

# HP Designjet Z2100, Z3100, Z6100

## Technical Notes

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**This note applies to Caldera 7.22 drivers revision A and newer.**

### 1. Printer settings.

#### 1.1. Connection

The Zx100 printers can have multiple connection plugs such as network connection and USB. **We strongly encourage the use of the network connection**, which will allow to take profit of most of printer's features to the full extent. On USB, there is no feedback from the printer at all. There will be no status shown, no printer error reporting, no media type/size checking, no access to the printer embedded accounting web server and even more.

By default the Caldera Zx100 driver uses the LP connection on port 9100. It is possible to use RawIP on the same port too. Eventually it might work with FTP connection ("File or device" has to be set to "PORT")

#### 1.2. Firmware

Be sure to use at every moment the latest printer firmware available. Especially we encourage to use the 6.x.x.x series of firmware (or newer), since it corrects many issues and adds advanced status reporting capabilities to the Z2100/Z3100 printers with the latest Caldera drivers. Version 6.x.x.x of Z6100 firmware is already available and it shouldn't be long before it is released for Z2100/Z3100 printers. See the appendix for the list of known bugs and fixes.

#### 1.3. Printer setup

Printer options can be edited on the printer panel or on printer's web server page (which can be accessed with button "Web server" in advanced options).

Recommended settings for Z6100:

- Graphics language: *automatic*
- Margins: *normal* (**Note:** if you change this setting, you must adjust the hardware margins in the paper setup for concerned driver in Caldera server administration. Failing to do so, the prints could be clipped.)
- Start printing: *immediately*
- Job queue : *Off* (disabled)
- Nesting: *Off* (disabled)

The Z2100 and Z3100 do not have any required settings, you can leave all as is.

**Note:** It is advised to reset the printer to factory settings prior to begin adjusting parameters.

### 2. Print modes

#### 2.1. Overview

Caldera can print in contone (RGB 8 bit) or halftone (1 or 2 bit) modes on Z2100 and Z6100 printers. It can only print in contone mode (CMYK or RGB 8 bit) on Z3100. The real mode parameters depend on chosen resolution and on the media type (see chapter 3 - Media types). All modes are detailed in tables at the end of this document. First find the correct type for your media – all media types are listed right after the category they belong in. Then you can look up the print mode in concerned media category.

## 2.2. Enhanced resolution mode

The Z6100 printer offers enhanced resolution mode for all Glossy media. This mode can be activated by enabling the setting “Enhanced mode” in the Media tab in advanced settings (**Note:** It was mistakenly called “CAD mode” in older driver releases). It modifies the print settings of Best resolution mode (for details please see Z6100 print modes in appendix). By default the enhanced mode is disabled. Beware that if you enable this, default color profile for Best resolution mode will not give correct results and you will have to create your own profile. In the same way a profile created for Best mode with enhanced mode enabled will not be correct with this disabled. It is important to understand this if you are willing to use Best resolution mode in both enhanced and normal modes. In that case the best to do is to create a second media with enhanced mode activated and to create a new profile at least for the Best mode (profiles for Fast, Fast+ and Normal mode can be reused from the original media since they are not modified by the enhanced mode setting)

## **3. Media types**

### 3.1. Overview

Each media has to be linked with a media type. This is done in the Media tab in advanced settings in the print client (or in EasyMedia). It is very important that the selected media in the print client is the same as the one selected on the printer panel. Failing to do that, the printer will most probably show an error (Wrong data format). In order to prevent that, the Caldera Zx100 driver can perform some verifications before printing. Be sure to activate the two following options in the Printer tab in advanced settings: “Check media type before printing” and “Check media width before printing”. Note that this won't work with “Send raw file” action.

### 3.2. Custom media

Windows and Mac HP software allow creating custom media on the printer. This will work fine with Caldera, you will have to create corresponding media in the rip (using EasyMedia module) and to associate it with the same base media type you did when you created the custom media. However, Caldera do not allow to create those custom media directly on the printer.

**Note:** In the case you can't remember which media type you based your custom media on, simply disable the media type checks in Caldera client and be sure to select the correct custom media on the printer.

**Note2:** Please note that not all of the printer's media types can be used as base type for a custom media. That is why not all types might be shown when creating custom media using Windows or MacOSX HP software.

### 3.3. Black ink

All Zx100 printers have two sorts of black: matte black and photo black. Use matte black for all media excepted for glossy papers because of adherence issues. With glossy media (see the appendixes for the list of glossy media types) be sure to use always photo black.

## **4. Calibration**

The Zx100 printers are shipped with an embedded spectrophotometer. It **cannot** be used directly by Caldera. The printers uses it to perform internal media calibration. This is useful (and it is advised to do it) only for contone modes. However in halftone modes, the internal media calibration has no effect on printed images.

If the RGB contone mode is used, you should force the output profile to sRGB.icc. This should be the default. On the opposite, in CMYK 8bit contone mode (only Z3100), you will have to use (or make) a profile in the same way as for halftone modes.

## 5. Appendix : print mode details : Z2100 and Z3100

Contone resolution is the resolution at which the image is rasterized. It is then interlaced by the printer, which prints at 1200 dpi in all cases. Detail column gives additional information such as the number of passes, printing direction (bidi = bidirectional, unidi = unidirectional) and the size of dots (fixdot = fixed dot size, vardot = variable dot size, 4 levels )

**Plain papers** : Plain paper, Bright White Bond Paper.

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	2 pass bidi fixdot
1200dpi-Normal	300	1200	4 pass bidi fixdot
1200dpi-Best	600	1200	6 pass bidi fixdot
1200dpi-Best+	600	1200	8 pass unidi fixdot

**Coated papers** : Coated paper, Natural Tracing Paper, Translucent Bond, Vellum

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	2 pass bidi fixdot
1200dpi-Normal	300	1200	4 pass bidi fixdot
1200dpi-Best	600	1200	6 pass unidi fixdot
1200dpi-Best+	600	1200	10 pass unidi fixdot

**Heavyweight Coated papers** : Heavyweight Coated Paper, HP Photo Matte, Photo Matte Paper, Photo Matte Paper, Proofing Matte Paper, Matte Film

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	2 pass bidi fixdot
1200dpi-Normal	300	1200	8 pass bidi vardot
1200dpi-Best	600	1200	8 pass unidi vardot
1200dpi-Best+	600	1200	12 pass unidi vardot

**Fine Art**: HP Smooth Fine Art Paper, HP Matte Litho, HP Textured FA Paper, Fine Art Paper, Fine Art Paper >250g/m2

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	6 pass bidi fixdot
1200dpi-Normal	300	1200	8 pass bidi vardot
1200dpi-Best	600	1200	8 pass unidi vardot
1200dpi-Best+	600	1200	12 pass unidi vardot

**Super Heavyweight Coated Papers** : HP Super HW Plus Matte, Super HW Coated Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	4 pass bidi fixdot
1200dpi-Normal	300	1200	8 pass bidi vardot
1200dpi-Best	600	1200	8 pass unidi vardot
1200dpi-Best+	600	1200	12 pass unidi vardot

**Canvas:** HP Prof Matte Canvas, HP Collector Satin Canvas, HP Artist Matte Canvas, Canvas

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	8 pass bidi vardot
1200dpi-Normal	300	1200	10 pass bidi vardot
1200dpi-Best	600	1200	16 pass bidi vardot
1200dpi-Best+	600	1200	12 pass unidi vardot

Cutting is not possible with canvas media.

**Glossy papers :** HP Premium ID Gloss, HP Premium ID Satin, Photo Gloss Paper, Photo SG/Satin Paper, HP HG Contract Proofing, HP SG Contract Proofing, Proofing Gloss Paper, Proofing SG/Satin Paper, Transparent Clear Film

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
1200dpi-Fast	300	1200	6 pass bidi fixdot
1200dpi-Normal	300	1200	8 pass bidi vardot
1200dpi-Best	600	1200	16 pass bidi vardot
1200dpi-Best+ **	600	1200	12 pass unidi vardot
1200dpi-Best+ **	1200	1200	16 pass unidi vardot

Always use the Photo black ink for glossy media.

\*\* Choice between those two modes is made by checking / unchecking the toggle “More passes” in the media tab in advanced settings. If activated, the mode 1200dpi-Best acts as 16 pass unidirectional mode at 1200 dpi in contone modes, if not activated it acts as 12 pass unidirectional mode at 600 dpi in contone modes.

## 6. Appendix : print mode details : Z6100

Detail column gives additional information such as the number of passes, printing direction (bidi = bidirectional, unidi = unidirectional) and the size of dots (fixdot = fixed dot size, vardot = variable dot size, 4 levels )

**Plain papers :** Plain paper, Bright White Bond Paper, HP Univ Inkjet Bond Paper, Natural Tracing Paper, Translucent Bond, Vellum

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	300 x 1200	1 pass bidi fixdot
Fast+	300	600	1 pass unidi fixdot
Normal	600	1200	2 pass unidi fixdot
Best	600	1200	4 pass bidi fixdot

**Coated papers :** HP Universal Coated Paper, Coated Paper, HP Coated Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	600 x 1200	1 pass bidi fixdot
Fast+	300	1200	4 pass bidi fixdot
Normal	600	1200	6 pass bidi vardot
Best	600	1200	8 pass bidi vardot

**Coated CAD papers :** Coated Paper (CAD), HP Coated Paper (CAD), HP Univ Coated Paper (CAD)

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	600 x 1200	1 pass bidi fixdot
Fast+	300	1200	2 pass unidi fixdot
Normal	600	1200	4 pass unidi fixdot
Best	600	1200	6 pass unidi vardot

**Heavyweight Coated Papers :** HP Univ Heavyweight Coated, Heavyweight Coated Paper, HP Heavyweight Coated, HP Proofing Matte, Proofing Matte Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	600 x 1200	2 pass bidi fixdot
Fast+	300	600 x 1200	4 pass unidi vardot
Normal	600	1200	8 pass bidi vardot
Best	600	1200	10 pass bidi vardot

**Super Heavyweight Coated Papers :** Super HW Coated Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	1200	4 pass bidi fixdot
Fast+	300	1200	6 pass bidi vardot
Normal	600	1200	8 pass unidi vardot
Best	600	1200	10 pass unidi vardot

**Canvas :** HP Prof Matte Canvas, HP Collector Satin Canvas, HP Artist Matte Canvas, HP Universal Matte Canvas, HP Smooth Fine Art Paper, HP Matte Litho, Canvas, Fine Art Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	1200	8 pass bidi vardot
Fast+	600	1200	8 pass unidi vardot
Normal	600	1200	10 pass unidi vardot
Best *			

Cutting is not possible with canvas media.

\* Best resolution mode is the same as Normal for this media

**Fine Arts :** HP Aquarella Art Paper, HP Textured FA Paper

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	1200	6 pass bidi vardot
Fast+	600	1200	8 pass bidi vardot
Normal	600	1200	10 pass bidi vardot
Best *			

\* Best resolution mode is the same as Normal for this media

**Backlit media** : HP Premium Vivid Backlit, Backlit Material

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	1200	6 pass bidi vardot
Fast+	300	1200	10 pass bidi vardot
Normal	600	1200	10 pass unidi vardot
Best	600	1200	12 pass unidi vardot

**Adhesive media** : HP Opaque Scrim, Scrim Banner, Adhesive Polypropylene, Adhesive Vinyl

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	1200	6 pass bidi vardot
Fast+	300	1200	8 pass bidi vardot
Normal	600	1200	10 pass bidi vardot
Best	600	1200	10 pass unidi vardot

**Glossy papers** : HP Premium ID Gloss, HP Premium ID Satin, HP Universal ID Gloss, HP Universal ID SemiGloss, Photo Gloss Paper, Photo SG/Satin Paper, HP HG Contract Proofing, HP SG Contract Proofing, Proofing Gloss Paper, Proofing SG/Satin Paper, Transparent Clear Film, Matte Film, HP ID Indoor Banner Gloss, Indoor Banner

<i>Resolution</i>	<i>Contone resolution</i>	<i>Halftone resolution</i>	<i>detail</i>
Fast	300	600 x 1200	6 pass bidi vardot
Fast+	300	600 x 1200	8 pass bidi vardot
Normal	600	600 x 1200	11 pass bidi vardot
Best **	600	600 x 1200	16 pass bidi vardot
Best **	1200	1200	11 pass unidi vardot

Always use the Photo black ink for glossy media.

\*\* Choice between those two modes is made by checking / unchecking the toggle “Enhanced Mode” in the media tab in advanced settings. If activated, the mode Best acts as 11 pass unidirectional mode at 1200 dpi. If not activated it acts as 16 pass bidirectional mode at 600 dpi. Warning, enhanced mode is not compatible with profiles created for Best mode without this activated, and reversed.

## 7. Appendix : Known bugs

**Symptoms:** Printer is printing trashed image with dummy color blocks and lines in contone modes (RGB or CMYK). It can happen when the resolution mode is changed, when switching from RGB contone to CMYK contone or back, or sometimes simply by changing printed job width.

**Printers:** Z2100 and Z3100

**Solution:** This should be fixed in 6.x.x.x firmwares. Please upgrade as soon as the firmware is released (not the case when writing those lines).

**Symptoms:** Printer is totally ignoring a job in contone RGB mode. The job is entirely sent to the printer and act as if it was printed successfully in Caldera spooler. The printer does not print the job and shows “ready” at the display.

**Printers:** Z6100

**Solution:** Bug completely solved in 6.x.x.x firmware, please upgrade. In older firmwares, the workaround is to disable the data compression in Caldera print client. However, this slows the printer since transferred data is much more voluminous. Be sure to re-enable the data compression for halftone modes and after upgrading to 6.x.x.x firmware.

**Symptoms:** Annoying head stops between the passes in halftone modes. The print head is stopping for few seconds on the sides while printing a job.

**Printers:** Z2100, Z6100

**Solution:** This behaviour can be caused by several causes that are not the same for Z2100 and Z6100 printers. On the Z2100 this is caused by a bug in the firmware and has not been fixed yet (as far as we're aware of). On Z6100, this could have been caused by the driver. Please download and install Caldera Z6100 driver v7.22 revision A (it will be included in Caldera starting from Super7 version).

**Note:** In case of a slow computer it is possible that the data are not computed fast enough to guarantee a sufficient data flow. In that case if you need to prevent the head from stopping when printing, use the action “Compute Reprint, then Print” instead of “Print”. All print data will be prepared entirely before sending them to the printer.

**Symptoms:** Printing raw file or a reprint on Mac computers is waiting few minutes (observed time is proportional to the job size) at 0% with the printer stuck in “preparing to print” state and the head making little movements repeatedly.

**Printers:** Z6100 (and possibly Z2100 and Z3100)

**Solution:** Fixed in 7.22 revision B drivers. Please upgrade.