

TECHNICAL INFORMATION

MULTIGRADE FB CLASSIC

PREMIUM QUALITY VARIABLE CONTRAST PAPER ON A FIBRE BASE

ILFORD MULTIGRADE FB CLASSIC is a traditional premium quality, variable contrast black and white paper on a 255g/m² baryta coated fibre base. It has a white base tint, and a neutral image colour. Prints made on the paper have deep blacks, an excellent tonal rendition, and excellent overall print appearance.

MULTIGRADE FB CLASSIC is a fast speed paper, and although primarily designed for dish or trough processing, it can also be machine processed in suitable systems. It has a fast processing induction time.

MULTIGRADE FB CLASSIC glossy has good toning capabilities.

MULTIGRADE FB CLASSIC is part of the ILFORD MULTIGRADE system and is fully compatible with MULTIGRADE filters, and existing equipment. It is suitable for printing from conventional negatives and from XP2 SUPER negatives.

MULTIGRADE FB CLASSIC is a double weight baryta coated fibre base paper available in glossy surface (1K) and matt (5K) surface.

EXPOSURE

MULTIGRADE FB CLASSIC is designed for use with all enlargers.

Safelight recommendations

MULTIGRADE FB CLASSIC can be safely used with safelights that have dark orange, dark brown or red filters. eg ILFORD 904, ILFORD 902, Kodak OC, Kodak 1A, and Paterson red Dome A safelight.

A 15 W bulb is recommended with safelights.

Good darkroom practices should always be adopted, by keeping safelight exposure to a minimum and always returning un-used paper to the original packaging. Ideally, safelights should be positioned a minimum of 1.2m / 4ft away from the paper.

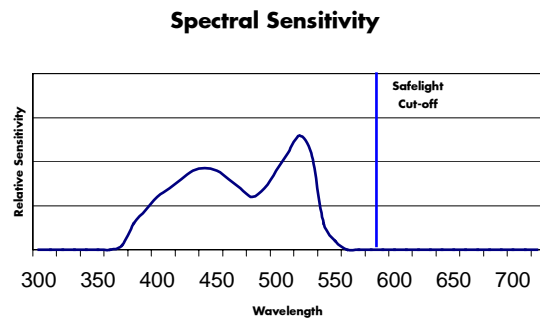
If in doubt as to whether a safelight is safe, tests should be carried out. Refer to the technical information sheet 'Safelighting' for how to carry this out.

Web link to

<http://www.ilfordphoto.com/applications/page.asp?n=148>

Spectral Sensitivity

Wedge spectrogram to tungsten light (2856K)



Use an appropriate safelight with a cut-off of no lower than 580nm – either a dark brown or red type.

Contrast range

Seven full grades of contrast, in half grade steps, are available on MULTIGRADE FB CLASSIC paper when used with the ILFORD MULTIGRADE speed-matched filters.

The chart below gives the ISO range figures (ISO standard 6846 – 1992) for MULTIGRADE FB CLASSIC. These figures give a guide to selecting the appropriate grade of paper for a given effective negative density range.

MULTIGRADE FB CLASSIC unfiltered has an ISO range of R95.

ISO range

MULTIGRADE FB CLASSIC paper and MULTIGRADE filters

Filter	00	0	1	2	3	4	5
Range (R)	170	140	110	95	80	60	50

The above values are representative of those obtained when dish/tray processing the paper to ILFORD recommendations.

ISO range figures may be helpful to printers who have some means of measuring the effective density range of the image as projected on the enlarger baseboard – such as with a photometer.

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ISO speed

The speed of MULTIGRADE FB CLASSIC depends on the filtration used during exposure. MULTIGRADE FB CLASSIC unfiltered, has a paper speed of ISO P500.

ISO paper speed

MULTIGRADE FB CLASSIC paper and MULTIGRADE filters

Filter	00	0	1	2	3	4	5
Speed (P)	230	230	230	230	230	210	210

The above values are representative of those obtained when dish/tray processing the paper to ILFORD recommendations.

Film speed equivalent

ISO paper speed is different to film speed. If you wish to use this paper product in a pinhole camera, a suggested start value would be an approx film speed of ISO 6, but some experimentation will likely be required.

Exposing light sources

MULTIGRADE FB CLASSIC is designed for use with most enlargers and printers, such as those fitted with either a tungsten or tungsten halogen light source.

It is also suitable for use with cold cathode (cold light) light sources designed for variable contrast papers. Other cold cathode (cold light) and pulsed xenon light sources may give a reduced contrast range.

Contrast control

Contrast is controlled by using MULTIGRADE hand filters, MULTIGRADE equipment such as MULTIGRADE 500/600 systems, and variable contrast enlarger heads or colour enlarger heads.

The twelve MULTIGRADE filters are numbered 00–5 in 1/2 steps, with the lowest filter number corresponding to the softest contrast.

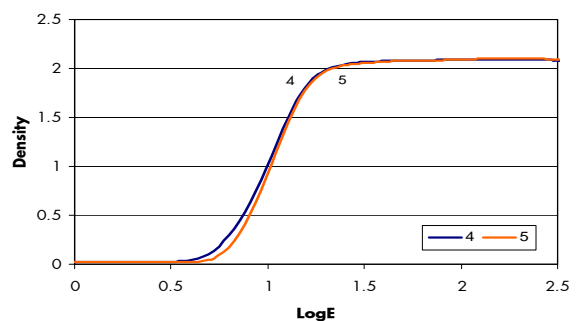
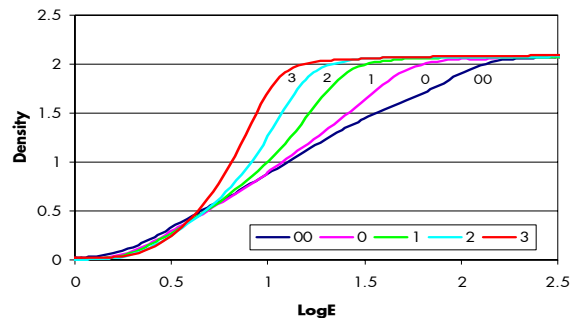
'Guide' exposure times for filters 00–3 1/2 are generally the same; but filters 4–5 will need additional exposure times – typically between x1.5 to double the time.

For more information on controlling contrast with colour enlargers and variable contrast heads, refer to the technical information sheet 'Contrast control'.

Web link to

<http://www.ilfordphoto.com/Webfiles/2010628932591755.pdf>

Characteristic curves



MULTIGRADE FB CLASSIC glossy paper exposed through filters 00, 0, 1, 2, 3, 4 and 5. Developer: MULTIGRADE diluted 1+9. Development: 2 minutes at 20°C/68°F.

Grades 4 and 5 are shown separately due to them having increased exposure.

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PROCESSING

MULTIGRADE FB CLASSIC is processed in the same way as other fibre base papers.

Note Photographic chemicals are not hazardous when used correctly. Always follow the health and safety recommendations on the packaging.

Photochemicals material safety data sheets containing full details for the safe handling, disposal and transportation of ILFORD chemicals are available from ILFORD.

Processing summary (intermittent agitation)

ILFORD chemical	Dilution	°C/°F	Time (min : sec)
Developer			
MULTIGRADE or MULTIGRADE or BROMOPHEN or PQ UNIVERSAL	1+9 1+14 1+3 1+9	20 / 68 20/68 20/68 20/68	1:30 – 3:00 2:00–5:00 1:30–3:00 1:30–3:00
Stop bath			
ILFOSTOP	1+19	18–24/64–75	0:10
Fixer			
ILFORD RAPID or HYPAM	1+4 1+4	18–24/64–75 18–24/64–75	1:00 1:00
Washing			
Fresh, running water	Above 5/41		30 – 45mins

Development

See the 'Processing summary' for development recommendations.

On correctly exposed prints with MULTIGRADE developer 1+9, the image will begin to appear at approx 20 seconds.

Development can be extended up to 6 minutes without any noticeable change in contrast or fog.

To give greater control during development, and for economy, the 1+14 dilution of MULTIGRADE developer can be used.

MULTIGRADE FB CLASSIC paper can also be processed in other high quality dish/tray developers.

Stop bath

See the 'Processing summary' for stop bath recommendations.

The use of a stop bath is strongly recommended. A stop bath stops development immediately, reduces the risk of staining and will extend the life of the fixer bath.

Fixation

See the 'Processing summary' for fixing recommendations.

The use of a hardening fixer is not recommended as it reduces washing efficiency. ILFORD RAPID FIXER and HYPAM are non-hardening fixers.

There is no benefit in extending fixation beyond the recommended time; some loss of print quality might be seen when long fixing times are given due to image etching.

Washing

See the 'Processing summary' for washing recommendations.

Drying

A final rinse in ILFORD ILFOTOL, diluted 1+200 with water, will aid even and rapid drying.

After washing, squeegee prints on both sides to remove surplus water. Prints can be clipped back-to-back to minimise curl and air-dried at room temperature, or glazed, or heat-dried.

OPTIMUM PERMANENCE

The standard fixing and washing recommendations will give excellent print permanence for all commercial needs. When optimum permanence is needed, perhaps for archival storage of prints, the following fixing and washing sequences at 18–24°C/65–75°F (including wash water) are recommended using ILFORD WASHAID.

Do not add a hardener to the fixer.

Be careful not to exceed the capacity of the fixer and not to extend the fixing time as both these make washing more difficult.

Optimum permanence sequence

	ILFORD RAPID FIXER (1+4)	1 min
Fixation	or HYPAM (1+4)	1 min
First wash	Fresh, running water	5min
Washing aid	ILFORD WASHAID (1+4) intermittent agitation	10min
Final wash	Fresh, running water	5min

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Optimum permanence sequence with selenium toner

Fixation	ILFORD RAPID FIXER (1+4)	1 min
	or HYPAM (1+4)	1 min
Toning	intermittent agitation	
	Selenium toner diluted with working strength	* min
Washing aid	ILFORD WASHAID instead of water, intermittent agitation	10min
Final wash	Fresh, running water	30min

* Tone the print for the appropriate time to achieve the depth of colour needed.

FINISHING

MULTIGRADE FB CLASSIC responds in the same way as other fibre base papers to the usual techniques of toning, chemical reduction and retouching.

The glossy surface (1K) paper responds more favourably to toning than the matt surface (5K) paper.

It can be mounted using the standard techniques for fibre base papers.

STORAGE

Unprocessed paper

Store unused MULTIGRADE FB CLASSIC paper in a cool, dry place in its original packaging preferably at temperatures of below 20°C / 68°F.

Avoid conditions of high temperature and/or high humidity.

MULTIGRADE FB CLASSIC will keep in excellent condition for up to three years when stored as recommended.

Prints

MULTIGRADE FB CLASSIC prints which have been processed as recommended in this leaflet will have a more than adequate storage life for most purposes.

Print life will be shortened, however, in adverse storage conditions, or if the print is exposed to oxidising gases.

It is recommended that prints made for display are toned to protect them from the oxidising gases that are found in many environments.

Selenium toner is recommended as it has little effect on the image colour of MULTIGRADE FB CLASSIC, but other protection methods can be used including sulphide toning and silver image stabilisers.

A wide range of technical information sheets are available which describe and give guidance on using ILFORD products.

Some products in this technical information sheet might not be available in your country.

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