

Technical Data

CP30

Colour print film

AGFA PRINT CP30 is a multilayer colour print film designed for use in optical or contact printers for making colour release prints from original colour negatives, duplicate negatives or internegatives.

AGFA PRINT CP30 is characterized by its consistency, excellent sharpness, very fine grain and outstanding dye stability.

AGFA PRINT CP30 combines excellent detail reproduction in highlight areas with impressive deep neutral blacks.

Film Structure.

AGFA PRINT CP30 is the result of Controlled Light Diffusion (CLDTM) technology which has been developed by AGFA. The film consists of three emulsion layers, separated by light diffusion controlling gelatine interlayers and a special antihalation layer in between emulsion and base. The emulsion layers are sensitive to green, red and blue light and during processing a magenta, cyan and yellow dye is formed respectively.

Coloured interlayers which reduce halation effects of light scattering in the emulsion and the special antihalation interlayer between base and emulsion have replaced the black rem-jet backing layers of traditional print films.

CLD technology has made it possible to design a print film with coloured interlayers that absorb unused light and eliminate halation effects more effectively than the conventional rem-jet backing layer.

The emulsion side is coated with a protective layer, containing lubricants, in order to provide protection from scratches during multiple projection runs.

Emulsion.

In **AGFA PRINT CP30**, a new generation of blue sensitive emulsions has been introduced, resulting in a higher speed (2-3 trimmer points), a higher contrast and improved latent image regression characteristics. The speed of the red and green sensitive layers are maintained on the same level as AGFA PRINT CP20. The sensitometric curves of the three light sensitive layers have been optimized to give a perfect balance over a wide tonal range, more saturated colours and deeper blacks without any loss of detail. When compared to AGFA PRINT CP20, one will be impressed by the improved blacks when screening AGFA PRINT CP30. This level is among the best that can actually be reached with standard motion picture printfilm stock, available on the market today.

Base.

AGFA PRINT CP30 is coated on a 120 micron permanent antistatic GEVAR base, eliminating the attraction of dust and dirt during multiple projection runs. An environmental friendly conductive polymer (a proprietary AGFA concept) surviving chemical processing is introduced. The scratching resistance of the backing layer during processing is improved, thanks to the introduction of a processing surviving lubricant. The other advantages (e.g. tear strength, durability, dimensional stability) of GEVAR polyester safety base are dealt with in the publication "Polyester, the alternative film base with superior quality", which can be obtained on request from your local AGFA representative.

The bottom CLD layer between emulsion and base contains Polyester Protecting Agents which protect the polyester during the subsequent laser subtiting process. In order to reach the optimum laser subtiting quality, polyester film needs to be processed keeping the chloride content in the film on the lowest possible level.

Processing.

AGFA PRINT CP30 is a fast developing emulsion, designed for use in all variants of the ECP-2 process, **including the latest ECP-2E version without First Fix and without silver-redevelopment.** It maintains its gamma balance even in deviating developing conditions and is compatible with all commonly used bleach systems. Since there is no carbon black antihalation backing layer to be removed, AGFA PRINT CP30 offers the potential for eliminating the pre-bath, the brushing and rinsing phases. This will result in a more efficient processing, a significant reduction of water consumption and a lower chemical load in the processing effluent. Since dry film enters the developer solution directly, some minor changes to the developing time, replenishment rate and composition of the replenishment solution for the developer may be advised e.g. increase the developing time by 5 seconds, increase the replenishment rate by 5% to 10%, dilute the replenishment solution by adding an additional amount of water (5% to 10%). However, industrial application in numerous laboratories has proven that application of the standard settings for developing time, replenishment rate and - composition leads to good results as well.

When compared to AGFA PRINT CP20, the water load of AGFA PRINT CP30 during processing has been decreased by 10%, which allows faster drying and less energy consumption in the drying cabinet.

The antihalation dyes and/or sharpening dyes, used in AGFA PRINT CP30, are decolourized and/or removed during processing. Although most of latter dyes are diffusing out of the printfilm during developing, the complete removal of these dyes may also be influenced by the type of bleach that is applied. Since it is common practice for film manufacturers to design printfilm for use in an accelerator / persulfate bleaching system, the use of alternative bleaching solutions may lead to a slightly different value of the minimum density, resulting in a slightly non-neutral hue.

However this colour imbalance, which may appear in evaluating control check wedges, is not noticed on the screen during projection of the release print.

Since in case of the absence of the pre-bath, most of the water-soluble dyes are diffusing out of the printfilm during developing and will charge the developer, it is advised to keep the developing solution as clean as possible by means of efficient filtration and / or the use of the appropriate ion-exchange or adsorption resins. For further assistance, contact your local AGFA representative or AGFA headquarters.

Reciprocity characteristics.

In comparison with an exposure time of 1/100 sec., a certain loss of speed may be noticed when printed at 1/1000 sec.

This will require a printer setting adjustment:

Exposure time	1/100	1/1000	1/10000
	R G B	R G B	R G B
Printer adjustment (B&H points)	- - -	1 2 3	3 3 3

Modulation transfer curve.

Since the final sharpness of any film depends upon every step in the exposure and processing chain (film printers, processing, projector lenses etc.), only the intrinsic and specific sharpness of the AGFA PRINT CP30 can be measured and charted as a reference. In the following graph, the *Spatial Frequency* refers to the number of line pairs (sine wave cycles) per millimeter film length that can be reproduced. The Response indicates the ratio of the modulation of the developed image to the modulation of the exposure pattern. Of-course the flatter the curve and the higher the response number, the sharper the film.

Safelight.

The use of a 10-Watt lamp or sodium vapour lamp with a Wratten #8 Safelight filter is recommended. However, the maximum length of exposure to the safelight should be determined by darkroom testing and if necessary, the intensity must be reduced to an acceptable level with ND filters.

Recommended handling.

Relative humidity: 50% +/- 5% at 20°C.

Printing recommendations.

Image printing.

AGFA PRINT CP30 offers film laboratories excellent colour timing and printing flexibility. It is balanced for exposure to tungsten light with a colour temperature of 3200 K.

For additive printing starting from duplicate negatives and original negatives, a typical printer setup is as follows;

e.g. Bell & Howell model C printer

1000-Watt lamp at 70V with Wratten #2B and heat absorbing filter, running at 55 m (180 ft) / min.

Light beam	Trimmer setting	Neutral density	Tape
Red	12	0,70 +/- 0,10	25
Green	12	0,60 +/- 0,10	25
Blue	12	0,65 +/- 0,10	25

The given settings may change in function of voltage variations.

The same figures apply to optical printers. However, due to a higher proportion of optical glass creating the effect of a far red absorbing filter, the red light exposure should be increased.

If required, AGFA PRINT CP30, can be exposed in a subtractive printer also using the above Wratten #2B filter and an infrared heat absorbing filter.

Colour correction filters can be used to modulate the light to the right balance.

Soundtrack printing.

A positive variable area soundtrack can be printed on AGFA PRINT CP30 from optical recording films such as ST8D, ST9, or other brands of sound recording films. Excellent sound results will be obtained.

The analogue soundtrack is formed by exposing mostly only the two top layers of the colour printfilm. This is achieved by selective exposure of the film with yellow light (silver soundtracks), greenish light (high magenta soundtracks) or red light (cyan dye only soundtracks) (*). **AGFA PRINT CP30 has shown excellent results when making Cyan Dye tracks where no silver-redevelopment is necessary anymore.** For the digital soundtracks – Dolby Digital SR.D, DTS and Sony SDDS, specific filterpacks and aimedensities are applicable. All data concerning filterpacks and aimedensities are available from your local AGFA representative or at simple request at AGFA headquarters.

The exact working density values of the soundtrack negative and the print must be determined by means of appropriate cross-modulation testing procedures.

Also consult the technical data sheets of AGFA SOUND ST8D and ST9 optical sound recording films.

(*) Coloured light is achieved by inserting the proper filter in the lightpath of the soundhead:

- For Yellow light: insert a minus blue filter (AGFA L519 or Wratten #12) + a UV-filter, like Wratten #2B.
- For Greenish light: insert a high magenta filter (AGFA G0004 or Wratten #12 + CC Cyan 90 to 120
- For Red light (Cyan Dye tracks): insert a red filter (AGFA L622 or Wratten #29)

Laboratory aimedensity values (LAD).

LAD values for AGFA PRINT CP30:

	R	G	B
Densities (for xenon light)	1,15	1,05	1,05

Densitometry: Status A

In theory, the print is neutral grey if these values are applied. Due to the varying parameters of perception, in particular evaluation conditions and personal preference, these values may differ in practice.

Storage.

- raw stock

Store in original package below 20°C (68°F).

When stored at low temperature, leave the film in closed package and allow sufficient time to warm up to room temperature, in order to prevent loose windings and condensation moisture.

- exposed film

The latent image characteristics of AGFA PRINT CP30 are excellent.

However, all exposed film should be developed as soon as possible. If immediate processing is not feasible, exposed film should be stored at a low temperature and in airtight conditions.

- processed film

Processed AGFA PRINT CP30 can be kept for short periods of time at 21°C and 50% R.H.

A cool and dry environment is recommended for long-term and archival storage.

Due to its excellent dye and base stability characteristics, AGFA PRINT CP30 is perfectly suitable for longterm and archival storage, provided the necessary precautions are taken.

More information regarding this subject can be found in the FIAF publication “Preservations and Restoration of Colour and Sound in Film” (International Federation of Film Archives).

Current product range.

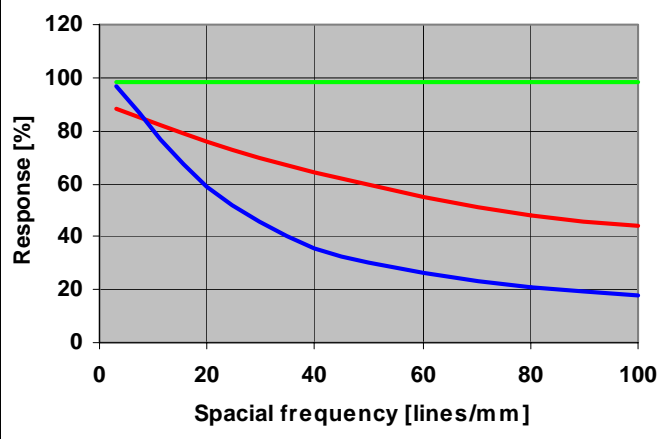
GEVAR Polyester base.

Width	Length [m/ft]	Perforation	Core/Spool	Winding	Order Code
35 mm	610 / 2000	P	CNP3	E.I.	E8CEG
35 mm	1223 / 4012	P	CNP3	E.I.	EGFSB
35 mm	1840 / 6036	P	CNP3	E.I.	EGFTD

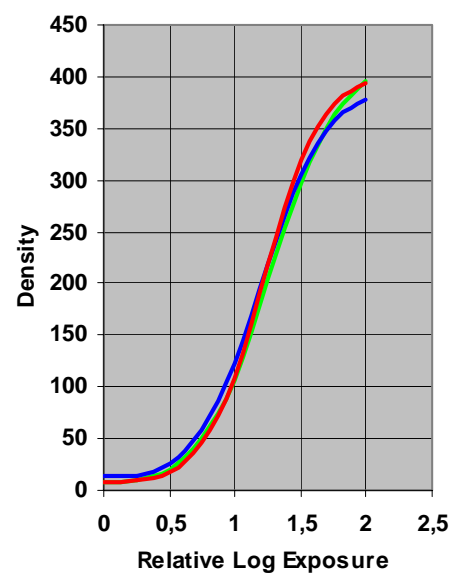
While the data presented are typical of production coatings, they do not represent standards which must be met by AGFA. Varying storage, exposure and processing conditions may affect results. The company reserves the right to change and improve product characteristics at any time.

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 Website: <http://www.agfa.com/en/sp/index.jsp>

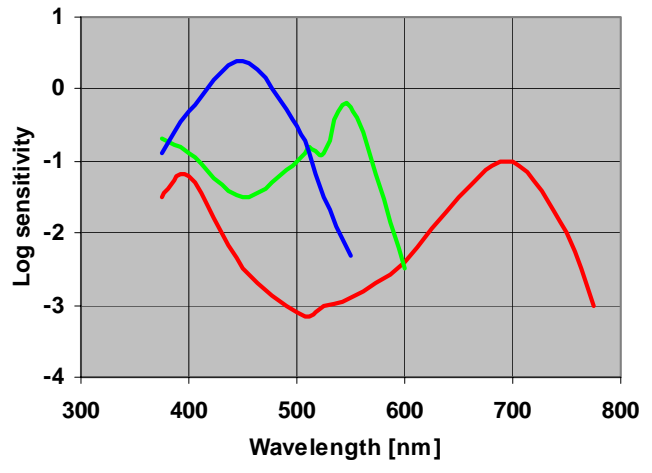
Modulation transfer curves



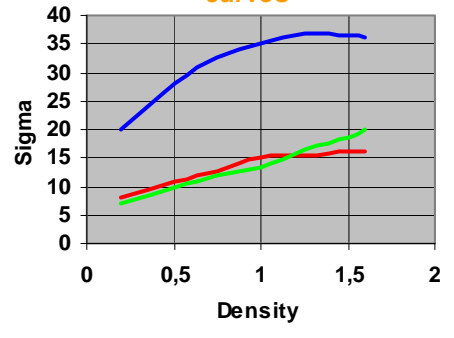
Sensitometric curves



Spectral sensitivity curves



Diffuse RMS Granularity curves



Spectral Dye Density Curves
Typical densities for a neutral subject at D=3.00

