



durst

HL 2506 AF

Durst HL 2506 AF
Professional horizontal enlarger for
colour and BW-enlargements from film
formats up to 25 x 25 cm (10 x 10 in.)
with computer driven Permanent Closed
Loop light monitoring system, together
with automatic focusing and sizing.



A sophisticated horizontal enlarger

Durst's supremely practical HL 2506 AF horizontal enlarger proves that sophisticated technology need not be complicated to use.

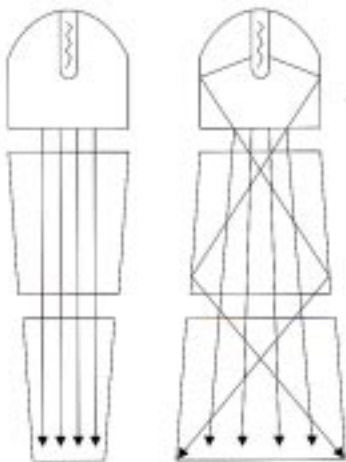
With its step-by-step instructions, programmed into the fully electronic control panel, its automatic time-saving and easy-to-use functions and other convenience features this unit will meet the most demanding requirements for a long time to come.



This is because of the combination of the following features:

- Automatic sizing and focusing
- Permanent Closed Loop System
- Automatic compensation of the reciprocity failure (X.Comp) by changing the copying parameters
- Built-in translator for direct factor independent input of VCNA-data
- 2 RS232 serial interfaces for
 - on-line operation
 - barcode operation
 - on-line/barcode operation
- Job memories for recording all printing data when testing, composing and doing repeat printing together with the highest repeatability of colour, density and print size the Durst HL 2506 AF allows a method of working which is many times faster than conventional enlargers:
- All jobs can be tested in a small print size since, when the final magnification factor is entered, colour and density are automatically adjusted to match. Testing at small factors has the advantage that, because of the increased amount of picture information, colour and density can be judged with more accuracy.
- Large element of time-saving as several originals can be tested one after another using the same factor.
- The enlarger does never have to stay blocked as all the values can be reproduced exactly and so the enlarger remains available for other work even during test exposures.
- Quick and exact size setting (approx. 3 times faster than conventional systems)
- Trouble free and fast repeat work
- Fast subsequent size matching
- Filing and retrieving of all parameters (reducing mistakes)
- Open system

Features



The single light source system offers the decisive advantage that there is only one variable component. This means that there will always be optimum colour mixing and evenness of illumination. In addition there is a format dependent light guiding system (see diagram with interchangeable light mixing boxes) without reflex losses which makes a significant increase in light intensity possible.

Extremely high light intensity with a single light source (one preheated 2000 W tungsten-halogen lamp)
 With the interchangeable double mixing boxes, matched to all film sizes from 24 x 36 mm to 25 x 25 cm (10 x 10 in.) the HL 2506 AF yields an exceptionally high light output - for the mixing boxes concentrate all of the light onto the film size in use. This ensures even illumination of the film area as well as optimum colour mixing.

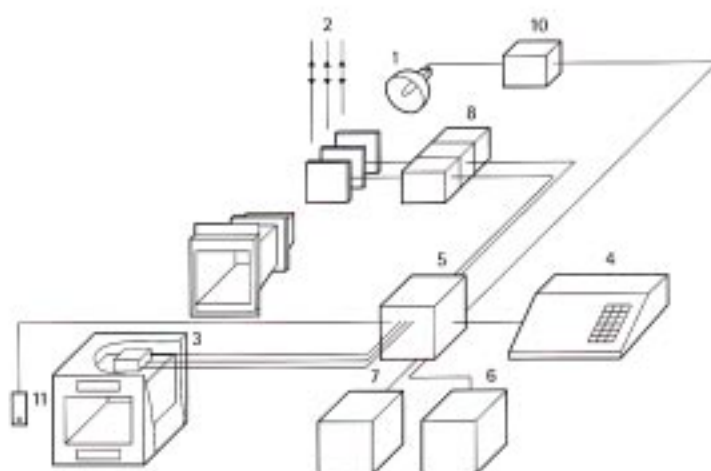
Even at high magnifications these mirror mixing boxes allow relatively short exposure times especially useful when making sectional exposures.

The mirror boxes also avoid contrast losses and retain their colour quality (without yellowing) over their whole service life.

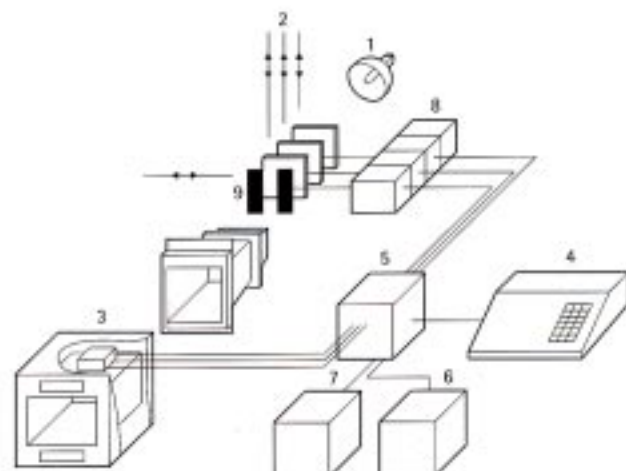
Permanent Closed Loop System with separate colour and density control
 Sensors built into the lower mixing box measure the blue, green and red components of the projected light beam and feed their signal outputs into a microcomputer. This then matches the settings of the three dichroic filters (cyan, yellow and magenta) to the programmed calibration values. This ensures constant filter settings and compensates when changing mixing boxes and for lamp aging.

The separate control for colour and density are also unique so that filter settings can be adjusted to a precision of ± 0.2 filter values. Compared to other Closed Loop Systems where colour and density adjustments are made through the three colour filters, Durst employs the principle of intensity adjustment through a stepless adjustable density diaphragm. This makes it possible to enter neutral density values without the colour filters moving significantly. Also this type of intensity adjustment does not influence the colour temperature of the lamp.

After every start-up there is an automatic zero balancing of the light and auto-focus system.



Traditional Closed Loop System with adjustment of colour and density only through the colour filters. Because of the associated densities of the colour filters, density corrections result in a small colour shift.



Durst Permanent Closed Loop System with separate colour and density control for maximum precision of filter setting (± 0.2 filter values). Since the reciprocity failure when changing the print size is electronically corrected by means of the magnification factor, the time consuming and inexact probe measuring of the density is avoided.

- 1 Lamp
- 2 Yellow, magenta and cyan filters
- 3 Sensors responding to blue, green and red
- 4 Filtration entry
- 5 Closed Loop processor
- 6 Correction and calibration memory
- 7 Autofocus processor
- 8 Drive for filters resp. density diaphragm
- 9 Density diaphragm
- 10 Adjustable power supply to lamp, to control density
- 11 Measuring probe to read density

Automatic focusing and sizing system

The advantages of the Durst focusing and sizing system are the high degree of setting precision and the simple and fast programming: Focusing the projected image and entering a measured length is enough, the remainder is taken over by the electronics. The focal length of the lens and the necessary parameters are automatically calculated. The range of input choices is as follows:

- Input of linear magnification (e.g. 1.8 x)
- Input of original/subject size and required print size. This automatically calculates and displays the corresponding magnification factor
- Input of percentage magnification
- With the appropriate layout keys you can further visually adjust the print size (again at two speeds) without loss of image sharpness.

The electronically driven focusing and sizing system with backlash-free fine adjustment guarantees „grain“ sharp pictures and high size repeatability for repeat work.

Divergences from the programmed focusing plane (e.g. emulsion side down or up, changing projection plane, changing film carriers, etc.) are recorded by the system and calculated exactly.



Lens turret with electronic central shutter for 6 lenses

The HL 2506 AF is fitted with a 6-position lens turret for focal lengths of 50 mm - 360 mm. The appropriate lens channel is automatically adjusted when the desired lens is selected. This reduces down time considerably, simplifies operation and protects the lenses.

The electromagnetic central shutter which is located between the lens and the film carrier only opens for exposure when the Permanet Closed Loop System has adjusted colour and density corresponding to the values entered. The central shutter is particularly important for compositings, extremely short exposure times and repeat printing.

Automatic reciprocity failure correction for colour and density for fast and trouble free size adjustment

A built-in three-point paper slope correction automatically compensates for the exposure increase needed by high magnifications. As the calculation of the necessary correction is not effected through a measuring probe in the projection plane but through the magnification factor, a higher degree of precision is ensured.

Test exposures can therefore be made at a smaller magnification (with shorter exposure times and covering larger print areas). This system has 30 paper memory channels (CP) and thus permits individual programming for various materials (prints, transparencies etc.). This allows the rapid and cost-effective handling of orders involving different magnifications.



Special supplementary filter for printing texts and logos in various colours

The built-in supplementary filter with 60 yellow and 60 magenta allows to print texts and logos in high colour densities with stepless adjustment. Standard or frequently used colours can be preprogrammed.



High precision and custom designed film carrier system to meet various applications

The basic framework of the film carrier holder consists of a precision made and torsion free casting with ball bearings and automatic film carrier centring system. The 4 masking blades can be moved in parallel and this makes for simple and secure centring of the film in the optical axis. The vertical adjustment of the film carrier features a two-speed movement.

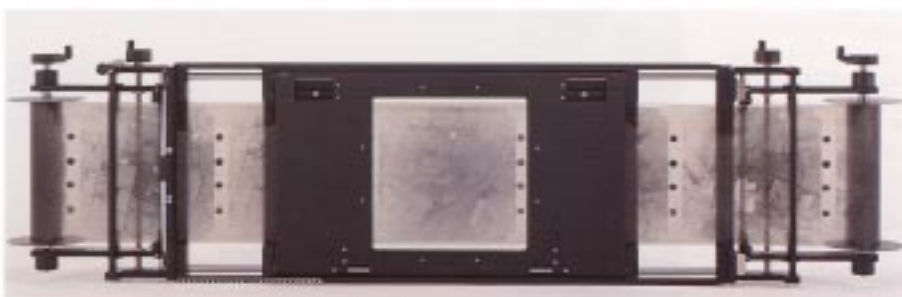
For a precise and repeatable horizontal position of the film carrier the carrier holder is equipped with an adjustable double purpose buffer: one side is fitted with a hard rubber for standard work and the other side features a magnet for high precision register work.

To allow a perfect alignment of the loaded film with the paper mounted on the projection plane the film carrier can be turned approx. 15 degrees in the optical axis.

A large choice of film carriers are available:

- Rapidgate film carrier for film formats up to 25 x 25 cm (10 x 10 in.) with the following interchangeable inserts:
- Rapidinsert with one each AN and one standard glass and two register bars (Kodak and Durst Mivalo register system) for standard and register work. Register bars for other systems are available on special request.
- Glass inserts with identical focusing plane for a rational method of working (work preparation at daylight - film stays in the glass insert until the work is completed) without dust problems
- Liquidgate insert for handling scratched films
- Glassless tension carrier inserts for 35 mm and 120 mm films (inserts for the 4 x 5 in., 13 x 18 cm/5 x 7 in. and 20 x 25 cm/8 x 10 in. film sizes are in planning)
- Honegroll aerial film carrier to take roll film widths from 70 mm to 25 cm (10 in.) and lengths up to 150 m (500 ft).
- Special carrier Honey 2464 with an aperture size of 24 x 64 cm (10 x 25 in.) to take three 20 x 25 cm (8 x 10 in.) or 360° panorama films.

Honegroll aerial film carrier with stepless adjustable film width from 70 mm to 25 cm (10 in.) and removable winder unit. (Optional)



Exposure control with integrated VCNA-translator

In the timer mode when changing the magnification factor the exposure program automatically calculates and sets the new exposure time as well as the colour and density corrections to compensate for the reciprocity failure.

In the VCNA-mode (video colour negative analyzer) after entering the colour and density values and the magnification factor the program automatically translates and sets the VCNA- data into filtration values and exposure time taking into account the corrections to compensate for the reciprocity failure. The system also corrects the filtration and exposure time when changing lens, mixing box and paper channel.

Highly user-friendly construction

- Built-in diagnostic program for fast and simple trouble shooting with notes on remedies.
- Centrally mounted swing-out circuit boards and control units with built-in power sockets for soldering irons, lamps etc.

150 job memories
for all exposure related data

Highly convenient handling

- With choice of left-hand or right-hand operation
- Step-by-step instructions with dialog system
- Easy paper calibration program using the Durst on-line densitometer Optodens (Optional)

The paper slope programming is user guided, simple and fast. Several paper types for the same process can be programmed at the same time. When using the Optodens densitometer the measured values are automatically corrected and added or subtracted to the memory values.

- Built-in data printer with buffer memory for printing all copying and memory data including the job number.
- Master channel - 3 process master channel are linked to the paper memories and compensate for chemistry shifts.



An integrated light table simplifies film loading and centring.

The built-in exposure timer with a range of 0.1-9999 seconds with simultaneous display on the film carrier holder. The exposure countdown is thus visible from the projection surface - useful for shading and dodging work.



Pidam (Picture Data Management)

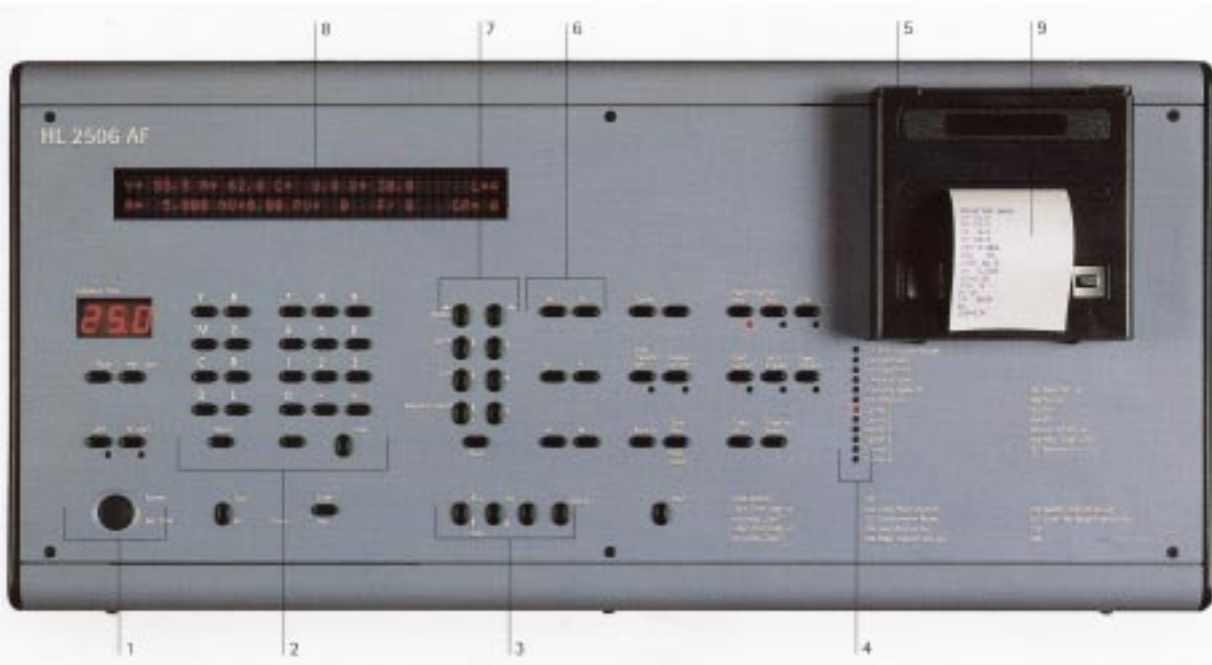
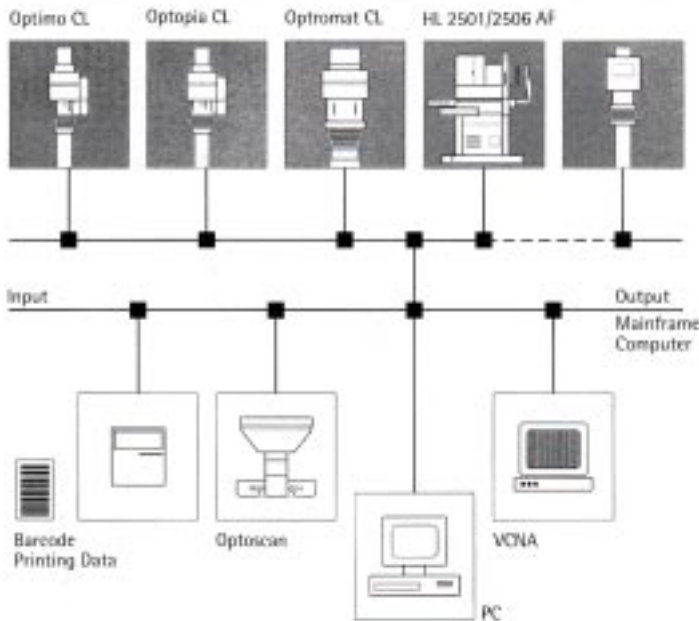
At the serial interface 1 (RS232) exposure data can be read in directly from the Optoscan film scanner, or via barcode by means of a barcode reader.

At the serial interface 2 data transfer into the network is affected (Pidam net) with a Personal Computer. All exposure data can be called-up directly from the PC at the enlarger by entering the job number and returned to memory.



Special rail system

The enlarger runs on special shaped rails and on three instead of four rollers to avoid any vibration during the exposure caused by a possible slight unevenness in the rails. The rails are fitted with levelling screws for optimum lining-up to the projection wall.



- 1 Control and display section for the exposure
- 2 Numerical key board and colour and density keys
- 3 Keys to operate the job memories
- 4 Coded functions/basic set-up

- 5 Data printer with buffer memory
- 6 Keys to input print size data (magnification factor, percentage magnification, original and requested print size)
- 7 Pair of keys for moving the enlarger, lens stage and film carrier
- 8 Alphanumeric display
- 9 Data print-out

Technical data

Height (on rails): approx. 183 cm (72 in.)
 Width (with control units): approx. 96 cm (37.8 in.)
 Length (with bellows extended): approx. 188 cm (74 in.)
 Height of optical axis: approx. 136 cm (53.5 in.)
 Weight: approx. 260 kg (573 lbs)
 Filters: dichroic (yellow, magenta, cyan)

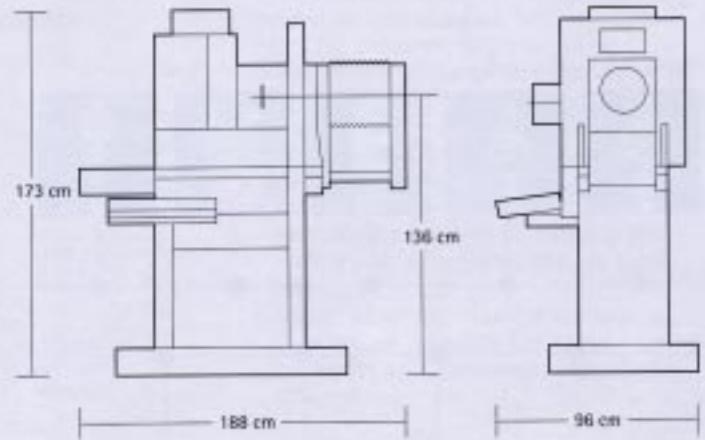
Memory system
 Lens channels: 6 (1 - 6)
 Paper channels: 30 (0 - 29)
 Job memories: 150 (0 - 149)
 Film carriers: 6 channels
 Lens turret: 6 lenses from 50 mm to 360 mm
 Filtration range: 0 - 130 in densitometric steps of 0.1

Density diaphragm: 0 - 60 in densitometric steps of 0.1

Shutters: Electronic central shutter
 Supplementary filter: 60 yellow + 60 magenta
 Light source: 2000 W/230 V, single tungsten halogen lamp with separate diathermic reflector

Mains supply: 220 - 240 V/50 - 60 Hz
 Power consumption: approx. 3000 W
 Stabilisation range: +10 % -15 %

Rails
 Length per unit: 2 m (6 1/2 ft, two units supplied with enlarger)
 Width (center to center): 62 cm (24.4 in.)
 Height: 4 cm (1.57 in.)



Lens/Focal length	Film size	Box	F-Stop	Mag. factor	Light intensity (projection plane)	Light gain compared to Hobox 100	
						F-Stops	Factor
360	25 x 25 cm	Hobox 100	8	5 x lin.	3.3 Lux	0.0	1.00 x
300	20 x 25 cm	Hobox 205	8	5 x lin.	5.4 Lux	0.3	1.25 x
300		Hobox 256	8	5 x lin.	13.3 Lux	1.6	3.09 x
	13 x 18 cm	Hobox 256-C*	8	5 x lin.	20.9 Lux	2.2	4.86 x
240		Hobox 138	8	5 x lin.	12.1 Lux	1.5	2.81 x
240		Hobox 186	8	5 x lin.	28.1 Lux	2.7	6.53 x
		Hobox 186-C*	8	5 x lin.	36.2 Lux	3.0	8.42 x
150	4 x 5 in.	Hobox 450	8	5 x lin.	16.5 Lux	1.9	3.83 x
150		Hobox 126	8	5 x lin.	43.4 Lux	3.3	10.09 x
		Hobox 126-C*	8	5 x lin.	56.2 Lux	3.7	13.07 x
105	6 x 9 cm	Hobox 69	8	5 x lin.	20.9 Lux	2.2	4.86 x
80	6 x 6 cm	Hobox 69	8	5 x lin.	21.9 Lux	2.3	5.09 x
50	24 x 36 mm	Hobox 35	8	5 x lin.	48.3 Lux	3.5	11.23 x

Approximate values

*Special mixing boxes with higher light output for

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The latest technical developments are constantly being incorporated into Durst products. Illustrations and descriptions are therefore subject to modification.

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