

# AVIPHOT PAN 80

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A panchromatic negative film for aerial photography.

Aviphot Pan 80 PE0 is a panchromatic aerial negative high resolution film, coated onto a transparent polyester base providing excellent dimensional stability.

Thickness of the polyester base PE1: 0.10mm / 0.004”.

Aviphot Pan 80 PE0 with a polyester base of 0.06mm/0.0025” is a film with the same emulsion and back layer as the PE1 version. This thinner base material allows larger film capacity on spools or cores.

## ■ Characteristics

- Aviphot Pan 80 has a high-efficiency protection layer on top of its emulsion to prevent scratching and pre- or desensitising by pressure.
- Base substrate and back layer keep their anti-static properties, even after processing.
- The spectral sensitivity of Aviphot Pan 80 is expanded into the near infrared range of the energy spectrum. As a result, the film offers excellent penetration through haze, fog and other atmospheric conditions liable to affect the image quality. Due to the reduced scattering by the atmosphere, images are sharp and well edged.
- Its spectral sensitivity to up to 750 nm makes Aviphot Pan 80 an outstanding tool for differentiation of species in agricultural and ecological studies.
- The photographic speed combined with the modern optics and the motion compensation systems of aerial cameras permits low to high altitude flights.
- The image contrast can be controlled by the processing parameters. Aviphot Pan 80 can be processed as a low contrast film for large-scale photography and as a high contrast film for high altitude civilian or military applications.
- Processing can take place in a continuous tone processor or manually (rewind development).

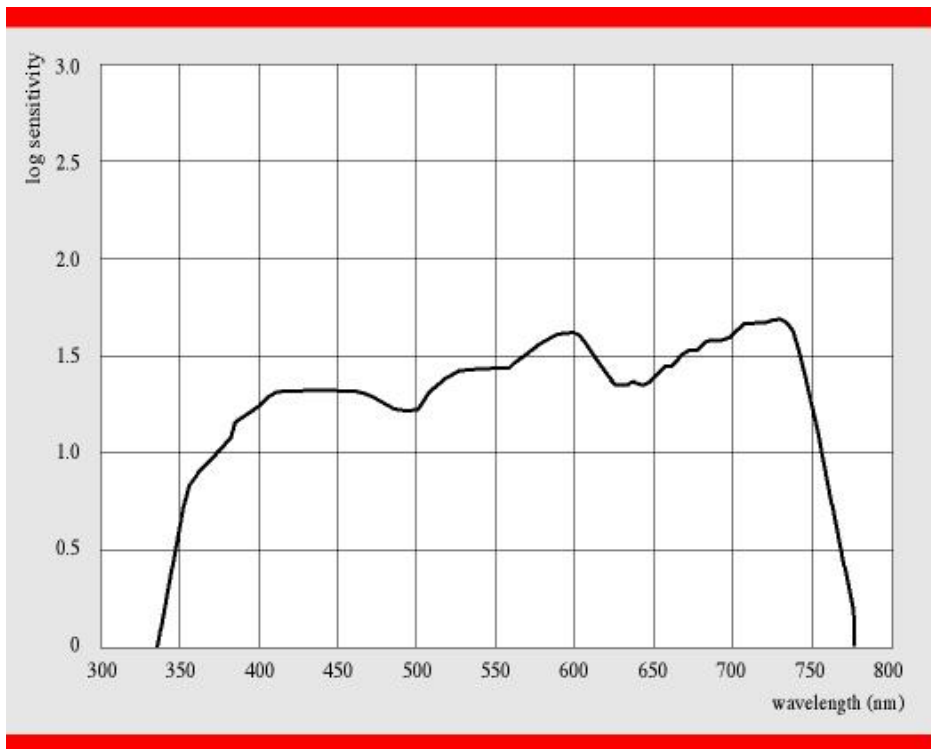
## ■ Applications

- The very fine graininess and the high sharpness of the film, makes it ideal for use in military high altitude reconnaissance and for detailed mapping applications.
- Due to its very fine grain, its explicit detail rendering and its ability to be processed at low contrast, this film is producing low grain and very low noise when scanned.

## ■ Photographic data

- **Colour sensitivity:** panchromatic up to 750 nm.

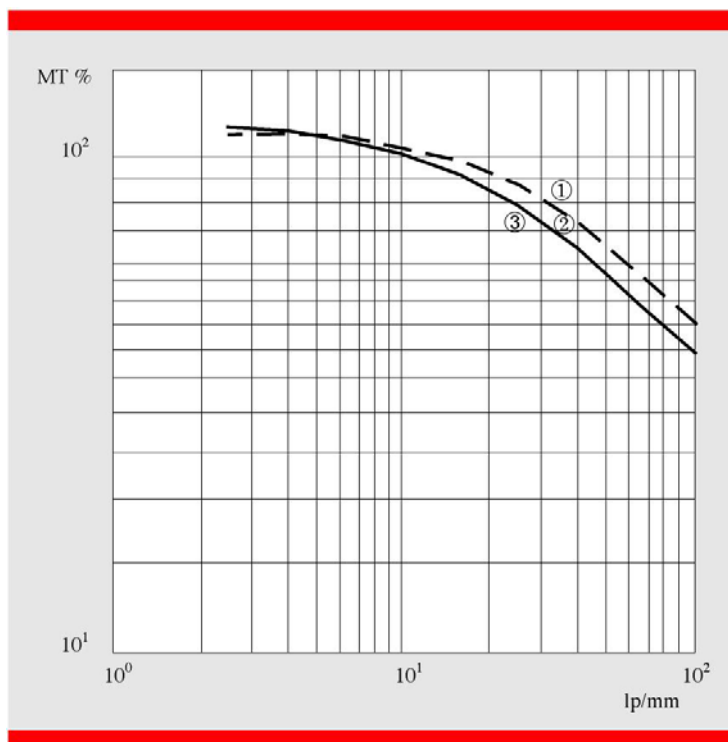
- Absolute spectral sensitivity



Sensitivity is reciprocal of the exposure ( $\text{mJ/m}^2$ ) required to produce a diffuse density of 1.0 above fog. Processed in Gevatone 66, G 74 c developer at 30 °C for 42 seconds.

- Photographic Modulation Transfer Function

The MTF curve expresses the ability of detail rendering (% of light signal modulation rendered) at increasing detail (detail frequency in lp/mm). MTF measured at 20, 42 and 70 seconds developing time in Gevatone 66 processor, G 74 c at 30 °C. Processing in G 74 c + AD 74 will shorten the developing time and improve the MTF results.

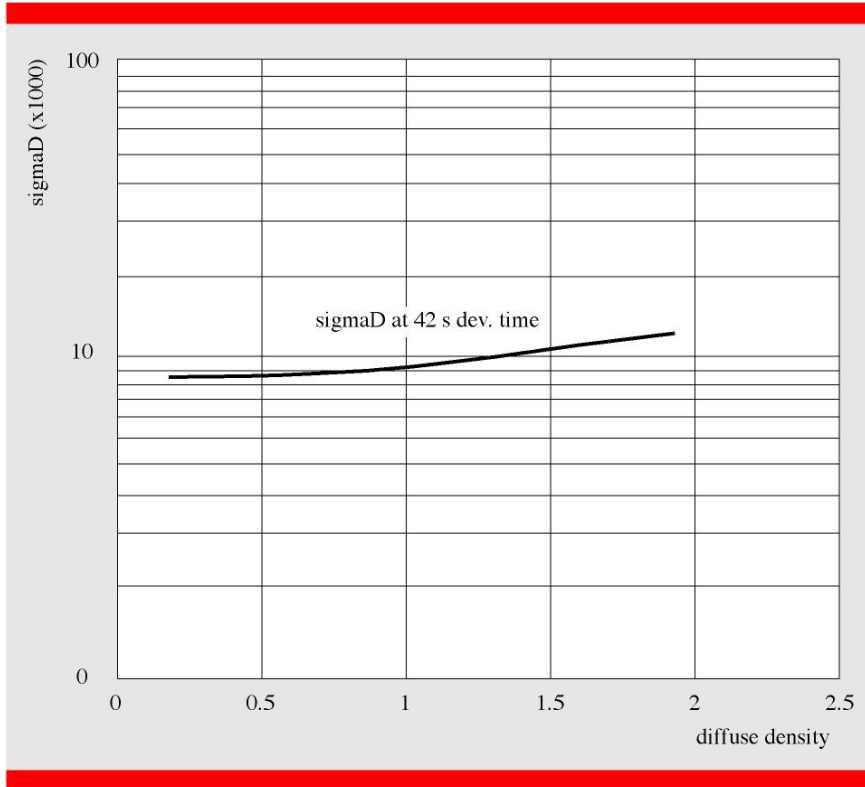


- ① MT curve at 20 s dev. time
- ② and ③ MT curve at 42 and 70 s dev. time

Measured on USAF 1951 resolution test patterns.  
 Processed in Gevatone 66, in G 74 c developer at 30 °C for 42 s.  
 TOC (target object contrast) 1000:1 = 287 line pairs or 574 dots/mm.  
 TOC 1,6:1 = 101 line pairs or 202 dots/mm.

- Granularity / Graininess

RMS granularity calculated from a microdensitometric scan with 50 µm spot.  
 Processing in Gevatone 66 processor, in G 74 c at 30 °C, for 42 seconds developing time.



## ■ Production guidelines

### Darkroom lighting

The film should be handled in complete darkness.

### Exposure

The film sensitivity can vary with processing.

Aviphot Pan 80 can be exposed as a 64 ASA to 100 ASA film. So, it can be used with all classic aerial recording cameras. The exposure depends on the required image contrast, the spectral quality and the intensity of the reflected light and the use of filters.

### Filter factors

If filters are used, the exposure time should be increased by a filter factor.

With filter	L 453 yellow	L 519 orange-yellow	L 599 red	L 622 deep red
Filter factor	1.5	1.8	3.0	4.0

## Processing

Automatic processing in a continuous-tone processor.

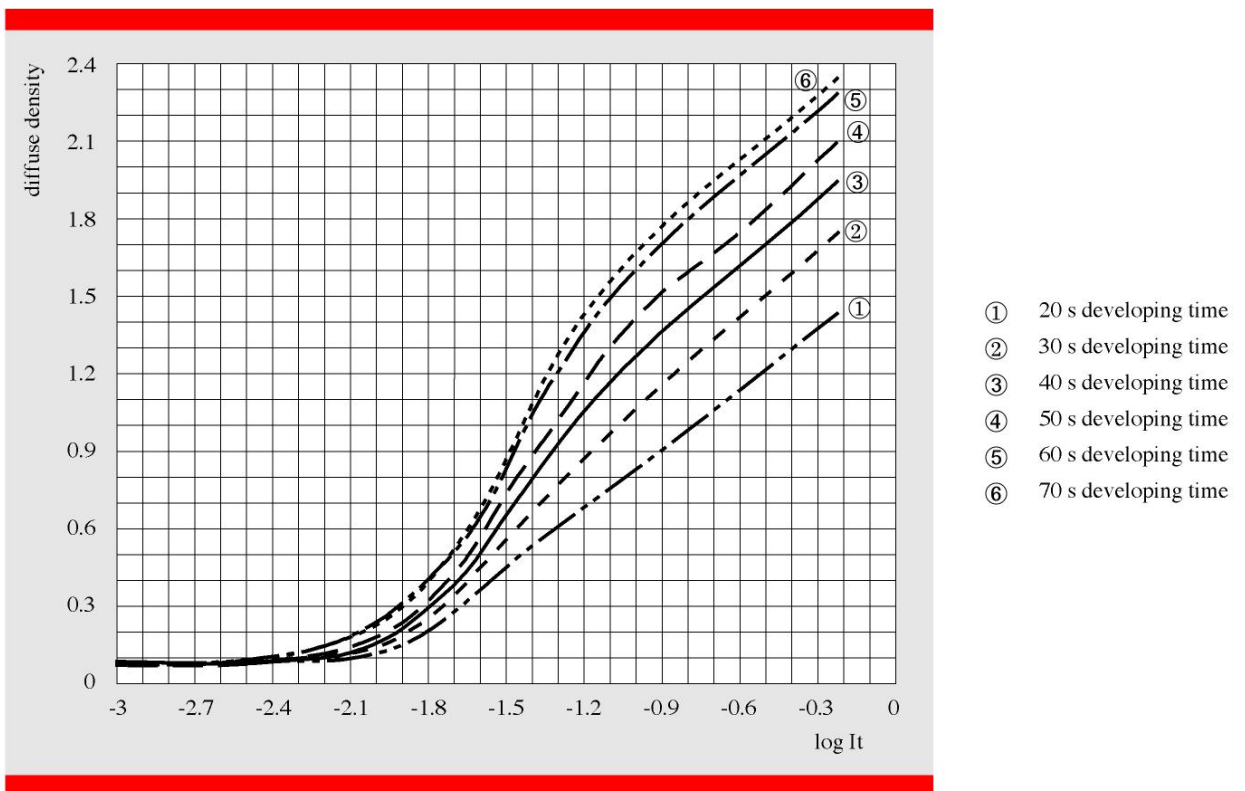
Recommended processing conditions:

Developer	G 74 c or G 74 c + AD 74
Developing time	From 20 to 70 seconds, depending on the required image contrast and speed.
Fixer	PFIX (or G333c)
Washing	Minimum 6 l/min at 30 °C

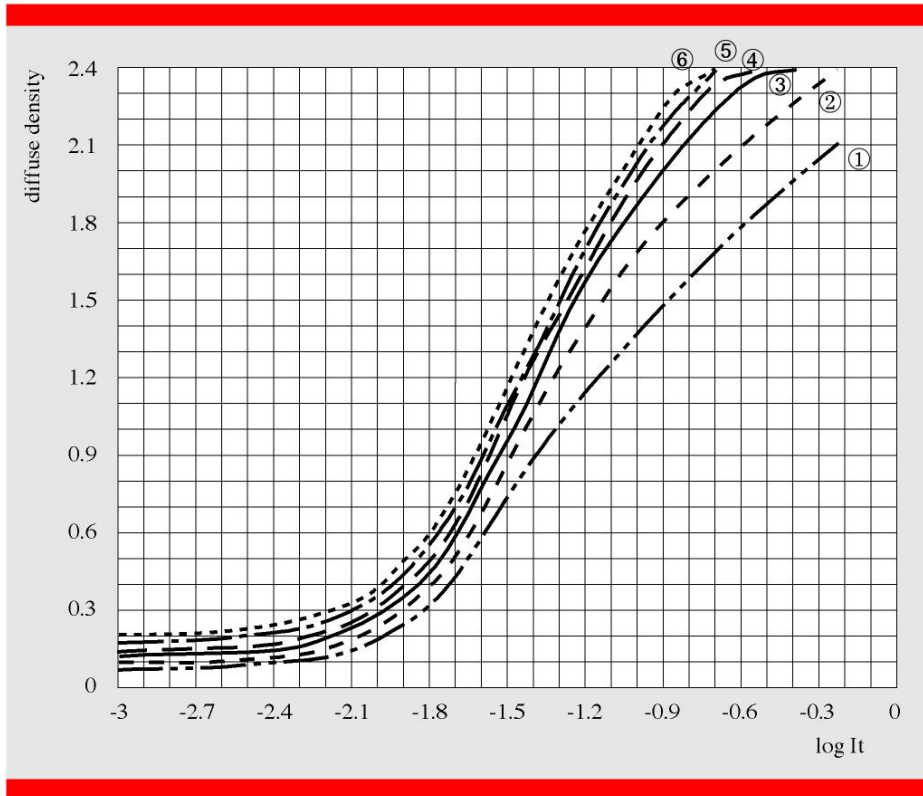
## Sensitometry in Gevatone 66, G 74 c developer at 30 °C

### Main sensitometric curves

- Characteristic curves in Gevatone 66, G 74 c, 30 °C.

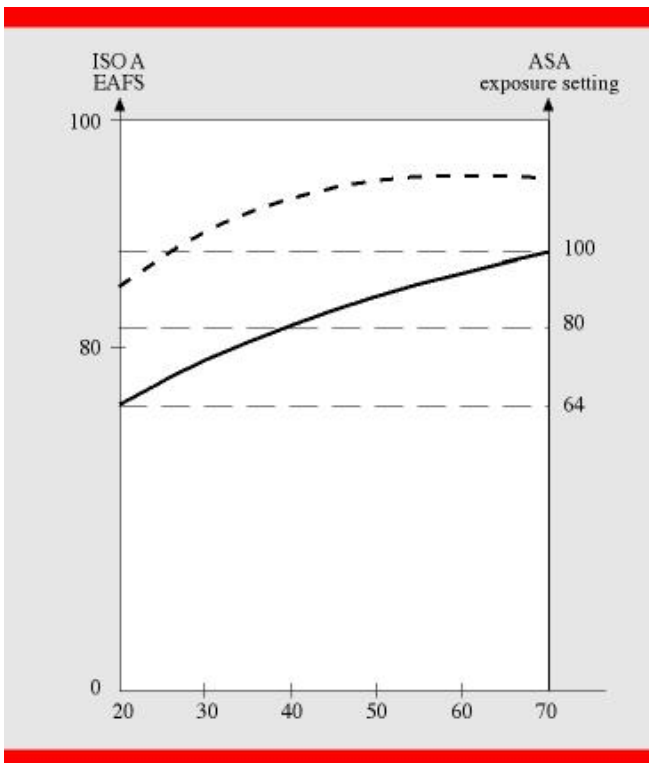


- Characteristic curves in Gevatone 66, G 74 c + AD 74, 30 °C.



- ① 20 s developing time
- ② 30 s developing time
- ③ 40 s developing time
- ④ 50 s developing time
- ⑤ 60 s developing time
- ⑥ 70 s developing time

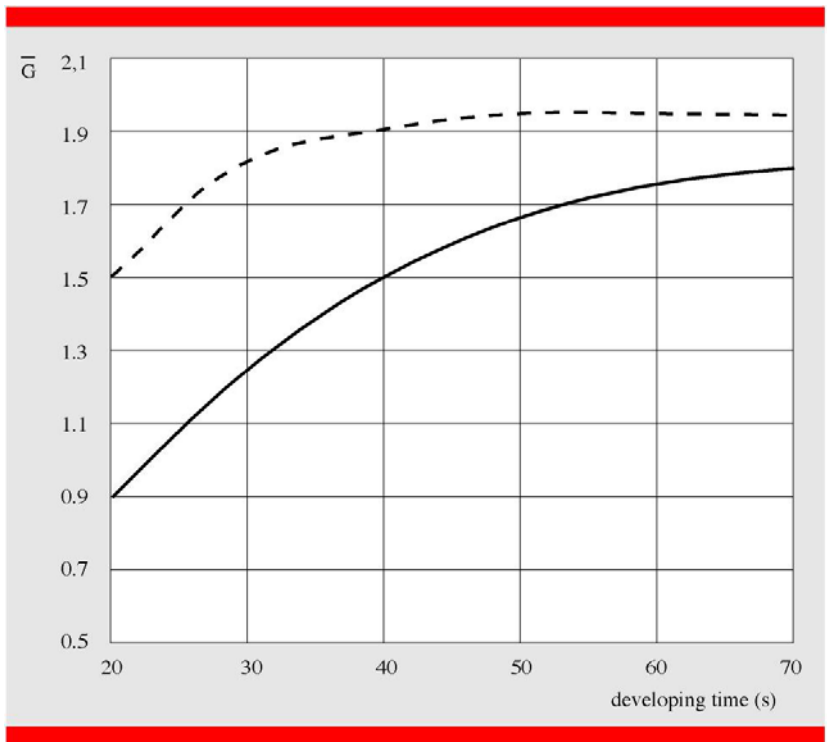
- Exposure/time curves



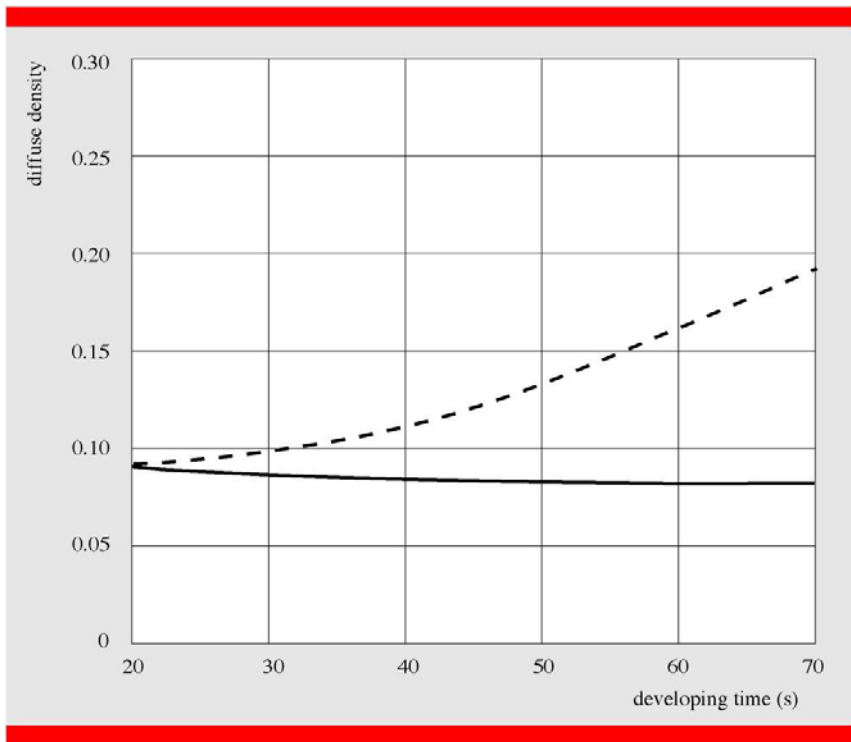
- curve G 74 at 30 °C
- - curve G 74 + AD 74 at 30 °C

Processed in Gevatone 66.

- Average gradient/time curves



- Fog/time curve



## ■ Assortment

### Aviphot Pan 80 PE1 – standard sizes\*

Size		Spool/Winding/Perforation	Order code
240 mm x 76 m	9 1/2 in x 250 ft	AH897 – EI – NP	EB5SZ
240 mm x 152 m	9 1/2 in x 500 ft	AM897 – EI – NP	EB5PT

\* For all other sizes, please contact your local Agfa representative.

Deliveries of Aviphot Pan 80 PE0 are subject to specific conditions.

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Subject to change without prior notice.

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## Development chart Rollei Retro 80S:

Developer	Dil.	ISO	Min.	Rhythm.	Temp.
Rodinal Spezial / R09 SPEZIAL	1+31	64	8	1	20° C
Studional / R09 STUDIO	1+31	64	8	1	20° C
R09 ONE SHOT (Agfa Rodinal)	1+50	80	14	1	20° C
BKA Acufine	Stamm	80	4:30	1	20° C
BKA Acufine	Stamm	100	5	1	20° C
BKA UFG	1+5	80	10	1	20° C
Rollei RHS	1+15	25	5	1	20° C
Rollei RHS	1+15	80	6	1	20° C
Rollei RLS	1+4	25	9:30	1	24° C
Rollei RLS	1+4	50	12:30	1	24° C
Ilford DD-X	1+4	80	4:30	1	20° C
Ilford DD-X	1+4	100	6:30	1	20° C
Ilford ID 11 / Kodak D76	Stamm	20	9	1	20° C
Ilford ID 11 / Kodak D76	Stamm	40	10:30	1	20° C
Ilford Ilfosol 3	1+9	80	5	2	20° C
Kodak X-Tol	1+2	64	11	1	20° C
Kodak HC - 110	1+47	80	11:30	4	20° C
Kodak HC - 110	H	80	10	5	24° C
Kodak HC - 110	H	160	11	5	24° C
Paterson FX39	1+19	64	13	3	20° C
Tetenal Ultrafine Plus	1+4	100	8	1	20° C
Tetenal Neofin Blau	1+16	50	5	1	20° C
Tetenal Neofin Blau	1+16	80	6	1	20° C
SPUR HRX3	1+29	32	5:30	1	20° C
SPUR SLD	1+29	50	5:30	1	20° C
SPUR 2525	1+19	32	5	1	20° C
Moersch Finol	1+1+100	80	8	6	24° C
Calbe A49	1+1	64	13	1	20° C