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durst

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СДЕЛ  
ПРОМЫШЛЕННЫХ  
КАТАЛОГОВ ВНИИПМ



Whether you want to make simple black and white prints or colour enlargements with exposure measurement, memory and calculation functions, the Modular 70 system combines all types of processes in one single enlarger. In almost no time at all the components can be combined to meet your requirements.

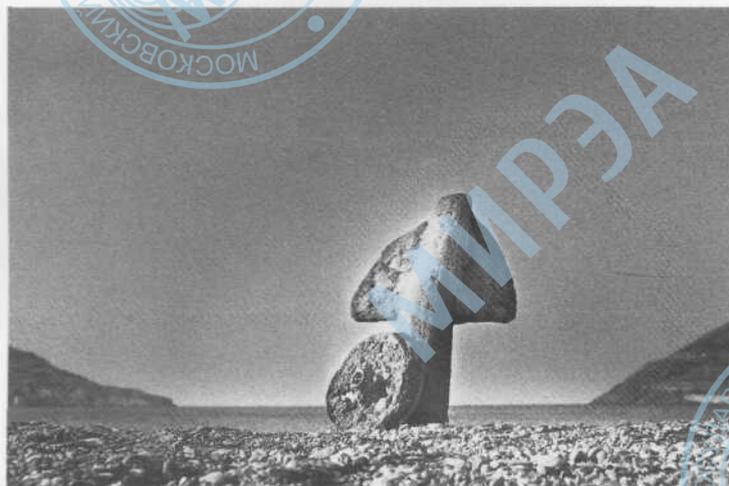


PWM-99

Подборка 10/1



Exceptional photographic results can only be achieved in your own darkroom. Photography is one of the most satisfying leisure time pursuits. Your camera equipment travels with you, not only at special places and at special times, but also to everyday events. You capture your impressions and memorise your views on the film. Over the years you collect negatives and transparencies, which are, perhaps, never enlarged, because no processing laboratory can undertake this task to your satisfaction. You, as the photographer, must decide for yourself the contrasts, colour variations or final composition. The emotions you felt while taking the photographs would be lost in the laboratory. Sometimes, you have a firm idea of how the finished photograph will look and works of art can appear in the darkroom, produced from the most ordinary negatives. There are no limits to your creativity when you produce your own enlargements.



Modular System components have advantages.

A darkroom is often wrongly judged by the number of pieces of equipment in it. In order to cope with growing requirements and to fulfil the varying tasks, further equipment is continually added. You will want to work with different film formats in colour or black and white and will require the highest quality working conditions to achieve the best pictures. Often this means that a lot of money is invested in little used equipment, which also takes up valuable working space.

The Modular 70 System is practical and well thought out. You can assemble the enlarger from various components, depending on requirements and processing methods. The modules are decided by your various processing methods (Colour, Black and White, Multigrade) and accept additional units to enable functions such as automatic colour analysing. Components, which are used for a number of processing methods, are combined in one module and therefore do not have to be purchased twice.

The concept of the modular light source and power supply is also new. The transformer is integrated in the lamphouse and can easily become a stabilised voltage regulator with the addition of the Modular 70 Stabi module. As all mains power components are housed in the head, the work space is left free and cables do not become tangled.

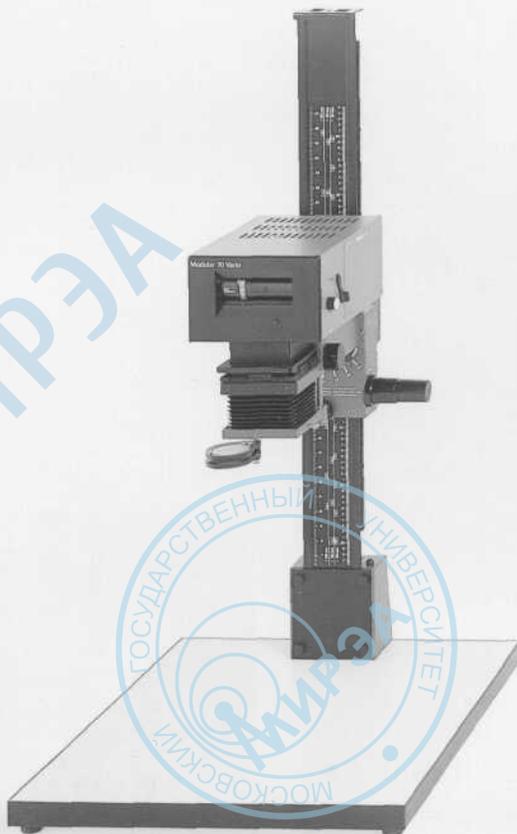
Owning the Modular 70 means that you have a specialised unit which will meet your changing requirements in the darkroom.

Using only two components, you can put together an individual enlarging system. The Modular 70 Basic and Modular 70 BW start you off in black and white enlarging. To use Multigrade black and white paper or colour paper, only the BW head is changed when the Modular 70 Lumo lamphouse and a different head is fitted – either the Modular 70 Vario or the Modular 70 Color. The individual modules can be changed in just a few seconds, and can be stored away in minimal space. The Modular 70 Micro extends both the flexibility and ease of various process methods in a single enlarger.

Modular 70 Start  
+ Modular 70 BW

Modular 70 Start Pro  
+ Modular 70 Lumo  
+ Modular 70 Vario

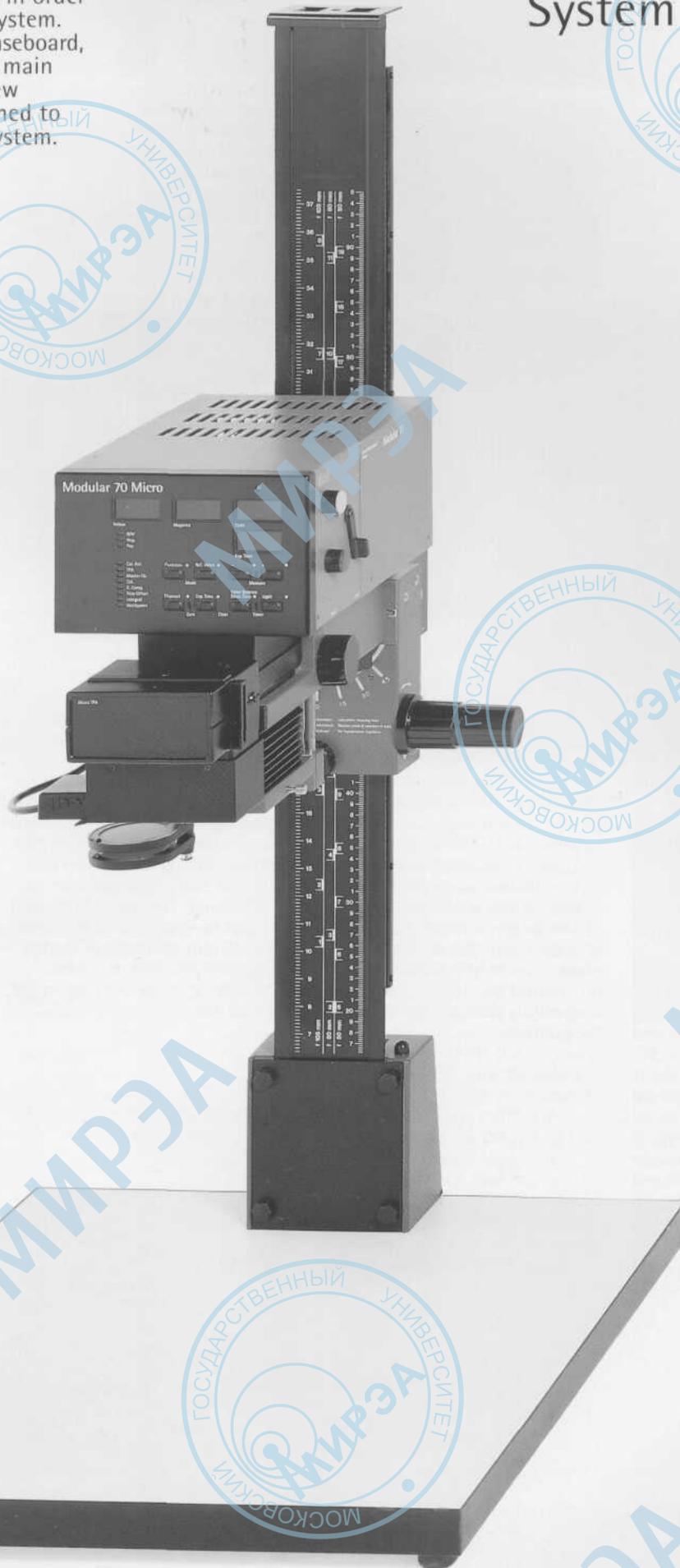
Modular 70 Start  
+ Modular 70 Lumo  
+ Modular 70 Color



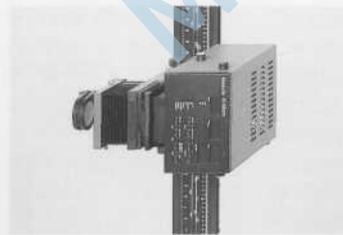
Durst enlargers do not suffer from the problem of obsolescence. A photographer who has an enlarger from the M 605 or M 707 series does not require a starting module in order to begin using the Modular System. The basic unit, consisting of baseboard, column and lens flange – the main body – is fully compatible. New system components are designed to extend the Modular 70 unit system.

- Modular 70 Start Pro
- + Modular 70 Lumo
- + Modular 70 Color
- + Modular 70 Micro
- + Modular 70 TPA

## The Conversion System



# The Modules



For wall projection it is possible to tilt the head either way by a maximum of 90 degrees, using the swivel mechanism.

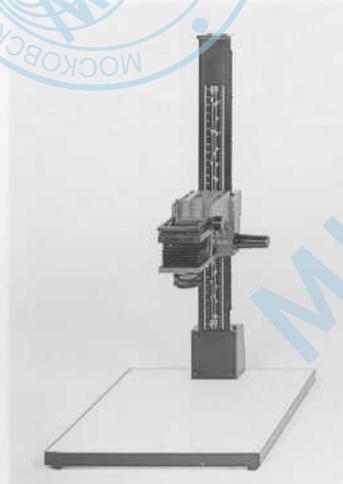


Distorted lines will be corrected by the Scheimpflug principle.



## Modular 70 Start

The Modular 70 Basic unit consists of baseboard, column, lens, flange, film carrier and filter holder. The magnification is adjusted by means of a hand crank via a rack and pinion system. A precise weight compensation spring ensures smooth, even head adjustments. The girder section column, made from robust sectional steel, makes for minimum vibration and indicates the enlargement factors for the lens focal lengths 50 mm, 80 mm and 105 mm as well as cm and inch scales. Enlargement ratios can easily be reset for repeat printing. The universal film carrier, made from precisely finished aluminium, has adjustable masking strips and can be lifted open with a knob, for easier film adjustment.



## Modular 70 Start Pro

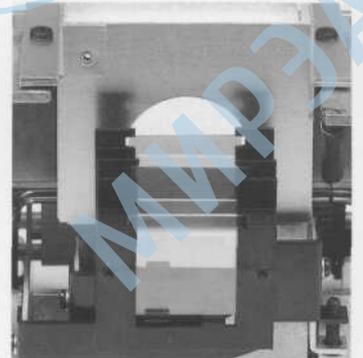
The Modular 70 Basic Pro with its 100x45 mm column is even more solid. The baseboard has 60x56 cm projection area and together with the 110 cm high column makes large magnification factors possible, without changing the lens. The height of the head unit can quickly be altered, using the sectional quick release grip and can be positioned precisely to a millimetre tolerance, using the fine focus drive.



## Modular 70 Lumo

The diffused light illumination system for working with colour and variable contrast black and white paper (filterhead Modular 70 Color/Micro and Modular 70 Vario) forms a component on its own. The amount of light can be continuously adjusted up to two stops by means of a density aperture. Using this method, the optimum aperture value for every enlarger lens can be achieved. The built-in mixing box can be changed with a lever from 35 mm to medium format up to 6x7 cm. This achieves optimum light concentration for each of these formats.

Durst tests the 100 watt Halogen lamps individually in the factory. They are selected for fine tolerances in alignment of the light element and for colour temperature. These strict controls result in even illumination of the negatives and transparencies with minimal light reduction of the edge and even colour mix. This results in low filter values and correspondingly short exposure times. An additional benefit of such selection is that filter corrections are minimal when it is necessary to replace the lamp.



The heat protection filter and the UV blocking filter are integral parts of the lamphouse. While they ensure minimal warming of the negative or transparency, they also guarantee controlled illumination of the photographic paper.

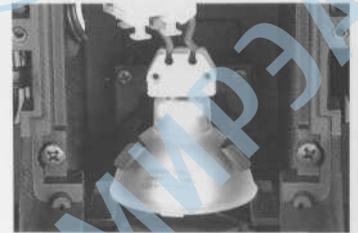


#### Modular 70 BW

The condenser system of the Modular 70 BW, in contrast to diffused lighting, generates targeted light, making it possible to achieve a rich contrast reproduction. Even negatives poor in contrast can be more satisfactorily reproduced, a benefit in particular for large reproduction sizes. Shorter exposure times result because the light source is used to its full extent. The deflection mirror of the reflex light system ensures that there is not too much heat generated in the film carrier. The built-in filter drawer is useful for working with variable contrast paper. In order to change format to 6x6 or 6x7 cm the appropriate condenser and mask insert for the negative carrier is available as an optional accessory.

#### Modular 70 Vario

The Vario filter head module makes working with multi-grade paper easier. Using a scale, which may be illuminated by LEDs, the required gradation can be selected. The density for the various gradation levels – as far as Ilford's Multigrade III paper is concerned – is automatically compensated, with the precisely cut curved disk, and therefore remains constant at all gradation levels. A precisely calibrated, selected Magenta filter and the 100 watt Halogen lamp, also selected for fine tolerances, are matched in the light assembly for multi-grade paper. To focus precisely, the filter can be swung out of place, using the white light lever.

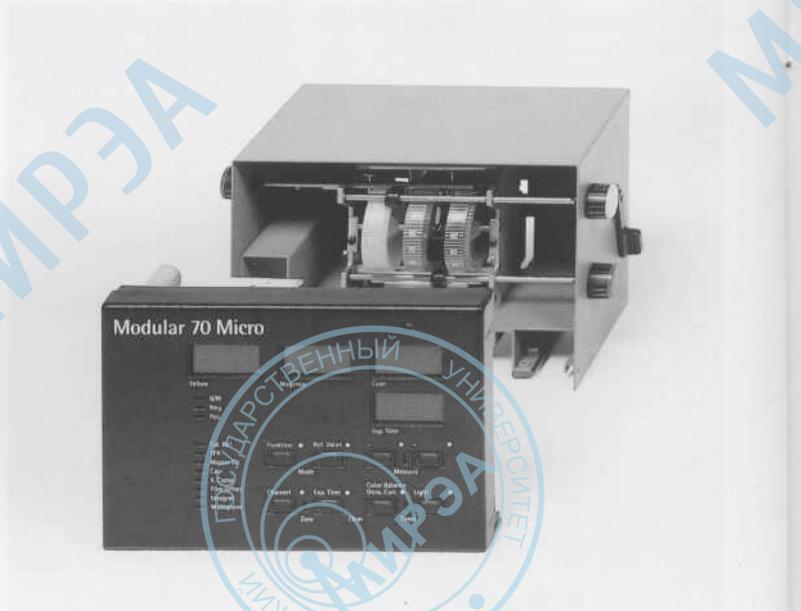
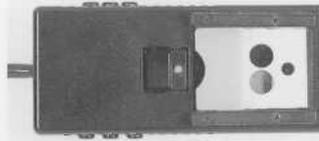
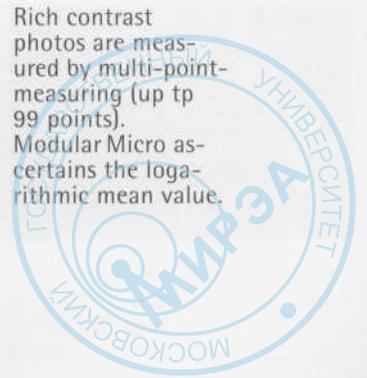


The test criteria for the lamp used in the Multigrade head, the Vario, are even more stringent. An exact colour balance of the lamp is a prerequisite for precise automatic density compensation for the various gradations.



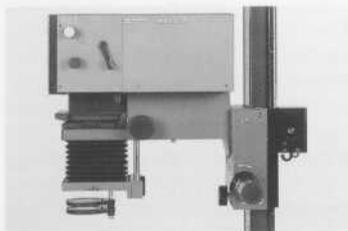


Rich contrast photos are measured by multi-point-measuring (up to 99 points). Modular Micro ascertains the logarithmic mean value.



#### Modular 70 Color

The Modular 70 Color Head Module, with its filter components, is simply pushed on to the lamp-house. The high quality dichroic interference filters for Yellow, Magenta and Cyan are adjusted by a knob. The filter values can be precisely selected up to 170 densitometric units. In order to make the reading of the chosen filter easier, the filter scales can be illuminated directly. When using especially light sensitive photographic papers and materials, the illumination remains switched off. The white light lever serves to assist focusing, without altering the chosen filter setting. The colour module can be changed in a matter of seconds to be replaced by the Vario module. When the Micro module is added to the colour head module, the resulting combination becomes an analyser unit.



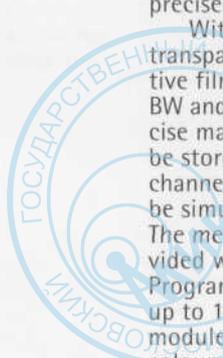
The built-in colour mixer box can be changed by a lever from 35mm to medium format.

#### Modular 70 Micro

The Micro module for the Modular 70 is a highly developed electronic colour analyser module, fulfilling functions with its 8-bit micro processor, previously only found on professional enlargers. The Micro simultaneously ascertains the exposure time and the filter values. All values are shown on the digital display. The properties of the dichroic filters are automatically taken into consideration. The micro processor calculates the average of the three colour density values logarithmically. Because of the highly accurate measurement, the exposure time is determined precisely.

With 30 film memories for transparencies and colour negative films and 30 memories for BW and colour paper types, precise material based norms can be stored. Using the master channel, all paper memories can be simultaneously corrected. The memory of the Micro is provided with battery back-up. Programmed values are retained up to 10 years, even if the Micro module is separated from the colour head.

Before the batteries run out, a warning signal appears. The function of the Micro module include automatic filter correction. Colour dominators are compensated using the adjustable under/over correction, e.g. with sea or sky negatives which have high blue content. The Micro makes readjustment of settings easier, when a new lamp is fitted, or when the chemicals are changed.





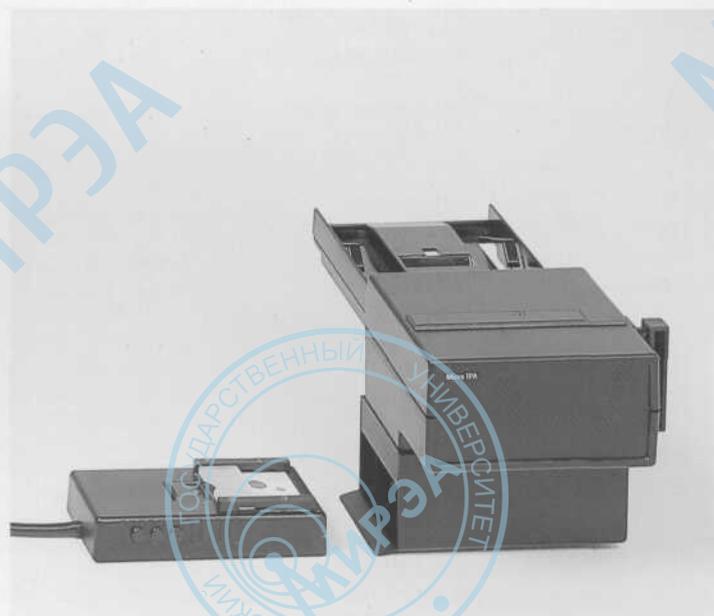
Colour dominators are compensated using the adjustable under/over correction.



The Halogen lamp circuit is provided with an electronic cut-out, to protect against overheating. "Super-Red-LEDs" are less likely to fog photographic paper, than the usual red-LEDs, although they appear brighter. The working area is not additionally illuminated, but simply marked with orientation dots. The LED displays automatically fade as soon as the room light is switched off so that unintentional fogging of the paper is therefore eliminated.

The Modular 70 Micro offers, as a result of its unique functions, the opportunity to work much more professionally. When combined with the Micro TPA, it may be used as a Densitometer. Its highly developed electronics make it possible for you to concentrate on composing your picture and therefore fosters your creativity.

Filter values and exposure time are shown on the digital display.



#### Test Print Analyser (TPA)

The Test Print Analyser (TPA) helps you to calibrate your Modular 70 Micro, providing a reliable means to set automatic average values for the Colour Analyser. The operating principle of the Micro TPA is based on the technology of professional Densitometers, but it is, nevertheless, easy to operate. The Modular 70 Micro TPA compares a small strip of paper developed and inserted by the user, with one which is already located in the TPA's body, calculates the necessary filter corrections and displays them.

The Micro TPA therefore makes it possible to find reliable calibration values without previous experience and knowledge of either colour analysis or colour correction, and then to produce enlargements which require little or no individual correction. The Micro TPA saves considerable time making the arduous production and evaluation of test strips a thing of the past.

#### Additional functions of the Micro TPA

Enlargements may be matched to any required colour, using a self finished reference strip (e.g. face tone or sky blue). Thus whole picture series with uniform colour characteristics can be produced (portraits, landscapes etc.) Calibration filter values can be automatically found using the TPA.



# Technical Data

## Modular 70 Start

### basic unit

Film format: 24×36mm  
as standard  
with optional accessories  
(insert masks, condensers)  
for film-formats from  
13×17mm up to 6×7cm

Maximum unit height: approx. 1300 mm

Size of the baseboard: 540×500 mm

Max. picture format  
on the baseboard: 470×500 mm

Distance optical axis/column:  
Column (breadth, depth, height): approx. 250 mm  
90×25×1100 mm

Height adjustment with hand  
crank via rack and pinion

Weight compensation spring  
Main body can be tilted either  
way up to 90 degrees

Wall and floor projection  
Filter holder with red filter  
and diffusion disk

Adjustable film barrier with  
register pins  
Lens adaptor

Lenses with M 39 thread can be  
mounted with adaptor into  
M 25 lens mount.

## Modular 70 Start Pro

### basic unit

Size of the baseboard: 600×650 mm

Max. picture format  
on baseboard: 600×560 mm

Column (breadth, depth, height): 100×45×1100 mm

## Modular 70 Lumo

### Illumination module for diffused lighting

(Modular 70 Colour  
and Modular 70 Vario)

Diffused reflex light  
Light source:

12V/100 W Halogen lamp  
selected for correct colour  
temperature and centring.  
up to 60 D (2 aperture openings)

Density aperture:  
Transformer with  
overheat protection as  
constant voltage regulator  
with additional module

Upgrading:  
Interchangeable mixing box:  
UV and IR filter.

(+10%/-15%)  
24×36 mm - 6×7 cm

## Modular 70 BW

Condenser illumination system  
(double condenser)

Light source:

Filter drawer

150 W Opal lamp

## Modular 70 Colour and Vario

### Filter module

Dichroic filter

Y-M-C filter values

White light lever

Vario contrast:

specially selected Magenta filter  
for exact colour correction.

Illumination of the filter scales  
by light diodes,  
9V battery.

up to 170 DD

0 - 5 steered by  
combined Y-M filtering

## Modular 70 Micro

Processor:

Changes the Modular 70 Colour  
head into an automatic  
enlarger (setting of density/  
exposure time, filtration with  
digital LED display).

Integral and multi-point  
measuring:

Under and over correction  
individually programmable

depending on measuring form  
and processing system (Col-  
Neg/transparency):

Exposure times

measuring range:

Exposure time norm range:

Measuring range accuracy:

Elimination of temperature and  
humidity errors by means of  
semi-automatic zero adjuster.

Master channel for correction  
of chemical and lamp drift  
(when changing the lamp).

Memory channels for paper:

Memory channels for films:

Gamma range:

TPA analyser range:

Grey field with density:

Automatic overheating  
protection

Measuring probe with  
silicon diodes

Measuring area

of the Cyan channel:

Yellow and Magenta channel:

Gradation display :

Automatic matching of the  
exposure time when changing  
the paper channels.

**Additional features**

In photometer mode Micro  
functions as a reflection and a  
transmission densitometer

(reflection densitometer: with  
Micro TPA as accessory).

Use as luxmeter possible with  
TPA as accessory

8 bit

up to 99 points

0 - 150%

0.1 - 999 sec.

1.0 - 999 sec.

+/-0.01 D in range

0.00 D - 3.00 D

30×3 (BW, Neg and Pos)

30×2 (Neg and Pos)

0.5 - 5.0 selectable

0.30 D - 1.5 D

0.70 +/-0.02 D

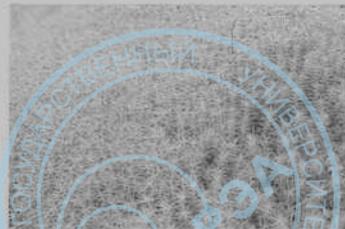
5.5 mm

10 mm

0 - 5 in 0.2 steps

Layout:  
Büro Weidner, Konstanz  
Litho:  
Brüllmann, Stuttgart  
Printed by  
dip-Druck, Bruneck

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



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Durst Phototechnik  
AG  
Division Phototechnik  
Postfach 223  
Vittorio-Veneto-Straße 59  
I-39042 Brixen, Italy  
Telefon 04 72/83 06 20  
Telefax 04 72/83 09 80

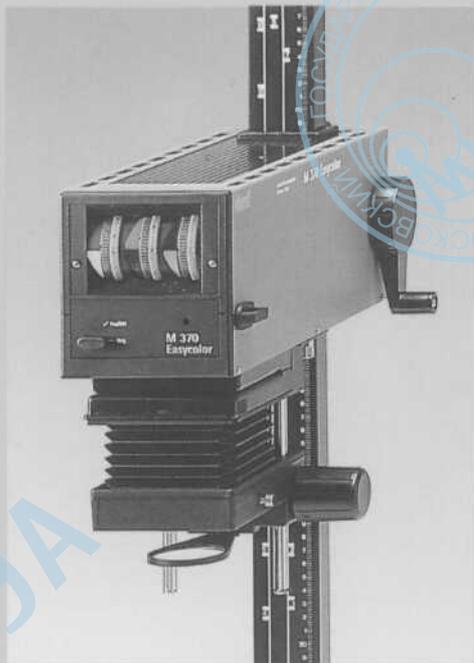
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M 370 Easycolor  
M 370 BW  
M 670 Color  
M 670 BW

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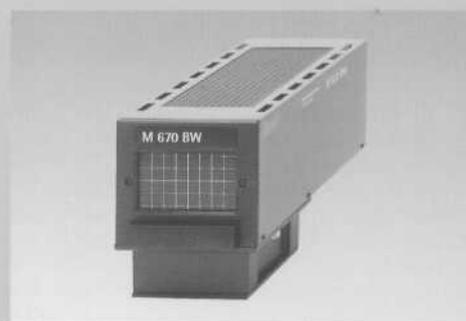


Durst M 370 Easycolor is a colour enlarger for film sizes up to 6 x 7 cm and as a basic model for 35 mm size.



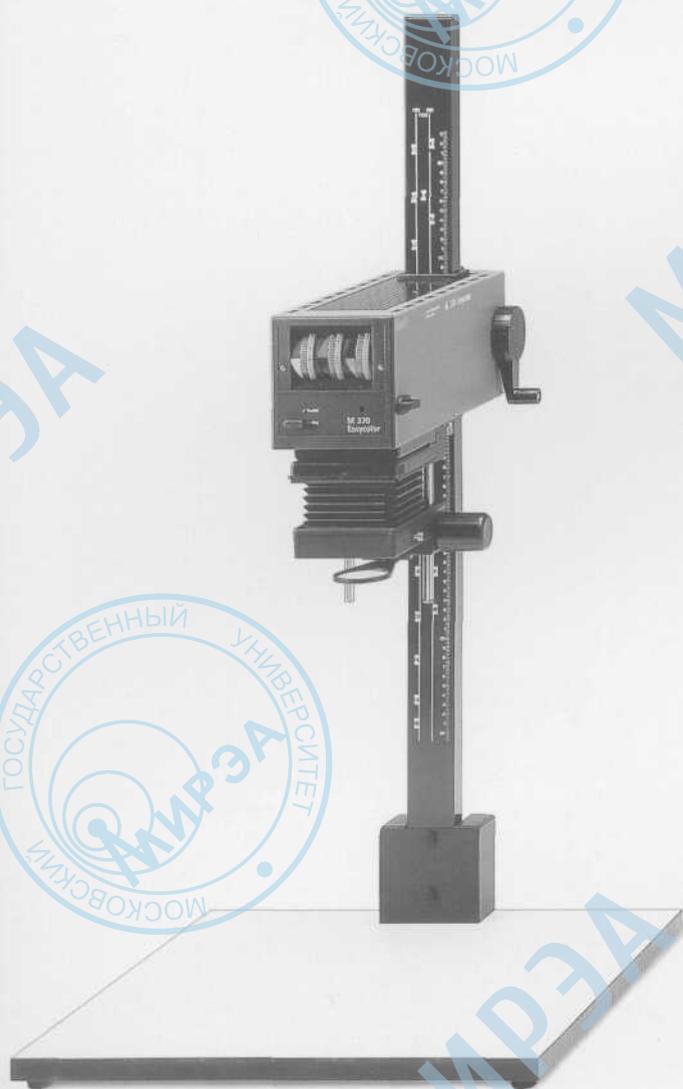
An interchangeable light mixing system employing concentrated directional light by means of an opal lamp and condensers allows the contrasty processing of B/W originals. Simply by adding auxiliary features (conversion kits) to

the basic enlarger, the M 670 model becomes an even more flexible and reliable tool for the pursuit of a creative hobby.



"P.W.M.-99"

## The beginning of a hobby



### M 370 Easycolor

The basic enlarger unit corresponds to the M 370 BW. The colour head is equipped with an innovative colour correction system and a scale for variable contrast paper. The important innovation on the Durst M 370 Easycolor is that a double filter wheel is implemented. One wheel for setting a zero reference as a basic filtration and the second wheel for making colour corrections. The colour correction wheels have a

main colour plus its complementary target colour indicated.

The double-filter wheel consists of the filter setting wheel and a scale wheel with adjustable zero reference.

Time saving basic filtration testing. Each Easycolor comes pre-calibrated for the selected halogen lamp (Colamp 100 S).

Colour corrections for printing colour negatives are carried out in a logical way corresponding to the colour patches. Ease of colour correction:

Model M 370 is available in two versions, the M 370 BW for B/W printing and the M 370 Easycolor for colour printing and use of variable contrast paper. As an enlarger with high light efficiency the standard version is able to handle the 35 mm film size; with a conversion kit (Lidiset/Lidicolset 66/67) one can work with 6 x 6 and 6 x 7 cm films. The M 370 series have several features guaranteeing vibration-free projection of negatives onto the baseboard to a size of 30 x 40 cm (35 mm negative): a robust square section column, height adjustment via crank handle and toothed

rack, and a smooth-running friction drive. Durst has paid great attention to the efficiency of the lamp (light efficiency/lamp wattage), illumination (especially fall-off towards the edges). Wall mounting brackets (accessories) and simple conversion of the column construction make floor projection possible.



### M 370 BW

The M 370 BW for traditional B/W printing is equipped with a directional light mixing system consisting of a 75 W opal lamp, condensers and heat reflecting mirror for the sharp reproduction of contours. Depending on the lens focal length, the lens boards (with M39 thread) are designed to take up the enlarging lens and the condensers.

The enlarger consists of a 460 x 500 mm coated baseboard, square profile column with a height scale in cm (height adjustment by means of a crank handle and a toothed rack), condenser lamphouse with a 75 W opal lamp, reflecting mirror, Lidicon 50 condenser, filter drawer for 75 x 75 mm filters, lens board with M39 thread, Lidineg 35 film carrier for 35 mm films, focussing mechanism via a friction drive and an adjustable bellows system, power supply connection cord with plug conforming to regional specifications.

### Lidiset 66/Lidiset 67

Lidiset 66 is a conversion kit comprised of condenser, film carrier, anti-Newton glass and format mask for working with 6 x 6/4.5 x 6 cm negatives. Lidiset 67 is an equivalent kit for the 6 x 7 cm film size.

You want to get rid of the colour cast in your test print, so on the colour head you simply reduce the colour you see in your test. If your test is too yellow make sure you see less yellow on your filter wheel, if your test is too red, reduce the red on the right filter wheel.

The print-related corrections are set based on „zero“. The original filter setting (-> all filter settings to zero) is therefore always known, and does not need to be noted down when working.

The required zero position for filter setting can at any time be matched to the paper used.

Extra reference marks for the variable contrast Ilford Multi-grade® paper make the new Durst M 370 Easycolor a universal colour and BW enlarger.

For the more ambitious . . .



#### M 670 Color

The color enlarger M 670 Color, by means of its diffuse 100 W/12 V halogen lamp light source, dichroic filtering with filter settings up to 170 D densitometric units and non-fading light mixing boxes, is capable of enlarging colour negatives, colour positive films, as well as B/W films when using variable contrast paper. The standard enlarger unit, designed for the processing of 35 mm films, can be easily converted for the

processing of 4.5 x 6/6 x 6/6 x 7 films by means of conversion kits (Vegacolset 66/67) with absolutely no loss of the optimal illumination and colour mixing quality.

The enlarger consists of a 50 x 46 cm coated baseboard, a square profile column with height/factor information given in cm/inch (height adjustment by means of crank and toothed rack), a lens panel of fiber-glass reinforced plastic, a fine focussing bellows mechanism with a

Model M 670 is available in two versions, the M 670 BW for processing of B/W and the M 670 Color for the processing of colour and variable contrast paper. By means of conversion kits comprised of lamphouse and filter system (for colour), or lamphouse and condensers (for B/W), respectively, the basic unit can be modified to suit the user's desired type of processing.

The M 670 is characterized by its high light intensity and perfected illumination and colour mixing qualities. Its stability is guaranteed by a broad square profile column and a focussing mechanism functioning by

means of crank and toothed rack. The M 670 is an enlarger for the user who wants equipment that can do just that little bit more: the head can be tilted 90°, modifiable for repro-work, a film carrier of reinforced plastic with adjustable film stops, a stable baseboard (500 x 460 mm) allowing enlargement of prints up to 41 x 50 cm from 35 mm up to 6 x 7 cm films. Enlargements of pocket film (110 mm) is possible up to 30 x 40 cm.

The B/W head with its 150 W opal lamp, condensers and mirror system guarantees sharp reproductions. Depending on the lens focal length and film original,



#### M 670 BW/Head

The B/W condensor lamp house is available as a separate unit for conversion of the colour model over to B/W with directional light. No tools are needed for conversion.



#### Vegaset 66/Vegaset 67

The Vegaset 66 is a conversion kit for the processing of 4.5 x 6 and 6 x 6 negatives and consists of a condensor, anti-Newton glass and format mask. Vegaset 67 is an equivalent kit for 6 x 7 cm films.

turning knob allowing adjustment on the left or right, and a lens board with an M39 thread for holding enlarging lenses. Diffusion-type lamphouse with a 100 W/12 V halogen lamp with a coated reflector, power supply by means of either a simple transformer (Tra 305) or a stabilized mains supply system (Est 305), connection cord and plug comply with regional specifications, filter system with Y-M-C glass filters which are adjustable by means of scaled filter

wheels (interior illumination) up to 170 densitometric units, white-light lever with indication of position, non-fading light mixing boxes, Unineg universal film carrier and Sivopar 35 format masks for 35 mm originals.

the lens boards (with an M39 thread) are designed to take enlarging lenses. Optimal matching of lens, condenser, and light mixing boxes provides the technical prerequisites so important for the quality of the final print: illumination (especially the fall-off towards the edges).



**M 670 BW**  
 Enlarger comprised of 50 x 46 cm coated baseboard, square profile column with height/factor increments in cm and inch, focussing mechanism with crank and toothed rack, lens stage of fiber glass reinforced plastic, fine focussing mechanism with bellows and adjustment knob located on the left and right, lens board with an M39 thread for holding enlarging lenses. B/W condenser lamphouse with

a 150 W opal lamp, reflecting mirror system, Siroicon 50 condenser, Unineg universal film carrier for 35 mm films, filter drawer for insert-type filters (75 x 75 mm), power supply via connection cord with plug in compliance with regional specifications.

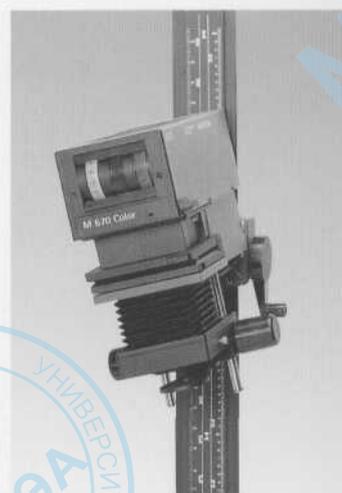


The halogen lamps utilized in all Durst enlargers are selected as a result of tests regarding the filament and the spectral coating of the reflector. This ensures ideal values concerning the service life of the lamp and the spectral behavior of the light.



**Wall/floor projection**  
 For giant enlargements it is necessary to project the image onto the wall or floor. The head of the M 670 can be tilted 90° and fixed in the horizontal position with a locking handle.

**Rectification**  
 The converging lines of a photograph can be rectified. The M 670 permits rectification by tilting the head.



# Accessories

M 670 BW

M 670 Color

M 370 BW

M 370 Easycolor

Conversion kit  
for 6 x 6

**Vegaset 66**  
Siriocan 80  
Sivogla AN  
Sixma 66

**Vegacolset 66**  
Vegabox 667  
Sivogla AN  
Sixma 66

**Lidiset 66**  
Lidicon 80  
Lidineg 50  
Sivogla AN  
Sixma 66

**Lidicolset 66**  
Lidibox 667  
Lidineg 50  
Sivogla AN  
Sixma 66

Conversion kit  
for 6 x 7

**Vegaset 67**  
Vegacon 100  
Sivogla AN  
Sixma 67  
Vegatub 39  
Vegafi

**Vegacolset 67**  
Vegabox 667  
Sivogla AN  
Sixma 67  
Vegatub 39

**Lidiset 67**  
Lidicon 100  
Lidineg 50  
Sivogla AN  
Sixma 67  
Vegatub 39

**Lidicolset 67**  
Lidibox 667  
Lidineg 50  
Sivogla AN  
Sixma 67  
Vegatub 39

B/W kit for 35  
mm

**Vegakit**  
Lamp house  
BW  
Dulamp 150 W  
Siriocan 50  
El/Sivo

Color kit  
for 24 x 36

**Colis 670**  
Colour head  
Colamp 100  
Vegabox 35  
Tra/Est

## M 370 Easycolor/BW

Size:	13 x 17 mm	18 x 24 mm	26 x 36 mm	4,5 x 6 cm	6 x 6 cm	6 x 7 cm
BW Condensers:	Lidicon 50	Lidicon 50	Lidicon 50	Lidicon 80	Lidicon 80	Lidicon 100
Film carrier:	Lidineg 50	Lidineg 50	Lidineg 50	Lidineg 50	Lidineg 50	Lidineg 50
Mask:	Sivopar 110	Sivopar 18	Sivopar 26	Sivopar 45	Sixma 66	Sixma 67
Panels:	Sirioutub 39	Sirioutub 39	Siriopla 39	Siriopla 39	Siriopla 39	Vegatub 39
Glasses:				Sivogla AN/ Sixgla	Sivogla AN/ Sixgla	Sivogla AN/ Sixgla
Lens:	35 mm	35 mm	50 mm	80 mm	80 mm	100-105 mm
Magnification:	min. 3,4 x	min. 3,4 x	min. 2,4 x	min. 1,7 x	min. 1,7 x	min. 1,7 x
Factors:	max. 21 x	max. 21 x	max. 13,5 x	max. 7,9 x	max. 7,9 x	max. 5,4 x
Wall-mounting device:	Vegawal					
Dust cover:	Siriocuf					
Adapter ring with M25 thread for lens panels having M39 thread:	Flaring					

## M 670 Color/BW

Size:	13 x 17 mm	18 x 24 mm	26 x 36 mm	4,5 x 6 cm	6 x 6 cm	6 x 7 cm
BW Condensers:	Siriocan 50	Siriocan 50	Siriocan 50	Siriocan 80	Siriocan 80	Vegacon 100
Film carrier:	Unineg	Unineg	Unineg	Unineg	Unineg	Unineg
Mask:	Sivopar 110	Sivopar 18	Sivopar 26	Sivopar 45	Sixma 66	Sixma 67
Panels:	Sirioutub 39	Sirioutub 39	Siriopla 39	Siriopla 39	Siriopla 39	Vegatub 39
Glasses:					Sivogla AN/ Sixgla	Sivogla AN/ Sixgla
Colour light box:	Vegabox 35	Vegabox 35	Vegabox 35	Vegabox 667	Vegabox 667	Vegabox 667
Lens:	35 mm	35 mm	50 mm	80 mm	80 mm	100-105 mm
Magnification:	min. 4,6 x	min. 4,6 x	min. 2,2 x	min. 1,5 x	min. 1,5 x	min. 1,5 x
Factors:	max. 28 x	max. 28 x	max. 19 x	max. 11 x	max. 11 x	max. 7,8 x
Stabilizer/Transformer:	Est 305/Tra 305					
Wall-mounting device:	Vegawal					
Dust cover:	Siriocuf					
Camera adapter with 3/8 in. connection thread:	Neriocam					

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## Technical data

- ☐ Maximal film format
- ⊗ Lamp power
- ∅ E Light output
- η Light field
- C<sub>e1</sub> Illumination of the entire picture area
- C<sub>e2</sub> Max. deviation
- C<sub>d</sub> Colour mixing value

The above factors are quality characteristics introduced by Durst for the objectification of quality concepts pertaining to professional enlarging systems. The mode of calculation and the relevancy of such factors are in a special publication and can be gotten on request from Durst.

### M 370 Easycolor/BW

- Film size: 24 x 36 mm
- BW condensor: Lidicon 50
- Film carrier: Lidineg 35
- Lens panel: Siroipla 39
- Lens: 50 mm (accessory)
- Magnification factors: min. 2.4 x  
max. 13.5 x

#### Dimensions:

- Enlarger height: 1000 mm (39.4 in.)
- Optical axis/column distance: 185 mm

- ☐ 13 x 17 mm - 6 x 7 cm
- ⊗ 100 Watt
- η 5 x lin F/Stop = 8
- C<sub>e1</sub> 6 x lin F/Stop = 11
- C<sub>e1</sub> 13 x lin F/Stop = 5,6

### M 670 Color/BW

- Film size: 24 x 36 mm
- BW condensor: Siroicon 50
- Film carrier: Unineg
- Mask: Sivopar 35
- Lens panel: Siroipla 39
- Colour light box: Vegabox 35
- Lens: 50 mm (accessory)
- Magnification factors: min. 2.2 x  
max. 19 x

#### Dimensions:

- Enlarger height: 1250 mm (49.2 in.)
- Optical axis/column distance: 210 mm

- ☐ 13 x 17 mm - 6 x 7 cm
- ⊗ 100 Watt
- ∅ E 4.2 lux (Box 67) m = 5 x lin F/Stop = 8  
13.5 lux (Box 35)
- η 0.004 lm/Watt (Box 67) m = 5 x lin F/Stop = 8  
0.0027 lm/Watt (Box 35)
- C<sub>e1</sub> 90/105 (Box 67) m = 6 x lin F/Stop = 11
- C<sub>e2</sub> 8 %
- C<sub>e1</sub> 85/100 (Box 35) m = 13 x lin F/Stop = 5.6
- C<sub>e2</sub> 8 %
- C<sub>d</sub> 0.04 D

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Durst Phototechnik  
AG  
Division Phototechnik  
Postfach 223  
Vittorio-Veneto-Straße 59  
I-39042 Brixen, Italy  
Telefon 04 72/83 06 20  
Telefax 04 72/83 09 80  
<http://www.durst-online.com>  
E-Mail: [info@durst.it](mailto:info@durst.it)

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03-0046-0(3)

6

771.318.5

Уманы

жы. 1

ОУДЕЛ  
ПРОМЫШЛЕННЫХ  
КАТАЛОГОВ ВНИИПМ

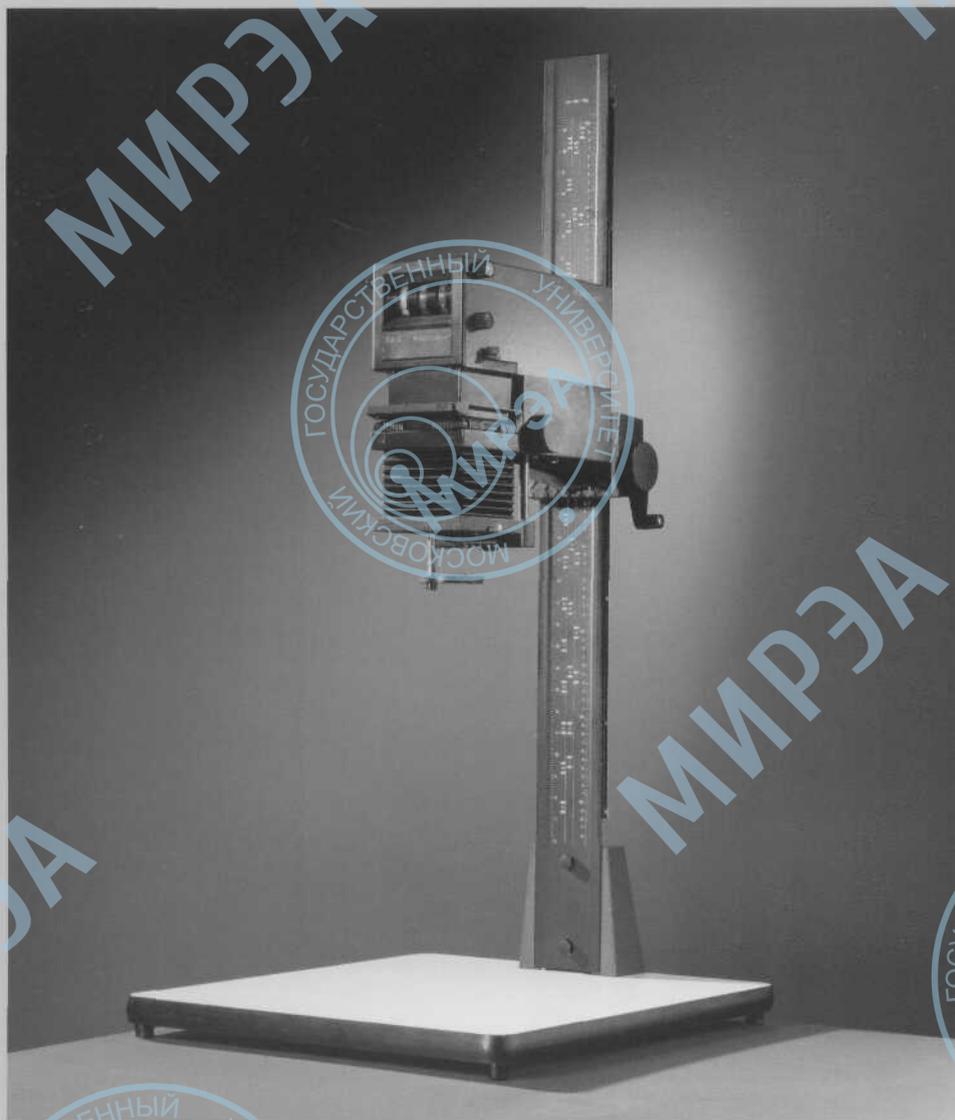


Limited edition of the  
100.000 times proven and  
successful Durst colour  
enlarger

Exactly 25 years ago Durst has presented the first halogen colour mixing heads for amateur enlargers. As the first manufacturer world-wide Durst introduced the mirror-type and heat absorbing mixing box system which evenly spreads the light of the tungsten-halogen lamp over the negative area and yields short exposure times, even illumination and suppresses flaws in the negative. Originally dichroic filters have been used in space technology. After that Durst had used them successfully in professional colour enlargers, Durst decided to build them also into colour heads of amateur enlargers and in this way allow the enthusiasts to take a great pass toward security of professional colour enlarging.

On the occasion of this anniversary Durst offers a limited special designed edition of the most successful, over 100.000 times world-wide sold 6 x 7 cm (2 1/4 x 2 3/4 in.) colour enlarger M 605 Color.

" PWM-99 "



Powerful (efficient) colour enlarger with interchangeable mixing box (24 x 36 mm - 6 x 7 cm (2 1/4 x 2 3/4 in)) Colour à la Durst has served as standard for highest requirements regarding perfection and performance for a long time. M 605 Classic has a built-in mixing box which can be changed with a lever from 35 mm to medium format up to 6 x 7 cm (2 1/4 x 2 3/4 in), thus allowing to enlarge different film sizes without complicated conversion of light mixing boxes.

A specially for semi-professional requirements designed solid baseboard, a counter-balanced heavy duty column, a built-in IR filter and UV-absorbing diffuser as well as other facilities for advanced enlarging methods (for example distortion control or wall projection) emphasise the versatility of the enlarger.

### Technical data

Max. film format:	6 x 7 cm (2 1/4 x 2 3/4 in.)
Baseboard size:	55 x 50 cm (21 1/2 x 19 1/2 in.)
Max. print size (on baseboard):	50 x 50 cm (19 1/2 x 19 1/2 in.)
Lens (optional):	28-105 mm
Overall height:	127.5 cm (50 in.)
Weight:	18.3 kg (40.3 lbs)
Light source:	100 W halogen lamp
Power consumption:	approx. 130 W
Power supply:	115 V/60 Hz, 230 V/50 Hz

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Durst Phototechnik  
AG  
Division Phototechnik  
Postfach 223  
Vittorio-Veneto-Straße 59  
I-39042 Brixen, Italy  
Telefon 04 72/83 06 20  
Telefax 04 72/83 09 80  
<http://www.durst-online.com>  
E-Mail: [info@durst.it](mailto:info@durst.it)

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

AC 800  
AC 800 AF

4

03-0046-0(4)

6  
771.318.5  
Италия  
№ 1

ОТДЕЛ  
ПРОМЫШЛЕННЫХ  
КАТАЛОГОВ ВНИИПМ



The Durst AC 800/AC 800 AF, with automatic subtractive exposure control, and optionally with autofocus, is the ideal enlarger for the fast and simple production of colour prints. This microprocessor-controlled enlarger reads the negative or slide during the exposure time, and automatically controls filtration and density.

Predominant colour areas in the negative are compensated as far as possible by the automatic low-correction feature.

The exposure control system has been adopted from the printer technology, and is simple to program thanks to the integrated reflection densitometer.

If the AC 800/AC 800 AF is used together with a roll paper magazine, the printing speed of a printer is reached, but you still enjoy the convincing advantages of an enlarger.

"PWH-99"

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# AC 800, the enlarger with printer technology.

The AC 800/AC 800 AF is the ideal enlarger for wedding and social event photographers who prefer to handle their work independently and quickly. Designed for film sizes up to 6 x 9 cm and print sizes up to 40 x 50 cm (16 x 20 in.), the AC 800 can handle standard print sizes, enlargements and crops, as well as printing of contact prints simply and rapidly. Thanks to all of this the AC 800 allows flexible printing in professional quality.



With the AC 800/AC 800 AF you can produce enlargements and crops in all sizes up to 40 x 50 cm, whereby colour and density remains unchanged thanks to the automatic compensation of the paper's reciprocity failure.



You only need to read an average negative to be able to produce a professional contact print of all the negatives on a film.

### The steps in brief:

- place the negative or slide in the film carrier
- make the reading
- activate the FXFF mode
- start the contact exposure

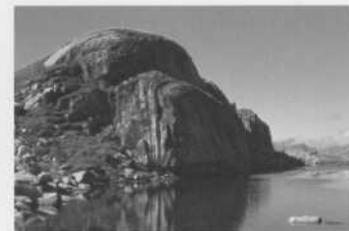
The reading system adopted from the printers, whereby the reading cycle takes place during the exposure time, permits very rapid and efficient operation. Even tricky shots with dominant colours are accurately corrected by the automatic colour and density low-correction feature. As a result the percentage of good first prints is much higher.

- a Conventional exposure control
- b AC 800/AC 800 AF

a



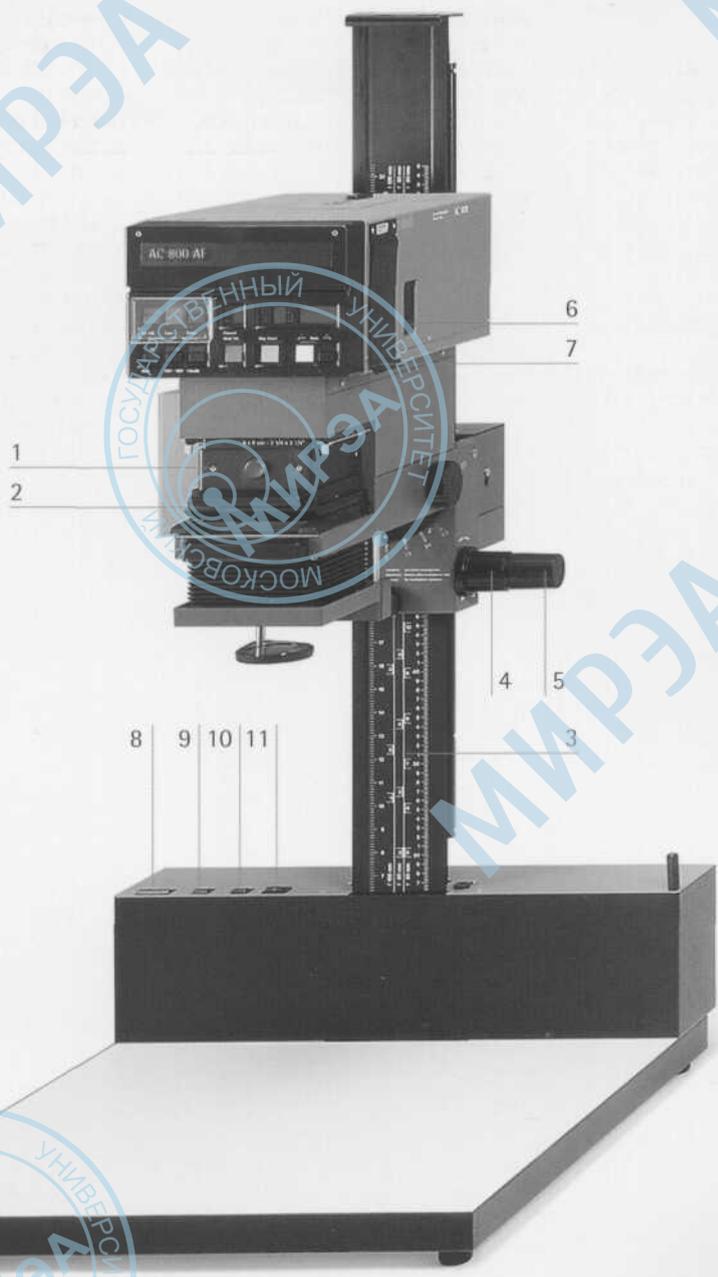
a



b

b

# Functions



- 1 Mixing box
- 2 Negative carrier
- 3 Column with cm and inch scale
- 4 Hand grip for rapid vertical adjustment
- 5 Hand grip for fine adjustment
- 6 Adjusting screws for filter pack
- 7 Metering arm of densitometer
- 8 „Expose“ key
- 9 „Light“ key
- 10 „W. Light“ key
- 11 Main switch
- 12 „Bal. Adjust“ key  
Triggers a reading sequence of the reflection densitometer. In conjunction with the „Enter“ key also stores reference grey values
- 13 „Enter“ key:  
Locks the various calibration modes and values for storage
- 14 „Setup“ key  
Starts calibration sequence or checks the parameters stored in the memory. Together with the „Enter“ key to save Setup data
- 15 „Hold“ key  
Holds preset colour and density correction values
- 16 „FXFF/VXFF“ key
- 17 „F. Var./ill.“ key  
Enters offset of the projection plane also switches LED displays on and off
- 18 „Channel/Mode Sel.“ key  
Selects required memory channel and/or print mode
- 19 „Disp. Select“ key  
Calls up various display values
- 20 „+/-“ keys  
Change indicated values
- 21 Operating mode indication (colour negative, colour slide, black-and-white)
- 22 Memory channel indication
- 23 Indication of selected calibration mode
- 24 Various indications for the enlarger head (H), metering sequence (P), focus variator (d), calibration (C), lens (L), f-stop (F), exposure time (E) and magnification (M)
- 25 Indication of stored values: yellow (Y), magenta (M), cyan (C) and density (D)
- 26 Display of values entered for the calibration mode in use, lens aperture and focal lengths, and the number of exposures made

## Full distortion control

You cannot always avoid converging verticals in the camera. By means of the tilting facility of the enlarger head and lens stage the AC 800 permits complete distortion control of such converging verticals. The enlarger carries tilt scales for easy resetting for repeat orders.



### Microprocessor-controlled enlarging system

All the machine's functions are controlled and monitored by the integrated microprocessor.

### The memory system

The memory system contains a total of thirty channels. Ten each are available for the individual negative, positive and black-and-white print modes.

Each of these thirty channels contains correction data for basic paper set-up, the paper reciprocity effect, and for under- and over-exposed negatives.

### Exposure control

The negative or slide placed in the film carrier is read and the filtration and exposure time calculated when the exposure is started. Under- and over-exposed shots are detected and automatically and accurately corrected.

### Automatic reciprocity failure compensation

Automatic reciprocity failure correction avoids colour balance and density changes at high magnifications. Test exposures for large prints can thus be made at low magnifications - which speeds up operation due to the shorter exposure times and allows a larger area of the negative to be used for assessment.

### FXFF (Fixed Exposure Fixed Filtration) Mode

This stores the exposure and filter settings of any measured negative and keeps them constant for subsequent negatives or transparencies of similar density and colour balance. The unit still compensates for density and colour balance variations at different magnifications.

### VXFF (Variable Exposure Fixed Filtration) Mode

This mode stores filter settings of a previously read negative or transparency but continues to correct for changes in density. Useful for duplicating slides onto reversal film or for enlarging negatives exposed under identical conditions. The unit still compensates for density and colour balance variations at different magnifications.

### Autofocus of AC 800 AF

3 freely programmable AF-channels permit the use of already available enlarging lenses, which can be programmed quickly and easily. In the operating mode the adjusted position of the head is metered via a potentiometer. The computer then calculates the proper focussing position and the lens stage is automatically adjusted.

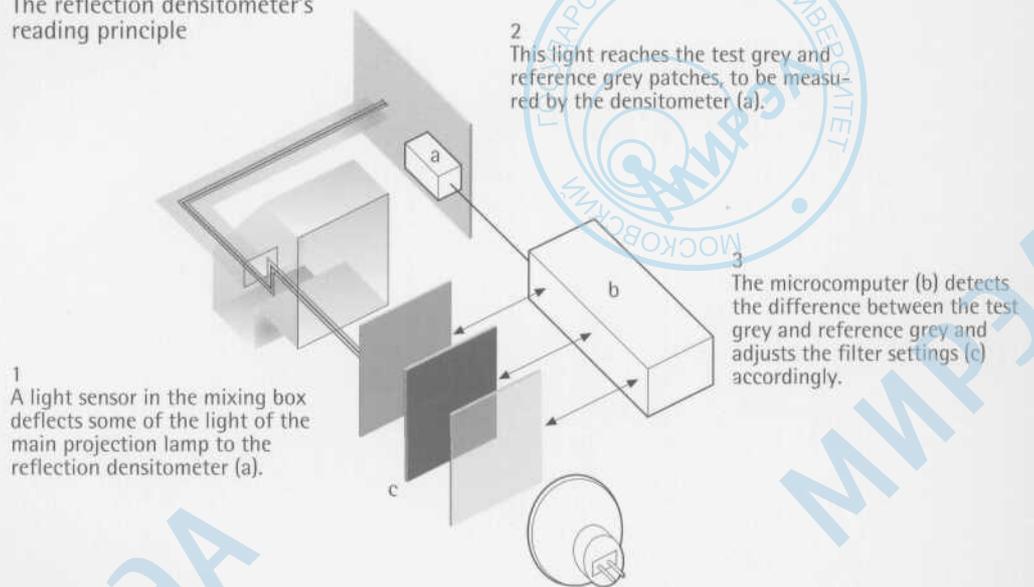
When various projection planes are used, as for example when working with a baseboard which is adjustable in height, the adjustment of the autofocus system results via the freely programmable positive variator.

The freely programmable negative variator serves for compensation of possible deviations in film planes when utilizing different film format masks or glass inserts of varying thickness.

### Advantages for the user

- work is possible quickly and comfortably from a sitting position.
- increased productivity thanks to quick print size setting and croppings.
- easy handling of originals which are normally difficult to focus, for example very dense or flat film originals.
- a longer life time for the lamp because time-consuming focussing is no longer necessary.
- minimal time required for programming enlarging lenses one already owns (about 10 min.).

The reflection densitometer's reading principle

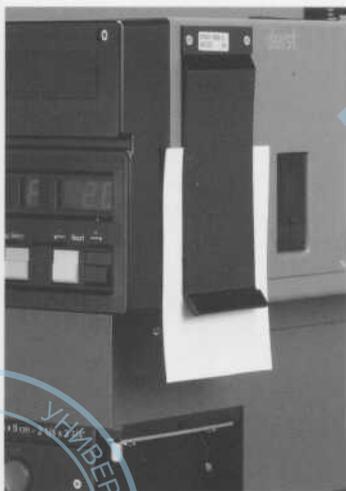


Simple programming thanks to integrated reflection densitometer, which appraises the colour cast in the test print.

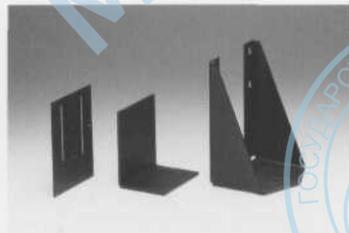
### The operation in brief:

- Select the appropriate memory channel and operating mode.
- Adjust the enlarger head to a 20 x 25 cm (8x 10 in.) print.
- Insert the negative and make an exposure.
- Place the processed test print underneath the measuring arm of the built-in reflection densitometer.
- Press the appropriate keys to analyse the test print - this automatically corrects the settings in the memory.
- Repeat the exposure and analysis sequence to get the test print perfect.

The correction figures for automatic compensation of the reciprocity effect and for under- and over-exposed negatives/slides are programmed in the same way.



# Accessories



Wallmount for AC 800.



AC 800 remote control.

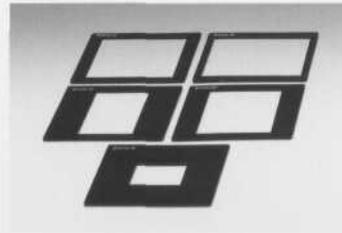


Setopla 28/39 and Lapla 39/50 lens circuit boards.

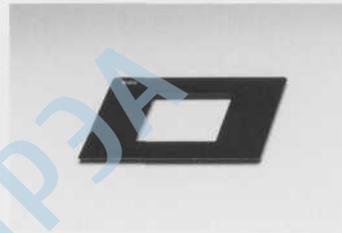
The Femotub for scale 1:1 enlargements.



AC 800 Box 66 and 35 interchangeable mirror mixing boxes.



Binema 69, 67, 66, 45, 35 and S interchangeable metal format masks.



Bidia, the metal format mask for mounted slides.

**AC 800 Control**  
The remote control for fast and reliable operation.



The AC 800 Control has the following input options:

- 1 Color and density correction.
- 2 Filter and density settings plus lens aperture.
- 3 Sign change of indicated values.
- 4 „Clear“ key to clear erroneous inputs.
- 5 „Hold“ key to hold set correction values.
- 6 „W. Light“ key to automatically swing out pre-filtration.
- 7 „Light“ key to switch enlarger lamp on and off.
- 8 „F Stop“ key to enter lens aperture.
- 9 „Expose“ key to switch off or start the exposure.  
All inputs are confirmed by an akustic signal.
- 10 Continuously adjustable illumination.

## Technical data

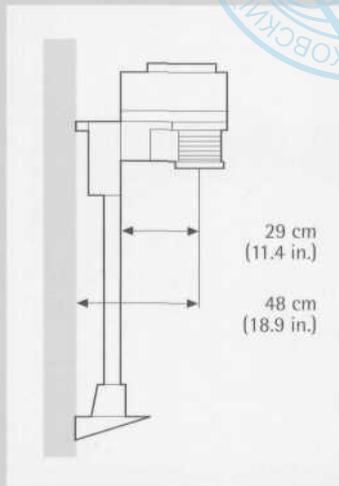
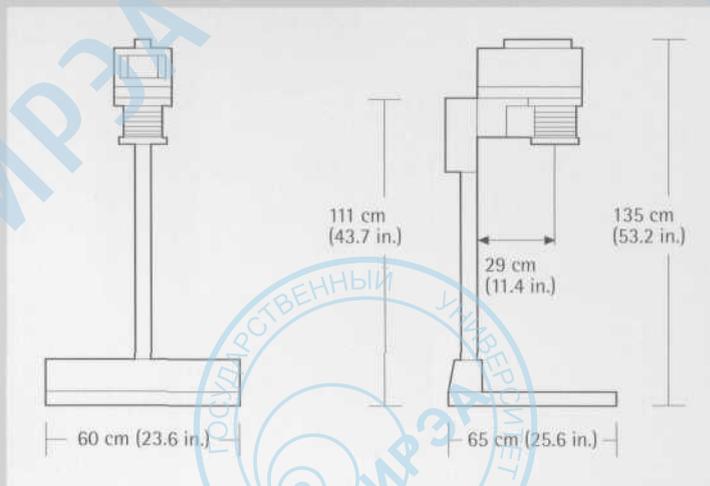
Type of unit:	Enlarger with automatic exposure control for film sizes up to 6 x 9 cm (2 1/4 x 3 1/4 in.) 111 cm (43.7 in.)
Column height:	135 cm (53.2 in.)
Height with fully raised enlarger head:	60 x 65 cm (23.6 x 25.6 in.)
Baseboard size:	60 x 56 cm (23.6 x 22 in.)
Usable baseboard area:	29 cm (11.4 in.)
Optical axis/column distance:	Halogen lamp 250 W/24 V Colamp 250 S
Light source:	Fadeproof interchangeable mixing boxes (35 mm, 6 x 6 cm, 6 x 9 cm)
Illumination:	By microprocessor Light measurement in mixing box for automatic colour temperature compensation in case of voltage fluctuations and lamp aging or replacement
Exposure control:	By built-in reflection densitometer and user prompts
Light monitoring:	For colour negatives, colour slides and black-and-white negatives
Calibration system:	Built-in fan
Operating modes:	Yellow, magenta, cyan
Cooling:	130 densitometric values (= D 1,3)
Filters:	± 99 densitometric steps (Y, M, C, D)
Max. filter density:	50, 80, 100/105 mm
Manual correction range:	Up to 40 x 50 cm (16 x 20 in.)
Lenses (focal length):	• Roll paper easel or foot-switch
Print sizes:	• AC 800 Control remote control unit
Outlet sockets for:	• Additional mains supply
Mains supply:	100, 110, 120, 220, 240 V set by voltage selector, 50 - 60 Hz
Power consumption:	350 watts
Net weight:	40 kg (88 lbs)
Wall mounting:	AC 800 Wallmount wall mounting kit

Linear magnification (approx. values):

Lens mm	Film size	Baseboard min.	Baseboard max.
105, 100	6 x 9 cm	1,5 x	7,3 x
80	6 x 6 cm	1,1 x	10,3 x
50	24 x 36 mm	4,5 x	17,8 x

### Autofocus

Programmable AF-channels:	3
Programmable focal lengths:	50, 80, 105 mm
Resolution of the positioning system:	0,01 mm
Reproducibility of lens position:	± 0,02 mm
Range of positive variator:	+ 999/- 99 mm
Range of negative variator:	+ 99/- 99 mm



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Durst Phototechnik  
AG  
Division Phototechnik  
Postfach 223  
Vittorio-Veneto-Straße 59  
I-39042 Brixen, Italy  
Telefon 04 72/83 06 20  
Telefax 04 72/83 09 80  
<http://www.durst-online.com>  
E-Mail: [info@durst.it](mailto:info@durst.it)

03-0046-0(5)

durst

Pictochrom +  
Pictochrom + AF

771.318.5  
Италия  
мк - 1

The professional enlarging system for colour printing.



Medium priced, yet with the advanced technology of bigger, more expensive enlargers. With automatic light monitoring by means of the microprocessor-controlled Closed Loop system. This system guarantees constant and reproducible printing light - the prerequisite for problem-free and perfect exposure series. Complete with a connectable measuring probe for density measurement, automatic compensation of reciprocity failure and with optional automatic focusing system.

ОТДЕЛ  
ПРОМЫШЛЕННЫХ  
КАТАЛОГОВ ВНИИПМ



PWM-99"

24

»If something can go wrong, it will«. (Murphy's Law)  
Particularly with exposure series with a conventional enlarger!

Here it's almost impossible to ensure a constant printing light. When even the smallest disturbances in the »light environment« of a conventional enlarger add up, the printing light becomes very negative: up to 15 filter values of the known DIN standard. No wonder that there are often a number of

»strays« in the run. The upper group of »blanched«, »greenish-tinged« and »reddish« portraits speaks for itself.



Exposure 27:  
The power supply suffers a break-down.



Exposure 67:  
The lamp is replaced.



The Closed Loop light monitoring system of the Pictochrom + prevents such incorrect exposures: no longer will a colour cast spoil the smile of Lady Nina.



Exposure 27:  
The power supply suffers a break-down.

Compensated by Pictochrom +.



Exposure 67:  
The lamp is replaced.

Compensated by Pictochrom +.



As usual: an almost perfectly exposed film - so all clear for an exposure series!



Exposure 52:  
The lamp doesn't  
have much longer  
to go.



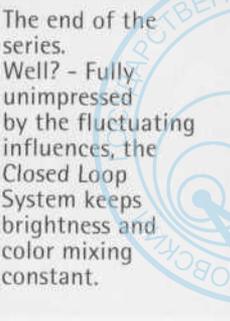
The end of the  
series. Well?

A completely different story: the same film, the same conditions. But this time it's all clear for an exposure series with the Pictochrom +.



Exposure 52:  
The lamp doesn't  
have much longer  
to go.

Compensated by  
Pictochrom +.



The end of the  
series.  
Well? - Fully  
unimpressed  
by the fluctuating  
influences, the  
Closed Loop  
System keeps  
brightness and  
color mixing  
constant.

How reliably the CL-system  
compensates all the various  
irritating, disturbing factors  
can be seen on the next  
page.

Unimpressed by fluctuating external influences, the Closed Loop system keeps the density value and colour mixing constant.

Exposure sequences are the proof of the pudding: Disturbing influences such as line drops, lamps in the »final stage« of their service life, a change of lamp or reflector, changes in the spectral characteristics of reflectors

The Closed Loop System of the Pictochrom +:  
Subtractive filter function; automatic filter adjustment by means of a step-motor; control of light intensity by means of density diaphragms automatically adjusted via step-motor.

Yellow, magenta and cyan filter

Density diaphragm  
30 D - 60 D

Color sensors for blue, green and red



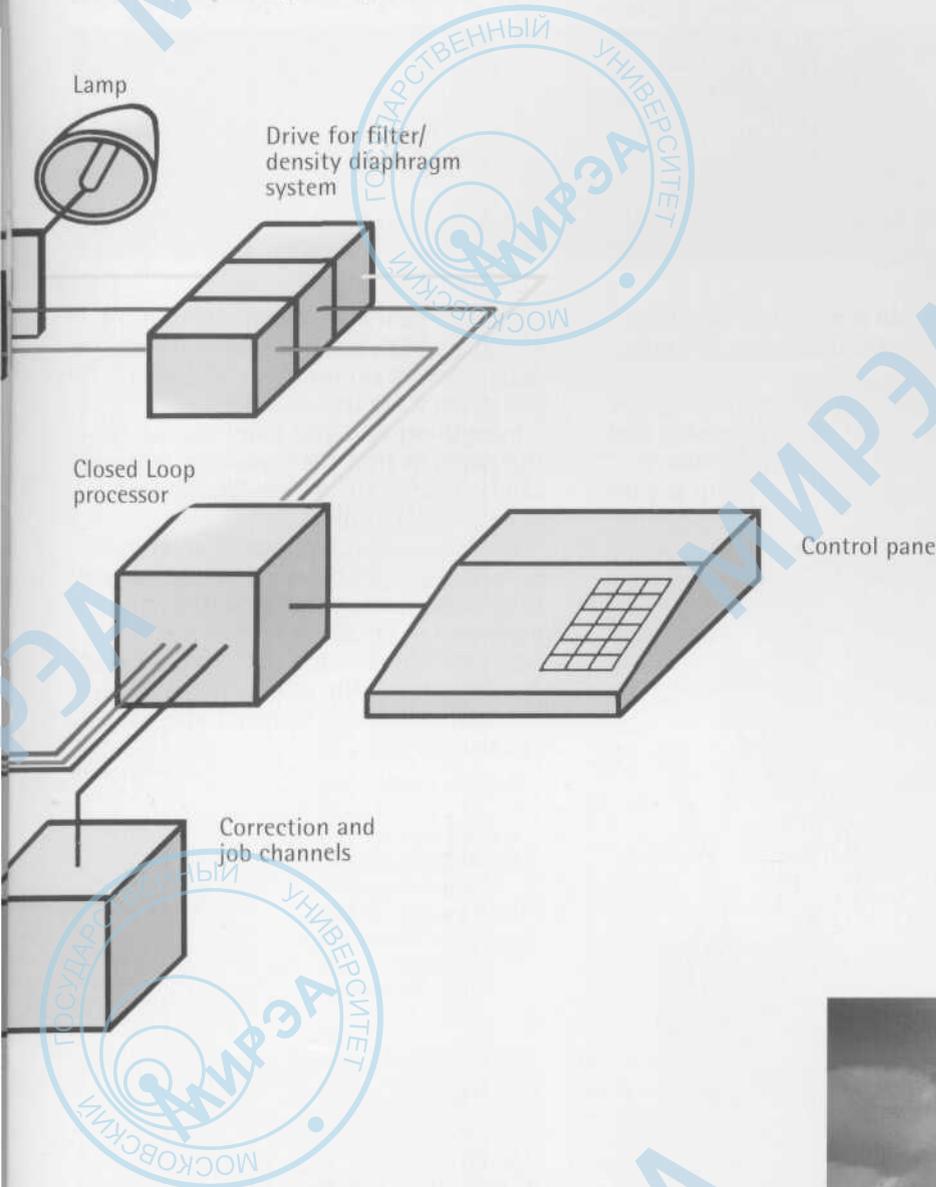
The Closed Loop system for problem-free post-exposures:

and filters due to heat, etc. all lead to tonal deviations, as demonstrated on pages 3/4. The Closed Loop system of the Pictochrom + reduces such disturbances to a minimum. The following scheme shows how this „closed loop“ system functions:

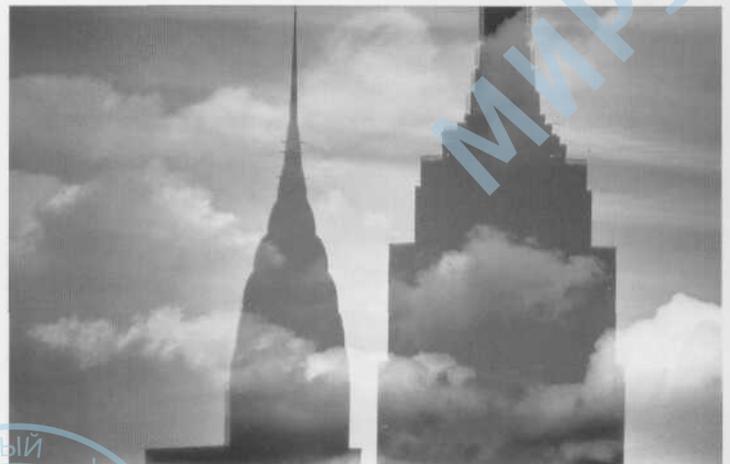
The printing light is continuously measured in the mixing box by three

sensors, one each for blue, green and red, and constantly compared with the set filter values. Set filter values are those which are either automatically calculated or input individually by the user. If the printing light does not conform to the set value, the filter system adjusts itself automatically until no deviation from this value is

determined. Since this all takes place within an unimaginably short time, one has a printing light which remains constant in spite of all disturbing influences and which is always reproducible.



For compositions such as these, you can now use widely differing negatives. With the Pictochrom + and its Closed Loop color head you've got the situation under



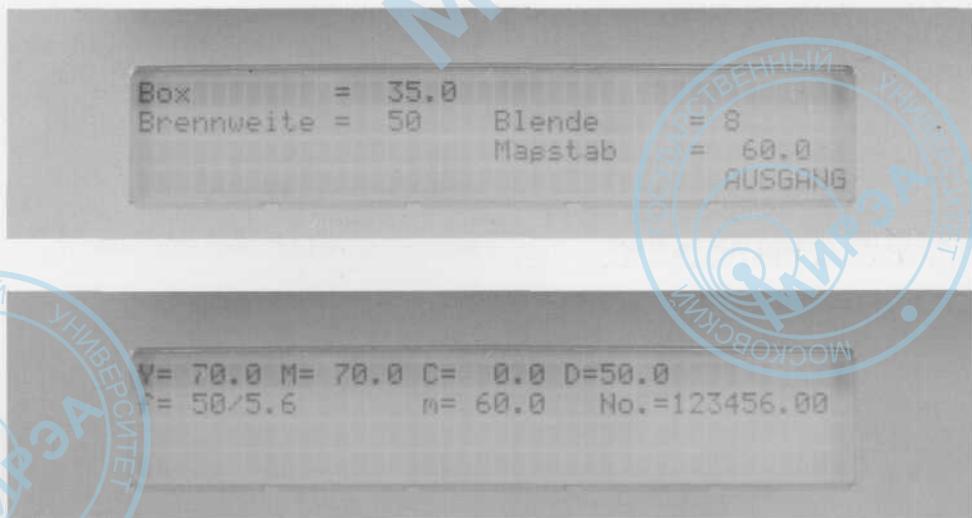
The same applies to the technique of composing:

If portions of a negative indicate large differences in density or the contrasts are uncommonly strong - you can correct all that effortlessly by marking and burning in - by changing the filter values or exposure times correspondingly. With results as shown here in the example.

perfect control and can combine extremes harmoniously.

21

»User-friendly« is good.  
A fully homogeneous »operating culture« is better.



This integrated handling concept from Durst makes all the difference between a simple »user-friendly« system and a comprehensive, sophisticated »operating culture« common to all Durst enlargers.

The clearly laid out control panel is a command centre that never lets you down.

Press a key and you are in full command of the electronic measuring and control system of the Pictochrom+. It's no problem at all to call up any one

of 200 so-called job channels from the memory - the ideal, safe place for all data, e.g. test exposures or jobs which you often have to repeat.

Everything that you enter via the control panel or that the computer tells you can be read in the 4-line-illuminated liquid crystal display.

The keyboard is ergonomic and requires just the right pressure to depress the keys. Important operational steps are explained in detail via a Help-key. And the Pictochrom+ offers a choice of five languages: The display is available in English, German, French, Italian or Spanish, to suit you.



While you are carrying out an exposure, the illumination of the keys and the display is turned off automatically.

To make sure that the memory never runs out of space, routine data such as that shown here can be printed out via a serial RS232-C interface.



What its electronic measurement and control system registers, and what the computer concludes from this almost instantaneously, is what Pictochrom + will put »on paper« perfectly. Here is a guide to its most important elements.

The 250 W cold light halogen lamp has been especially selected. Its high light efficiency and uniform spectrum have been tested according to works standards.

The column is made from a torsion-free, extruded aluminium profile. Scales for cm, inch and the magnifications for the various focal lengths are printed on the column to facilitate quick adjustments for repetitive work.

The counter-balance spring balances the weights and allows you to position the enlarger head at any height exactly and smoothly.

In the service channel, the electronic components are well protected and the cabling is clearly visible. In an emergency everything can be reached easily.

The subtractive filter system with 3 dichroic filters and density diaphragm is adjusted by means of step-motors.

The mixing boxes are format-matched. This guarantees optimal light output, frequency mixing and illumination of the film sizes from 35 mm to 4x5 in. With the newly developed quick-change system (cf. p.8).

The interchangeable lens holder has round lens boards for lenses from 50 - 180 mm. This allows the aperture setting to be read easily.

The built-in metal shutter allows short and exact exposure times. This is important for exposure series.

With the quickly adjustable handle you can change the height of the enlarger head effortlessly and with the knurled grip you can position it precisely to the desired millimetre.

The silent-running ventilator fan works on the circulation principle and protects the lamp-house, ventilating shaft and film carrier from dust.

The film carrier glides along on precisely guided roller-bearings. Page 7 shows interchangeable masks, and the film carrier with register pins and masking strips.

The Closed Loop electronic system acts within milliseconds to correct any change in light quality during the entire exposure. The composition and the intensity of the light is measured continuously and controlled by means of the filter system.



The measuring probe\* makes it easier for you to determine the exposure time and saves you several test exposures, a lot of time and photographic paper.



Once you have achieved the right colour and density of your print, you can then alter the magnification without having to perform new test exposures since colour and density of your print remain unchanged thanks to the built-in automatic reciprocity failure compensation.

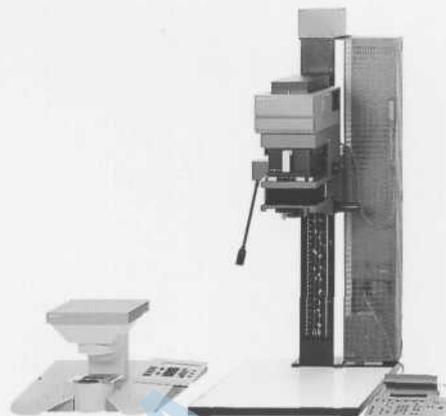


This measuring probe will enable you to determine the exact density of your negative or slide original film by using spot- or integral measuring methods.

The online connection with the scanning measuring system Durst Optoscan\* transforms Pictochrom + into a fully automatic printing system.

Exposure data calculated using Optoscan is transmitted onto the enlarger and adjusted automatically.

When handling mixed orders, the calculated exposure data can be temporarily stored in the main memory and then retrieved in the correct order. The integrated translator function also allows the direct input of VCNA-calculated values.



\* accessory

Pictochrom + AF, the enlarger with the autofocus system and motorized height adjustment of the head, is the decisive rationalization factor in the lab thanks to its high degree of automation.

The auto-focus system 10 freely programmable AF-channels permit the use of already available enlarging lenses, which can be programmed quickly and easily. In the operating mode the adjusted position of the head is scanned via a potentiometer. The computer then calculates the proper focussing position and the head is automatically adjusted.

When various projection planes are used, as for example when working with a baseboard which is adjustable in height, the adjustment of the auto-focus system results via the freely programmable positive variator.

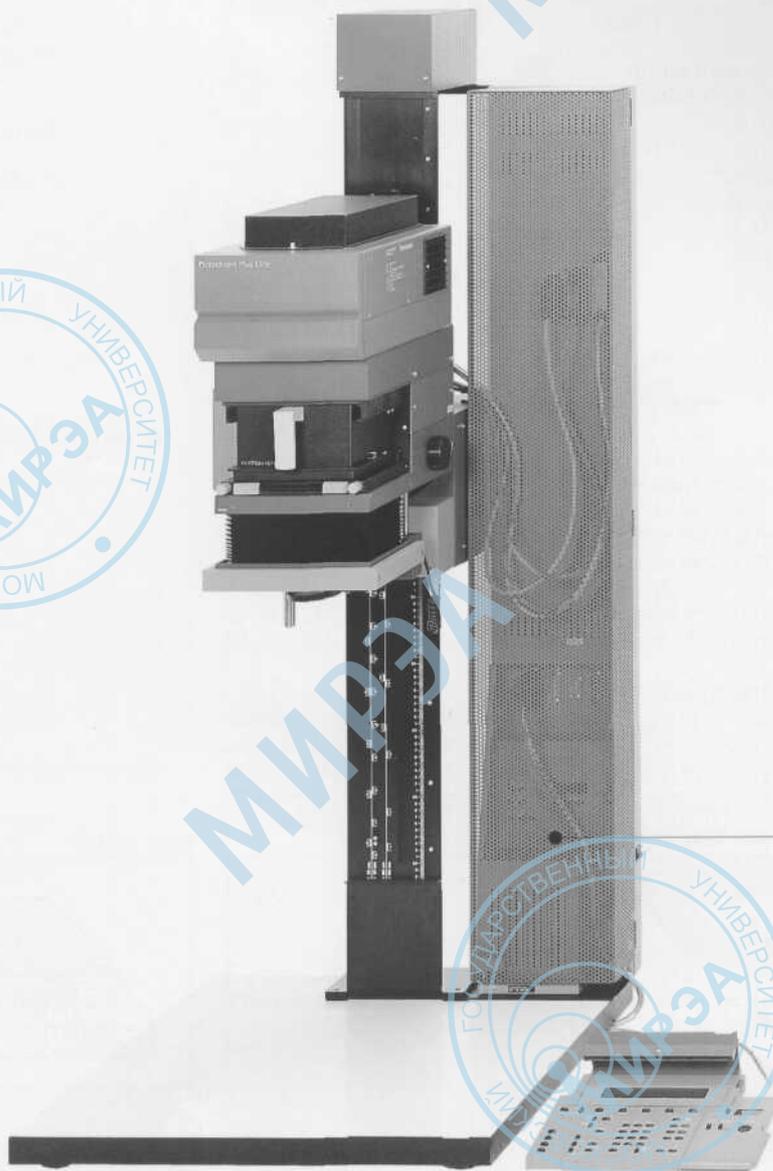
The freely programmable negative variator serves for compensation of possible deviations in film planes when utilizing different film format masks or glass inserts of varying thickness.

Motorized height adjustment of the head

The enlarger head is transported to the desired height by pressing a button, the adjustment speed from the smallest to the largest magnification factor being about 15 seconds.

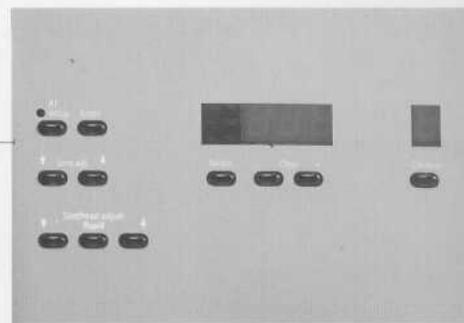
The motorized fine adjustment of the head now allows the precise correction of the magnification factor, with the required projection being focussed automatically.

To change films easily, one need only press a key to move the enlarger head to a low height so that the film carrier can be reached from a sitting position.



Advantages for the user

- work is possible quickly and comfortably from a sitting position.
- higher productivity through minimal loss of time due to adjustment of various print sizes and crops.
- easy handling of originals which are normally difficult to focus, for example very dense or flat film originals.
- a longer lifetime for the lamp because time-consuming focussing is no longer necessary.
- minimal time required for programming when using already available enlarging lenses (about 10 min.).

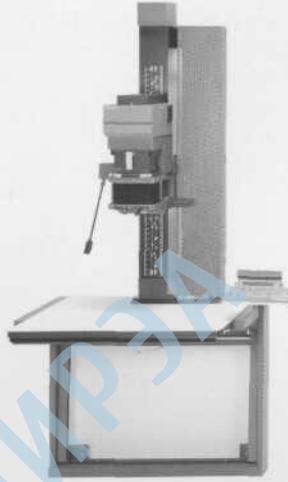


On the wall, on the table,  
installation as desired,  
tailored to suit your needs!

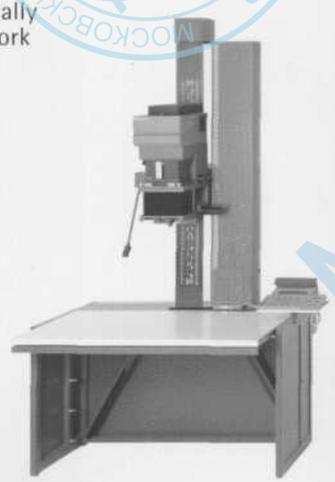
Model with  
baseboard



With a slide table  
which can be used  
with a roll paper  
easel as well



With a manually  
adjustable work  
table



Model with wall  
mounting in com-  
bination with a roll  
paper easel

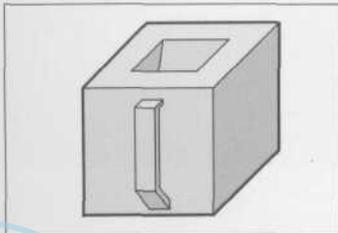


Version with motor-  
driven work table



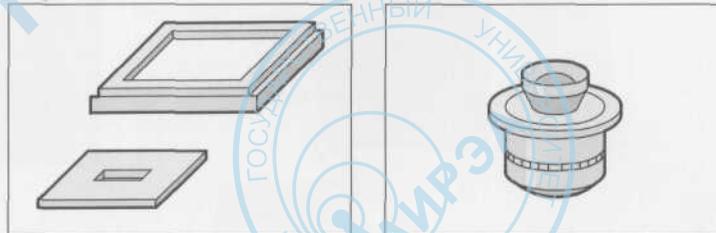
Technically ingenious, prac-  
tical and perfected accesso-  
ries fulfill your special needs

Mixing boxes



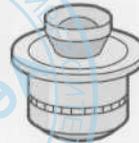
Pictobox 35  
Pictobox 67  
Pictobox 550

Format masks for the film carrier

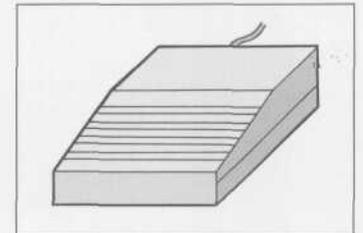


Femomask 35, 45, 66, 67,  
69, 450 and 92

Lenses



Foot-switch



# Technical data at a glance

Film sizes: up to 10 x 12.5 cm/4 x 5 in.  
(roll film up to 12.2 x 12.2 cm)  
(5 x 5 in.)  
148 cm (58 in.)

Column height:  
Max. height (head in highest position): 174 cm (69 in.)  
Baseboard dimensions: 4 x 64 x 69 cm (1.5 x 25 x 27 in.)  
Usable area of the baseboard: 64 x 57 cm (25 x 22.5 in.)  
Distance optical axis/column: 31 cm (12.2 in.)  
Weight: approx. 60 kg (133 lbs)  
Noise level: 56 dB (A)  
Usable focal lengths: 50-150 mm (180 mm)

Power supply unit  
Supply voltage: 100/110/220/240 V  
50-60 Hz  
Stabilization: +10% -15%  
Power consumption: approx. 500 VA

Req. climatic conditions  
Temperature: +15 °C to +30 °C  
(59 °F to 86 °F)  
Relative humidity: 5-95 %

Light source/  
illumination system  
Halogen lamp: 250 W/24 V  
Illumination (Factor 5x, f/stop 8):  
Ø E 4.8 Lux (Box 450)  
Ø E 33.0 Lux (Box 35)  
Efficiency (Factor 5x, f/stop 8):  
Illumination (Factor 5x, f/stop 11)  
Middle-corners: C<sub>e1</sub> max. 20 %  
4 corners: C<sub>e2</sub> max. 5 %

Connections:  
• foot switch or roll paper easel  
• matrix printer  
• sensor device  
• Optoscan II

Closed Loop  
Max. error during lamp change: +/- 0.025 D at gamma 1  
for pos.  
+/- 0.015 D at gamma 1  
for neg.  
Cold-warm-drift: +/- 0.01 D at gamma 1  
and  
constant room temperature  
Reproducibility: +/- 0.008 D at gamma 1  
Colour mixture: C<sub>d</sub> = 0.025 D at gamma 1

Filter  
Max. filter density: 130 densitometric units (1,3 D)  
adjustable in 0.001 increments  
Two-step density diaphragm:  
step 1 = 0.30 D  
step 2 = 0.60 D  
Exposure time range: 0.5 - 999 sec.

Paper channels: 30  
Job memories: 199 (0 ÷ 198)

Measuring probe  
Measuring point diameter: 7.5 mm  
Measuring sensitivity: 6 mlx to 60 lux

## Enlarging factors Pictochrom + (reference values):

Lens mm	Film size	Base-board min.	Base-board max.	Labom Table max.
150	10 x 12.5 cm (4 x 5 in.)	0.90 x	6.6 x	10.6 x
135	9 x 12 cm (3 1/2 x 4 3/4 in.)	0.80 x	7.6 x	12.0 x
105	6 x 7 cm/6 x 9 cm (2 1/4 x 2 3/4 in./ 2 1/4 x 3 1/2 in.)	0.60 x	10.3 x	16.0 x
100	6 x 7 cm/6 x 9 cm (2 1/4 x 2 3/4 in./ 2 1/4 x 3 1/2 in.)	0.55 x	10.7 x	17.0 x
80	4.5 x 6 cm/6 x 6 cm (1 3/4 x 2 1/4 in./ 2 1/4 x 2 1/4 in.)	0.50 x	14.0 x	21.0 x
50	24 x 36 mm	4.20 x	24.0 x	36.0 x

## Enlarging factors Pictochrom + AF (reference values):

Lens mm	Film size	base-board min.	base-board-max.	Labom Table max.
150	10 x 12.5 cm (4 x 5 in.)	1.0 x	6.6 x	10.6 x
135	9 x 12 cm (3 1/2 x 4 3/4 in.)	1.0 x	7.6 x	12.0 x
105	6 x 7 cm/6 x 9 cm (2 1/4 x 2 3/4 in./ 2 1/4 x 3 1/2 in.)	1.0 x	10.3 x	16.0 x
100	6 x 7 cm/6 x 9 cm (2 1/4 x 2 3/4 in./ 2 1/4 x 3 1/2 in.)	1.0 x	10.7 x	17.0 x
80	4.5 x 6 cm/6 x 6 cm (1 3/4 x 2 1/4 in./ 2 1/4 x 2 1/4 in.)	2.6 x	14.0 x	21.0 x
50	24 x 36 mm	5.8 x	24.0 x	36.0 x

## Adjustment speed of autofocus system Pictochrom + AF

Head fast: approx. 8.2 cm/sec.  
Head slow: approx. 6 mm/sec.  
Lens carrier fast: approx. 7.2 mm/sec.  
Lens carrier slow: approx. 1.2 mm/sec.  
Lens channels: 10 (0-9)  
Usable focal lengths: from 50 to 180 mm  
Resolution of the positioning system: 0.01 mm  
Reproducibility of lens position: ± 0.02 mm  
Range of positive variator: + 999/- 99 mm (1 digit = 1 mm)  
+ 99/- 99 mm (1 digit = 0.05 mm)  
Range of negative variator:

- ☐ Max. film size
- ⊗ Lamp performance
- Ø E Light power
- η Light efficiency
- C<sub>e1</sub> Illumin. middle-corners
- C<sub>e2</sub> Max. deviation
- C<sub>d</sub> Color mixing value

are quality indices introduced by Durst for the objective analysis of quality concepts regarding professional processing devices.

Durst products are continuously developed according to the state of the art. Illustrations and descriptions are therefore subject to change.



durst

Durst Phototechnik  
AG  
Division Phototechnik  
Postfach 223  
Vittorio-Veneto-Straße 59  
I-39042 Brixen, Italy  
Telefon 04 72/83 06 20  
Telefax 04 72/83 09 80

03-0046-0(6)

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Laborator 1200 6

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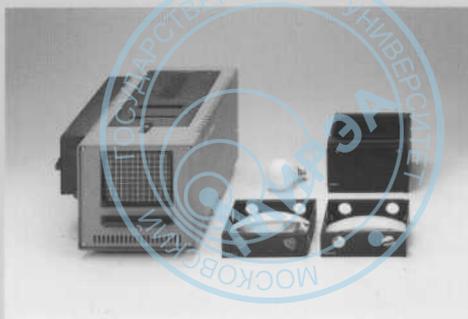
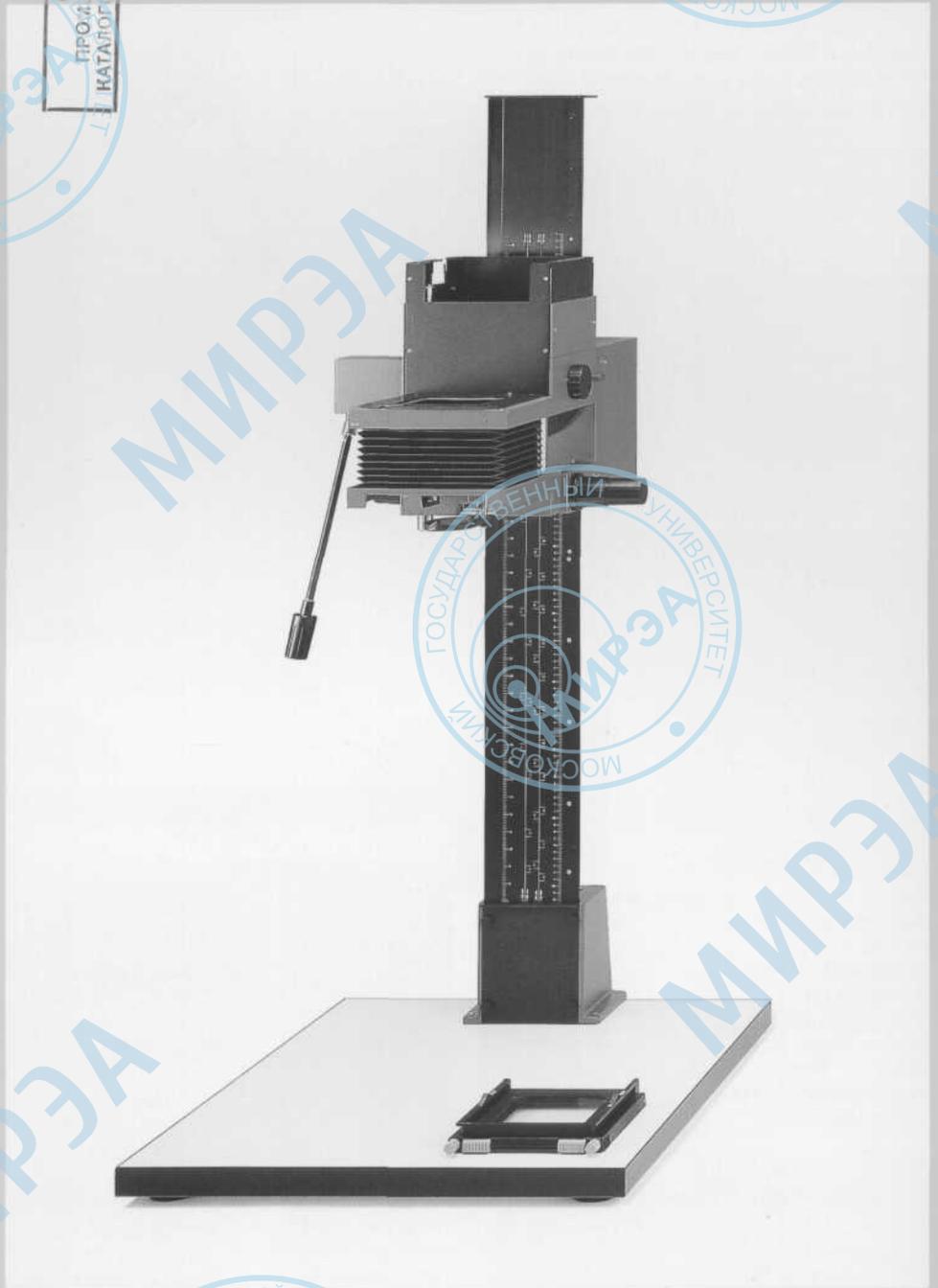
Стел  
ПРОМЫШЛЕННЫХ  
КАТАЛОГ ВНИИПМ



The Laborator 1200 is the professional enlarger for users who set high standards in terms of print quality and individual work. Thanks to its modular design, the enlarger is upgradable with various user-specific illumination systems, e.g.:

- a colour head with halogen light source and diffused light illumination system
- a condenser illumination system with point light source
- a condenser lighting system with spot light source
- a microprocessor-controlled enlarger head with halogen light source and motorised filters for variable-contrast B/W papers.

Designed for film sizes up to 10.2 x 12.7 cm (4 x 5 ins.) for printing enlargements of prints with a wide range of sizes, the Laborator 1200 meets professional standards for the production of quality prints in colour and black-and-white.

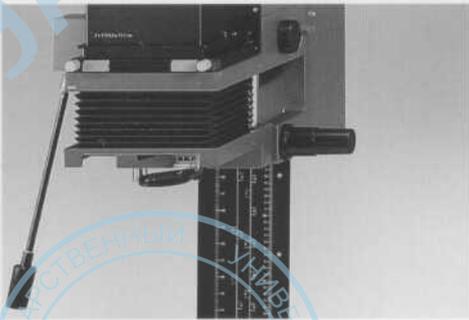


"PWH-99"

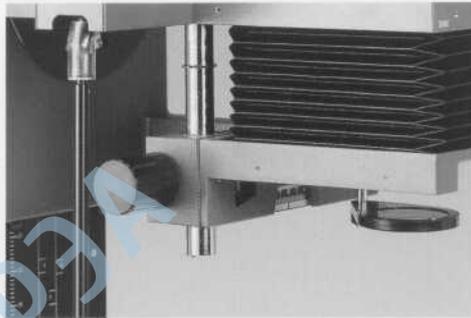
33

## The basic enlarger Laborator 1200

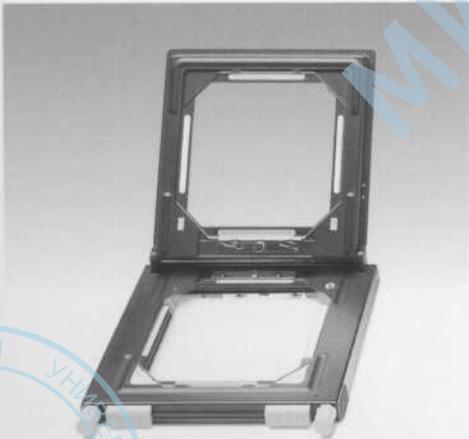
The Laborator 1200 is designed for film sizes up to 10.2 x 12.7 cm (4 x 5 ins.). On the baseboard enlargements up to a print size of max. 50 x 70 cm (20 x 30 in.) are possible. The Laborator 1200 basic enlarger consists of a stable column, a large, robust baseboard, the head support and a professional film carrier including 2 carrier glass inserts.



The height is adjusted by a double-purpose handgrip for fast and fine adjustment. A counterweight spring ensures counterbalancing. There are "cm/inch" and magnification scales on the column for the precise resetting previously set sizes.

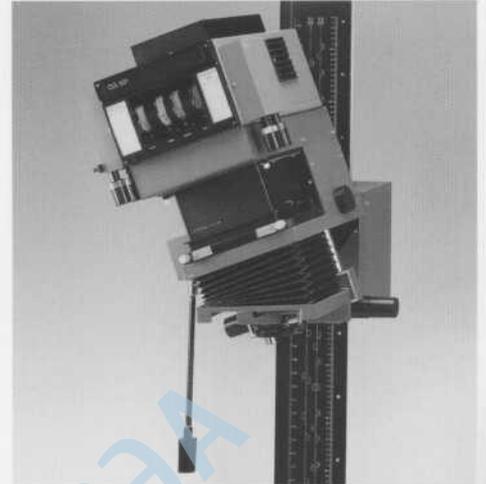


The focus is set by a handgrip, and for large scales by a pull-out extension arm. Double-sided guide rails on the lens carrier ensure better edge to edge sharpness.



The heavy duty metal film carrier meets professional users' standards. Designed for film sizes up to 10.2 x 12.7 cm (4 x 5 in.), the carrier is equipped with registering pins, steplessly adjustable masking strips and interchangeable metal format masks and glass inserts.

The enlarger head can be steplessly pivoted up to 90° for wall projection. The lens carrier also pivots to permit full distortion control according to the Scheimpflug principle. Reference scales ensure exact reproducibility.



## Colour head CLS 501

250 watt halogen light source and diffused light illumination system for film sizes up to 10.2 x 12.7 cm (4 x 5 ins.). The main application of the CLS 501 is the individual production of colour prints in a wide range of sizes from colour negatives and/or slides.



### Specification and description of functions

Die-cast enlarger head with integrated vibration-free fan for ample cooling in the lamp house, and consequently less heat at the film deck.

**Perfect illumination** with direct lighting; a special diffuser with minimum light loss and mixing boxes matched to film sizes from 24 x 36 mm to 4 x 5 in. provide maximum light output.

**Stepless dichroic filter adjustment** (yellow, magenta and cyan) up to 130 densitometric values. Extension rods facilitate convenient filter adjustment even with the enlarger head at the top of the column.

**Supplementary slide-in filter** (45 yellow + 15 magenta) for enlarging old non-masked negatives.

### Steplessly settable density diaphragm (0 - 60 D)

- Maintains the ideal working aperture while changing magnifications;
- Increases exposure times for reductions to minimize effect of afterglow;
- Extends exposure time at the ideal working aperture to simplify dodging and burning in.

### The white-light lever

withdraws the filters and density diaphragm from the light path for easier viewing of the projected image. A lamp signals this on the front panel.

## Multigraph L 1200

The Durst Multigraph is a universal microprocessor-controlled enlarging head handling film sizes up to 10 x 12.5 cm (4 x 5 ins.) for processing conventional and variable-contrast B/W papers.



### Specification and description of functions

Enlarger head with 250 watt halogen light source and integrated vibration-free fan for ample cooling in the lamp house and consequently less heat at the film deck.

### Contrast and density reading

Connected with the keyboard via cable, the reading probe serves to read density and contrast. Hundreds of points are read within a couple of seconds, whereby the computer calculates contrast range and density of the measured negative and automatically sets the values on the keyboard and on the enlarging head.

### Exposure control

The exposure time is started with the „Expose“ key. The lamp is powered up and the motorized filters are positioned exactly.

Only after this, the motorized light shutter opens and closes again after the rundown of the exposure time. The print result is therefore not influenced by the up- and after glow of the lamp.

### „Permanent Closed Loop“ Light monitoring

Print runs demonstrate it clearly: disturbing influences such as line drops, changes in colour temperature of the lamp or filters as well as lamp aging or changes lead to inconsistent results.

The „Permanent Closed Loop“ light monitoring of the Multigraph compensates such disturbing influences, providing constant and repeatable results.

### „Burn-in“ function

This function allows to preprogram three additional exposure times and grades for burn-in exposures. The „Burn-in“ times and grades are automatically displayed and set in the enlarging head after the run down of the main exposure time.

### 5 adjustable grade tables for different paper types

These tables serve to set filtration and density values for each grade step of the papers in use. This allows the Multigraph to be matched to all current available or future black/white materials.

## Varipoint L 1200

Enlarging head with 100 watt point light source and condenser illumination system, handling film sizes up to 10.2 x 12.7 cm (4 x 5 in.), for printing low-contrast B/W negatives and electron microscope B/W negatives.

## B/W Kit L 1200

Enlarging head with 150 W opal light source and condenser illumination system, handling film sizes up to 10.2 x 12.7 cm (4 x 5 in.), for printing low-contrast B/W negatives.



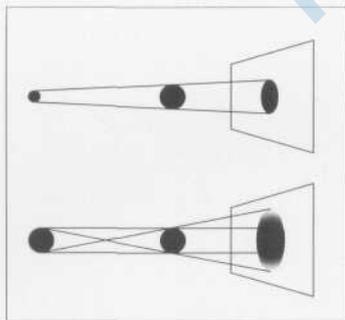
### Features and description of functions

12 V/100 W point light lamp for razor sharpness and perfect rendition of minute details.

Illumination system with coated reversing mirror, condensers and film carrier glass inserts.

Stepless regulation of the light intensity from zero to maximum by variable transformer.

Lamp holder with micrometric XY setting option for exact lamp centering.



### Advantage of point-source lighting

A black disc lit by a point source projects a pinsharp shadow on the screen. With a diffused light source the same shadow appears blurred.

### Specification and description of functions

#### Lighting system

Reversing mirror and dedicated condensers ensure directed light, and so sharp and brilliant image rendition.

#### Lamp holder

with micrometric XY setting option for exact lamp centering.

#### Filter drawer

for slotting in grade- and colour filters.

Note the following table of condenser combinations to cover different film sizes on the Durst Laborator 1200 with Varipoint L 1200

Lens mm	Film size mm	Approx. linear magnifications		Condenser combination
		min.	max.	
150	100 x 125 (4 x 5 in.)	1,5 x	6,5 x	Femocon 152 T Femocon 151 T
80	60 x 60	2,5 x	14,5 x	Femocon 80 T
60	32 x 45*	4,2 x	19,5 x	Femocon 60 T
50	24 x 36	5,4 x	23 x	Femocon 50 T

\* Aperture cards

# Accessories

Laborator 1200



L 1200 Wallmount  
for attachment to wall

Colour head CLS 501



Femobox N  
Format-related mirror type  
light boxes for 35 mm,  
6 x 6 cm, 6 x 9 cm,  
10.2 x 12.7 cm (4 x 5 in.)

Multigraph L 1200



MG Box  
Format-related mirror type  
light boxes for 35 mm,  
6 x 6 cm, 6 x 9 cm,  
10.2 x 12.7 cm (4 x 5 in.)

Varipoint L 1200



Femocon 80 T  
Double condenser for  
80 mm lenses

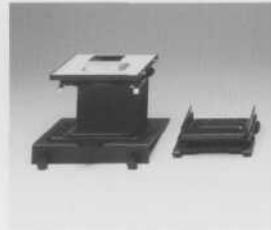
B/W Kit L 1200



Femocon 80  
Double condenser for  
60 mm and 80 mm lenses



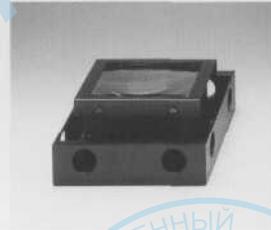
Setopla 2839 and Lapla  
39, 42, 50 lens boards  
Lenses  
with focal lengths from 50  
to 150 mm



Febidap  
6 x 9 cm negative carrier  
system for rapid handling of  
35 mm and 120/220 rollfilms,  
permits rotation of Bimaneg  
negative carrier



Pictope  
Footswitch



Femocon 60 T  
Double condenser for  
60 mm lenses



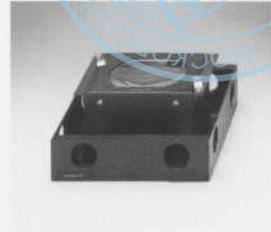
Bimacon 80  
May be used with the Febi-  
dap adapter to cover film  
sizes up to 6 x 6 cm  
(2 1/4 x 2 1/4 in.)



Femotub  
for 1:1 magnification (with  
150 mm lens)  
Dutub 2  
Extension tube with stepless  
extension adjustment for  
reductions



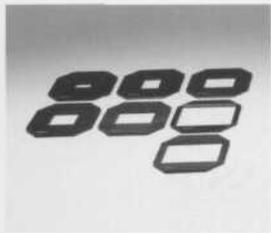
Bimabox N  
Format-related mirror type  
light boxes for 35 mm,  
6 x 6 cm, 6 x 9 cm, for com-  
bination with Febidap



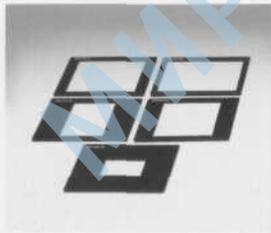
Femocon 50 T  
Double condenser for  
50 mm lenses



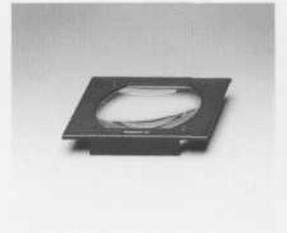
Febidap  
6 x 9 cm negative carrier  
system for rapid handling of  
35 mm and 120/220 rollfilms,  
permits rotation of Bimaneg  
negative carrier



Femomask N  
Glassless format masks for  
the standard Femoneg film  
carrier from 35 mm up to  
10.2 x 12.7 cm (4 x 5 in.)  
Femogia AN  
Anti-Newton glass for the  
standard Femoneg film  
carrier



Binema  
Glassless format masks for  
the Bimaneg film carrier  
from 35 mm to 6 x 9 cm

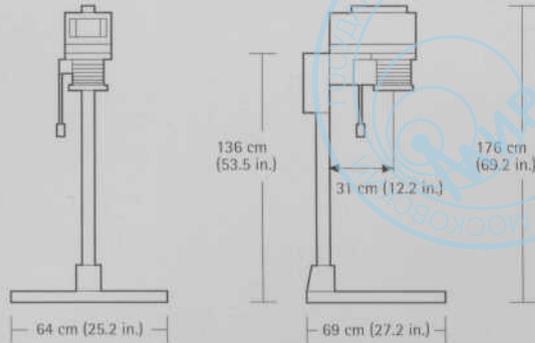


Femocon 50  
Single condenser, may be  
used together with the  
Femocon 80 for lenses from  
28 mm to 50 mm, and with  
the Bimacon 80 for 50 mm  
lenses

## Technical data

### Basic enlarger Laborator 1200

Column height:	136 cm (53.5 in.)
Maximum column height (fully re- vised enlarger head):	176 cm (69 in.)
Baseboard size:	4 x 64 x 69 cm (3 x 25 x 27 in.)
Usable baseboard area:	64 x 69 cm (25 x 27 in.)
Optical axis/column base distance:	31 cm (12.2 in.)
Net weight:	approx. 45 kg (99 lbs)



### Linear magnification (approx. values):

Lens mm	Film size mm	Baseboard min.	Baseboard max.
150	100 x 125 (4 x 5 in.)	1,5 x	6,5 x
135	85 x 100	1,2 x	7,5 x
105	65 x 90	1,0 x	10,3 x
100	65 x 90	1,0 x	10,8 x
80	56 x 72	2,5 x	14,3 x
50	24 x 36	5,4 x	22,5 x

### CLS 501

Light source:	250 watt/24 volt tungsten-halogen lamp
Mains supply:	via TRA 500 transformer for: 100 volt/60 Hz, 110-120 volt/60 Hz or 220-240 volt/50 Hz via stabilised EST 500 transformer for: 110-140 volt/60 Hz or 180-260 volt/50 Hz
Filters:	dichroic filters in yellow, magenta and cyan
Filter densities:	up to 130 densitometric units (= D 1.3)
Supplementary filters:	approx. 45 yellow/15 magenta
Density diaphragm:	from 0 up to 60 densitometric units (= D 0.6)
Dimensions:	53 x 29 x 30 cm
Weight:	approx. 16 kg

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Durst Phototechnik  
AG

Division Phototechnik

Postfach 223

Vittorio-Veneto-Straße 59

I-39042 Brixen, Italy

Telefon 04 72/83 06 20

Telefax 04 72/83 09 80

http://www.durst-online.com

E-Mail: info@durst.it

### Multigraph L 1200

Light source:	halogen lamp 250 W/24 V
Lamp house cooling:	built-in cooling fan
Light monitoring:	permanent closed loop system
Max. filter density:	Yellow: 1.70 D/Magenta: 1.70 D
Filter control:	motorized
Exposure time range:	1,0 - 999 sec.
Exposure control:	built-in exposure timer and light shutter
Grade tables:	5 grade tables can be programmed for any available or future variable contrast paper
Graderange:	00 - 0 - 1 - 2 - 3 - 4 - 5
Grade steps:	manual input = 1/10 with reading probe = 1/10 ± 30 %
Contrast correction:	5 (digital display of memory value)
Paper channels:	• foot switch or roll easel
Interfaces:	• reading probe
Reading probe:	reading probe for exposure and grade calculation with automatic setting on the operating panel. The reading is not influenced by safe lights, as the reading cell is protected with special filters.

### Diameter of reading point:

Burn-in function:	7,5 mm three „Burn-in“ times in % and „Burn in“ grades can be programmed. The „burn-in“ times and grades are automatically set after the run down of the main exposure.
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### Supply voltage:

Power consumption:	100/110/220/240 V - 50/60 Hz (voltage selector)
Weight (head only):	approx. 500 VA
Environmental requirements:	7.5 kg (16.5 lbs) temperature range: + 15 °C to 30 °C (50 °F to 86 °F) Relative humidity: 5 - 95 %

### Varipoint L 1200

Light source:	12 volt 100 watt point light lamp
Mains supply:	via transformer (100/110, 120/220/240 volts, 50 - 60 Hz); output voltage infinitely variable from 0 to 12 volts
Power consumption:	approx. 100 watts
Lighting:	via mirror and condensers
Negative carrier glasses:	specialty coated
Dimensions:	34 x 29,4 x 19 cm
Weight:	approx. 7 kg (15.4 lbs)

### B/W Kit L 1200

Light source:	opal lamp 150 W (intermittent use of 250 W)
Mains supply:	110, 220 and 240 volt
Lighting:	via mirror and condensers
Cooling:	via convection
Filter drawer:	120 x 120 mm
Dimensions:	34 x 29,4 19 cm
Weight:	approx. 9,8 kg (21,5 lbs)

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