LECTRA ENTERPRISE SOLUTIONS

Peripherals Guide for PC

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Contents

1. INTRODUCTION

In the following document, provided guidance is on peripheral devices and solutions for use with Lectra's Software solutions. They are appropriate for use with PC systems.

2. OVERVIEW ON PRINTERS

Guidance on inkjet printers appears in this section. Although Epson professional imaging printers are preferred, they are not available in all areas of the globe, thus Canon professional inkjet solutions is an optional alternative.

In the previous documents the Epson Stylus Pro was the preferred range but this is becoming obsolete and being replaced by the SureColor range. There are still some models available such as Epson Stylus Pro 4900 & 4900 Designer that are compatible with Lectra solutions.

The Epson printers are available in three different ink-set technologies.

- **UltraChrome® HDR** (High Dynamic Range): provides a much wider tonal range that includes orange and green cartridges for standard Epson Stylus Pro 4900, Epson SureColor P6000 STD and P8000 STD.

  (To learn more about these inks go to https://www.epson.co.uk/consumables/ultrachrome-hd-ink)

- **UltraChrome® HDX** can produce a wide range of vivid colors with deep, rich blacks and dense shadowed areas that includes a violet cartridge that can replace the light light black ink. The reange includes Epson SureColor P5000V, P7000V and P9000V (depending on your region these models could be called Commercial).

  (To learn more about these inks go to https://www.epson.co.uk/gb/en/consumables/ultrachrome-hdx-ink)

- **UltraChrome® XD** can produce high volume printing for Epson SureColor T3200, T5200 and T7200. (Faster but reduced Gamut)

The latest Epson SureColor **UltraChrome® XD** range of printers have a high print speed but a reduced gamut compared to the **UltraChrome® HDR/HDX** Inkset printers.

We are in the process of testing Epson SureColor 8-colour and 10-colour printers that gives the widest color gamut of Epson's SureColor range.

- 8-colour ink-set featuring light magenta, light cyan, light black, green, orange and CMYK

- 10-colour ink-set featuring light magenta, light cyan, light black, green, orange, violet and CMYK

2.1 Benchtop Inkjet Printers

Model	Printer Quality	Ink Type	Paper Width	Paper Type	Print Speed	Other Features
Epson Stylus Pro 4900	Up to 2880 x 1440 dpi print resolution	11 color Pigment Ink Technology **UltraChrome HDR** includes orange and green Dark Black switchable between Photo Black and Matte Black 200 ml ink cartridges size	up to 17" sheet or roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll 17"	8.0 x 10 x 1440 dpi = 1 min 28 sec 11 x 14 x 1440 dpi = 2 min 31 sec	USB 2.0 and 10/100 Base T Ethernet standard connection Storage N/A 98% PANTONE® coverage
Epson SureColor SC-P5000 (*)	Up to 2880 x 1440 dpi print resolution	11 color Pigment Ink Technology **UltraChrome HDX** includes orange, green and violet (replaces light light black) Dark Black switchable between Photo Black and Matte Black 200 ml High-Capacity Ink Cartridges	up to 17" sheet or roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll 17"	8.0 x 10 x 1440 dpi = N/A 11 x 14 x 1440 dpi = N/A	USB 2.0 and 10/100 Base T Ethernet standard connection Storage N/A 99% PANTONE® coverage
Canon imagePROGRAF iPF5100	2400 x 1200 dpi print resolution	12 color inkjet technology **LUCIA** Cyan, Photo Cyan, Magenta, Photo Magenta, Yellow, Black, Matte Black, Red, Green. Blue, Gray, Photo Gray 130 ml ink cartridges	Accepts media up to 17" wide in sheet or roll	Matte Photo Paper MP-101	1200 x 1200 dpi on Plain Paper = 212 sq.ft. per/hr 2400 x 1200 dpi on Photo Gloss Paper = 39 sq.ft. per/hr	USB 2.0 and 10/100/1000 Base T Ethernet standard connection Storage N/A

Epson SureColor SC-P5000 (*) will be released at the end of Jan 2017.

2.2 Wide Format Inkjet Printers

MODEL	PRINTER QUALITY	INK TYPE	PAPER WIDTH	PAPER TYPE	PRINT SPEED	OTHER FEATURES
Epson SureColor SC-P6000	Up to 2880 x 1440 dpi print resolution	9-ink, **8-color UltraChrome HD** pigment inks (C, LC, VM, VLM, Y, LK, LLK, and PK or MK) Dark Black switchable between Photo Black and Matte Black 350 ml, or 700 ml ink cartridges	up to 24" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17" and 24")	16" x 20" x 1440 dpi = 4 min 16 sec 20" x 30" x 1440 dpi = 7 min 36 sec	Gigabit Ethernet, USB 2.0 and Internal Hard Drive Slot connections 320 GB Storage 93% Pantone reproduction
Epson SureColor SC-P8000	Up to 2880 x 1440 dpi print resolution	9-ink, **8-color UltraChrome HD** pigment inks (C, LC, VM, VLM, Y, LK, LLK, and PK or MK) Dark Black switchable between Photo Black and Matte Black 350 ml, or 700 ml ink cartridges	up to 44" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17", 24" and 44")	16" x 20" x 1440 dpi = 4 min 16 sec 20" x 30" x 1440 dpi = 7 min 36 sec 40" x 60" x 1440 dpi = 24 min 20 sec	Gigabit Ethernet, USB 2.0 and Internal Hard Drive Slot connections 320 GB Storage 93% Pantone reproduction

MODEL	PRINTER QUALITY	INK TYPE	PAPER WIDTH	PAPER TYPE	PRINT SPEED	OTHER FEATURES
Epson SureColor SC-P7000V	Up to 2880 x 1440 dpi print resolution	11-ink, **10-color UltraChrome HDX** pigment inks (C, LC, VM, VLM, Y, LK, LLK, O, G and PK or MK) Dark Black switchable between Photo Black and Matte Black 350 ml or 700 ml ink cartridges	up to 24" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17" and 24")	16" x 20" x 1440 dpi = 4 min 16 sec 20" x 30" x 1440 dpi = 7 min 36 sec 40" x 60" x 1440 dpi = 24 min 20 sec	Gigabit Ethernet, USB 2.0 and Internal Hard Drive Slot connections 320 GB Storage 99% Pantone reproduction
Epson SureColor SC-P9000V	Up to 2880 x 1440 dpi print resolution	11-ink, **10-color UltraChrome HDX** pigment inks (C, LC, VM, VLM, Y, LK, LLK, O, G and PK or MK) Dark Black switchable between Photo Black and Matte Black 350 ml or 700 ml ink cartridges	up to 44" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17", 24" and 44")	16" x 20" x 1440 dpi = 4 min 16 sec 20" x 30" x 1440 dpi = 7 min 36 sec 40" x 60" x 1440 dpi = 24 min 20 sec	Gigabit Ethernet, USB 2.0 and Internal Hard Drive Slot connections 320 GB Storage 99% Pantone reproduction

(Epson SureColor T-series printers are faster but have a smaller colour Gamut)

MODEL	PRINTER QUALITY	INK TYPE	PAPER WIDTH	PAPER TYPE	PRINT SPEED	OTHER FEATURES
Epson SureColor SC-T3200 (EU) or T3270 (US)	Up to 2880 x 1440 dpi print resolution	5 color pigment inkset **UltraChrome XD** Dual-Black ink technology 110 ml, 350 ml, 700 ml ink cartridges	up to 24" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17" and 24")	17" x 22" Quality 1440 x 720 dpi: 30sec 17" x 22" Highest Quality: 1440 x 1440 dpi: 1min 38sec 22" x 34" Quality: 1440 x 720 dpi: 52sec 22" x 34" Highest Quality: 1440 x 1440 dpi: 2min 50sec	USB 2.0 and One Gigabit Ethernet Port (10/100/1000 Base-T) Optional: 320 GB Storage
Epson SureColor SC-T5200 (EU) or T5270 (US)	Up to 2880 x 1440 dpi print resolution	5 color pigment inkset **UltraChrome XD** Dual-Black ink technology 110 ml, 350 ml, 700 ml ink cartridges	up to 36" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17" and 24")	17" x 22" Quality 1440 x 720 dpi: 30sec 17" x 22" Highest Quality: 1440 x 1440 dpi: 1min 38sec 22" x 34" Quality: 1440 x 720 dpi: 52sec 22" x 34" Highest Quality: 1440 x 1440 dpi: 2min 50sec	USB 2.0 and One Gigabit Ethernet Port (10/100/1000 Base-T) Optional: 320 GB Storage
Epson SureColor SC-T7200 (EU) or T7270 (US)	Up to 2880 x 1440 dpi print resolution	5 color pigment inkset **UltraChrome XD** Dual-Black ink technology 110 ml, 350 ml, 700 ml ink cartridges	up to 44" roll	Archival Paper Sheets (A3 and A4) Enhanced Matte Paper Roll (17" and 24")	17" x 22" Quality 1440 x 720 dpi: 30sec 17" x 22" Highest Quality: 1440 x 1440 dpi: 1min 38sec 22" x 34" Quality: 1440 x 720 dpi: 52sec 22" x 34" Highest Quality: 1440 x 1440 dpi: 2min 50sec	USB 2.0 and One Gigabit Ethernet Port (10/100/1000 Base-T) Optional: 320 GB Storage

MODEL	PRINTER QUALITY	INK TYPE	PAPER WIDTH	PAPER TYPE	PRINT SPEED	OTHER FEATURES
Canon imagePROGRAF IPF6450	Up to 2400 x 1200 dpi print resolution	12 color pigment inkset (LUCIA EX) 130 ml and 330ml ink cartridges	up to 24" roll	Matte Photo Paper MP-101	A1 Roll High Quality Mode = 5min A1 Roll Standard Mode = 2.1 min	USB 2.0 and 10/100/1000 Base T Ethernet standard 80GB Hard Drive
Canon imagePROGRAF iPF8400	Up to 2400 x 1200 dpi print resolution	8 color pigment inkset (LUCIA EX) 330 ml and 700 ml ink cartridges	up to 44" roll	Matte Photo Paper MP-101	A0 Roll High Quality Mode = 4.5 min A0 Roll Standard Mode = 3.10 min	USB 2.0 and 10/100/1000 Base T Ethernet standard 250GB Hard Drive

3. OVERVIEW ON MONITORS

The following guidance are for monitors used in Textile Design.   For this use, the monitor should be high quality in order to render designs with high resolution, clarity and color. Several representative examples from HP, NEC and ViewSonic and Eizo appear in the list below, similar models are available from Dell, Lenovo, LaCie and others.

3.1 Current trends for monitors

3.1.1 Widescreen

16:10 aspect ratio widescreen has become the standard for monitors.

3.1.2 Monitor Connection

Either HDMI or Display Port/Mini Display Port are widely used more than VGA and DVI ports for monitors. The simple reason is due to image quality and utilizing the NVIDIA or ATI graphic cards.

3.1.3 LED Backlighting

- The term "LED monitor" generally refers to a monitor with a LCD panel and a LED backlight.

- A typical LCD monitor uses cold cathode fluorescent lamps (CCFL) as a light source to illuminate the LCD panel. In an LED backlit monitor, white LEDs (Light Emitting Diodes) use as the light source.

- Environmentally friendly LED backlights provide the following benefits:

  - About 50%* less power consumption compared to traditional CCFL monitor

  - 20,000,000:1 MEGA Dynamic Contrast Ratio

  - Environmentally friendly mercury-free backlight

  - Low EMI (Electro Magnetic Interference)

- There are several backlighting configurations ranging from a row of white LEDs at bottom of screen and reflected upward, to a full matrix of discrete RGB LEDs behind the entire area of the TFT. LED screens reach a deeper black point and greater color brilliance, but are not necessarily wider gamut compared to conventional fluorescent backlit LCDs.

3.1.4 Desired Features

- If on-screen color needs to match the print, a wide gamut display is necessary, at least above 98% NTSC. Some of the monitors listed below exceed 100% NTSC gamut, and would be appropriate for critical color matching and on-screen approvals.

- Uniform color, brightness and contrast across entire screen surface.

- Uniform brightness and color across a large viewing angle range, at least 175 degrees.

- Adequate lifetime rating.

3.2 Example of monitors with a Wide Gamut – for Color Managed environments

MODEL	SIZE	RESOLUTION	CONTRAST RATIO	BRIGHTNESS	VIEWING ANGLE	RATED DISPLAYS	CONNECTIVITY
Eizo ColorEdge CG247X	24-Inch Screen LED-Lit Monitor	1920 x 1200 pixels (16:10 wide aspect ratio)	1500:1	400 cd/m2 squared	178º horizontal, 178º vertical	up to 99% of Adobe RGB color space	Includes: • Regular DisplayPort with 10-bit support • HDMI • DVI-D input • USB up/down x2
Nec Monitor 27" MultiSync PA272W-BK	27-Inch Screen LED-Lit Monitor	2560x1440 QHD resolution (16:9 wide aspect ratio)	1000:1	340 cd/m2 squared	178º horizontal, 178º vertical	up to 99.3% of Adobe RGB color space	Includes: • Regular and Mini DisplayPort with 10-bit support • 10-bit HDMI • DVI-D input • USB hub
ViewSonic VP2770 LED 27" Professional Series	27" Wide Color TFT Active Matrix IPS LED (27" diagonal)	2560x1440 WQHD resolution (16:10 wide aspect ratio)	1000:1 Dynamic contrast : 20,000,000:1	300 cd/m2 squared	178º horizontal, 178º vertical	up to 99% of Adobe RGB color space	Includes: • DisplayPort cable • HDMI cable • DVI cable • USB 3.0 cable

3.3 Example of monitors for less critical Colour environments

MODEL	SIZE	RESOLUTION	CONTRAST RATIO	BRIGHTNESS	VIEWING ANGLE	RATED DISPLAYS	CONNECTIVITY
ViewSonic VP2365-LED 23" Professional Series (only in the US)	23" Color TFT active matrix e-IPS LED (23" diagonal)	1920 x 1080 maximum resolution (16:9 wide aspect ratio)	1000:1 static Dynamic contrast : 20,000,000:1	250 cd/m2 squared	178 x 178 degree	98% sRGB color gamut	Includes: • VGA • DVI • USB 2.0
ViewSonic VP2468 24' Full HD monitor	24"W (23.8" Viewable)	1920 x 1080 maximum resolution	1000:1 static Dynamic contrast : 20,000,000:1	250 cd/m2 squared	178 x 178 degree	99% sRGB color coverage and Delta E	Includes: • HDMI • USB 3.0 • DisplayPort, and Mini DisplayPort
HP Z23n Full HD IPS Display (23")	HP Z23n Narrow Bezel IPS Display	1920 x 1080 (16:9 wide aspect ratio)	1000:1 static Dynamic contrast : 5000000:1	250 cd/m2 squared	178 x 178 degree	96% sRGB color gamut	Includes: • VGA • HDMI (with HDCP support) • DisplayPort 1.2 (with HDCP support)

4. FLATBED SCANNERS

The most common flatbed scanner used in design work have a 12" x 17" scan surface. A larger flatbed scanner with 18" x 24" surface is useful for archiving physical assets. For even larger scan sizes, drum scanners are available.

MODEL	OPTICAL RESOLUTION	MAX. RESOLUTION	SCANNING SURFACE	NETWORK capability	CONNECTIONS	OTHER FEATURES
Epson Expression 11000XL Pro - Graphic Arts	2400 dpi	2400 x 4800 48 bit color	A3 12.2" x 17.2"	Connects as a network scanner Shares with multiple users via EpsonNet Network utility	Hi-Speed USB 2.0	• Higher price vs. the entry level solution, but provides higher quality images with a large scanning area for fabrics, textiles, other samples.
Image Access Widetek 25	1200x 600 dpi	1200 x 1200 dpi 36 bit color	25" x 18.5	Network scanning via Web Browser	USB 2.0 connection	• Captures 3D surfaces for industrial quality inspection: material for weaves, patterns and texture.

Contex HD iFLEX	600 dpi	Enhanced resolution 9600 dpi 48 bit color	A2 18" x 24"	Connects as network scanner Provided with a scan utility, "Nextimage"	Gigabit Ethernet LAN port USB 2.0 connection	• One of the larger commercial flatbed scanners available. This unit is for large samples and specialty high-resolution work, particularly asset digitization and archiving. Contex and Vidor also manufacture drum scanners. • Available Photoshop plug-in allows scanning directly into Photoshop.

5. TABLETS

Guidance provided on drawing tablets and screens are by Wacom. Designers prefer to use a drawing tablet in place of or in addition to a mouse, giving the effect of drawing with a brush.

MODEL	SIZE	WORKING AREA
Wacom Intuos Pro S	158 × 98 mm	6.2 x 3.9"
Wacom Intuos Pro M	338 x 219 x 8 mm 13.2 x 8.5 x 0.3 in	224 x 148 mm 8.7 x 5.8 in
Wacom Intuos Pro L	430 x 287 x 8 mm 16.8 x 11.2 x 0.3 in	311 x 216 mm 12.1 x 8.4 in
Wacom Intuos 4 XL	623 x 462 x 28 mm 24.5 x 18.2 x 1.1in	488 x 305 mm 19.2 x 12.0 in

MODEL	SIZE	WORKING AREA
Wacom Cintiq 22HD	650 x 400 x 55 mm 25.6 x 15.7 x 2.2 in	Diagonal display/working area: 54.5 cm 21.5 inch Resolution 1920 x 1080
Wacom Cintiq 27 QHD	770 x 465 x 54.5 mm 30.3 x 18.3 x 2.1 in	Diagonal display/working area: 68.6 cm 27 inch Resolution QHD 2560 X 1440

6. PERIPHERALS FOR COLOR AND COLOR MANAGEMENT

6.1 Color Palette Acquisition, Printer Calibration and Profiling

Guidance provided below for ColorMunki and i1Pro 2 spectrophotometers that connect with Kaledo solutions and can calibrate and profile printers and monitors.

- Colormunki Design offers a simple entry-level method of calibrating printers.

- i1Publish Pro2 and i1Basic Pro2 are high-end solutions capable of creating precise profiles, which incorporate spot color correction, illuminant correction and optical brightener correction.

Both solutions are multifunctional and are capable of calibrating and profiling displays and projectors in addition to printers.

6.1.1 ColorMunki Design

The ColorMunki Design Package includes:

- ColorMunki all-in-One Miniature Spectrophotometer

- Integrated white calibration tile

- Protective bag /Monitor holder (for creating monitor profiles)

- USB 2.0 Connector

- Software: Photo ColorPicker, that allows color measurement, palette creation and save/export, synchronization with Corel and Adobe color rendering.

6.1.2 X-Rite i1Basic Pro 2 and i1Publish Pro 2

The i1Basic Pro 2 or the i1Publish Pro 2 includes:

- Hardware tools and attachments to allow calibration monitor profiling, printer profiling, reflective measurement of swatches and materials.

- i1Profiler software for calibrating and profiling displays.

- With optional software (I1Profiler Publish), ability to create printer profiles.

- USB 2.0 Connector

- PANTONE Color Manager Software

- i1Publish Pro 2: includes ColorChecker Camera Calibration and ColorChecker Classic Target [mini]

6.2 Color Visualization

6.2.1 X-Rite SpectraLight QC Viewing Booth

This light booth allows the user to compare colors (paper, fabric, etc.) in a controlled lighting and perception environment. Filtered tungsten halogen daylight simulation provides the most accurate rendering of daylight available anywhere in the market for optimum visual assessment.

It is available as a traditional light booth (shown below) or as an overhead luminary for illuminating a specially configured room. It has seven light sources that configures with the following illuminants:

- Daylight options:
    - D65
    - D50
- Fluorescent options:
    - CWF F2 (Cool White, 4230K)
    - F12/U30 (3000K)
    - U35 (3500K)
    - F11/TL84(4000K)
    - Incandescent A (2856K)
    - UV (Filtered near UV)

7. PRINTING MANAGEMENT USING RASTER IMAGE PROCESSORS (RIPS)

Guidance provided on solutions and workflows that streamline the process and provide improvement.

When printing production demands are high, on a constant basis or intermittently, Lectra can provide basic guidance on RIP.