



# Rho 600

## Inkjet Flatbed Printer with Quadro® Array Technology

All the companies that are active in the field of visual communication will sit up and take notice. Market leader Durst is presenting a thoroughly intelligent innovation in the area of inkjet flatbed printers. Rho 600 – the uncompromisingly perfect generation of printers demonstrates yet again Durst's guiding principle of „Leading Imaging Technology since 1936“. The Rho 600 makes an immediate impression: Quadro® Array Technology, a sensor controlled belt transport, a proprietary ink supply and drying technology. These are supplemented by the characteristics of speed, flexibility and upgradeability. The overall design is in fact impressive for every application because the modules can be combined in any number of configurations to suit your requirements. Secure some incomparable advantages for yourself right now in the battle to win over the customer.



# The Technology

Precision of the inkjet nozzles is a prerequisite for top-quality inkjet printing. Crucial factors include the control of the trigger impulses and precision in placement of the droplets. Quadro's Dot Size Control technology delivers precise adherence to the specifications.

Whereas in the past you could choose between good print quality and high production speed, today Durst's Quadro technology delivers both at once, exactly in accordance with the motto: uncompromisingly fast, uncompromisingly good.

## The print heads.

Four compact and precisely aligned Spectra slots produce a packing density of 512 outlets per Quadro Array. The modular structure permits several print heads to be installed in various alignments with no difficulty. Consequently the resolution and positioning of the inkjet are precisely adjusted to the desired requirements. The nozzle channels are triggered by means of a serial-parallel converter. Addressing is carried out individually or simultaneously, depending on the job. Top-quality printing is guaranteed by the ink feed to the nozzle outlets developed by Durst. The constant droplet volume and the extremely even shape and speed of the ink droplets are simply outstanding. The ink is degassed in the Rho 600 by means of osmotic filters, heated and then constantly fed to the piezo printer system. The print head alignment is selected in such a way that white printing can be carried out at the same time as CMYK in one pass.

## Endless printing:

### The ink supply

Eco-friendly and generous: The 5-litre Cubitainers of ink. Ink is topped up during printing by means of the plug-in-and-tip connector, without coming into contact with it. Durst is the first company in the world to supply the colour „white“; a separate ink feed system in parallel to the CMYK supply makes it possible to print white in combination with CMYK. The system for „lacquer effect“ (varnish) is similar.

## The transport mechanism

The Rho 600 prints both rigid and semi-flexible panels up to 40 mm thick (up to 70 mm in the case of the industrial model). In addition to this, a motorised unwinding and winding system enables the printing of flexible panels on rolls up to 19 cm in diameter. The panels are fed into the printer over fixed platforms at exactly the right angle, and their transport is precisely monitored by sensors.

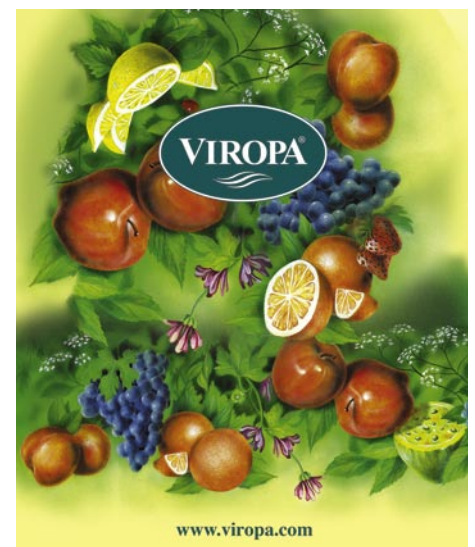
## Quality right down to the last drop:

### Durst UV ink

The ink used for printing was developed for Durst, and is hardened by UV radiation. Viscosity and surface tension are coordinated in such a way that optimum hardening is achieved with optimum adhesion on most materials.

Durst offers a selection of three ink systems:

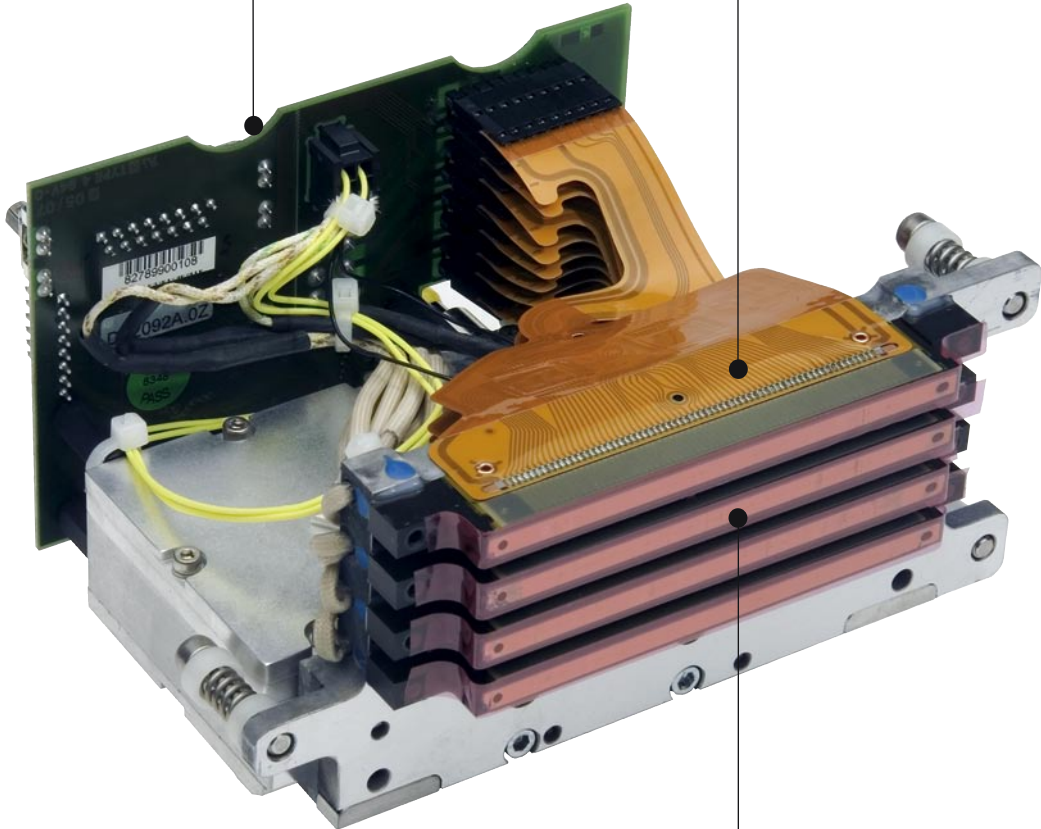
- Rho ink flexible set – the most flexible UV ink on the market for materials such as blue back paper, films, textiles, vinyls etc., or for panels that are bowed or slightly drawn.
  - Rho ink rigid set – a quality ink for rigid materials such as metals, acrylics, polycarbonates and glass. Rho ink rigid set achieves the highest adhesion score with otherwise unprintable materials according to the cross-hatch test.
  - Paperboard ink – the economical UV ink for paper-laminated or absorbent surfaces, and for use in interior spaces.
- In addition to the traditional CMYK inks, Durst supplies a proven, white-pigmented ink, which promises optimum results as a background, a spot colour, a filler colour or as an opaque pigment for inverse transparency printing.



## The Quadro Print Head - technology that puts things in focus.



What sort of technology does Durst use to achieve its great reproduction of skin tones, colour gradients or pastel-coloured areas, without colour outlines or abrupt transitions? Dot Size Control and precise droplet size and placing is the secret behind colour gradients of 400/600 dpi. And Quadro technology with its constant monitoring of droplet geometry makes it possible to print critical colours over large areas without modulation.



# T

And you will also be astonished at the reproduction of text with Quadro® Array Technology. Crystal clear printing of very small font sizes down to 6 point, by means of controlled droplet geometry without satellite droplets. And similarly precise printing of barcodes (A-class). As of now, extremely small text on packaging, display boards, maps or directional signs is no longer a problem.



### Future-proof and upgradable.

Make a start and work your way up within the system – the successful product concept from Durst. The Basic entry-level model with one Quadro Array per colour and up to 40 sqm/hour can be upgraded to the Presto (two Quadro Arrays per colour, up to 80 sqm/hour) at any time. Then a further upgrade to the Rapid with 4 Quadro Arrays per colour and up to 160 sqm/hour is the next step. The same applies to the colours. White, Varnish, Ocean Blue, Vivid Red, Orange, Purple; these are all upgrade options that can be subsequently implemented at manageable cost in just a few hours. Modularity also applies to the add-on modules: automatic feeder-stacker, roll-to-roll system, conversion from Flexible to Rigid ink.

## Hardworking Software

The tried and tested Linux-based Durst user software with „on-the-fly“ image editing offers you rapid and reliable production while taking up minimal space on your hard disk (on-the-fly pixel interpolation/scaling, colour, density, contrast, saturation and definition correction, cut-outs etc.). „On-the-fly“ image editing eliminates the need for additional print files, which drastically reduces the overall printing time and minimises the space taken up on the hard disk. The media employed are stored with their properties, and immediately retrieved again when needed. Depending on the print media and the requirements in terms of colour density and colour quality, you can choose between four different printing modes. These include Backlit Mode, which automatically applies twice the quantity of ink without any time delay, thus guaranteeing the required density.

## The right one for every requirement: A choice of three models Basic, Presto, Rapid

In the Rho 600 you get an upgradeable system that grows to match your customers' requirements. The same applies to all three models: Basic, Presto and Rapid. All three are of course of modular construction, and hence upgradeable as you already know from the tried and tested Rho 250. From the entry-level Basic model it is an easy step up to Presto and Rapid; from CMYK to integrated white printing and lacquer effect or spot colours.

**m<sup>2</sup>**

Speed is no conjuring trick. At up to 160 sqm per hour, the Rapid is the fastest flatbed printer on the market. Four Quadro Arrays per colour give it power and 130 cm/min. feed with good, saleable quality. This is a genuine quantum leap.



**Does everything, prints everything.** The industrial model and the selection of inks, the belt or roller transport system make the Rho 600 the most versatile flatbed printer of its age. The concept of loading on one side of the machine and unloading on the opposite side corresponds with the normal industrial workflow principle.



## The all-rounder at a glance.

We have shown you the many technical advantages. All our innovations pursue the aim of providing you, the future Rho 600 owner, with substantial economic advantages.

### What can photographic labs and digital printers get out of the Rho 600?

First, it is an economical way to get into digital print technology. For inside and out, on panels up to 40 mm thick, without lamination. Move up to become a general provider for trade fairs, exhibitions, events, logistics communications, bus shelters, notice boards, maps, direction signs etc. Even without lamination, your prints will retain their true colours for a long time. At the same time you will receive the ideal supplement to your existing range of photographic printouts. You will also be able to take on special-effect prints with gloss lacquer with immediate effect – even for small print runs without any special machines.

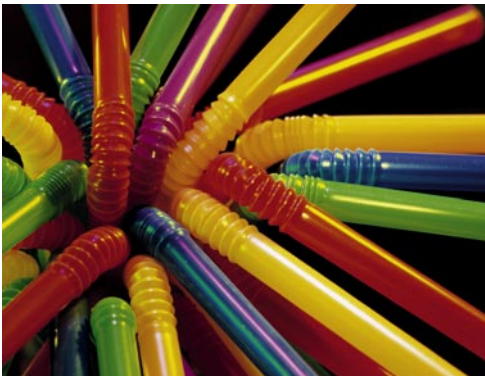
### What can Rho 600 do for photo labs?

Rho produces large-format advertising for brands, POS, POP, exhibitions and trade fairs, and prints business stationery and brochures which demand perfect colour reproduction, colour gradients, skin tones and small-format texts.

### New and extra business for the screen printer.

You can print bus shelters, building and company signs, display and information boards, room dividers and ceiling decorations, and other elements of interior design. Print what was previously impossible. Doors with profiled door panels, corrugated cardboard boxes with open corrugations and lightly embossed panels. You will be a much sought after partner to industries that used to have to manage with laborious transfer techniques. Without having to produce a printing screen and without any of the associated additional costs, Rho 600 produces high-quality, sophisticated short print runs (under 50 items) or even single prints. Now you can take orders that you never expected to get before! Rho 205 does not replace screen-printing but is a useful supplement to it. Cost-effectively, quickly and without any lengthy changeover times, you will be able to print special colours, tiny fonts, changing pictures or event details. Everything a perfect fit – thanks to tried and tested Rho technology.

**The perfect addition to the print shop**  
Digital/conventional print shops use Rho 600 as the replacement for antiquated flexographic printing or as a high-quality supplement to their standard machines. Print economical short print runs for displays, packaging and signs. Offer your clients special-effect prints that were once reserved for special machines, using gloss lacquer for even the smallest print runs.



# Technical data

## General specifications

### Dimensions:

Width: 552 cm (218 in.)  
Length without roller tables:  
195 cm (77 in.)  
Length with roller tables:  
425 cm (167 in.)  
Height: 175 cm (69 in.)

### Weight:

approx. 3.400 kg (7.500 lb)

### Safety standards:

complies with currently valid guidelines

## Printing specifications

### Printing system:

Patented Durst flatbed system with Quadro® array technology for the finest quality and the highest speed

### Resolution:

400/600 dpi selectable

### Colours:

Standard: CMYK  
Optional: White, Clear Varnish for special effects, Spot Colours (on request)

### Inks:

UV-resistant pigment inks for interior and exterior applications.  
Rho Ink Flexible Set: for the widest range of flexible and rigid media with best adhesion on vinyls.  
Rho Ink Rigid Set: for all kinds of board materials with best adhesion on acrylics and polycarbonates.

### Ink supply:

Integrated ink tanks with 10 litre capacity per ink, refillable during the printing process. The refill inks are in 5-litre, non-returnable containers, easily disposal in collapsed condition, thus avoiding pollution to the machine and the environment.

### Software/RIP:

Durst Rho Linux software with on-the-fly image processing (scaling, pixel interpolation, sharpness correction, cropping, panelling and further corrections) and on-the-fly dithering for very fast processing with minimum storage capacity occupation on the hard disk. Integrated Cheetah PostScript Level 3 RIP (400 MB in approx. 1 min.)

### File formats:

- Grey levels CMYK, RGB and Lab TIFF
- Grey levels CMYK and RGB JPEG
- Windows Bitmap (BMP)
- PostScript Level 2/3, EPS (only Type 1 fonts)
- PDF
- RGB PPM raw format

### Productivity

**Rho 600 Basic:** up to 40 sqm/h  
(32,5 cm/min – 12,8"/min linear speed)  
**Rho 600 Presto:** up to 80 sqm/h  
(65 cm/min – 25,5"/min linear speed)  
**Rho 600 Rapid:** up to 160 sqm/h  
(130 cm/min – 51"/min linear speed)

Printing speed is measured on full width at continuous production at 400 dpi

## Media specifications

### Media types:

Wide range of uncoated and coated materials printable – also textured surfaces such as hard foam sheets, soft foam sheets, aluminium, acrylic glass, cardboard sheets, corrugated sheets, etc.

### Maximum printing width:

205 cm (80 in.)

### Maximum printing length:

Only restricted by medium length

### Maximum thickness:

Standard: 40 mm (1.58 in.)  
Industrial model: 70 mm (2.75 in.)

### Maximum media weight:

Standard: 50 kg  
Industrial version: 70 kg

### Smallest sheet size:

DIN-A3 – 29.7 x 42 cm (12 x 17 in.)

### Registration of materials:

Materials are registered at the leading edge by means of fibre optic sensors. An encoder measures the transport sequences, ensuring utmost precision in image alignment.

## Location requirements

### Space requirement:

min. 8 x 8 m (27 x 27 ft.)

### Maximum height:

2.400 m (8.000 ft) above sea level

### Temperature range:

+15 °C to +30 °C (+59°F to 86°F)  
non-condensing

### Relative air humidity:

25 – 80 %, non-condensing



**Durst Phototechnik  
AG**

**Large Format Division**

Vittorio-Veneto-Straße 59

I-39042 Brixen, Italy

Telefon +39/0472 81 01 11

Telefax +39/0472 83 09 80

www.durst-online.com

info@durst.it

**Durst Phototechnik  
Digital Technology**

**GmbH**

Julius-Durst-Straße 11

A-9900 Lienz, Austria

Telefon +43/4852/7 17 77

Telefax +43/4852/7 17 77 50

www.durst-online.com

info@durst-online.at

The latest technical developments are constantly being incorporated into Durst products. Illustrations and descriptions are therefore subject to modification. All rights reserved on images and illustrations.

© Durst Phototechnik AG, 07/2005  
IX20605