

## TECHNICAL INFORMATION

**HARMAN  
PHOENIX 200**ISO 200/24° C41 PROCESS COLOUR FILM

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HARMAN Phoenix 200 is an experimental ISO 200, C41 process, colour negative film with high contrast and strong visible grain.

It can be used for any photographic subject with results dependent on ambient lighting conditions, colour palette, and exposure accuracy. Best results are typically obtained outdoors with consistent light and medium brightness scenes whilst metering for the mid-tones.

HARMAN Phoenix's high contrast can lead to punchy, vibrant scene rendition, even under softer lighting, although both colours and contrast can be controlled depending on the scanner and scanning parameters used. Adjustment of standard scanning parameters is advised to achieve the best results. (See later information).

HARMAN Phoenix 200 is easily processed in C41 / CN16 processing chemicals and can be exposed in the range EI 100 – 400. The best overall results are obtained at EI 200, however highlight control may be improved by underexposing 0.5 – 1 stop depending on the scene.

HARMAN Phoenix 200 film is available in ISO 200 DX coded cassettes with 36 exposures and is suitable for all 35mm film cameras.

**WHY HARMAN PHOENIX 200 IS DIFFERENT:**

HARMAN Phoenix 200 is an experimental C41 colour film and the first ever made by HARMAN Photo. As such it has characteristics that make this very different to the more traditional, established C41 colour negatives films.

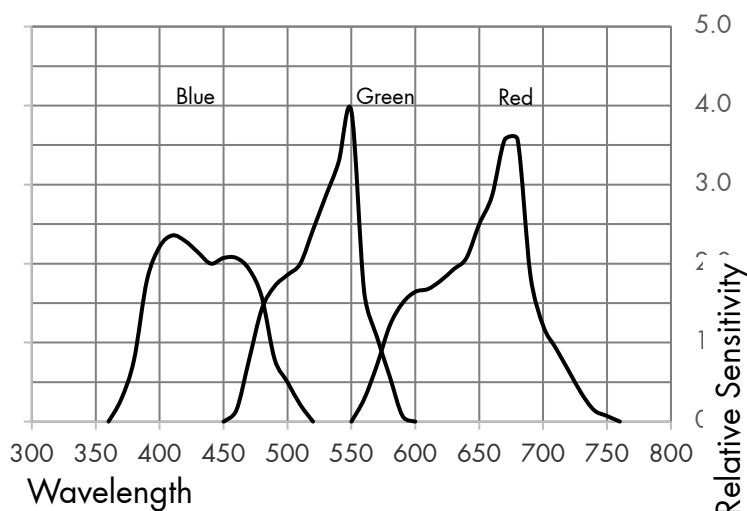
In addition to the risk of occasional coating anomalies, this film does not have masking dyes and limited antihalation incorporated in the base layer. This means that striking halation effects around bright light sources and reflections are possible. In addition to its atypical colour rendering, this film has a distinctly analogue look when shooting certain scenes and colour palettes.

**EXPOSURE RATING:**

HARMAN Phoenix 200 film has a speed rating of ISO 200/24° (200ASA, 24DIN, EI 200) to daylight. The speed rating was measured using standard C41 processing. Although rated at 200/24°, Phoenix can be exposed over the range EI 100/21°–400/27°.

## SPECTRAL SENSITIVITY:

### Wedge spectrogram to tungsten light (2856K)



### Film contrast

HARMAN Phoenix 200 negatives are higher contrast than most conventional colour films. Some bracketing of the exposure may therefore be required to correctly capture the scene's brightness, particularly on bright days.

## FILTER FACTORS:

HARMAN Phoenix 200 film may be used with all types of filters (e.g., Polarising or neutral density filters) in the usual way. Follow the instructions given by the filter manufacturer.

## MAKING LONG EXPOSURES:

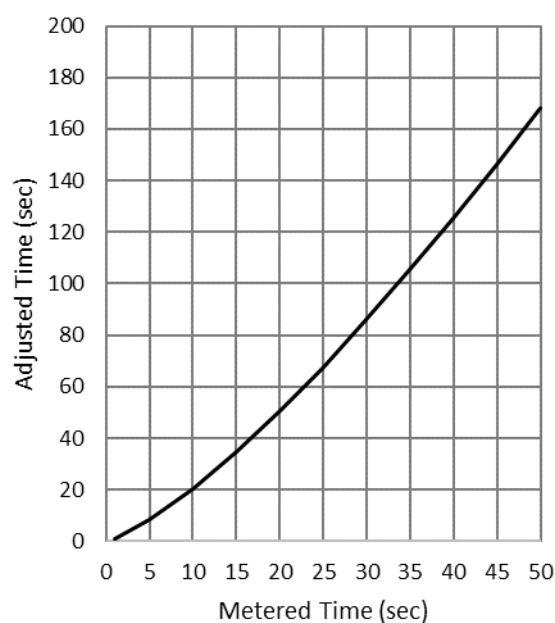
For exposures between 1 and 1/10 000 second, no adjustments are needed for reciprocity law failure.

When exposures longer than 1 second are given, HARMAN Phoenix 200, along with other films, needs to be given more exposure than indicated by a meter. Use the graph to calculate the increased exposure time which should be given once the metered time is known.

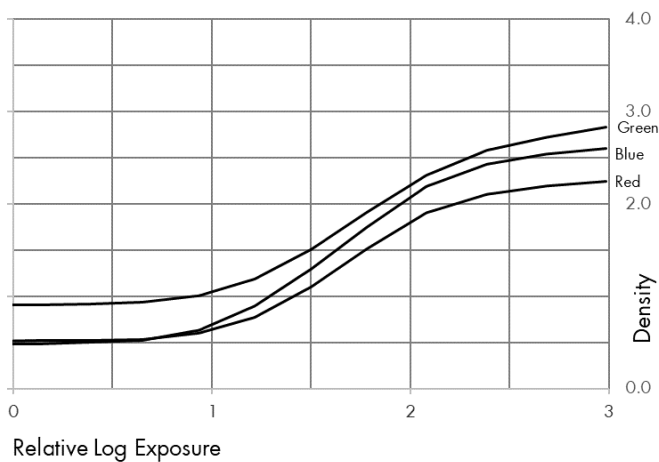
The graph is based on the formulae  $T_a = T_m^{1.31}$

$T_a$  = Adjusted Time

$T_m$  = Metered Time



### CHARACTERISTIC CURVE:



HARMAN Phoenix 200 film processed through standard C41 type chemicals.

### PROCESSING:

HARMAN Phoenix 200 film is processed in the standard C41 colour negative film process. This film can be processed alongside all makes of colour negative film.

#### Safelight recommendations

Handle HARMAN Phoenix 200 film in total darkness.

#### C41 type processing

HARMAN Phoenix 200 film is fully compatible with C41 type processing chemicals, both replenished (e.g. in dip and dunk or roller transport processors) and unreplenished (e.g. in spiral tanks or with Jobo one-shot rotary processing). The film can be put through standard C41 lines with no adjustment to processing speed, temperature, or replenishment rates.

#### Drying

If processing by hand and to avoid drying marks, use a clean squeegee or chamois cloth to wipe the film before hanging it to dry. Dry the film at 30–40°C/86–104°F in a drying cabinet or at room temperature in a clean dust-free area.

Machine processing – use default C41 machine settings.

#### Push processing

Push processing is not recommended for HARMAN Phoenix 200.

### STORAGE:

For immediate use, store HARMAN Phoenix 200 in a cool (10–20°C/50–68°F), dry place in its original packaging.

HARMAN Phoenix 200 may be stored in a fridge/freezer but allow plenty of time for the film to acclimatise prior to use.

#### Exposed film

Once exposed, process HARMAN Phoenix 200 as soon as practical. Exposed films should always be stored in cool, dry conditions - as recommended above.

#### Unexposed Film

Store unexposed film in the same way as other colour films, i.e., in a cool (10–20°C/50–68°F), dry place in its original packaging.

### **Negatives**

Store processed negatives in a cool (10–20°C/50–68°F), dry place, in the dark. Suitable storage sleeves include those made of cellulose triacetate, Mylar, paper (pH6.5–7.5) or inert polyester.

Correctly processed HARMAN Phoenix 200 negatives usually have a magenta / purple tint, although the exact image colour will depend on the method of processing.

### **Emulsion side identification**

Unlike some negatives HARMAN Phoenix 200 emulsion has a glossy surface. To determine the emulsion side, view the negatives towards a light source, with the edge signing reading correctly the emulsion is facing away.

## **SCANNING & PRINTING:**

### **Print making**

HARMAN Phoenix 200 negatives are printed in the same way as other colour C41 films. Either via scanned negatives or direct analogue exposure.

### **Scanning**

Settings for popular scanners is detailed in the next section.

### SCANNING:

Unlike more traditional colour negative films, HARMAN Phoenix 200 does not have an orange mask. This can affect scanner response and some adjustment may therefore be required to achieve the optimum results. Some recommendations for best settings are shown below. These scanning settings were developed by HARMANLab.com in conjunction with and support from The Darkroom.com, Analogue Wonderlab, SilverPan Film Lab and Blue Moon Camera and Machine.

### Fujifilm SP3000

Below are our starting point recommendations. Nb. many labs will have their own preferred workflow, so these should be treated as guidance only. These settings can be assigned to a custom channel as follows.

#### **Main Menu > Setup & Maintenance > Password "7777" > Print condition set-up & check > Custom setting register.**

Assign the settings to any free channel and save under appropriate name e.g., Phoenix – please see the Scanner manual for further information.

It is also possible to set a specific auto DX channel for the film, however the settings are more limited, and this is not recommended, unless it is your preferred workflow.

<b>Input Type</b> Negative	<b>Sharpness/Grain Control</b> Sharpness Process = No	<b>Key Step Width</b> Default (CMY = 5, D=10) BL = Default (0) SL = Default (0) (Only impacts Key corrections)
<b>Tone Correction</b> Hypertone = Yes Full correction Tone adjustment = Standard Highlight level = Normal Shadow level = Normal Mode = 1	<b>Gradation/Bright</b> Gamma: Shadow= - 4, Midtone= -2, Highlight =0  Balance = All 0 Bright Mode = 0 Colour Mode = 0	<b>Other Corrections</b> Saturation = -3

**NB.** As with other C41 process films, Digital Image Correction and Enhancement (Digital ICE) can be used to remove dust and scratches automatically from the image.

### Noritsu HS1800, LS600, LS1100

Noritsu scanners can easily be configured to work with HARMAN Phoenix 200. Many labs will have a preferred configuration. Below is our recommended starting point to give good results with minimal configuration.

Global Settings	DSA Settings	Colour Balance and Density
Colour Correction = Std Gradation Correction(135) = ON Basic Dens Correction = 1 Scanner = ON Tungsten Correction = 80 CF = 80 Basic colour correction = 0  (All others 0 or OFF)  <b>Input Type</b> Negative	Auto Contrast Ov = 0 Auto Contrast Sh = 0 Auto Contrast Hi = 0 Auto Sharpness = 0 Chroma = 100 Grain Suppression = 0 Auto Contrast 2 = 5 CS Balance (red) = 0 CS Balance (blue) = 0	Starting points Y = -2 M = 0 C = +2  D = Adjust as required

Settings can be adjusted during the workflow and applied to all frames using the hold function, or by creation of a print channel specifically for HARMAN Phoenix 200. To create a print channel, you must log in with the service menu password. (See below)

**In the function menu - Press F1 then F9, enter the service password in the prompt "2260".**

Entering the service password will now allow you to edit and save new print channels.  
Please see your operation manual for your scanner / EZ Controller for more information.

### Epson V850 & Epson flatbed scanners

Use full autoexposure and auto colour.

### Digital Camera Scanning

Please follow your normal workflow for scanning with a digital camera. Using your conversion software, you can adjust the parameters to suit your tastes.

### Other Scanners

For scanners not listed above, as a guide use the following settings.

- Auto exposure / Colour correction = On
- Sharpening – Off or Low
- Saturation – Depending on the scanner a small reduction of up to 30% may give more desirable images.

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