

Neuralog Z3

User Guide

Guide for Printing Well Logs and other Continuous Form Documents on the Neuralog Z3 Printer/Plotter



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NeuraLaserColor® 2009

NeuraLaserColor 2™ 2012

Neuralog Z3™ 2018

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Printed July 2018 R2, Stafford, TX.

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Chapter 1. A Printing Solution

Congratulations on your purchase of the Neuralog Z3 Well Log Printer/Plotter. Neuralog Z3 has been developed through a partnership of Neuralog, L.P. and Oki Data Americas, Inc. to print high-quality continuous form documents, such as well logs, while maintaining basic functionality for office cut-sheet printing. This multi-purpose printer/plotter uses the latest generation of printing technology to produce crisp prints of well logs and other office documents.

Your Neuralog Z3 Well Log Printer/Plotter, or NeuraLaserColor 3, is more than just a printer; it is a complete printing solution. This solution includes the continuous feed print engine, the continuous form attachment, a paper stacker, certified printing consumables such as print cartridges and paper, and a custom print driver developed specifically for printing well logs. NeuraView software completes this system to give you everything you need to print well logs in industry standard formats. Use the NeuraView application that ships with your printer, or you may use your own Windows printing software to send well log prints to NeuraLaserColor.

The following are commonly used terms related to NeuraLaserColor that will be used throughout this document.

1.1 Neuralog Z3 Continuous Form Printer/Plotter

Neuralog Z3, or NeuraLaserColor 3, Continuous Form Printer/Plotter refers to the Print Engine with Continuous Form Attachment, Continuous Form Stacker and the standard 530-sheet cut sheet tray. The Neuralog Z3 supports printing continuous paper documents (well logs) up 700 feet¹ long and 8.5" wide. Narrow media printing kits are available for half scale log printing. In addition, Neuralog Z3 supports cut sheet printing of letter, legal, executive, A4, A5 and B5 sizes. It can also print cut sheet on a variety of media types.

1.2 Print Engine

The Print Engine refers to the NeuraLaserColor printer without any input/output attachments. The Print Engine is supplied by Oki Data Americas, Inc. and customized by Neuralog.

¹ While the plotter may be capable of longer prints, Neuralog has tested and certified documents up to 700 feet. Printing ability and performance is usually limited by electronic file size, rather than physical length.

1.3 Continuous Form Attachment

The Continuous Form Attachment (CFA)² is the device which attaches to the print engine and feeds and cuts the continuous form paper. It receives both power and control signals from the print engine. It contains the following major components.

- **System Board** – Controls all actions of the individual components. Updatable firmware controls the system.
- **Guide Drive System** – Moves the paper forward and backward; straightens paper; retracts when not in use. Consists of subsystems of independent motors, gears and wheels.
- **Rotary Cutter** – Cuts the 8.5” width of the paper by moving across the page. Consists of a rotary blade, anvil rail system and motor. The cutter blade has been factory-rated to 10,000 cuts.
- **Paper Sensor** – Detects the paper as it moves through the device; located in the center of the printing track near the opening of the CFA
- **Cut Mark Sensors** – Detects the Neuralog cut marks on the well log media; located on either side of the printing track and correspond to the Neuralog standard specification.
- **Well Log Mark Sensor** – Detects the form marks on the right hand side of the printing track.
- **Connector and wires** – Connects wiring from CFA to print engine wiring for control and power signals.
- **Case** – Housing for all components made from a combination of CAD-generated plastic and machined pieces as well as sheet-rolled metal.

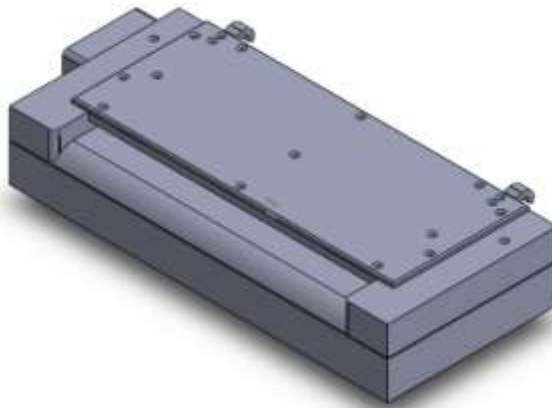


Figure 1-1. Neuralog Z3 Continuous Form Attachment

- **LED Status Light** – The status light on the CFA indicates the unit is on and provides certain diagnostic information.

After the bootup sequence the status light will turn light blue when ready.

² US Patent #8,489,012.

During cutting, the status light blinks to indicate cut marks have been detected.

- Left mark only detected: Flashes Blue
- Right mark only detected: Flashes Yellow
- No marks detected: Flashes White
- Both marks detected: Does not Flash

A red status light indicates that there has been a malfunction in the CFA .

- **CFA Hooks:** The CFA has two hooks that attach it to a bar at the printer entrance. The CFA should snap easily into place and is straight when properly installed.
- **CFA/Printer Connector:** The cable that extends from the CFA has a round metal connector that is joined to its mate coming out of the right side of the printer. The two ends must be properly aligned to be connected. The printer power should always be turned off when connecting or disconnecting these cables.

WARNING: Always turn printer OFF when connecting or disconnecting CFA.

- **Lid and Thumb Screws:** Two thumb screws allow the CFA lid to be removed for cleaning. The printer/CFA power should always be turned off whenever the CFA lid is removed.

The Continuous Form Attachment is manufactured by Neuralog, LP. The Neuralog Z3 CFA has been designed to work with the Neuralog Z3 printer. It is not compatible with the other NeuraLaserColor printers; nor are the other NeuraLaserColor CFAs compatible with this next generation printer.

1.4 Paper Cutter

The Neuralog Z3 cutter, found in the CFA, cuts the well log paper at the end of a job as part of the printing workflow. This allows for optimal paper folding and continuation of the next print job. The desired location for the paper cut is usually about 1/32” after the perforation at the end of the print. This will prevent any “chads” from occurring on the leading edge of the first page of the print. If the cutter should need to be re-calibrated contact Neuralog Support. A calibration adjustment is available to the end user.

1.5 Paper Stacker

The Paper Stacker, or Paper Basket, attaches to the exit of the printer. It catches the continuous paper and allows the paper to automatically fold into a stack. The Neuralog Z3 Paper Stacker has been designed to assist the well log paper folding as it exits the printer.



Figure 1-2. Neuralog Z3 Paper Stacker

1.6 Printer Operator Panel

The Neuralog Z3 Operator Panel is used to access information about the printer and set certain printing parameters. The most important or frequently used operations are discussed here. Use the Menu Button Set shown to access these functions

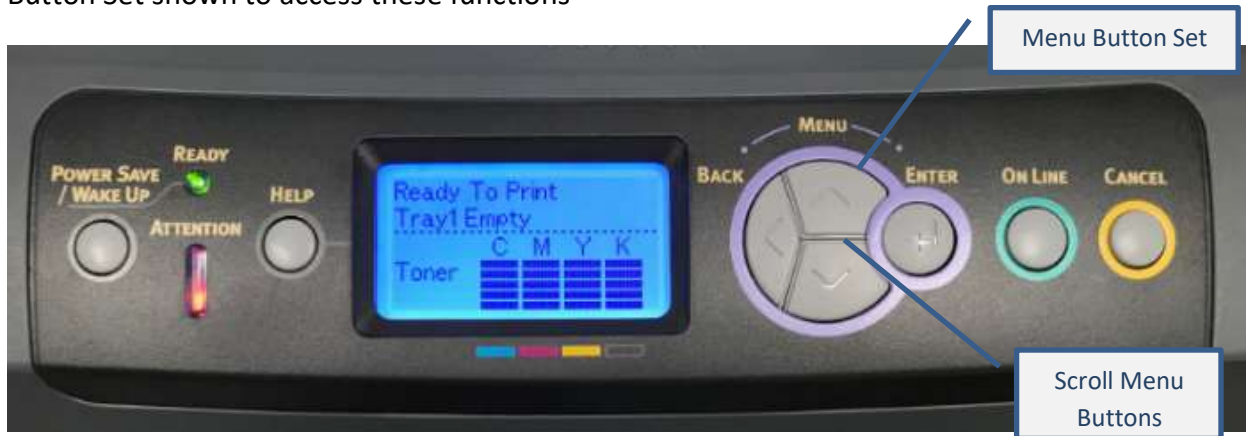


Figure 1-3. Neuralog Z3 Operator Panel

1.6.1 Network Address of the Printer

By default the printer will be auto-assigned a network address when plugged into your network.

To locate the printer Network IP Address:

- Press Menu
- Press Configuration (the first choice)
- Scroll down 2 clicks and press Network
- Scroll down 2 clicks and press IPv4 Address. *The number is displayed.*
- Click OnLine or Cancel to return to the main screen.

1.6.2 Continuous Print Parameters

Certain continuous printing parameters are accessible through the operator panel.

To locate the Continuous Print Parameters:

- Press Menu
- Scroll down to the end of the list and select Continuous Print Parameters

1.6.2.1 Exit Speed Adjust

The Printer Exit Speed may be adjusted to assist with continuous printing quality. This setting allows the exit rollers to turn slightly faster to provide a smooth stretch to the media inside the printer, ensuring there are no waves or wrinkles. If at any time wrinkles or wavy smears appear in the printed media, this setting can be increased to help resolve the issue. We suggest an exit speed adjust only if you are having trouble. Values of 10-40 have been found to work well.

1.6.2.2 Rewinder Wait Time

The Rewinder Wait time pauses the printer at the beginning of the print. It is not normally used for Well Log printing.

1.6.2.3 Cut Mode

The Neuralog Z3 will always stop and cut, regardless of this value. Leave this value at its default.

1.6.3 Printer Shut Down Procedure

Menu->Shut Down->Shut Down Start provides the proper shutdown procedure for the printer. Turn power button off once this has been executed.

1.6.4 Center of Print Adjustment

The center of the continuous prints can be adjusted in increments of ¼ mm through the Operator Panel. To access this feature, follow these steps on the printer operator panel.

Menu->Menus->System Adjust->Print Position Adjust->X Adjust

- Use the up/down arrows to change the value.
- The default value is 0.
- Up makes the value more positive and moves the image to the right.
- Down makes the value more negative and moves the image to the left.

1.7 Print Cartridges

Neuralog Z3 print cartridges are toner based. The printer contains four print cartridges: black, yellow, cyan and magenta. Neuralog provides all cartridges for the Z3 printer. These cartridges are rated to yield 11,500 pages for CMY and 11,000 pages for black @5% coverage. Original starter cartridges that ship with the printer are lower yield.



Figure 1-4. Neuralog Z3 Print Cartridges



Figure 1-5. Neuralog Z3 Print Cartridge

1.8 Print Drums

A Neuralog Z3 contains four print drums, one for each cartridge, rated at 30,000 pages @5% coverage. These drums are light sensitive and should be handled with care. The toner is latched onto the drum when placed in the printer.



Figure 1-6. Neuralog Z3 Print Drum



Figure 1-7. Neuralog Z3 Toner and Drum

1.9 Fuser

The fuser is the part of the printer that melts the toner onto the paper. The Neuralog Z3 fuser is located at the back of the printer, behind the toner/drum sets. Neuralog provides fusers for the Neuralog Z3, rated to yield 60,000 pages.

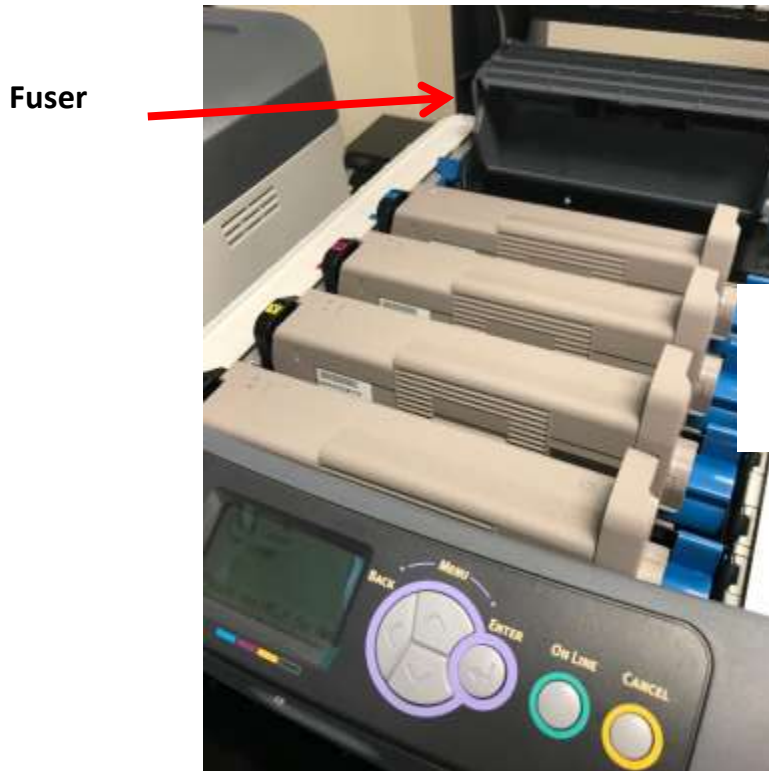


Figure 1-8. Neuralog Z3 Fuser, ITU and Toner Waste

1.10 Transfer Belt (TU)

The Transfer Belt transfers the electrical charge from the print cartridge drum onto the paper media. It moves the paper to the fuser where the toner is fused to the page. Neuralog provides ITUs for the NeuraLaserColor. The Neuralog Z3 TU is rated to yield 60,000 pages.

1.11 Toner Waste Container - NA

There is no Toner Waste Container on this printer. The drums collect excess toner.

1.12 Continuous Form Paper

Continuous form paper is fan folded paper of “unlimited” or continuous length. One box of this paper is usually 5000 6.25” sheets, or about 2600 feet of paper. The continuous paper used by the Neuralog Z3 is 8.5” wide. Neuralog provides certified well log paper for the Neuralog Z3. The certified well log paper is also compatible with NeuraLaserColor I and NeuraLaserColor II. Look for the Neuralog logo on the back of the well log paper to verify it is genuine Neuralog paper.

1.12.1 Well Log Paper

Well log paper is continuous form paper used for well log printing. Full scale well log paper is 8.5" wide. Half Scale well log paper, less common, is 4.25" wide.

1.12.2 Well Log

A well log is a graph where the vertical (long) axis or axes represent depth and the horizontal (short) axes represent measured values. Well logs are typically 20-100 feet when printed, but may be any length.

1.13 Well Log Printing Application

A Well Log Printing Application can load and display well logs, as well as send these files to a well log printer for continuous form print. Well Log Printing applications should have the following features to work well with Neuralog Z3.

- Windows based, Windows 2000+ recommended
- Ability to load very large and very long documents in a timely manner
- Ability to size the document horizontally to fit on the continuous form page
- Additional features such as copies, color selection, etc.

Chapter 2. Neuralog Z3 Setup

2.1 Setting up the Printer

Neuralog Z3 setup is simple and should only take a few minutes. Before you begin, you will need to choose an easily accessible location and decide how the printer will be integrated into your network. You will need a power outlet, a physical network connection and a network address for your printer. Alternatively, you may print over a USB connection.

2.1.1 Unpacking the Printer

Setup sheets for the Neuralog Z3 print engine, the Continuous Form Attachment and the Stacker are provided with your equipment. These sheets can be found in their respective boxes. If you are unable to locate the setup sheets, they can be downloaded in the PDF format from www.neuralog.com. We recommend that you save your boxes and packaging material.

2.1.2 Location

Printers should be set up in a cool (office-temperature) environment and on a sturdy table or stand. The printer weighs about 60 pounds. It is recommended that it be lifted and moved by two people. The printer has handholds which make moving it easier. Be sure to locate these handholds and remove the CFA and paper stacker before attempting to move the printer.

Table: Neuralog Z3 Printer Dimensions – Unpackaged				
	Height in	Width in	Depth in	Weight w/cartridge (Unpackaged)
Printer.	15.3	17.1	21.5	61 lb/27.6 kg
CFA	2.5	13	5.5	4.3 lb/1.9 kg
Stacker	13	10	6.5	1 lb/0.5 kg

The printer will need power and network or USB connections. Fuser based printers in general consume a significant amount of power, and continuous printers will contribute to network traffic; so make sure your facility is set up for well log printing. The printer must be directly plugged into a power wall outlet. If the printer is plugged into a power strip with other equipment, it may become power “starved” and the printing may fail.

For colder locations, if the printer has been stored outside an office environment, make sure the printer reaches a temperature of 50F (10C) before powering on the unit. Powering on a printer in colder environments can result in initialization errors. Check the specification table for environment ratings.

Finally make sure your printer has adequate space. You will want to access the operator panel at the LEFT ENTRANCE of the printer. This panel provides feedback on printing and allows you to set up printer options. You will need space on the LEFT side of the printer for the CFA and for the continuous form paper. You will also need room to stand while loading paper into the printer. You will need space on the RIGHT side of the printer for the paper stacker. Also note that your paper stacker may be designed to hang off the edge of the printer table, so the printer should be positioned to allow for this.

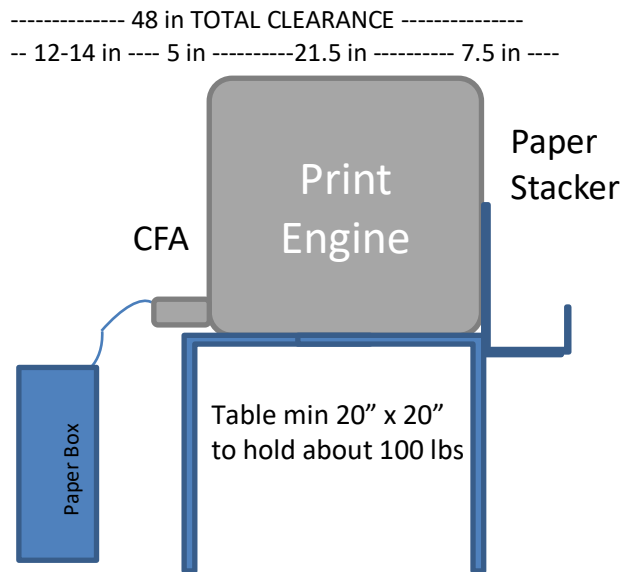


Figure 2-1. Proper Clearance for Neuralog Z3 Printer

Continuous form paper should be pulled from the box, kept on the floor about 12 inches away from the CFA. This will allow the paper to properly unfold as it leaves the box. The Neuralog Z3 has been designed to pull continuous form paper directly from the box. However, it is important to make sure the paper flow is in no way restricted by the box lid, placement of the box, or by plastic in the box. Always make sure the path from the paper box to the printer is unobstructed. Always make sure the paper flows straight with respect to the CFA. The paper should not twist as it enters the CFA.

The continuous paper will exit the upper right exit of the printer and flow into paper stacker on the right side. Be sure to have adequate space for the paper catcher. Always make sure the paper exit path out of the printer is unobstructed.

2.1.3 Power

Select a location for your printer that is near a power outlet. When running at full functionality, printers consume a significant amount of power. Using a power strip or long extension cord can interfere with

printing. Having multiple printers or other high power consuming devices plugged into the same outlet may interfere with printing. Neuralog Z3 can be 110v or 220v. Make sure you have the correct printer for your power conditions.

Note that the ON/OFF power switch is at the Right Lower Side of the printer if you face the CFA. The power socket is at the exit side of the printer near the power switch. Be sure the switch is OFF when plugging in your printer and setting up the CFA.



Figure 2-2. Setting up Power to your Neuralog Z3

2.1.4 Network

The Neuralog Z3 has an easy to use network setup panel. The network socket is at the printer exit side as shown in the picture above (with a network cable). The printer can be given a static or dynamic IP address and can be placed on your company's local area network or on a private network. It may run with a print server (a special computer that manages printing) or may be used without a print server (each user's computer manages its own prints). There is no single right way to set up your printer on a network. Your IT administrator will know how to configure your printer for your company.

A basic network setup example is provided in the section *Setting up the Printer Network Configuration*.

2.1.5 USB

The Neuralog Z3 can also be used with USB. The USB socket is at the printer exit side as shown in the picture above (with no cable).

2.2 Installing the Continuous Form Attachment

Once you find an appropriate location for your Neuralog Z3 you can attach the CFA, or Continuous Form Attachment. The CFA should always be handled with two hands. You should NOT attach or un-attach the CFA to the printer unless the printer's power has been turned OFF.

1. With both hands carefully snap the CFA onto the printer metal mounting rod using the two hooks. The CFA is installed at the printer entrance under the control panel.
 - *Make sure each hook is completely attached to the rod.*
 - *The left hook snaps on just to the left of the alignment clip.*

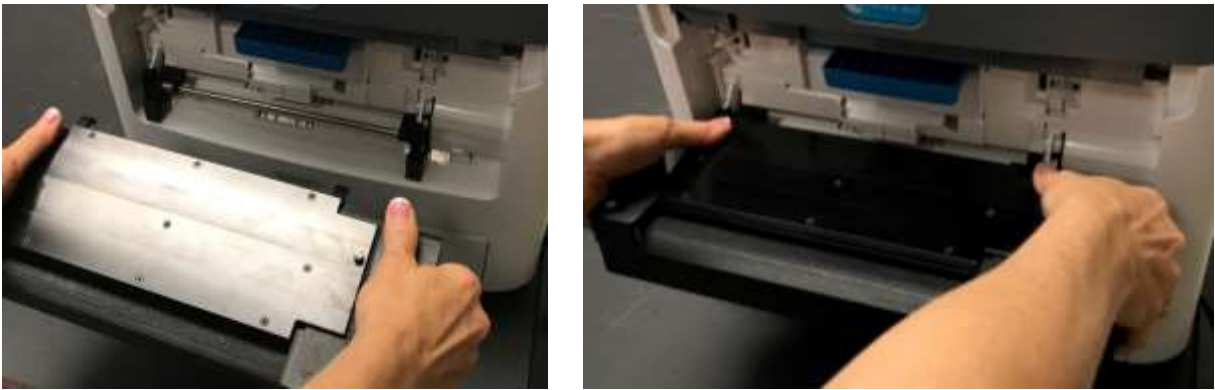


Figure 2-3. Connect CFA hooks to mounting rod

2. Connect the round metal control/power connector to its mate on the printer.



Figure 2-4. Connect the CFA Cable to Printer Cable

Once the CFA is in place and connected you are ready to power ON the printer and move on to the next step. You will see the CFA LED turn on when the CFA has power.

2.3 Uninstalling the Continuous Form Attachment

If you should need to remove the Continuous Form Attachment from the printer follow these steps.

1. Turn the printer power OFF. You will see the LED on the CFA turn off.
2. With two hands gently pull out any paper that had been loaded into the CFA.
3. Disconnect the CFA/printer connectors.
4. With two hands unsnap each hook that attaches the CFA to the printer.
5. Set the CFA on the table in a secure place.

2.4 CFA Boot-up and Wake-up

The CFA receives both control and power from the printer through the wiring harness. When the printer is powered up and the CFA receives power it goes through a boot up sequence that can be used for diagnostics. The boot up sequence will occur if there is no paper in the CFA and the printer is powered up. The sequence exercises the following.

- Lifter motors – move up to engage the paper and move down to disengage the paper
- Driver motors – push the paper forward into the printer
- Rotary cutter – moves left to right and then right to left
- LED – flashes the version of the CFA firmware

Neuralog support personnel can listen to this boot up sequence over the phone if diagnostics of the system is needed. Knowing the CFA firmware version can allow support to check for firmware updates. Note that this sequence only occurs when the printer power is turned on. This sequence can be observed by cycling the printer power.

2.5 Loading the Continuous Form (Well Log) Paper

Once the Continuous Form Attachment has been installed and powered ON you can load paper. When ready the CFA will be in a ready state with a Light Blue LED. Paper can now be loaded, or you can complete the other setup steps and load paper later. As soon as the edge of the paper is detected by the CFA, the LED becomes green. Paper can be completely removed from the box, or paper can be pulled from the box it comes in, as long as there is no plastic in the box and nothing such as the box lid can restrict the paper flow. The box must be straight with respect to the CFA so that the paper does not twist.

If the printer is on but not in the ready state, paper may still be inserted into the CFA. In this case the paper will load to an intermediate position. Once the printer returns to the ready state, the CFA light will turn green and the paper will load.

Do not attempt to load paper into the CFA when it is going through its diagnostic procedure. During this procedure the CFA is not ready and will not load the paper properly.

2.5.1 Loading the Paper

Paper is loaded into the Neuralog Z3 printer with the printable side of the media face up and the marks face down. Loading paper is very simple. Using two hands pick up the first sheet of continuous form

paper and then place the paper in the CFA within the paper guides. Gently move the paper along the track. Once the paper is far enough in the track, the CFA will grab and automatically load the paper. Release the paper as soon as you feel this pull. The paper will load to just inside the printer opening.

Manual paper loading is needed only when using a new paper stack. After each print, the CFA will cut and reload the well log paper, ready for the next print.



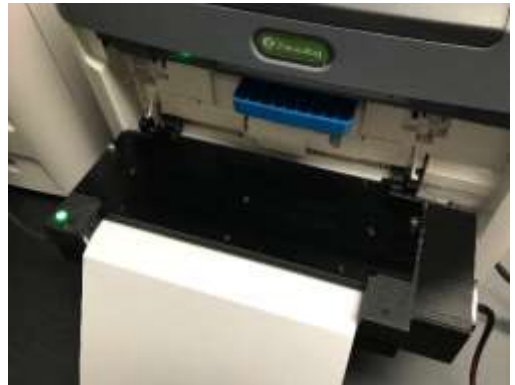
	<p>Grasp paper with both hands and load keeping the front edge straight. Loading is easiest when you stand directly in front of the CFA.</p> <p>Make sure the paper stack is straight with respect to the printer and not crooked or twisted.</p> <p>Make sure there is not plastic or box edges obstructing the paper.</p>
	<p>Load the paper to just inside the lip of the CFA until the CFA grabs and pulls the paper.</p> <p>The LED will turn green as soon as the CFA detects the paper.</p> <p>Check to make sure that the load was straight.</p>
	<p>When loaded the leading edge of the paper will be just past the exit side of the CFA entering the printer.</p> <p>The load should be straight.</p> <p>The perforation should be positioned like that shown in the photo.</p>

Figure 2-5. Proper Loading of Continuous Form Paper for Neuralog Z3

If you need to pull the paper out of the CFA, gently pull the paper back out with both hands. It's a good idea to practice loading the paper a few times until you are comfortable with the process.

2.5.2 Fanning the Paper

Paper should be fanned to remove static electricity. This can be done before or after loading and should be repeated if static electricity is a problem. Fanning is recommended for both continuous form paper and cut-sheet paper. For continuous paper reach into the box (or on table) on one side and flex the paper to loosen the sheets, similar to what is shown here for cut sheets. This procedure is particularly important for dry climates where static electricity is known to cause problems.



Figure 2-6. Fan both continuous and cut sheet paper to remove static

2.5.3 Choosing the Correct Start Page

The Neuralog Z3 is set up to start printing after the first page of fanfold media with a large mark, normally leaving the first two perforated sheets blank. It is necessary that the out fold page be loaded first to allow for optimal folding into the paper basket.³ The print itself will always start on the out fold for correct well log presentation.

Paper is loaded into the printer with the marks face down and on the right side. The printer prints on the side of the paper facing UP. Your well log paper has marks on the back side of the paper so be sure the marks face down when loaded.

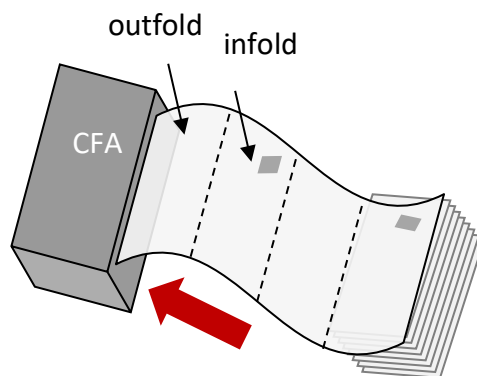


Figure 2-7. Loading Well Log Paper print side up, mark side down

³ These marks appear on most continuous form paper; the industry standard is for the mark to be on the "in-fold".

Paper Loading:

- Marks face down.
- Printable paper side faces up.
- First page has no mark for proper fold.

Once you have loaded the paper, Neuralog Z3 will begin each print on the correct page as it cuts and reloads the paper. It is only when manually loading paper that the operator needs to be mindful of the start page. If the wrong start page was chosen, the printer will still print correctly, however the paper may not fold. The printer is self-correcting and subsequent prints will begin on the correct fold.

2.6 Installing the Paper Stacker

The folding Paper Stacker is attached to the exit of the printer. The paper will feed through the exit rollers and fold into the basket below. Note that when installed the basket will hang of the back of the printer and hang over the edge of the table. To install the basket.

- Un-tape Fang and Chain set. It is already installed on your printer.
- Hang Basket in holder slots.

Make sure the Fangs and Chain are not obstructed. A complete setup sheet is included in the Printer box.



Figure 2-8. Installing the Paper Stacker

2.7 Setting up the Printer Network Connection

There are many options for setting up your printer on a network. By default the printer will obtain a dynamic network address when it is powered on and plugged into the network. It will store this address for use each time it is powered on.

For simple static address setup of your Neuralog Z3 follow these steps. For other configurations, please see your system administrator.

- Obtain a static IP network address from your system administrator. Most companies have a local area network with dynamic and static addresses. A static address will insure there are no network conflicts with other devices. This can be done for your company's public network or you can create a private network visible only to your machine.
- Assign the chosen address to your printer. You will enter the printer Administrator mode to change this setting. From the printer operator panel use the four arrow buttons to complete these actions.



Figure 2-9. Printer Operator Panel

- Enter Administrator Mode.
 - Select the Menu button ^
 - Scroll down 5 times until you see **Admin Setup** vvvvv
 - Select **Admin Setup** by selecting the Enter button. ↓
 - Enter the default administrator password (six lower case "a") using the UP and Enter button on control panel. is 6 ^ ↓ ^ ↓ ^ ↓ ^ ↓ ^ ↓ ^ ↓ ^ ↓
 - Password: aaaaaa
 - After you selected 6a's you will see 6 stars hit the Enter button again to accept. ↓
- Set to Manual IP Address
 - Select **Network Setup**. ↓
 - Scroll down to **IP Address Set** and select. vvvvvv ↓
 - Scroll and select **Manual** v ↓
 - Once Manual is Selected it will have an asterisk * next to it. Click the Back button once. <
 - If you want to check the value select Enter again. Make sure there is an asterisk next to the value you have chosen. Select Back when done.

- Enter the IP Address
 - Scroll down once and click on **IPv4 Address**. v ↵
 - Use the Up ^ and Down v buttons to manually set the IP address for each value.
 - Select the Enter button ↵ to move to the next value to the right. Continue to click to toggle through all values if you need to make a change. Make sure the asterisk appears on the screen indicating the complete value has been saved before leaving the screen.
 - Once you enter an IP address, click the Back button (4 times) until you are back to the Main Menu of printer. Note that there is no “Enter” or “Submit.” Once the value is set and the asterisk appears, you back out of the menu system.

Wait a couple of minutes until printer selects and accepts the IP Address you assign it.

- View and Check the IP address on the Operator Panel
 - Select the Menu button ^
 - Select Configuration ↵
 - Select Network vv ↵
 - Select IPv4 Address vv ↵
 - The address will be displayed on the screen
- View and Check the IP address on a web browser
 - Bring up Windows Explorer or other browser and enter the IP Address to display the printer’s Web pages.
 - The printers web page will be displayed

If you have set up a private network, you will need to make sure this address is accessible by the computer you will use. Make sure the PC and printer are connected with either a network switch box or a crossover cable.

- View the network connections on your PC and make sure it has (or you assign) an address in the same network sequence.
 - Use the TCP/IPv4 connection.
 - Please see your system administrator if you need help.
- Verify that the network installation was successful by “pinging” the address you assigned from a network computer.
 - Bring up a Command prompt (DOS)
 - Type in “ping printers-address”
ping xxx.xxx.xxx.xx
 - You should see the following
Reply from xxx.xxx.xxx.xx: bytes=32

- An unsuccessful network connection gives the result *Request timed out.*

2.8 Setting up the Printer USB Connection

Neuralog Z3 USB is plug and play, that is the setup simply involves installing the driver and attaching the printer to your PC using a USB cable.

2.9 Printer Internal Drive

Neuralog Z3 has an internal 40 GB hard drive that stores jobs before they are printed.

2.10 Printer Web Interface

Neuralog Z3 has a built-in web server with useful information. Once your network is successfully set up, you can use these pages to access your printer. The web server is only accessible only by network; it is not accessible via USB.

Bring up a web browser window, such as Internet Explorer.

Type in the printer’s assigned IP address in the browser address bar. It is not necessary to enter the http:// prefix.

If your printer is turned ON and the network connection set up properly, you will see your printer’s interface web page.

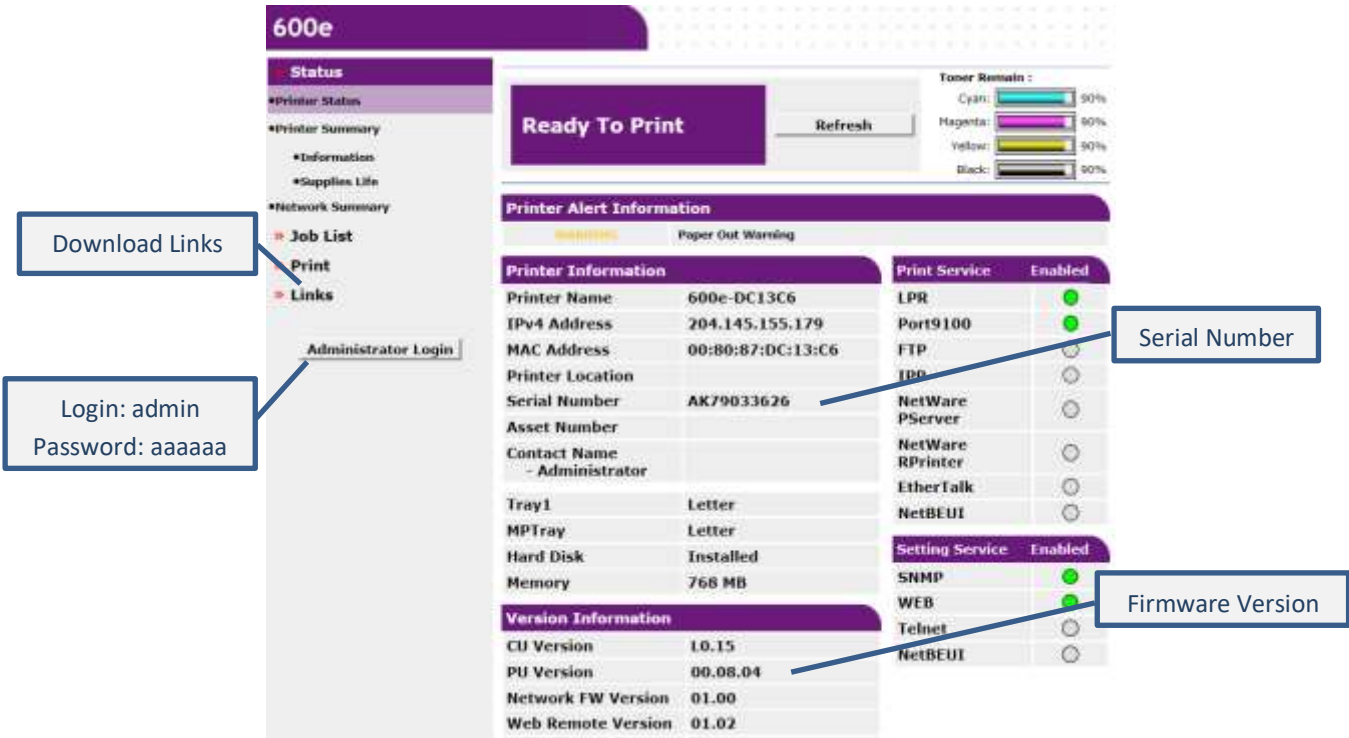


Figure 2-10. Web Interface Home Page

From these pages you can monitor toner cartridge levels, as well as monitor the life span of other printer parts. You can also set up contact and location information for your printer.

Also available through the printer web server are useful support links.



Figure 2-11. Web Interface Support Links

2.11 Installing and Setting up the Printer Driver

The print driver that ships with the Neuralog Z3 is needed for continuous form printing. The print driver can be downloaded from www.neuralog.com. The print driver installation is the same for both 32-bit and 64-bit operating systems. The correct driver will be automatically chosen for your computer.

2.11.1 Driver Installation

There are several ways to install a print driver. Many people find the multiple choices confusing or wonder about the “best” way to install a driver. A printer driver and a single printer “instance” can be installed as a single process or as two separate steps. Don’t let the different options intimidate you. Usually any path through the Windows Wizard is valid; even though the steps are presented differently, they result in the same end sequence. Contact your system administrator if you need help installing the printer driver.

There is a recommended installation procedure. Printer drivers can be installed by selecting **Add Printer** from your Windows Devices and Printers panel. When you use **Add Printer**, you will browse or search for the print driver files, which you have typically downloaded to your local drive.

It seems that the number one problem with driver installation is lack of Administrator privileges. Even though the installation occurs with no issues, problems can sometimes arise later in day-to-day printing. We have found that the “safest” way to install a driver is to first extract the driver files and use the **Add Printer** option within Windows.

To add the printer using the **Add Printer Wizard**:

- Make sure you have access to extracted files.
- Go to the Windows **Devices and Printers** section of the **Control Panel**.
- Select **Add Printer** and then one of the options below. Either of these options will add the printer, the way the steps are presented are slightly different.
 - Select **Add a local printer** to select or create a port manually. This is a more straightforward set of steps, or
 - Select **Add a network, wireless or Bluetooth printer** to be given a list of available printers already connected to your network. This is useful if you know the printer is on the network but don't know the port number.

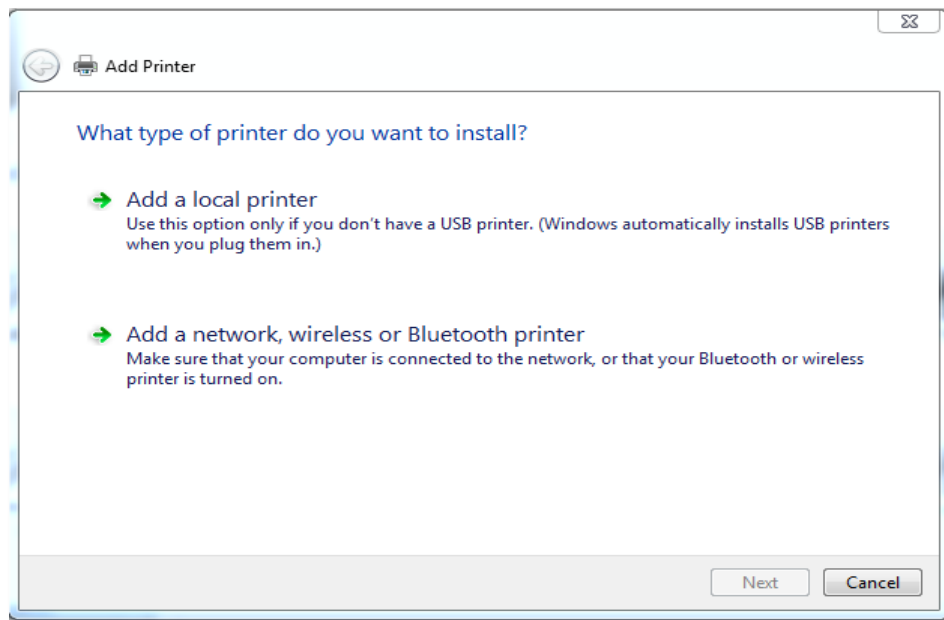


Figure 2-12. Add Printer Screen in Print Driver Installation

- Option 1: Select **Add a local printer** to select or create a network port manually.
 - After the port is selected, Select **Have Disk** to find the driver installation files that were extracted.
 - Browse for and select the file **NeuraLaserColor3\OKU3C041.inf**.

- This will add Neuralog to the Manufacturers list and add the driver to the Neuralog Printers list.

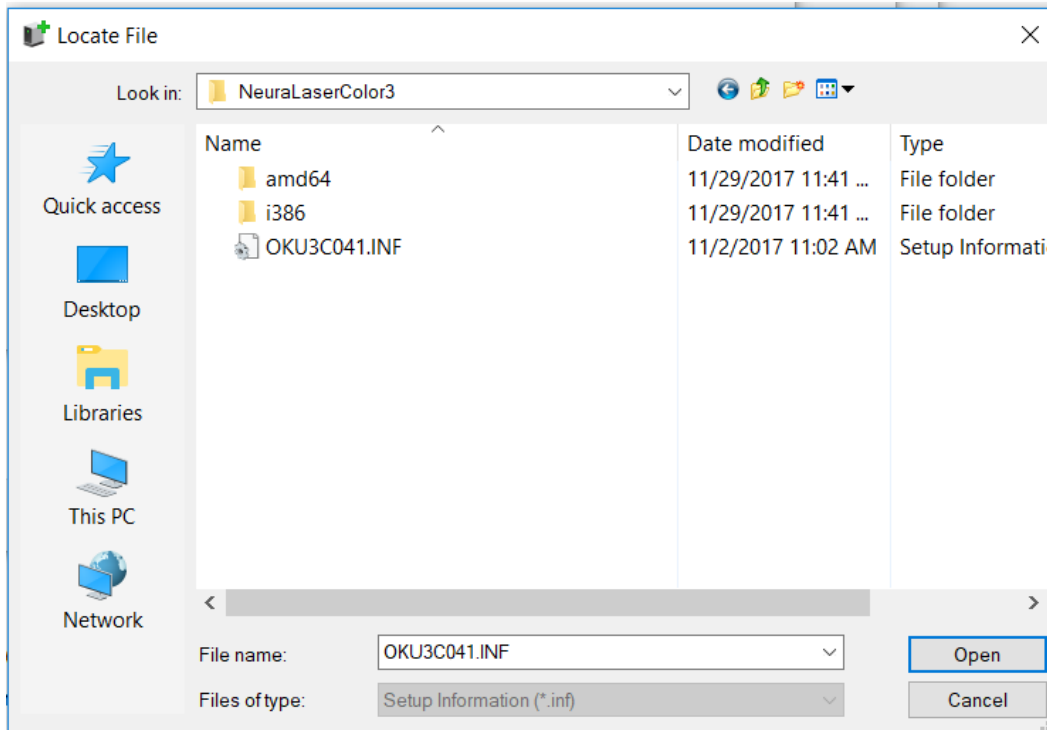


Figure 2-13. Select the Print Driver File

- Select **Neuralog** from the Manufactures list and select **NeuraLaserColor3** from the Printers list. NeuraLaserColor3 is a signed driver; you should see the signed driver icon.
 - Select Replace the current driver.
 - Give the printer a name such as *Neuralog Z3 Printer*.
 - At this point the printer installation will occur.
- Option 2: Select **Add a network, wireless or Bluetooth printer** to be given a list of available printers already connected to your network.
 - Select the printer once it is found on the network or you can choose **The printer that I want isn't listed**.
 - If you choose Option 2, be sure that you are able to select the correct print driver files.
 - Follow the steps and give the printer a name such as *Neuralog Z3 Printer*.
 - At this point the printer installation will occur.

2.11.2 Printing Preferences and Defaults

Go to the Control Panel and access the properties of the printer. Look over these settings in this section. These are the default settings for printing well logs.

Well log printing on the Neuralog Z3 is already configured under the Super Long Paper selection. Double click on the Super Long Paper choice to view this panel.

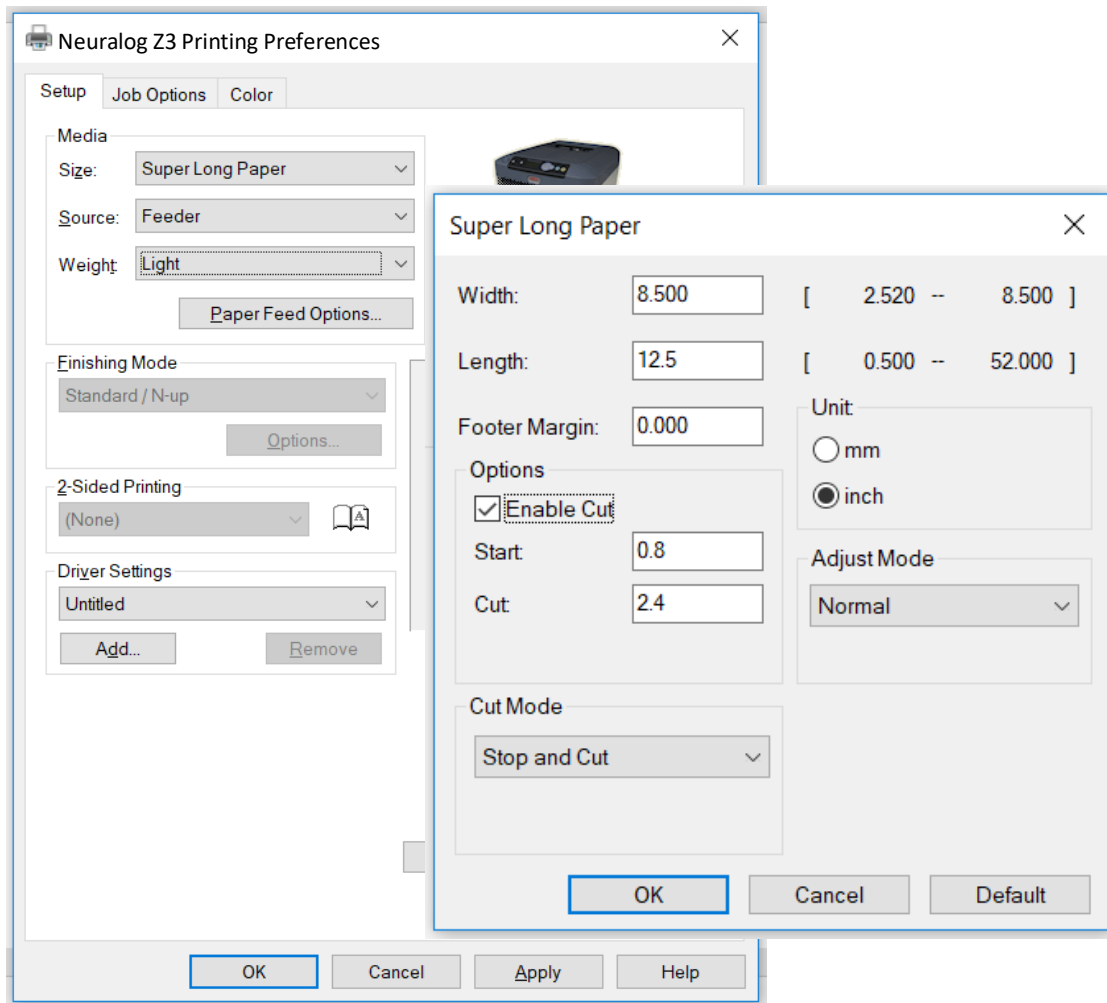


Figure 2-14. Printer Driver Panel: Default Super Long Page

You can print well logs using the Super Long Paper setting and never create any additional pages. However, if you have any kind of specialty media, you can optionally View or Create a new page size in the driver.

- Select **Paper Feed Options...** button
- Select **Custom Super Long Paper...** button

Set up the Page parameters as follows. Below are the values for the standard Well Log page.

- **Name:** Provide a meaningful name, Well Log Paper
- **Unit:** The units for all values are set to inches or mm. The default is inches.
- **Width:** Set the width to 8.5 inches for full scale well log paper. Set the width to 4.25 for half scale well log paper. For a different unique media, enter its actual width.

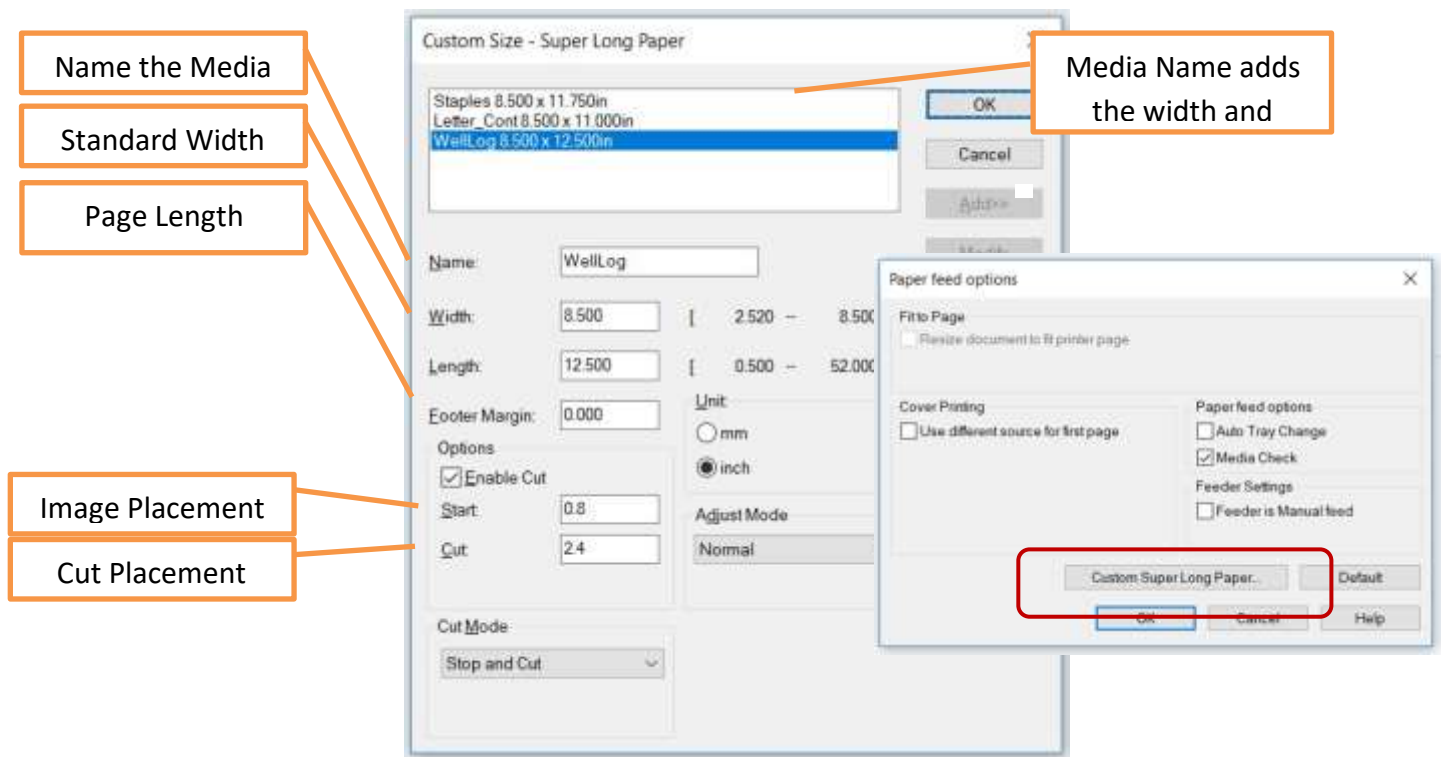


Figure 2-15. Printer Driver Panel: Creating a new Super Long page size

- **Length:** 12.5
Because well log pages are “stitched” together, length can be 11” or 12.5” or any other reasonable length. It does not matter. We recommend leaving the default of 12.5.
- **Footer Margin:** 0
There is no footer margin for well logs. Leave this value at 0.
- **Start:** 0.8
The sets the location of start of print for the well log header. It should be very close (about 0.1”) to the perforation.
 - Adjust to a slightly larger number to move image down the page

- Adjust to a slightly smaller number to move image up the page
- **Cut: 2.40**

This allows the printer to stop in the correct location for well log paper. The cut should be either on the perforation or just after the perforation so that if there is a paper chad, it is on the exiting print tail. The print header should have no chad.

 - Adjust to a larger number to move the cut down the page if needed.
 - Adjust to a smaller number to move the cut up the page if needed.
 - The CFA controls the exact cut using the cut marks on the well log media.
- **Enable Cut** must be **Checked**.
- **Adjust Mode** must be **Normal**. This indicates that the well log pages need to be stitched together.
- **Cut Mode** must be **Stop and Cut**
- Click **Add>>** button to **create a new super-long page** and it will be added to the list.
- If you make changes, must click **Modify** button to **save the changes**.
- Click **OK** to close the panel(s) when done.

NOTE: You must click **Add>>** to create a page and **Modify** to change selected page. *Then* click OK; otherwise your work will not be saved.

Normally there will be no need to create any new Super Long Page sizes for well log paper. The default Super Long Page should be used.

Paper Feed Options... Panel

This panel should be left unchanged for printing well logs and other continuous documents.

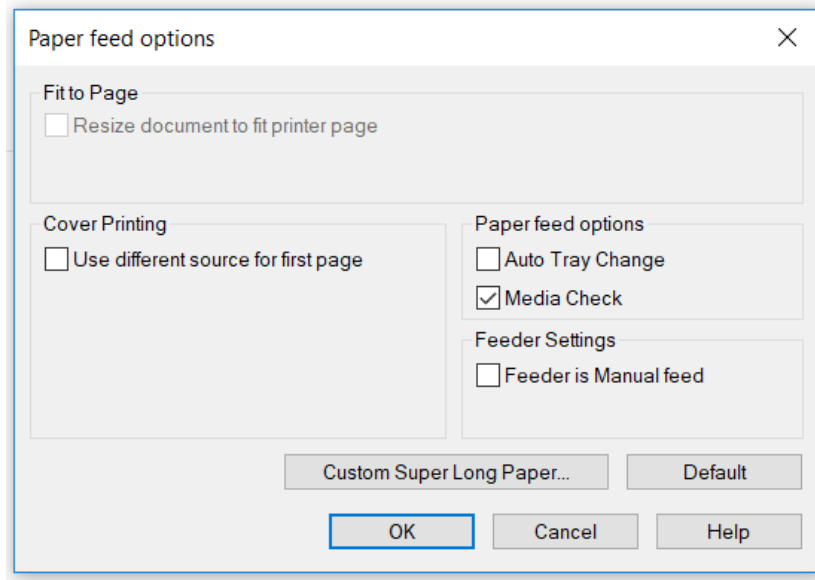


Figure 2-16. Printer Driver Panel: Paper Feed Options

Fit to Page is not used for well log printing. The well log printing software should control the way the well log is scaled.

Cover Printing is not used for well log printing

Auto Tray Change: Should be Unchecked.

When Auto Tray Change is enabled, the printer may switch to a secondary paper source (if the paper is the same) when the primary paper source runs out of paper. Usually not applicable for well log printing.

Media Check: Not applicable for well log printing.

Feeder is Manual feed should be unchecked for well log printing.

Selecting the Media Weight

The chart below provides insight to the speed and temperature for each of the media weight selections.

We recommend using the **Light** media setting for well log printing. This provides the best speed and temperature for well log printing with good paper folding performance.

Media Weight Setting	Printing Speed		Fusing Temp. (deg.C) (deg.F)
	inch/s	mm/s	Upper
Light	6.1	155	168/334.4
Medium Light			175 / 347
Medium			180 / 356
Medium Heavy			180 / 356
Heavy	4.69	119	175 / 347
Ultra Heavy 1	2.8	71	165 / 329
Ultra Heavy 2			173/343.4
Ultra Heavy 3			178/352.4
Ultra Heavy 4			178/352.4
Label 1			169 / 334.4
Label 2			169 / 334.4
Film			152 / 305.6
Glossy			151 / 303.8

Figure 2-17. Media Weight Setting Guide

2.12 Customizing the Print Driver Setup

While your Neuralog Z3 is primarily a continuous form printer, it does have the ability to print cut sheets. If you want to use the printer in this way, there are two options. The second option is recommended.

- (1) Install the print driver as is. For individual print jobs from standard Windows applications, configure the panels to print cut sheets.
- (2) Install a second instance of the print driver. Set up the printing preferences/defaults on this instance to be cut sheet. For example, name the printers *NeuraLaserColor-Continuous* and *NeuraLaserColor-CutSheet* in the driver installation.

Likewise, if you want to set up your printer to efficiently print in black and white mode, you can also install another copy of the print driver and set its defaults to BW only mode. Give it a name similar to *NeuraLaserColor-BW*. BW mode is set in printing preferences/defaults driver Color Tab. For BW only printing CHECK the "Gray Scale" radio button. This will make the printer a black and white printer by default (for this print driver) but will allow you to override this setting for individual print jobs.

Chapter 3. Printing Applications

The Neuralog Z3 uses a standard Windows interface and can be used as your office printer. Any application that prints to a typical office printer can print to Neuralog Z3. Continuous form printing, however, requires applications that allow documents to be printed continuously and allow them to be scaled horizontally to fit on the page. Neuralog Z3 has been designed to work with any application that meets these requirements. If you would like to verify that your application can print to Neuralog Z3, please contact us.

3.1 Neuralog Applications

Neuralog creates applications to work with well logs and other petroleum industry documents. Any Neuralog product that will load a well log, will print to Neuralog Z3. In particular, NeuraView, an application for viewing, editing and printing large and/or long documents, is a good choice for printing logs to Neuralog Z3.

3.1.1 NeuraView

A copy of NeuraView PE (printer edition) was provided with your printer. We recommend printing well logs from NeuraView, but any other well log viewer that meets the continuous form requirements will work. Be sure to use NeuraView Version 2017 or later. A NeuraView user guide is available from www.neuralog.com.

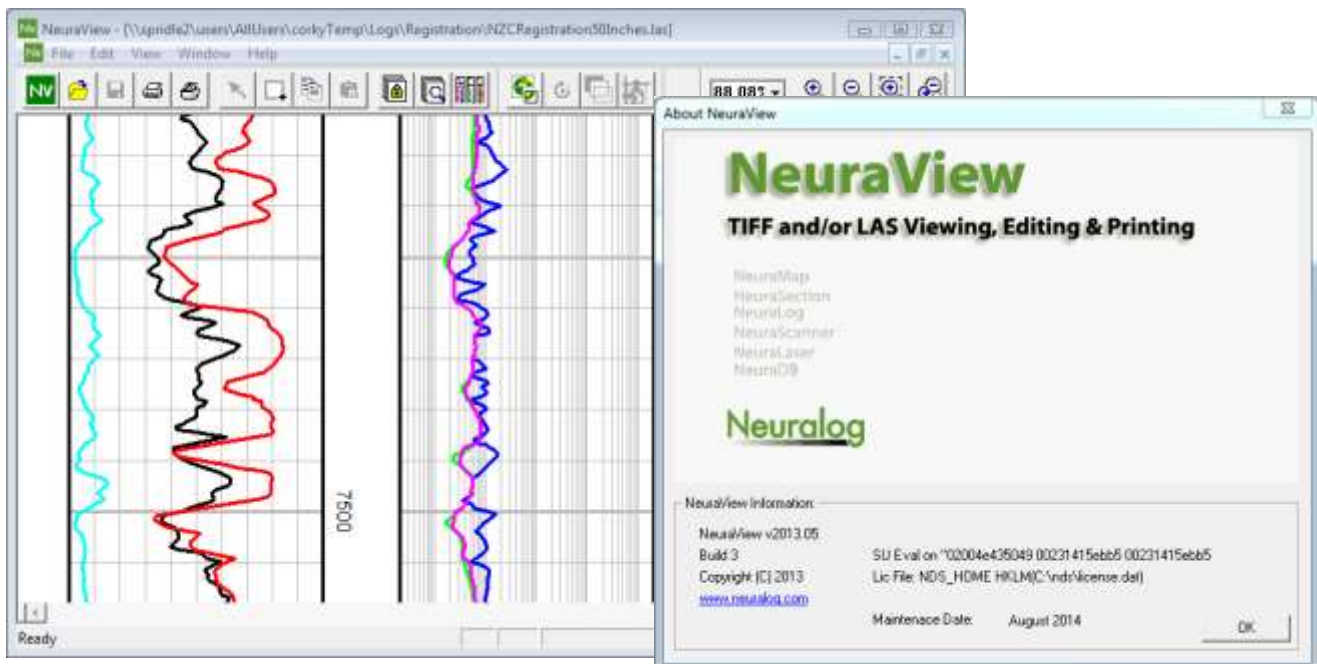


Figure 3-1. NeuraView Application

NeuraView is provided with your NeuraLaserColor and is an excellent choice for printing logs. Here are some key features of NeuraView.

- Loads and prints very large and very long files.
- Supports a variety of industry standard formats for printing or file conversion.
 - TIFF
 - JPG
 - LAS – *Log ASCII Standard*
 - PDF - *Adobe Acrobat format*
 - PDS - *Schlumberger PDS format*
 - BMP
 - EMF
 - CGM
- Has editing and markup capabilities.
- Has cropping and stitching capabilities.

NeuraView PE is available for printing only. For saving your well log edits a fully licensed version of NeuraView is available.

3.1.2 NeuraLog

NeuraLog is an application for digitizing logs. It is also used for quality control of digitizing work and to edit LAS files. NeuraLog will print both TIFF images and LAS files to the Neuralog Z3. For best results use NeuraLog Version 2017.x. NeuraLog Digitizing System will also print TIFF and LAS well logs. NeuraLog is undergoing a complete revamp (2018) to be more suited for today's geological needs. A free NeuraLog trial is available for NeuraLaserColor users.

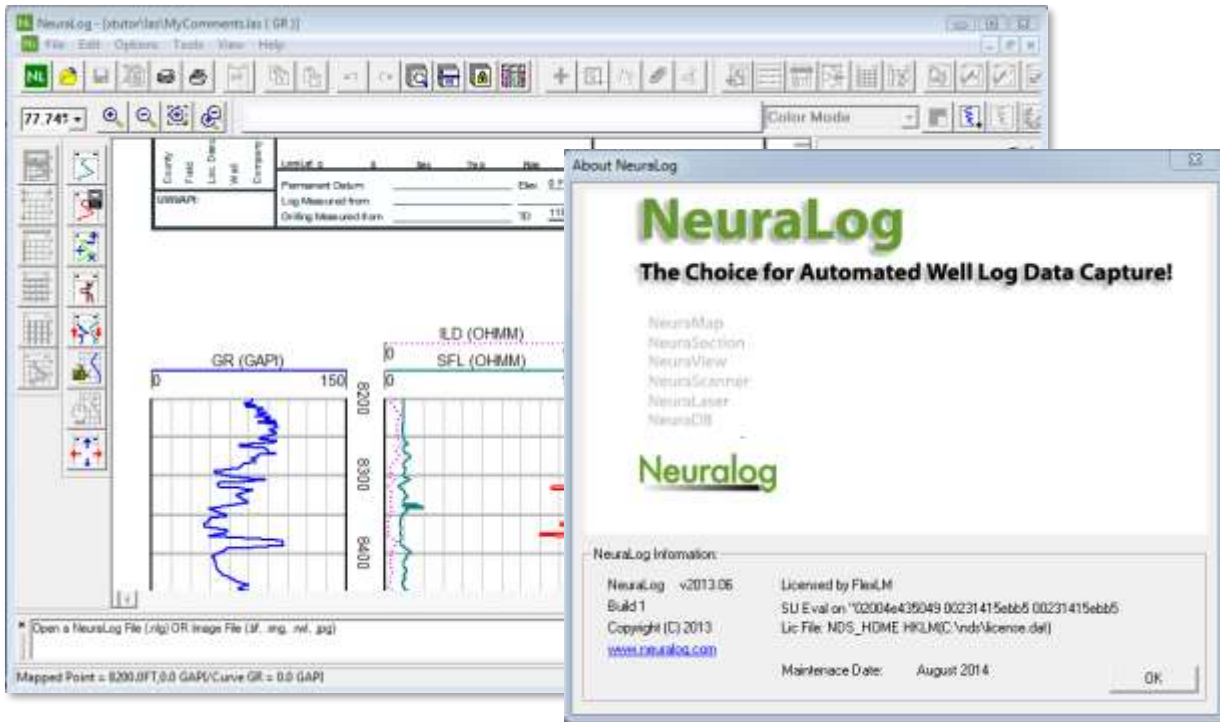


Figure 3-2. NeuraLog Application.

3.1.3 NeuraSection Touch

NeuraSection Touch is an application for log correlation, cross section creation, geologic analysis and simple mapping. NeuraSection Touch is unique in that it supports a hands-on touch approach to geology, allowing direct input from touch display devices. NeuraSection will print individual logs to the NeuraLog Z3. It will also print all logs within a cross section. The prints will have marks such as depth registration and tops. Color fills will also be printed. Cross sections and maps can also be printed from NeuraSection.

NeuraSection has been completely revamped (2018) and modernized for today's geologist. A free NeuraSection trial is available for NeuraLaserColor users.

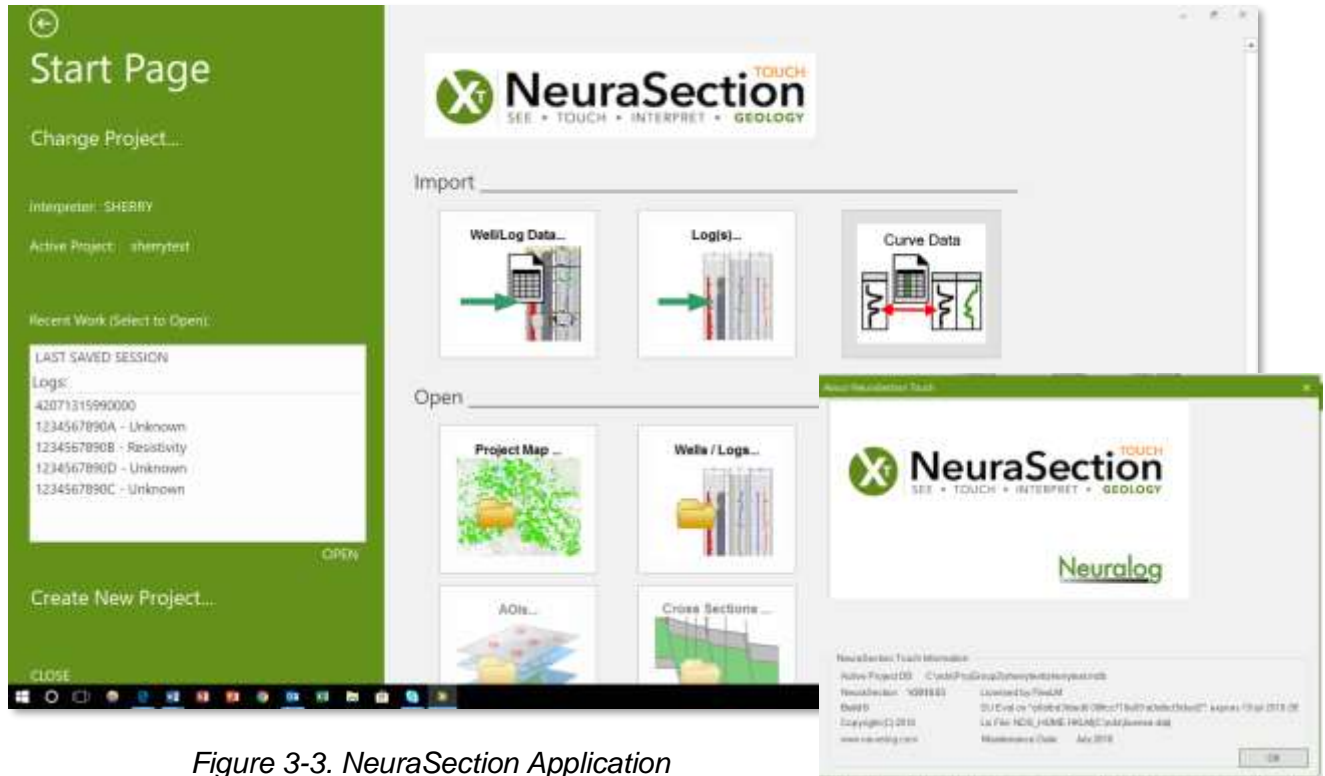


Figure 3-3. Neuralog Application

3.2 Other Well Log Viewing Applications

The applications listed below are mentioned because they are popular software for viewing and printing well logs. Some are downloadable at no cost. Neuralog does not endorse or promote these applications. Many other applications exist and work well. These are easily accessible and/or well known.

3.2.1 Adobe Acrobat Reader DC

Any file of the PDF format will print to Neuralog Z3. However PDF well logs can be formatted in a variety of ways, leading to incorrect prints. Adobe Reader is a free and ubiquitous application and is available at www.adobe.com; it will load and print most logs. Neuralog Z3 will print logs directly from Adobe Reader or other PDF applications with the correct scale. <http://www.adobe.com/products/reader.html>

3.2.2 PDSView

PDSView is a freeware software utility for viewing Schlumberger oilfield graphic PDS files. PDSView allows you to display, annotate, print and convert Schlumberger PDS files. PDSView 3.5 is downloadable from Schlumberger's web site www.slb.com. Note that Neuralog Z3 must be set to the default printer to work with PDSView.

3.2.3 PreView

PreView is an application designed to provide access to all Wireline data produced by Weatherford, for the purposes of viewing and plotting logs as well as exporting LAS files. **PreView Client Viewer 18.01.5761** is downloadable from Weatherford's web site. www.weatherford.com.

3.2.4 WellSight

WellSight is a Windows-based application for viewing and printing logs. WellSight Systems Inc. is a software company based in Calgary, Alberta, Canada. This company supplies a free viewer, as well as other function-specific software. WellSight 8.2 was released in March 2017. www.wellsight.com.

3.2.5 Atlas MetaWin Viewer

Baker Atlas Metafile Viewer will load and print files in Baker Atlas CGM and META formats to NeuraLaserColor. Version 6.25 is currently available from Baker Atlas. <http://www.bakerhughes.com>

3.2.6 JustIMAGE

JustCroft is a company in the United Kingdom that has software to work with geological image files. JustIMAGE Version 5.3 adds direct support for the Neuralog Z3 printer. www.justcroft.com

3.2.7 Other Applications

There are many other applications that work with NeuraLaserColor. If you know of an application that needs to be added to this list or tested with the printer, please contact support at support@neuralog.com.

Chapter 4. Printing Well Logs

Once your Neuralog Z3 print driver is installed and application selected it is time to print some logs. This section gives some tips on how to get the best log prints.

4.1 Handling Well Log Paper

Neuralog Z3 will work best with Well Log Paper certified by Neuralog⁴. Different papers can vary in width, thickness, perforation, fold and overall quality. Neuralog has extensively tested specific papers that work well with all NeuraLaserColor models and selected the best paper to provide to the end user. Our testing has shown that other papers can lead to prints of inferior quality and even CFA or printer jams.

When opening a box of paper, make sure the correct side is pointing up. Remove any plastic inside the box⁵. If you are going to leave the paper in the box, make sure the box is centered directly under the CFA. That is, make sure the paper will not twist as it enters the device. Fan the first 100 or so sheets of paper to remove any static electricity. Make sure the printer is turned on and load the paper. See *Loading the Continuous Form (Well Log) Paper*.

Note that Well Log paper boxes are stored upside down at the warehouse. This helps alleviate cupping, the sinking down of the middle of paper. If you are going to store your well log paper for a long period of time (months), it is recommended that you store the boxes upside down. Be sure to orient box correctly before opening.

The paper that Neuralog sells can be recycled and/or shredded. Please dispose of excess paper properly.

4.2 The Continuous Form Attachment (CFA) or Continuous Feeder

The purpose of the Neuralog Z3 CFA is to load the paper into the printer, send information about the moving paper to the printer, and cut the paper at the end of the print. An array of sensors is used to accomplish these tasks. An LED provides visual feedback to the user about

⁴ Look for the Neuralog logo on your well log paper.

⁵ Paper supplied by Neuralog will not have plastic in the box.

CFA status. This section explains some of the details of how the CFA works and provides information about the LED status indicator.

4.2.1 Power up

When the printer is turned on with no media loaded in the CFA, the CFA is powered up and goes through a diagnostic sequence. In this power up the lifter motors, drive motors and cutter are all exercised. The LED will illuminate white⁶ to indicate that the CFA is communicating with the printer. During the cutting portion of the sequence, the LED changes to yellow to indicate that the cutter blade is moving. When complete the LED changes to white indicating that both the printer and CFA are ready, and paper can be loaded.

Whenever the CFA is powered on with paper already loaded, it will establish communications with the printer and display a green LED when ready. When a CFA is powered on with no paper loaded, the white light will turn green as soon as media is loaded.

All of these cases should end with the CFA displaying a green light when paper is loaded, meaning it is ready to print. If the LED is another color, there may be a problem with the printer. Check the printer status.

4.2.2 Loading Paper

The CFA LED will be green to indicate ready state when paper is loaded. When in ready state, the CFA can sense when paper has been placed in its track. The paper is automatically grabbed and loaded to the correct position in the printer. For proper loading, paper should be torn or cut near the perforation. There should not be a chad near the perforation on the page you load as this might cause the paper to snag. If your Neuralog Z3 system is leaving a chad on the first page of the print, contact Neuralog support for an adjustment to the cut location.

4.2.3 Tracking Paper

The CFA tracks the paper as it moves through the printer, sending feedback to the printer about the paper's position and speed. This feedback allows the printer to start and stop print jobs at the correct place, as well as monitor and adjust for length of print accuracy. Tracking is accomplished using sets of marks on the paper media. As these marks pass under the CFA sensor array, the LED blinks to indicate mark detection. In this way it is possible for Neuralog support or the end user to verify correct paper tracking functionality.

4.2.4 Cutting Paper

The CFA has the job of cutting the paper at a specified position after the print job ends. To do this it uses the sensor array along with special smaller cut marks on the well log media. These

⁶ On some devices the LED may appear to be a light blue color when in this mode.

marks allow for the paper to be straightened at the end of a print so that a straight cut can be made. The best position for the cut is on the perforation to about 1/32" after the perforation. This creates a small insignificant chad on the tail of the print, while ensuring the loading page of the next print has a clean edge. If your printing system is not making cuts to this specification, please contact Neuralog support for an adjustment.

The CFA uses a tungsten rotary blade cutter mounted on a large screw drive. It is driven by a bidirectional motor and can cut from either the Left or Right starting position. During the actual cut the CFA LED will turn yellow indicating the cutter is moving. The LED should turn green when complete. After the cut the paper is ejected and the new starting page is loaded for the next print.

4.2.5 LED Codes

The following table explains the various LED color codes that you will see on the CFA.

Table: Continuous Feeder LED Color Codes		
Led State	Summary	Description
OFF	Power Off	No power to CFA. Printer is OFF
White	Ready and Waiting	CFA is booted and waiting to communicate with Printer Engine
Green	Ready; Paper detected; Ready to print	CFA is booted and communicating with Printer
Green w/ Flash	Printing	Paper is moving and CFA sees media marks
Yellow	Cutting	CFA blade is physically moving
Red	Error	Error
Blue	CFA is feeding paper into loading position for printer	Loading
Blue Flash	While positioning paper for cut, did not see RIGHT cut mark	Missed Cut Mark
Yellow Flash	While positioning paper for cut, did not see LEFT cut mark	Missed Cut Mark
White Flash	While positioning paper for cut, did not see RIGHT or LEFT cut mark	Missed Cut Mark

4.3 The Paper Stacker

The purpose of the paper stacker is to fold the prints as they exit the printer. The stacker can hold up to about 500 feet of continuous paper, however we recommend emptying the stacker frequently. The Neuralog Z3 uses a passive stacking system consisting of a simple basket with a "fang and chain" system to guide the paper into a folded state. The basket hangs on slots at the back of the printer. Gravity and momentum push the paper into the basket and the "fang and chain" assist with the fold.

Neuralog Z3 paper stacker is designed such that when a continuous print completes, the tail of that print sits at the top of the paper basket. As the next print exits the printer, it pushes the current media down into the folded position. There may be an interleave of paper between the jobs.

Because of the layout of the stacking system and the nature of the printer, Neuralog Z3 may require two blank pages at the beginning of the print for proper stacking. This will allow the paper to refold in its natural position. The printing system is set up to allow for two blank pages.

4.4 Printing in Color Black-and-White

Neuralog Z3 has a special mode allowing it to be used as a Black-and-White laser printer. When in its normal print mode all four cartridges are engaged in the printing process. When placed in the special BW only mode, the printer will print using only the black cartridge.

To control Color/BW printing mode do the following.

- Access the Printing Preferences panel in the Print driver and go to the Color tab.
- For color printing, leave Color Mode on **Automatic**.
- For black cartridge only printing check the **Gray scale** radio button.

Note that these settings can be configured in the Printing Preferences and/or Printing Defaults panels to set up a default behavior for the printer.

4.5 Toner Save

The printer also has a Toner Save mode. To turn on the Toner Save mode:

- Access the Printing Preferences panel in the Print driver and go to the Color tab.
- Check the **Toner Save** box.

4.6 Copies

The Neuralog Z3 will print copies of logs. The number of copies can be set in your printing application or in the Print Driver panel. The printer driver Job Options tab holds the default setting for copies of Collated. If at any time you are printing log copies and the pages intermingles and are not printing correctly, check to make sure Collated is checked. Also check to make sure your printing application does not have a collated option that has overridden the default value.

4.7 Print Speed

For normal continuous printing the Neuralog Z3 moves paper at about 7 inches per second or ips. There are lower speeds which are available, but not normally needed for well log printing.

If you were to print a different type of continuous media other than paper, you might need to reduce the printer speed.

In addition to the speed of moving the paper, users are concerned with the Time to First Print or TTFP. The following factors reduce TTFP.

- Smaller document print file size
- Reliable and fast network connection
- Printer Memory

Document size is primarily controlled by the data itself and the application creating the file. Some applications create smaller files. Other factors include DPI and number of colors. BW files are the smallest and will spool most quickly to the printer.

A reliable low-traffic network is vital for printing continuous documents in a timely manner. If performance is critical, you may choose to install your NeuraLaserColor on a private network or USB to avoid unrelated network traffic.

4.8 Margin/Position Settings

The Neuralog Z3 allows you to control the top margin of printed well logs through the print Start value in the driver. The default of this value is set to about 0.10" margin.

The printer has left/right margins of 0.125". While the margin is fixed, the left/right continuous center of the print can be controlled through the printer operator panel.

Menu->Menus->System Adjust->Print Position Adjust->X Adjust

- Use the up/down arrows to change the value.
- The default value is 0.
- The adjustments are in 0.25mm.
- Up makes the value more positive and moves the image to the **right**.
- Down makes the value more negative and moves the image to the **left**.

4.9 Print Quality and Accuracy

The print driver provided with NeuraLaserColor provides quality log prints through a variety of features. Color adjustments are possible, but usually not needed or recommended. Toner Saver may be checked if desired, DRAFAT

4.9.1 DPI

The default DPI for NeuraLaserColor is 300 x 300dpi. 600x600 dpi is also available. While this mode produces the highest possible quality well log print, the level of print quality is usually not needed for printing well logs.

4.9.2 Print Length

The Neuralog Z3 has been certified to print well logs with an accuracy of 99.5%, or less than 0.5% error in total length accuracy. In other words, a 100 foot print should be no more than +/- 0.5 feet off. In practice most Neuralog Z3 printers have been found to perform much better than this, and you may achieve results closer to 99.9% accuracy. Length accuracy of 99.5% is an industry standard used by most energy companies. If your Neuralog Z3 should be found to not meet this specification, contact Neuralog's technical support. A diagnostic routine is available to configure printer length accuracy. This routine is available to the end user.

4.9.3 Print Width

The Neuralog Z3 will print documents up to an 8.25"⁷ active width on 8.5" continuous form paper. There should be both a left and right 1/8" margin with no more than 1/32" error. If your Neuralog Z3 should be found to not meet this specification, contact Neuralog's technical support. A diagnostic routine is available to configure printer width accuracy. This routine is available to the end user.

Note that many documents have internal white space margins and may not seem to print to full specification. Be sure to verify your document has image elements in the full width of 8.25" and be aware of document white space before attempting to adjust the printer margin. Also you will want to verify that the viewing application has the ability to set L/R margins if you want to adjust this value.

4.10 Getting Information from Printer Reports

Neuralog Z3 has several reports that provide information about the printer, consumables and documents printed. These are accessed through the web interface or printer operator panel.

4.11 Cancelling a Print Job

Cancelling a print job can be done from the application, the printer's queue, or on the printer's operator panel. The most effective way to cancel a job is using the printer operator panel.

Cancel a job using the large yellow Cancel button on the printer to end the job. Depending on the amount of data in the printer the job may take a few moments to cancel.

Do not attempt to rip the paper out of the CFA to end the print job. This can damage the CFA and printer. If it is critical that the job be ended immediately rather than waiting on the Cancel function to work, the printer should be turned off using the On/Off switch near the paper entry.

⁷ 8.25" is the standard log width set by the American Petroleum Institute.

Chapter 5. Maintaining the Printer

The Neuralog Z3 requires little maintenance. However, at periodic intervals you will need to change the print cartridges, and eventually change the fuser and ITU belt. You may also wish to clean your printer and CFA

Periodically Neuralog will release firmware updates that will fix problems or improve functionality. These may be firmware releases for the printer itself or for the Feeder attachment. Instructions for installing these updates are provided.

5.1 Updating the Printer and CFA Firmware

Printer and CFA updates may be made available for clients who have active maintenance contracts. The CFA Firmware is updated using a USB cable and a program provided by Neuralog.

5.2 Cleaning the Printer and CFA

If you do a significant amount of printing, it is inevitable that paper dust will build up inside the printer and CFA. The printer entrance and the CFA can be wiped off with an alcohol pad to remove this residue. The frequency of cleaning will depend mostly on how much you print. Perform cleaning as needed and as part of your well log printing workflow. It should only take a few minutes. Always turn the unit completely off before cleaning.

5.2.1 CFA

Over time paper dust may build up inside the CFA. This residue can usually be removed with an alcohol pad. Do the following to clean the CFA.

- Turn the printer/CFA OFF and Unplug the CFA from the printer.
- Use an alcohol pad to wipe off the CFA
- Loosen lid with the two thumb screws and tilt the lid up.



Thumb screws for removing lid.

Figure 5-1. Continuous Feed Attachment

- Remove lid and set aside.



Figure 5-2. Continuous Feed Attachment with Lid Removed

- Wipe off paper dust that has collected in the media path with the lint free cloth or alcohol pad. Most build up will probably be at the left and right ends.



Figure 5-3. Cleaning the Continuous Feed Attachment

- Replace the lid and tighten the thumb screws.
- Reattach CFA with Power turned OFF.
- Repower printer and CFA

5.2.2 Printer Media Entrance

Over time the printer's entrance may collect paper dust. This residue can usually be removed with a lint free cloth or an alcohol pad. Clean only the metal and plastic printer parts with the alcohol pad, wiping off excess visible debris. Do not touch the alcohol pad to the toner/drum/image belt. Do the following to clean the printer entrance.

- Turn the printer/CFA OFF.
- Remove the CFA and place in a safe location.

- Open the printer front using the blue handle.
- Inspect the area, particularly the upper metal rod and left/right sides, for residue.
- Clean with alcohol pad. Wipe off any residue from the upper metal rod and the areas around it, paying special attention to the ends where build up is most likely. This is where the media enters the printer.



Figure 5-4. Cleaning the Printer Entrance

- Rotate the metal rod to clean its full circumference by placing multiple fingers on the top of the rod and rotating it towards you.
- If you see residue on the rubber rollers, wipe them off with a plain paper towel. Do not use alcohol on the rubber rollers.
- When all residue has been removed, close the door and reattach the CFA to printer bar.
- Repower the printer and CFA.

5.2.3 LED Head

The LED head of the printer may be cleaned by wiping the surface with a clean, lint free cloth. Do NOT use alcohol or cleaning solutions on the LED head.

- Turn off printer.
- Open printer top cover by pressing the Release Button.



Figure 5-5. Printer Release Button to Open the Cover

- Gently wipe of each of the four LED heads with a lint free cleaning cloth.
- Close printer cover, turn printer on, and resume printing.

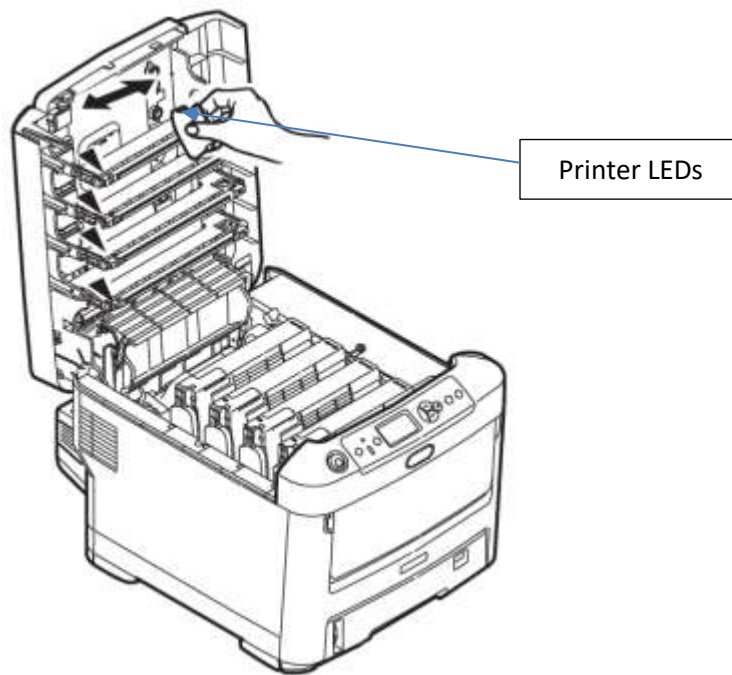


Figure 5-6. Cleaning the Printer's LEDs

WARNING: The LED head contains light sensitive material. Do not leave the printer cover open under bright light for extended periods of time.

5.3 Neuralog Z3 Consumables

Neuralog provides the toners, drums and fusers for the 600e printer. The transfer belt is also replaceable if needed. The table below provides page yields at the industry standard of 5% coverage. These consumables must be purchased from Neuralog or an authorized provider. To purchase consumables:

<http://www.neuralog.com/store/>

Toner Life	CMY-11,500 pages; K-11,000 pages (@5% coverage)
Drum Life	CMYK-20,000 pages (@5% coverage)
Fuser	60,000 standard pages
Belt Life	60,000 standard pages

The following are basic procedures for changing Neuralog Z3 consumables⁸. Both Toner and Drum colors include Cyan, Magenta, Yellow and Black, ordered from the back of the printer coming towards you. There is a single fuser located at the back of the printer. Turn the printer off before accessing consumables.

5.3.1 Procedure for changing the Toner and/or Drum

- Access printer consumables by pressing the grey release button.
- Remove a toner/drum set by grasping and sliding up. The example shown is the black color.
- Do not change the blue latch on the right hand side of the toner. This latch releases the toner from the drum.
- Replace a toner/drum set by sliding it back into place in the appropriate track.
- Close the printer top and press down firmly on both sides to ensure it is shut properly.

⁸ Many instructions and illustrations are taken directly from the original manufacturers documentation. Credits are provided in this Printing Guide.

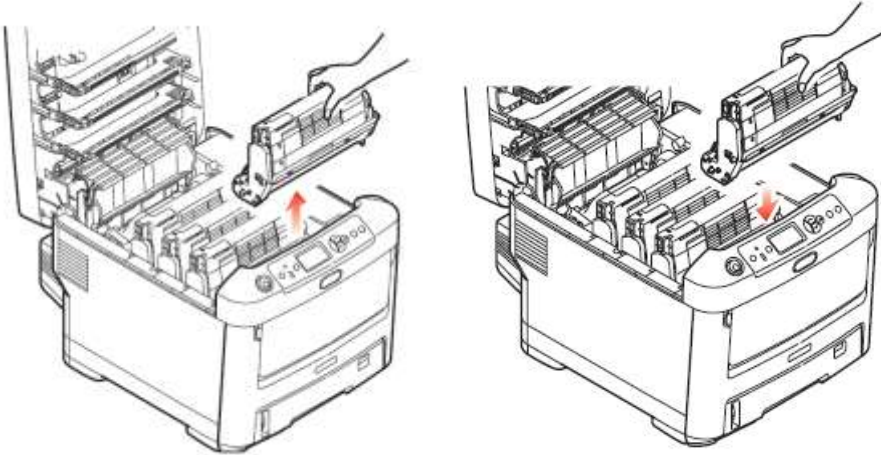


Figure 5-7. Toner/Drum Replacement

WARNING: Use Caution when removing the drum. It is delicate and light sensitive and can get scratched. Do not touch the green drum surface. Do not leave the drum surface exposed to light for more than 5 minutes. If available, place in the black plastic bag that ships with new consumables. If the drum becomes damaged, print defects will occur.

5.3.2 Procedure for removing the toner from the drum.

First remove the toner/drum set from the printer. There is a release lever that removes the toner from the drum. You will see toner piled inside the drum. This is normal; however, you should be careful not to spill this toner.

- Unlock the blue release lever by moving it towards you. (1)
- Pull the toner away from the drum. (2)
- Replace the toner using the reverse steps. (2, then 1)
- Note that the toner may be messy so use caution, so it does not spill.

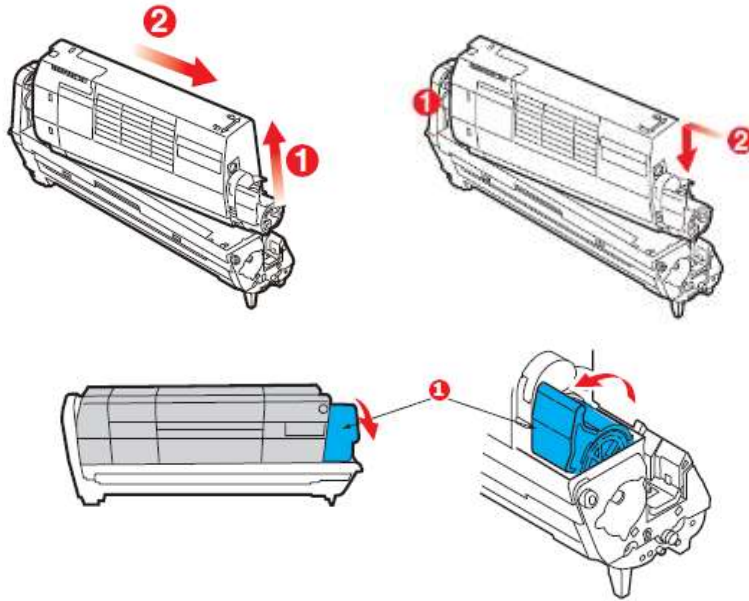


Figure 5-8. Toner/Drum Separation

5.3.3 Procedure for removing the fuser from the printer.

Turn the printer off if the fuser needs to be removed. The fuser will be hot. It is recommended that the printer be allowed to cool for 10 minutes before the fuser is removed. Use extreme caution. Identify where you will set the warm fuser before removing from the printer.

- Access the fuser by pressing the grey release button.
- Unlatch two blue latches on either end of the fuser (b).

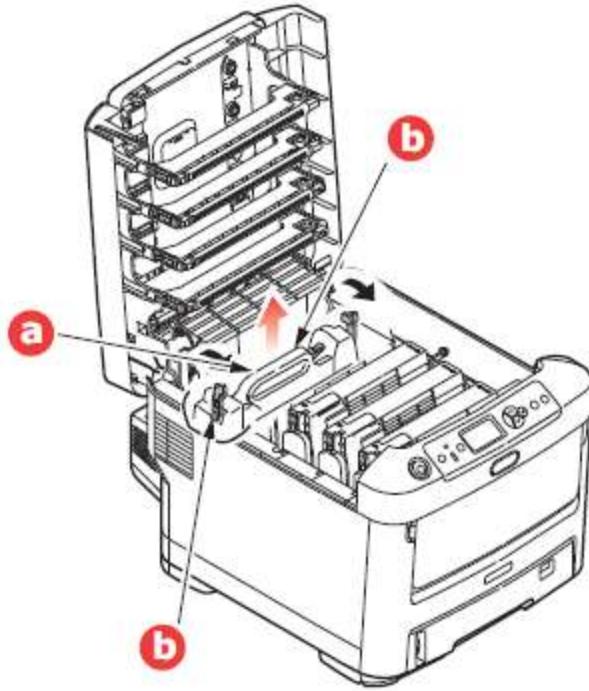


Figure 5-9. Fuser Replacement

- Carefully pull the fuser up and out of the printer by the handle (a).
- Place the fuser on a pre-determined surface that won't be damaged by heat.
- When replacing the fuser, the two locating lugs (c) will face towards you. You should also be able to read the yellow caution label. When oriented correctly, the fuser will slide readily into place.

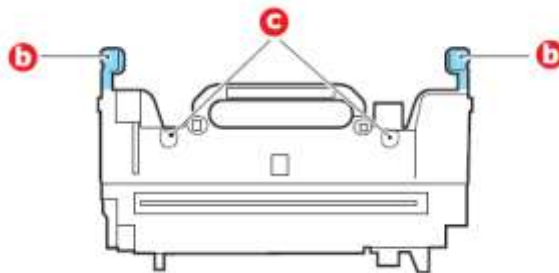


Figure 5-10. Fuser Positioning

- Latch the fuser back into place using the two blue latches (b).
- Close the printer top and press down firmly on both sides to ensure it is shut properly.

5.3.4 Procedure for Transfer Belt from the printer.

In order to remove the transfer belt from the printer, you must remove the 4 toner/drums; the fuser does not need to be removed. Follows the preceding instructions and use extreme caution when handling the delicate drums and when handling the fuser if it is still warm.

- Turn off the printer and open the cover by pressing the gray release button.
- Carefully remove the four toner/drum sets and make sure they are handled with care. You will want to make sure the drums are covered and not exposed to light.

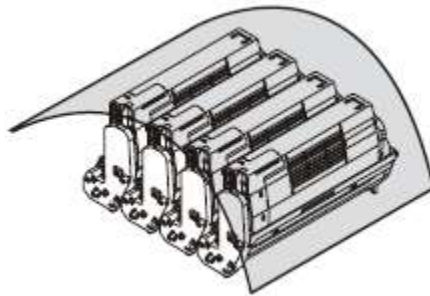


Figure 5-11. Protection for the Drums

- Keep in mind that the toner/drum sets are keyed and must be returned to the printer in the same order.
- Unlatch the two blue belt fasteners by turning counter clockwise. (a)
- Pull up on the belt lifting bar. The belt will move forward and up. (b)
- Remove the belt from the printer. (c)

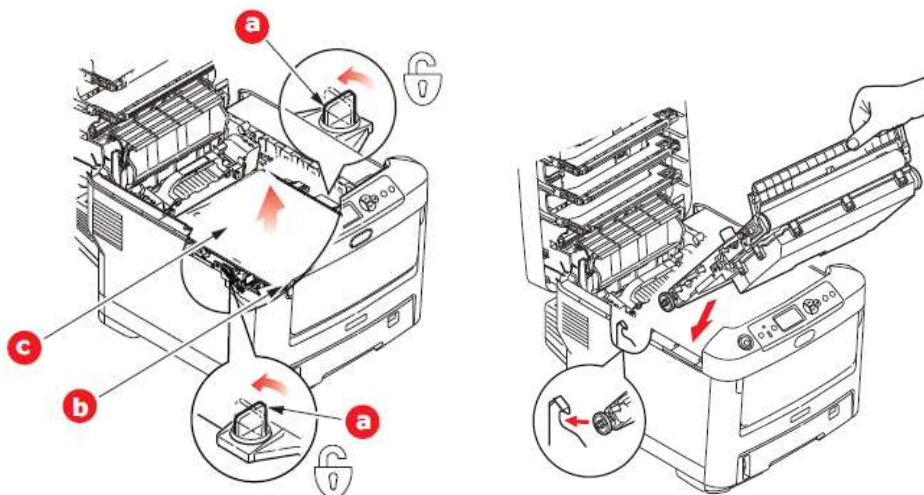


Figure 5-12. Replacing the Transfer Belt

- Replace the belt by lowering into place, using the lifting bar at the front and the drive gear near the rear.
- Lock the belt back into place using the two blue latches
- Replace the toner/drum sets.
- Close the printer top and press down firmly on both sides to ensure it is shut properly.

In a few moments the printer status will update and your printer will once again be ready to print.

5.4 Locating your Printer Serial Number

The Neuralog Z3 serial number will be needed for any support contract work. The serial number is located on the back of the printer. It is the first 10 digits of the number shown on the small barcoded sticker.



Figure 5-13. Printer Serial Number

The serial number can also be found by printing out the Configuration report. To print this report.

- Press Menu
- Press Print Information (the second choice)
- Scroll down and press Configuration
- Scroll down and press Execute. *The 2 page Configuration report will print.*

The Serial Number can be found on the first column of page 1 under System. It is a 10 digit number that begins with "AK".

5.5 Managing and Ordering Supplies

Supplies for your Neuralog Z3 can be ordered by visiting www.neuralog.com or emailing orders@neuralog.com or calling 1-800-364-8728. Be sure to allow for adequate shipping time when placing orders. Neuralog accepts credit cards and other standard means of payment. To monitor supply status, open the Neuralog Z3 Web page by typing your printer's IP address into a web browser.

Chapter 6. Troubleshooting Printing

The following sections provide a variety of troubleshooting tips for the Neuralog Z3.

6.1 Operating the Printer and CFA

Media Won't Load into CFA	<ul style="list-style-type: none"> Media is too wide > 8.52" for the standard CFA. CFA is not powered on. There is a paper dust build up inside the CFA that is preventing the media from loading. The wheels inside the CFA are not functioning. The CFA blade is not in the home position and is obstructing the path.
Media prints out blank	<ul style="list-style-type: none"> Driver parameters are incorrect. Printer driver indicates marked media when media does not have marks. Media may be loaded upside down. The printer has been in a low power sleep mode and the fuser is not able to warm. (This mode should be disabled on your printer.)
Print starts in the wrong place.	<p>The Start Position in the driver needs adjusting.</p> <ul style="list-style-type: none"> Larger number moves print down the page. Smaller number moves print up the page
Print ends with 702 Fuser error.	<p>The printer has been in a low power sleep mode and the fuser is not able to control its fuser temperature correctly. (This mode should be disabled on your printer.)</p> <p>The printer may have inadequate paper. Do not use a power strip; plug directly into wall.</p>
Cut is crooked or in the wrong place.	<p>There may be paper dust inside the CFA causing the blade to function incorrectly.</p> <p>The Cut setting on the driver may be incorrect.</p> <p>The media may have invalid cut marks on it.</p> <p>The media may be twisted as it enters the CFA.</p>
Media jams at the printer exit.	<p>The cut location in the driver may be set to a bad setting. If the cut is set such that the leading edge of the next media has a paper chad, the chances of a jam increase.</p>
Printer or CFA won't turn on.	<p>Check power switches and cables. If you do not heed the warnings, and you plug the CFA into the printer while it is turned on, it is possible that the printer will be damaged.</p>

6.2 Print Quality

<p>Prints have white smears/black color is missing.</p> <p>Prints are wrinkled.</p>	<p>The media may be poor quality and have an uneven coating.</p> <p>The environment may have excessive humidity.</p> <p>The media may be wavy or crooked, causing it to bubble inside the printer.</p> <ul style="list-style-type: none"> ➔ Inspect the media to make sure the quality is good. ➔ Make sure the media is loaded completely straight and there is nothing dragging on or twisting the media before it enters the printer. ➔ Remove plastic bags from boxed media. Remove the media from its box and place it on the floor. ➔ Keep the printer in a dry controlled environment for best results. ➔ Change the driver media setting (see the provided chart). Slower speeds usually have the best results. ➔ Increase the Exit Speed to keep the media taut inside the printer. ➔ If these steps do not resolve any printing problems, contact Neuralog. <p>The printer may have a poor power source causing it to malfunction.</p> <ul style="list-style-type: none"> ➔ Do not use a power strip; plug directly into the wall. ➔ Make sure printer has a stable energy source.
<p>Printed media has spots of toner throughout it</p>	<p>One of the printer drums or the printer transfer belt has become contaminated.</p> <ul style="list-style-type: none"> ➔ Determine the color. ➔ Inspect the appropriate drum or inspect the transfer belt. ➔ Clean or replace the consumable part.

Chapter 7. NeuraLaserColor Support

Neuralog takes pride in providing excellent support to its clients. Any clients under a current support contract can receive technical support. There are a variety of ways to obtain support.

7.1 On-Site Support

In many parts of the world, an On-Site Support contract may be available. Contact Neuralog if you need information about on-site support or if your printer needs service.

7.2 Contacting Neuralog

7.2.1 Phone Support:

Phone support is available at 1-281-240-2525 Monday-Friday 9AM-5PM Central Time. A support technician is usually available to take your call.

7.2.2 Email Support

Email support is available at support@neuralog.com

7.2.3 GoTo Meeting Support

GoTo Meeting or “over the web” support is available by appointment. Contact Neuralog to arrange for an on-line meeting.

7.2.4 www Support

There is a variety of information and downloads available for NeuraLaserColor at www.neuralog.com. These include electronic copies of documentation, Frequently Asked Questions, Driver and Firmware updates and release notes. Also available here is a file exchange service that allows you to get and receive files from Neuralog.

7.3 Downloading the latest Neuralog Z3 Release

The latest Neuralog Z3 Firmware, Drivers and Documentation can be found in the support section of the Neuralog web site. Go to the **Support and Downloads** tab and select **Neuralog Z3 Printer Support**.

The following are available for download from www.neuralog.com; however, these files are password protected. Authorized Neuralog Z3 users should contact Neuralog support for passwords and installation help.

- Latest NeuraView release
- Neuralog Z3 Firmware (updates to be released)

- Neuralog Z3 CFA Firmware (updates to be released)
- Neuralog Z3 Drivers and Utilities
- Neuralog Z3 Documentation
- Neuralog Z3 FAQ (Frequently Asked Questions)
- Neuralog Z3 Release Notes

7.4 Packaging the Printer/Plotter for Return

Any packaging materials for Neuralog Z3 and the Continuous Form Attachment have been custom made for these products. You should save these materials so that in the event that you should need to ship your product (to Neuralog or to another location), your printer and CFA will be properly protected. Neuralog cannot be responsible for damages done to products that have been improperly shipped by the end user. DO NOT attempt to ship these products without proper packaging.

Appendix A. Printer and CFA Specifications

The following is basic information about the print engine and Continuous Feed Attachment.

Physical Specifications

Printer Dimensions	17.1" x 21.5" x 15.3" or 435mm x 547mm x 389mm (W x D x H)
Printer Weight	61lbs/27.6Kg
CFA Dimensions	13.0" x 5.5" x 2.5" or 330mm x 140mm x 64mm (W x D x H)
CFA Weight	4.3lbs/1.9Kg

Power Consumption Chart

Printing	1200 max; 600 W ave
Standby	90 W ave
Power Save	15 W max
Sleep	1 W
Printer Power supply	110 - 127 VAC, 50/60 Hz @ 1150W 220 - 240 VAC, 50/60 Hz @ 1150W

Operating Environment

Temperature	10 to 32 C
Humidity	20 to 80% RH

Printer Noise Level

Operating	68dB(A)
Standby	37dB(A)

Appendix B. Setting up a Private Network

The following instructions provide an example of setting up your Neuralog Z3 on a private network. Your setup will be similar to this.

Required items:

- Neuralog Z3 with CFA
- Computer with print driver installed
- Crossover Cable⁹, *or*
- Network switch box with cables
 - Network cable from printer to switch box
 - Network cable from computer to switch box

Setup instructions:

- Plug computer and printer into port switch or use crossover cable.
- Set up a Static IP on printer, FOR EXAMPLE:
 - IP: 192.168.155.70
 - Netmask: 255.255.255.0
 - Gateway: 192.168.155.1

PC Setup Instructions for Window 7 static IP:

- Start > Control Panel > Network and Internet
- Network and Sharing Center
- Change Adapter Settings
- Right Click on the Local Area Connection > Click on properties
- Go to Networking Tab > Highlight Internet Protocol Version 4 (TCP/IP v4)
- Click properties

⁹ A crossover cable is a special type of network cable that allows this type of communication. A “regular” network cable will NOT work.

- Click **Use the following IP address**, FOR EXAMPLE
 - IP Address: 192.168.155.71 (for the computer)
- Click in the Subnet Mask field > it auto fills a mask
- Leave the gateway empty
- Click the **Use the following DNS server addresses**: radio button

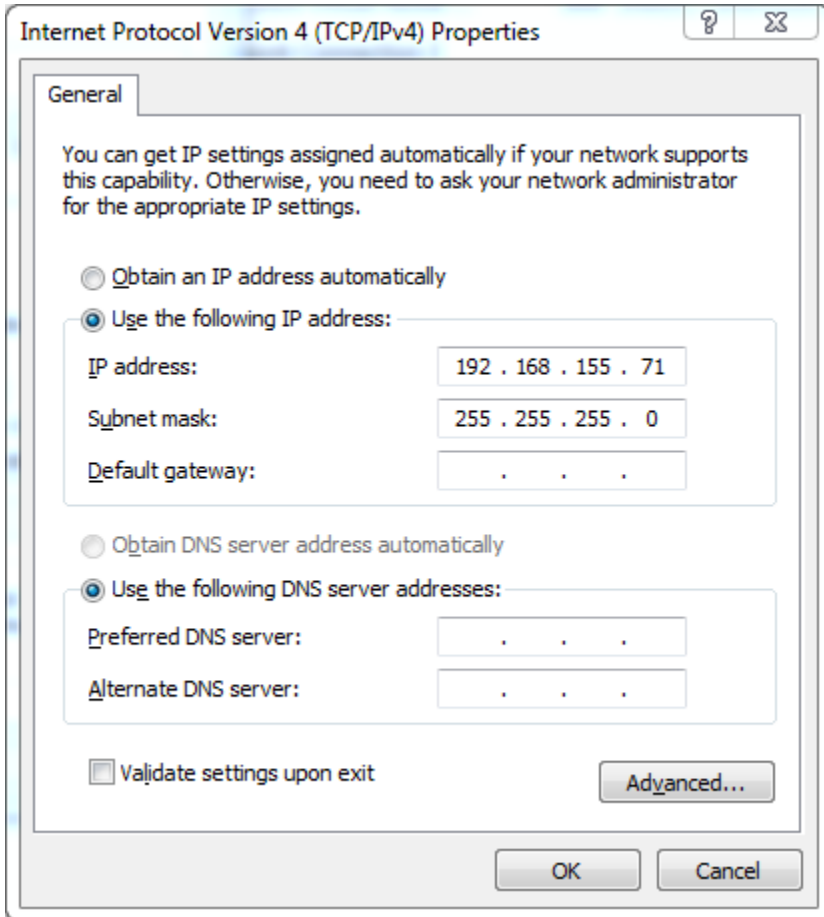


Figure B-14. Private Network setup

- Click OK
- Click OK/close again
- Now the computer is setup on its own private network

Then, from the cmd window or the internet explorer window try to ping the printer. Or, enter the printer's IP Address in your browser window. Once you see the printer, you know that the network setup has been successful.

Appendix C. Compliances

Waste from Electrical and Electronic Equipment (WEEE) Directive



The WEEE logo signifies specific recycling programs and procedures for electronic products in countries of the European Union. We encourage the recycling of our products. If you have further questions about recycling options, please contact Neuralog Support.

DECLARATION OF CONFORMITY

Manufacturer: Neuralog, Inc,
Manufacturer's Address: 4800 Sugar Grove Boulevard, Suite 200
Stafford, TX USA 77477

Declares that the following product(s)

Product: NeuraLabel 600e/Neuralog Z3

Conforms to the following Product Specifications:

FCC Part 15, Subpart B / ICES-003
EN 55032:2015
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 61000-4-2:2009
EN 61000-4-3:2006
EN 61000-4-4:2004
EN 61000-4-5:2006
EN 61000-4-6:2009
EN 61000-4-8:2010
EN 61000-4-11:2004

The product(s) described above are in conformity with the following Directives of the European Parliament and the Council of the European Union:

2014/35/EU (LVD) relating to electrical equipment designed for use within certain voltage limits;
2014/30/EU (EMC) relating to electromagnetic compatibility;
2011/65/EU (RoHS2) on the restriction of the use of certain hazardous substances in electrical and electronic equipment

and carries the CE marking accordingly.

Supplementary Information: (1) CE Mark affixed 2017.

Appendix D. Neuralog Z3 Parts Catalog

<u>Neuralog Z3 PART #</u>	<u>DESCRIPTION #</u>	<u>WEIGHT #</u>	<u>COUNTRY OF ORIGIN</u>
<u>Printer Base Unit</u>			
HW-NZC3-120V	Neuralog Z3 - 120V Well Log Printer/Plotter (includes NeuraViewPE License and 12 months warranty)	70 lbs each	Thailand
HW-NZC3-230V	Neuralog Z3 - 230V Well Log Printer/Plotter (includes NeuraViewPE License and 12 months warranty)	70 lbs each	Thailand
<u>Paper Handling Parts</u>			
HW-NZC3-CFA	CFA -Continuous Form Attachment	10 lbs each	United States
HW-NZC3-PB	PB - Paper Basket	1 lb each	United States
<u>Media / Fanfold Paper</u>			
HW-NZC-FSP	Full Scale log paper:- 5,000 sheets 24# 6.25"x 8.5"	38 lbs each	United States
<u>Laser Toner</u>			
HW-NZC3-TONER-K	Black High Yield Print Cartridge (est 11,000' life at 5%)	2 lbs each	China
HW-NZC3-TONER-C	Cyan High Yield Print Cartridge (est 11,500' life at 5%)	2 lbs each	China
HW-NZC3-TONER-M	Magenta High Yield Print Cartridge (est 11,500' life at 5%)	2 lbs each	China
HW-NZC3-TONER-Y	Yellow High Yield Print Cartridge (est 11,500' life at 5%)	2 lbs each	China
<u>Laser Drum</u>			
HW-NZC3-DRUM-K	Black Drum (est 30,000' life at 5%)	3 lbs each	Thailand/China
HW-NZC3-DRUM-C	Cyan Drum (est 30,000' life at 5%)	3 lbs each	Thailand/China
HW-NZC3-DRUM-M	Magenta Drum (est 30,000' life at 5%)	3 lbs each	Thailand/China
HW-NZC3-DRUM-Y	Yellow Drum (est 30,000' life at 5%)	3 lbs each	Thailand/China
<u>User Replaceable Parts</u>			
HW-NZC3-ITU	Internal Transfer Unit (est 60,000 standard page life)	5 lbs each	Thailand/China
HW-NZC3-FAK-230V	Fuser Assy Kit 230V (est 60,000 standard page life)	5 lbs each	Thailand/China
HW-NZC3-FAK-120V	Fuser Assy Kit 115V (est 60,000 standard page life)	5 lbs each	Thailand/China
<u>Extended Warranty</u>			
MT-NZC3	Neuralog Z3 - 12 Month Extended Warranty	N/A	N/A
MT-NZC3-P	Neuralog Z3 - 12 Month Platinum Extended Warranty	N/A	N/A
<u>Shipping and Handling</u>			
SV-S&H	Shipping and Handling	N/A	N/A

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