

# Rollei

# INFRARED

## DATA SHEET<sup>1</sup>

The Rollei INFRARED is perfect for infrared photography, e.g. for photographs with the unmistakable “wood effect”. A highly sensitive, hyperpanchromatically sensitised black-and-white film with a nominal sensitivity of ISO 200/24° to 400/27°.



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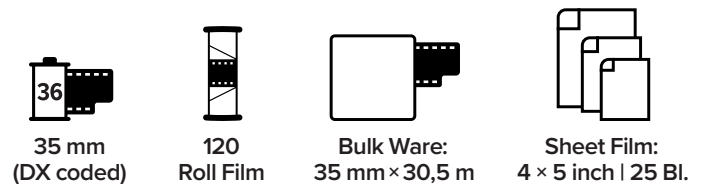
# ROLLEI INFRARED

Rollei Infrared is a hyperpanchromatic B/W film with a nominal sensitivity of ISO 200/24°-400/27°, that is cast on a crystal clear synthetic base. This film is characterized by its high resolving power with finest grain as well as high edge sharpness.



	-	+	
Nominal Sensitivity:	●●●●○		high sensitive
Sharpness	●●●●○		high sharpness
Exposure Latitude	●●●○	○	very high exposure latitude
Resolving Power	●●●●○		very high resolving power
Suitable for BW Reversal	●●●●○		very suitable

## AVAILABLE AS



The Rollei Infrared can be used for normal shots as well as in the infrared range. It reacts very distinctly to the respective photographic filter up to the infrared effect. The 7.5 µm thin film –silver rich –hyperpanchromatic sensitized Rollei Infrared is cast on a crystal clear polyester base of 100 µm.

### FACTS:

- Medium- to high-sensitive hyper-panchromatic b/w film
- ISO 200/24° – 400/27° up to the infrared range (650 – 750nm)
- Resolving power contrast 1000:1 = 160 lines/mm
- Fine grain | Granularity RMS (× 1000) = 11
- Distinct response to the respective photographic filter up to the infrared range
- Good pull & push characteristics
- Good tone reproduction with finest differentiation of the infrared spectrum depending on the filter, recommended between 715 –730nm
- Very good maximum blackness
- Can be used as b/w slide film due to the crystal clear PET base material
- Optimal flatness thanks to anticurling layer

### STORAGE AND HANDLING:

- Always protect from direct sunlight
- Minimum shelf life as indicated on package:  
Store at Ø 8°C
- develop for a short time after exposure
- avoid high storage temperatures above 40°C

### FILTER-FACTORS:

By using yellow or red filters, you can increase the tonal values in the respective wavelengths. In general, filters of all kinds, i.e. color, pole, neutral density filters, can be used as usual. Please follow the manufacturer's recommendations.

- Yellow filter for contrast enhancing cloud rendering
- Orange filter for clearer long-distance vision
- Red filter for a more dramatic image mood

The loss of sensitivity is taken into account during a TTL measurement of the camera. If external light meters are used, the filter factors listed below are used to adjust the effective film speed in order to obtain a correct measurement.

Filter factors:

Filter	Filter factor	Aperture value
Yellow (8 )	1.5	0.5
Yellow-dark (15)	3	1.5
Yellow-green (11)	2	1
Orange (22)	4	2
Red (25)	5	2.25
Red dark (29)	8	3
Red 695 (89B)	16	4
Infrared 715 (88A)	16-32	4 a 5

### LABORATORY LIGHTING:

The film can be processed in absolute darkness and should not be exposed to sunlight or darkroom lighting! We recommend to use a change bag.

**LAYER STRUCTURE OF THE FILM:**

- Protective coating
- Emulsion layer
- Antihalation layer (AHU)
- Carrier PET
- Back Layer (Anti-Curling)

**DEVELOPMENT:**

As is well known, the development result is not only dependent on time, temperature and developer type, but also on the development method (tank, dish, processor). In order to achieve reproducible results, the following instructions must be observed:

- When processing in developing cans, the can must be moved (tipped) continuously during the first minute and then every 30 seconds. Development times of less than three minutes should be avoided!
- When processing in development drums (rotary development), the speed of rotation should be greater than 30 rpm (with changing direction of rotation). Development times of less than three minutes should be avoided.

**CAN DEVELOPMENT**

When developing and fixing the film in a tank with a reel, the following applies: Agitate in the first 60 seconds continuously, then for 5 sec every 30 seconds. Hint: After each tilting rhythm, there should be a short push on the table top. This releases air bubbles adhering to the film. Compared to developing trays in open containers, the advantage is that work can be carried out in ambient light. In addition, the agitation of the tank can be mechanized.

**ROTATION DEVELOPMENT**

In general, the processing conditions of rotary development (e.g. Jobo) are very similar to those of manual can development. The advantages of rotary development are:

- Reduced chemical consumption
- Shorter development times
- More constant working conditions (temperature)
- Higher reproducibility of the result

Due to the permanent agitation, a rough rule of thumb for rotary development applies: 10 to 15% shorter development times than in manual hand development (can).

Processing times are given by the respective manufacturer of the machine.

**MACHINE DEVELOPMENT**

Rollei films can be processed in all common developing machines (e.g. rotary, hanger, drag belt or roller transport machines).

**SPECIAL INSTRUCTIONS**

- Always store films in a cool place: Best at +8°C & store at room temperature for at least 1 day before use.
- Load into camera or magazine or sheet film cassette in subdued light
- Camera suitability, i.e. mainly with plastic cameras, test cameras with infrared control of film transport for fogging
- When using IR filters, always take a picture **WITHOUT** the filter, so that it can be determined whether any errors are due to the exposure or the processing.
- Since the spectral sensitivity condition cannot be perceived by the human eye or light meter, it is recommended to always take at least one exposure each with nominal, +1 and -1 exposure.

**DEVELOPMENT TIME TABLE:**

Agitate in the first 60 seconds continuously, then for 5 sec every 30 seconds. **Process temperature: 20°C**

The development times given below are to be understood as approximate values and refer to an average contrast of  $\gamma = 0.65$ . Due to individual processing conditions, deviations in the times are possible.

DEVELOPER	ISO	DILUTION	TIME (min)   20°C
Supergrain	400/27°	1 + 12	7
Rollei RLS	200/24°	1 + 4	14:30 (24°C)
R09/Rodinal	400/27°	1 + 25	10:30
		1 + 50	22
R09 Spezial/Studio	400/27°	1 + 15	8:30
		1 + 31	17
ILFORD ILFOSOL 3	400/27°	1 + 3	5
ILFORD Perceptol	400/27°	1 + 1	10
ILFORD ID-11 / Kodak D-76	400/27°	Stock	10:50
Kodak X-Tol	400/27°	1 + 1	17
Kodak HC-110	400/27°	B (1 + 31)	5
Moersch Tanol	400/27°	1 + 1 + 100	19:30 (24°C)

**PRE-WATERING**

- Pre-watering is recommended for short development times, still developments, and films with a pronounced anti-halo layer (antihalation layer). To do this, soak the film for approx. 1 min in a water bath at process temperature before development.

**DEVELOP**

- Development times can be taken from the adjacent table
- Recommended developer: Rollei SUPERGRAIN
- Temperature: Processing temperature

**STOP**

- Duration of the stop bath: about 60 seconds
- Recommended stop bath: Rollei RCS Citrin Stop
- Dilution: 1 + 19
- Temperature: Processing temperature

**FIX**

- Duration of fixation: between 3 to 8 minutes
- Recommended fixing bath: Rollei RXA Fix Acid
- Dilution: 1 + 7
- Temperature: Processing temperature

**WASH**

- To remove all chemical residues:
  - Rinse approximately 8 – 10 times with clear water.
  - Time interval: 6 to 10 minutes
- Temperature: Processing temperature

**FINAL RINSE**

- To shorten drying time and support uniform drying; acts as a fungicide and antistatic;
- Demineralized water with wetting agent
- Recommended wetting agent: Rollei Wetting Agent c
- Dilution: 1 + 100
- Temperature: Processing temperature

**DRYING**

- Hang in a dry and dust-free room, with sufficient distance from the floor.
- Carefully remove the water drops that are on the lower corners of the carrier with a tissue/absorbent paper.
- We recommend never to strip the film if a wetting agent is used

**PUSH & PULL**

**Pushing** is the deliberate underexposure of the film, subsequently accompanied by overdevelopment. The film loses shadow detail, but can effectively be exposed 1 – 2 stops lower. Highlights and midtones thus stand out with less contrast. Rough push time formula:

- + 1 f-stop: Base time  $\times$  1.33
- + 2 f-stops: Base time  $\times$  1.33<sup>2</sup>

**Pulling** is the opposite and means the deliberate overexposure of the film, subsequently accompanied by underdevelopment. The shadow drawing is raised - extreme highlights and an „overexposure“ can disturb the photo. Rough pull-time formula:

- - 1 f-stop: Base time : 1.33
- - 2 f-stops: Base time : 1.33<sup>2</sup>

**ALL ROLLEI FILMS AT A GLANCE**

	<b>RPX 25</b>	<b>RPX 100</b>	<b>RPX 400</b>	<b>RETRO 80S</b>	<b>RETRO 400S</b>	<b>SUPERPAN 200</b>	<b>ORTHO 25 plus</b>	<b>INFRARED</b>
ISO	25	100	400	80	400	200	25	400
Carrier	Polyester	Triacetate	Triacetate	Polyester transparent	Polyester transparent	clear Triacetate	Acetate	Polyester transparent
Sensitivity	panchromatic	panchromatic	panchromatic	super-panchromatic	panchromatic panchromatic	panchromatisch	orthochromatic	panchromatic extended IR sensitivity
35 mm	✓	✓	✓	✓	✓	✓	✓	✓
120 Roll Film	✓	✓	✓	✓	✓	✓	✓	✓
Sheet Film	4 × 5 inch   25 sh.	–	–	–	–	–	4 × 5 inch   25 sh. 5 × 7 inch   25 sh. 8 × 10 inch   25 sh.	4 × 5 inch   25 sh.
35 mm × 30,5 m	✓	✓	✓	✓	✓	✓	✓	✓
35 mm × 17 m	✓	✓	✓	✓	✓	✓	–	–



Nominal Sensitivity	● ○ ○ ○ ○	● ● ○ ○ ○	● ● ● ● ○	● ○ ○ ○ ○	● ● ● ● ○	● ● ● ● ○	● ○ ○ ○ ○	● ● ● ● ○
Sharpness	● ● ● ● ●	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ●	● ● ● ● ○
Belichtungsspielraum	● ● ○ ○ ○	● ● ● ○ ○	● ● ● ● ○	● ● ● ○ ○	● ● ● ○ ○	● ● ● ● ○	● ● ○ ○ ○	● ● ● ○ ○
Exposure Latitude	● ● ● ● ●	● ● ● ○ ○	● ● ● ○ ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ○
Suitable for BW Reversal	● ● ● ○ ○	● ○ ○ ○ ○	● ○ ○ ○ ○	● ● ● ● ○	● ● ● ● ○	● ● ● ● ●	● ● ● ● ●	● ● ● ● ○

**NOTES:**

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**CHEMISTRY | DILUTION | TIME | INTERVAL:**
