Image Access

Bookeye® 3

Operation Manual

This device is ENERGY STAR compliant.

Introduction

Dear Customer,

We congratulate you on the acquisition of this innovative product from Image Access.

We at Image Access are proud of the work we do; it is the result of our extremely high standards of production and stringent quality control.

With the Bookeye® 3 scanner, Image Access offers an efficient scanner which covers a wide scope of applications due to its versatility. Its integrated web based user interface makes all functions available in structured menus.

This operation manual is designed to lead you through all situations which will arise when using the Bookeye® 3 scanner.

For this reason, we ask you to read the operation manual attentively before starting to work with the device. By doing so, you will avoid operation errors and you can control all functions from the beginning.

In addition please consider the following points:

- Damages to your unit may have occurred during shipping. Please check for damages immediately after delivery of the unit. Inform your supplier if damage has occurred.
- Read and ensure that you understand the safety notes. They were developed for your protection and safety as well as to protect the unit.
- Regular maintenance conserves the high quality and safety of the Bookeye® 3 scanner during the entire service life.

If you have any further questions, please feel free to contact your local dealer or Image Access directly. Our staff will be happy to help you.

For your daily work with the Bookeye® 3 scanner, we wish you success and complete satisfaction.

Regards

Your Image Access Team

About this Manual

Operation Manual
All information about the normal operation and behavior of this device is found in this **Operation Manual**. The manual is written for people who only operate the device and do not perform setup and adjustment procedures. All device elements and software functions are described in detail, although some of them might never be used. This manual does not cover any application software like BSW, BSCAN or BCS2. Refer to the appropriate manual to learn about the application software.

Setup and Assembly Manual
The **Setup and Assembly Manual** is written for technical staff with some basic mechanical as well as software skills. Many resellers will offer on-site installation; therefore, large parts or all of the setup and assembly manual might not be of interest to the reader. The access level at which these setup and adjustment processes are performed is called “Power user” and is password protected from access by the normal operator.

Both manuals can be downloaded from our customer service portal at http://service.imageaccess.de. Be sure to always check for the latest versions of these manuals.

The manual is divided into four sections, A to D.

Section A	describes the hardware of the device. It shows the connectors as well as all other elements of the device.
Section B	describes the operation software and the keyboard functions.
Section C	describes troubleshooting procedures and test scan generation.
Section D	shows all technical data and CE, FCC, UL declarations.

Version History

Version	Published in	Content/Changes/Supplements
A	April 2006	**First Edition.**
B	August 2006	**Second Edition:** Chapter A.2.1 added.
C	September 2007	**Third edition:** Some modifications in the integrated S2N user interface. Additional parameters in the output options have been added. New graphic elements in the S2N user interface.
D	August 2008	**Fourth edition:** New screenshots because of new firmware version 5. A new tab in the S2N user interface enables the user to define the dimension of user-defined formats more easily.

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A Hardware Operation

A.1 Safety Notes

Read and ensure that you understand the safety notes.

The safety notes have been written to ensure your protection and for your safety.

All safety requirements of the following standards

EN 60950

UL 60950

CSA C22.2 No. 60950

are fulfilled by the Bookeye® 3 scanner.

A.1.1 Marking of Safety Notes

All safety notes are marked with a warning sign.

A description of the potential hazard is found at the right side beside the warning sign.

Safety Note!

Text with description of potential hazard.

A.1.2 Laser Safety Note

Safety Note!

Text with description of potential hazard.

A.2 Device Overview

Picture 1: Components of Bookeye® 3 scanner

For a first look at the Bookeye® 3 scanner, some of the components have been identified in the above photo. These components are referenced in this operation manual.

The Bookeye® 3 scanner main hardware elements are:

— The main body with two book cradle plates attached.
— Two lamps.
— The camera neck with camera head on top.
— The keyboard with LED display.

A.2.1 Device Location

A.2.1.1 Environment

Choose a location that complies with the limits of temperature and humidity. Refer to chapter 0 for detailed environmental specification.

A.2.1.2 Ambient Light

The location should have a controlled ambient light situation. Light scenarios to avoid are direct sunlight, spot light from light beams, light sources that cause sharp shadows on the scanning bed, high levels of ambient light and varying light conditions.

The Bookeye® 3 scanner is an open system with a built-in high quality light source. Open system means, that the ambient light is added to the light seen by the camera.

The recommended location for the Bookeye® 3 scanner:

- Is not exposed to daylight.
- Is evenly illuminated from the ceiling with fluorescent lamps with electronic ballasts. The light intensity measured on the book cradles should be approx. 300 lux.
- The light should not cause any shadows; therefore the variation of the intensity across the scan area should be kept below 20%.

If the fluorescent lamps are powered by non electronic ballasts, they will produce a flicker twice the frequency of the main power supply (100Hz or 120Hz). If the intensity of this light becomes too high, vertical stripes of even distances of approx. 8-12 pixels will be visible on the scan.

Direct sunlight will vary over the day and will result in overexposed images. Sunlight also can produce sharp shadows.

Light beams from spotlights will also produce sharp shadows. In most cases, they emit a high level of infrared light. Infrared light is not visible to the human eye but to the camera. The light source of the Bookeye® 3 scanner itself has no infrared content at all. The advantage is that the scanner does not have an image quality degrading infrared filter. Too much infrared content will result in overexposure.

The BOOKEYE Color scanner has an integrated “White Balance” function. This function will compensate the ambient light influences. Therefore it is recommended to perform the “White Balance” function when the ambient light scenario has been changed.

A.2.1.3 Table

Place the device on a flat and solid base, preferable a solid table. The load bearing capacity of the table must correspond to the device weight. The table should be build to hold at least three times the weight of the unit. Also it should not shake or move to avoid image distortions. If the table is too weak it can be attached to a solid wall to stabilize it.

A.2.1.4 Power outlet

Safety Note!

Ensure that the power outlet is always accessible. This will help to separate the device from the power outlet in case of an emergency.

A.2.2 Connecting the Power Source

The power connector and the main power switch are located at the right side of the back of the document bed.

Picture 2: Bookeye® 3 scanner back side view

Important: Before connecting to the power source, check the following items:

The wall outlet is in perfect condition and properly grounded.

The power cable is not damaged in any way.

The wall outlet fuse has the correct electrical dimensions. Refer to the technical specification chart for detailed information.

Check the device fuse. Use only the specified device fuse. The device fuse specification is named on the identification plate.

After the main power switch is turned on, the green START field above the START button lights up. This indicates that the BOOKEYE Color is ready-to-use.

A.2.3 Connecting the Network

The BOOKEYE Color scanner is delivered with a cross-over cable (green cable connectors) and a standard CAT6 network cable.

The network connector is located at the back side of the document bed.

Use the cross-over cable to connect the BOOKEYE Color scanner directly to a PC via a network card.

Use the network cable to connect the BOOKEYE Color scanner to a network.

A.2.4 Connecting a Foot Pedal Switch

The scan sequence and other operations can be invoked through the optional available foot pedal switches.

At the back side of the device, there are two jack plugs to which the foot pedal switches can be connected. The jack plugs are labeled with “FS1” and “FS2”.

A.3 Starting the Bookeye® 3 scanner

If the device has been used before and was constantly connected to power, the display will show the message:

Standby Press Start button

and the green START field above the **Start** button is illuminated.

Picture 3: Display before power up

If the device was previously disconnected from the main power supply, the standby message might not be visible. As long as the green START field above the **Start** button is illuminated, the scanner can still be powered up by pressing the **Start** button.

Standby Press Start button

Press the **Start** button. The background light immediately lights up indicating that the device is starting.

The START field becomes dark and the STOP field will light up.

The next message in the display is:

System check Please wait

The message is indicated for some seconds. Meanwhile the device performs the basic hardware and software checks.

followed by:

BE3-SCL-R1 Firmware 4.56

This is the device name followed by the firmware version

At this point during the power up cycle, the display will show:

RESET NETWORK CONFIGURATION ?

for one second.

If the **Start** button is pressed during this interval, the display shows:

ARE YOU SURE ?

If the **Start** button is pressed again in the next three seconds the IP address, gateway and subnet mask are all reset to their factory defaults.

This procedure is followed by:

MECHANICS CHECK 192.168.1.50

Indicates, that the test for the motors and for the end position switches is running. The second line shows the IP address.

If the tests end successful, the display shows:

HARDWARE CHECK 192.168.1.50

Indicates the test of all remaining hardware components. The second line shows the IP address.

When the power-up test sequence is finished error free, the display shows the final message.

Ready to scan

After the device has powered up, the **Start** button has a second function. It can be used to delay a scan until the button is pressed in one of the application software scan modes.

A.3.1 Stopping the Bookeye® 3 scanner

If the **Stop** button is pressed at any time the scanner is idle, the display will at first show the message:

Prepare to shut down

The message is displayed for two seconds before the device is powered down .If the button is released before the time has elapsed, nothing happens.

If the button is held the display reads:

Shut down in progress

The device actually powers down. This is additionally announced by the sound “Power down”.

At the end of the power down sequence the backlight turns off and the display reads:

Standby Press Start button

Important: If for any reason the Bookeye® 3 scanner does not respond to the application and the keyboard, the start key can power down the device, regardless of the processor status. To achieve this, the start button must be held for **at least** six seconds.

A.4 Book Cradle

The motorized book cradle is safely and easily operated. Two driving elements on each side move the wooden cradles plates upwards. The plates are not connected to the stand-offs. If the book cradle is lowered and something blocks its way down, only the weight of the plate and eventually part of the weight of a book will squeeze the object.

The driving element will only move if the appropriate key is pressed. For security reasons there is no way of moving the book cradle automatically or remotely.

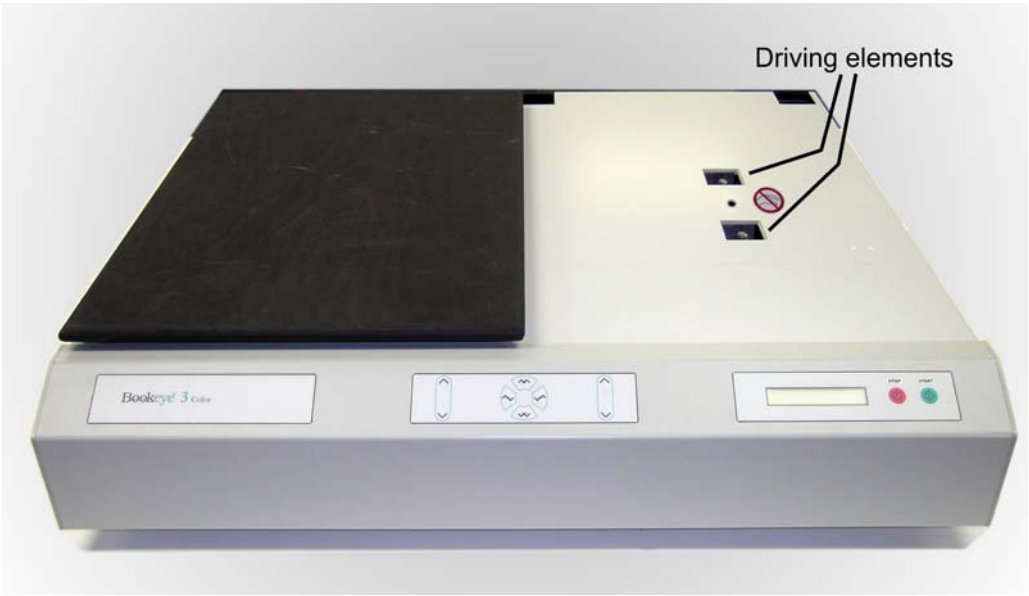
Safety Note!

Always lower the book cradle to its home position before power off.

Important: If the book cradle plates get dirty or scratched, use the micro fiber cleaning cloth to clean the surface of the plates. The cleaning cloth should be slightly damp.

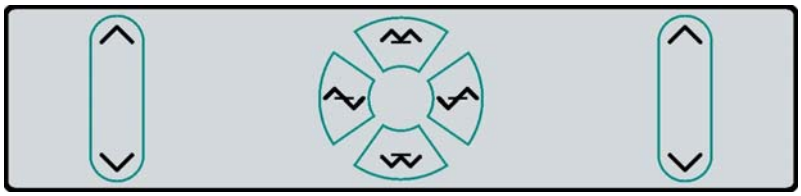
A.4.1 Removing the Book Cradle Plates

Lift the two book cradle plates to separate them from the main body. They are not fastened to the driving elements; they only rest on them.



Picture 4: Book cradle on right side removed

A.4.2 Book Cradle Control Keys



Picture 5: Book cradle Control Keys

Operating one plate of the book cradle:

	**Left cradle up/down** and/or **Right cradle up/down** The control key on the outer side moves the corresponding cradle up and down independently of the other cradle plate.

Operating both plates at the same time:

	**Cradles up** This key moves both plates upwards exactly in synchronization.
	**Cradles down** This key moves both plates down exactly in synchronization.

Once a book has been balanced on the two book cradles, the compensator keys are used to compensate between the two sides. That means, the surface of the book is at the same height on both sides. The right compensator key operates identically on the right cradle.

	**Left compensator** The left compensator key lifts the left cradle and lowers the right cradle at the same time.
	**Right compensator** The right compensator key lifts the right cradle and lowers the left cradle at the same time.

Note: If the home position (lowest) of a cradle is reached, it stops automatically. An acoustical click notifies the user of the fact that the end position is reached. If the highest possible position is reached, it will also stop and generate the same click.

A.4.3 Operating the Book Cradle

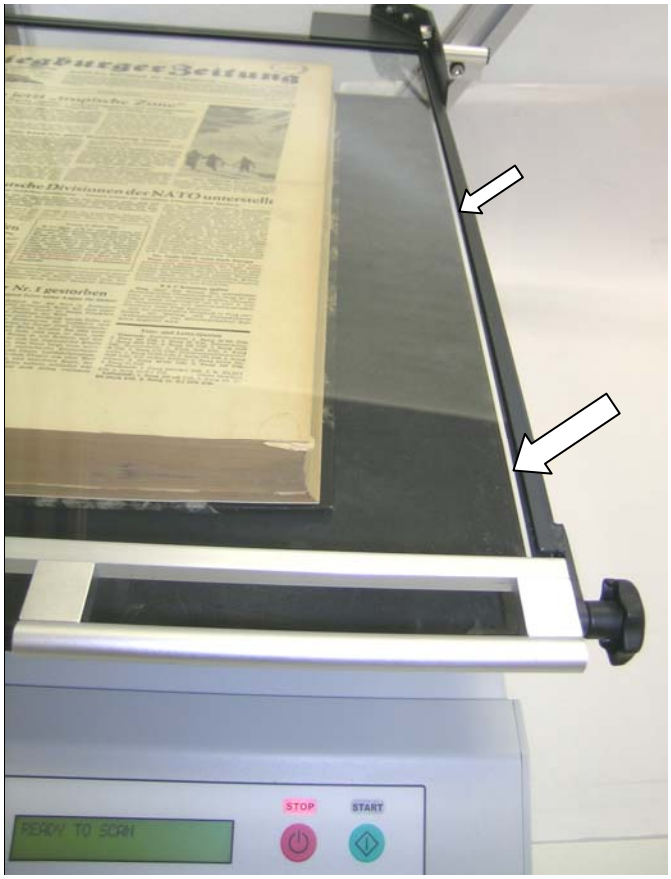
First lower both cradles to their home position. Place a book on the right plate, open the book cover and raise the left cradle until it fully supports the left book cover. This is the reference position.

Picture 6: Book cradle at start

If the optional glass plate is used, lift both cradles up until they reach the glass plate. Use only the Cradles up / Cradles down keys for this, as they keep the balance between the cradles. Move up until the glass plate is exactly horizontal, while manually applying some pressure on the book.

Picture 7: Book cradle at start with glass plate option

Note: Watch the small opening (see arrows in picture below) between the glass plate's frame and the cradle. If the distance is equal on the upper and lower side, the glass plate is in the horizontal position.



Picture 8: Horizontal alignment check

After the reference position is reached, use only the left and right compensation keys while advancing through the book.

This will ensure that the distance of the book's surface stays constant through the entire process and will therefore guarantee exactly the same resolution and size on all pages.

Picture 9: Book cradle in the middle of the book

B Software Operation

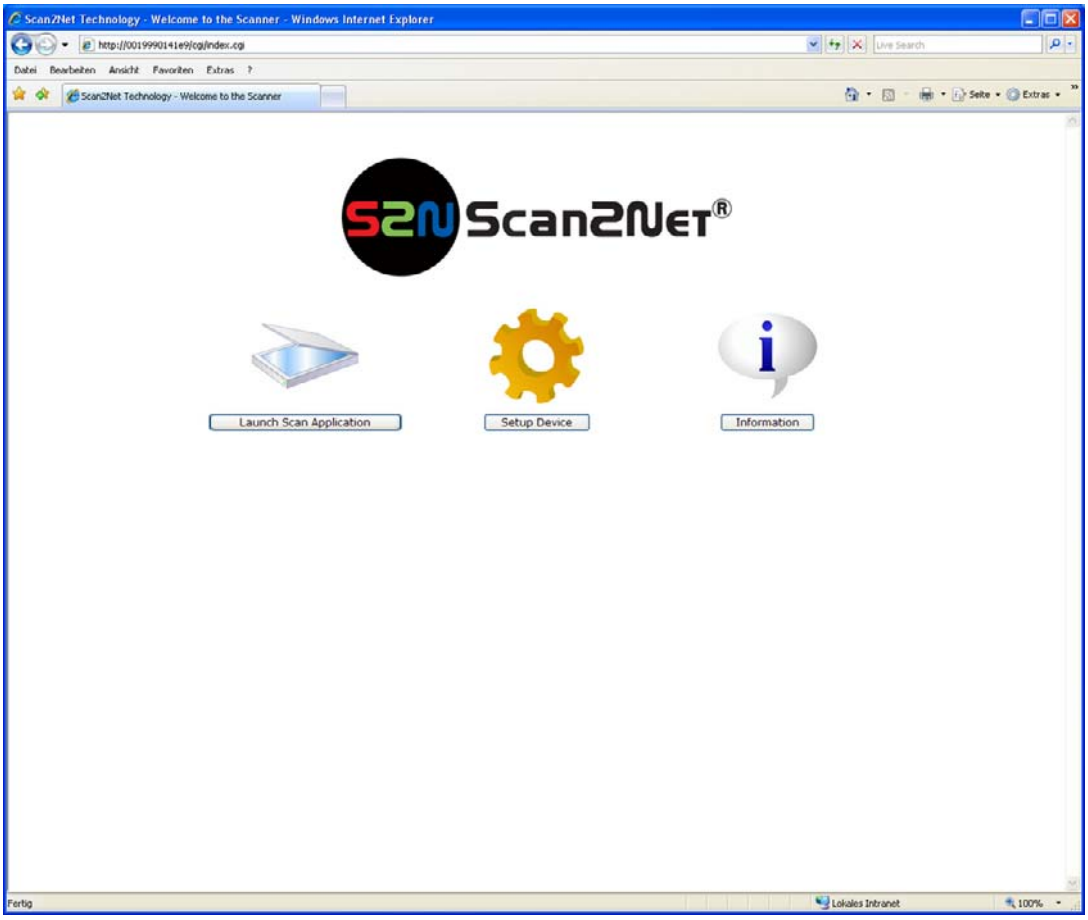
B.1 The Integrated User Interface

Essentially, the scanner is a web server and comes with its own HTML based user interface. To access a Scan2Net scanner, any standard web browser can be utilized.

Start your browser.

Enter the IP address of the scanner. The default IP address of the scanner: **192.168.1.50**

The following start screen of the integrated user interface will be displayed.

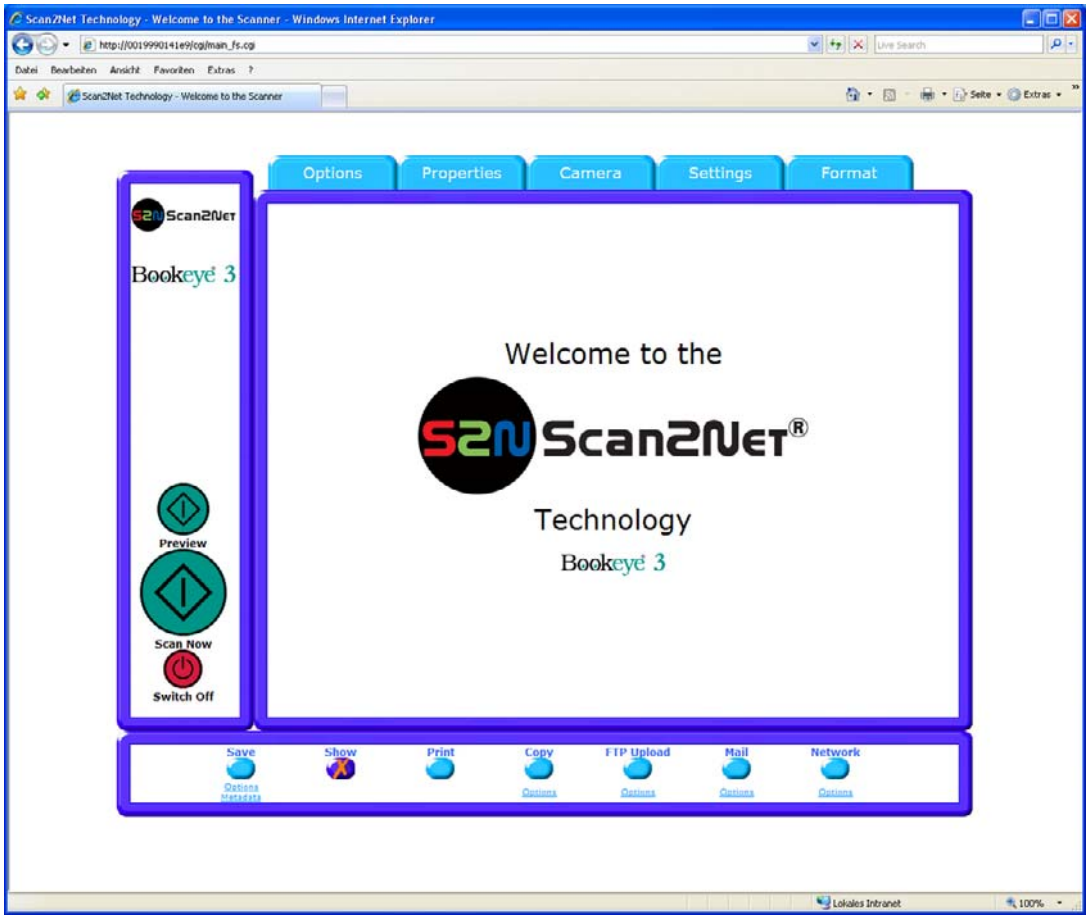


Picture 10: Start screen

Click the button Launch Scan Application.

B.1.1 The Main Screen

After launching the scan application, the main screen of the integrated user interface will open.



Picture 11: Main screen

The main screen is structured in three parts.

The menu bar of the large frame on the upper right part has five menu items:

- Options
- Properties
- Camera
- Settings
- Format

The seven control buttons in the lower part of the screen control the output modes.

As default the output mode ***Show*** is selected. After clicking onto the button **Preview** or onto the button **Scan Now** a window opens and shows the image.

When selecting ***Save*** the scanned image will not be displayed. Instead of the second window a box opens where the desired directory can be set.

Selecting ***Print*** will display the scanned image in a second window and direct the scanned image to locally available printers.

Selecting ***Copy*** prints directly to a previously installed network printer.

Selecting ***FTP Upload*** scans directly a FTP server.

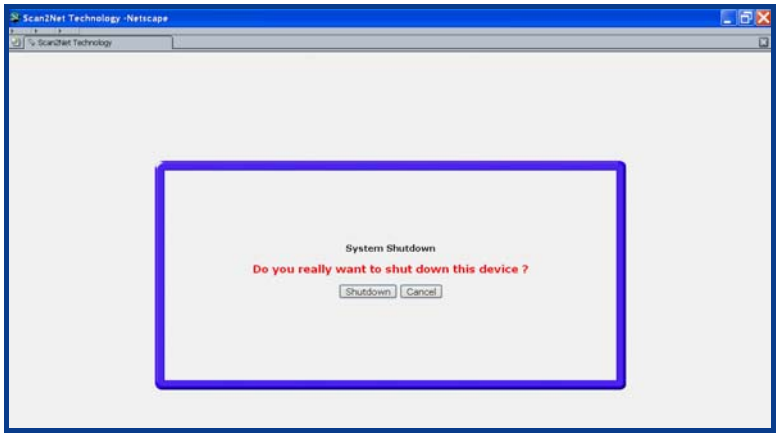
Selecting ***Mail*** sends the scanned image directly to a previously defined e-mail address.

Selecting ***Network*** uploads the scanned image directly to a previously defined workstation in the network.

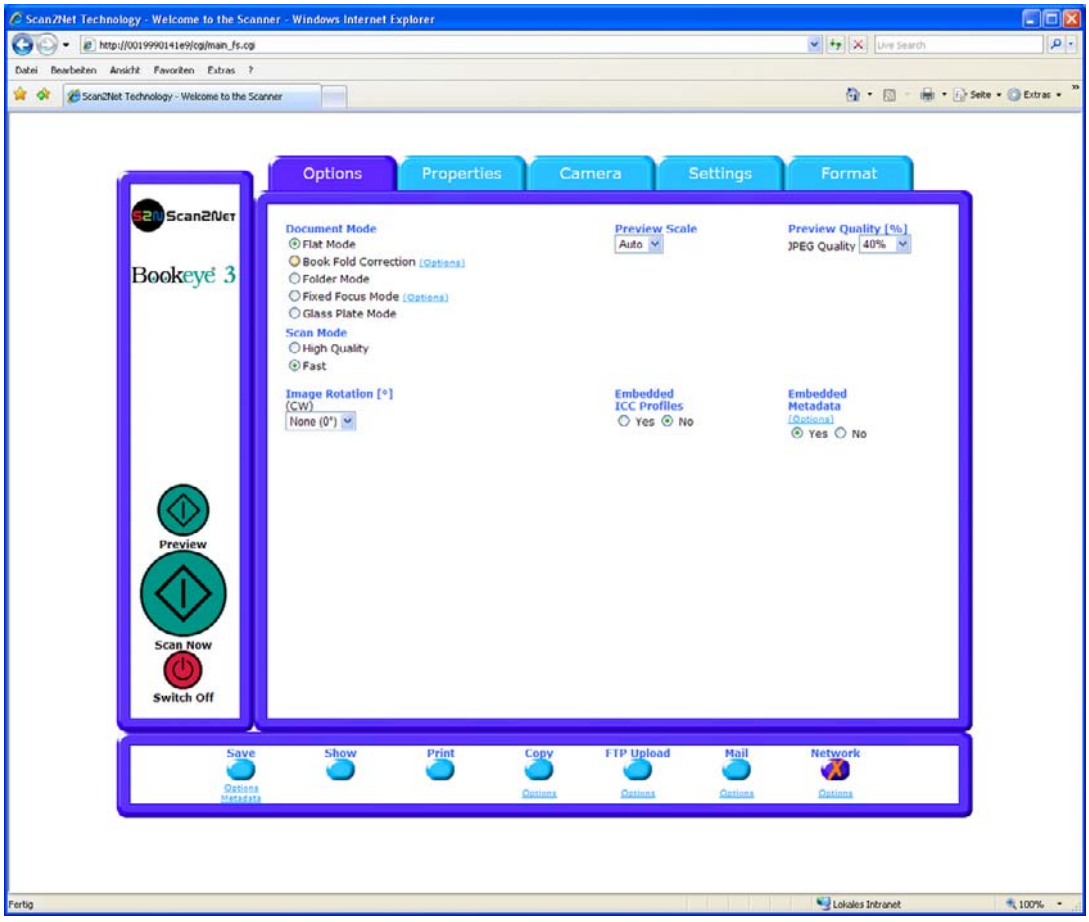
The frame on the left side shows the buttons for preview scan and main scan.

Note: Pressing the red button  switches the scanner off.

If the red button is pressed, the following window will appear.



B.1.2 The Options Screen



Picture 12: Options screen

The ***Document Mode*** allows the user to select between different types of documents:

In ***Flat Mode*** the document is treated as flat, i.e. with a fixed focus setting, regardless of the actual shape of the document. This mode avoids out of focus problems when scanning three dimensional objects that cannot be described as folders or books.

In the ***Book Fold Correction*** mode the focus follows the surface of a book while the scanner advances from left to right or right to left. Also all geometric distortions are compensated. It is essential that the book is aligned straight to the laser line for optimal results. More details of the book fold correction can be specified in the ***(Options)*** dialog (see chapter B.1.2.1).

In the ***Folder Mode*** the focus is fixed on the right side and the left side of the document independent of each other. It is essential that the open folder is aligned straight to the laser line to get optimal results.

In the ***Fixed Focus Mode*** the focus is fixed to the value stored in the ***(Options)*** settings (see chapter B.1.2.2).

In the ***Glass Plate Mode*** the focus is fixed to the defined height of the glass plate in closed position.

The ***Scan Mode*** allows the user to select between **High Quality** with a reduced scanning speed or **Fast** with normal speed.

The ***Image Rotation*** can be any degree of rotation out of 90°, 180°, 270° or none. The angle is defined in the clockwise direction.

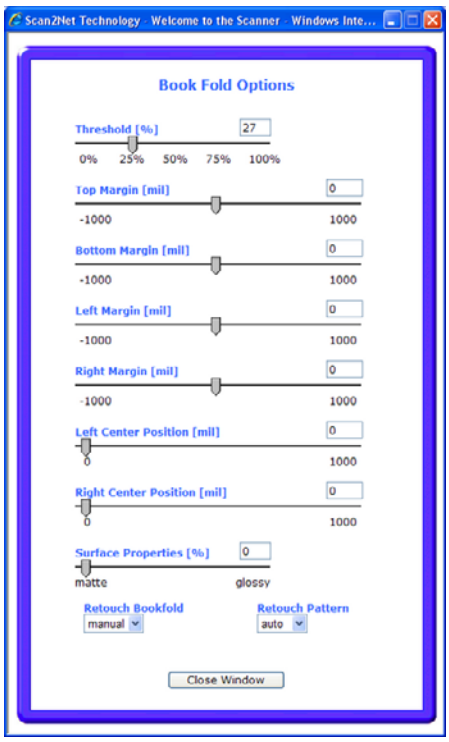
The ***Preview Scale*** value sets the size of the preview image. If set to **Auto** the function will perform a best fit before the image is displayed on the screen.

The ***Preview Quality [%]*** sets the JPEG quality of the preview image.

The ***Embedded ICC*** switch is either **Yes** or **No**.

The ***Embedded Metadata*** switch is either **Yes** or **No**. More details can be specified in the ***(Options)*** dialog.

B.1.2.1 Book Fold Options



Picture 13: Book Fold Option screen

Clicking on ***(Options)*** opens an additional window.

It allows to set the value for the margins, the left and the right center position as well as the threshold value.

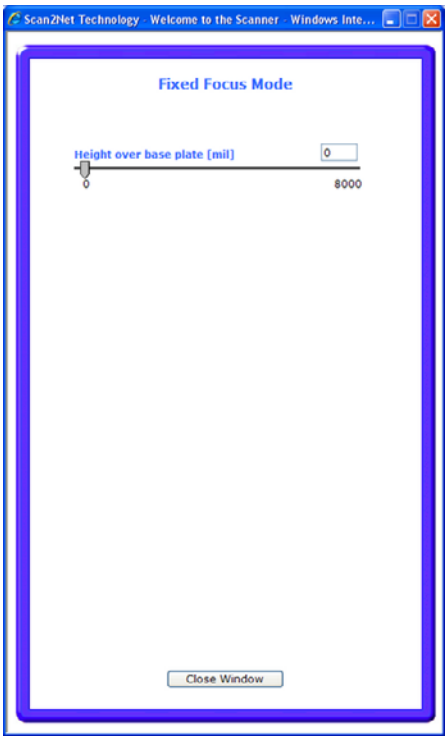
The unit of measurement is “mil”. This unit of measurement is defined as 1000 mil = 1 inch.

The ***Surface Properties*** slider allows to modify the correction of different surfaces from matte to glossy.

The ***Retouch Bookfold*** switch is either **auto**, **manual** or **off**. If **auto** is selected, the width of the bookfold area will be detected automatically and filled. If **manual** is selected the sliders for ***Left Center Position*** and ***Right Center Position*** define the width of the filled area.

The ***Retouch Pattern*** switch is either **auto**, **black** or **white**. If **auto** is selected the pattern matches with the pattern in the bookfold area, otherwise it is black or white.

B.1.2.2 Fixed Focus Mode



Picture 14: Book Fold Option screen

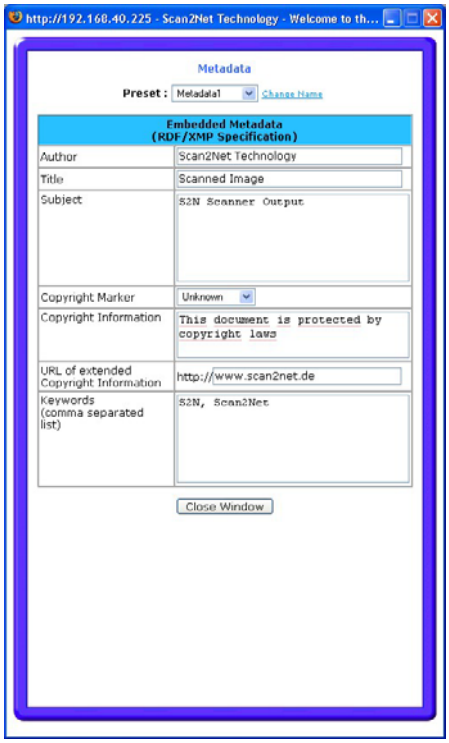
If ***Fixed Focus Mode*** is selected, the scanner only focuses on one position.

The height above the base plate of this position is controlled by the user via the menu on the left.

Move the slider or enter the value directly in the field on the right.

The unit of measurement is “mil”. This unit of measurement is defined as 1000 mil = 1 inch.

B.1.2.3 Embedded Meta Data



Picture 15: Metadata screen

This function is used in conjunction with the file formats JPEG, TIFF or PDF.

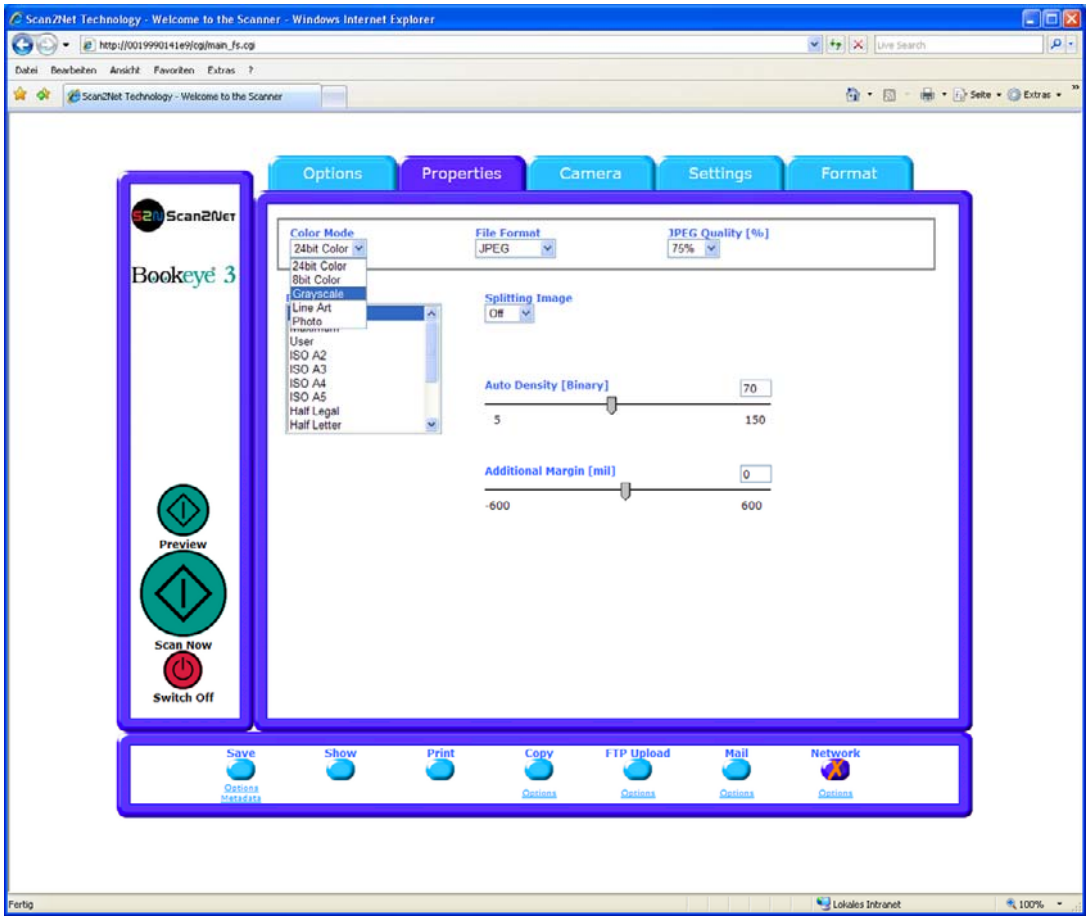
It will allow the operator to include a set of XMP/RDF compliant document metadata in the file header.

Select **Yes** or **No**. Go to ***(Options)*** to define a set of XMP/RDF compliant metadata. The configuration window will pop up.

Metadata	Description
Author	Enter the name or organization that created the document or is the copyright owner of the document.
Title	Enter a short title for the scanned document.
Subject	Abstract of the document.
Copyright Marker	Select if the scanned document is copyright protected.
Copyright Information	Enter the copyright message. This message will be only embedded in the scanned document if the copyright marker is set to “yes”.
URL of extended Copyright Information	Enter an external URL which shows a detailed copyright message.
Keywords (comma separated list)	Enter a list of comma separated keywords which describe the content of the document.

Note: Each change of an entry field is transferred to the scanner immediately.

B.1.3 The Properties Screen



Picture 16: Properties screen

The ***Color Mode*** control allows the user to select from a list the desired color modes. Available are **24bit Color** and **8bit Color** as well as **Grayscale**, **Line Art** and **Photo**.

The ***File Format*** control defines the file format that is used to store a scanned image. Some interdependencies exist between the ***File Format*** control and the ***Color Mode*** control. For example, it is not possible to store an image scanned in True Color mode in TIFF G4 file format.

The ***JPEG Quality [%]*** control determines the compromise between quality and compression rate. A higher quality factor produces larger files. The default setting of 75 is a good compromise for most documents.

The ***Format*** control selects between various standard paper formats. If **Auto** is selected, the scanner scans the maximum format and then crops the document to its real size. This function is highly advanced and works with default values most of the time.

The **Auto** function can also be statically configured with the two sliders ***Auto Density*** and ***Additional Margin*** on the right side.

If **User** is selected the ***User defined format*** control opens. It allows to set the values for **Height** and **Width** of the area to be scanned. It also allows to define the position of the area to be scanned. The position is set by the values for **X Offset** and **Y Offset**.

Note: The point of origin for **X Offset** and **Y-Offset** is defined in the upper left corner of the document area. Only positive values are allowed.

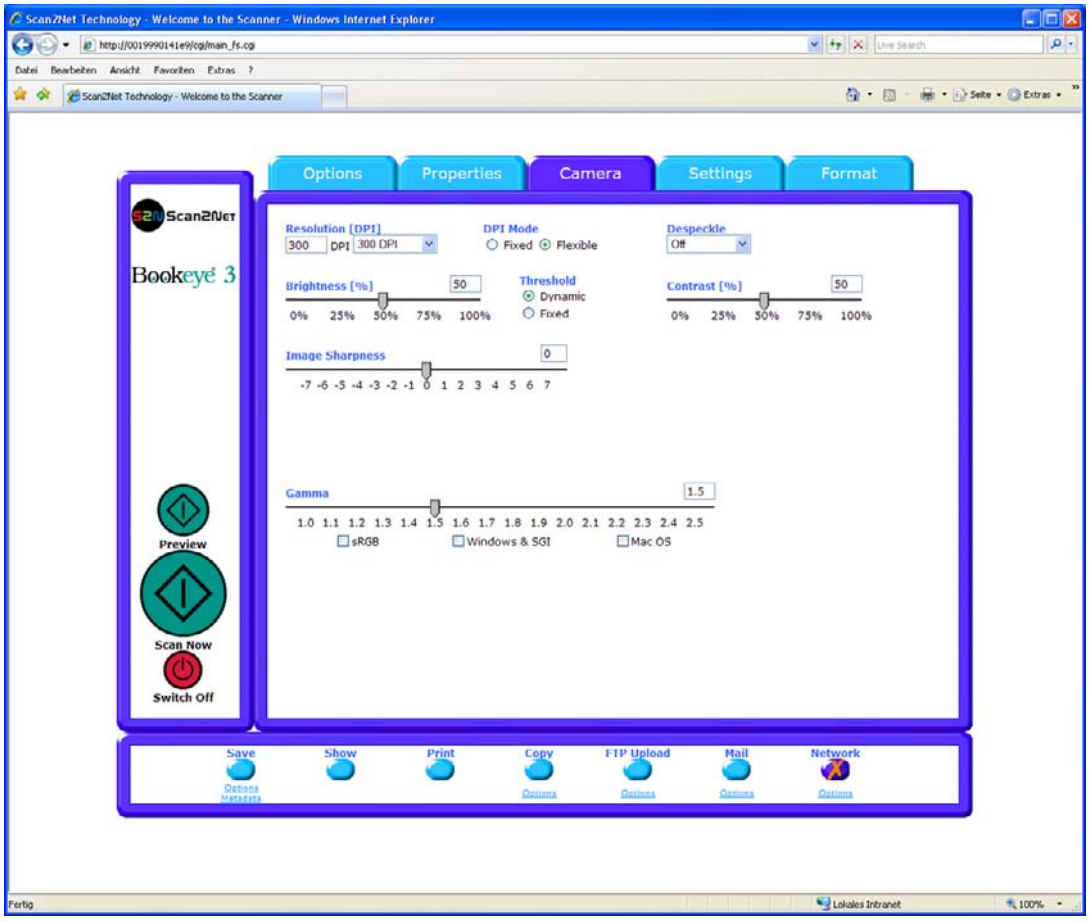
Picture 17: X- and Y Offset definition

A value for ***Additional Margin*** can be added to or taken away from the image. It is defined in units of pixels.

The ***Auto Density*** value defines the brightness level of the background. All areas that are darker are considered background and will be used to find the borders of the document.

The ***Splitting Image*** button allows splitting the image into two pages although only one scan is performed.

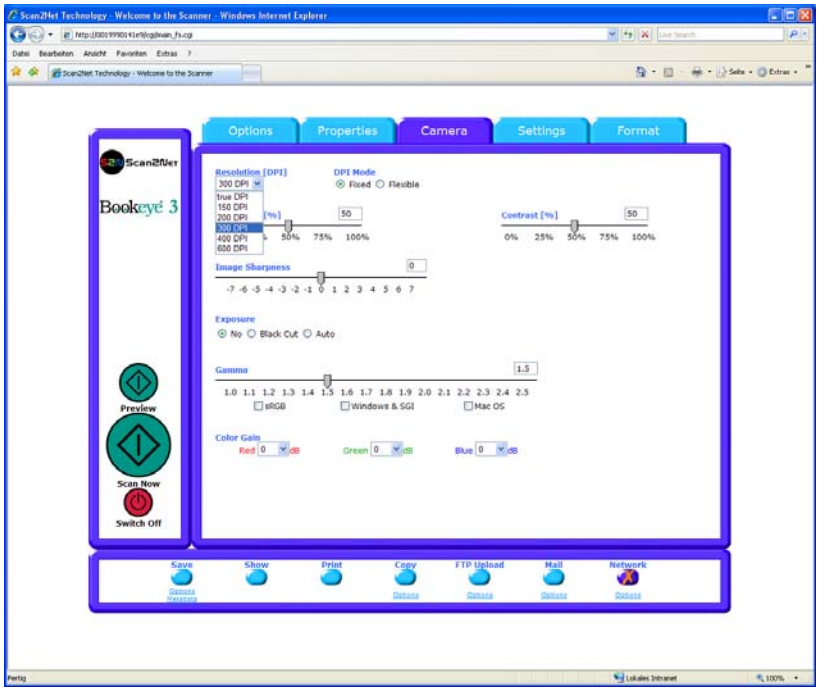
B.1.4 The Camera Screen



Picture 18: Camera screen

In this screen all parameters concerning the camera will be set.

Some interdependencies exist between controls displayed in this screen and settings in other screens. The ***Despeckle*** control e.g. is only displayed if the color mode **Line Art** is selected.

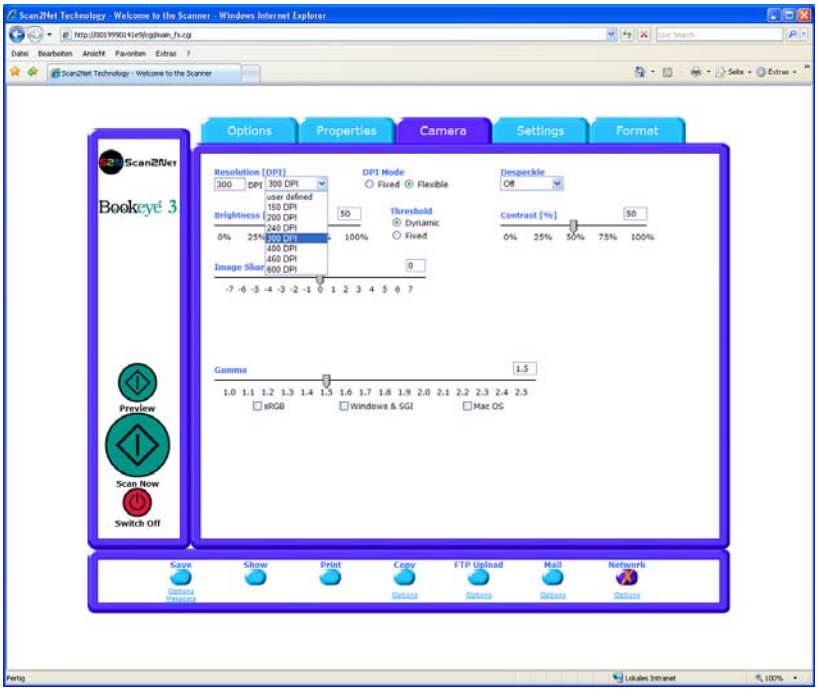


Picture 19: DPI mode Fixed

If the button ***DPI Mode*** is at **Fixed**, the resolution can be selected out of a drop down list in the ***Resolution*** field.

The values for ***Resolution*** can be **150**, **200**, **300**, **400** and 600 DPI and also **True DPI**.

True DPI is used if the scanner's real resolution, depending on thickness of the document as well as the position of the book cradles, should be used. The scanner will then measure the optical resolution and use this in the file header.



Picture 20:DPI mode Flexible

If the button ***DPI Mode*** is set to **Flexible**, the resolution can be selected out of a drop down list right to the ***Resolution*** field.

This value can be manually overridden. Enter the desired resolution in the field left from the drop down list field. The value can be varied in steps of 1 dpi. To send the new value to the scanner, click on another menu item or press the “Tab” key or the “Enter” key on your PC keyboard.

If the ***Resolution*** field value is changed, the right box will show **user defined**.

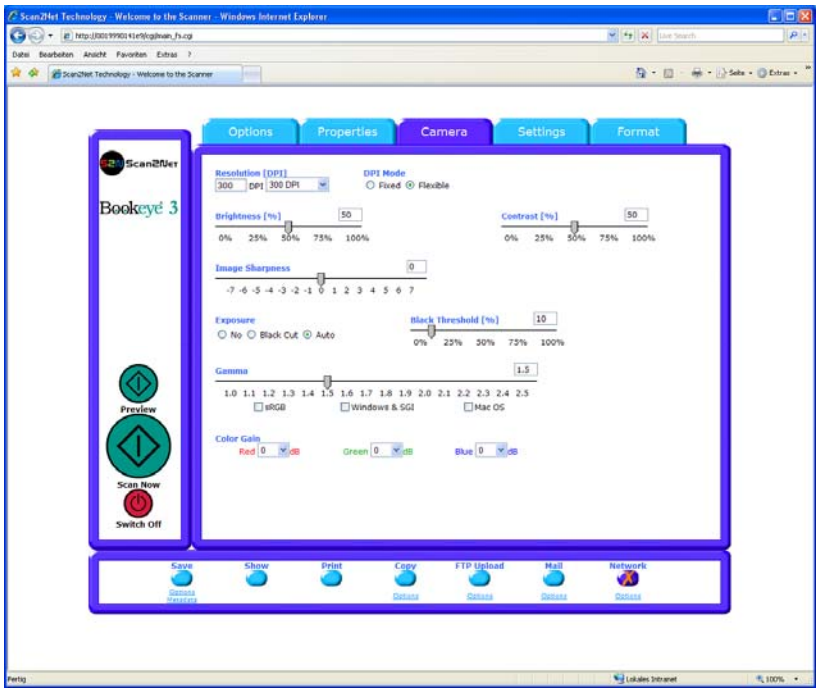
The ***Brightness*** slider defines the brightness of the resulting image. Lower brightness values make the image darker.

The ***Contrast*** slider defines the contrast of the resulting image. Higher contrast values show more details. If scanning in binary (i.e. Line Art, Photo Mode), the behavior of the contrast slider changes. If the ***Auto Threshold*** is off, the slider has no function at all. If the If the ***Auto Threshold*** is on, the contrast slider defines the reaction time of the automatic background tracker.

Note: Use the contrast slider carefully in the automatic threshold mode because if set to the extremes, unexpected image artifacts occur.

The ***Image Sharpness*** slider invokes an advanced algorithm which sharpens the image according to the local content of a given area.

The ***Exposure*** function sets the threshold value for the black cut function or for the auto exposure function.



Picture 21: Black Threshold slider

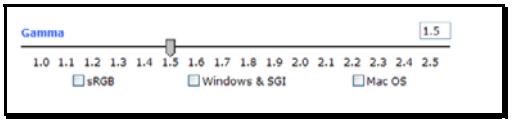
No disables the exposure function.

When **Black Cut** or **Auto** is selected an additional slider is displayed.

Black Cut 0 (zero) to 100	Sets the threshold for **black**. All pixel values found in the image below the selected value are set to black. Result: The image contrast is improved.
Auto 0 (zero) to 100	Sets the threshold for **black** and activates the **automatic exposure** control. This function searches the image for the highest and the lowest pixel value. The highest pixel value is defined as “white”. Is the lowest pixel value higher than the threshold it is defined as “black”. Otherwise all values below the threshold are defined as “black”. Result: Automatic contrast control and the image contrast is improved.

Note: The ***Exposure*** function is not displayed in the color modes **Line Art** and **Photo**.

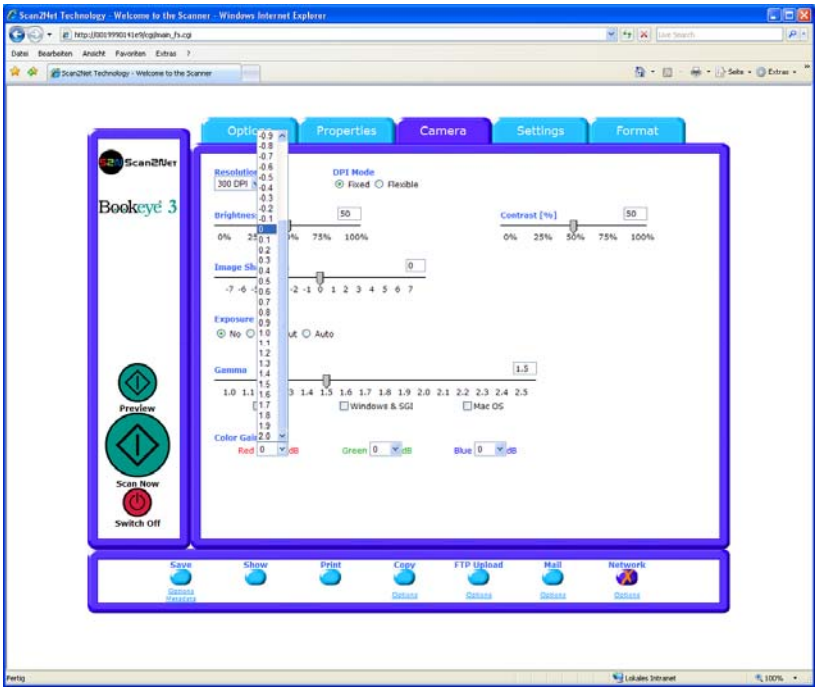
The ***Gamma*** slider does the gamma correction directly inside the camera electronics.



Picture 22: Gamma slider with preselection buttons

Three typical values are predefined on the ***Preselection*** buttons.

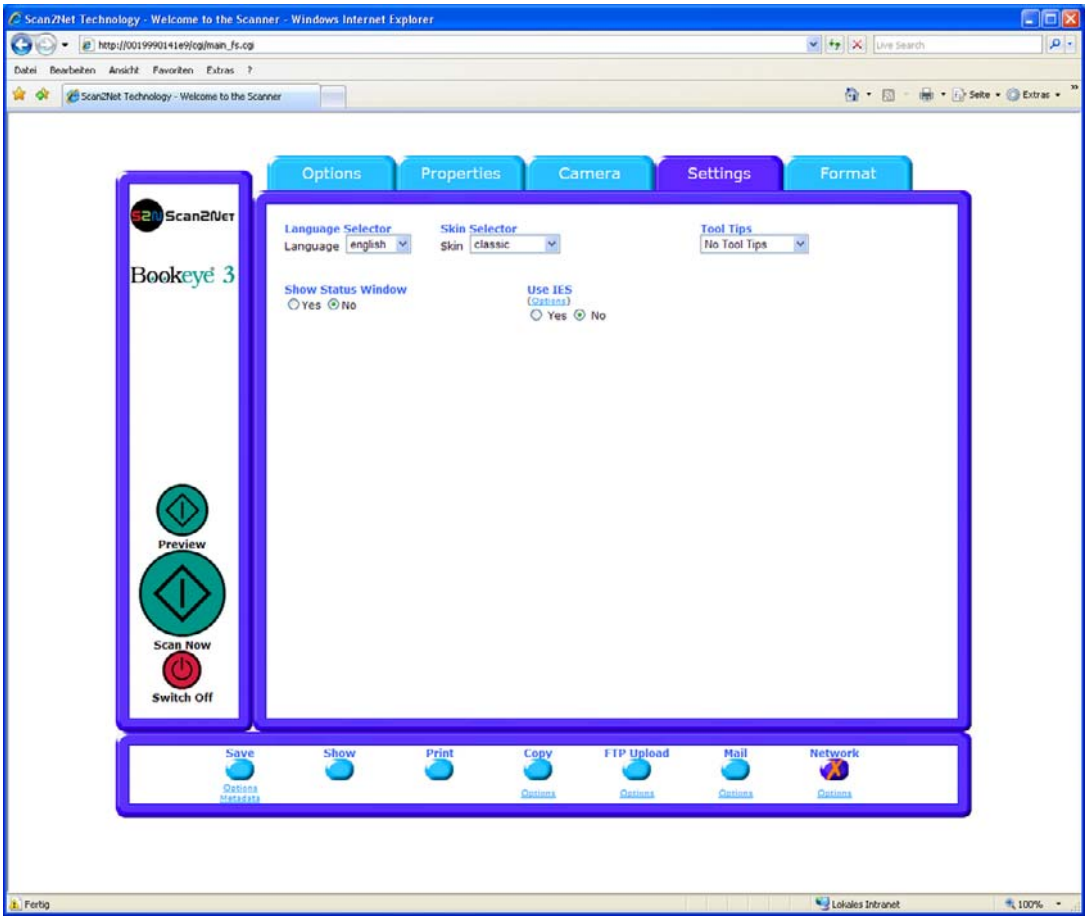
The ***Color Gain*** drop down list changes the gain on a specific channel. This function is used to eliminate any color shift or tints from the background.



Picture 23: Color Gain screen

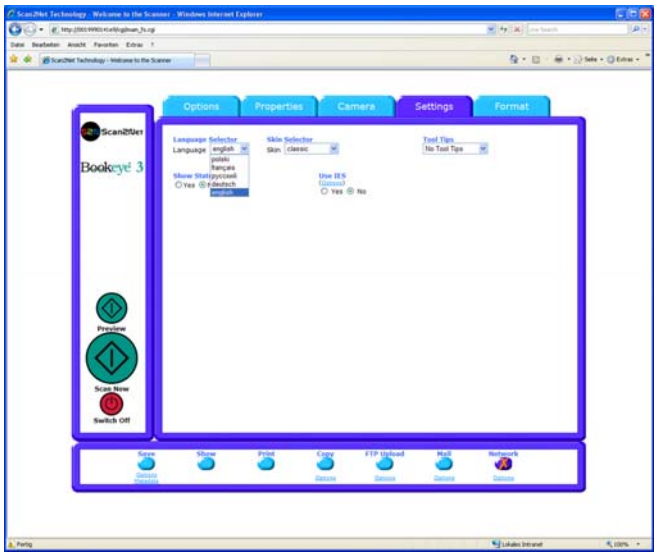
Note: The ***Color Gain*** controls are only displayed in color modes **24bit Color** and **8Bit Color**.

B.1.5 The Settings Screen



Picture 24: Settings screen

This screen allows the user to set some secondary parameters.



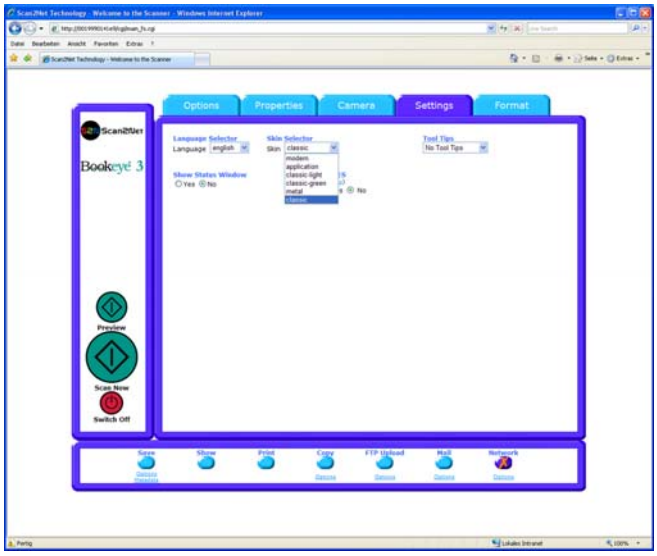
This screen allows the user to set some secondary parameters.

The ***Language Selector*** offers a drop down list of languages for the scanner's user interface.

Currently available languages are **english**, **deutsch**, **français**, and **russian**. If **russian** is selected, all text are displayed in Cyrillic fonts.

The S2N user interface shows all texts in the selected language immediately after switching.

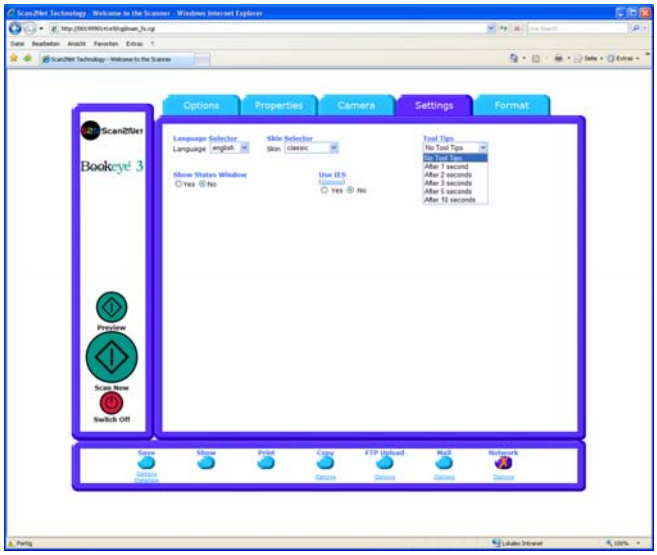
Picture 25: List of available languages



Picture 26: Skin Selector

The ***Skin Selector*** offers different surfaces (skins) for the user interface.

Currently available surfaces are **modern** and **application, metal** and **classic**, **classic-green** and **classic-light**. Other skins can be designed and integrated by the user.

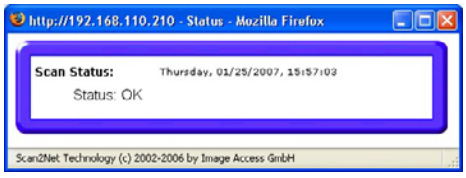


Picture 27: Tool Tips

Tool Tips can be activated to inform the user with short texts about the available functions in each screen.

With the drop down list the delay time can be defined. Selecting **No Tool Tips** switch this function off.

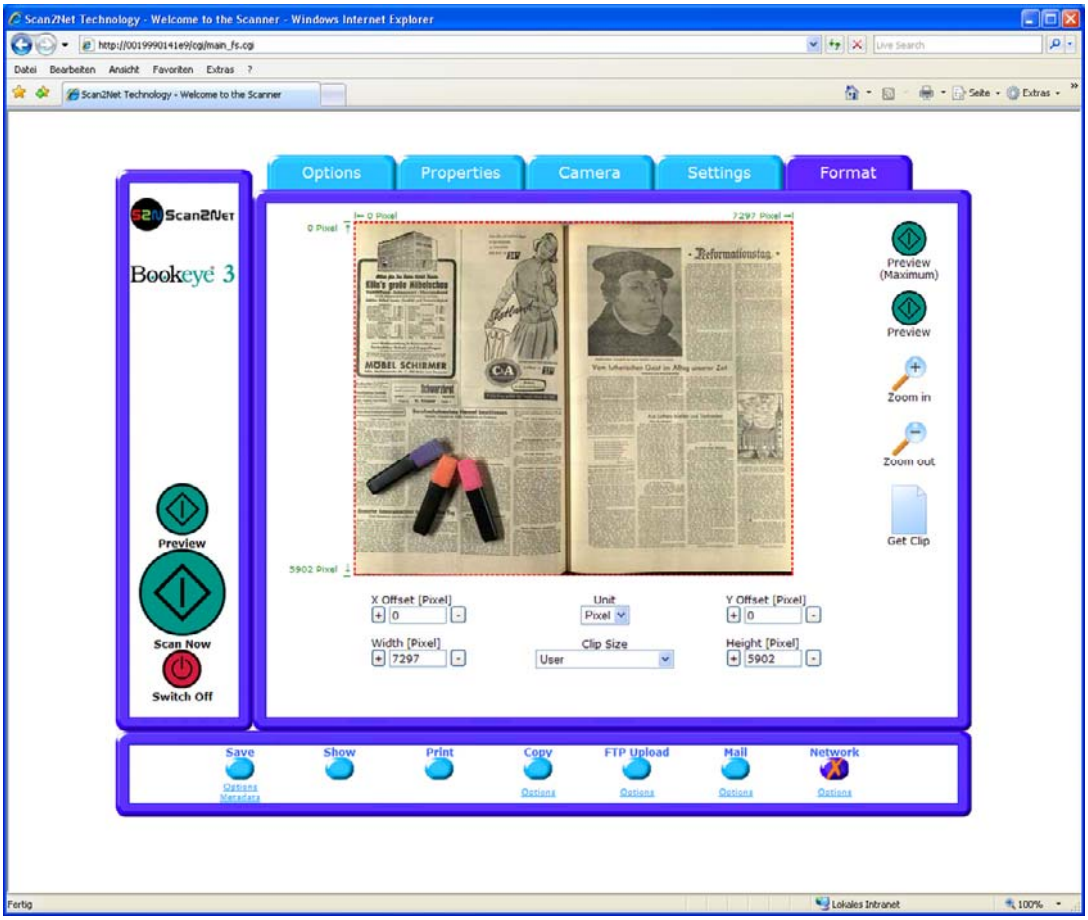
Show Status Window turns on and off the display of a scanner status window. Click the **Yes** button to activate this window.



Picture 28: Status window

Use IES opens an additional window to show the demo mode of the **Image Enhancement System**. The **IES** allows to modify specific scan parameters.

B.1.6 The Format Screen



Picture 29: Format screen

When selecting this screen the image scanned and displayed at last is shown. The dimension of the image depends on the selected format in the **Properties** screen.

The **Preview (Maximum)** button allows to rescans the complete document area. The image will be displayed in the preview area of the **Format** screen.

The **Preview** button rescans the document area which is set in the **Properties** screen. To get a new preview scan, first change to the **Properties** screen, set the new format, and finally return to the **Format** screen. Click on the **Preview** button to display the new image.

To select a specific area of the image, click with the mouse in the preview area and drag a rectangle. Dragging with the mouse the rectangle starts in the upper left corner and ends in the lower right corner.

Click the **Zoom in** button to display the selected area of the image in detail.

Picture 30: Rectangle dragged with mouse

Picture 31: "Zoom in" result

Click the **Zoom out** button to return to the previous dimension of the image.

Click the **Get Clip** button to get the selected area of the image in full resolution in a separate window.

The control fields **X Offset** and **Y Offset** allow the user to position the rectangle.

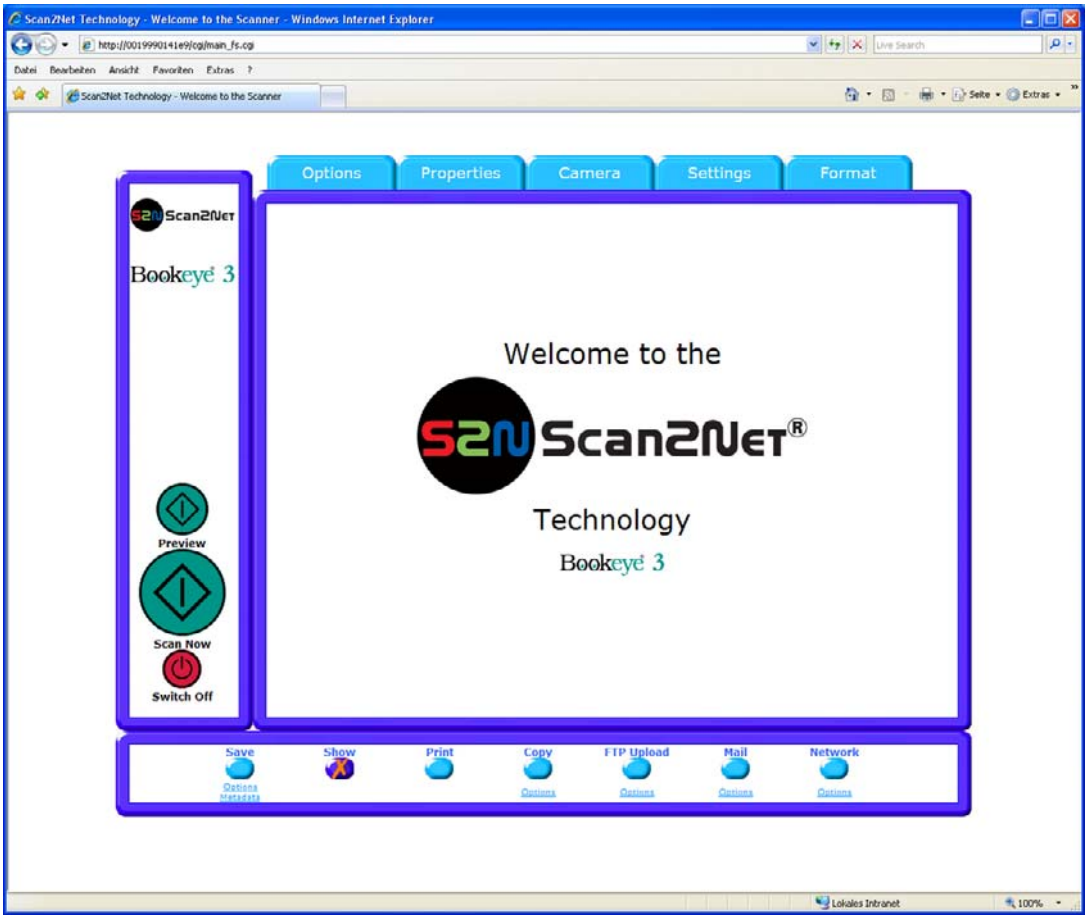
The control fields **Width** and **Height** allow the user to set the dimension for the rectangle of the specific area.

The control field **Unit** allows the user to select from a list the unit of measurement for the specification of the rectangle.

The control field **Clip Size** offers a list of formats for the specific area. The content of the list depends on the size of the preview scan area. I.e. the smaller the preview scan area, the shorter the list of available formats.

B.1.7 Output Options

There are various output options available on a Scan2Net scanner. In most cases, the button ***Show*** is activated.



Picture 32:Output Option Show

A scan will open a new browser window and display the image on the screen. The output options described in this chapter are accessible via the above menu but are also present in the upper part of each scanned image.

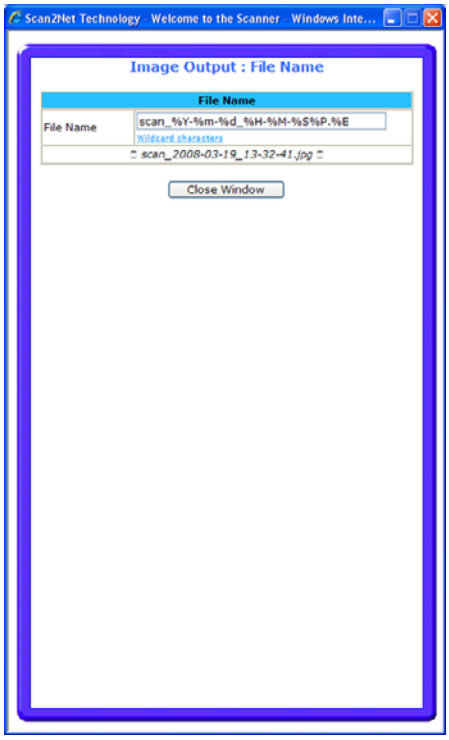
Picture 33: Output Options in Scan Window

Their functionality is identical, therefore only the output option screen is described here.

B.1.7.1 Output Option Save

This output option scans to the local disk drive. After the scan is performed, a window opens and the default file name is shown.

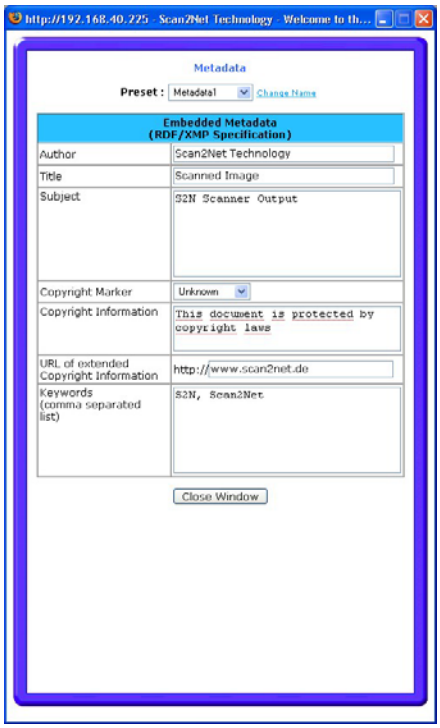
The user can select local and network drives for the save location and can also change the file name before it is actually stored.



Picture 34: Image output option

The **Options** key below the **Save** button is used to define some parameters for the file name of the image.

The **Wildcard characters** key below the file name gives additional information concerning the parameters of the file name.

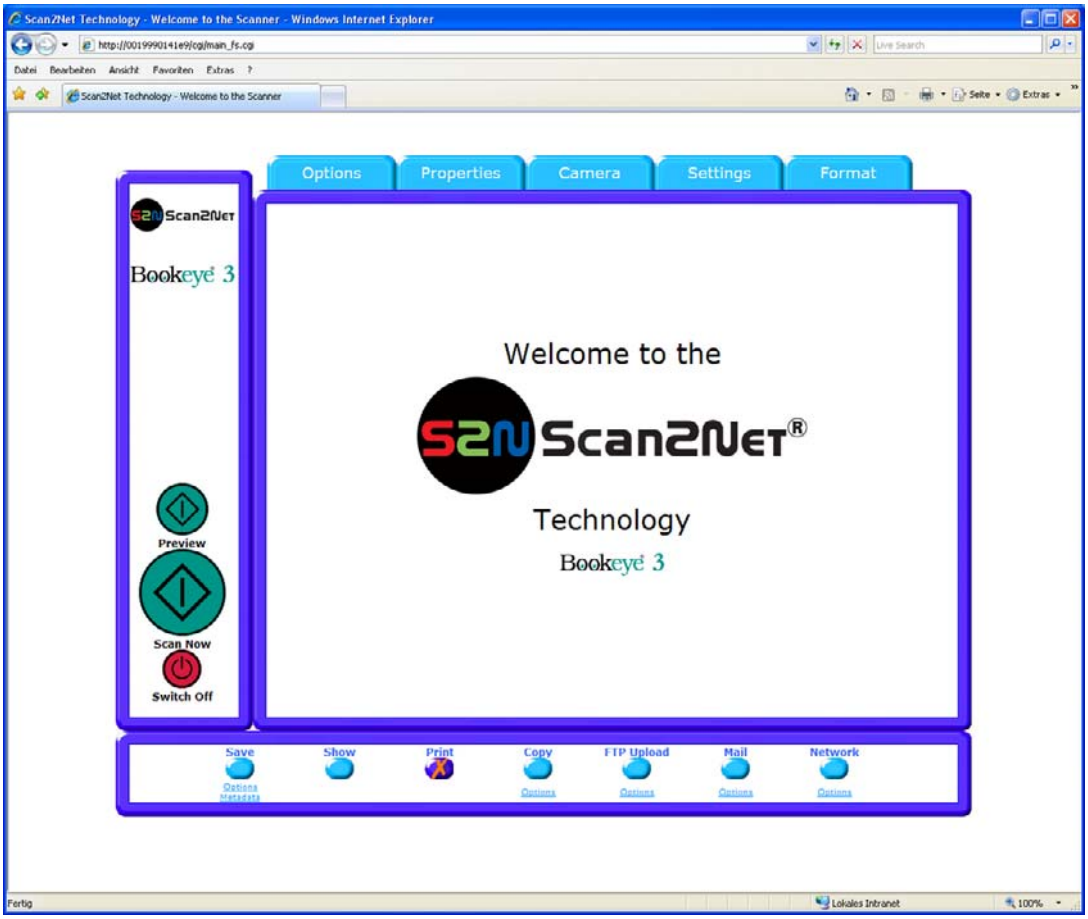


Picture 35: Metadata mask

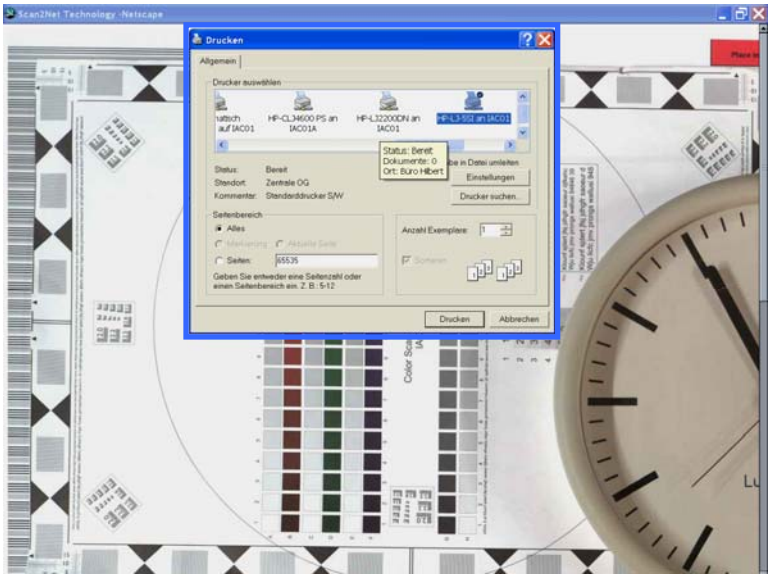
The **Metadata** key allows the user to define some information which will be added to each file header.

B.1.7.2 Output Option Print

This output option prints to the locally available printers. After the scan is executed, the standard windows printer interface is opened. The user can select one of the locally available printers.



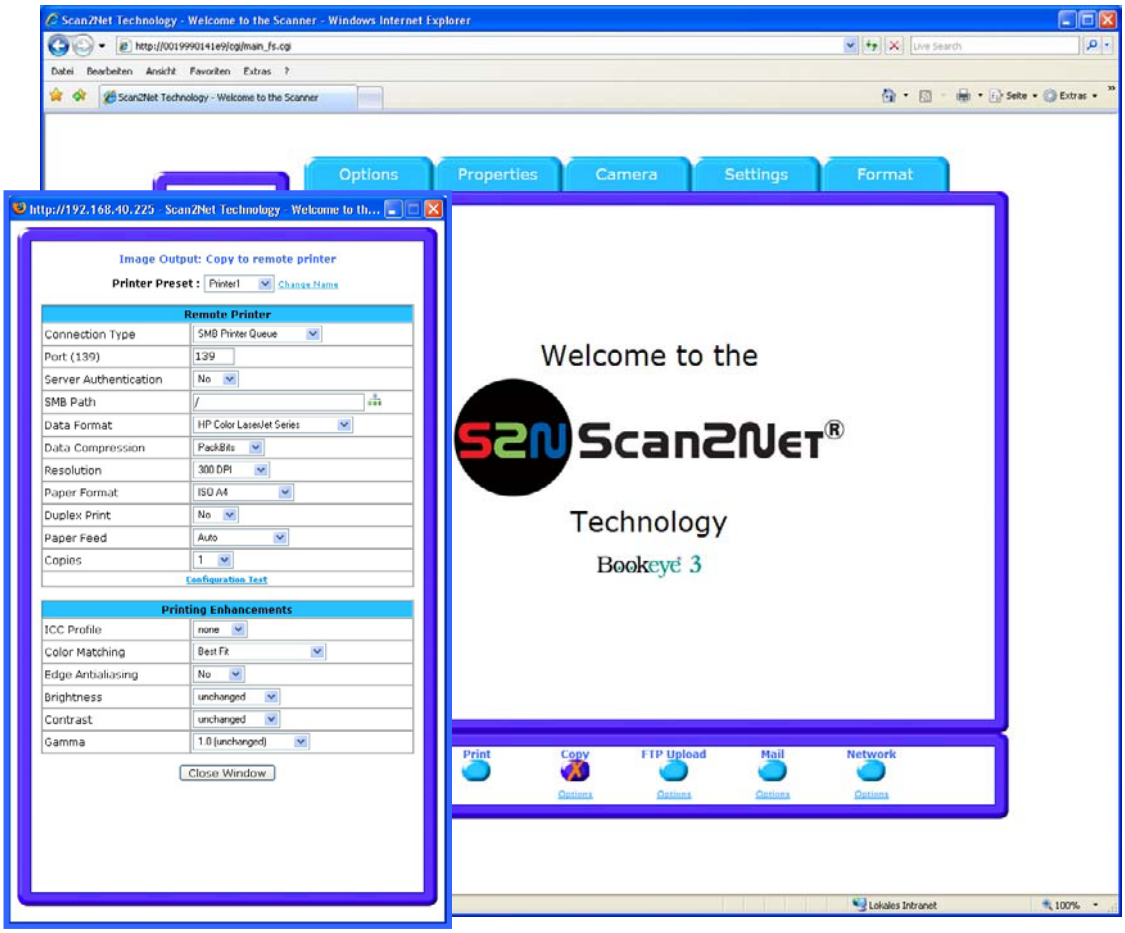
Picture 36: Output Option Print



Picture 37: Available List of Printers for Option Print

B.1.7.3 Output Option Copy

This output option prints directly to a previously installed network printer. The **Option** key is used to configure the remotely connected printer.



Picture 38: Output Option Copy

Remote Printer	Description
Printer Preset	Choose a printer configuration out of five possible sets of parameters. If you click on “Change Name” you can change the name of this set.
Connection Type	Choose between **IP Networking** and **SMB Printer Queue**.
Address **(with IP Networking only)**	Enter the IP address of the printer.
Port (9100) **(with IP Networking only)**	Enter the IP port of the remote printer. Default is port 9100.
Connection Timeout **(with IP Networking only)**	Choose the timeout for connecting to the remote printer before the connection is aborted.
Port (139) **(with SMB Printer Queue only)**	Enter the IP port of the remote printer. Default is port 139
Server Authentication **(with SMB Printer Queue only)**	Select **Yes** or **No**

Remote Printer	Description
SMB Path **(with SMB Printer Queue only)**	Enter the path of the directory where the printer is established.
Login **(with SMB Printer Queue only)**	Enter the login for the printer if Server Authentication is set to **Yes**.
Password	Enter the password for the printer if Server Authentication is set to **Yes**.
Data Format	Choose the data format of the remote printer. Selectable are Postscript, Postscript with framing HP/PJL communication and HP DesignJet (HP/RTL) compliant printers. Changing the data format will change some of the options in this configuration window.
Data Compression	Select the compression method if the printer type offers it.
Resolution	Select the printing resolution. If an exact 1:1 copy of the scanned document is required, the scanning resolution and printing resolution must match.
Paper Format **(not with all printer types)**	Choose the paper format for output.
Duplex Print	Switch on/off printing both sides of a paper sheet (duplex).
Paper Feed	Select the paper feed method for the remote printer. The menu may contain manual paper feed, various paper trays and paper rolls.
Copies	Number of copies of each print

Printing Enhancement

Quality Level **(only DesignJet)**	Toggle the printing quality from draft to high quality. Only available with HP/RTL compliant remote printers.
ICC Profile	Select the profile used for printing. One can upload a set of printer ICC profiles in the Poweruser setup. Only available with HP/RTL compliant remote printers.
Color Matching	Select the color rendering method for the remote printer. **Best Fit:** The printer uses the nearest matching colors of its own color space. **Printer Color Range**: The printer uses the full range of its color space despite of the color definition of the scanned document. Only available in conjunction with HP/PJL communication framework.
Edge Anti Aliasing	Switch on/off printer featured edge anti aliasing. Only available in conjunction with HP/PJL communication framework.

Note: Each change of an entry field is transferred to the scanner immediately.

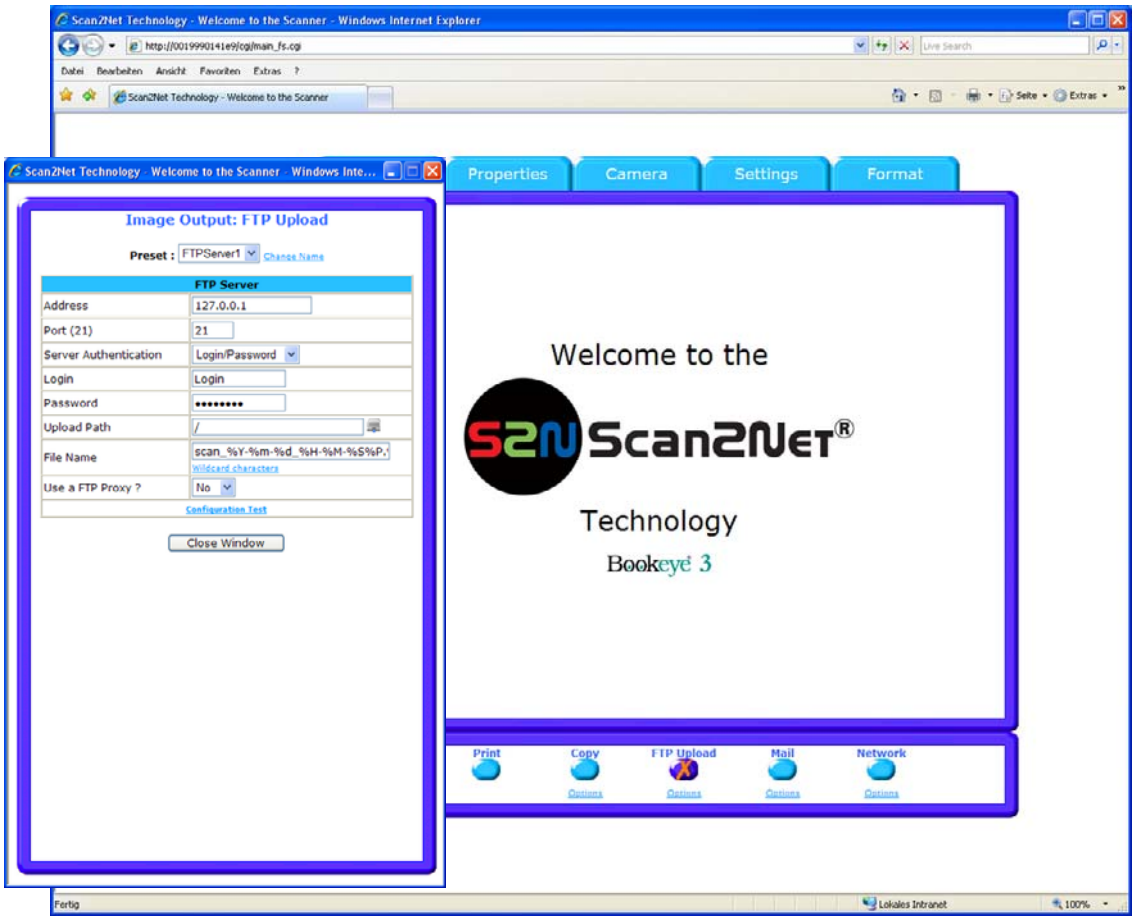
Printing Enhancement

Brightness	Modify the brightness level of the print. Only available with HP/RTL compliant remote printers.
Contrast	Modify the contrast level of the print. Only available with HP/RTL compliant remote printers.
Gamma	Modify the printer gamma. Only available with HP/RTL compliant remote printers.

Note: Each change of an entry field is transferred to the scanner immediately.

B.1.7.4 Output Option FTP Upload

The scanner can directly scan to a FTP server.



Picture 39: Output Option FTP Upload

The **Option** key is used to configure the FTP interface. A configuration window will pop up.

FTP Upload	Description
Address	Enter the IP address of the remote FTP server.
Port (21)	Enter the IP port of the remote FTP server. Default is port 21.
Server Authentication	Select the authentication method.
Login	Enter the login name.
Password	Enter the password for the login at the remote FTP server. The password is stored using encryption.
Upload Path	Enter the upload path at the remote FTP server, starting with / (root). Click on the icon, to browse the directory structure of the remote FTP server. Note: You must have a valid login for browsing the directory structure.
File name prefix	Enter the file name prefix. A time stamp will be added to this prefix to form the complete file name.

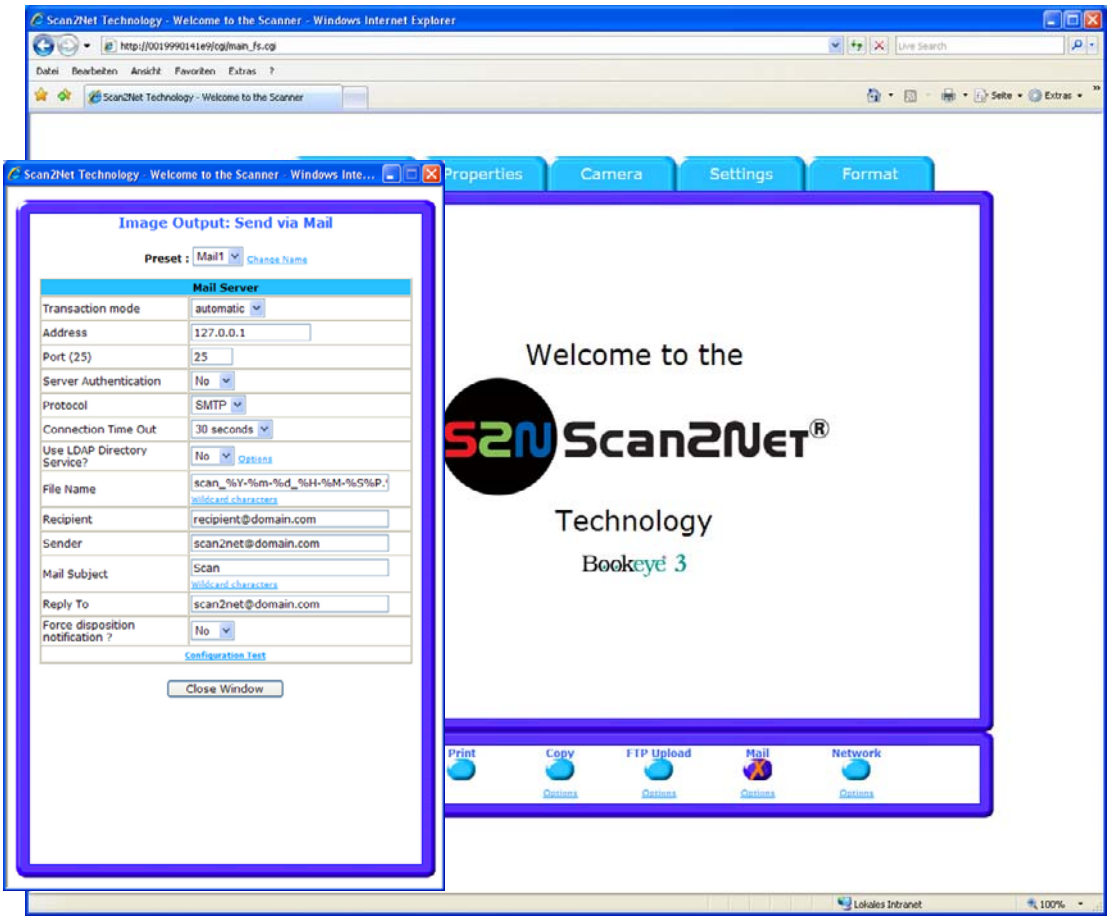
Continued on the following page.

FTP Upload	Description
Use a FTP Proxy ?	Switch on/off the use of an FTP proxy for connecting to a remote FTP server outside the local network.
FTP Proxy Address **(if "Use FTP Proxy" is set to "Yes")**	Specify the IP address of the FTP proxy.
Port **(if "Use FTP Proxy" is set to "Yes")**	Specify the IP port of the FTP proxy.

Note: Each change of an entry field is transferred to the scanner immediately.

B.1.7.5 Output Option Mail

The scanner can directly e-mail each scan.



Picture 40: Output Option Mail

The **Option** key is used to configure the mail interface. A configuration window will pop up.

Mail Upload	Description
Transaction mode	Choose if all scanned documents will be send to the same receiver (automatic batch mode) or if the scanner should ask after every scan (interactive).
Address	Enter the IP address of the outgoing mail (SMTP/LMTP) server.
Port (25)	Enter the IP Port of the outgoing mail server. Default: Port 25.
Server Authentication	Set to **YES** if the mail server requires an authentication.
Login	Enter the user name for authentication at the outgoing mail server.
Password	Enter the password for authentication at the outgoing mail server. The password is stored using encryption.

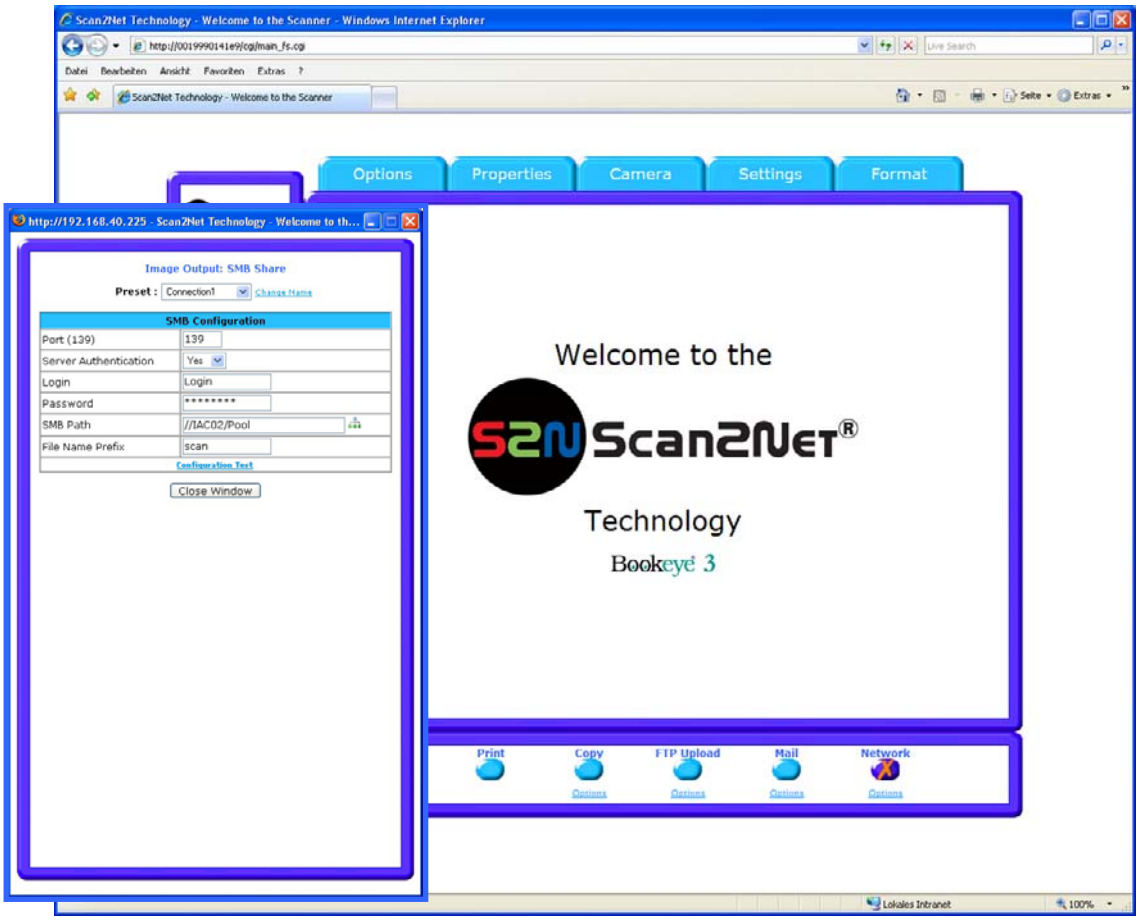
Continued on the following page.

Mail Upload	Description
Protocol	Choose the connection protocol. SMTP is the most common protocol.
Connection Timeout	Choose the timeout for connecting to the outgoing mail server before the connection is aborted.
File name prefix	Enter the file name prefix. A time stamp will be added to this prefix to form the complete file name.
Recipient	Type in the recipient of the e-Mail. Format: fully qualified e-Mail address.
Sender	Type in the sender of the e-Mail. Format: fully qualified e-Mail address.
Mail Subject	Type in the e-Mail subject. (Optional)
Reply To	Type in a reply address for answers. (Optional) Format: fully qualified e-Mail address.
Force disposition notification?	Request for a notification when the recipient has opened the mail. Note: This feature is not supported by all mail servers or clients.

Note: Each change of an entry field is transferred to the scanner immediately.

B.1.7.6 Output Option Network

SMB is a network protocol which is used by Microsoft windows based networks.



Picture 41: Output Option Network

The **Option** key is used to configure the SMB Upload interface. A configuration window will pop up.

SMB Configuration	Description
Port (139)	Enter the IP port of the SMB network communication. Default is port 139.
Server Authentication	Set to **YES** if the mail server requires an authentication.
Login	Enter the user name for the login at the Windows workstation or file server which you want to connect to.
Password	Enter the password for the login at the Windows workstation or file server which you want to connect to. The password is stored using encryption.
SMB Path	Enter the upload path at the Windows workstation, starting with a single / (root). If you click at the icon you can browse the workstation/server list and the directory structure of the Windows workstation/file server. **Note:** You must have a valid login for browsing the directory structure.
File name prefix	Enter the file name prefix. A time stamp will be added to this prefix to form the complete file name.

B.1.8 The Setup Screen

Although most settings on the system level can be performed only in the **Poweruser** access level, some user defined settings are available on the start screen. The **User** access level also allows showing certain information about the system like power up time, remaining lamp life time or firmware version.

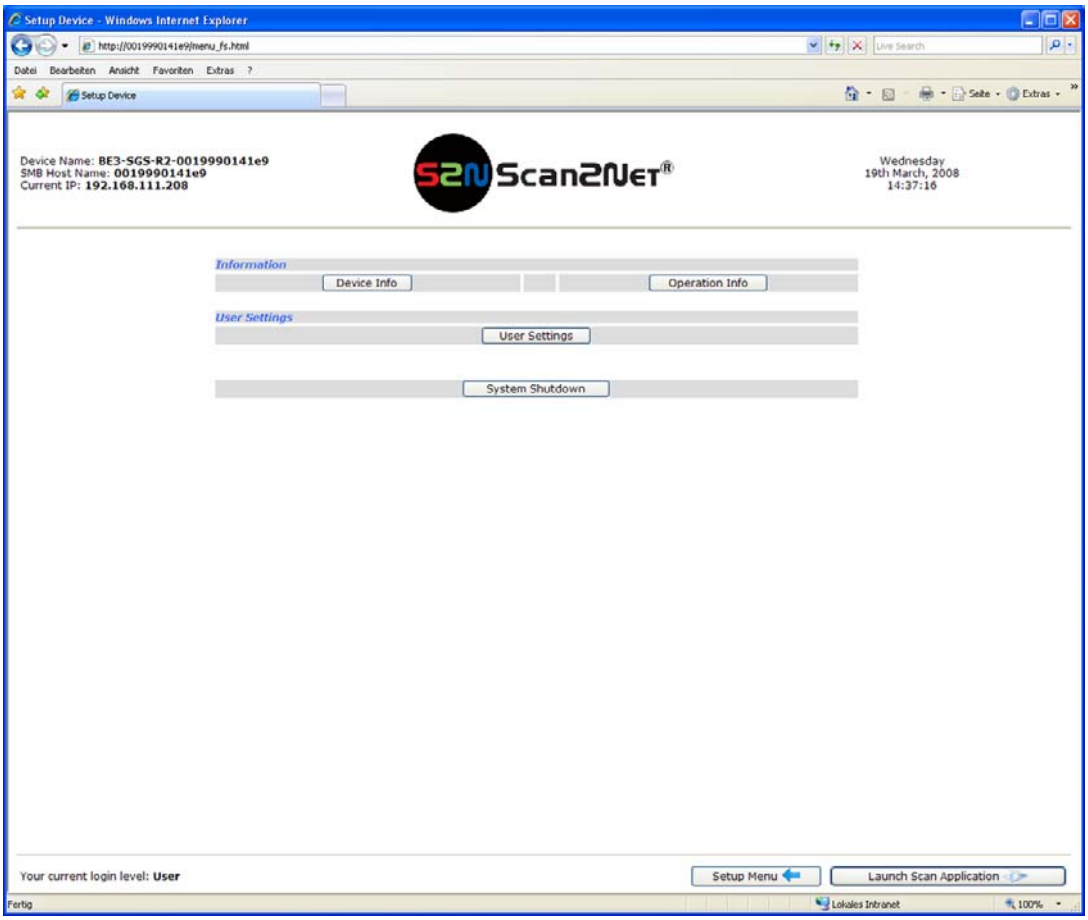
Start your browser and enter the IP address of the scanner to get access to the scanner. The start screen (see Picture 10) will open.

On the start screen click the button Setup Device.

The next screen shows the login levels **User**, **Poweruser** and **Admin**.

Picture 42: Login screen

Click the button User.



Picture 43: User screen

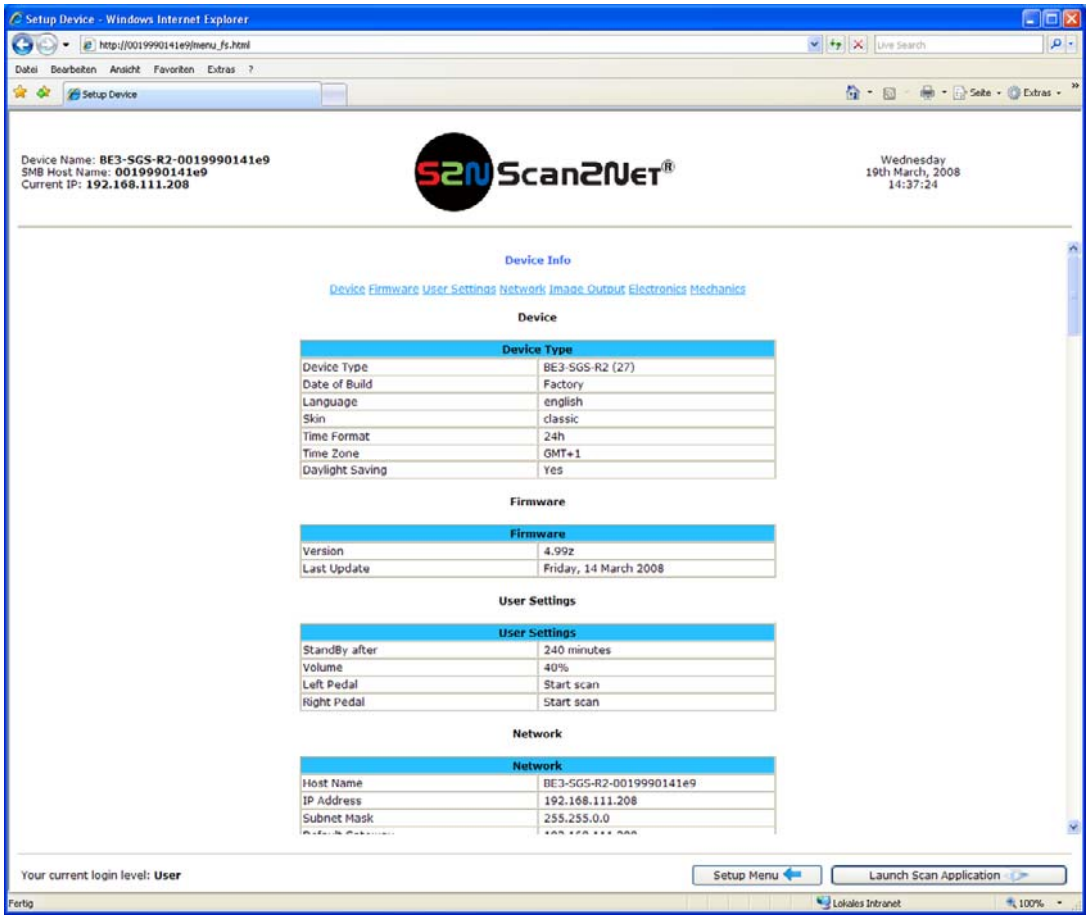
The user screen is divided into two sections.

The section **Information** shows some details of the scanner and gives a general operation information.

The section **User Settings** allows the user to define some basic parameters of the scanner.

In the section **Information** click the button Device Info and the following list will be displayed.

Specific information can be reached by clicking the links below the headline **Device Info** or by scrolling through the list.



Picture 44: Device Info screen

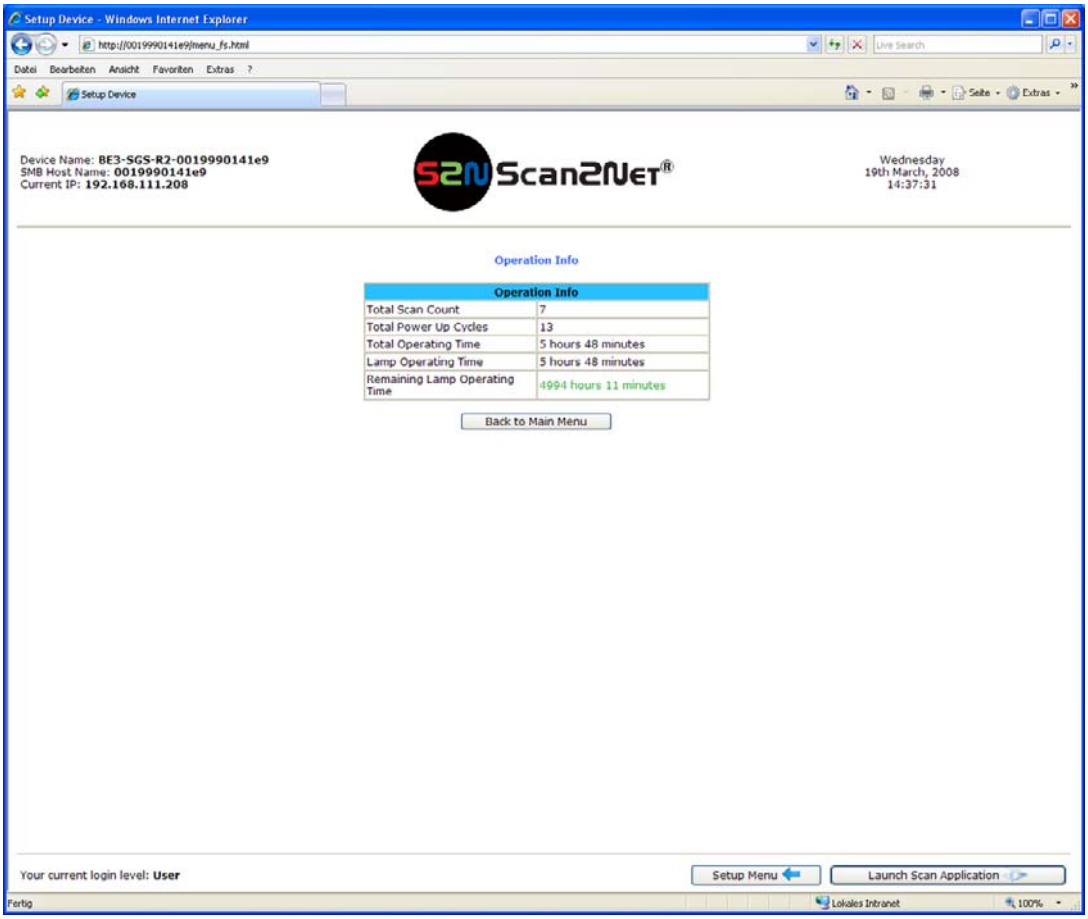
The tables following the keyword show the current status of the Bookeye® 3 scanner.

The most important information for users is the firmware version in the second table. Other information may be of interest if a service technician is onsite or the hotline is called.

To return to the **USER** screen (Picture 43) scroll down completely and click the button Back to Main Menu or click on the “Return” button in your browser.

In the section **Information** the button Operation Info opens the following list.

It shows various scan counters and elapsed time described in the following table.



Picture 45: Operation Info screen

Field	Description
Total Scan Count	The total number of scans performed since the scanner left the factory. Each CCD scan cycle is counted, regardless of it being a pre-scan or a full scan.
Total Power Up Cycles	The total number of power up cycles performed since the scanner left the factory. This function counts the start/stop button invoked cycles only.
Total Operating Time	The total operating time since the scanner left the factory. This is the on-time only, standby time does not count.
Lamp Operating Time	The total lamp operating time since the scanner left the factory. This is the on-time including the dimmed periods.
Remaining Lamp Operating Time	The typical remaining life time of the lamps. The Bookeye® 3 scanner life time is so long, that the lamps usually last for the life time of the device.

To return to the **USER** screen (Picture 43) scroll down completely and click the button Back to Main Menu or click on the “Return” button in your browser.

In the section **User Settings** click the button User Settings and the following screen will be displayed.

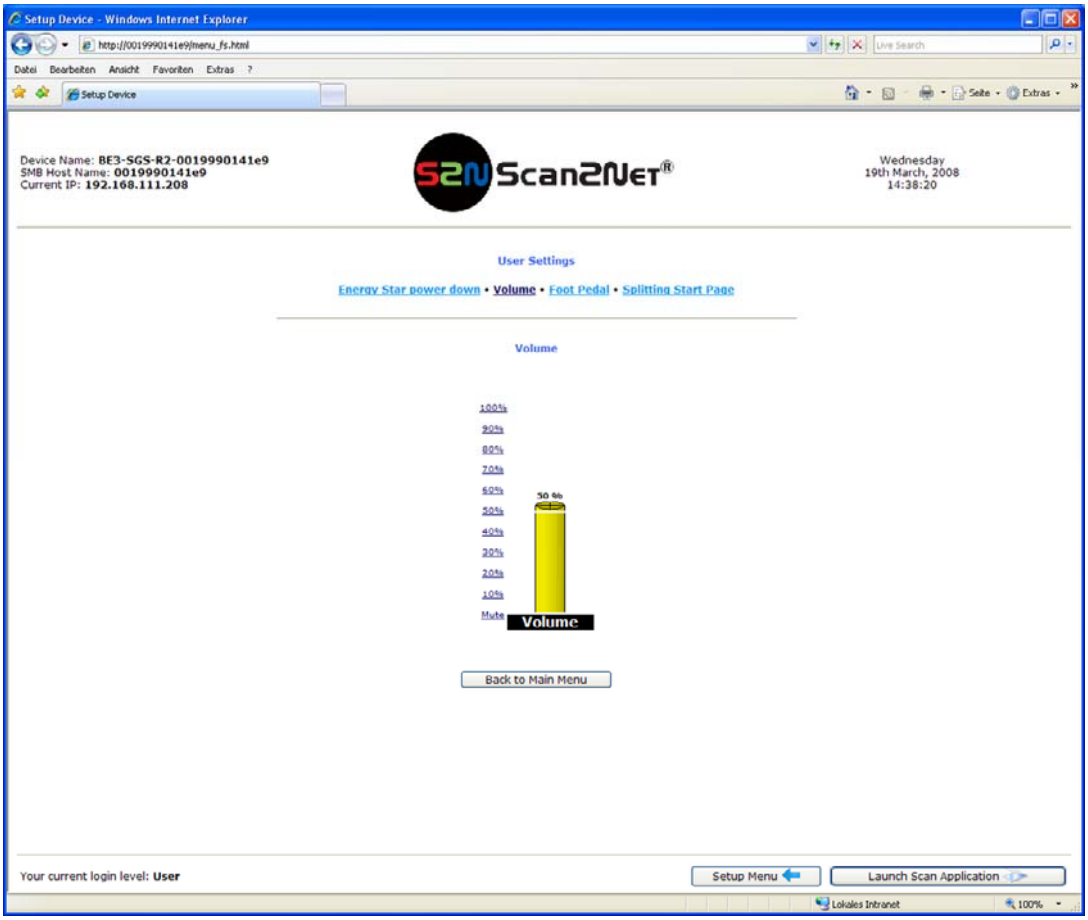
Picture 46: User Settings screen

The Bookeye® 3 scanner is Energy Star compliant. In stand-by mode it consumes only 5W of power. The Energy Star guidelines require the default time until the device goes into standby to be 15 minutes.

Use the function **Energy Star Power down** to set the time until the scanner goes into stand-by mode.

The user can modify the standby time by selecting a time period from the list. Picture 46 shows the list of available values. The list starts with 5 minutes and ends with four hours. This is the maximum time period defined through the Energy Star guidelines.

Select the desired time from the list.



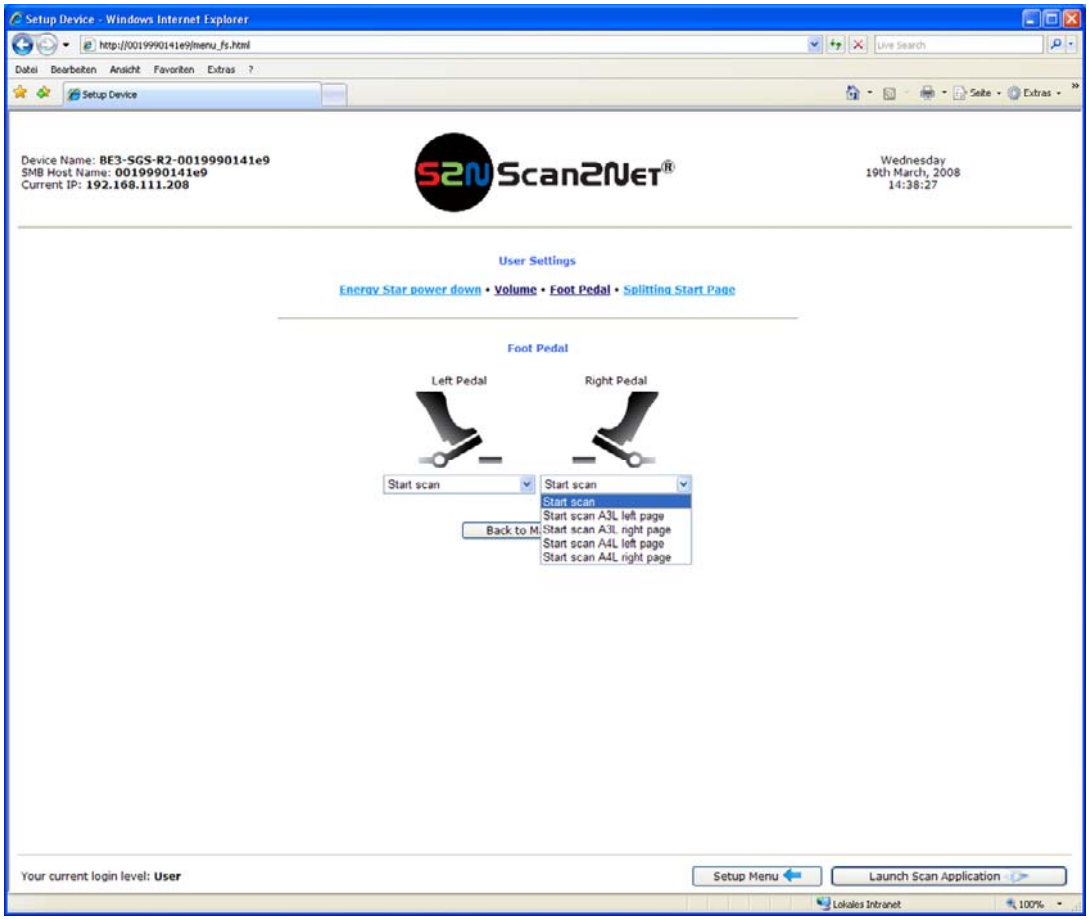
Picture 47: Volume level

Click the button **Volume** to set the loudspeakers volume of the scanner.

A screen opens and shows a graphic to symbolize the volume.

Click on the percentage value to change the volume level. The color of the graphic will change depending on the selected volume level.

Volume level	**Volume bar color**
Up to 30%	Green
40% to 60%	Yellow
70% or higher	Red



Picture 48: Foot pedal settings

The scanner has two connectors on its back to connect foot pedals. For each foot pedal a specific action can be defined.

Click the button **Foot Pedal**. Go to the left or right pedal drop-down list and select which action to take if the corresponding pedal is operated.

Drop-down list item	Function
Start scan	Starts the scan with the selected scan area size
Start scan A3L left page/right page	Starts the scan in ISO A3 landscape format at the left / right side of the document area.
Start scan A4L left page/right page	Starts the scan in ISO A4 landscape format at the left / right side of the document area.

Picture 49: Splitting Start Page

In some languages, books are printed from right to left. In these cases, it can be desirable to start the page splitting in the reverse order, i.e. starting with the right side followed by the left side in the second step.

Click the button **Splitting Start Page** and select either the left page or the right page as start page.

B.2 Laser guided Document Type Detection

This chapter is important to understand because it describes the most common scanning problems and their cure.

The Bookeye® 3 scanner has an auto focus system that actually stays in focus as the scanner sweeps from left to right over the scanning area. To achieve this, the pre scan must be able to capture the heights profile of the document. This is pretty simple while scanning a flat surface but becomes challenging if scanning a thick book.

The height profile is also necessary to move the light beams across the scanning area. The two lamps and the line CCD form an electronic gear. Details are described in the **Setup and Assembly Manual**.

The gear is adjusted at the home position (lowest position) during the setup process. If the height of the document is known at a given position, the lamps can compensate for with a change in the angle relative to the scanning position and therefore guarantee the best possible illumination.

The scanner also has a built in digital zoom. As the document gets closer to the scanning head the digital zoom is adjusted accordingly to keep the resolution and document size independent of its heights.

B.2.1.1 Description of the Laser Purposes

The Bookeye® 3 scanner comes with a built-in line laser that serves five different purposes.

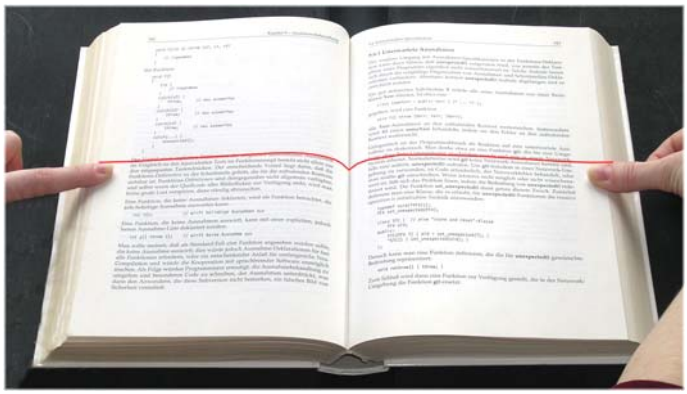
— During the setup procedure, the laser line helps to check the mounting position of the camera head. This is described in the **Setup and Assembly Manual**.

— The laser line is used to guide the user in positioning the document. The document should be positioned somewhere on the book cradle plates, oriented toward the center of the scanner. The laser line must cross the document preferably in an area that is not too dark.

— The user should align the document content in respect to the laser line. The automatic format detection will crop the document to a rectangular size but it cannot compensate for any skew.

Picture 50: Correct versa incorrect placement

— The area where the laser line covers the outer edges of the document is the only area, where the optional thumb removal function will work. The user should hold down the book only in these areas.



Picture 51: Holding down a book

— The scanner performs a pre-scan to detect size, elevation and location of the document. The pre-scan function uses the laser to adjust the focus in the following scan.

B.2.2 Scanning in Fixed Focus Mode

This is the simplest scanning mode. The focus is fixed to a known position that the user can change. See chapter B.1.2.2 for detailed description.

If the ***glass plate option*** is installed, this value is overridden and replaced with the auto-focus value measured during the installation of the glass plate option.

Not only the focus but also the lamps follow the virtual height of the document regardless of its real value. The scanner will not perform any pre-scan.

The digital zoom is adjusted for the predefined height, either from the “Fixed Focus Mode Settings” or the glass plate option; in such a way that the previously selected resolution is reached. If ***true dpi*** resolution is selected, the digital zoom is off and the scan will be made in the native optical resolution at the given distance between the document and the CCD.

B.2.3 Scanning in Flat Mode

This is also a simple scanning mode. The scanner performs a pre-scan and measures the height of the document. If the measurement does not produce any meaningful results, the keyboard will play the sound “Attention” and will display the message:

No focus found Retry? N= Stop Y=Start	After repositioning the document, press **Start** to retry or **Stop** to cancel and advance to the next step.
Use left cradle pos.? N= Stop Y=Start	The highest book cradle position is assumed to be the focal plane. Press **Start** to accept or **Stop** to cancel the scan.

The focal point and the lamps will follow the measured height of the document, which was determined during pre-scan.

The digital zoom is adjusted relative to the measured height so that the previously selected resolution is met. If ***true dpi*** resolution is selected, the digital zoom is switched off and the scan will be executed in the native optical resolution at the given distance between the document and the CCD.

Note: As long as the scan is not cancelled, all retries or changes of the document mode are completely transparent to the application. If the scan is finally cancelled, a “Stop Button Pressed” status is sent to the application.

B.2.4 Scanning in Folder Mode

This mode is similar to the flat mode, but it treats both sides of the document bed independently. The scanner performs a pre-scan and measures the heights of the document on the left side and the right side.

Picture 52: Scanning in folder mode

If the measurement does not produce any meaningful results the keyboard will play the sound “Attention” and the display will show the message:

No focus found Retry? N= Stop Y=Start	After repositioning the document, press **Start** to retry or **Stop** to cancel and advance to the next step.
Use cradle positions? N= Stop Y=Start	The left and right book cradle positions are assumed to be the focal plane. Press **Start** to accept or **Stop** to cancel the scan.

The focal point and the lamps will follow the measured heights of the two sides of the document which was determined during pre-scan. The focus plane and the position of the lamps make a step between the two different levels in the middle of the scanner. It is therefore necessary to center a folder to the scanner to achieve optimum results.

The digital zoom is adjusted relatively to the measured height so that the previously selected resolution is met. If ***true dpi*** resolution is selected, the digital zoom is switched off and the scan will be executed in the native optical resolution at the given distance between the document and the CCD.

Note: This will result in two different dimensioned images if they are not at the same height.

Note: As long as the scan is not cancelled, all retries or changes of document mode are completely transparent to the application. If the scan is finally cancelled, a “Stop Button Pressed” status is sent to the application.

B.2.5 Scanning in Book Mode

The scanner measures the height profile as it advances over the scanning bed in the pre-scan. The profile of a book has some typical characteristics that the scanner attempts to find. One of these is the book fold, which the scanner will find and use later for further compensation.

If the book is positioned so that the laser covers it fully and the background in the vicinity of the laser is not too dark, the curvature of the book will be found and the scanner will adjust focus, lamps and digital zoom to produce a perfectly flat image with the predefined resolution. The optional ***true dpi*** resolution in book mode reduces the image to the resolution at the home position (lowest) of the scanner.

If the measurement of the curvature does not produce sufficient results to identify the book fold, the sound “Attention” will be played and the display will show the message:

No book fold found. Retry? N= Stop Y=Start	After repositioning the document, press **Start** to retry or **Stop** to cancel and advance to the next step.
Use folder mode? N= Stop Y=Start	The scanner temporarily uses the folder mode. Press **Start** to accept or **Stop** to cancel the scan.

If the results of the measurement are still not sufficient, the keyboard will again play the sound “Attention” and the display will show the message:

No focus found Retry? N= Stop Y=Start	After repositioning the document, press **Start** to retry or **Stop** to cancel and advance to the next step.
Use cradle positions? N= Stop Y=Start	The left and right book cradle positions are assumed to be the focal plane. Press **Start** to accept or **Stop** to cancel the scan.

Note: As long as the scan is not cancelled, all retries or changes of document mode are completely transparent to the application. If the scan is finally cancelled, a “Stop Button Pressed” status is sent to the application.

C Tests and Troubleshooting

C.1 Troubleshooting Matrix

Fields with light blue background need the power user access level. All other fields are available to all users.

Problem	Possible cause	Action
Green start button does not light up.	No power	Check main outlet, power cord, power-on switch on the back of the device.
Start button does not power up the device.	Connector failure, software glitch …	Switch power off for at least 10 seconds. Retry after green start button lights up again.
Stop button does not power down the device.	Internal software hangs, application hangs …	End all applications and retry. If problem persists, press the **start button** for at least 10 seconds. Power up again.
Image is darker than expected.	The target used for white balance is much brighter than the scanning target.	Go to the White Balance function and modify the Brightness Correction setting.
Image is brighter than expected.	The target is much brighter than the target used for white balance.	Go to the White Balance function and modify the Brightness Correction setting.
Image is darker on one side than on the other side.	The electronics gear is out of sync.	Exercise the Scan Start procedure.
Image shows a color shift towards red (tint)	The target used for white balance is bluer than the scanning target.	Go to the RGB adjustments and lower the gain on red.
Image shows a color shift towards blue (tint)	The target used for white balance is more red than the scanning target.	Go to the RGB adjustments and lower the gain on blue.
Image shows a color shift towards red (tint)	The scanner receives significant amounts of infrared light (sun or spot lights) not visible to the human eye.	Change position, close blinds, dim or shut off any bright spotlights.
Image shows areas that are overexposed and too bright.	The scanner receives too much ambient light from a point source like sunlight, spotlight etc.	Change position, close blinds, dim or shut off any bright spotlights.

Problem	Possible cause	Action
Image has unevenly spaced vertical stripes or streaks.	The electronics gear is out of sync.	Exercise the Scan Start procedure.
Image has evenly spaced vertical stripes or streaks.	50/60Hz interference from fluorescent ceiling lights.	Change position, dim or shut off some lamps, change ceiling lights to electronic ballasts.
Image has horizontal stripes or streaks.	Improper white balance.	Exercise the White Balance procedure.
Scanning two A4 (letter) pages perfectly centered in A3 (double letter) format cuts of one side of the scan.	The scanner's optical middle (in the horizontal direction) is lost or misaligned.	Exercise the Scan Start procedure.
A small portion of the lower side of the target is missing in the image.	The scanner's optical center (in the vertical direction) is lost or misaligned.	Go to the Scan Center function and lower the value.
The image shows an extra small portion on the lower side of the target	The scanner's optical center (in the vertical direction) is lost or misaligned.	Go to the Scan Center function and raise the value.
The image is out of focus on a flat target with significant contrast, book cradles in their lowest position and flat mode scanning.	The reference focal point is lost or misaligned.	Exercise the Autofocus procedure.

D Technical Data

D.1 Scanner Specifications

Scan Area

Maximum Scan Area [pixel]	10640 x 7441 pixels
Maximum Scan Area [mm]	900 x 630 mm
Optical Resolution	300 x 400 dpi
Resolution	75 – 400 dpi

Luminosity

Scanning	4500 LUX
Stand-by (300 sec):	1000 LUX
Stand-by, idle	0 LUX (lamps off)

Lamps:

High Power White LED	UV- and IR-radiation free
Lifetime	50.000 hours on-time

Book Cradle:

Maximum load / book cradle plate	15 kg / 33 lbs

D.2 Ambient Conditions

Operating Temperature	+5 to +40° Celsius
Storage Temperature	0 to +60° Celsius
Relative Humidity	20 to 80% (non-condensing)
Ambient luminance	≥ 300 Lux
Noise Level	< 50 dB(A) (Operating) < 30 dB(A) (Stand-by)

D.3 Electrical Specifications

This device is Energy Star compliant.

Voltage	110–240 VAC
Frequency	50/60 Hz

Power Consumption

Standby	6 W
Self-test mode	150 W
Start procedure	260 W
Standby, operational, lamps off	105 W
Standby, operational, lamps on	140 W
Operating	275 W
Pre-Scan	170 W

Moving the book cradle (lamps on)

Both plates simultaneously	165 W
Single plate	150 W

Moving the book cradle (lamps off)

Both plates simultaneously	130 W
Single plate	115 W

D.4 Dimensions and Weight

Scanner outer dimensions (without lamps)	1250 x 900 x 780 mm (H x W x D)
	49,2 x 35,4 x 30,7 inches
Scanner outer dimensions (lamps attached)	1250 x 1500 x 780 mm (H x W x D)
	49,2 x 59,0 x 30,7 inches
Total weight of scanner (without glass plate), ready to use	65 kg / 143 lbs
Dimensions Transport Box (contains main body, camera head in separate box, lamps, camera neck, test target folder, assembly material, tools and cables)	600 x 1520 x 1100 mm (H x W x D) 23,6 x 59,8 x 43,3 inches
Weight Transport Box:	55,5 kg / 122,1 lbs
Weight of camera head box:	17 kg / 37,4 lbs
Total shipping weight	137,5 kg / 302,5 lbs

D.5 CE Declaration of Conformity

The undersigned, representing the manufacturer:

Image Access GmbH

Hatzfelderstrasse 161 – 163

42281 Wuppertal, Germany

herewith declares that the

Product: Bookeye Planetary Scanners

Model Designation: BE3-AAA-BCd-XXX
with AAA = SCL or SGS or CGS
B = R or N
C = 1 or 2 or 3 (representing the size of the scan area)
d = + or not applicable
XXX = 12-digit serial number

Serial number: All

For unique identification of the product configuration, please submit the 12-digit serial number found on the product to the manufacturer.

Is in conformity with the following European standards and IEC directives:

EMC:

EMC Directive 89/336/EEC with amending directives 92/31/EEC & 93/68/EEC as per

EN 55022 Class B

EN 55024

EN 61000-3-2

EN 61000-3-3

Safety:

Low Voltage Directive (Safety) 73/23/EEC as per

EN 60950(A1/A2/A3/A4/A11)

UL 60950

Wuppertal, 25.02.2008

Thomas Ingendoh , President and CEO

D.6 FCC Declaration of Conformity

Responsible party:

Image Access GmbH

Hatzfelderstrasse 161 – 163

42281 Wuppertal, Germany

Tested To Comply With FCC Standards FOR HOME OR OFFICE USE

Product:	Bookeye Planetary Scanners
Model Designation:	BE3-AAA-BCd-XXX with AAA = SCL or SGS or CGS B = R or N C = 1 or 2 or 3 (representing the size of the scan area) d = + or not applicable XXX = 12-digit serial number
Serial number:	All

For unique identification of the product configuration, please submit the 12-digit serial number found on the product to the manufacturer.

This device complies with Part 15, Class B of the FCC Rules. Operation of this product is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

D.7 Safety Declaration

Product:	Bookeye Planetary Scanners
Model Designation:	BE3-AAA-BCd-XXX with AAA = SCL or SGS or CGS B = R or N C = 1 or 2 or 3 (representing the size of the scan area) d = + or not applicable XXX = 12-digit serial number
Serial number:	All

For unique identification of the product configuration, please submit the 12-digit serial number found on the product to the manufacturer.

This device complies with:

EN 60950 :2000

UL 60950

CSA C22.2 No. 60950

Thomas Ingendoh , President and CEO

For your notes