

# AVIPHOT PAN 200

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A panchromatic negative film for technical, industrial and aerial photography

Aviphot Pan 200 PE1 is a panchromatic negative film, coated onto a transparent polyester base providing excellent dimensional stability. Thickness of the polyester base: 0.10 mm (.004").

Aviphot Pan 200 PE0 is a similar film coated onto a 0.06 mm (.0025") polyester base.

Aviphot Pan 200 PE0 AR, coated on a 0.06 mm (.0025") polyester base is designed for LED exposure through the back.

Aviphot Pan 200 is suitable for technical, industrial and aerial photography.

## ■ Applications

Aerial photography assignments from low to medium altitudes, for gathering, interpreting and processing information intended for cartography, inventory purposes and exploration studies. This film can be used in industrial recording systems, such as equipment for plotting graphs in control and monitoring devices. It can also be used in stereo image recording devices, either airborne or in ground-based facilities for subsequent production of three-dimensional plans, maps, etc.

## ■ Characteristics

With its expanded colour sensitivity into the near infra-red range of the colour spectrum, Aviphot Pan 200 offers excellent penetration through haze, fog and other atmospheric conditions liable to affect the image quality. Obviously, this yields an improved image contrast and therefore more information.

With the uniform distribution of the panchromatic sensitivity within the range of visible light, the terrain can be imaged very faithfully without having to revert to the use of special spectral recording filters. Yellow filters can be used to get a higher image contrast. They also decrease the overall film sensitivity.

Variations in average gradient ranging between 0.9 and 1.9 are attainable in processing conditions specified by Agfa. The necessary contrasts in the photographic image are obtained by processing the film at the appropriate developing time.

The high sensitivity means:

- Shorter exposure times, creating less image blur due to image motion.
- Smaller apertures improving the sharpness across the entire image.
- Possibility to shoot even in less favourable weather conditions, and consequently increasing the number of flying hours per day.

With the film's specific sensitization and its capability to reproduce small details and a flexible image contrast, different shades in the vegetation, waterfront shores and information in the shadow areas are rendered with outstanding detail.

Aviphot Pan 200 can be processed in a continuous tone processor or by hand (rewind development).

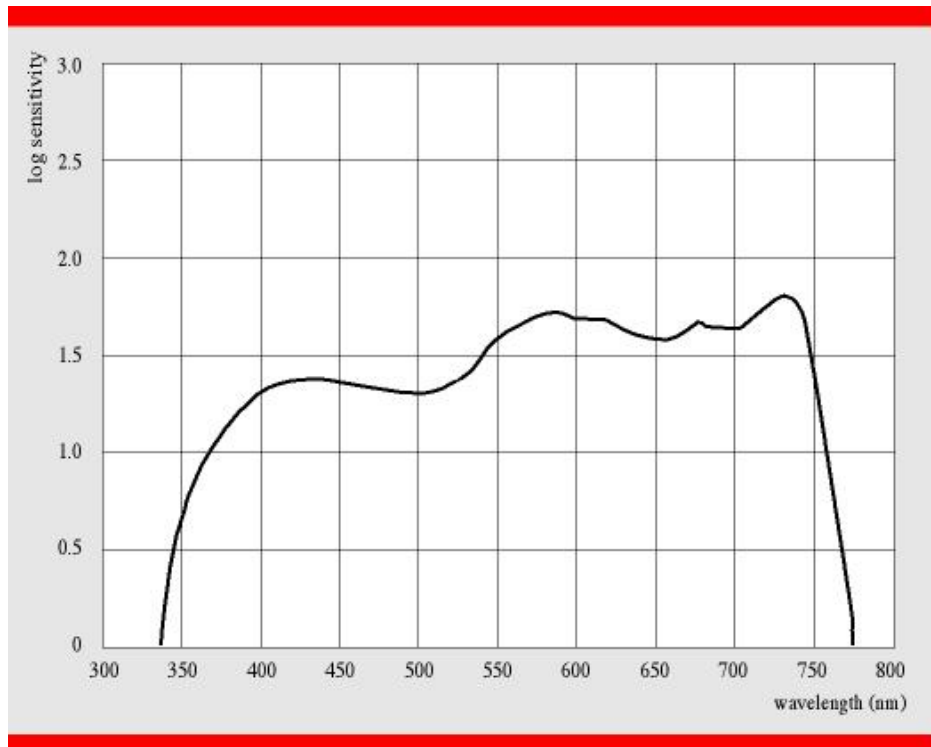
The polyester base and the back layer of the film (designed to achieve optimum vacuum draw down) ensure dimensionally stable processing.

## ■ Photographic data

### Colour sensitivity

Panchromatic, up to 750 nm.

### Absolute spectral sensitivity



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

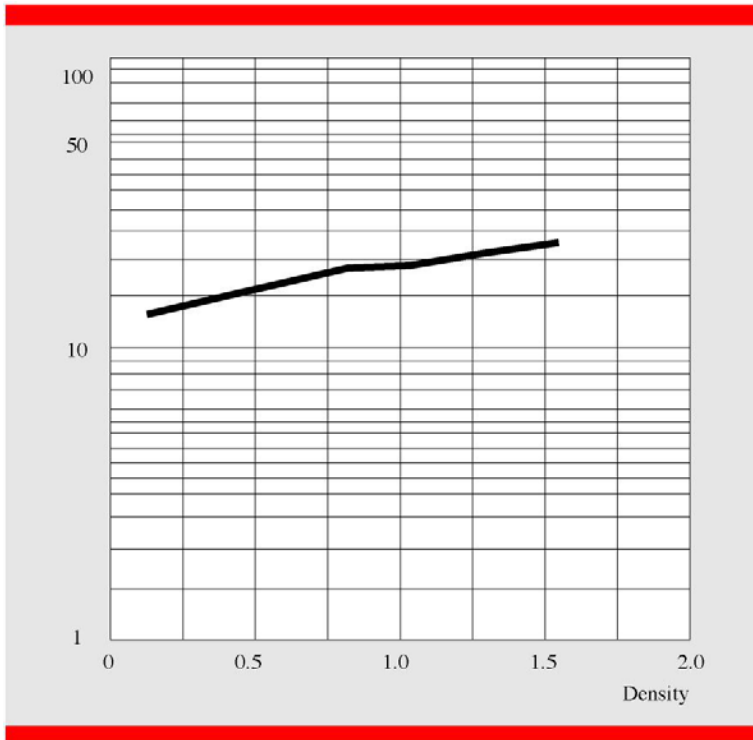
### Resolution

According to ANSI PH 2.33 standard:

TOC (Target Object Contrast) 1000:1 = 181 lp/mm or 362 dots/mm.

TOC 1.6:1 = 51 lp/mm or 102 dots/mm.

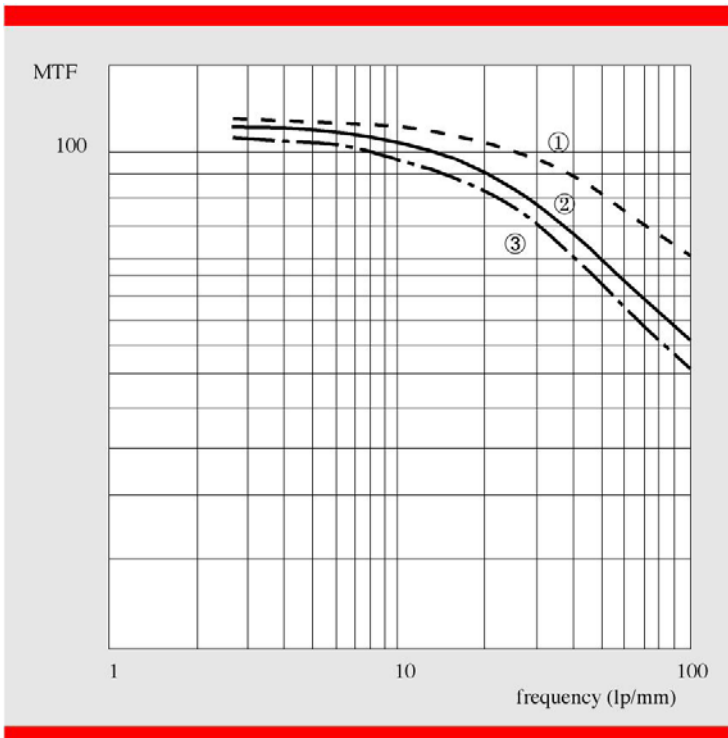
## RMS granularity



Measured at 50 $\mu$ m spot size.

Processed in Gevatone 66, in G 74 c developer at 30 °C and gamma = 1.20.

## Photographic modulation transfer function



- ① 20 seconds (gamma = 0.8)
- ② 40 seconds (gamma = 1.5)
- ③ 70 seconds (gamma = 1.8)

## Production guidelines

### Darkroom lighting

Aviphot Pan 200 has to be handled in complete darkness.

### Exposure

The film speed can vary according to processing. Aviphot Pan 200 can be exposed as a 125 to 250 ASA film. Consequently, it can be used with all classic aerial recording cameras (ZI, LH, Vinten, Recon Optical, ...). Working with EAFS/ISO A exposure values also yields good results, although these values differ for every processor and developer.

Exposure depends on

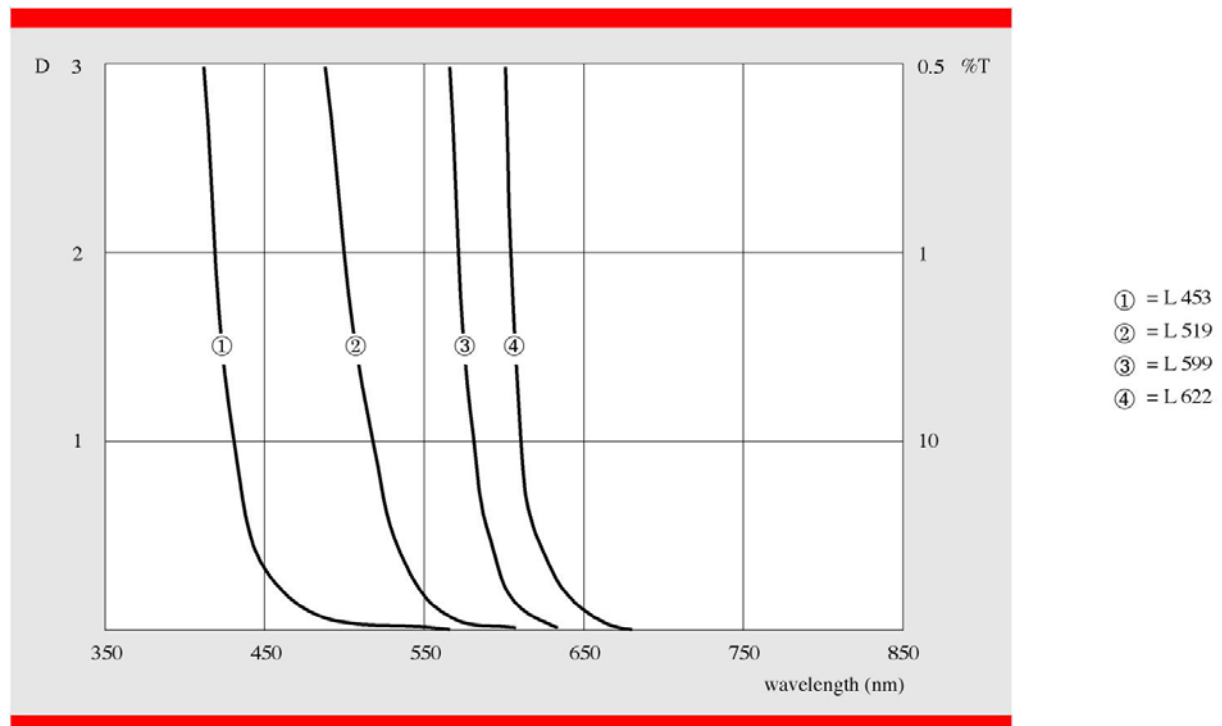
- the required image contrast;
- the light reflected from the earth;
- altitude and speed of the aircraft.

### 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 red
Filter factor	1.5	1.8	3.0	4.0

Absorption curves of the filters used:



If the filters are supplied by the manufacturers of aerial photography recording cameras, we recommend to follow the filter factors supplied by them.

## Processing

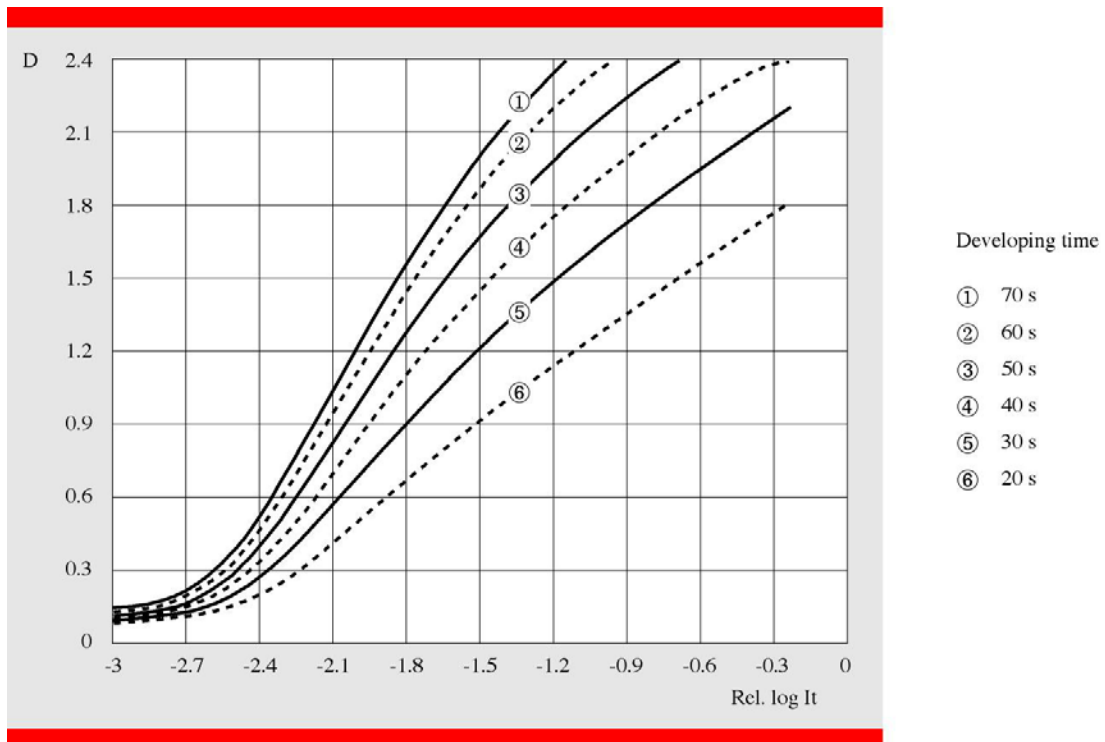
Aviphot Pan 200 PE1/PE0 can be processed either in a continuous-tone processor, or by hand if there is no processor available.

### ***Automatic processing in Gevatone 66, in G 74 c developer***

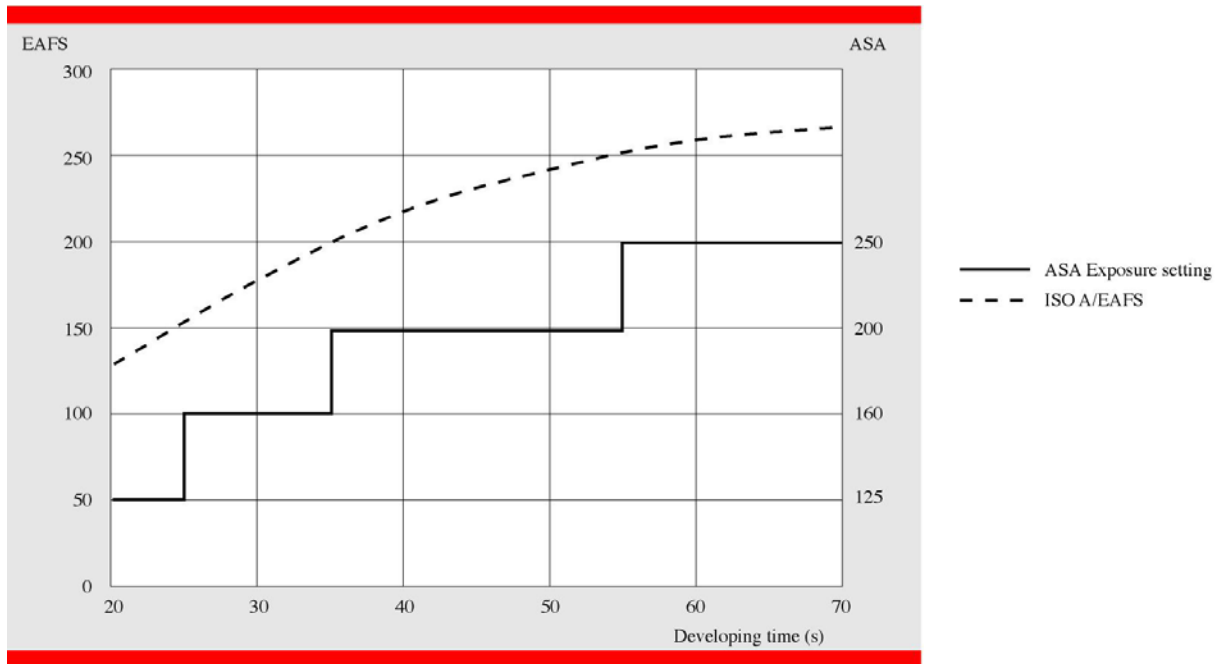
Optimum quality can be attained at 20 to 70 seconds of developing time, depending on the required gradation and sensitivity.

#### *Main sensitometric curves*

- Characteristic curves



- Exposure/time curves

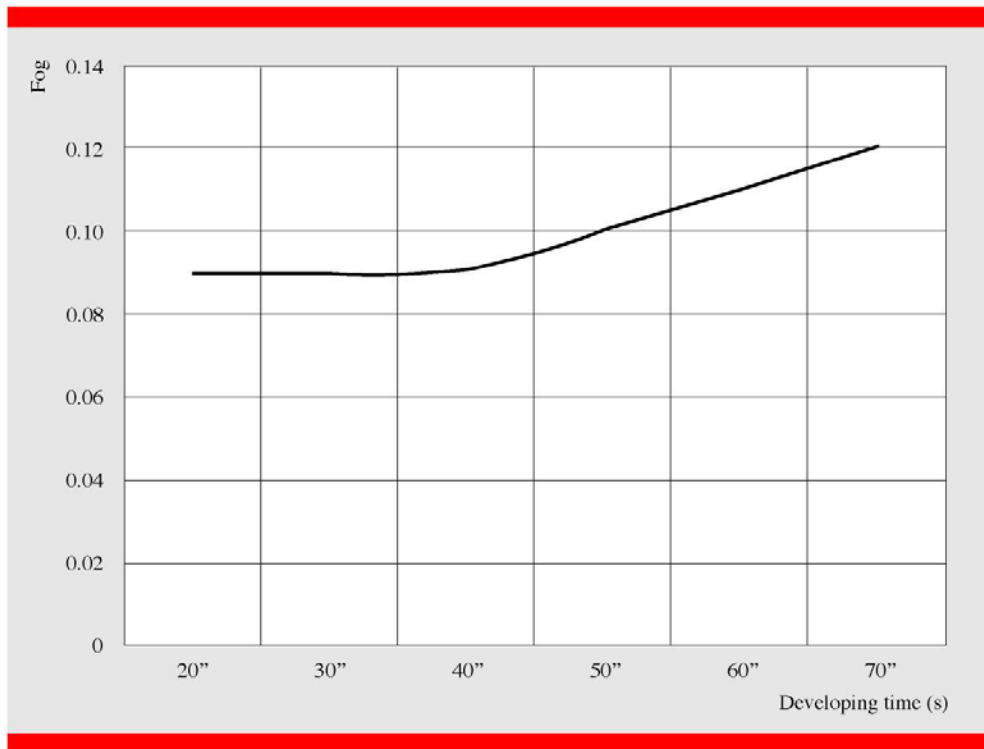


EAFS: Exposed using a 5800K xenon flash. Daylight measured 400 nm to 740 nm.  
 ASA: Exposed using a 5800 K xenon flash. Daylight measured with a visual filter.

- Average gradient/time curve



- Fog/time curve



### ***Rewind processing***

Example: working method using a Zeiss FE rewind unit.

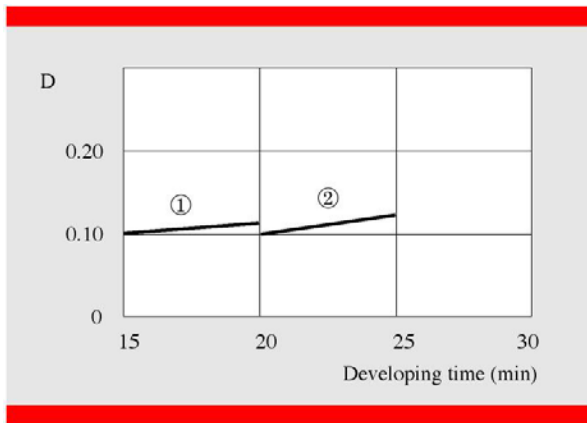
Wind the exposed film on the rewind frame. Rewind the film once by hand in water at 20 °C. Only afterwards you can start to develop the film.

Developer: G 74 c. The optimum developing time can be derived from the average gradient/time and exposure/time curves.

Rapid fixer: Pfix, with 12 ml of ASP Aditan hardening agent added for every litre of fixer. At least 6 passages required (1 passage at 76 m and 38 m = 2.5 minutes).

Rinsing: 8 passages in running water.

Drying: Add a wetting agent to the final wash water, to ensure drying of the film.



- ① 38 m
- ② 76 m

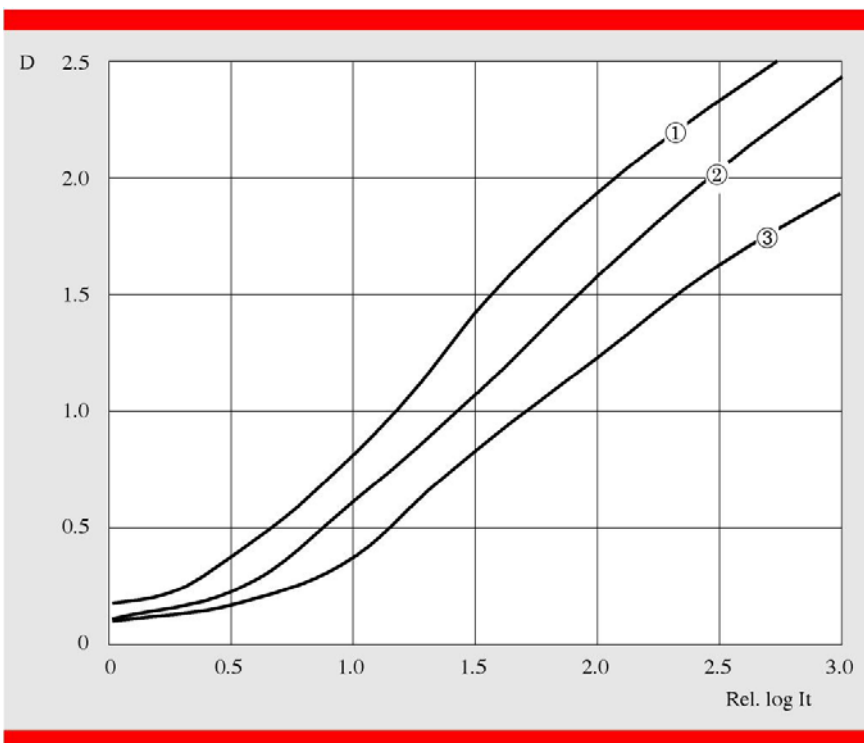
**Rewind development in G 74 c**

Mixing solution: 1.5 l of part A + 10 l water + 1.5 l of part B + 0.335 l of G 74 s (starter) + 16.7 l water.

Developer temperature: 20 °C.

The most important sensitometric curves for 240 mm x 76 m rolls:

- Characteristic curves

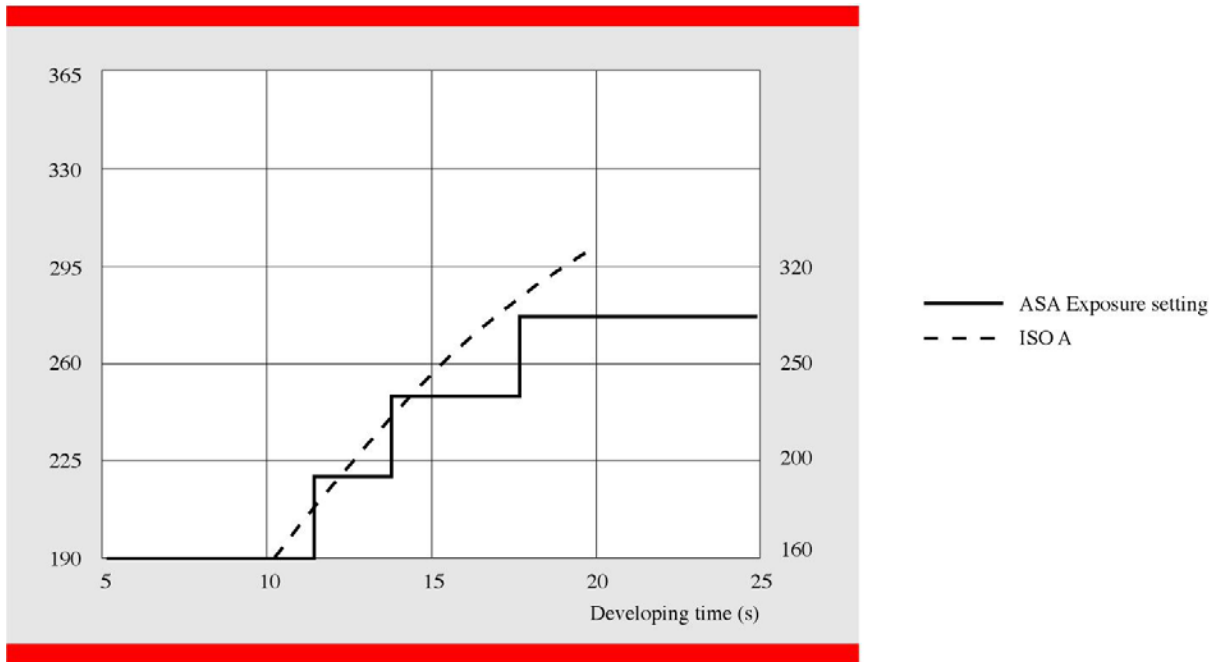


Developing time

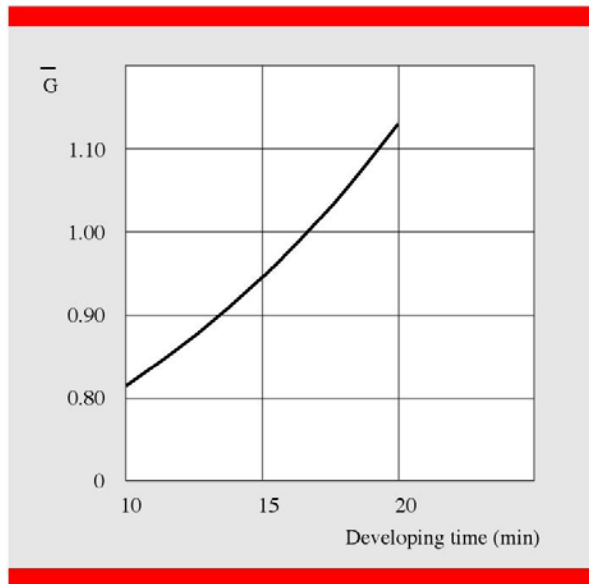
- ① 20 min.
- ② 15 min.
- ③ 10 min.



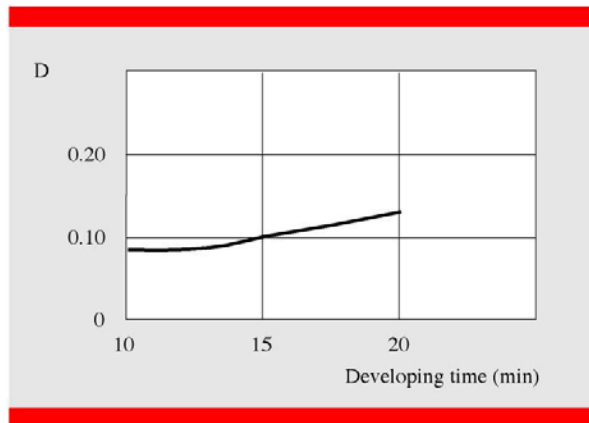
- Exposure/time curves



- Average gradient/time curves



- Fog/time curve



## ■ Assortment

Standard sizes\*

Size		Spool/Winding/Perforation	Order code
240 mm x 76 m	9 1/2 in x 249 ft	AH897 – EI – NP	3DEPF
240 mm x 152 m	9 1/2 in x 500 ft	AM897 – EI – NP	3DEQH

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

Aviphot Pan 200 PE0 and Aviphot Pan 200 PE0-AR are also available.

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**Rollei**

# Superpan 200

Top of the line, created for professional use.  
The emulsion is coated onto a transparent synthetic base providing excellent long-term and dimensional stability.

Répond à toutes les exigences d'un photographe professionnel.  
L'émulsion est couchée sur un support transparent PET à haut niveau de conservation (LE500), résistant à la rupture et stable dimensionnellement.

Spitzenprodukt, für höchste Ansprüche von Berufsfotografen.  
Die Emulsion ist auf einen transparenten synthetischen Träger gegossen, der ausgezeichnete Form- und Langzeitstabilität sicherstellt.

SCHWARZ/WEISS FILM • MONOCHROME FILM • FILM NOIR & BLANC  
ZWART/WIT-FILM • FILM CZARNO-BIAŁY • ČERNOBÍL FILM  
PELLICOLA IN BIANCO E NERO • PELÍCULA BLANCO Y NEGRO  
BLACK & WHITE FILM • Черно-белая пленка

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### Entwicklungszeitentabelle:

ISO-Angaben beziehen sich grundsätzlich auf DAYLIGHT/TAGESLICHT

Entwickler	ISO	Verdünnung	Minuten	Temperatur
Rodinal R09 ONE SHOT	200	1 + 25	8	20°
Rodinal R09 ONE SHOT	200	1 + 50	17	20°
Rodinal Spezial R09 SPEZIAL	250	1 + 15	6:30	20°
Studional R09 STUDIO	250	1 + 15	6:30	20°
Studional* R09 STUDIO*	160	1 + 31	13	20°
BKA Acufine	200-400	Stammlösung	4:30	21°
BKA Diafine	640-800		3 + 3	20°
BKA UFG	250	1 + 5	12:30	20°
BKA UFG	320	Stammlösung	5	20°
A49	200 ohne Filter 25 mit RG715	Stammlösung	10	20°
ID11	200	1 + 1	14	20°
X-Tol	400	1 + 1	17	20°
X-Tol	400	1 + 2	21	20°
D76	200	1 + 1	14	20°
ecoprint Universal	400	1 + 12	6	20°
Finol	160	1+1+100	11:30	24°
Tanol	100	1+1+100	15	24°
Tanol Speed	250	1+1+100	14	24°
Masc	64	1+1+40	13	20°
MZB	80		6:30	24°
RLS	200	1 + 4	12	24°
RLS	100	1 + 4	12	24°
RLS	50	1 + 4	10	24°
RHS	200	1 + 7	6:30	20°
RHS	400	1 + 7	7:30	20°
RHS	320	1 + 9	9	20°
HRX3	50	1 + 19	6:30	20°
SLD	100	1 + 29	8:30	20°

\*Als Einmalentwickler