

# Glossary of Digital Art and Printmaking

by the Digital Art Practices & Terminology Task Force (DAPTTF)

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## A

### **8-bit color**

In 8-bit color, each pixel has eight bits assigned to it, providing 256 colors or shades of gray, as in a grayscale image.

### **24-bit color**

Digital color model that uses eight bits each for the three additive colors red, green, blue. It can reproduce 256 shades of each primary color. Same as true-color image. Generally refers to 24-bit or better images. In 24 bit color, each pixel has 24 bits assigned to it, representing 16.7 million colors. 8-bits - or one byte - is assigned to each of the red, green, and blue components of a pixel.

### **achromatic color**

Neutral white, gray, or black that has no hue.

### **acid dyes**

A soluble substance used for dyeing wool, silk and nylon. They are economical, react quickly, exhaust well and provide permanent results. (see also "reactive dyes")

### **acrylic medium**

A gloss or matte extender, thinner or thickener for acrylic paint which comes in varying thicknesses. It dries to a clear, flexible non-yellowing finish and may also be used a glue.

### **additive colors**

The three additive primary colors are red, green and blue. When these three colors of

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light are mixed in equal proportions, they will produce white light. Also known as additive primaries.

### **addressable resolution**

The maximum resolution of any device. The finite number of pixels that any imaging device is capable of creating, manipulating or imaging.

### **algorithm**

A mathematical routine that solves a problem or equation. In imaging, the term is usually used to describe the set of routines that make up a compression or color-management program and other RIP applications.

### **aliasing**

The visual stair-stepping of edges (jagged edges) that occurs in an image when the resolution is too low. Can be caused by improper image sampling or improper image processing. (see "jaggies")

### **alpha channel**

An image-editor channel used to contain a mask or partial picture element or color. Created by Alvy Ray Smith and Ed Catmull at N.Y.I.T. in 1997, the alpha channel is used to calculate the transparency of each color in an image. In a three color image, the alpha channel would be the fourth channel.

### **AM (amplitude-modulated screening)**

An image screening method that uses halftones where dots vary in size but are located on a regularly-spaced grid.

### **analog**

data consisting of or systems employing continuously variable signals or data, as opposed to discreet steps or levels of digital data.

### **ANSI (American National Standards Institute)**

The official US standards organization, the U.S. member of the International Standards Organization (ISO), responsible for industry standards.

### **anti-alias**

The process of smoothing and removing of aliasing effects by electronic filtering and other techniques, such as blending of hard edges. Also, blending object-oriented art with bit-mapped art.

### **archival**

Of or about or pertaining to archives. A term that has been used extensively in conservation literature, but that lacks an internationally accepted definition. General understanding: with characteristics of long term stability (as in: archival quality). Considered meaningless unless qualified with additional information, data, etc.

### **archiving**

Retention of images, often on CD-ROM. Information necessary to reproduce the print is also archived, including ink, tables, sizes, and media used.

### **artifact**

In digital graphic applications, unwanted visual anomalies or defects generated by an input or output device, or by a software operation, that degrade image quality. (see also "aliasing" and "moiré pattern")

**artist's proof**

One of a small group of prints set aside from the edition for the artist's use; a number of printer's proofs are sometimes also done for the printer's use.

**ASTM International (American Society for Testing and Materials) (formerly ASTM)**

One of the world's largest international voluntary standards-writing organizations. Produces Standards (Test Methods, Recommended Practices, Specifications) for products, systems, and services. Volunteers do the testing and writing; conformance to the Standards is voluntary (with a few notable exceptions, i.e., ASTM D4236).

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## B

**banding**

Patterns (stripes) on a print caused by insufficient color or gray-scale ranges within the output device's image processor, or insufficient information contained within the original scan. Creates harsh, well-defined transitions between different ranges.

**bar printer**

Another term, English in origin, for inkjet printer.

**Bezier curve**

Curved-line segments created by establishing endpoints or anchor points, and at least one transient point or node. Named after French engineer Pierre Beziér.

**BIT**

Derived from Binary Digital T. The smallest unit of information in a computer, a 1 or a 0. 8 bits = 1 byte. Coined by J.W. Tileu at Bell Labs in 1948.

**bit depth**

The maximum number of bits that are used to define a pixel. A measure of the defined brightness range. The color depth or pixel values for a digital image. The number of possible colors or shades of gray that can be included in an image.

**bitmap**

A rasterized graphic image formed by a rectangular grid of pixels or dots.

**black**

The fourth color in process four-color printing. The "K" in CMYK. (see "Color Printing" analysis)

**black generation**

The addition of black ink to the other process colors when separating an RGB color

image into CMYK colors. Black generation is typically handled in one of two ways, GCR (Gray Component Replacement - replacing some of the CMY with K) or UCR (Under Color Removal - using K only in neutral areas).

**black point**

Color that when scanned produces values of 0, 0, 0 in a scanner. Ideally, the black point is 0% neutral reflectance or transmittance. (see also "white point")

**BMP file**

A Windows bitmap file, with the extension ".bmp," that defines an image (such as the image of a scanned page) as a pattern of dots (pixels). From Bit mapping, the process of addressing the pixels on the screen.

**bon-a-tirer or BAT (bone-ah-ti-ray)**

The proof accepted by the artist that is used as the standard for comparing all subsequent prints. Some printers require a signed BAT before production printing can begin.

**brayer**

A roller used for flattening, transferring or adhering together two flat surfaces.

**brightness**

The overall intensity of the image. The lower the brightness value, the darker the image; the higher the value, the lighter the image will be. (see "chroma")

**bronzing**

A problem with certain ink/paper combinations where darkened, or "bronzed," reflections from inked areas are juxtaposed with areas where little or no ink is present, with the resulting full reflection of the of the paper. Also called "gloss differential."

**buffering**

The neutralizing of acids in paper by adding an alkaline substance (usually calcium carbonate or magnesium carbonate) into the paper pulp. The buffer acts as a protection from the acid in the paper or from pollution in the environment.

**bulk ink**

Ink in large containers, supplying the printer in quantity. (see "continuous ink system")

**burnish**

To rub a surface to smooth and polish or to help it adhere or transfer to another surface.

**BYTE**

A standard unit of digital measurement. 8 bits = 1 byte. Each 8-bit byte represents an alphanumeric character.

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## C

### **calibration**

The act of setting or adjusting the color settings of one device relative to another, such as a monitor to a printer, or a scanner to a film recorder. Or, it may be the process of adjusting the color of one device to some established standard.

### **capture**

Acquiring information, such as an image, with a scanner or digital-camera device.

### **cartridge**

The container for inks in inkjet printers. Chipped cartridges have electronic chips on them that can prevent refilling. Unchipped cartridges can be reused or used with inks other than those of the manufacturer.

### **CCD (charged coupled device)**

Light-detection device used in many popular scanners, digital cameras, and video cameras that generates electrical current in direct proportion to how much light strikes areas of the sensor.

### **CD-R (CD-Recordable)**

A CD format that allows the users to record data to a disc when using the proper hardware. Recorded data is not erasable.

### **CD-RW**

A CD format that allows users to erase data.

### **Certificate of Authenticity**

1. A written or printed description of the multiple which is to be sold, exchanged, or consigned by an art dealer. [CALIF. CIVIL CODE] 2. A written statement by an art merchant confirming, approving, or attesting to the authority of a work of fine art or multiple, which is capable of being used to the advantage or disadvantage of some person. [IOWA CIVIL CODE] 3. A written statement disclosing certain key facts about a multiple print.

### **channel**

A component of a digital image that carries the data for a color component or a mask.

### **chine collé**

Two sheets of paper pressed (glued) together to become a single sheet.

### **chop**

The impression made by the artist's or the printer's seal on the paper, usually near the bottom.

### **chroma**

A measure of saturation associated with color; degree of color purity; relative brightness of a hue when compared to another.

### **chromagenic print**

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A color print made from a color transparency or negative in which the print material has at least three emulsion layers or silver salts. Each layer is sensitized to one of the three primary colors and records information about the color makeup in the photograph. In the initial development, a silver image is formed in each layer. With further development dye couplers are added that when united with the silver form dyes of the appropriate colors in the emulsion layers. When seen against a white print stock, the layers appear in full color.

### **chromatic**

Perceived as having a hue; not white, gray or black.

### **chromaticity**

Dimensions of color stimulus expressed in terms of hue and saturation, or redness-greenness, and yellowness-blueness, excluding the luminous intensity; generally expressed as a point in a plane of constant luminance.

### **CIE (Commission International de l'Eclairage)**

The international commission on illumination. A set of color standards based on mathematical modeling of human vision and light. CIE color spaces are used for the communication of color independent of a specific device.

### **CIE LAB (L\*a\*b\*)**

A color model to approximate human vision. The model consists of three variables: L\* for luminosity, a\* for one color axis, and b\* for the other color axis.

### **clipping**

The grouping (usually unwanted) of all tones or colors above or below a certain value into one composite tone. The loss of visual information caused by too little contrast, in which certain gray scale values are lost or compressed either into the range of pure white or pure black.

### **CLUT (color look up table)**

A set of conversion values for the display of color images in an RGB environment.

### **CMS (see "color management")**

### **CMY (Cyan, Magenta, Yellow)**

Three subtractive primary colors used in color printing. In theory, the combination of pure CMY inks produces black; in reality, black must be added to produce a full color gamut.

### **CMYK**

Cyan, Magenta, Yellow, and Black (or Key) are the four colors used in process-color printing. Also known as subtractive color, the color black is achieved by the presence of all inks.

### **coating**

The process of treating media or substrates to accept inkjet inks. Also, a thin covering providing protection from UV-induced fading, smudging and fingerprints, which may or may not improve the permanence of the print because most fading is due to visible light.

### **cockling**

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(1) Describes the wavy or wrinkled appearance of paper when ink absorption limits have been exceeded. (2) A printing defect typically seen as deforming wrinkles on paper and usually caused by heavy ink loads or moisture.

### **cold press paper**

Printmaking and watercolor paper made in a mold, roughly textured.

### **collage**

Collage involves the creation of artworks that include elements that have previous existence as separate items. They may be found elements, transformed elements, or elements created entirely by the artist. Digital collages may be defined as digitally created artworks that involve the bringing together of separate images (which may or may not have existed in non-digital form and which may or may not have been created or altered by the artist) and digitally "pasting" them in place in order to create a new work. Digital collages may also contain digital drawing, digital painting, or other digital media.

In both montage and collage, multiple sources are used to create a single image. In montage, the disparity of the sources is invisible. In collage, the disparity of the sources is visible, sometimes so much so that the whole is fractured into separate elements contained within a single area.

### **color balance**

The ability to reproduce the colors of a scene to some acceptable standard.

### **color calibration**

A system of software and/or hardware that adjusts and coordinates colors between two or more digital devices. Color calibration systems commonly compare device color profiles and translate one color model into a device-independent language.

### **color compression**

Shrinking the color gamut of the original to the color gamut a device will represent.

### **color curve**

A graphic mechanism for displaying color measurements and for making color changes to an image. User adjustments to the angle and slope of the curve implement color changes to one or all of an image's color channels.

### **color depth**

(see "bit depth")

### **color gamut**

A range of colors that can be reproduced by a given system.

### **colorimeter**

An instrument used for color measurement based on optical comparison with standard colors. An instrument used for color measurement based on optical comparison with standard colors. An instrument used for color measurement based on optical comparison with standard colors. An instrument used for color measurement based on optical comparison with standard colors.

**color management (color management system)**

An advanced technology that uses profiles of the input and output devices to maximize color accuracy and consistency. Targets that include over 3000 colors are printed and measured with a colorimeter to create profiles for the various ink/media combinations. A combination of software and or hardware devices used to produce accurate color results throughout a digital-imaging system.

**color model**

A color measurement scale or system that numerically specifies the perceived attributes of color.

**color profile**

Also called "device profile," or simply "profile." This term refers to the relationship between the color models of the system devices.

**color saturation**

Color Strength. A measure of color purity, or dilution by a neutral.

**color separation**

The process of separating a color image into four subtractive colors, CMYK, either by photographic or electronic processes, thus producing a set of four films or a computer file.

**color space**

Three-dimensional mathematical model enclosing all possible colors. The dimensions may be described in various geometries giving rise to various spacings. The parts of the visible spectrum which can be reproduced in a given medium. (i.e., RGB for computer monitors, CMYK for print, web safe index colors for the world wide web)

**color temperature**

The color spectrum of a "black body" radiator heated to a given temperature on the Kelvin scale. The manufacturer's method of indicating the color of a light source in degrees Kelvin (K); i.e., 2700K (yellow/white), 4100K (white), 5500K (blue/white).

**colorant**

Any substance that imparts color to another material or mixture. Colorants can be dyes or pigments.

**colorimeter**

An instrument used for color measurement based on optical comparison with standard colors.

**colorimetric**

Of, or relating to, values giving the amounts of three colored lights or receptors-red, green, and blue. Adjective used to refer to measurements converted to psychophysical terms describing color or color relationships.

**colorimetry**

Light measurements converted to a psychophysical description or notation which can be correlated with visual evaluations of color and color differences.

**complementary colors**

Two colors that, when combined, create neutral gray. On a color wheel complements are directly opposite the axis from each other; blue/yellow, red/green, and so on.

**compression**

The process of removing irrelevant information and reducing unneeded space from a file in order to make the file smaller. Compression can cause losses and distortion, depending on the method. Some types of compression can cause losses and distortion. In Run Length Encoding, rows of pixels of the same colors are stored as a number and color, reducing the file size while keeping the data in tact.

**computer-generated**

A misnomer that implies that no human, artistic control is required to produce artwork. In general it may mean having come *through* a specific kind of device, but essentially it is understood that computers do nothing without the input and control of human beings.

**continuous ink system (CIS)**

Ink system incorporating large, bulk containers of ink, designed to enable continuous operation for much longer periods of time (than possible with original ink cartridges). Also referred to as "continuous flow system" (CFS).

**continuous tone**

A photographic image containing gradient tones. For printing purposes, continuous-tone images are converted to dot patterns (halftones).

**contrast**

Tonal gradation between the highlights, midtones, and shadows in an image. High contrast implies dark black and bright white. Medium contrast implies a good spread from black to white, and Low contrast implies a narrow spread of values from black to white. Also, understood in terms of "Rate of Falloff." High contrast implies a rapid transition between black and white, whereas a slow "rate of falloff" produces gradual or smooth transition between light and dark.

**copyright**

Legal basis for the owner's control of the usage of his images or artworks.

**crop**

To remove part of an image.

**cyan**

One of the three subtractive primary colors. (see "Color Printing" analysis)

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**D**

**DPI**

Dots per inch. A measure of the detail of a print. "Apparent dpi" refers to the fact that the

eye perceives a giclée as having greater detail than in does in physical reality.

**D65**

The CIE Standard Illuminant that represents a color temperature of 6504\_K. Widely used as the standard white point for monitor calibration. (see "Kelvin")

**DAM (Digital Asset Management)**

Database systems used to track and manage computer files in computer graphics environments.

**database**

An organized collection of data or information.

**deckled edges**

Fine watercolor papers have natural deckles on two or four sides. Frequently the look of a print is improved by tearing the paper rather than cutting it, creating "torn deckles." After tearing, a bone knife is used to smooth the edge and create the deckled look.

**delamination**

Separation of layers in a laminate because of a cohesive failure at the material interface. May be used to describe any splitting of a material in a plane parallel to its surface.

**Delta E\*, Delta e\***

The total color difference computed with a color difference equation. It is generally calculated as the square root of the sum of the squares of the chromaticity difference, Delta C\*, and the lightness difference, Delta L\*.

**densitometer**

An instrument that measures the optical density of a transmitting material, or an instrument to measure the negative log of the reflectance of a reflecting material. Such instruments do not measure color. They are widely used in the graphic arts and photographic industries for process control. It will indicate, in density units or percentage dot, the percentage of a given area that is covered by halftone dots. This instrument is used to ensure consistency and process control.

**density (optical density)**

The degree of opacity of an image; a measure of reflectance or transmittance equal to  $\log_{10} (1/\text{reflectance})$  or  $\log_{10} (1/\text{transmittance})$ ; the ability of a material to absorb light; the darker it is, the higher the density. Density measurements of solid ink patches are used to control ink on paper.

**digital**

Type of data consisting of (or systems employing) discrete steps or levels, as opposed to continuously variable analog data.

**digital art**

Art created with one or more digital processes or technologies.

**digital C-print**

Another term for digital photoprint. These are actual photographic prints that are exposed to laser or LED light then processed in traditional RA-4 wet chemistry.

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### **digital collage**

The process of electronically simulating traditional collage techniques by pasting together disparate images into a cohesive visual whole, resulting in a new image.

### **digital fine art print**

A fine art print made by any digital output process conforming to traditional fine art qualifications and requirements.

### **digital imaging**

The process of image capture, manipulation and final image form, accomplished by digital systems.

### **digital photoprint**

One of the major digital printing technologies. Produces actual photographic prints that are exposed to laser or LED light then processed in traditional RA-4 chemistry. (see "digital C-print")

### **digital printer**

A non-impact printing device that is capable of translating digital data into hard copy output. Typically refers to printing with one of the digital output technologies (inkjet, electrostatic, thermal transfer, or laser photoprinting).

### **digitize**

The process of converting analog data to digital information.

### **dithering**

A graphics display or printing process that uses a combination of dots or textures to simulate an original image or an output device. The purpose is to create the impression of a continuous-tone gray-scale or color image. (Diffuse dithering: method for printing continuous tone images on a laser printer, in which the grayscale information is represented by randomly located printer dots.)

### **Dmax**

A measure of maximum density. When talking about paper and inks in digital printing--it can apply to many things--it is the blackest black possible.

### **Dmin**

Lowest level of density.

### **dot**

Dots make up an image in color separations or halftones. Halftone dots will have a fixed density but have variable size (amplitude modulation).

### **dot gain**

The phenomenon that occurs when ink expands its coverage during printing onto a substrate; often caused by abnormal or excessive absorption by the substrate.

### **dot pitch**

The distance between the dots on a computer monitor, typically 0.24 to 0.38 mm. The closer the dots the sharper the image on the monitor.

**dots per inch (DPI)**

(see "DPI")

**down-sampling**

The process of receiving data from another computer, server or system. The reduction in resolution of an image, necessitating a loss in detail.

**drop-on-demand (DOD) / impulse**

An inkjet system in which pressure pulses are generated directly in the printhead by piezo crystals or heated resistors to eject drops of ink only when they are needed to print a dot.

**drum scanner**

A type of optical scanner where the reflective or transmissive art is mounted to a rotating drum. As the drum spins, the image rotates past a fixed lens or sensor allowing the image to be recorded as a series of fine lines.

**dry down**

The amount of time until inks are stable.

**durability**

A relative term used to describe the functional lifespan of a material typically compared to a control.

**dye**

A colorant that does not scatter light but that absorbs [and therefore reflects] certain wavelengths [of the electromagnetic spectrum] and transmits others. Dyes are generally organic and generally soluble in water or some other solvent system; or they may exist in such a finely dispersed state that they do not scatter light and behave as though they were in solution. The dividing line between a dye and a pigment may, therefore, be indefinite and dependent on the particular total system involved.

**dye sublimation**

An imaging process that vaporizes colorant with heat and pressure, and deposits it on to a substrate in order to achieve a continuous tone image.

**dynamic range**

The measurable difference between the brightest highlight and the darkest value.

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## E

**edition**

The aggregate of identical prints produced from a single matrix. (see also "open edition," "limited edition," and "variant edition")

**effective resolution**

The final appearance of a scan that has been enhanced to produce more data than the scanner can record. This is done by interpolation.

**electrostatic**

A process of imaging where a "toner" is used to form an image by controlled static charges. Toner printing adheres to the charged areas.

**Encapsulated Postscript File (EPS)**

An Adobe graphic file format. EPS translates graphics and text into a code which the printer can read and print. EPS files hold both low-resolution "viewfiles" and high-resolution PostScript image descriptions. A vector-based, computer graphics file format developed by Adobe Systems. EPS is the preferred format for many computer illustrations because of its efficient use of memory and fine color control.

**expanded-gamut printing**

Printing system wherein manufacturers add additional colors of ink to expand the range of the standard cyan, magenta, yellow, black (CMYK) inkset. Lighter densities of cyan and magenta (LC, LM) and orange and green (O, G) and multiple blacks are the most popular.

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## F

**fading**

A subjective term used to describe the lightening of the hue of a colorant following exposure to the effects of light, heat, time, temperature, chemicals, and so on.

**feathering**

A technique in many image-editing programs that allows for the softening of the edge around a selection.

**filters**

Software or subprograms within image manipulation software that employ algorithms to control modifications to digital images by altering the values or arrangement of entire or selected areas of an image.

**finish**

The surface properties of a material determined by its surface contour and gloss, texture, color, smoothness, or other properties affecting appearance.

**flatbed printer**

Printer with an adjustable flatbed or platen that supports the substrate, which may be up to 12 inches thick and irregular in surface. The bed moves the media below the ink heads for printing, or in some cases the head moves over the stationary bed.

**fluorescence**

A physical process at which the material's pigments absorb light and re-radiate this light as a different color, giving the color of the material extra light or brilliance. Optical phenomenon characterized by the re-emission of absorbed radiant energy by certain chemicals or materials.

**FM (Frequency-Modulated Screening)**

A dithering method that uses uniform dot sizes and varies the distance between them. This method is different from conventional halftone screening, which aligns dots of varying sizes on a regular grid.

**foot-candle**

The quantity of light at a point on a plane surface one foot from a standard candle and perpendicular thereto, where a "candle" [a unit of luminous intensity] refers to candle power, a measure of intensity of a source of light compared with a standard candle.

**format**

Characteristic identifying size of printer, media, or graphic, according to width of media roll, printer's print area, or graphic. "Medium Format" is generally taken to be between 11-24" in width; "Large Format" (Wide Format), larger than 24" in width; and "Grand Format," larger than 72" in width.

**four-color process**

A system of printing colors by printing dots of magenta, cyan, yellow and black. (see "Digital Printing" analysis)

**fractal**

A mathematically generated pattern that is reproducible at any magnification or reduction, and repeats infinitely.

**frisket**

A paper or liquid masking device. (see also "masks")

**FTP (File Transfer Protocol)**

The method for uploading and downloading files to/from Internet server systems.

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## G

**gamma**

A mathematical curve representing both the contrast and brightness of an image. The steepness of the curve indicates greater contrast calculated as a trigonometric tangent function.

**gamut**

A finite or limited range of colors provided by a specific input or output device, or by a set of colorants.

**gamut compression**

The editing of an image to reduce the color gamut so that the image can be displayed or output within the limits of a particular device.

**gamut mapping**

The plotting of an image color gamut into the CIE color space.

**gas ghosting**

The phenomenon where uncured inkjet prints form a fogged or ghost image on the inside of the glass surface when framed. Happens primarily with "barrier-type" paper such as RC papers. Can be avoided with thorough or accelerated drying of the print.

**gaussian blur**

An image-softening effect used in digital imagery. Named after French Mathematician Carl Friedrich Gausse.

**GCR (Gray Component Replacement)**

A type of process-color separation that determines the amount of black ink used to replace Cyan, Magenta, and Yellow in areas where those three inks overlap.

**giclée**

(1) A print made by a digital process, typically inkjet. (2) A copy (typically identical) of an original work of art (as a painting) that was created separately and then reproduced digitally, specifically by inkjet printing. First used in this context by Jack Duganne in 1991 to describe prints made on an IRIS inkjet printer. Pronounced [ zhee-clay ].

**GIF (Graphic Interchange Format)**

An image format type generated specifically for computer use. Its resolution is usually very low (72 dpi, or that of your computer screen), making it undesirable for printing purposes.

**gloss differential**

(see "bronzing")

**grain**

The direction of the threads in cloth or the fibers in paper.

**graphic**

A non-text item (illustration or photograph) or non-text component of an image.

**graphics tablet**

An input device that uses a stylus or specialized mouse to write or draw on the tablet surface to communicate with the computer.

**gravure**

An intaglio printing process that uses engraved cylinders. Ink is retained in the engraved areas for printing. It is ideal in long-run work and prints on most substrates.

**grayscale**

An image having no color hues but containing a range of gray levels as opposed to only pure black or white.

**green**

One of the three additive primary colors of light (Red, Green and Blue). (see "Digital Printing" analysis)

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## H

**halftone**

The process of reproducing a continuous tone image as a series of various sized dots within a fixed grid that can be reproduced with ink. The finer the dot grid, the higher the quality of the reproduction.

**high bit**

(see "8-bit" "24-bit" etc.)

**highlight**

The lightest area within an image. Also called "specular reflection."

**histogram**

A graphical display that represents the distribution of tones within an image. The horizontal coordinate represents each pixel value possible from black to white. The vertical values indicate the number of pixels in the image that occur at each value level.

**HLS**

Hue, luminance and saturation: a color model based on these three coordinates of color, where Hue is the dominant color, Saturation is color purity, and Luminance is the light/dark characteristic of the color.

**hot press**

Process for making smooth textured printmaking paper in a mould.

**HSB (Hue, Saturation, and Brightness)**

A color model that utilizes Hue, Saturation, and Brightness as the three coordinates, where Hue is the dominant color, Saturation is the purity of color, and Brightness is a neutral scale of how light or dark a color is.

**hue**

The attribute of color by means of which a color is perceived to be red, yellow, green, blue, purple, etc.

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I

**illuminant**

Mathematical description of the relative spectral power distribution of a real or imaginary light source. That is, the relative energy emitted by a source at each wavelength in its emission spectrum.

**impact printing**

Process of applying ink to a substrate utilizing physical contact between some part of the printing device and the substrate, (e.g., offset, lithography, and flexography). (see also "non-impact printer" and "Printing Technologies" analysis)

**indexed color**

A color system that defines a palate of colors to be used in a specific image. Often this makes images small and manageable.

**infrared**

Electromagnetic radiation of wavelengths between 780 to 1000 nanometers (nm).

**ink**

A fluid or viscous substance used for writing or printing. In digital printing, the substance in inkjet printing (liquid or solid) that gets sprayed onto the medium; made up of a colorant, a solvent or vehicle, and various additives.

**ink limiting**

A control within a program that limits the percentage of ink applied to an area of print.

**inkjet**

A digital printing technology that uses nozzles to spray ink onto a surface. (see "Digital Printing" analysis)

**inkjet coating**

(see "coating")

**inkjet printer**

A type of printer that sprays tiny spurts of ink onto coated paper. (see "Digital Printing" analysis)

**intaglio**

Form of printing in which all the elements of the image are below the surface of the plate, having been cut, scratched, engraved, or etched into the metal to form ink-retaining grooves or cups. (see "Printing Technologies" analysis)

**intensity**

The amount of light reflected or transmitted by an object with black as the lowest intensity and white as the highest intensity.

**interpolation**

A technique for increasing the size of a graphic file by creating pixels. Also an extrapolation algorithm. There are two types, sequential and bi-cubic. Note: increasing

the size of an image by interpolation does not increase or enhance the ability to resolve the detail in that image. It only makes the details that are already present larger.

**IRIS or IRIS print**

The branded inkjet printer that produced the early "digital fine art prints" and for which the term "giclée" was first used. Currently no longer being manufactured.

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## J

**jaggies**

The effect caused by images or lines being rendered at too low a resolution. It can easily be defined as a stair-stepped effect giving the line or image a rough appearance.

**JPEG (Joint Photographic Experts Group)**

Standardized image compression format developed by the Joint Photographic Experts Group. Usually used for compressing full-color or gray-scale images.

**JPEG 2000**

Officially called ISO 15444, the "JPEG 2000: Image Coding System" is a standardized format that will expand the ability to manage and transport continuous tone images without noticeable loss of quality.

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## K

**Kelvin**

The name of the absolute temperature scale. Used in imaging to define the quality of a light source by referring to the absolute temperature of a black body that would radiate equivalent energy. Generally, a tungsten reading lamp is rated at 2800 degrees Kelvin, while TV or Film quartz lights are rated at 3200 degrees Kelvin, and outdoor light averages around 5600 degrees Kelvin. The higher the Kelvin temperature the more bluish the light appears.

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## L

**lamine**

A clear coating of a variety of possible substances, usually plastic, that is applied to one

or both sides of a medium after printing for reasons of durability.

**lamination**

Bonding one product to another by pressure for protection or appearance.

**laminator**

A device with two silicon rollers for applying controlled pressure (sometimes with heat) to a print to adhere two items together. May also be used as a press for transferring an image.

**large-format**

A printer, media, or print 24" or greater in width.

**laser printer**

A laser printer uses a laser beam to write on a photoconductive revolving drum that is coated with toner, which is a fine, black powder. After the image is transferred to paper it passes through a pair of heated rollers or a fuser that melts the toner fusing it with the paper fibers.

**lenticular**

A technology to create print images that appear to encompass actual depth and/or animation, by "stripping" the image and placing the printed image behind a specially stripped lens material.

**letterpress**

In letterpress printing the raised portion of a metal or hard plastic plate is inked before being pressed on the paper or other substrate resulting in type that is slightly embossed.

**lightfast**

Resistant to the destructive action of light.

**limited edition**

A number of multiples or identical artworks that are produced from a single master or matrix, all of which depict the identical image, and which may bear the artist's signature and numbers indicating the unique number of the specific print as well as the stated maximum number of prints in the edition. (see also "edition" and "open edition")

**line art (or line drawing)**

1. Single color diagrams or drawings. 2. An image that requires sharp edges and high contrast between areas of the image that have ink and those areas that do not have ink. A drawing that consists only of black and white with no intermediate grayscale information. These images require a higher resolution to create the sharpness that is necessary.

**linearization**

The process of measuring and correcting for a device's inability to see or reproduce a straight line of tones from black to white. Most commonly used to ensure that an imagesetter reproduces the same halftone dot values predicted by the imaging software. Linearization is a critical first stage in setting up any color system.

**lithograph**

The process of printing from a stone or metal plate on which the image to be printed is ink-receptive and the blank area is ink repellent. (see "Printing Technologies" analysis)

**LPI (Lines Per Inch)**

Measurement of resolution on a traditional printing press. The number of lines per inch on a halftone screen. As a general rule, the higher the lpi, the higher the printed resolution and quality.

**LUX**

A measurement of light defined as: 1 lumen/m<sup>2</sup>; lumen = amount of light from a 1 candela source; candela = a unit of luminous intensity. LUX is a unit measurement for only the visible portions of the electromagnetic spectrum. (see "foot candle")

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# M

**mask**

A special effect that can modify images so that only part of the image can be seen, or so that the image blends into the background.

**master**

(see "matrix")

**matrix**

Traditionally, the plate or surface upon which an image is inscribed in order to hold ink for the purpose of transferring the image to the substrate or paper. In digital terms the matrix becomes the electronic file located on a computer\_s hard drive or resident memory or stored on a disk or CD. This matrix is made up of binary encoded information that can describe to how the image file should appear on the digital raster screen or print.

**matte finish**

A low-gloss finish with very little reflective quality.

**media**

Another term for substrate; the materials to be printed, such as watercolor papers, canvas, copper, wood veneer, cotton, or plastic. The common term used in digital printing.

**mezzotint**

A tonal, rather than linear, engraving process made by first roughening the surface of the plate with a mesh of small burred dots and then producing the picture by flattening and burnishing selected areas that print as highlights. Though its traditional role of rendering copies of works of art has been supplanted by photography, it is making a comeback as a printmaking technique in its own right. **Aquatint:** Another tonal process where a porous ground allows acid to penetrate to form a network of small dots. Any pure whites are "stopped out" entirely before etching begins, then the palest tints are "bitten" and

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stopped out, and so on as in etching. This process can be repeated up to 20 to 30 times until the darkest tones (deepest recesses in the plate) are reached.

### **microporous**

Refers to inkjet media with a receptor coating containing voids that the ink fills, rapidly absorbing the ink within the media rather than simply applying it to the surface of the media. This rapid absorption essentially makes it instantaneously "dry" to the touch.

### **midtone**

Tones in an image that are in the middle of the tonal range, halfway between the lightest and the darkest. Also called "middle values."

### **moiré**

An undesirable artifact or pattern that can appear in output film, or a created special effect. It appears as a regular pattern of "clumping" of colors. A moiré pattern is created by juxtapositions of two repetitive graphic structures. An often undesirable element in a digital scan, but a natural visual occurrence created when similar patterns are superimposed and a third pattern is inferred wherever the two similar patterns do not completely match.

### **monochrome**

An image made of a range of only one color.

### **monoprint**

One of a series in which each print has some differences of color, design, texture, etc. applied to an underlying common image.

### **monotype**

A one-of-a-kind print made by painting on a smooth metal, glass, or stone plate and then printing on paper. The pressure of printing creates a texture not possible when painting directly on paper. Sometimes called a "unique edition." (see "Printing Technologies" analysis)

### **montage**

The seamless combination of divergent images into a singular image.

### **mottling**

A texturing seen in the smooth or monotone areas of an image. This can be due to faulty processing and a number of improperly used digital processes, e.g., excessive unsharp masking.

### **Munsell system of color notation**

Identifies precise, specific colors and shows relationships among colors, relying upon three attributes: hue, value, and chroma. The system consists of over 3 million sample observations of what people perceive to be like differences in hue, chroma, and value. American Artist A.H. Munsell, circ 1905. The complete Munsell notation for a color is written as hue value /chroma or hv/c.

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## N

### **newton rings**

Concentric multicolored rings that occur when film is in contact with glass; a problem in scanning from negatives or transparencies.

### **non-impact printing**

A printing process that transfers the ink to the media (paper or other) without pressure. (see also "impact printing")

### **nozzle**

In inkjet printing, the orifice in the printhead from which ink droplets are ejected.

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## O

### **offset printing (offset lithography)**

Currently the most common commercial printing method, in which ink is offset from the printing plate to a rubber roller then to paper.

### **OD (optical density)**

(see "print density")

### **opacity**

The measure of the amount of light that can pass through a material. Also, the property of a film that prevents "show through" of dark printing or marks on a substrate (media). The degree to which a material obscures a substrate, as opposed to transparency, which is the degree to which a material does not obscure a substrate. Also "hiding power."

### **open edition**

An edition or set of identical prints from a single master or matrix that is not limited in number. (see also "edition" and "limited edition")

### **optical resolution**

The maximum physical resolution of a device. Optical resolution provides better quality than interpolated resolution (of the same number), which uses software to create additional image information.

### **orientation**

The direction that the page is printed; horizontal = landscape, vertical = portrait.

### **output**

In digital printing technology, to translate information from the computer to an external device (e.g., a printer or monitor); to print. Also, the visual display of digital information,

or that which is printed or displayed.

**overlamine**

A protective clear film that extends an image's durability and enhances its visual quality. Most often used in commercial signage.

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## P

**palette**

The number of colors a device is capable of displaying and producing. Also the tools used in paint programs.

**PDF (Portable Document File)**

A proprietary format developed by Adobe Systems for the transfer of designs across multiple computer platforms.

**phase change printer**

An inkjet printer where the ink starts as a solid but is then heated, liquefied, and then sprayed onto a substrate. (see "Digital Printing" analysis and "solid ink")

**Photo CD**

A proprietary format developed by Eastman Kodak for storing photographic images on a compact disc. Images can be easily accessed for use in professional printing.

**photograph**

An image or picture made by photography, whether traditional or digital. (see "photography")

**photography**

The art or process of capturing an image onto a recording medium (whether photographic film or image sensor/detector) by the action of light or other radiant energy with the aid of a camera or other device.

**PICT**

A picture file format.

**piezoelectric (or piezo)**

An inkjet printing technology that uses electricity to "fire" the nozzle. (see "Digital Printing" analysis)

**pigment**

Colorant consisting of particles made up of many synthetic dye molecules or carbon black. Generally more stable than dyes of the same color. Pigmented inkjet inks are credited with better longevity and may have a narrower color gamut. Finely ground insoluble dispersed particles that, when dispersed in a liquid vehicle, can be made into a paint or ink.

**pixel**

Term derived from **pi(x)cture element**. Refers to the simplest or smallest element of a digital image.

**pixel depth**

The amount of data used to describe each colored dot on the computer screen. Example: monochrome is 1 bit deep, grayscale is 8 bits deep, RGB is 24 bits deep. Images to be printed as CMYK separation should be 32 bits deep. (see also "bit depth")

**pizza wheel**

Serrated, edged wheels that are used to move paper through printers.

**planographic**

In printmaking, a surface that has ink on its flat plane as opposed to being engraved or embossed to hold ink.

**plotter**

A term applied to a peripheral unit that, through computer control, prints data via the Cartesian (X/Y) coordinate system.

**portrait, portrait mode**

The orientation of an image that is taller than it is wide; a setting controlling an output device to properly fit a computer document to the print medium. Vertical.

**postcoat**

Clear material applied as a final coat to protect prints or artwork.

**posterization**

An effect created by having a limited number of levels or gradient steps within an image. This may be a planned/desired effect, or it may be a mistake requiring correction.

**PostScript**

A page description programming language created by Adobe that is a device-independent. PostScript is an industry standard for outputting documents and graphics.

**PPI (pixels per inch)**

A measure of resolution or density of pixels in a digital image.

**print**

1. In the context of fine art, an original work of art (as a woodcut, lithograph, photograph, or digital print) where the art object or artwork does not exist until it is printed. The print is made directly from the matrix by the artist or pursuant to his/her directions. Also known as "fine print," "work on paper," and "original print." 2. A physical image, usually on paper, produced by, but not limited to, such processes as etching, lithography, serigraphy, relief printing, photography, or digital methods. Prints are usually, but not always, produced on paper and in multiples. Traditional, photographic, and digital processes can be used to produce prints.

**print density or optical density (OD)**

The print density of an inkjet hardcopy is the visually perceivable and densitometrically

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measurable absorption of light on the surface due to the presence of a colorant. OD only measures the surface density of a dry hardcopy, not the density of the total amount of ink that was sprayed onto the medium.

### **print on demand**

The ability of digital printing to produce prints individually or sporadically over an extended period of time, with consistency. This allows orders of a small number of prints when needed--"print on demand."

### **print permanence**

The resistance of a print to physical change of any type, from any source, be it light, heat, acids, etc.

### **print resolution**

(see "resolution")

### **print service provider (PSP)**

A commercial, digital printing agency or firm that takes an artist's image file and prints it to the artist's specifications.

### **printer driver**

Printer-specific software that allows a computer to communicate with the printer. If available, provided by the printer manufacturer. (see also "RIP")

### **printhead**

Part of a digital printer that is directly responsible for applying ink to a medium.

### **printing**

The process of applying ink to a substrate.

### **printmaker**

A person producing actual prints from the artist's master file, under the artist's supervision.

### **process color**

The mechanical process of reproducing a full color image with the three primary subtractive color inks and black (CMYK: Cyan, Magenta, Yellow and Black or "K"). When viewed under a loupe, the individual color halftone dots can be seen in a process color image.

### **profile**

A file of data or values. In digital printing, generally used to refer to a color profile, especially of a specific piece of equipment (monitor, printer, scanner, etc.) that enables the user to correlate color consistently on various devices.

### **proof**

A preliminary print used to evaluate aspects of the image (color, density, resolution, etc.) prior to final printing.

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## Q

### **quadtone inks**

Special multi-monochromatic (B&W) inksets.

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## R

### **rag (cotton rag)**

In the context of paper manufacturing, cotton rags are a source for high quality cellulose fibers. In fine art printmaking, refers to rag content of paper, generally high-quality paper.

### **raster**

A horizontal row of pixels on a screen. The process of rendering an image or page, pixel by pixel, in a sweeping horizontal motion, one line after another.

### **raster image**

An image that is defined as a collection of pixels arranged in a rectangular array of lines of dots or pixels. (see "bitmap")

### **rasterization**

Changing vector-type image information to raster image information.

### **RC paper**

Resin coated paper. Term used for photographic paper used in most color and some black-and-white printing applications; has a polyethylene coating on each side.

### **reactive dye**

Dyestuff used for coloring textiles. Reactive dyes are used for wool, silk, cotton, but they do not dye polyester or other synthetic fibers.

### **receptor coating**

Chemical layer adhered to the surface of the media that has the function of receiving and binding ink arriving from the printhead nozzle. (see "coating" and "inkjet coating")

### **reflectance**

The fraction of the light incident on a surface that is reflected; varies according to the wavelength distribution of the light.

### **reflectance, specular**

Mirror-like reflectance. The magnitude of the specular reflectance on glossy materials depends on the angle and on the scattering of the light by an uneven surface.

**reflectance, total**

Reflectance of radiant flux reflected at all angles from the surface, thus including both diffuse and specular reflectances.

**reflective art**

Artwork that is neither digital nor transparent. Refers to artwork that is viewed with the light on the same side of the image as the viewer.

**registration**

A process used to align an image to a particular placement on a surface before printing or transferring to that surface.

**relief process**

In printmaking, a process using printing plates that are incised, etched, or sand-blasted before the surface is inked. Lines or areas that have been cut away do not print. The ink is transferred from the surface of the plate to the paper either by hand-rubbing or with a press.

**rendering**

Applying shading and lighting effects to a two dimensional image.

**reproduction**

A copy of an original work of art. In the context of digital art, a copy of artwork that already exists in some other original form or material (painting, drawing, et al.) prior to the fixing of the image of that original work on the current printing matrix. (see also "giclée")

**resampling**

Changing the resolution of a bitmap file without altering its physical size.

**resolution**

A definition of resolution in terms of pixels per inch, or pixel density. Refers to the number of smallest discernable dots or pixels. A measurement of the "fineness" of detail reproduction given in line pairs per mm, or pixels per inch. (see "DPI" and "PPI")

**retouching**

Removing imperfections or unwanted portions of an image.

**RGB**

A color model using red, green, and blue; the additive primary colors. Video display systems use RGB data to create screen images.

**RIFF (Raster Image File Format)**

A storage format used with grayscale images. In Corel Painter the RIFF format is used to save color image files that retain all of the Painter capabilities such as "wet canvas" and active layers. Saving in any other format disallows further modifications and interaction with these tools.

**RIP (Raster Image Processor)**

"Bridge" software allowing the computer to give specific instructions to a printer. Often includes add-on features such as color-calibration routines and various tools.

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## S

### **saturation**

A measure of purity of color. Saturated colors contain pure color only, colors desaturate to gray. Saturation is a measure of the degree of pureness or movement away from gray. The amount of gray in a color. More gray means lower saturation; less gray means higher saturation. If a color has no saturation, it is a shade of gray. Saturation is also the degree to which a color is undiluted by white light. (see "chroma")

### **scale**

To enlarge or reduce an image by increasing or decreasing the number of scanned pixels or the sampling rate, relative to the number of samples per inch needed by the printer or other output device. (see also "interpolation")

### **scan**

The process of translating a picture from reflective art or transparency into digital information.

### **scanner**

A hardware peripheral that illuminates, reads, and then converts original text, artwork, or film into digital data. Types of scanners include flatbed, film, and drum.

### **screen printing (screenprinting)**

Stencil-based impact printing technology. (see "Printing Technologies" analysis)

### **selection**

Any of several processes by which the digital artist can isolate a portion of a digital image in order to perform additional work or protect the selected area from manipulations applied to the remaining "unprotected" areas. Similar to frisket paper and masking tape in traditional painting.

### **serigraph**

A screen print (silk screen). A form of printmaking utilizing stencils attached to porous screens that support delicate areas of the cut design. In the fine art world, most often issued in signed and numbered editions. (see "Printing Technologies" analysis)

### **service bureau**

A company that typically offers custom print-output production services, which can include digital color graphics.

### **shadow detail**

Subtle features in the darker part of an image.

### **shadow point**

The darkest tone printable in an image without being black. All tonal values below this

threshold will print as black with no detail.

**sharpen edges**

An image-editing technique to enhance the edges of an object.

**sharpening**

1. A picture enhancement making the image have more distinct borders, areas, lines, or tones. 2. An option on some scanners that emphasizes detail by increasing the contrast of the boundaries between light and dark areas of an image.

**show-through**

Occurs when ink penetrates the paper substrate and is visible from the back; also termed "print-through."

**silhouetting**

A masking or image blocking that isolates an image from the background.

**silk screen**

An archaic term for screen printing, since most screen printing is now done with synthetic-fabric screens.

**signed**

Carrying an original signature of the artist. In law: 1. Autographed by the artist's own hand, and not by mechanical means of reproductions, and if a multiple, after the multiple was produced, whether or not the master was signed. [IOWA CIVIL CODE] [GEORGIA CODE SIMILAR] 2. The artist signed the print multiple by hand to signify the artist's examination and approval of the print. "Signed" does not mean the act of leaving an impression of the artist's name upon the print by any mechanical process. [HAWAII CIVIL CODE]

**sized paper**

A paper with filler added to the pulp as it is manufactured or applied to the surface after the paper is formed to facilitate better acceptance of art media.

**SLR**

Single Lens Reflex, a form of small format (35mm or 6cm) camera that has a reflecting mirror that retracts when the shutter is released. An SLR allows the photographer to view the image exactly as it will be framed in the photo.

**soft proof**

Viewing a digital image with a monitor instead of generating a hard copy proof. Can be done from a remote location via the Internet.

**solid ink**

Also called "phase change." Solid ink technology involves the use of solid, resin-based ink. The printhead and ink supply are heated to melt the ink and bring it to very low viscosity. The ink is ejected hot and "freezes" on the surface of the medium or onto a drum from which it is transferred like an offset press, onto paper. Solid ink technology can be printed and transferred, or can be printed directly.

**spatial resolution**

The smallest feature of an image that can be detected as a fraction of the total image.

**spectrophotometer**

Photometric device for the measurement of spectral transmittance, spectral reflectance, or relative spectral emittance. Spectrophotometers are normally equipped with dispersion optics (prism or grating) to give a continuous spectral curve. Commonly called "spectros."

**spectrum**

Spatial arrangement of components of radiant energy in order of their wavelengths, wave number, or frequency. In this context, the full range of visible wavelengths of light energy radiation.

**sRGB**

One of several standard RGB color working spaces. Best used for images on the Internet.

**stochastic / FM screening**

An alternative to traditional halftone dots, this random-placement dot strategy is used to render enlarged images on large-format printing devices. Unlike halftone, the dots are of a uniform size, darker areas have more dots packed closer together.

**stylus**

A tool that is used on a graphic input tablet as a drawing instrument, or as a mouse.

**subsampling**

Scanning at a less-than-optimum sampling rate.

**substrate**

Ultimately, the material that receives the printed image. Sometimes called "media" in digital printing. The single or multi-layered base material of the medium, which can have a very simple or complex structure and is a carrier for the coating, if present.

**subtractive color / reflective color**

The color mixing system associated with pigments, as opposed to pure light. The term refers to the CMYK color space used by conventional and digital printing devices to produce full-color printing. Theoretically, when all three subtractive primary colors are mixed together the resulting color is black. (see also "CMYK")

**subtractive primaries**

The three colors that are used to create all other colors in color photographic printing. (Cyan, Magenta, and Yellow)

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# T

**tablet (graphics tablet)**

(see "graphics tablet")

**thermal inkjet printer**

Printer using inkjet print heads with a heat (thermal) system used to produce the ink drop. (see also "piezo")

**thermal transfer printer**

A machine that digitally prints by transferring inks (resin or wax based) from a foil (or ribbon) onto media such as paper or vinyl.

**thumbnail**

A small low-resolution version of an image.

**TIFF (Tagged Image Format File)**

A file format for storage of digital images.

**tiling**

The process of breaking down an image or page into sections for editing or printing purposes.

**toner**

A colored powder or liquid used to print onto various materials on electrostatic printers. Contains a colorant, an electrostatic thermoplastic, charge control agent, and often a magnetic material.

**topcoat**

The coating applied to the surface of inkjet or other type media during the manufacturing process. The topcoat enhances ink adhesion and other performance characteristics; it also helps to control dot gain, drying time, and moisture resistance.

**transform**

A color-space exchange from one system (RGB or CMYK) to the other, or changing from one hue base to another.

**translucent**

Diffuse transmission of light. No clear image can be seen.

**transparent**

Adjective to describe a material that transmits light with minimal diffusion or scattering. (Clear, not opaque.)

**trilinear scanner**

A scanning device that uses three linear array charge-coupled devices (CCDs) utilizing red, green, and blue filters to capture color scans in a single pass.

**tristimulus**

1. Of, or consisting of, three stimuli; generally used to describe components of additive mixture required to evoke a particular color sensation. 2. Colorimeter: An instrument that measures tristimulus values and converts them to chromaticity components of color.

**tristimulus values, CIE**

Amounts (in percent) of the three components necessary in a three-color additive mixture required for matching a color; in the CIE system, they are designated as X, Y, and Z.

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## U

### **ultraviolet light (UV)**

Radiant energy with wave lengths slightly shorter than the visible spectrum.

### **unsharp mask**

A sharpening process that first blurs the edges then subtracts the image from the blurred areas to yield an image of apparent enhanced sharpness.

### **UV ink**

Term used in relation to ultraviolet properties in inkjet ink, in two different manners: (1) ink that is resistant to UV light degradation, or (2) ink that is "cured" or dried by exposure to UV light.

### **UV protective glaze**

An acrylic sheet used in framing art. It has ultraviolet light inhibitors capable of filtering out 99 percent of UV rays (one of the causes of print fading).

### **UV resistance**

The resistance of something to change under UV light sources including daylight.

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## V

### **variant edition**

A set of prints of the same image but varying as to size, coloration, image consistency, materials, or being otherwise differentiated.

### **vector**

A term given to a graphic drawing, specified as a color, start and end point, and applied to line segments, type, and tints.

### **vector graphics**

Drawing software. Vector graphics files are usually stored in formats such as PICT or EPS. Any of a number of graphics formats including EPS(F) and DXF that describe objects on the screen not as colored pixels but as mathematically defined shapes. Vector graphics can be rescaled to any size without any effect to file size. Typically, vector graphics occupy less disk space than their bitmapped (rasterized) counterparts.

**vector image**

A computer image that uses mathematical descriptions of paths and fills to define the graphic, as opposed to individual pixels.

**vehicle**

In this context, a fluid or solid substance (depending on its physical state and on its desired function) that serves to either dissolve or disperse another substance or a range of substances and make them usable in a certain environment. In the context of art material coatings, the total liquid content of a paint or ink, including the binder (the adhesive portion) and any additives (driers, solvents, resins, defoamers, preservatives, and so on)

**video card**

An add-on device that accelerates the digital screen refresh rate in order to display complex digital graphics and motion.

**vitreography**

Printmaking using glass plates for either intaglio or planographic processes.

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## W

**water-resistant**

A surface that can resist dampness but not a soaking of water such as that tolerated by a waterproof surface. Generally implies a lesser degree of protection against water than the term "waterfast," but still improves the material's resistance to water damage.

**waterfast**

Resistant to the destructive action of water.

**waterleaf paper**

Papers made with little or no sizing. (see "sized papers")

**watermark**

A faint marking on the back of some photographic papers indicating that the picture was taken by a professional photographer. Also, term for a faint image superimposed on a digital image to protect rights of ownership. An identifying mark or symbol imbedded in the substrate on which the art is made, usually referring to the maker of the substrate.

**weatherability**

The ability of a material to withstand the effects of exposure to weather conditions or to significant change in physical or chemical properties.

**web press**

A high-speed printing press that prints on both sides of a continuous roll of paper. Web presses are used for high-volume printing such as newspapers and magazines.

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### **white**

The result of combining the additive primary colors (Red, Green, and Blue). In the subtractive color mixing system, "white" is the result of the absence of any color.

### **white balance**

The balancing of color components to create pure white when photographing or scanning a white object. A substitute for a color temperature setting.

### **white point**

The color and intensity of a device's brightest white. With printers, this is usually the white of the paper. With scanners, the color that when scanned produces values of 255, 255, 255 (RGB). Ideally, the white point is 100 percent neutral reflectance or transmittance. (see also "reflectance")

### **WYSIWYG**

What You See Is What You Get. Refers to the ability to output data from computers exactly as it appears on the screen.

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# #