LithoTel

ColorLinx® 8

The Universal Solution for Press Side Color Management

Operation Manual

Version 8.0

December 2008

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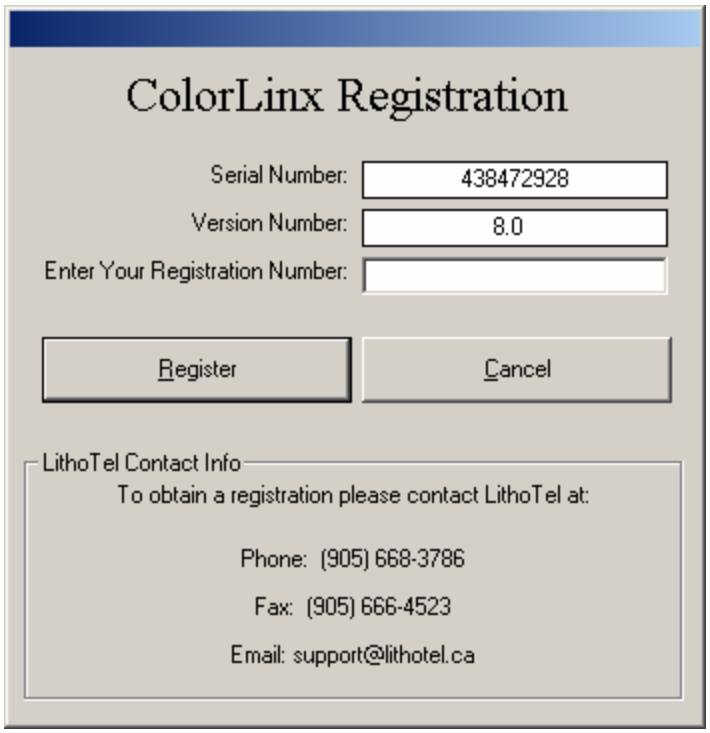
Registering ColorLinx

A registration form similar to the following will appear the first time you start the program.



A correct registration number must be entered before you can run the software.

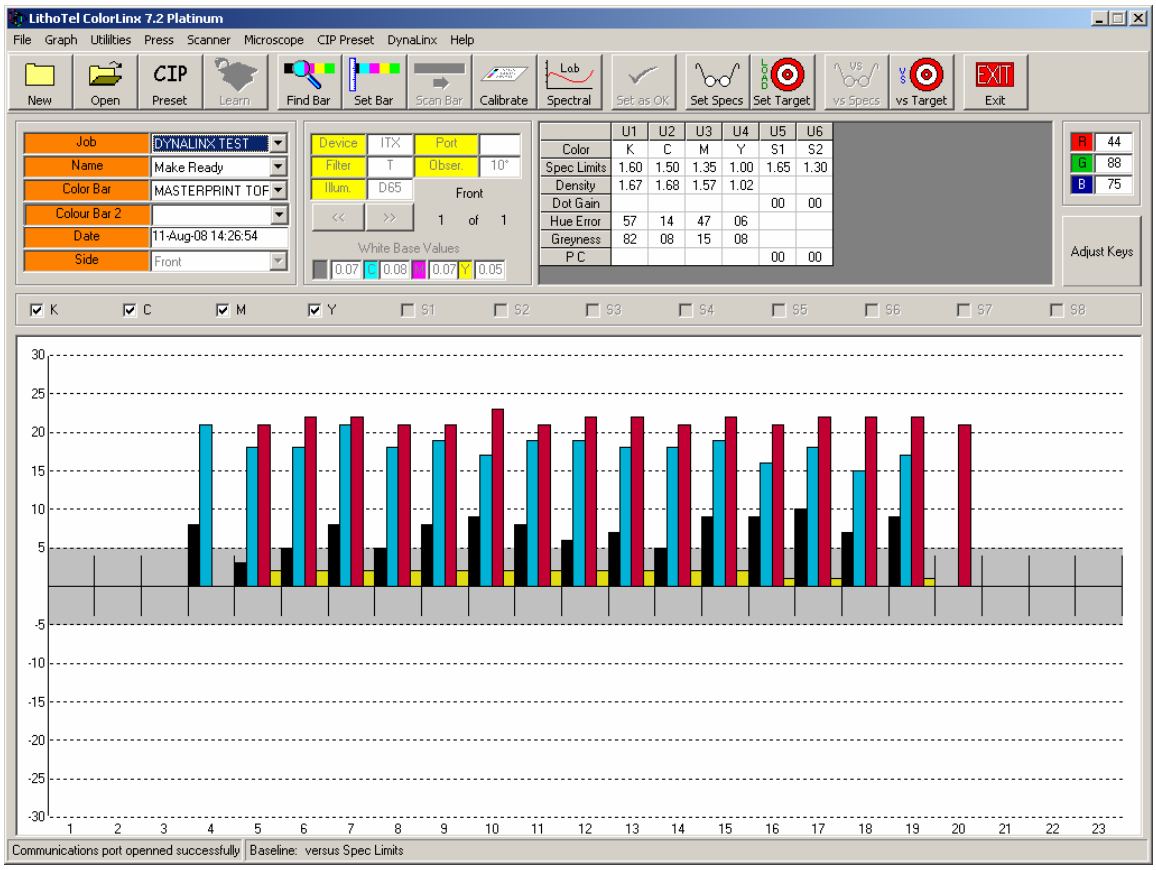
A registration number can be obtained by contacting LithoTel Software Design Ltd. at (905) 668-3786 between the hours of 8:00 AM and 5:00 PM EST.

After obtaining and entering a valid registration number, press the **Register** button to start the main program.

ColorLinx Overview

ColorLinx Overview

Welcome to LithoTel's ColorLinx 8! This section provides an overview of the main ColorLinx window, as shown below.



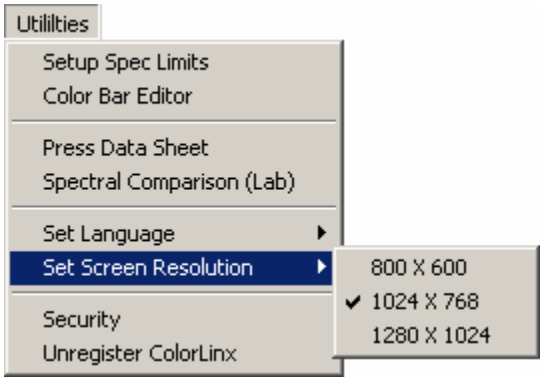
The main window is separated into a number of sections, each of which is described in greater detail below. These include:

- The Main Menu, which provides quick and easy access
- The Toolbar, which provides quick short cut buttons to many of the main menu's various functions.
- The Job Controls, which provides and sets information on the current job sheet.
- The Numerics Panel, which displays average statistics from the current scan.
- The Graph, which displays the density differences between the scan and baseline for each key on press.

Configuring ColorLinx

Setting the Screen Resolution

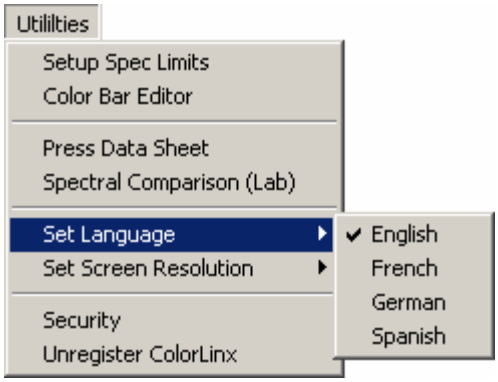
To select a particular screen resolution for displaying the main program window, click on **Utilities** > **Set Screen Resolution** from the pull down menu bar, and then choose the desired screen resolution.



The currently selected screen resolution is indicated by a check mark. ColorLinx supports screen resolutions between 800 x 600 pixels and 1280 x 1024 pixels.

Setting the Language

To select the desired language for ColorLinx, select **Utilities** > **Set Language** from the main window menu bar.

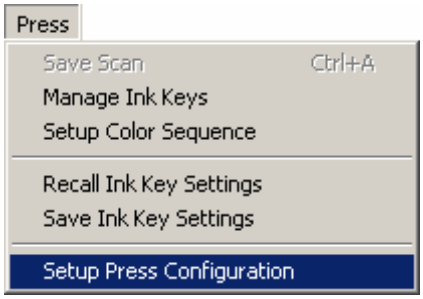


The currently selected language is indicated by a check mark. ColorLinx currently supports English, French, German and Spanish.

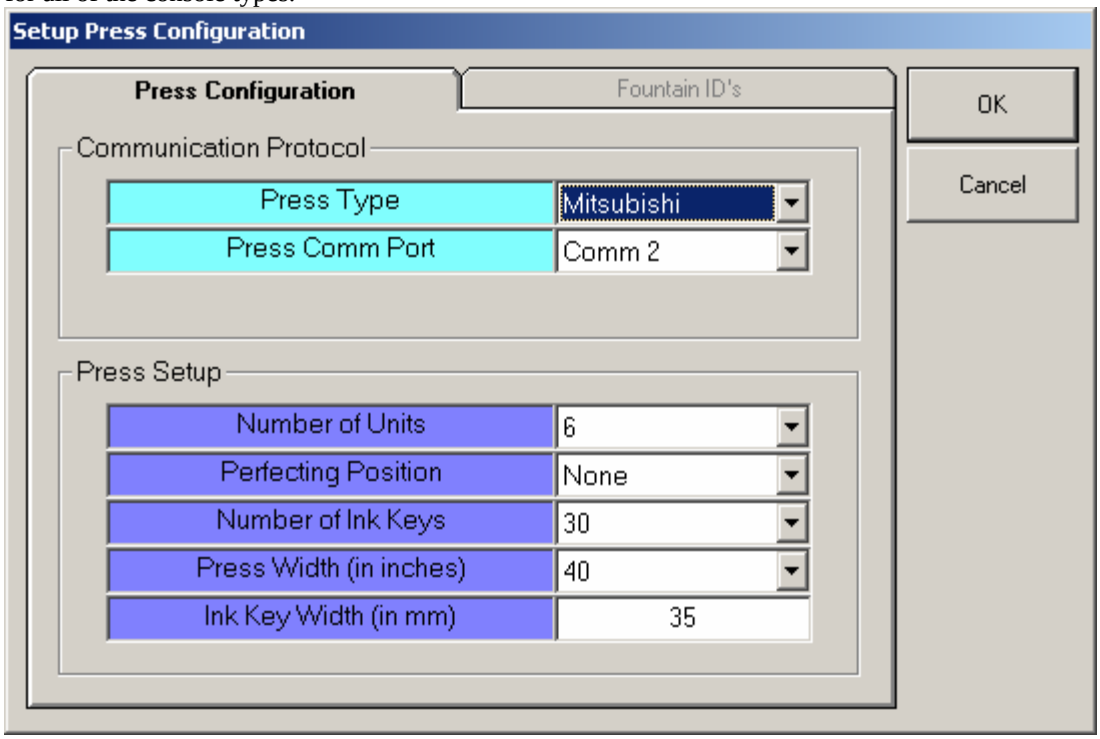
Setup Press Configuration

ColorLinx 8 currently supports Heidelberg, KBA, Komori, Mitsubishi, Perretta, and Roland press consoles. This section describes how to configure the software for a particular press configuration.

First, open the Setup Press Configuration window by selecting **Press** > **Setup Press Configuration** from the main pull down menu bar.



This window is organized into two different tabs. The first tab, **Press Configuration**, is enabled for all of the console types.



Press Configuration

On this tab the following parameters must be set:

- Press Type
- Press Comm Port
- Press IP Address and Port (for KBA Arcnet/Ethernet only)
- Number of Units

- Perfecting Position
- Number of Ink Keys
- Press Width (in inches)
- Ink Key Width (in mm)

Fountain ID's

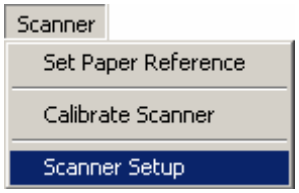
This tab is used to set the fountain identifiers for a Perretta press console. Each available fountain must have a unique identifier.

To accept any changes made to the press configuration, press **OK**. Otherwise, to return to the main program without applying any changes, press **Cancel**.

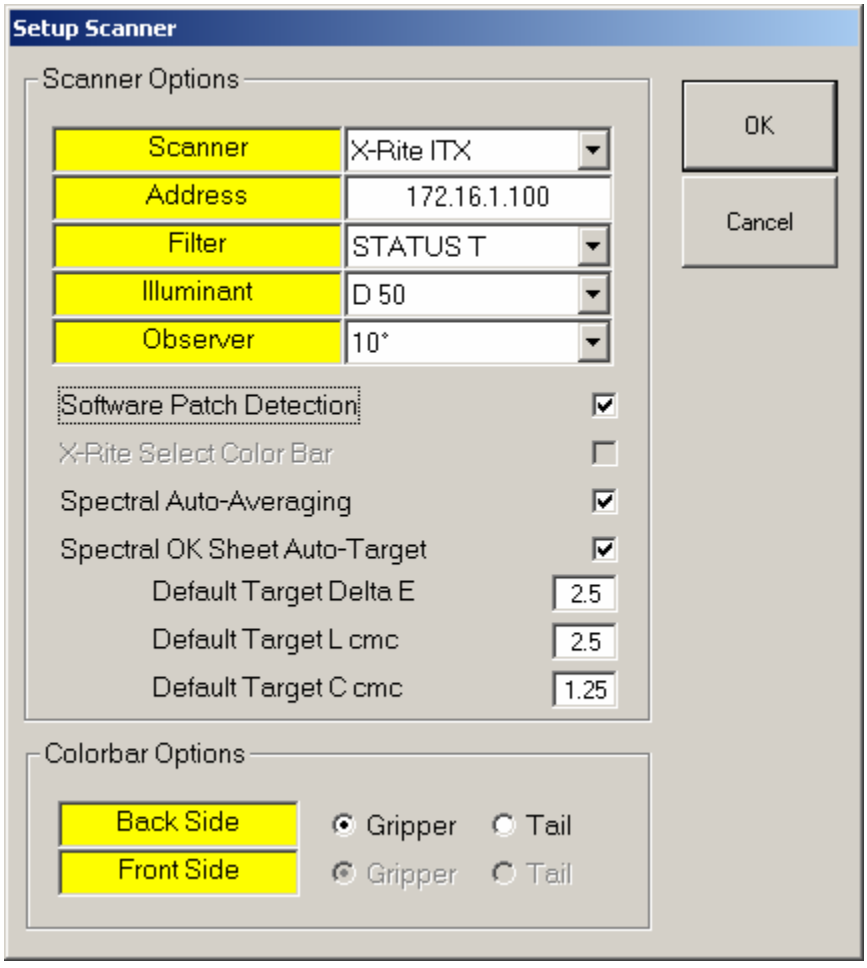
Setup Scanner Configuration

ColorLinx 8.0 currently supports the Techkon SpectroDrive and RS400/RS800 scanners, as well as the X-Rite IntelliTrax and ATS/ATD scanners.

To configure the software for a particular scanner, select **Scanner** -> **Setup Scanner** from the main pull down menu bar.



The Setup Scanner window will load.



Set the following scanner attributes, if enabled for the particular scanner chosen.

- **Scanner** - Sets the type of scanner.

- **Address** – Sets the network address for the IntelliTrax and SpectroDrive scanners.

or

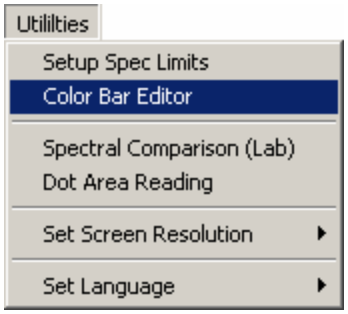
- **Port** - Sets the serial communications port for the ATS/ATD andRS400/RS800 scanners.
- **Filter** - Selects the filter used for densitometric readings.
- **Illuminant** - Selects the illuminant used for spectrographic readings.
- **Observer** - Selects the observer used for spectrographic readings.
- **Software Patch Detection** – Indicates whether improved software patch detection algorithms should be used; enabled by default.
- **X-Rite Select Color Bar** – Available only for the X-Rite ATS or ATD, this allows the operator to select from multiple bars when using the Find Color Bar operation. If this option is not selected, the color bar closest to the edge of the sheet is selected by default.
- **Spectral Auto-Averaging** is a feature available for scanning spectrophotometers. When enabled, the software will automatically saved averaged L*a*b* values read from solids in the colorbar and save them to the spectral package.
- Under the **Colorbar Options** section, you should also specify if the colorbar is printed on the gripper side of the press sheet, or on the tail side of the press.

To return to the main program, press **OK** to accept changes made to the scanner setup, or **Cancel** to ignore any changes.

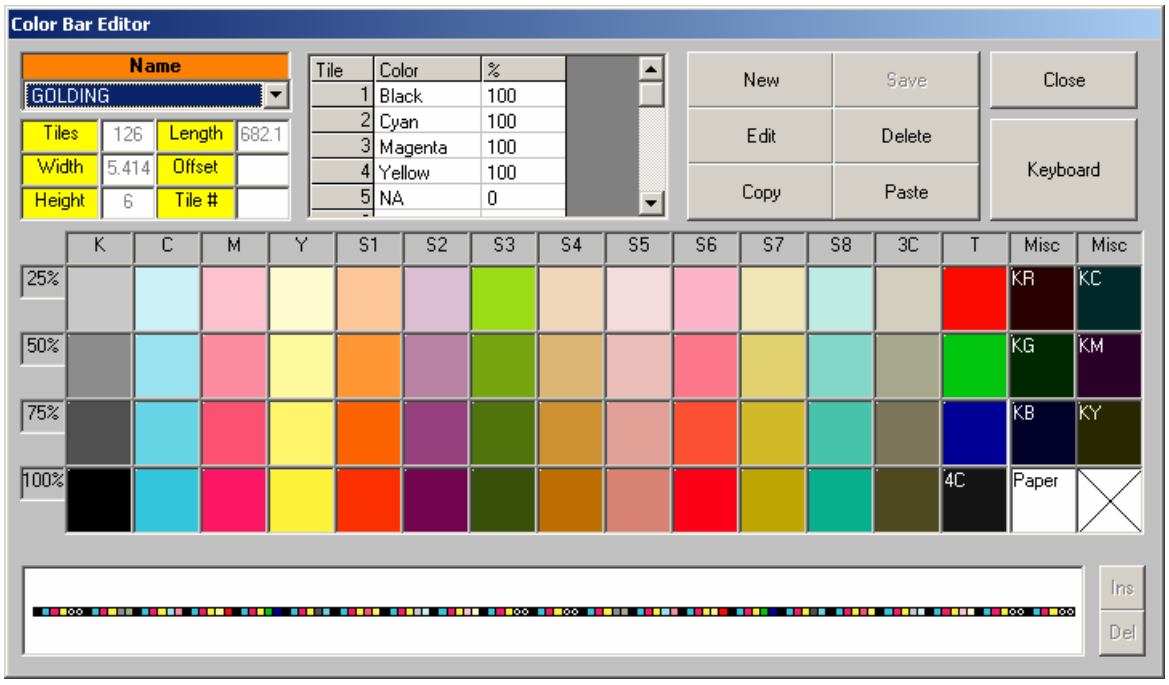
Color Bar Editor

ColorLinx has a built in Color Bar Editor that allows you to configure the system to scan almost any bar. The only limitations are that every patch must be the same width, and the patches meet the minimum size requirements for the scanner you are using.

To start the color bar editor, select **Utilities > Color Bar Editor** from the main pull down menu.



The Color Bar Editor allows you to create new color bars, as well as edit or delete existing bars.



Create a New Color Bar

To create a new color bar:

1. Press the **New** button.
2. Enter a **Name** from the bar using the keyboard or virtual keyboard.
3. Set the number of **Tiles** for the bar.

4 Set the **Width** of the tiles.

5 Set the **Height** of the tiles.

6 Recreate the bar you will be scanning by clicking on the appropriate tiles in the color palette.

7 Press the **Save** button to add the new bar to the library.

Copy and Paste

The Copy and Paste buttons can be used to expedite the process of creating a color bar by copying a section and pasting it repeatedly.

To use the Copy and Paste buttons:

1 Enter the set of color bar tiles you wish to repeat. Use the white tile in the color pallet to enter in any non-repeatable elements (traps, screens, etc.) that can be changed after the copy and paste.

2 Select the set of tiles you've entered by dragging and clicking on them inside the tile list at the top of the window, between the color bar **Name** and the **New** button.

3 Press the **Copy** button to store the selected tiles to memory.

4 Select the tile that you wish to begin pasting the copied tiles into, typically the first tile after the set of tiles you've just copied.

5 Press the **Paste** button. Each time the Paste button is pressed, the copied tiles are pasted into the bar, and the current tile advanced. Pressing the button multiple times can be used to fill the entire bar.

6 When finished pasting, go back to the non-repeatable elements and manually fill these in.

7 Press the **Save** button to add the bar to the library.

Editing a Color Bar

Using the color bar editor, you can also quickly modify previously saved color bars from the library and save then with a different name.

1 Click the **Edit** button on the window. The name of the color bar will clear from the description box, allowing you to rename the color bar and update its properties.

2 Make any changes to the color bar as needed and type in a new name in the description box.

3 Select the **Save** button to add the bar to the library.

Deleting a Color Bar

This option should be used when a color bar is no longer in service, or has been configured incorrectly and saved. Note that ColorLinx will not allow you to delete a color bar as long as there are Job scans in the database that still reference that bar. In order to delete a color bar proceed as follows:

1 Find the bar you wish to delete in the drop down **Name** list.

2 Click on the **Delete** button from the Color Bar Editor window. If the color bar is not being used by any jobs in the database, it will be deleted.

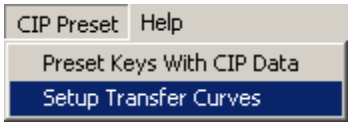
3 If you are finished using the Color Bar Editor, click on the **Close** button to exit.

Setting Up the Transfer Curves

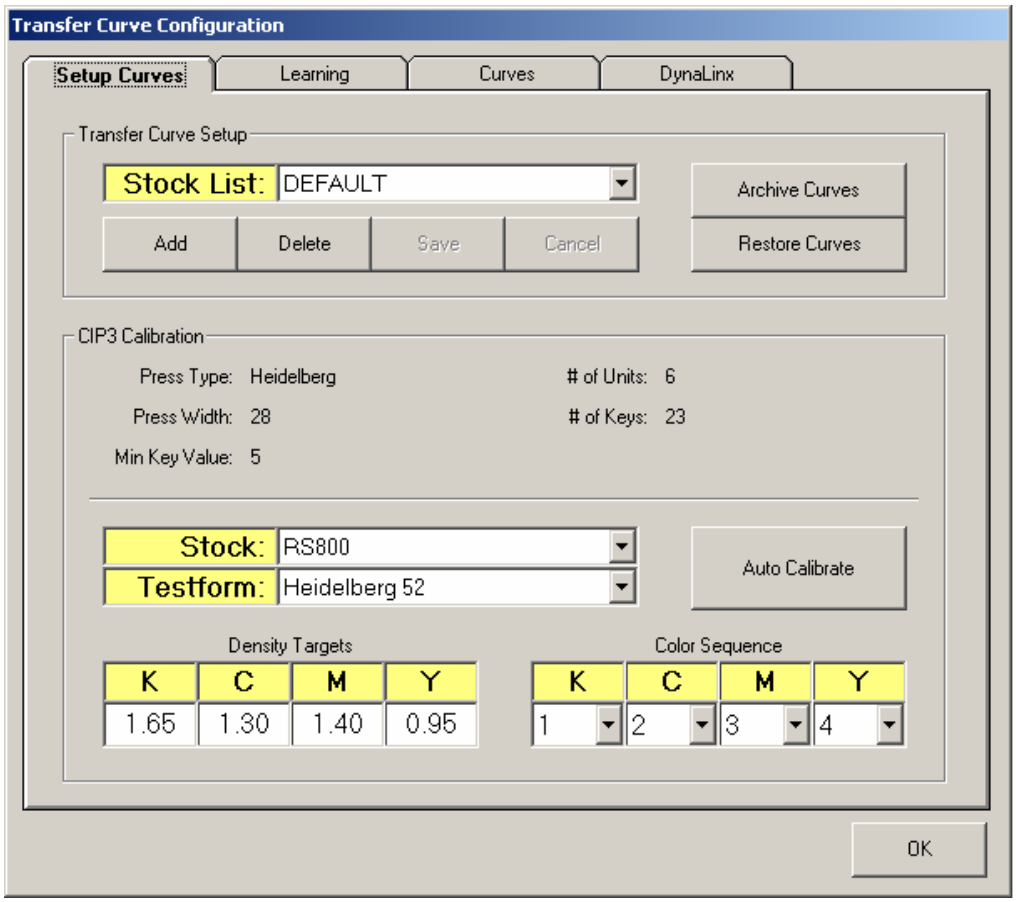
When LithoTel performs an installation of ColorLinx that will include CIP presets, and extensive Transfer Curve Calibration Test is run on all house stocks. Once the software is calibrated, the presets will normally produce 85%-95% of acceptable color after the first pull.

Over time, changes in consumables and zero set fluctuations may cause the accuracy of the presets to vary from this optimum range. ColorLinx has several options to adjust the transfer curves to ensure that the presets are always as accurate as possible.

To edit the transfer curves, select **Setup Transfer Curves** from the **CIP3 Presets** pull down menu.



The Transfer Curve Configuration window appears. This window is separated into four tabs: **Setup Curves**, **Learning**, **Curves** and **DynaLinx**.



The **Setup Curves** tab allows you to create, delete, archive and restore sets of transfer curves.

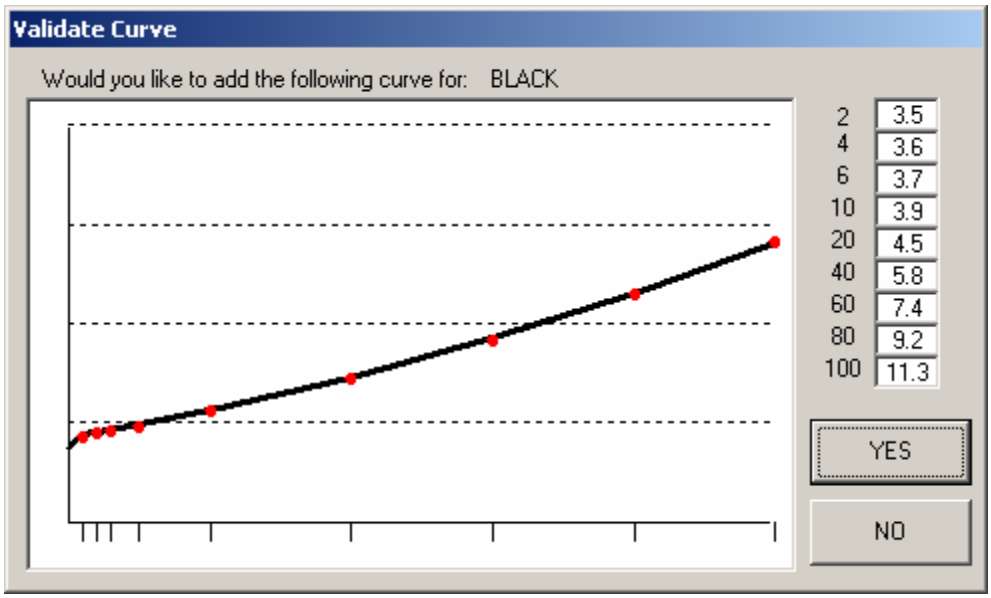
Under Transfer Curve setup:

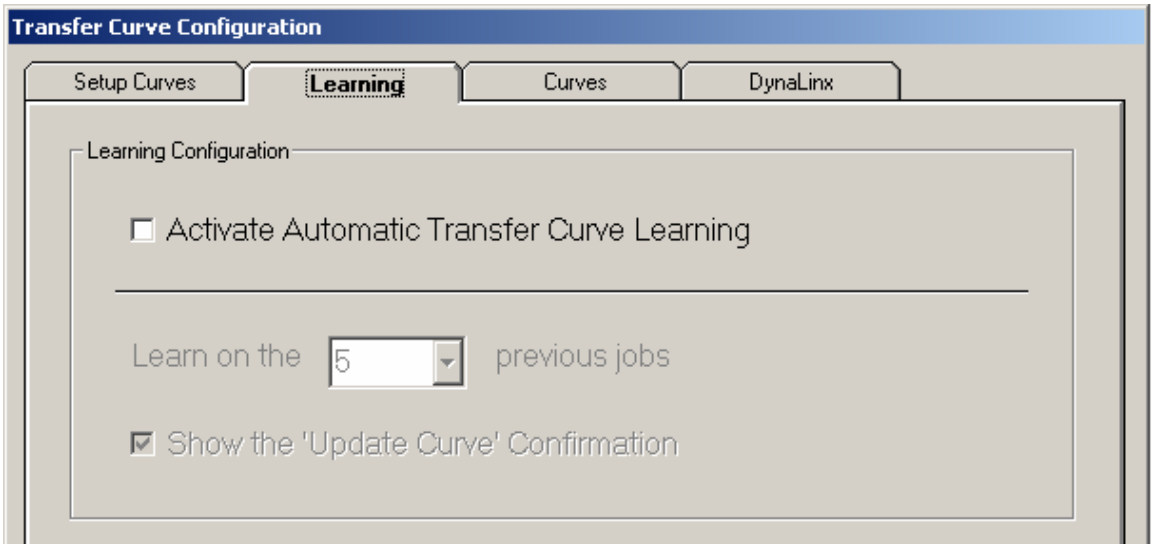
- The **Stock List** combo box allows you to select the set of curves from the available list.
- To create a new set of curves, click **Add**, type in a new name, and then click **Save**.
- To remove a set of curves, select the set from the list and click **Delete**, and then **Ok** to confirm.
- The **Archive Curves** button, when clicked, will save a copy of the selected set of curves to an archive.
- To restore this archived version at a later time, click the **Restore Curves** button.

The CIP calibration section is used at the end of the Transfer Curve Calibration Test to retrieve the key settings from the press and generate the correct transfer curves. After the standardized test transfer form has been run to balanced densities, simply:

- Select the stock you're calibrating from the **Stock** combo box.
- Select the standard **Testform** that was used to perform the calibration.
- Under **Density Sequence** type in the density targets for **K C M Y** under used for the calibration.
- Under **Color Sequence**, enter the unit color sequence used for the calibration.
- Press **Auto Calibrate**.

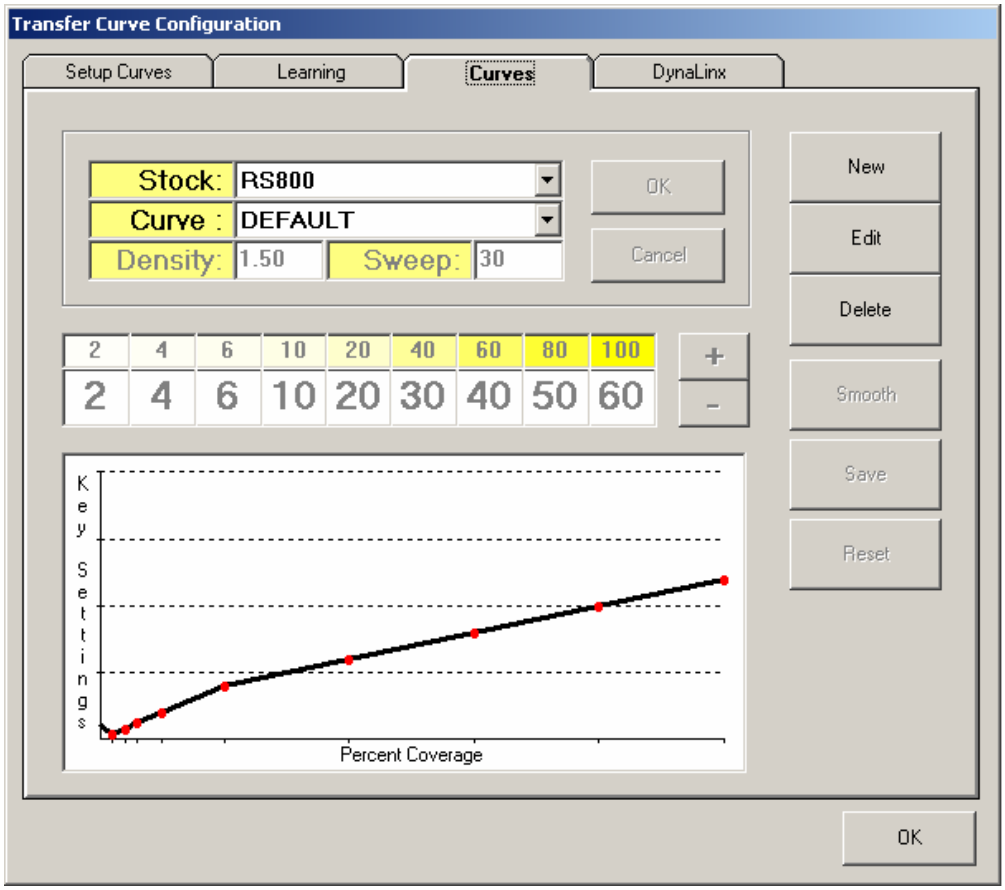
The software will ask you confirm the curve for each color.





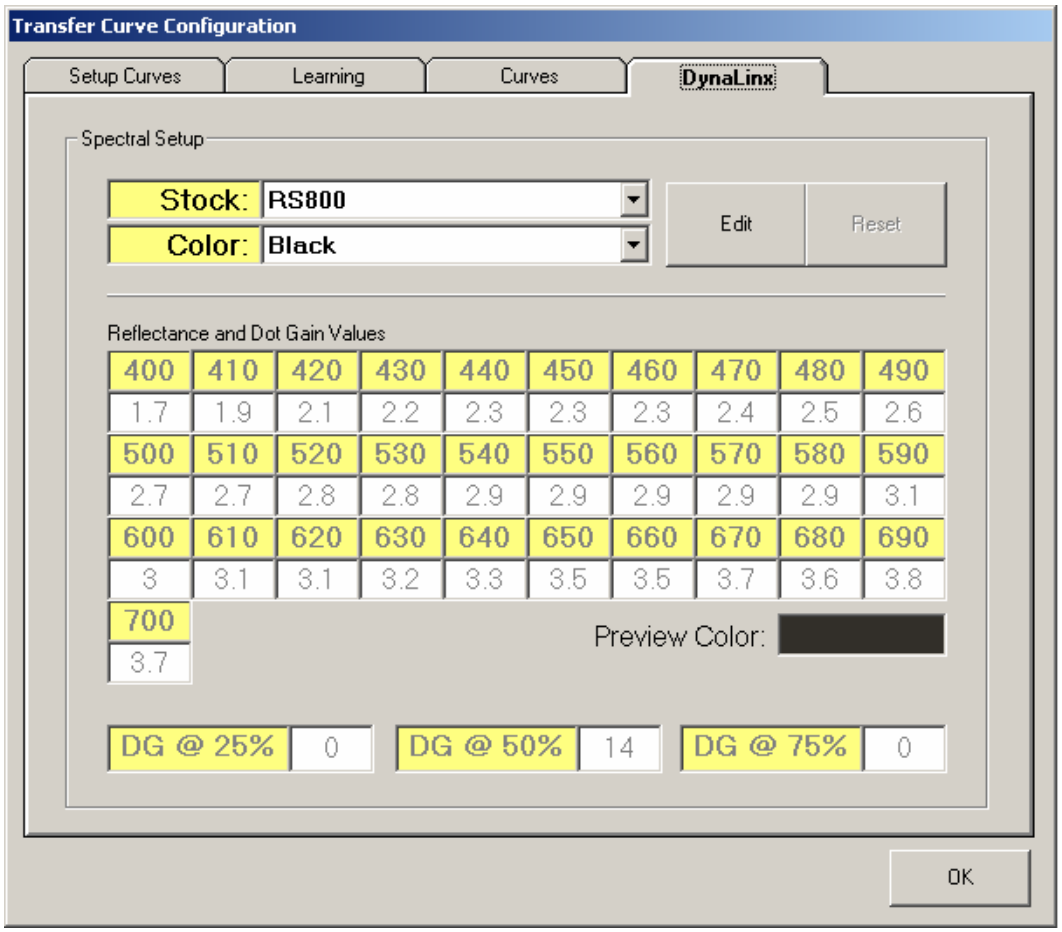
The **Learning** tab will allow you to configure the Learning option in the software. When enabled, the software will allow the operator to automatically update the transfer curves at the end of a print job.

To enable the automatic learning, simply ensure that the **Activate Automatic Transfer Curve Learning** option is checked on.



The **Curves** tab gives you the option to manually edit transfer curves. To edit a transfer curve:

- Use the **Stock** combo box to select the stock of the curve that you would like to edit.
- Use the **Curve Name** combo box to select the curve that you would like to edit.
- Press the **Edit** button.
- Click on the curve step you would like to adjust (it will highlight in yellow).
- Adjust the curve value using the **'+'** and **'-'** buttons.
- Repeat the previous two steps for each curve you want to adjust.
- To exit without saving the changes, press the **Reset** button.
- To save the changes, press the **Save** button.



The **DynaLinx** tab is used to setup the default reflectances and dot gains for the stocks that are used when presetting the job with DynaLinx. These default reflectances are used to color the initial proof image that appears in DynaLinx after the presetting has been preformed.

- Use the **Stock** combo box to select the stock of the curve that you would like to edit.
- Use the **Color** combo box to select the color that you would like to edit.
- The Reflectances for each color from 400nm to 700nm can be set manually, or more readily entered using a hand held spectrophotometer.
- The Dot Gain values can be entered manually.

Presetting the Press

Introduction to Presetting

This section provides a brief introduction and overview of the press presetting process in a digital workflow. The latter sections describe in greater detail how to use ColorLinx to preset the press. Presetting is available on the Platinum, Silver, and the Bronze editions of the software.

Press presetting begins in prepress with a digital file of the work to be printed. All of the image and layout data contained in this file is used by the CTP System to create plates for the printing press. The plate setter or RIP software also creates a CIP file describing the image data on the plates.

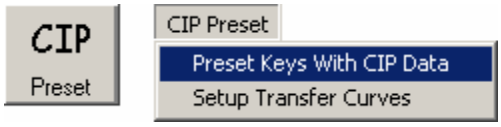
LithoTel's KeySet software then analyses and converts the CIP data into individual ink zone percent coverage values for the press. This data is saved down to a file that is used by the ColorLinx software, which converts the percent coverage values into key values based on transfer curves specific to the press. Applying these values through the ColorLinx software to the press completes the presetting process. With properly calibrated transfer curves, presets will normally produce 85%-95% of acceptable color after the first pull.

Presetting is also the first step in setting up ColorLinx to send colorimetric data to DynaLinx.

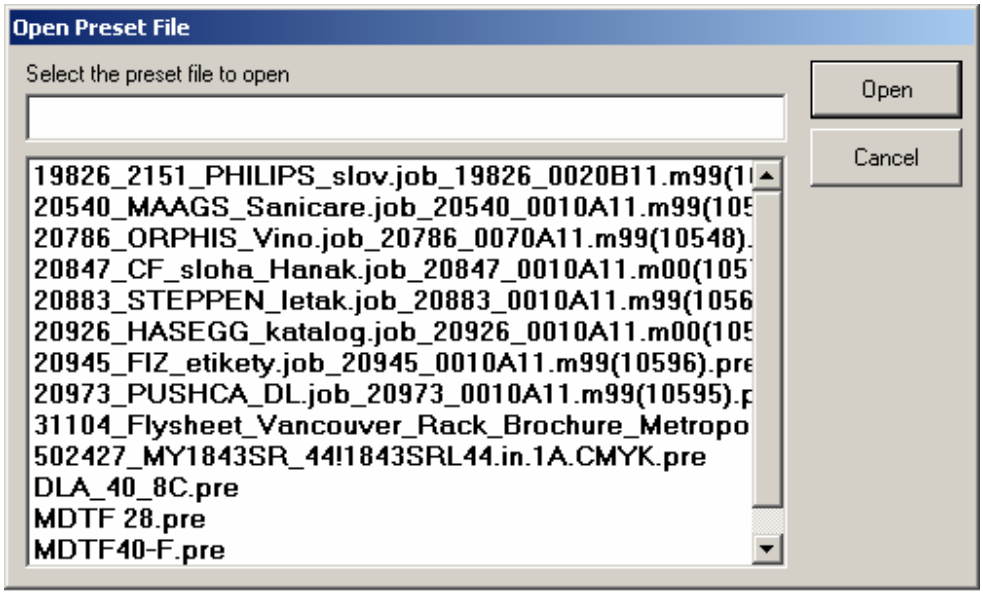
In ColorLinx, the process begins with Selecting the Preset File.

Selecting the Preset File

To select a preset file, press the **Preset** button from the main toolbar, or select **CIP Preset** > **Preset Keys with CIP Data** from the main pull down menu.



The Open Preset window will open.



Select the preset file you wish to open, and press **Open**.

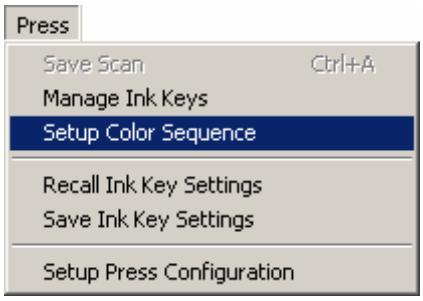
If you wish, you can enter a partial file name at the top to narrow down the list.

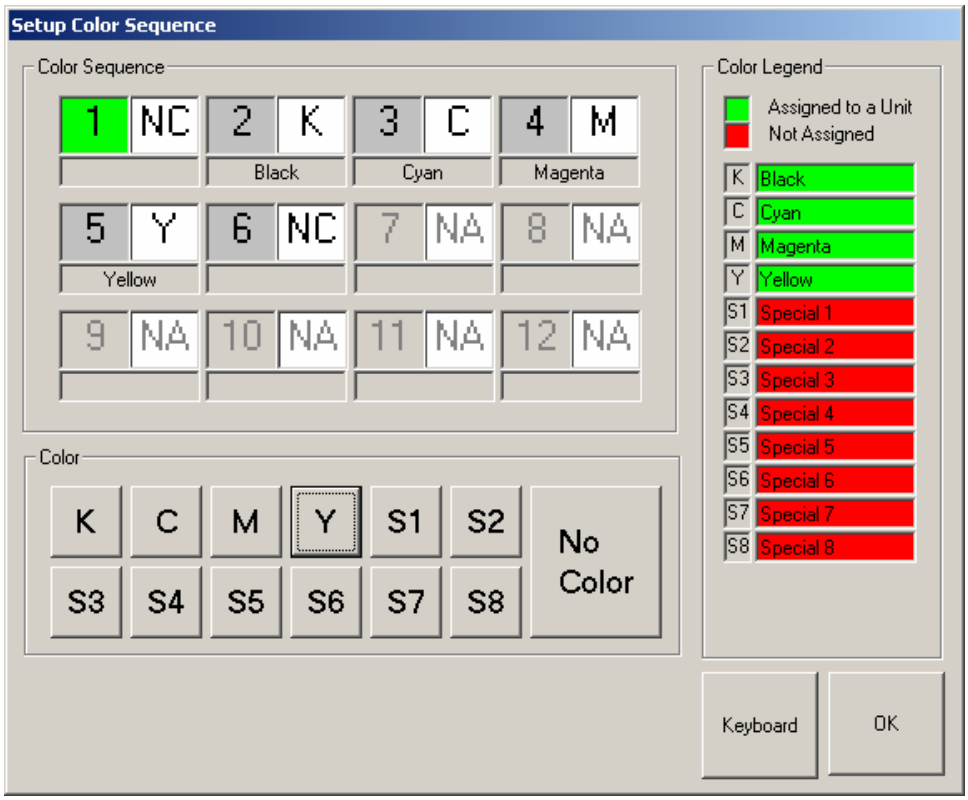
The CIP Presets window will open.

Setup Ink Sequence

This option is available for all press consoles with one exception. ColorLinx can be configured to get the ink sequence directly from Mitsubishi Consoles. If this option is activated, the Ink Sequence Option will not be available in ColorLinx. The Ink Sequence Form allows the operator to specify the unit color mappings for the press. This must be configured correctly in order for ColorLinx to identify which units to adjust when managing the color on press.

Select **Press** > **Setup Color Sequence** to open the Setup Color Sequence window





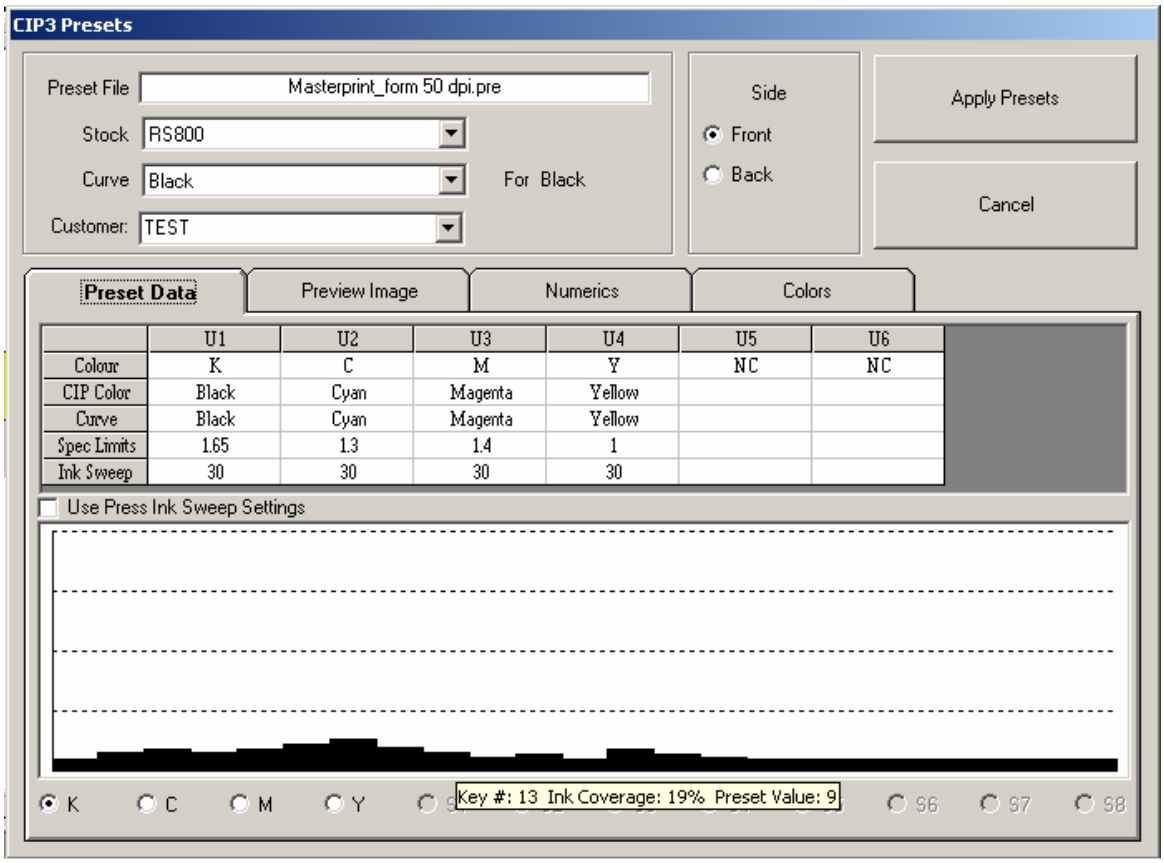
- The Color Sequence frame contains a listing of 12 units. The grayed out items cannot be selected (See Setup Press Configuration to see how to set the number of active units). The currently selected unit will appear highlighted in Green.
- To set the Color Sequence:

1. Select Unit Number 1
2. Click on the appropriate color selection from the choices listed in the Color frame
3. Repeat for the remainder of the active units

- Editing the fields in the Color Legend can set a descriptive name for each color.
- Legend items highlighted in Green indicate that they have been assigned to a Unit. Items in Red have not been set to a unit.
- Once the sequence has been correctly set, press **Close**.

Previewing and Applying the Presets

Once a CIP preset file has been selected, the Preset Keys window opens, allowing you to preview and apply the ink key presets to the press console.



- The **Preset File** field shows the currently loaded file.
- Use the **Stock** combo box to select the appropriate stock you will be printing the job on. This will load a set of curves that have been specifically calibrated for this stock.
- The **Curve** combo box allows you to change the transfer curve for the currently selected color.
- The **Customer** combo box allows you to select a customer to send DynaLinx updates to. If you do not wish to send the current job to DynaLinx, simply clear this box.
- The **Use Press Ink Sweep Settings** check box, when checked, indicates that the current settings on press should be used to modify the preset values. If not checked, the curve ink sweep values are used instead. This option is only available on certain press consoles.
- On the **Preset Data** tab, the color radio buttons at the bottom of the form (**K**, **C**, **M** …) allow you to preview the preset values for each color in the job as graph. Moving the mouse pointer on the graph will display a tooltip with the settings for each key you mouse over.
- The **Preview Image** tab allows you to view a preview image of the job before sending data to the press.
- The **Numerics** tab provides a numerical representation of the preset values in a table.
- The **Colors** tab is used to setup the baseline colors for DynaLinx (see Presetting for DynaLinx).

To send the preset data to the press console, press the **Apply Presets** button. A new job will be automatically created using the preset file name, unless a job already exists with this name, in which case this job will be loaded automatically instead.

(Note: the Apply Presets option is not available in the Bronze edition of the software. A **Print** option is available instead.)

To exit the form without sending the presets, press the **Cancel** button.

Closed Loop Color Control

Introduction to Closed Loop Color Control

This section provides a brief introduction and overview of closed loop color control on the press using ColorLinx. Closed loop color control is available on the Platinum and Gold editions of ColorLinx. The Bronze and Silver editions provide a version of color control that is identical except there is no direct communication to the press console.

For closed loop control, density data is acquired from the press sheet for each key using a scanning densitometer. This scanned data is compared to set density specifications, or an OK sheet scan of the same color bar, with differences between them graphed on the screen.

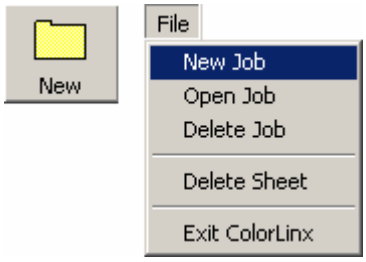
The software uses these color differences on each key to calculate the color correcting key adjustments to be made. These adjustments are then sent to the press, closing the loop. After enough impressions have been made for the adjustments to take effect (about 100 – 200 impressions, depending on the press), the process is repeated. In this way correct color is maintained throughout the press run.

If DynaLinx is enabled, then the scan data is also used to update lower the press image in DynaLinx, as well.

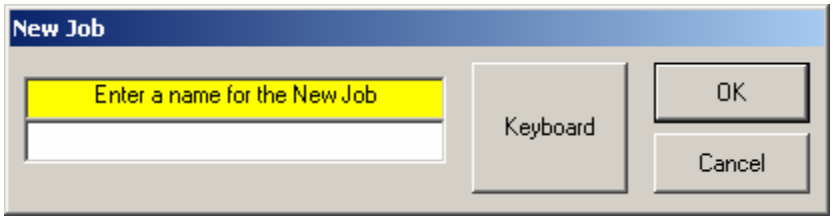
The closed loop control process begins with Setting up a New Job.

Setting up a New Job

Before scanned density data can be input into the system, a New Job needs to be created to hold the data. To do so manually, press the **New** button on the main toolbar, or select **File > New Job** from the main menu.



The New Job window will appear.



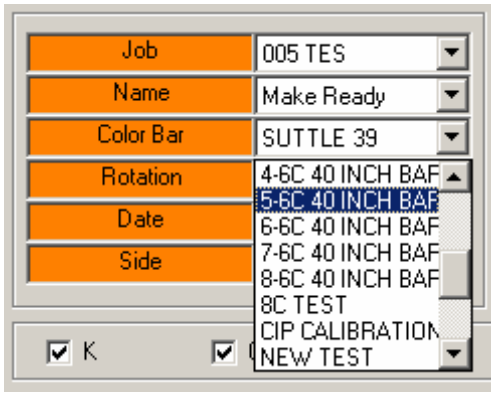
Enter a name for the job using the keyboard, or if using a touch screen monitor press the Keyboard button to activate the Virtual Keyboard. Once a job name has been entered, press **OK**.

The job is now available under the **Job** pull down box on the main program window.

Note that a New Job is automatically generated upon applying CIP presets. See Previewing and Applying the Presets for details.

Selecting a Color Bar

Use the Color Bar combo box on the main window to select the color bar that you will be scanning

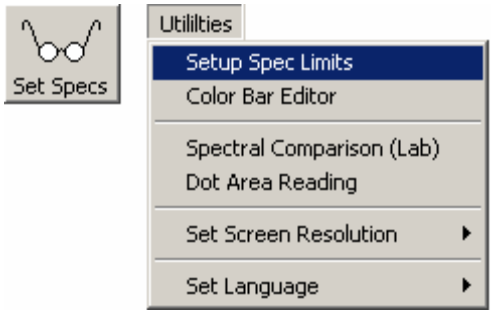


Note: To add color bars to the library use the Color Bar Editor.

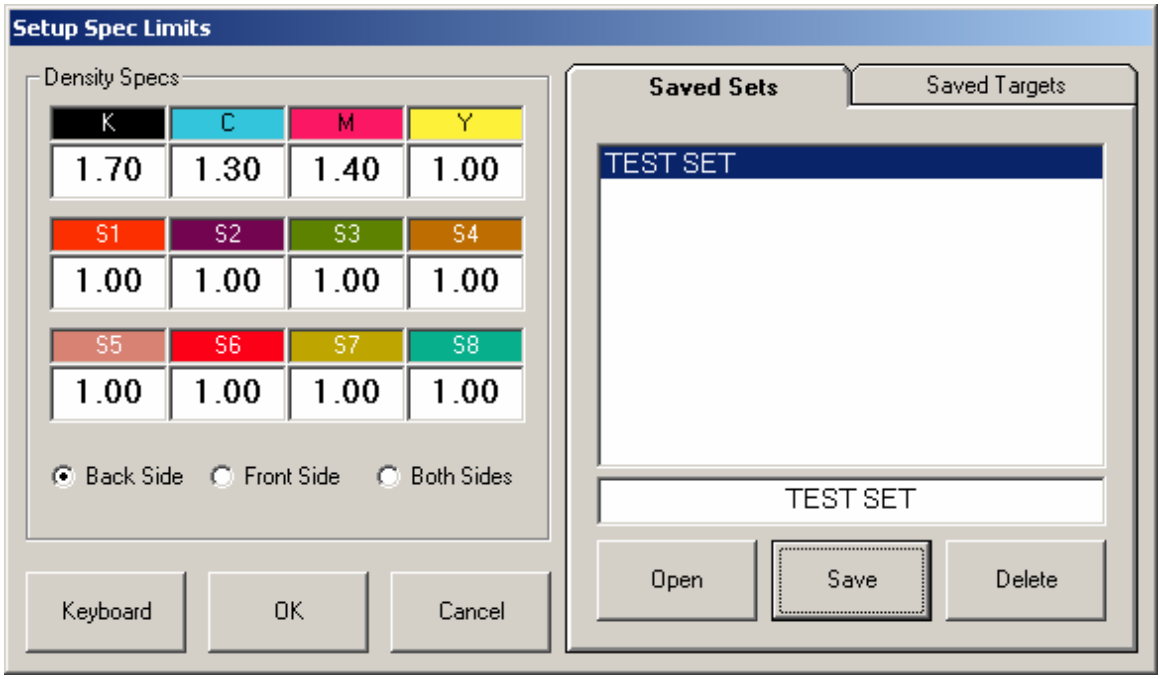
When running DynaLinx, it may be necessary to select a second color bar as well. The second, lower bar can be selected under the **Color Bar 2** combo box.

Setup Density Specifications

Select **Utilities** -> **Setup Spec Limits** or press the **Set Specs** button to activate the Setup Spec Limits window



The Setup Spec Limits window will load.



The right side of the window shows the currently set density specifications. These values are used to calculate the key density differences when the main program is set to vs. Specs.

The left side of the window is split into two tabs; a Saved Sets tab and a Saved Targets tab. The Saved Sets tab shows density specification sets saved down to the database, while the saved targets tab contains a list of individual targets that can be used to set individual colors.

To set your density specs:

- Select the color that you want to change the spec limit for and enter the new target value using the regular or virtual keyboard (press **Keyboard** to activate the virtual keyboard). Values can also be read directly from a printed sample such as a draw down or swatch book using a compatible handheld device.
- To load a complete set of saved density specs, select it from the Saved Sets database list so that it name appears in the text box below, and press the **Open** button.
- To save a complete set of modified density specs, enter a name for the set in the text box below the database base list and press the **Save** button.
- To remove a set of density specs from the database, select it from the list and press the **Delete** button.
- To assign an individual saved target to a color, first select the color you wish to assign. Select the Saved Targets tab, and click on the saved target you want to set the density spec to.
- For perfecting presses, use the **Front Side**, **Back Side**, or **Both Sides** option buttons to select which side(s) you are adjusting the spec limits for. Note that selecting **Both Sides** will overwrite the specs from the currently selected side to the opposite side.

Press the **OK** button to accept the current density specs, or press **Cancel** to exit without applying the changes to the density specs.

Using the IntelliTrax and SpectroDrive Scanners

IntelliTrax and SpectroDrive Overview

This section provides instructions for operating the newer X-Rite IntelliTrax and Techkon SpectroDens automated track scanners.

Though the two devices have some physical differences, their operation with regard to the software is virtually identical.

The X-Rite IntelliTrax is an evolution of the older ATS/ATD automated tracks. Like the ATS/ATD, is has a flat track with a vacuum bed into which the edge of the printed sheet is placed. IntelliTrax also has improved color bar recognition programming built into the head, eliminating the need for large color bar libraries in the software.

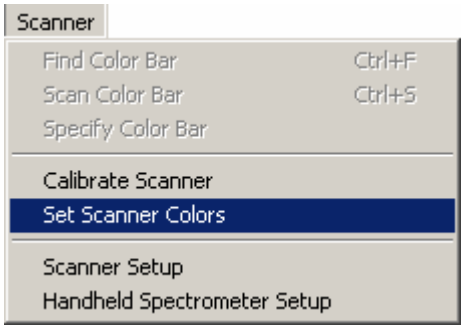
Similarly, the Techkon SpectroDrive is an evolution of the RS 400/800 handheld scanners. The SpectroDrive incorporates an automated drive head that traverses a track aligned to the color bar on the printed, while still being able to remove the head from the track to take spot readings with. It also incorporates improved color bar recognition.

Set Color Specifications

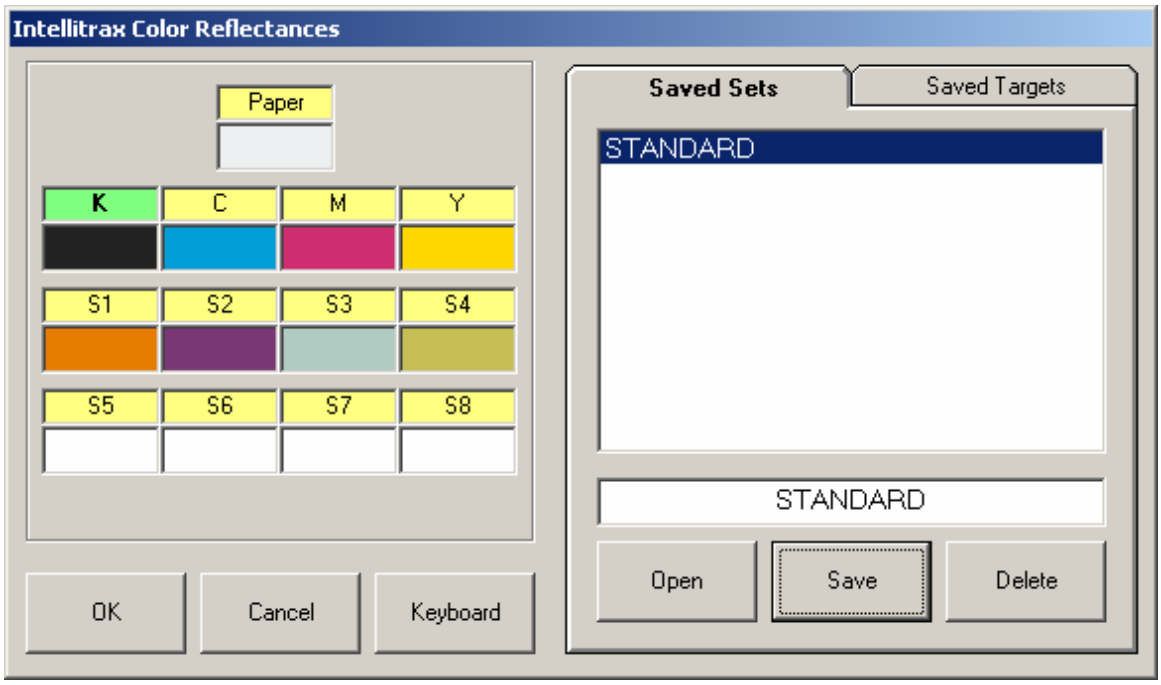
In order for the X-Rite Intellitrax and Techkon SpectroDrive to properly detect and interpret a colorbar, it must have an accurate description of the inks.

This can be done by directly reading an ink sample using a handheld spectrophotometer, such as X-Rite 500 series, a Techkon SpectroDens, or the head of the Techkon SpectroDrive, or by choosing a suitable color description from a built in list.

To set the Intellitrax Color Specifications, select Scanner > Set Scanner Colors



The Color Reflectances window will open



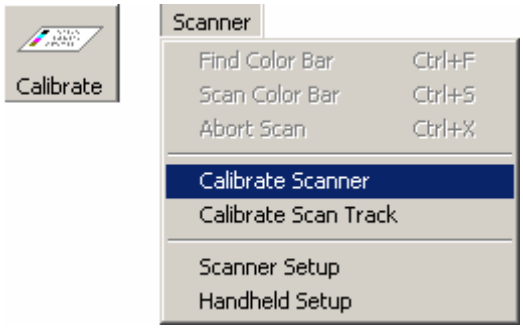
This window is very similar to the Setup Density Specs window.

- Select the color that you want to change the spec limit for and take a reading with the spectromphotometer in the color reflectances mode.
- To load a complete set of saved density specs, select it from the Saved Sets database list so that it name appears in the text box below, and press the **Open** button.
- To save a complete set of modified density specs, enter a name for the set in the text box below the database base list and press the **Save** button.
- To remove a set of density specs from the database, select it from the list and press the **Delete** button.
- To assign an individual saved target to a color, first select the color you wish to assign. Select the Saved Targets tab, and click on the saved target you want to set the density spec to.
- For perfecting presses, use the **Front Side**, **Back Side**, or **Both Sides** option buttons to select which side(s) you are adjusting the spec limits for. Note that selecting **Both Sides** will overwrite the specs from the currently selected side to the opposite side.

Calibrating the Scanner

It is advisable to calibrate the scanner on a regular basis. Performing the calibration once a week will ensure that you receive accurate readings.

To start the automatic calibration process, press the **Calibrate** button on the toolbar, or select **Scanner > Calibrate Scanner** from the main menu.



A message window will open to indicate when the device has completed the calibration. Click **OK** to return to the main window.

Scanning the Color Bar

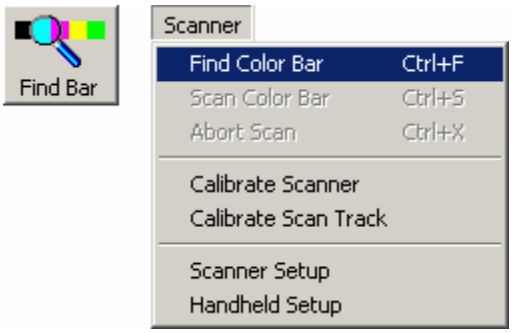
Before a color bar can be scanned successfully, it is necessary for the scanner to locate it on the press sheet. You will be unable to scan the sheet until the color bar has been found for the particular Job, Color Bar, and Side you are scanning.

First, position the sheet to be scanned.

Ensure the correct color bar has been selected.

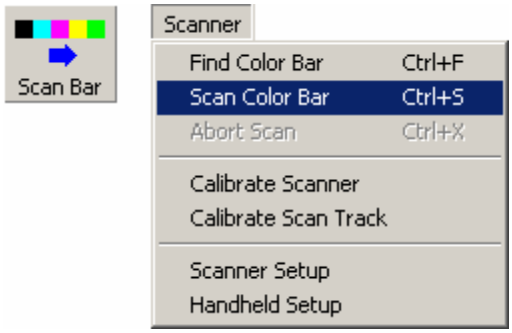
If the Scan Bar button is not enabled, pressing the button on the scanner will initiate the Find Color Bar process.

You can also initiate the Find Color Bar routine by pressing the **Find Ba**r button on the main toolbar, or by selecting **Scanner > Find Color Bar** from the main menu.



The scanner will perform a scan during the find bar routine, and will update the graph with the results once completed.

Once the bar has been found, subsequent scans can be initiated simply by pressing the button on the scanner, or by pressing the **Scan Bar** button on the toolbar, or selecting **Scanner > Scan Color Bar** from the menu.

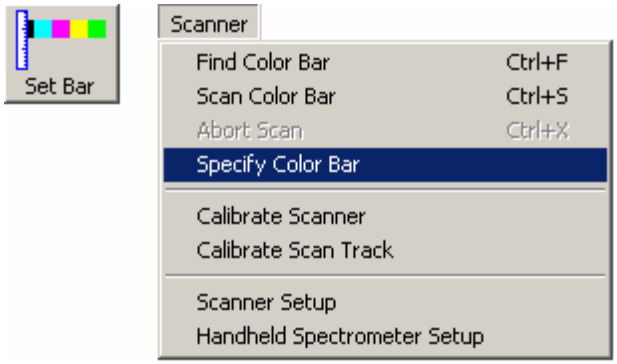


Wait until the scan has completed, at which point the graph will be updated for interpretation.

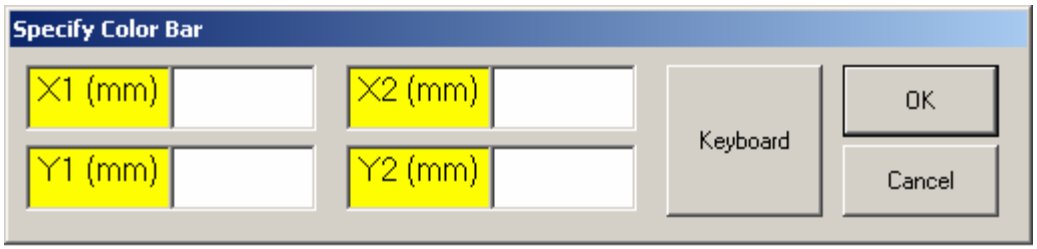
Specify Color Bar

This option is available for the IntelliTrax scanner, and can be used to manually specify the color bar location on the sheet, in case the find color bar routine fails.

Click Set Bar on the main toolbar, or select **Scanner > Specify Color Bar** from the pull down menu.



The Specify Color Bar location window will open



The first point (X1, Y1) is the starting point of the color bar.

X1 is the distance from the near edge of the sheet to the beginning of the color bar.

Y1 is the distance from the paper stop (assumed to also be the sheet edge) to the *center* of the first color bar patch.

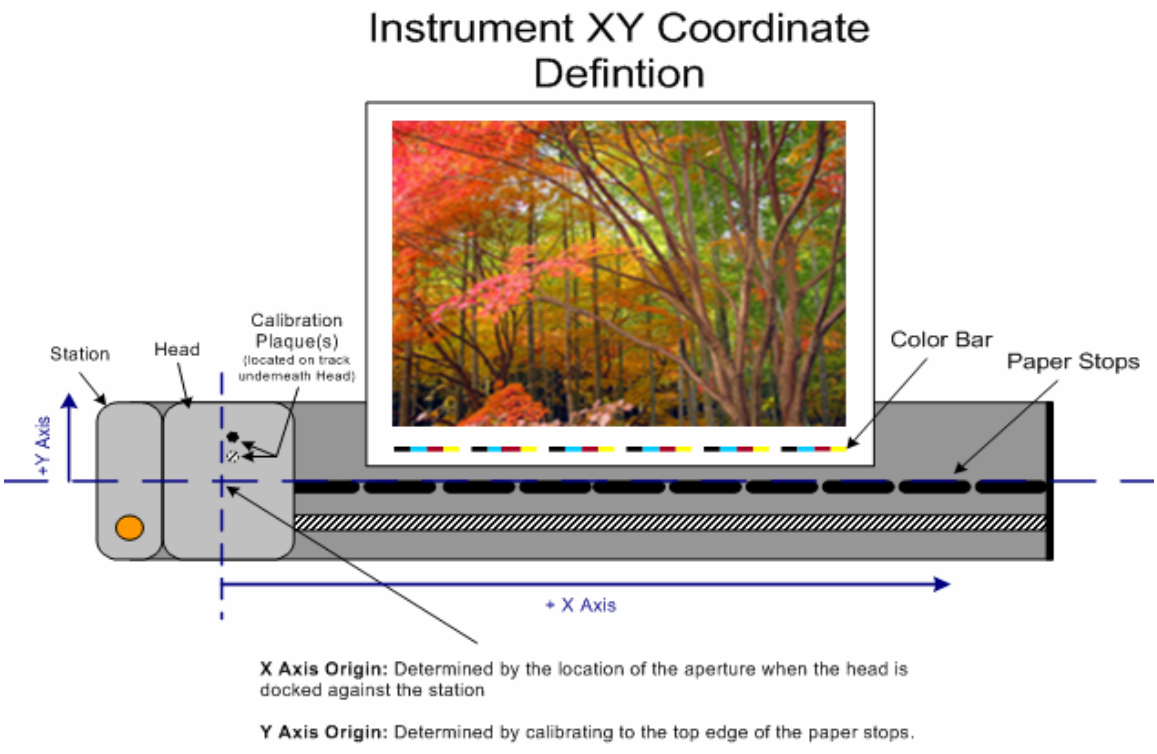
The second point (X2, Y2) determines the end of the color bar.

X2 is the distance from the near sheet edge to the end of the last color patch.

Y2 is distance from the paper stop the to center of the color last color bar patch (usually the same as Y1).

Set (X1, Y1) and (X2, Y2), place the sheet in the scanner and press OK.

The scanner will then attempt to scan the color bar at the specified location.



Using the X-Rite ATS/ATD Scanners

X-Rite ATD/ATD Scanner Overview

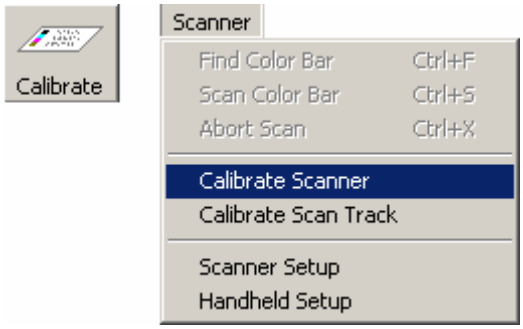
This section provides instructions for operating the older X-Rite ATS and ATD automated track scanners.

X-Rite Calibration

It is advisable to calibrate the scanner on a regular basis. Performing the calibration once a week will ensure that you receive accurate readings.

Calibrate Scanner

To start the X-Rite automatic calibration process, press the **Calibrate** button on the toolbar, or select **Scanner > Calibrate Scanner** from the main menu.



Calibrate Scan Track

Occasionally you may need to recalibrate the X-Rite scanner to the black scanning track. This setting is used by the scanner to differentiate between the matte black of the scanning track and the white edge of the scanned sheet. If the paper edge is not being found correctly, the track characteristics may have changed and need to be updated.

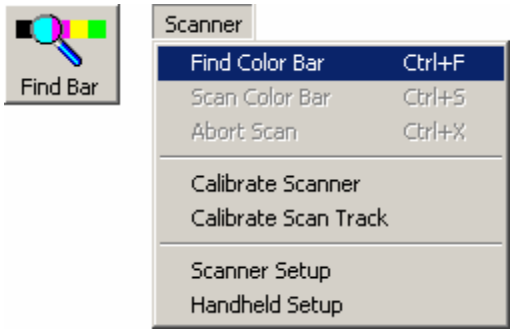
To calibrate to the scanning track, select **Scanner > Calibrate Scan Track** from the main menu bar.

Finding the Color Bar

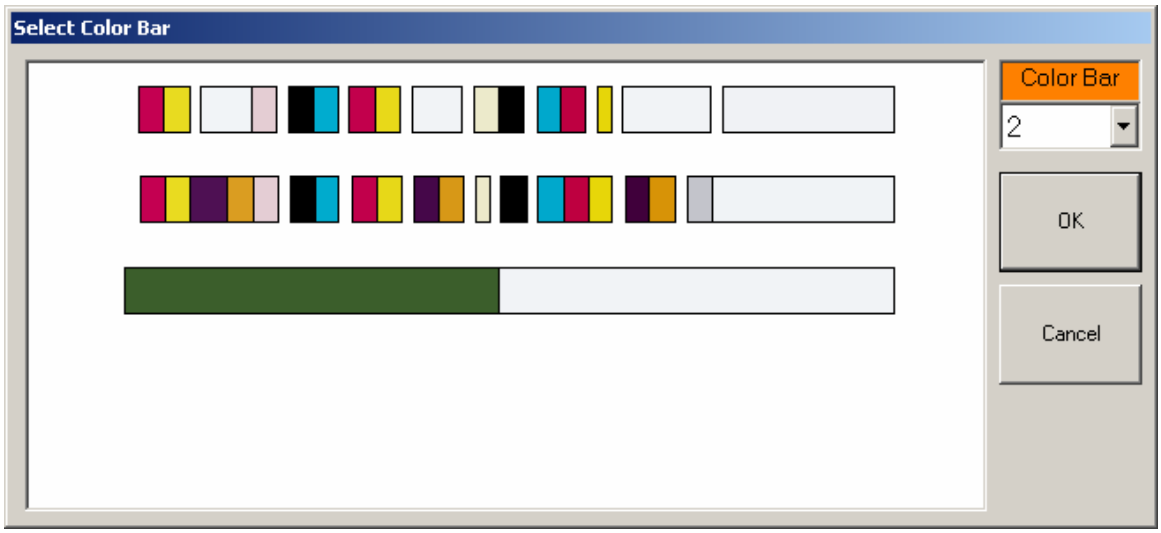
Before a color bar can be scanned successfully, it is necessary for the scanner to locate it on the press sheet. You will be unable to scan the sheet until the color bar profile has been found for the particular Job, Color Bar, and Side you are scanning.

First, position the sheet to be scanned square against the scanning track.

If the Scan Bar button is not enabled, pressing the grey button on the X-Rite scanner will initiate the Find Color Bar process. You can also initiate the Find Color Bar routine by pressing the **Find Bar** button on the main toolbar, or by selecting **Scanner > Find Color Bar** from the main menu.



The X-Rite scanner will search along the edge of the sheet for any valid color bar candidates. If more than one candidate is found and the X-Rite Select Color Bar option has been enabled in the Scanner Setup, the Select Color Bar window will open:



Click on the correct color bar candidate and press **OK**.

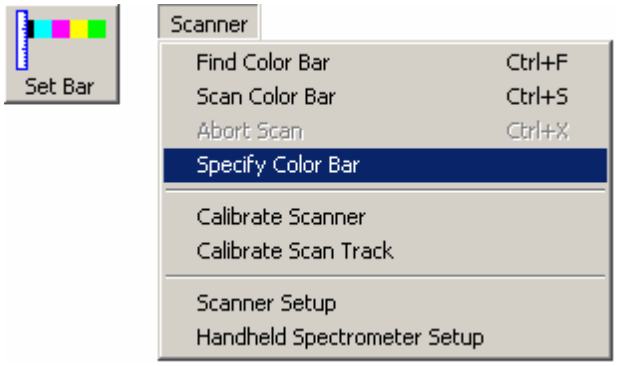
After the color bar has been successfully found or selected, the software will perform a scan.

If a color bar candidate could not be found, you can specify the location of the color bar manually.

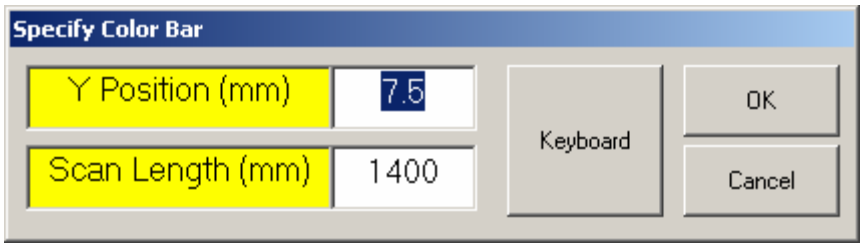
Setting the Color Bar Location

If a color bar could not be found automatically, you can specify the location of the color bar manually.

Click on **Set Bar** on the main toolbar, or select **Scanner > Specify Color Bar** from the pull down menu.



The Specify Color Bar location window will open



For the **Y Position**, enter distance from the center of the color bar to edge of the sheet that rests against the scanner, in mm.

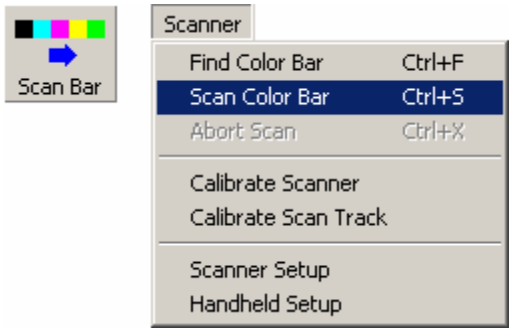
The **Scan Length** will have an estimate in it based upon the length of the color bar selected on the main window.

Press **OK** to send this location to the X-Rite scanner.

Scanning with the X-Rite

To scan a sheet, first position the sheet square against the scanning track with the color bar properly aligned.

To initiate the scan press the **Grey Button** on the scanner, or press the **Scan Bar** button on the toolbar, or select **Scanner** > **Scan Color Bar** from the menu.



Wait until the scan has completed, at which point the graph will be updated for interpretation.

Using the Techkon RS800/400 Scanners

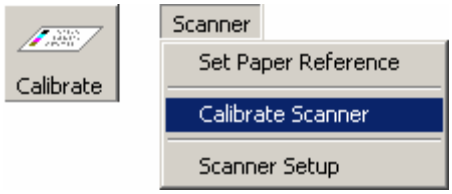
Techkon Scanner Overview

This section provides instructions for operating the older Techkon RS400 and RS800 hand scanners.

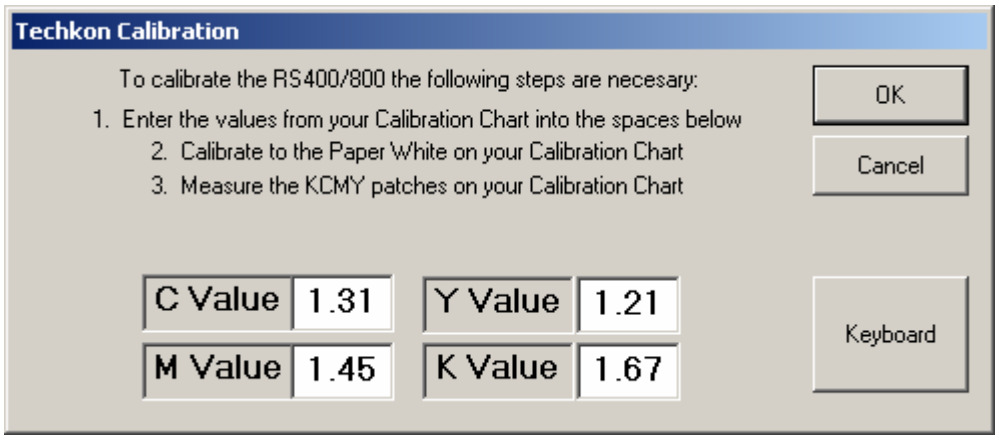
Techkon Calibration

It is advisable to calibrate the scanner on a regular basis. Performing the calibration once a week will ensure that you receive accurate readings. To perform the calibration, the calibration card and absolute white standard plaque provided with the device are required.

To enter the calibration mode, press the **Calibrate** button on the toolbar, or select **Scanner** > **Calibrate Scanner** from the main menu.



The Techkon Calibration window will appear



Perform the following steps to calibrate the scanner.

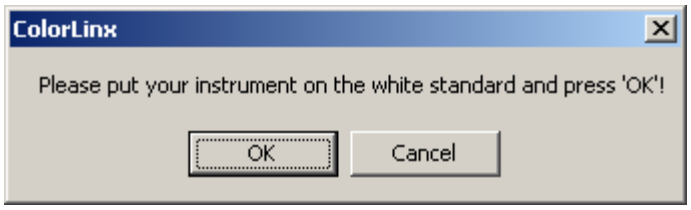
1 Enter your calibration card values into the appropriate spots on the calibration screen. Press **Keyboard** if you wish to use to virtual keyboard to do so.

2 Calibrate the scanner to the White paper reference patch on the calibration card. Position the aperture on the White patch, and push and hold the Green button on the scanner until you hear two beeps.

3 Read the Black, Cyan, Magenta and Yellow patches on the calibration card by positioning the aperture over each and quickly pressing the green button once.

4 After all the patches have been entered, press the **OK** button

If you are calibrating an **RS800**, the following screen will appear:

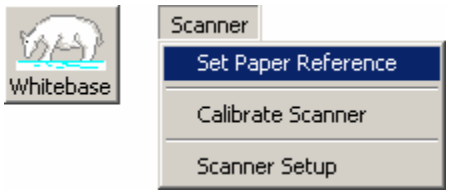


You should position the RS800 aperture on the Absolute White standard, and then press the **OK** button. The calibration is complete after you hear the scanner make two beeps.

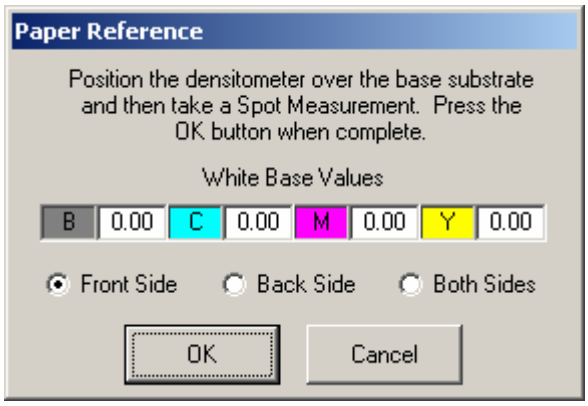
If calibrating the **RS400**, the previous window will not appear. Instead, you will need to place the RS400 on the Absolute White standard as above, and manually push and hold the green button down until you hear the two beeps. The calibration is now complete.

Setting the Paper Reference

To set the Paper Reference values into the software with the Techkon scanners, press the **Whitebase** button on the toolbar, or select **Scanner** > **Set Paper Reference** from the main menu.



The Paper Reference screen will then appear.



- The **Front Side**, **Back Side**, and **Both Sides** buttons allow you to specify to which side the paper reference measurement applies to, if you're working with a perfecting press.
- Take a spot reading on the paper with the scanner by quickly pressing the green button once; the paper densities should appear in the appropriate spots.
- Press the **OK** button to accept the paper values.

Scanning with the Techkon

Follow these steps to scan a press sheet with the Techkon scanner:

1 Position the aperture of the scanner in front of the first tile of the color bar that you will be scanning.

2 Press the Green button on the scanner twice. The scanner will beep once and the status light will turn green.

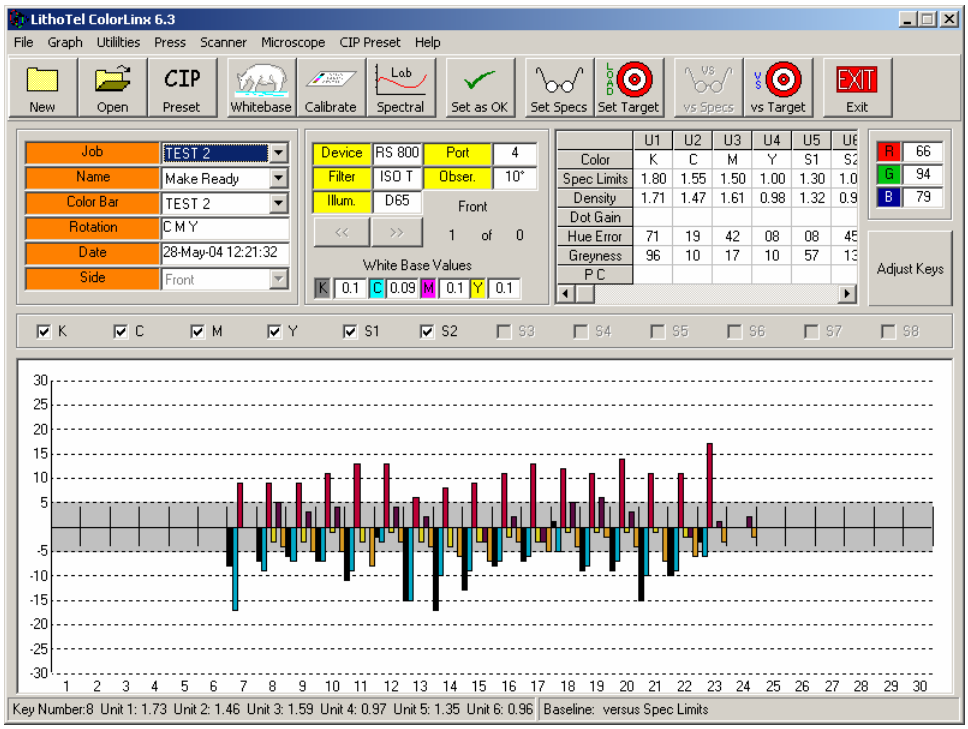
3 Roll the scanner over the entire length of the color bar. The unit will beep after the bar has been completely scanned.

ColorLinx will update with new graph data as soon as a scan has been successfully completed.

Closing the Loop

Interpreting a Scan

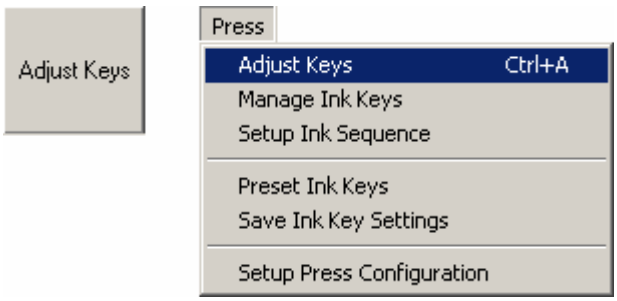
Upon completing a scan, ColorLinx will update with new graph data.



- The colored bar graph indicates the density difference for each key between the scanned color bar and the baseline; either the set density specifications or the OK sheet (See also Changing the Baseline).
- The baseline is indicated below the graph on the ride hand side panel.
- Density values outside the grey region on the graph require adjustment; density values above the grey region are high, while density values below the grey region are low.
- Clicking on a key will display the density values by unit for that key.
- Individual colors can be turned on and off using the check boxes labeled K through S8 above the graph.
- Only those colors shown on the graph will be adjusted when the Adjust Keys button is pressed (See also Managing Ink Keys).

Adjusting the Ink Keys

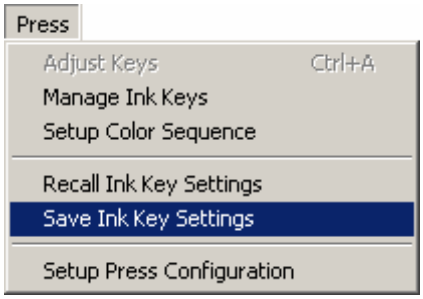
After you have performed a scan, the **Adjust Keys** button on the right side of the main form becomes active. If you wish to apply the recommended corrections to the press, click on this button, or select **Press > Adjust Keys** from the main pull down menu.



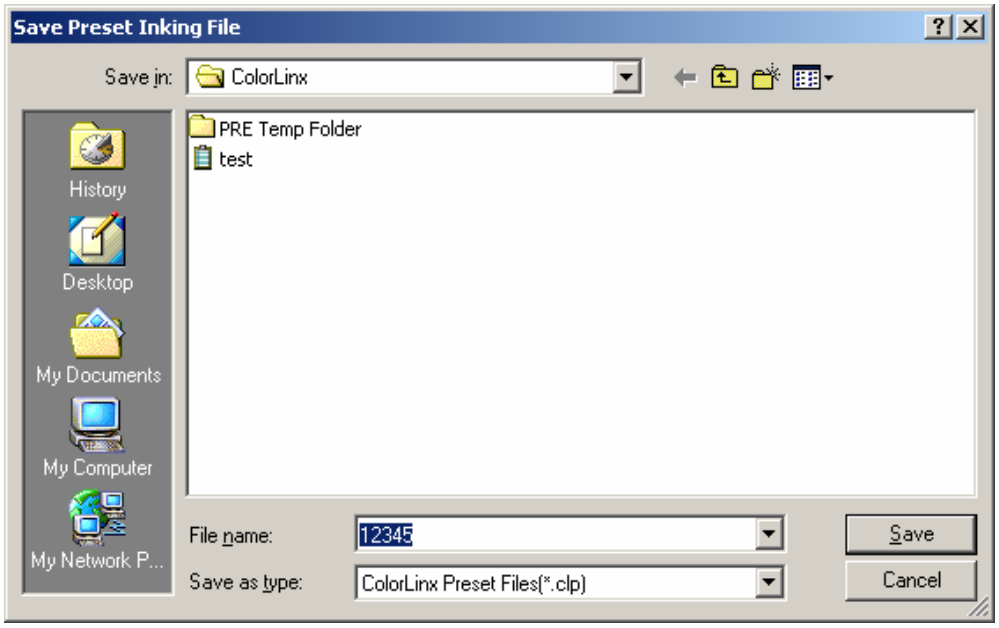
For the Silver and Bronze editions of the software, there is no direct closed loop communication. Instead, you may save the scan down to the database by selecting **Press > Save Scan**, or by pressing the **Save Scan** button.

Saving and Loading Ink Key Settings

At the end of a press run, you may wish to save the final ink key settings on the press, so that they can be called up at a later date if needed. To save the press ink key settings to a file, select **Press** > **Save Ink Key Settings** from the pull down menu.



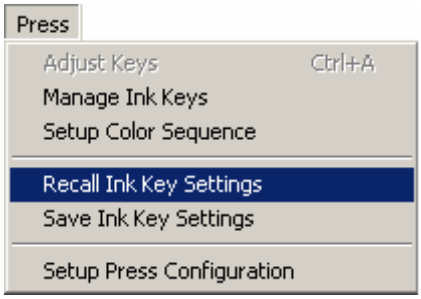
The save file window will open.



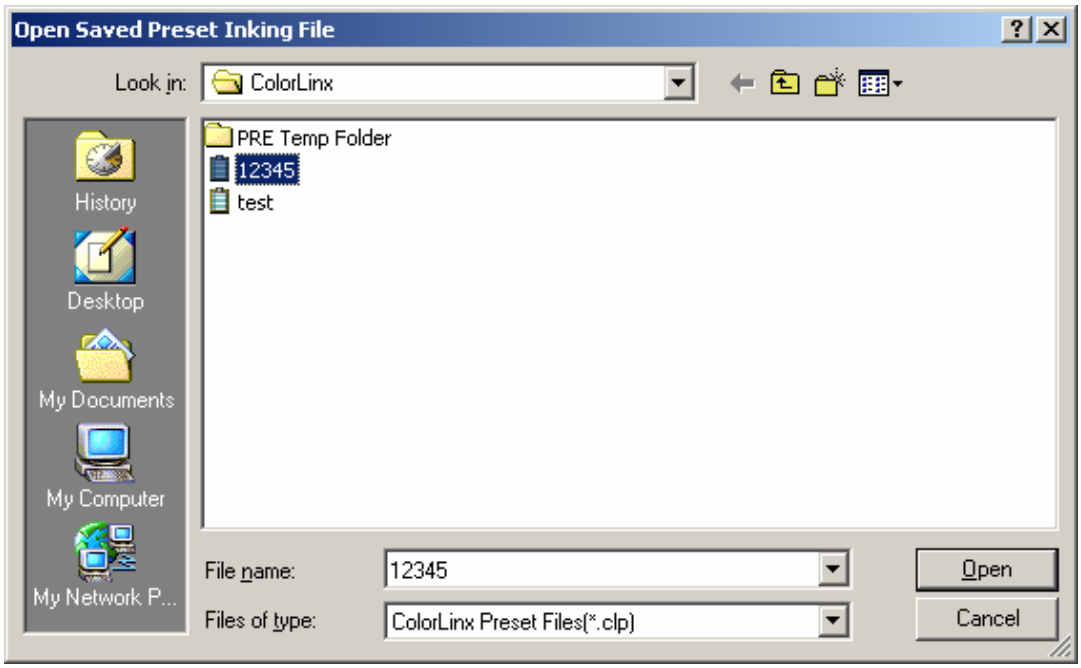
Verify the file name you wish to save the key values under. By default it will be the current job name.

After you click **Save**, the ink sequence form will load in order to verify the color sequence you wish to save the ink key settings with. Press **Ok** to accept, and the ink key settings are saved down to the file.

To recall these saved settings, select **Press** > **Recall Ink Key Settings** from the pull down menu.



The open file window will open.



Select the saved file you wish to open, and press **Open**.

The color sequence window will open to confirm how the key settings are to be applied to the press units. Press **Ok** to accept the color sequence and the key settings are sent to the press.

Learning

The Learning option is available in ColorLinx Platinum and Bronze, and when enabled allows the operator the use the final ink key settings from a job to adjust the transfer curves. In this way the software learns over time how to better preset the ink keys on subsequent jobs.

The **Learn** button on the main toolbar becomes enabled when the scanned densities are within a +/- 5 point tolerance to the transfer curves densities, and the ink sweeps (if available from the console) are within +/- 5 of the transfer curve sweep settings.

When the **Learn** button is active, simply press it at the end of the job to initiate the software to learn from the final key settings on the press.

For some consoles, it may be necessary to save the final key settings from the console to the software before activating learn, and the software will prompt you if this is the case.

Similarly, if the last scan is too old, it may ask you to scan a new sheet before proceeding.

DynaLinx

DynaLinx Overview

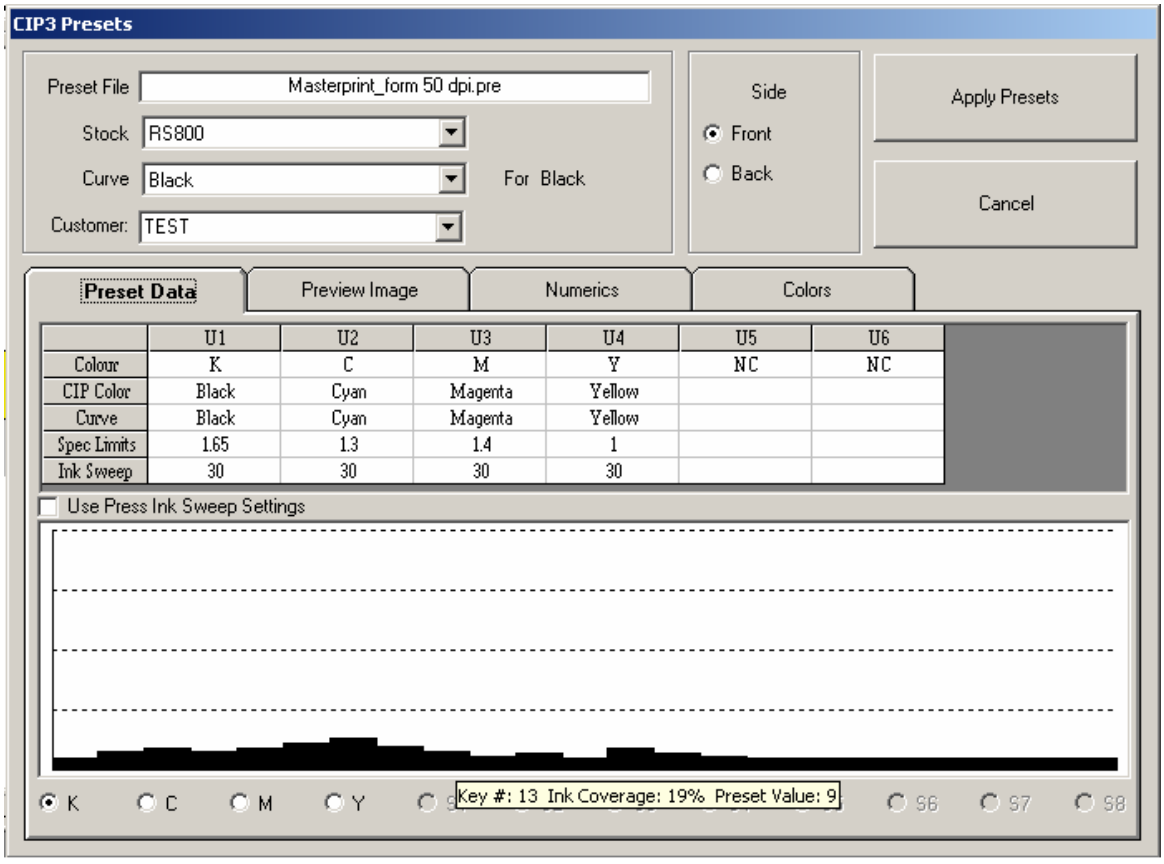
ColorLinx now provides support for DynaLinx, LithoTel's press side and remote approval software.

DynaLinx works by providing two images: an upper image colored to represent the color corrected soft proof, and a lower image updated with color data scanned using ColorLinx. In this way ColorLinx provides up to date color data from the press sheets as the job is being run.

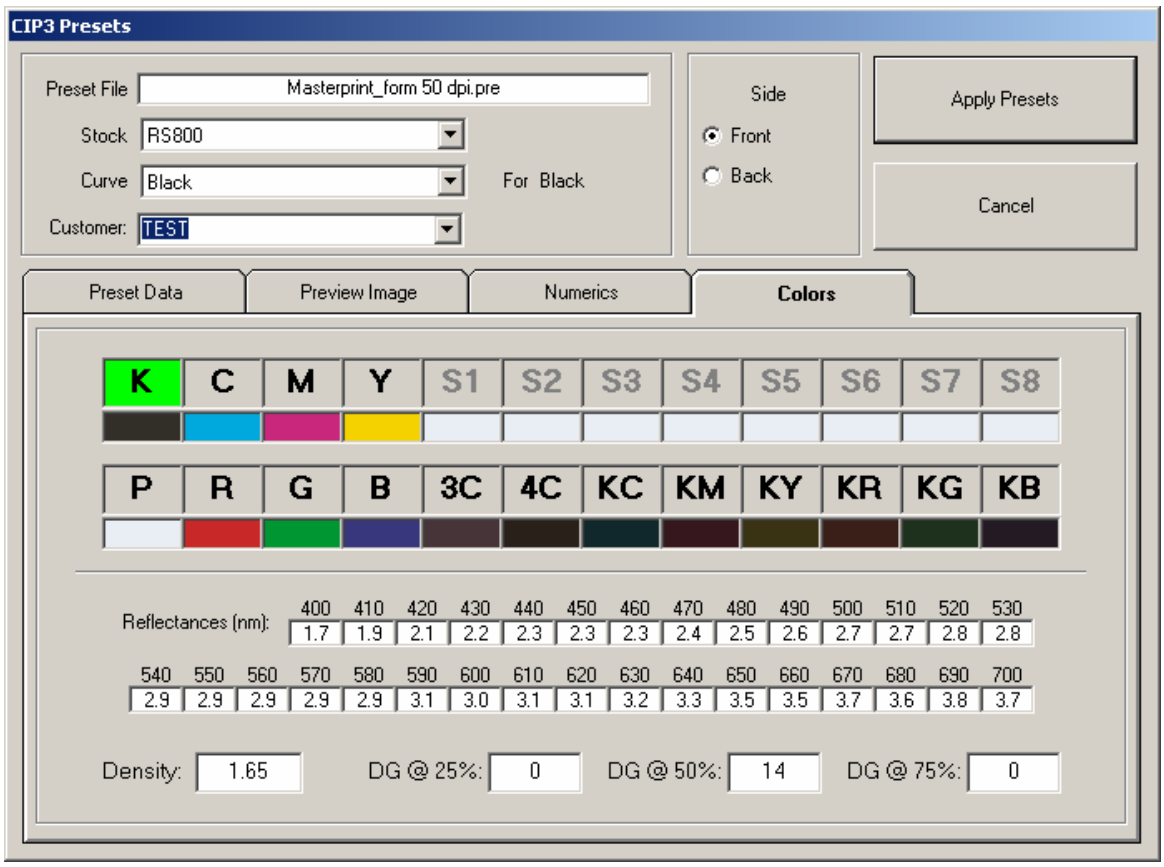
Only a few additional considerations are needed when running ColorLinx to provide data with DynaLinx. These are detailed in the sections that follow: Presetting for DynaLinx , Customer Setup , Scanning for DynaLinx , Accepting an OK, and Sending an Email Report.

Presetting for DynaLinx

When presetting a job in ColorLinx, there are a couple of considerations to be made, detailed below.



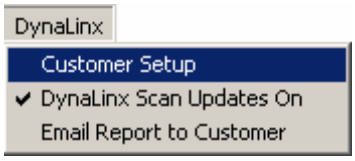
First, if the job is to be sent remotely, a customer must be selected from the Customer pull down. If the job is not to be sent, it must be clear. Customers can be setup using Customer Setup on the main window.



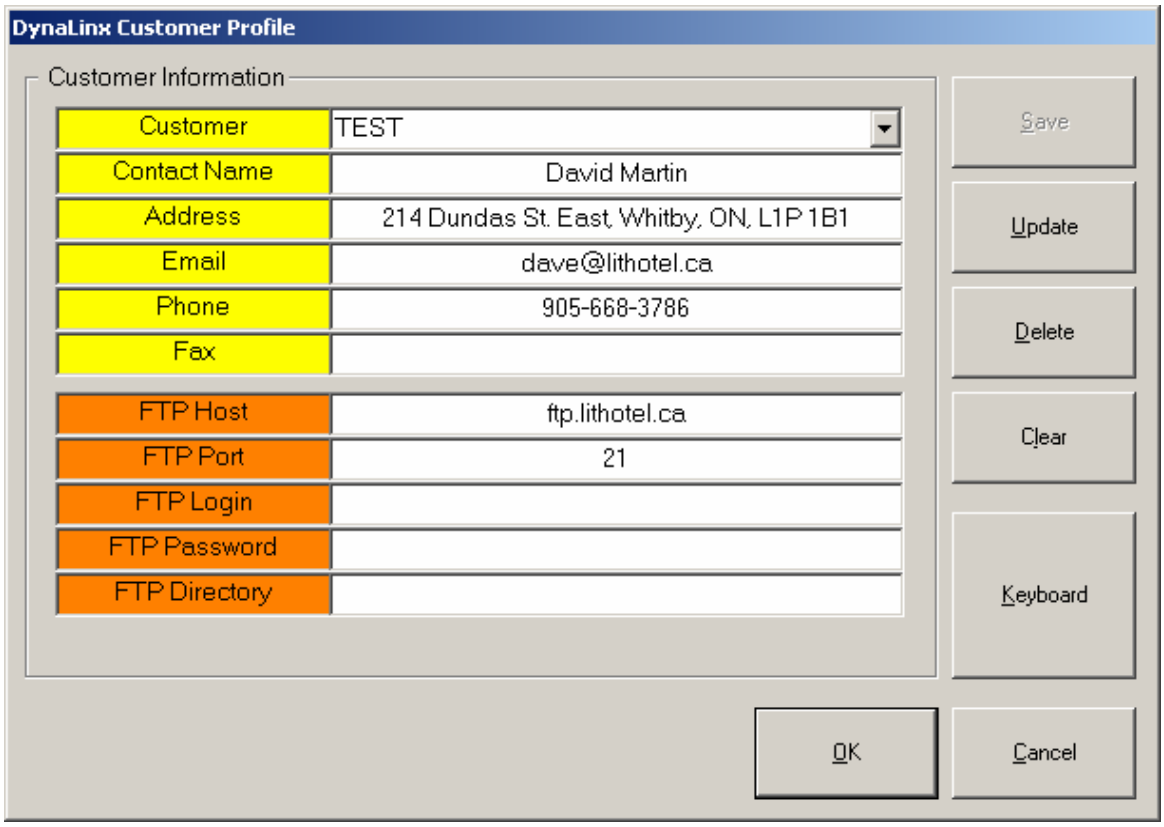
Second, you should ensure that the color reflectances and dot gains have been setup properly. These values are used by DynaLinx to render the original target image before the color bar scans are performed.

Customer Setup

The setup the list of DynaLinx Customers available to ColorLinx when presetting for DynaLinx, select **DynaLinx > Customer Setup** from the main pull down menu.



The DynaLinx Customer Profile window will open.



This window can also be used to select the current customer you are sending DynaLinx scan updates to.

When first opened, the selected customer will indicate to whom updates are being sent, usually selected as part of presetting.

To change the selected customer, selected from the **Customer** list and click **OK**.

If you do not wish to change the selected customer, click **Cancel** to exit the form instead.

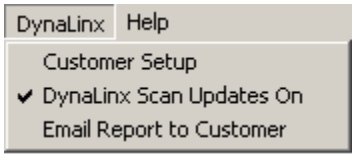
To create a new Customer, simply type in a new name in the **Customer** combo box, enter the customer contact information and related FTP internet connection information, and click **Save**.

To edit the information for an existing customer, select the customer from the **Customer** combo box list. Update the fields that you wish to edit, and click **Update** to save the changes.

To delete an existing customer from the list, select the customer from the **Customer** combo box and click **Delete**.

Scanning for DynaLinx

To send scan data to DynaLinx, simply scan as you normally would, but first make sure that this option has been enabled. You can check this under **DynaLinx > DynaLinx Scan Updates On**.



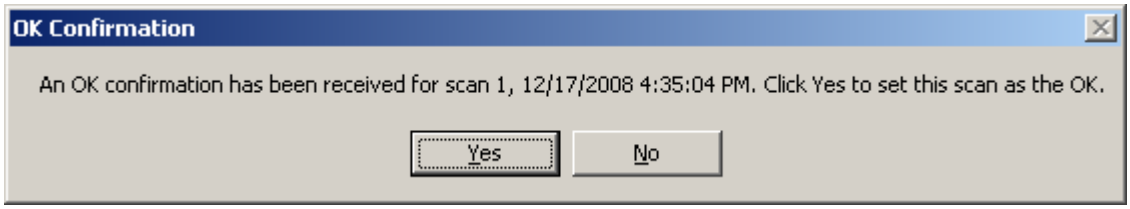
When this is checked, scans will be sent to the DynaLinx customer, if the customer has been set.

The updated color information when the color bar scan is completed.

Similarly, when unchecked, updates will not be sent when a scan is performed. This is useful when performing a Make Ready and do not wish the data from these scans to be sent, for example.

Accepting an OK

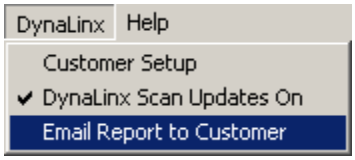
When a remote DynaLinx client OK's a scan, a message is relayed to ColorLinx.



Clicking Yes will set the scan to the OK sheet indicated. Subsequent scans will use this as a baseline for comparison.

Sending an Email Report

Once a job is complete, you can send email containing an attached report file to the customer. To do this, simple select **DynaLinx > Email Report to Customer**, and the report will be emailed to the customers email address that was entered under Customer Setup.

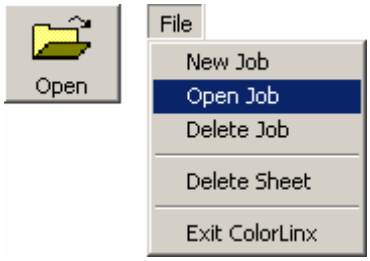


Advanced Features

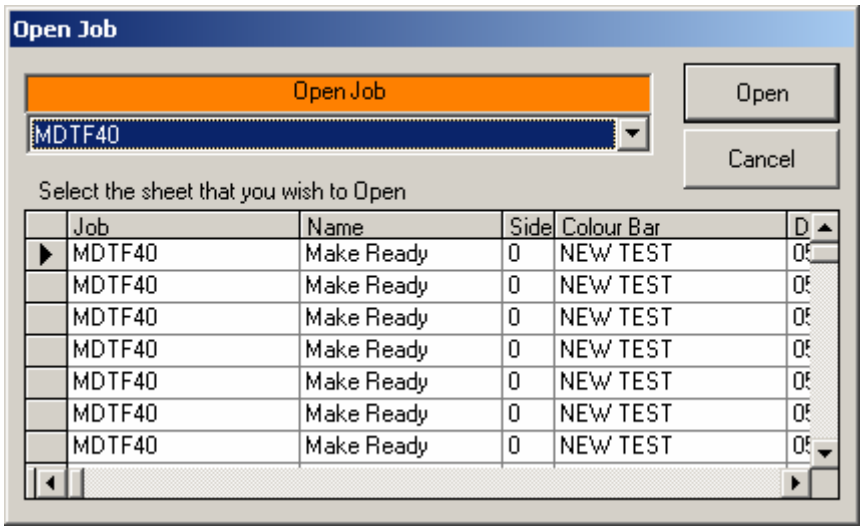
Opening an Existing Job

If you would like to open a previously saved job, you can select the job from the **Job** pull down list on the main window. This will open the existing job and place it on the last scan performed.

You can also press the **Open** button on the tool bar, or select **File > Open Job**.



The Open Job window will appear.



Use the **Open Job** combo box to choose the Job that you want to open.

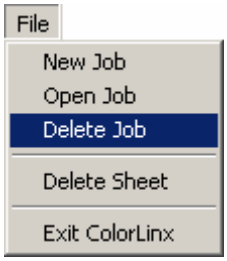
The list will then update with all of the sheets currently saved for the selected Job.

Select the sheet you wish to open, and press the **Open** button.

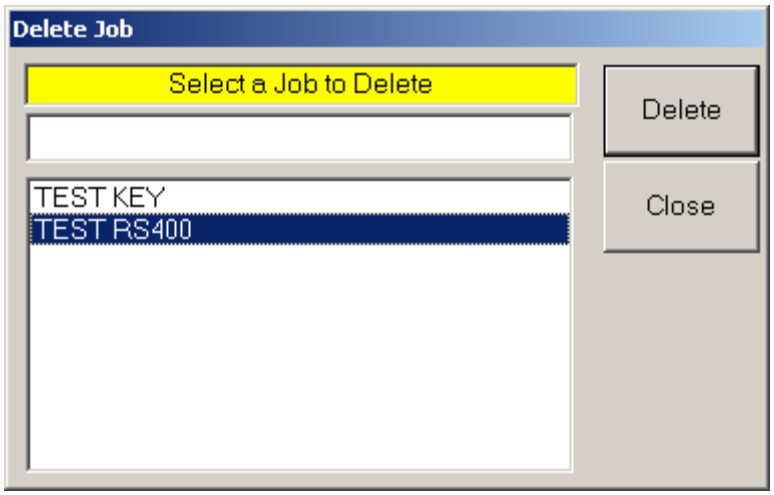
You will return the main window with the selected job active.

Deleting a Job

There are times when you might want to delete certain jobs from the database in order to reclaim some disk space. To accomplish this, select **File > Delete Job** from the pull down menu.



The Delete Job form will appear.

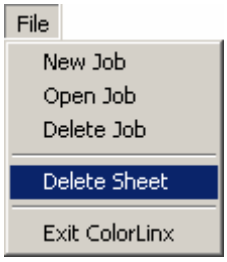


Click on the Job that you would like to remove and then press the **Delete** button. You will be asked to confirm the deletion. Click **Yes**, and the Job and all Sheets contained in it will be deleted.

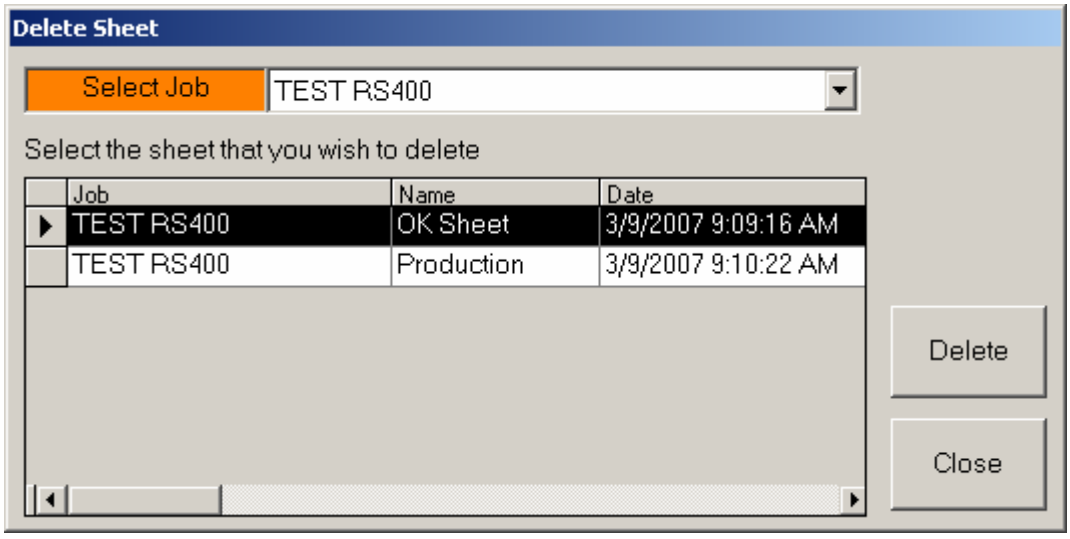
To select multiple jobs for deletion, you can use the standard windows Shift-Click or Ctrl-Click. To narrow the list of jobs shown, type in a partial or complete job name in the text box above the list; the list box will automatically find those jobs that match the text.

Deleting a Sheet

Use the Delete Sheet function to remove a specific sheet scan from the ColorLinx database. Select **File > Delete Sheet** from the pull down menu.



The Delete Sheet window will appear.

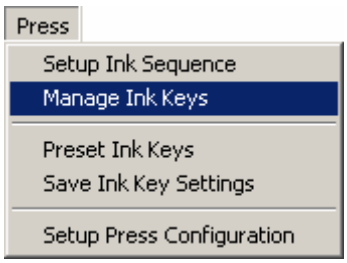


Select the Job that contains the sheet that you want to delete. The list will update with all of the sheets contained in the selected job.

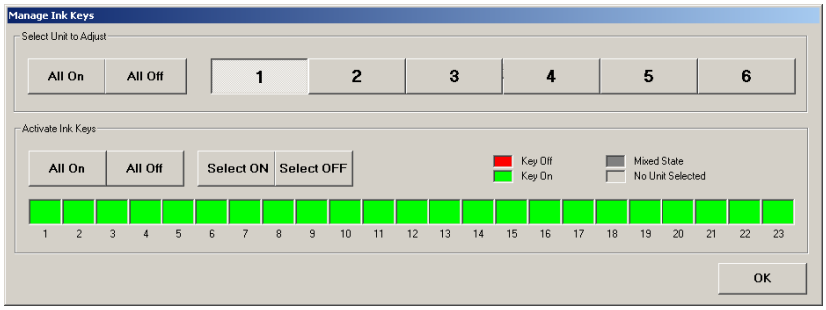
Click on the sheet(s) that you would like to remove and then press the **Delete** button. You can use Shift-click or Ctrl-click to select multiple sheets. Only the selected sheet(s) will be deleted from the database.

Managing Ink Keys

The Manage Ink Keys function allows the operator to deactivate keys in the software so that they will not be controlled on press. To display the Manage Ink Keys window, select **Press > Manage Ink Keys** from the main pull down menu.



The following window will appear.



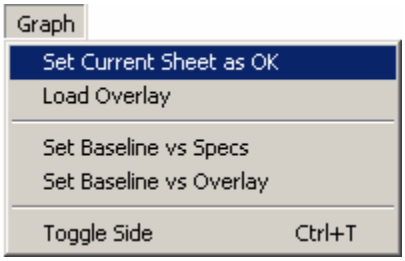
To manage the ink keys:

- Select the units that you wish to manage the ink keys for by pressing the appropriate unit button under **Select Unit to Adjust**. The **All On**/ **All Off** buttons will select/deselect all the units at once.
- To turn all the keys on for the selected unit, press the **All On** button. When a key is Green, it is active, and the software will make adjustments to it.
- To turn all the keys off for the selected unit, press the **All Off** button. When a key is Red, it is inactive, and the software will not make adjustments to it.
- To change the setting of an individual key, click on the Key number.
- Keys that are On show green, keys that are Off show red. If multiple units are selected, then keys on different units that are not in the same On/Off state show up as gray to indicate this mixed state.
- Repeat these steps for all of the Units / Keys that you want to adjust.
- Press **OK** to exit.

OK Sheet

In some cases you may not want to run to your standard house densities, but to a customer OK'd press sheet. ColorLinx allows you to run to either Target Density values or to an OK sheet.

To set a press sheet as an OK sheet, scan the sheet and then press the **Set as OK** button or select **Graph > Set Current Sheet as OK**.



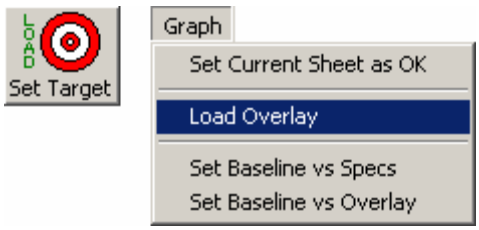
This will set the scan as the OK sheet baseline for all subsequent scans.

See also Load Overlay and Changing the Baseline.

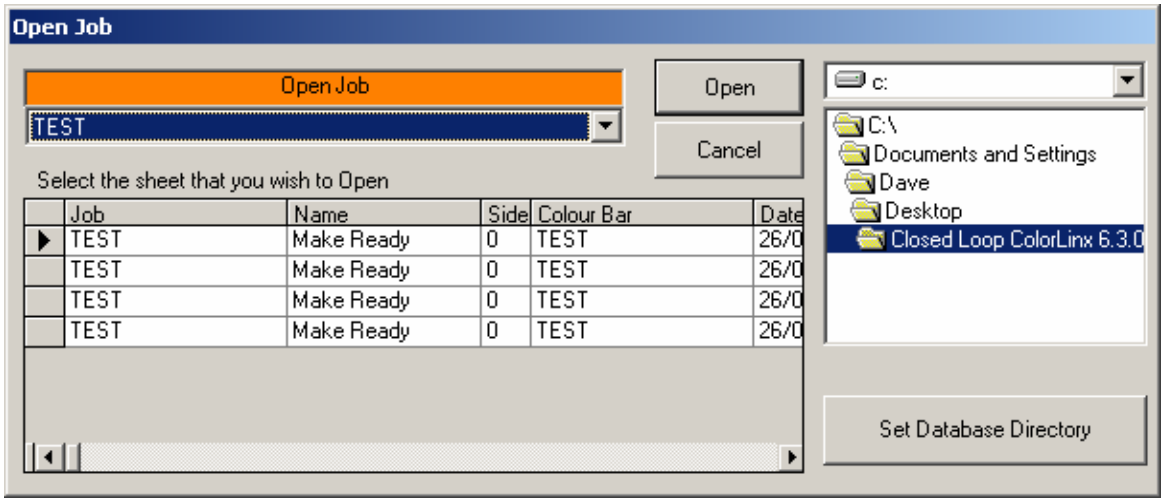
Load Overlay

The load overlay feature can be used to set the target baseline density values to any previously saved scan. This is particularly useful for repeat jobs when you would like to make ready against the OK Sheet from the last time the job was run.

Press the **Set Target** button, or select **Graph > Load Overlay** from the pull down menu.



The Open form will appear.



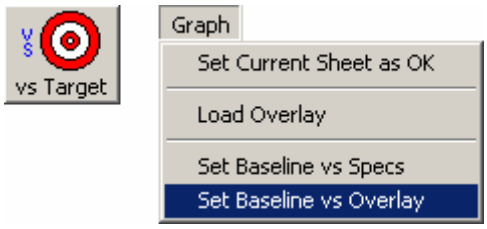
- Select the Job from which you would like to choose the baseline scan.
- Select the desired sheet for you baseline target.
- Press the **Open** button

Subsequent scans will be compared to the sheet you have loaded.

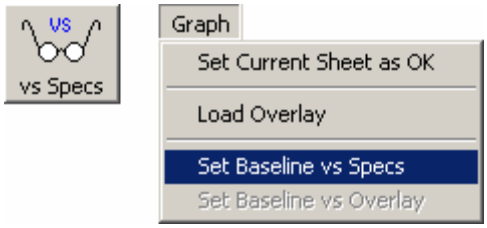
Changing the Baseline

ColorLinx allows you to use Target Density values or a Saved Scan as the baseline for comparison of subsequent scans. If you already have an overlay loaded as a baseline, you can use the following buttons to change what you are graphing against.

By pressing the **vs. Target** button (or selecting **Graph > Set Baseline vs. Overlay**), you will be graphing against the Loaded Overlay.

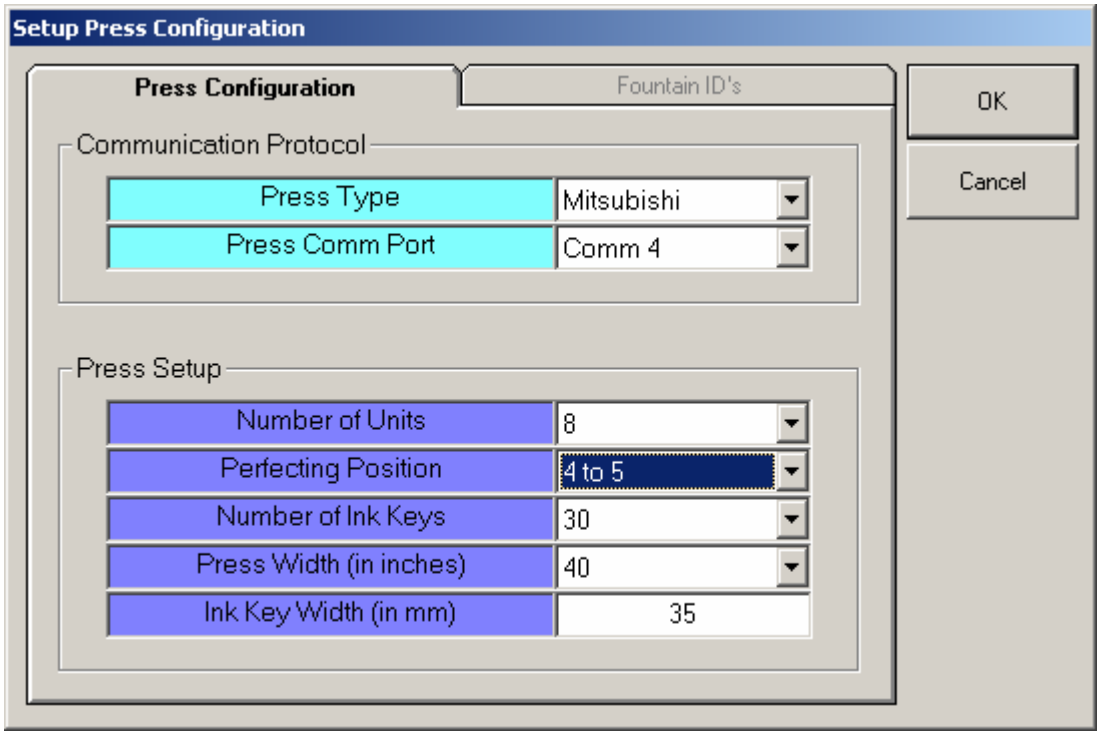


If you press the **vs. Specs** button (or select **Graph > Set Baseline vs. Specs**), you will be using the Target Specification Limits as the baseline data.



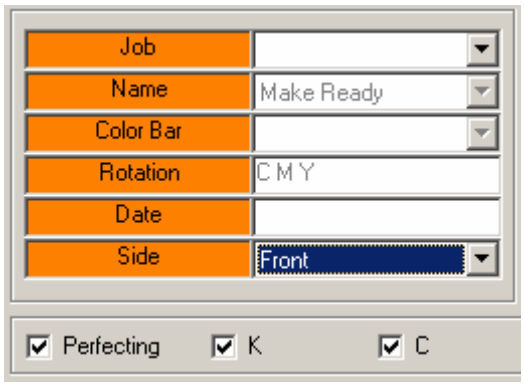
Perfecting

ColorLinx 8 provides support for perfecting presses in any configuration with up to 12 units. To configure ColorLinx for a perfecting press, open the Setup Press Configuration window and set the perfecting position:



The setup above is for an eight unit, four – over – four Mitsubishi perfecting press. The first four units comprise the Front side of the press, while the last four units make up the Back side of the press.

Pressing OK will accept the settings, and return the program to the main window. A few changes will be apparent:



The **Side** box has become activated. It is used to specify which side of the press the scanned density data and press adjustments should be applied to. Before scanning and sending press adjustments, ensure that the Side has been correctly set to appropriate value, **Front** or **Back**.

To set the **Side** box, you can select either **Front** or **Back** from the drop down list. Alternately, you can toggle back and forth between the two by clicking on the **Side** label to the left of the list, by pressing **Ctrl + T** on the keyboard, or selecting **Toggle Side** from the **Graph** drop down menu.

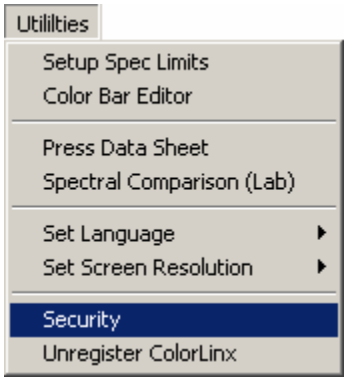
Below the **Side** box, and beside the K black checkbox, the **Perfecting** check box can be used to turn the perfecting mode on and off in the software, useful for those presses that can print in either perfecting and non-perfecting. Simply click on the **Perfecting** box to switch between perfecting and non-perfecting, depending upon how the Job is to be run on the press.

There are a few other items of interest to note with regard to perfecting. First is the color sequence. On a non-perfecting, Mitsubishi press, the color sequence in the ColorLinx software is determined by querying the settings on the console. However, for a perfecting Mitsubishi press, it is necessary to manually set the sequence in ColorLinx. Setting the ink sequence in the software is described in Setup Ink Sequence.

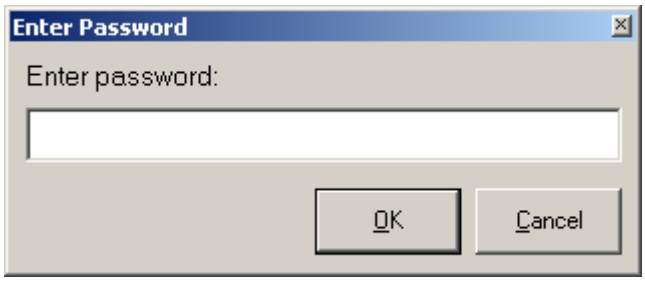
Also, you should note that the Density Specs, Overlay, and Paper References are tracked independently for each side.

Security

ColorLinx has a security feature that permits password protection of certain software features. To access these security options, select **Utilities > Security** from the main menu:

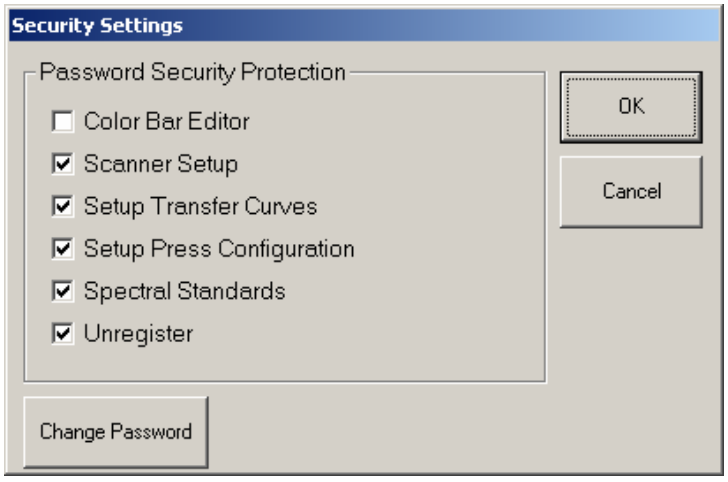


The Enter Password window will open, prompting you to enter the correct password to access the security features:



Enter the correct password and click **OK**. The default password is COLORLINX.

The Security Settings window will open.



Each of the options under **Password Security Protection** can be enabled or disabled using the checkboxes. If checked, in order to access the option, the user must enter the security password.

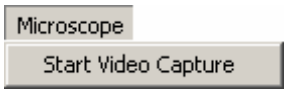
The password can be changed by clicking on the **Change Password** button. A box open asking you to enter the new password, and a second box will ask you to verify the new password. The security password in ColorLinx is case insensitive.

Other Features

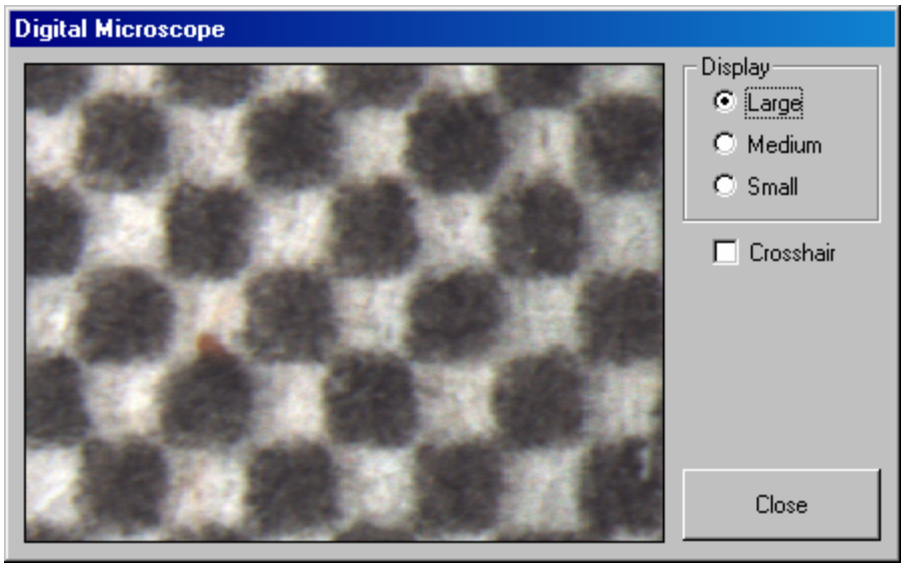
Video Capture

ColorLinx has the ability to display live video from the Techkon DMS 910 digital microscope. This tool can be used to magnify register targets, slur targets, screens, etc.

- To start the live video capture, ensure that the microscope is plugged into a USB port on the computer, and select the **Start Video Capture** option from under the **Microscope** pull down menu.



- If a Techkon DMS 910 digital microscope is attached to the computer and the correct drivers have been installed, a live video window will appear on the screen.

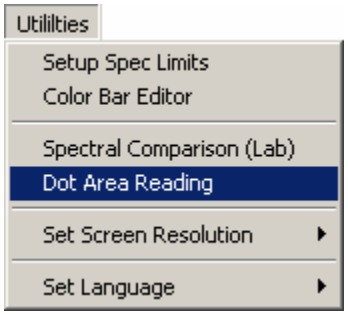


To capture an image and save it to disk, press the green button on the DMS 910 microscope. A **Save As** window will open, prompting you to enter a suitable filename. Press **OK** to save the file.

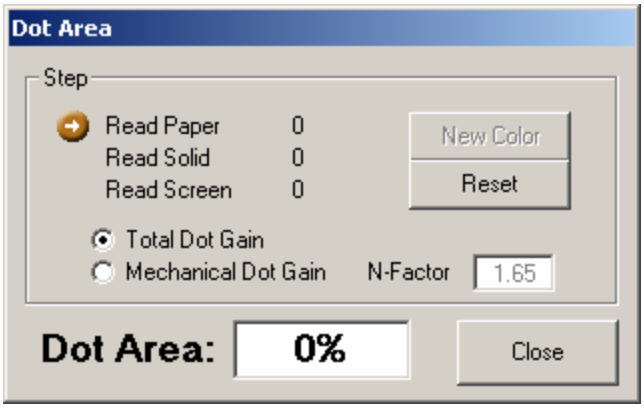
Dot Area Reading

This option allows the Techkon RS400 and RS800 handheld scanners to quickly give dot area readings. This functionality is built into the X-Rite handheld densitometers, and is not available in the software for these instruments.

To initiate a Techkon dot area reading, select **Utilities > Dot Area Reading** from the main menu:



The Dot Area window will open.



To perform a dot area reading:

1 Read the paper white reference by placing the instrument aperture over a white area of the press sheet and pressing the green button once.

2 Read the solid color by positioning the aperture over an appropriate solid color patch and pressing the green button once.

3 Read the screen by positioning the aperture over an appropriate screen patch and pressing the green button once. The dot area calculation will appear in the Dot Area window. Repeat this step for each screen you wish to read for that color.

The **Total Dot Gain** and **Mechanical Dot Gain** buttons permit switching between the two modes.

Press **Reset** to clear all readings and return to step 1, Read Paper.

Press **New Color** to clear the color readings and return to step 2, Read Solid.

Press **Close** to close the window and return to the main program.

Spectral Comparisons

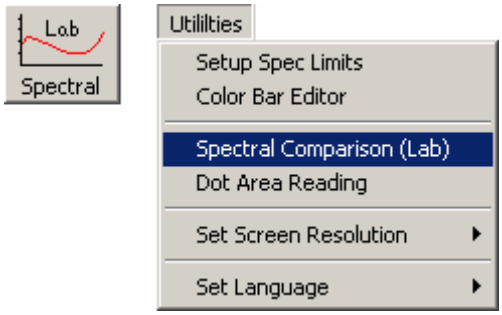
Spectral Overview

The ColorLinx spectral package allows for comparison of CIE L*a*b*C*H values spot read with a spectrophotometer, either the Techkon RS 800 or the X-Rite 500 series.

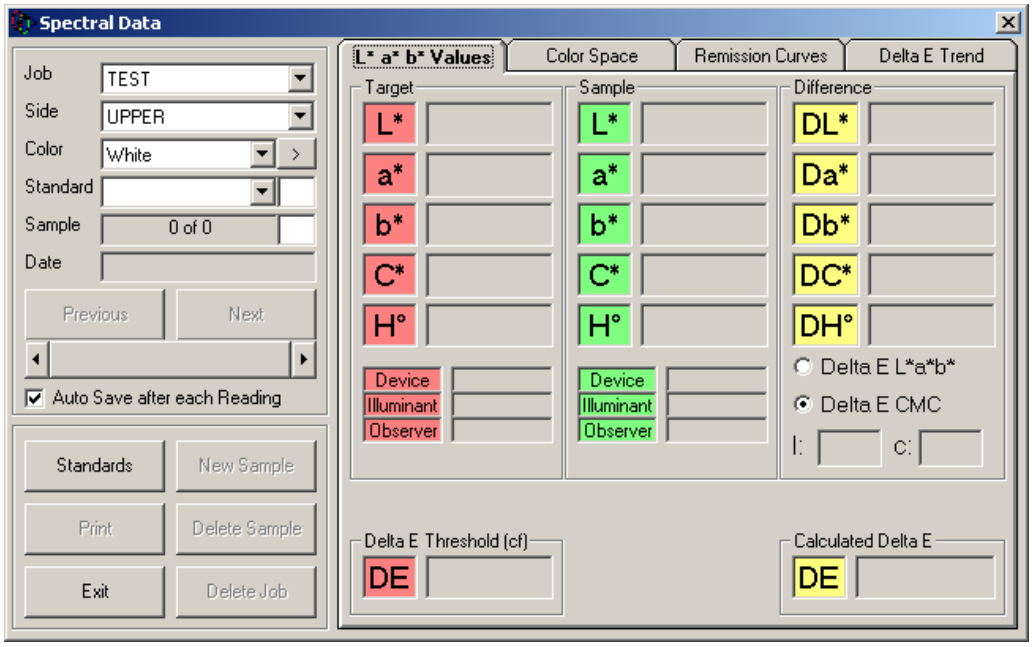
Before utilizing the spectral package, it is important to understand how the spectral information is organized. Spectral data is first ordered by **Job** name. Each spectral job corresponds to a Job with the same name in the main ColorLinx program. However, the data is saved in a separate database file; deleting a spectral job will not delete the corresponding job in the main database, and vice versa.

An individual job has one or more **Samples**. A sample could be a single press sheet or form. Each sample has a particular Side associated with it (for perfecting presses). Each sample consists of one or more color **Readings**. Individual color readings are compared to set **Standards**.

To open the spectral package, press the **Spectral** button on the toolbar, or select **Utilities > Spectral Comparison** from the menu.

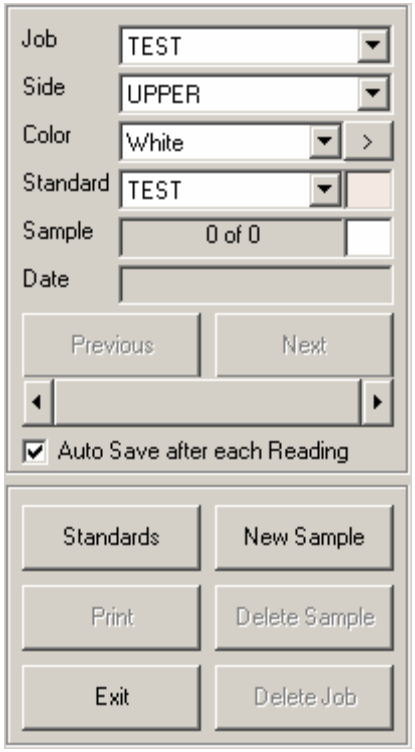


The Spectral Data Window is organized into two different sections, the Control Panel and the Graph Panel.



The Control Panel

Located on the left-hand side of the window, this panel contains the controls for loading, sorting, and saving the spectral data.



The top most part of the control panel consists of the following:

- **Job:** The currently selected job. The different spectral jobs can be selected from the drop down list. Defaults to the current job in the main program.
- **Side:** Sets the side for the current sample.
- **Color:** The currently selected color reading for the current sample. Each reading in a sample is associated with a color.
- **>:** The advance color button. Advances the color to the next color that has a set standard.
- **Standard:** The standard for the current color. When enabled, you can select the standard from the drop down list. The box beside the text field displays the color for the standard.
- **Sample:** The current sample. The first pair of numbers indicates the sample number, such as *4 of 4*. The second pair gives the reading number for the current color reading, such as *(1 of 1)*. The box beside the sample label displays the color for comparison to the standard above.
- **Date:** The date and time at which the current sample reading was taken.

The bottom section of the control panel has the following buttons:

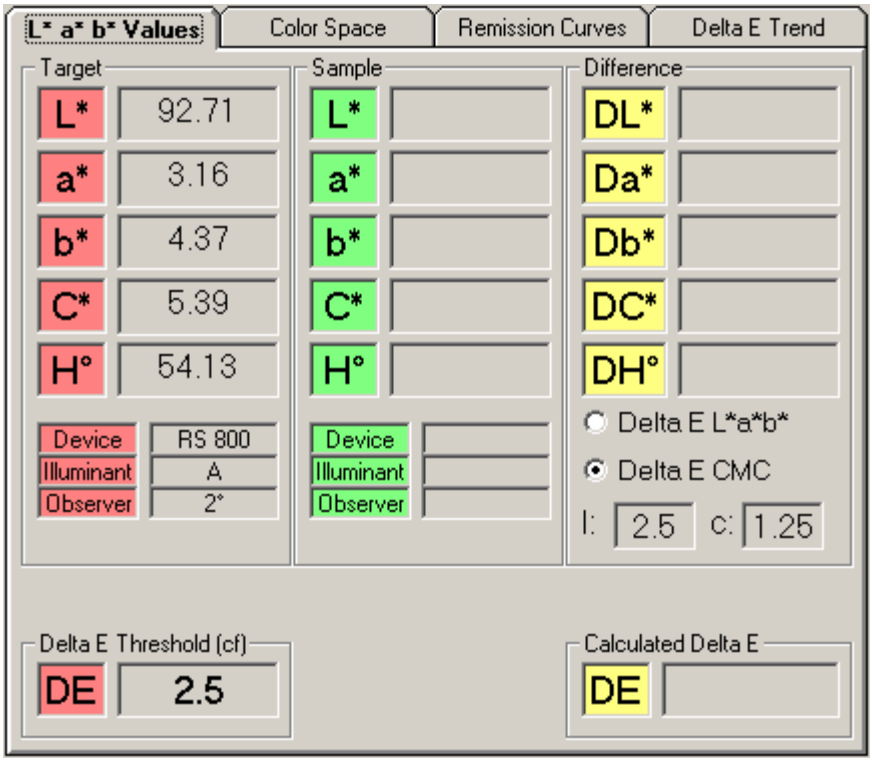
- **Standards:** This will load the standards window when pressed.
- **Print:** Prints the currently selected sample on the default printer. If the Delta E graph is selected, this graph is printed instead.
- **Exit:** Close the Spectral Data window and return to the main program.
- **New Sample / Save Sample:** When this button reads New Sample, pressing it will change the caption to Save Sample and cause the sample number to advance by one, allowing for new

data readings to be taken. After all the desired readings for the current sample have been taken, pressing Save Sample will save it to the database.

- **Delete Sample:** Removes the current sample from the current Job.
- **Delete Job:** Removes the current Job from the database. Data in the main program associated with the same Job name remains intact.

The Graph Panel

Located on the right side of the window, this panel displays the spectral data in a variety of ways.

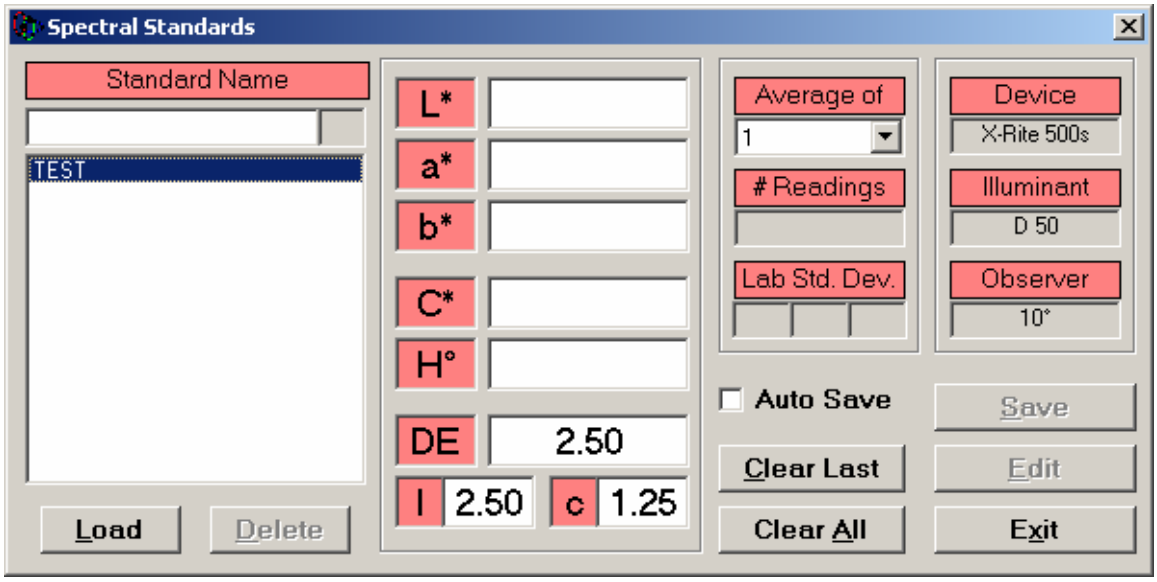


The four tabs at the top of the panel are:

- **L*a*b* Values:** Displays the L*a*b*C*H values for the current color standard, sample reading, and the differences between the two. A calculated Delta E, either Lab or CMC, is show and compared to the DE threshold, along with a Pass / Fail indicator.
- **Color Space:** Plots the L*a*b* values on a color space graph.
- **Remission**: Plots the remission curves for the sample and standard. Only currently available for readings from Techkon spectrophotometers.
- **Delta E Trend:** Plots a delta E trend chart for the current color.

Creating Standards

In order to make numerical spectral comparisons, standards are required to compare the sample readings against. These standards are created and modified in the Standards window, which is opened by pressing the **Standards** button on the Spectral Data window.



- To create standards, simply take a spectral reading, then provide a unique **Standard Name**, a **DE** (delta E) threshold (also known as a commercial factor cf), and **l** and **c** factors, and press the **Save** button.
- Optionally, you can set the **Average of** value to something greater than one to take multiple readings and average them to get your standard. If the **Autosave** button is checked, the standard is automatically saved after taking all the readings.
- To load and existing standard, select it from the list and press **Load**. Press **Delete** to delete the standard from the database.
- If a saved standard is loaded, you can press **New** to allow entry of a new standard, or **Edit** to alter the existing standard.

Caution: Editing an existing standard will change the standard for all samples in the database. You should limit your standard alterations to modifying the DE, l and c values only.

Setting Standards and Reading Samples

This section describes how to set the standards and read samples for comparison.

- To set the standards, select the side from the **Side** box and the color from the **Color** box, and then select the corresponding standard from the **Standard** box. Repeat for each color-standard pair you plan on tracking.
- Check over the color standards you've just set by pressing the advance set color button **'>',** beside the **Color** box. This will allow you to easily loop through all of the set standards, to ensure they are set correctly.
- Press the **New Sample** button. This will cause the sample text to advance to *1 of 0"*, and the button caption will change to *Save Sample"*
- Take a reading for the currently selected color standard. The color values will be shown along with the calculated differences along and a **Pass** or **Fail** indicator.
- Press the **'>'** button to advance to the next color and take a reading for that color. Repeat for all set standards.
- Press the **Save Sample** button to save the standards along with the initial sample readings. The sample indicator text will advance to *1 of 1 (1 of 1)"*, and the button caption will return to *"New Sample"*.