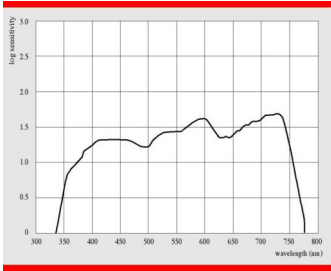




SPUR UFG (Ultra Fine Grain) Film with the new Special Developer SPUR UFG -1 (As at August 30, 2023)

SPUR UFG film is an extremely fine-grained film with variable sensitivity from ISO 50/18° to ISO 125/22°, pushable to ISO 200/24°, due to the aforementioned new developer SPUR UFG-1.



The film basis of the new process is AGFA Aviphot Pan 80, an emulsion originally developed for aerial photogrammetry.

The spectral sensitization goes far into the red range (see graph) and allows the film to be used as an infrared substitute film.

The maximum resolution of the film material is 287 LP/mm at a contrast of 1000 : 1 and 101 LP/mm at a contrast of 1.6 : 1, measured when developed with a high-contrast developer for aerial photography.

SPUR UFG is available as 35mm film 135 as well as roll film 120.

Due to the extremely high level of fine grain, very high sharpness cannot be achieved with conventional image-wise developers, and the characteristic curve also leaves a lot to be desired when conventional developers are used. This is because the film was originally developed for aerial photogrammetry rather than image-wise purposes.

For this reason, we have "tailored" this film to a special developer for imaging purposes, so to speak, which completely eliminates the above-mentioned problems. With the new two-component developer SPUR UFG-1, high sharpness and high resolution are achieved while maintaining the extreme fine grain, and in addition the characteristic curve is corrected and improved.

Development parameters for 35 mm films 135: (Roll film 120 must be overexposed by 1 DIN):

Film Speed: **ISO 50/18°** (120 film ISO 40/17°)

Dilution: 1 + 11.5 (total)

z. e.g. 10 ml A + 10 ml B to 250 ml working solution

Development time at **20° C: 10,5 min**

Inversion: After filling twice, **then twice every 3 min, while the last 2 minutes inverse permanently 90 seconds**

Contrast: N

Film Speed: **ISO 80/20°** (120 film ISO 64/19°)

Dilution: 1 + 11.5 (total)

z. e.g. 10 ml A + 10 ml B to 250 ml working solution

Development time at **20° C: 12,5 min**

Inversion: After filling twice, **then twice every 3 min, while the last 2 minutes inverse permanently 45 seconds**

Contrast: N

Film Speed: **ISO 100/21°** (120 film ISO 80/20°)

Dilution: 1 + 11.5 (total)

z. e.g. 10 ml A + 10 ml B to 250 ml working solution

Development time at **22° C: 13 min**

Inversion: After filling twice, **then twice every 3 min**

Contrast: N

Film Speed: **ISO 125/22°** (120 film ISO 100/21°)

Dilution: 1 + 11.5 (total)

z. e.g. 10 ml A + 10 ml B to 250 ml working solution

Development time at **25° C: 13,5 min**

Inversion: After filling twice, **then twice every 3 min**

Contrast: N

Film Speed (Push) **ISO 160/23°** (120 film ISO 125/22°)

Verdünnung 1 + 11,5 (total)

z. B. 10 ml A + 10 ml B to 250 ml working solution

Developing time at **26° C: 14 min**

Inversion: After filling twice, **then twice every 3 min**

Contrast: N + 0,25

Film Speed (Push) **ISO 200/24°** (120 film ISO 160/23°)

Dilution 1 + 11,5 (total)

z. e. g. 10 ml A + 10 ml B to 250 ml working solution

Developing time at **28° C: 16 min**

Inversion: After filling twice, **then twice every 3 min**

Contrast: N + 0,5

Final assessment of the results:

The **higher the selected sensitivity**, the less drawing in the shadows and the more differentiation in the highlights.

Exposure with **ISO 50/18° is not recommended** by us, despite the best shadow drawing, because the highlights are rendered relatively soft and undifferentiated. You should therefore only use this sensitivity if you absolutely need the resulting shadow drawing and do not need good highlight differentiation.

The **best characteristic curves** are obtained at **ISO 80/20° and ISO 100/21°**. We therefore recommend **ISO 80/20° and ISO 100/21° as standard**. At ISO 80/20° the shadow drawing is slightly better, at ISO 100/21° the highlight differentiation.

Graininess increases somewhat from ISO 125/22°, but resolution does not deteriorate; in fact, it improves as a result of the higher contrast and underexposure of the shadows.

Highlights are soft at ISO 50/18° (poor differentiation), normal at ISO 80/20°, normal at ISO 100/21°, still normal at ISO 125/22°, a bit steeper at ISO 160/23°, and steeper still at ISO 200/24°.

From ISO 125/22° to ISO 200/24°, **Zone 6 is rendered with lower density**, resulting in darker skin tones for Central Europeans. This effect is more pronounced the higher the selected sensitivity, i.e. especially at ISO 200/24.

From ISO 125/22°, the **contrast increase between zone 6 and zone 8 is higher than normal**. At these sensitivities, the density difference between zone 6 and zone 8 is approx. 0.70, at ISO 200/24° even 0.80. This leads to an unusual image expression in this range, which can be used for creative purposes.

This is why **the push sensitivities from ISO 125/22°** should only be used if the lighting situation demands these sensitivities or if the resulting properties described, including the somewhat coarser graininess, are to be explicitly achieved because of a desired image expression.

Developing temperature:

All temperature specifications represent the filling temperature of the working solution. Keeping this temperature constant (e.g. in a warm water bath) during development is not necessary; on the contrary, it would falsify the results. It is only necessary to ensure that the development takes place in a room with a normal room temperature of approx. 20° to 21° C. The temperature must be kept constant during development. If development takes place in summer at higher room temperatures, the development time must be reduced accordingly. It should be noted here that the higher the room temperature on the one hand and the higher the filling temperature on the other, the more the development time must be reduced.

Shelf life and Capacity:

SPUR UFG-1 is very durable. Part A lasts for at least 3 years if unopened, Part B has an almost unlimited shelf life.

With 2 x 100 ml concentrate (A + B), 10 KB films can be developed when using Jobo's 1500 tank system. With developing cans requiring 300 ml working solution, 8 KB films can be developed.

The working solution is a one-time developer and should be used relatively soon after preparation. Its shelf life is short.

Water quality:

It is essential to use distilled/ionized water for the preparation of the working solutions.

Exposure: Please note the following:

Because of the PET film base of the 135-film, light piping might occur and expose the first frames. To avoid this, the film should be stored in a black film can before and after use. The film should not be lying around without protection from light. Loading the camera should be done at not too bright light. The camera must have a manual adjustment for film speed.

Overexposure should be avoided, as this can lead to irradiation with certain subjects (e.g. white writing on a black background).

Tips for using filters:

Due to the red sensitivity of the film, with a bright red filter you lose only 2 stops of sensitivity, with a dark one only 2.5 stops. We recommend that you do not measure the exposure through the filter, but instead measure without the filter and stop down accordingly to avoid incorrect exposures due to possible red-blindness or excessive weighting of red light caused by the measuring cell.

The use of filters is associated with a reduction in quality depending on the subject, unfortunately also when using red filters. The lowest quality reduction occurs when using a green filter, even when using an orange filter the quality reduction is still relatively low.