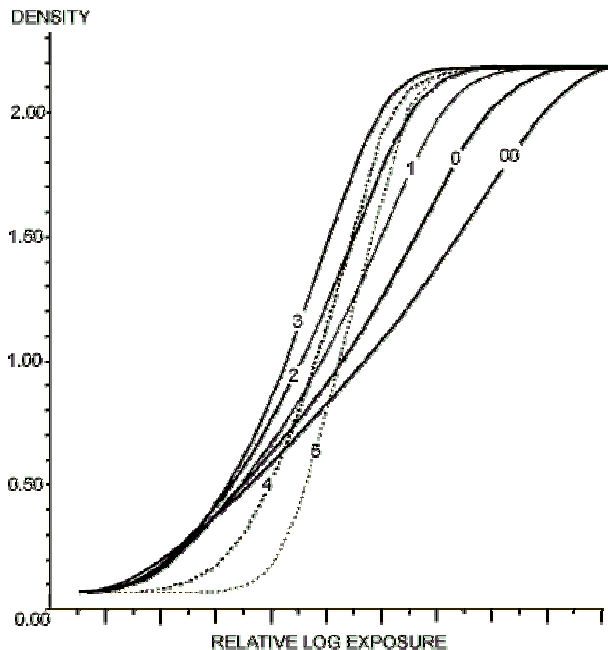
VC SELECT can achieve the following maximum densities:-

- Glossy 2.00 – 2.20
- Fine Lustre 2.00 – 2.20

Results achieved using ILFORD Multigrade Developer at 1 + 9 at 20°C, as recommended under processing instructions. Other developers and fixers should give comparable results.

Density/Characteristic curves

(Glossy surface)



Results achieved using ILFORD Multigrade Developer at 1 + 9 at 20°C as recommended under processing instructions. Other recommended developers and fixers should give comparable results.

Note, the above curves are based on a d_{max} of 2.20 being achievable, but depending on paper age, storage conditions and processing - sometimes this value can be lower (2.00).

Safelighting

VC SELECT has an orthochromatic emulsion; this requires a dark orange/brown or red safelight to be used. All variable contrast papers are more sensitive to safelights than conventional graded printing papers.

Good darkroom practices should be adopted by keeping safelight exposure to a minimum and returning unused paper to the original packaging.

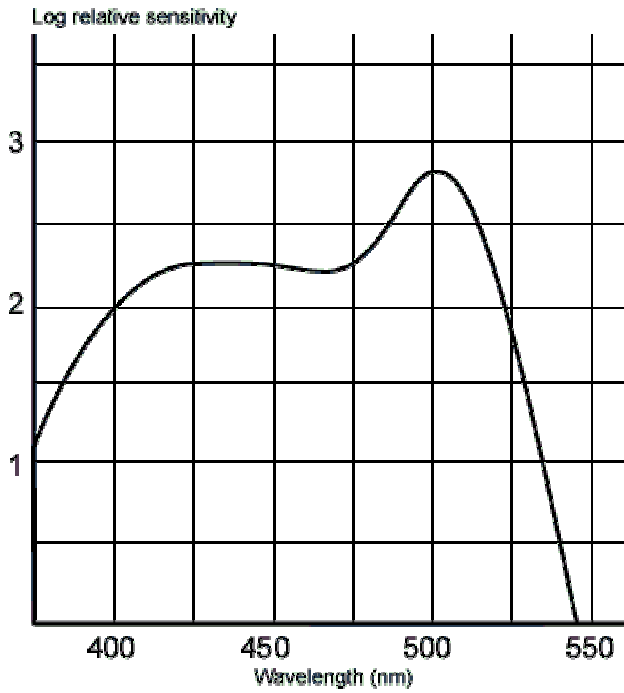
Box/lantern type safelights using glass filters should only be used with a 15 W bulb or less and should be positioned at least 1 metre from the paper. Safelight filters which are suitable for use with VC SELECT are :-

ILFORD 904, ILFORD 902 and Kodak OC or 1A.

Fluorescent safelights are also safe and suitable, these give a brighter, overall more even lighting. Fluorescent safelights should be positioned at least 1.5 metres from the paper.

Other safelights can be used, but tests should always be carried out first.

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PROCESSING

To maximise d.max, grade spacing and tonal rendition, and to enhance the characteristics of variable contrast emulsions, a developer and fixer such as ILFORD Multigrade Developer and ILFORD Hypam Fixer are recommended. Equivalent products from other manufacturers should give similar results.

The below table shows recommended dish processing conditions for use with ILFORD Multigrade developer and ILFORD Hypam/Rapid fixer.

If using another manufacturer's chemistry, refer to their instructions for recommended processing conditions, to achieve similar results.

Chemistry	Dilution	Temp.	Time (seconds)
ILFORD Multigrade Developer	1 + 9	20°C	60 s
ILFORD Multigrade Developer	1 + 14	20°C	90 s
ILFORD Ilfostop bath	1 + 19	20°C	10 s
ILFORD Hypam or Rapid Fixer	1 + 4	20°C	30 s
Wash in running water	-	-	2 minutes

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Drying

VC SELECT can be dried using any standard resin coated paper drying methods, these include:

- Warm air drying up to temperatures of 80°C.
- Atmospheric drying, having removed excess surface water using a suitable print squeegee.
- Warm air drying, as in purpose made print drying cabinets.
- Infra-red dryers such as the ILFORD ILFOLAB 1250 Dryer or similar.

Note:- VC SELECT, as with all resin coated papers, should NOT be used with a rotary glazing/drying drum or flat bed glazing/drying press.

Mounting

VC SELECT can be mounted using any of the standard methods for resin coated papers.

- Cold adhesive films/cold mounting
- Hot adhesive films/dry mounting
- Spray adhesives (such as those from the 3M range)