Ultra Dottie II
CTP Calibrator

Operating Manual

BETA INDUSTRIES
THE QUALITY CONTROL COMPANY

Version 1.03

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CTP Calibrator/Plate Reader

Instruction Manual
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2.1 Introduction

Dear Beta Industries customer:

Congratulations! You have just acquired the portable plate measuring device
Ultra Dottie II made by Beta Industries. This device solves one of the most difficult
tasks in the printing industry – quick and accurate quality control of the
Computer-to-Plate (CtP) process. With the help of its built-in video camera the
Ultra Dottie II geometrically analyzes the dot area of any given test patches with
regular or stochastic screens. Where applicable the dot diameter, screen ruling,
the screen angle and the visual coverage are calculated and displayed. The
quality of the dot form of a screen type occasionally has to be assessed. This
can be done with the Ultra Dottie II at a resolution of 12,700 ppi (pixels per inch) or
6,350 ppi as a matter of choice. To avoid having to check each individual
measurement during the linearization of a CtP, the Ultra Dottie II offers the
possibility of measuring an entire curve with up to 100 sample points and then
transferring it to a host PC. Beta Industries also offers BetaTab software,
with which the data can be copied into a word processor, a spreadsheet or
another software program. The power-saving electronics and LED technology allow up
to 30,000 measurements for each set of batteries (2 ordinary commercial AA batteries), which
means that no limits are placed on mobility. With the icon-based, graphical user interface
Beta Industries is opening up new paths and offers the user a simple, easy to understand operating concept.

2.2 Safety

2.2.1 Warning

For safety reasons it is absolutely necessary to read through the user's guide and all of the instructions it contains.

2.2.2 General safety tips

If the safety recommendations and instructions in this User Guide are not complied with, this can lead to measurement errors or data loss or involve physical injury or damage to property.

• Ultra Dottie II is not intrinsically safe. Therefore the device cannot be used in an environment where there is a risk of explosion.

• Ultra Dottie II may not be used in an area with strong electromagnetic fields.

• Use the Ultra Dottie II in ambient temperatures between 10°C (50°° F) and 40°C (104°F), and do not expose the Ultra Dottie II to direct sun light.

• Ultra Dottie II should never be opened up. The guarantee expires immediately upon unauthorized opening of the device. Contact your dealer if repairs prove to be necessary.

• To avoid incorrect handling, the Ultra Dottie II should only be used by trained personnel..

• Ultra Dottie II should only be used on dry and stable measuring surfaces.

• Ultra Dottie II should be protected against chemicals, corrosive vapors,
strong mechanical vibrations and impacts.
• Use original Beta Industries spare parts and accessories only.
• Use the original packaging exclusively when transporting the device.
• The Ultra Dottie II case can be cleaned with a cloth moistened with soapy water

2.3 Packaging and transport

Always transport Ultra Dottie II in the original device case to avoid damage.
Safeguard the measuring foot by pushing back the locking device.
 Beta Industries cannot be liable for damage to the Ultra Dottie II during
transport that can be traced back to inadequate packaging or an
unlocked measuring foot.

2.4 Basic equipment and accessories

The Ultra Dottie II and the associated standard accessories are supplied in a
fitted case. Please check the contents of the device case for completeness
on delivery.
The following components must be present:
• Ultra Dottie II
• User guide

2.5 Accessories

To perform and document quality control, it is often necessary to save the measured data on a PC.

2.5.1 BetaTab software

The BetaTab software enables you to transfer the measured data and binary images to your PC or Macintosh and to copy these into a given program (e.g. word processor, spreadsheet). The screen dot as well as the associated measurement values will be transferred and can then be used for statistical analysis. This software is an ideal tool for documenting measurement results.

2.5.2 Beta Target (Optional)

The BetaTarget is a long-term stable absolute reference. You can use the BetaTarget to test the device for its accuracy, to carry out an upgrade and if necessary to calibrate it.
BetaTarget technical data:
Dot: 28.0%
Lines/cm: 50, Lines/in: 127

Dot size: 120µm

The reference plate used by Beta Industries is an extremely precise glass substrate that is metal vaporized and, as is used in semiconductor manufacturing, etched out. It is embedded in gray plastic. The reference plate has a lifetime of two years. The expiration date and the serial number are printed on the label.

3 OPERATION

Operation : Functional Elements

<RESET> on bottom

LCD Display

<ENTER>

<UP> button

<DOWN> button

Positioning Aid

Locking button

RS232 Interface

0° Positioning

3.2 First steps for use

Release the measuring head by sliding the locking device on the left
side forward. After initial opening or after pressing the <RESET> button (red button on the bottom side of
the measuring head) the start-up screen appears on the display. The version number of the firmware and the device serial
number are shown on the bottom left of the screen. If you have technical questions, please communicate this information to
the manufacturer. The device's factory settings have been selected to enable you to begin measuring plates immediately. The
Ultra Dottie II is configured as follows:

MODEL TYPES:

1) **BASIC:** AM (Standard Screening) for Metal Plates
2) **BASIC PLUS:** AM/FM (Stochastic) for Metal & Polyester Plates
3) **ADAVANCED:** AM/FM (Stochastic) for Metal & Polyester Plates, including print, proofs, & films
4) **ULTIMATE:** All ADVANED features plus PQS software databse

• Standard plate • Lines/inch • Regular screen (AM) • Red LED (a standard plate is typically measured with the red LED)

3.2.1 Power-saving mode

The Ultra Dottie II changes over automatically to power-saving mode after

approximately 30 seconds. This is announced by displaying the
'Sleep' symbol. The display will then fade out. Tapping any
button on the device will reproduce the last display.

3.2.2 Toolbar

The toolbar appears on the left on the display and displays the
functions available using symbols. A cursor (black frame surrounding
the symbol) can be moved through the toolbar using the <UP> and
<DOWN> buttons (see section 3.1).

Functions available using symbols. A cursor (black frame surrounding
the symbol) can be moved through the toolbar using the <UP> and
<DOWN> buttons (see section 3.1).

The function designated by the cursor is executed by pressing the
<ENTER> button. In normal operating mode the cursor moves after
approximately 5 seconds to the default position. To re-position the

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cursor simply tap the <UP> or <DOWN> button.

3.2.3 Meaning of the symbols

3.2.3.1 Change display mode

Next display

Previous display

Change to image display for a visual dot inspection

Increase representation resolution to 12,700 ppi

Reduce representation resolution to 6,350 ppi

Change to characteristic curve display

Device Settings

3.2.3.2 Move the sub-cursor

Shift the sub-cursor from left to right

Shift the sub-cursor from right to left

Shift the sub-cursor downwards / Decrease value

Shift the sub-cursor upwards / Increase value

3.2.3.3 Device Settings

⌹ Standard plate

🄿 Polyester plate

☐ Paper

▣ Film

cm Screen ruling in (lines/cm)

" Screen ruling in (lines/inch)

▦ Regular screening (AM)

▨ Stochastic screening (FM).

Ⓡ Ⓖ Ⓑ Illumination for plate measurement R (Red LED), G (Green LED), B (Blue LED)

C M Y K Color for paper measurement C (Cyan LED), M (Green LED), Y (Blue LED), K (Green LED)

Y/C M Automatic CMY color recognition during paper measurement

● Positive dot %

◨ Negative dot %

3.2.3.4 Other functions

[icon] Transfer current record (binary image or characteristic curve) to the host PC

[icon] Device is calculating (during measurement and data transfer)

[icon] Device is changing over to power-saving mode

[icon] Add reference value

[icon] Delete reference value

[icon] Restart and delete all previous settings

3.2.3.5 Symbols for measurement results

[icon]   Screen ruling in lines/cm or lines/inch

[icon]   Dot diameter in mm (based on a circular dot of the same surface area)

[icon]   Screen angle in °

[icon]   Logarithmic Reflectance Value

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3.2.3.6 Status information

▯ Standard plate

■ Polyester plate

▢ Paper

▦ Film

▭ Batteries need to be exchanged

+ Positive dot %

- Negative dot %

AM Regular screening

FM Stochastic screening

R Red illumination for plate measurement

G Green illumination for plate measurement
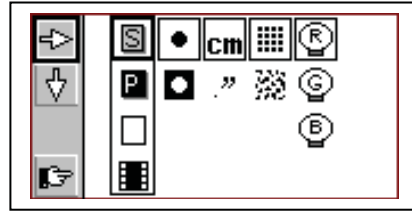
3.3 Adjusting device settings

After unpacking or after pressing the <RESET> button, you can use Ultra Dottie II to begin measuring standard plates using the factory settings, or change the display of the device settings by selecting the 'Next display' symbol
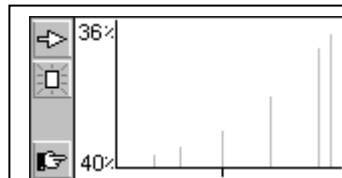
You will find the toolbar on the left of the display with functions that allow you to move the sub-cursor. On the right side of the display you will find one column for each group of settings.

• Measurement medium (standard plate, polyester plate, paper or film)

• Dot % display (Positive or Negative)

• Unit displayed (cm or inch)

• Screening algorithm (regular or stochastic)

• Illumination (red, green, blue LED)

Important:
In normal circumstances the reference value is set to be equal to the nominal value to produce a linear plate.
However, for certain applications a non-linear plate may be desirable. In this case Ultra Dottie II offers the possibility of defining the reference curve in deviation from the 45° straight line.

 Important:

Standard plates and polyester plates are measured with a red LED. Use of the blue LED or green LED is only recommended when the coloring of the plate has a strong proportion of light pink hues (e.g. AGFA N90A), as little image contrast is obtained with red illumination. Film is measured on a professional illumination table in transmission. This is why no choice of illumination is available for the film setting. With paper measurement, automatic color selection allows for quicker work, as no switching between the CMY colors is required. Color contrast is very slight with tones under 10%, so that manual color setting is recommended. For measurements on black, the illumination color needs to always be manually selected.

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3.4 Inputting a reference curve

The user can switch to 'Input a reference curve' by selecting the function in the settings window (see section 3.3).

You will find the toolbar on the left side of the LCD.

An XY diagram of the defined sample points for the current reference curve is shown on the LCD. The X axis corresponds to the nominal value and the Y axis to the reference value. The currently selected nominal value is indicated on the lower end of the Y axis and the associated reference value on the upper end, provided that a sampling point for the reference curve is planned at this location.

All reference values are reset by selecting the function.

You preset the nominal value using and .The position of the nominal value is marked by a small black arrow on the X axis of the diagram. After initially selecting the nominal value select to add the value. Thereafter the increment and decrement functions will be highlighted in the toolbar. By default, the reference value is the same as the nominal value. To enter a 45° reference curve, successively set the nominal value to the value of the patches being measured, select the function and press <ENTER> button.
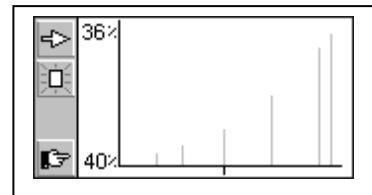
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To move to the next sampling point, select ⬜➡ or ⬅⬜.

You delete a value using ⬜➡ and ⬅⬜.

The position of the nominal value is marked by a small black arrow
on the X axis of the diagram. After initially selecting the nominal

value select ▬ to delete the value.

Example: Inputting a reference curve with the sampling points 5, 10, 30, 60 and 90.

• Select the reference curve window from within the settings window.

• Select the function ⬜ with the <UP> or <DOWN> button and
  execute this using the <ENTER> button. All reference values are reset.

• Select the function ➡ and execute this function repeatedly until the
  nominal value is equal to 5% (press <ENTER> button 5 times).

• Select the function ＋ .

• The default value for this sample point corresponds to the nominal

  value. Now select the function ⬆ to increment ⬇ or to decrement
  and press the <ENTER> button. If the reference curve is altered at
  least once, the Ultra Dottie II will create a sample point for the reference

curve in this position and save this. The vertical gray line at this location in the diagram is adjusted simultaneously when the reference value is changed.

• Select the function and execute this function repeatedly until the nominal value is equal to 10% (press <ENTER> button 5 times).

• Change the reference value using the steps described for 5%.

• Set further reference values in the same way.

When all of the desired settings have been made, change to the standard window by using .

3.5 Measuring

3.5.1 General

Position the instrument by means of the positioning target on the patch and lower the measuring head. The symbol will appear in the LCD. Keep the measuring head lowered until the measurement value is displayed. If the measuring head was released before the completion of the measurement, indicated by the blinking symbol, the measurement must be repeated.

Important: *For precise measurements, make sure the medium*

> **Important:**
> For repeatable measurements, it is recommended to hold the measuring head on the right and left side approximately at the level of the locking element and to lower it. Incomplete lowering of the measuring head leads to a blurred image and consequently to an inexact measurement result.

and the device is positioned on a flat and stable surface. Always position the entire instrument on the sample (the 4 feet and the measuring head).
The measuring device shows the measurement result after a

successful measurement.

You will find the toolbar on the left side of the LCD with

the following functions:

Change to image display for a visual dot inspection

Change to characteristic curve display

Device settings

For regular screening in the display you will find:

DOT **xx.x** % Measured dot area

Identified screen ruling in lines/cm or lines/inch

Dot diameter in µm (based on a circular dot of the same

surface area), provided that a closed dot was present

Screen angle in °

Visual coverage
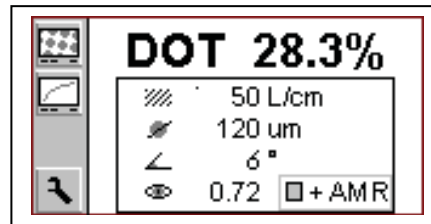
Important:

In a regular screen, the screen ruling, dot size and screen angle will always be shown if the dot area has closed dots (highlights and shadows). The dot size will be displayed if the stochastic screen is set and screen tones < 10% are measured. This means the laser image quality can be verified easily. These parameters are not shown for middle tones, especially for chain dots. The visual coverage is a 'density' measurement, which is not compatible with any current standard and can only be used for comparative analysis. For density measurement, we recommend using a Beta Industries densitometer conforming to standards. Only the dot area is usually determined in stochastic screens. However, use of image analysis algorithms makes it possible to measure individual dot sizes in stochastic screens as well.

All or only some of the measurement results are shown depending on the patch measured and the algorithm (regular or stochastic screening).

You will find the status of the device settings on the lower right section of the display (see section 3.2.3.6 for the explanation of the symbols

Important:

As the measurement algorithm is designed and optimized for finding dots in a picture, measuring a 0% patch or a 100% patch can be difficult since the software is designed for having the best possible performance for dot easurements. For this reason, and in certain cases only, the displayed measurement value for the 0% or the 100% may not be correct. The measuring range for full precise readings is limited to 1% to 99%. Therefore, incorrect 0% or 100% patch measurement result that may occur in certain cases do not indicate that the instrument is functioning poorly. Please use the Vip Target to check the accuracy of the device (see chapter 2.5.2).

3.5.2 Calibration

As the Ultra Dottie II calibration is done automatically, no calibration or "zeroing" on the plate is needed. After inputting the appropriate settings

into device the, measurements can be executed without any further calibration. A zeroing on the plate is however required for the "Visual Coverage" value. This zeroing is done by a measurement on the medium (e.g. plate ground). To check the absolute accuracy of the Ultra Dottie II, Beta Industries offers the Ultra Dottie II Target. With the help of this tool, the device can be checked and calibrated (see section 2.5.2).

3.5.3 Measuring standard plates

Standard plates and polyester plates are measured with a red LED. Use of the blue LED or green LED is only recommended when the color of the plate has a strong proportion of light pink hues (e.g. AGFA N90A), as little image contrast is obtained with red illumination.

3.5.4 Measuring polyester plates

Standard plates and polyester plates are measured with a red LED. Use of the blue LED or green LED is only recommended when the coloring of the plate has a strong proportion of light pink hues, as little image contrast is obtained with red illumination.

> *Important: Due to the grainy background of polyester plates the repeatability may be up to +/- 0.8 %. For the same reason and because of the algorithms used for measuring dots, measurements below 5% or on a 100% patch can sometimes be incorrect. Therefore, the measuring range for exact readings is limited to 5% to 99%. Please note that incorrect measurements for 0% or 100% patches do not indicate that the instrument is functioning poorly. If you were to get incorrect measurements for 0% or 100% patches, please use the BetaTarget check the accuracy of the device (see chapter 2.5.2).*

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3.5.5 Measuring film

Film should be measured on a professional illumination table in transmission mode. This is why no choice of illumination is available for the film setting.

Important: Please make sure that the light table is equipped with a flat and stable glass free of scratches and dirt.

3.5.6 Measuring paper

For paper measurements, automatic color selection allows for quicker work, as no switching between the CMY colors is required. Color contrast is very slight with tones under 10%, so that manual color setting is recommended. For measurements on black, the color (K) must always be selected manually.

The Ultra Dottie II is equipped with a video camera, which measures the geometric dot size, relevant for plate readings. For prints, the densitometric dot size needs to be measured, as this measurement corresponds to the visual impression. Therefore, the Ultra Dottie II is not the ideal device for measurements of the dot area on paper. Nevertheless, it can be used for visual dot analysis of prints.

3.5.7 Measurement Values

3.5.7.1 Dot area

This value represents the area coverage of the measured patch.

With the image analysis algorithm, dust and image errors are

eliminated.

3.5.7.2 Screen ruling

Depending on the settings, the screen ruling is displayed either in

Lines/inch or Lines/cm.

Important: The screen ruling is not shown for FM screening and for middle tones, especially for chain dots in AM screening. In a regular screen, the screen ruling will always be shown if the dot area has closed dots (highlights and shadows).

3.5.7.3 Dot diameter

The diameter of the dots is displayed in μm. The calculation is based

on a circular dot of the same surface area.

Important: The dot diameter is not shown for middle tones, especially for chain dots in AM screening. In a regular screen, the dot diameter will always be shown if the dot area has closed dots (highlights and shadows).
The image analysis algorithms make it possible to display the dot diameter for stochastic screen when the dot area is smaller than 10%.

3.5.7.4 Screen angle

Hold the Ultra Dottie II parallel to the edge of the plate to get a correct value of the screen angle in degrees.

Important: *The screen angle is not shown for FM screening and for middle tones, especially for chain dots in AM screening. In a regular screen, the screen angle will always be shown if the dot area has closed dots (highlights and shadows).*

3.5.7.5 Visual Coverage

The visual coverage is a 'density' measurement, which is not compatible with any current density standard and can only be used for comparative analysis. For proper density measurements, we recommend using a Beta Industries Densitometer conforming to standards.
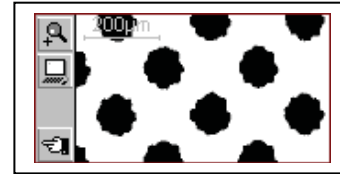For the "Visual Coverage" value, a zeroing on the medium is needed. The zeroing is done by a measurement on the sample (e.g. plate background).

3.6 Visually checking the dot

After a measurement the picture will be held in the device's memory until the next measurement and can be displayed or transferred to a

host computer at any time by selecting the function ▦ .

As usual you will find the toolbar on the left side of the LCD with the following functions.

🔍 Increase representation resolution to 12,700 ppi

🔍 Reduce representation resolution to 6350 ppi

💻 Transfer the current binary image to the host PC via RS232

↩ Back to previous display

Depending on the setting the binary image will be displayed with a resolution of 6,350ppi (a pixel corresponds to 4 micron x 4 micron) or 12,700ppi (a pixel corresponds to 2 micron x 2 micron).

A light gray ruler in the top left corner shows the current resolution and the associated length of the line:
• 200µm at 6,350 ppi

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• 100µm at 12,700 ppi

This means that an absolute size comparison of the represented dots is possible immediately.

Transferring the binary image to a host makes it possible to document the dot quality. As an option Beta Industries offers the BetaTab software, which can accept the binary image and copy it into any application that supports the clipboard.

3.7 Measuring a plate characteristic curve

The user can change from the standard display to the plate characteristic curve function by selecting the symbol for the plate

characteristic curve function

You will find the toolbar on the left side of the LCD with the following functions:

Reset all measurement values

Reset the last measured value and measure again

Transfer the characteristic curve to the host PC via RS232

Back to previous display
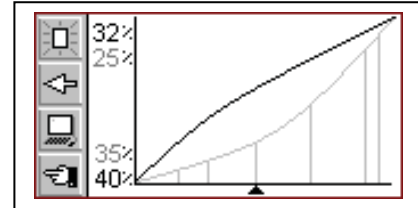
The following information is shown in the LCD:
• **Reference curve:** this is drawn in light gray. The sample points
(patches being measured) are indicated by vertical lines at the
corresponding locations.
• **Plate characteristic curve:** this is drawn in black, with the curve
being plotted accordingly after each measurement.
• **Next patch to be measured:** the nominal value of the next patch to
be measured is shown on the lower left edge of the Y axis and its
expected reference value is shown above it. If all of the patches
have been measured this display is empty.
• **Current measurement value:** the measurement value of the patch
just measured is shown in black on the top left corner of the Y axis
and the expected reference value is shown below it. If no patch has
been measured yet after a restart, this display will be empty.
A black arrow on the X axis gives a graphic representation of the
next nominal value to be measured.

**Example: Measuring a plate characteristic curve with the sample
points 5, 10, 30, 60 and 90 (45° reference curve):**

• Select the function with the <UP> or <DOWN> button and execute this using the <ENTER> button. All reference values are reset. The nominal value 5% and the reference value 5% are shown.
• Measure the 5% patch. The measured value is shown at the top edge of the Y axis and the 5% reference value is shown below it. The nominal value of 10% and the reference value of 10% are shown for the next patch.
• Measure the 10% patch. The measured value is shown at the top edge of the Y axis and the 10% reference value is shown below it. The nominal value of 30% and the reference value of 30% are shown for the next patch.
• If you have measured the 20% patch instead of the 10% patch, put the measurement cursor back by one patch by selecting the function with the <UP> or <DOWN> button and then pressing the <ENTER> button. The nominal value, reference value and current measurement value will be put back accordingly.
• Measure the 30%, 60% and 90% patch in the same way. No new nominal value will be shown now. The curve can then be transferred to the host PC by selecting the icon and pressing the <ENTER> button.

It is worth making a reference to the BetaTab software here: the plate
characteristic curve including the reference values, can be copied into a
spreadsheet, word processor or other program with BetaTab.

3.8 Ultra Dottie II maintenance and care

3.8.1 Reset

If the microprocessor becomes blocked (e.g. after changing batteries
or another disruption), then press the <RESET> button (red button
on the bottom side of the measuring head). The device will respond
with the start-up display.
If you have technical questions for the manufacturer, you will find
the firmware version and serial number in this display. Please state
these when requesting verifications.

Upgrading your Ultra Dottie II

When your plate measuring needs change, you can upgrade your Ultra Dottie II to
take advantage of stochastic, color print, and other advanced features.
After contacting our office we will fax or email an UPGRADE CODE number to you.
Follow the steps below to enter the code and upgrade your instrument.
1. Press and release the red RESET button on the bottom of the main body.

The opening screen will be displayed with the word "Basic" at the bottom.

2. Press and hold the red RESET button. Press and hold the LEFT button.

3. Release the RESET button then release the left button.

4. The display will clear and show 0000 with the underscore blinking under the left digit.

5. If your UPGRADE CODE NUMBER is 2046, for instance;

6. Press the center button to twice to raise the first digit, stopping at 2. If you overshoot the correct value at any position use the left button to lower the displayed value.

7. Press the right button to move the cursor to the second digit.

8. Since the second digit is zero, nothing else needs to be done at this position, press the right button to move to the third digit.

9. Press the center button four times to raise the display to 4.

10. Press the right button to move to the fourth digit. Press the right button six times until 6 is displayed.

11. Press the right button one final time to finish the code entry function.

The main screen will now be displayed with the name of the upgraded instrument in the main screen at the bottom.

Upgrade Types:

A) BASIC to BASIC PLUS: On the SETUP screen an additional icon for stochastic (FM) screening should now be present underneath the icon for standard AM screening.

B) BASIC or BASIC PLUS to ADVANCED: All of the advanced features such as PAPER, STOCHASTIC, LED COLOR, and CURVE PLOT will now be available on the SETUP screen.

Be careful not to accidentally go into the upgrade function. Entering the wrong values will cause the instrument to revert to a BASIC model. You will need to enter the upgrade code again to return to the ADVANCED mode.

3.8.2 Replacing the batteries

The batteries must typically be replaced after 30,000 measurements.
The Ultra Dottie II monitors the battery voltage and shows an 'empty batteries' symbol ▭ when the batteries need to be replaced soon.
Replace the batteries as quickly as possible in this instance.
Take the following steps when replacing the batteries:
• Loosen the battery cover screw with a flat-tip screwdriver.
• Remove the cover from the battery compartment.
• Remove the two old batteries.
• Insert the new batteries while taking the polarity into account.
The polarity and the mounting position are illustrated in the battery compartment.
• Put the battery cover back on again.
• Tighten the battery cover screw. • Dispose of the old batteries in accordance with regulations. • Push the <RESET> button.

Important:
Always replace both batteries at the same time.
If you are not using the device for a long time, please take the batteries out of the battery compartment.

4 APPENDIX 35

4 Appendix

4.1 Technical data

Functions		
	Dot area %	X
	Screen ruling in lines/cm or lines/inch	X
	Dot diameter	X
	Screen angle	X
	Visual coverage	X
	Binary image display	6,350 ppi and 12,700 ppi
	Plate characteristic curve	100 measurements
	References	100 references

Test measurements		
	Standard plates	X
	Polyester plates	X
	Film	X
	Paper	X
	Positive and negative samples	X
	Regular screen (AM)	X
	Stochastic screen (FM) 1st and 2nd order	X

Measurement technique		
	Sensor	CMOS 648 x 488
	Sensor resolution	12,700 ppi
	Viewing area per pixel	2µm x 2µm
	Viewing area	ca. 1.3mm x 1mm
	Analysis	Image analysis algorithms
	Illumination	RGB LED ring optics
	Repeatability	± 0.5%
	Measurement time	3.4 sec (typ.)
	Screen ruling range (AM)	26 l/cm – 147 l/cm
		65 l/Inch – 380 l/Inch
	Dot size range (FM)	10 µm – 50 µm
	Dot diameter resolution	1 µm

	Screen angle resolution	3°
	Visual coverage	0.2.2
User Interface	Graphical display	160 x 80 pixels LCD grayscale
	User interface	Symbol oriented
Power supply	Power supply	2 AA batteries
	Measurements per set of batteries	30,000 (typ.)
Data interface	Interface	Serial (RS232)
	Baud rate	115,200
Mechanical data	Dimensions	4.3 x 7.3 x 14.5 cm
		(1.7 x 2.9 x 5.7 in)
		Weight Approx. 400 g
Operating conditions	Temperature	10°C to 40°C
	Relative humidity	10% to 80% non-condensing
Storage conditions	Temperature	-20°C to 70°C
	Relative humidity	10% to 90% non-condensing

4.2 Serial interface*

The Ultra Dottie II is equipped with an RS232 interface. To obtain
access to the serial interface socket, remove the black cover on
the rear of the measuring head.
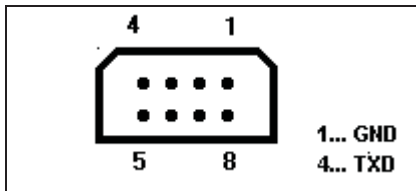
The serial interface is configured as follows in the factory:

• Standard RS232 with TxD cable

• 115,200 baud

• 8 bit, 1 stop bit, no parity

*For connection to a USB port the use of a KEYSPAN High Speed USB Serial Adapter USA-19HS is recommended.

CE-DECLARATION OF CONFORMITY

The undersigned, representing the following manufacturer

Beta Industries

herewith declares that the product:
Ultra Dottie II
Plate Measuring Device

is in conformity with the provisions of the following CE

directive(s) (including all applicable amendments):

73/23/EEC   Electrical equipment for use within specified voltage limits

89/336/EEC   Electromagnetic compatibility

and the standards and/or technical specifications referenced

overleaf have been applied.

The last two digits of the year in which the CE marking was affixed: **03**