

# GLOSSARY

Learning about digital technology can be an overwhelming task. Here is a comprehensive collection of digital terms, compiled by Look Print, as a reference for terminology specific to the print industry.

With nearly 14 years of experience we have learnt that the more we are able to help our clients to understand the process, i.e. understand the language and the terms, the easier it is for them to ensure they receive exactly what they want. To this end we are delighted to share this knowledge.

We have many descriptions that are technical, and many that are elementary. We ask that if there is too much information to simply “read between the lines” to get an overall view, and if there is not enough information to simply ask us so we may improve the next edition.

We hope this knowledge stays with you and assists your understanding of the digital printing industry and processes. It has been designed to help you to communicate with your colleagues, clients and suppliers, and to help you to grow your business.



In compiling this information many of the definitions have been derived from the Digital Printing and Imaging Association glossary (edited by industry consultant Catherine Beck of Denver, Colorado, USA, working closely with an editorial advisory board of six industry leaders). The remainder of the information has been written by Look Print or has been derived from several sources, including Digital Fine Art Magazine and Screenweb. Full credit for information gathered from others is acknowledged.

# Aa

## Aberration

The failure of a mirror or refracting surface or lens to produce exact, point-to-point correspondence between an object and its image.

## Absolute White

In theory, a material that perfectly reflects all light energy at every visible wavelength. In practice, a solid white with known spectral data used as the 'reference white' for all measurements of absolute reflectance.

## Absorb/Absorption

Dissipation of the energy of electromagnetic waves into other forms as a result of its interaction with matter; a decrease in directional transmittance of incident radiation, resulting in a modification or conversion of the absorbed energy.

## Access Time

The amount of time required to acquire a block of data from a storage device and read it into the computer system.

## Achromatic Colour

Neutral colour (white, gray, or black) that has no hue.

## Acquire

Computer command, typically under the 'File' menu, that allows the start of scanning software directly from the application. Acquire is only available if the software is TWAIN-compliant.

## Acrobat®

Adobe's electronic page-viewing system based on an extension to PostScript®. In theory, it transfers text, graphics and images between computers and printers, no matter the platform, without altering the original format.

## Acrylic

A type of clear or frosted plastic used in the imaging industry for flat and formed faces, light boxes and weatherproof panels.

## Acrylic Adhesive

A PSA adhesive made of acrylic polymers.

## Acrylic Ink

An ink with an acrylic component.

## Actual Size

The size of an image when it was scanned (not enlarged or reduced in area or viewing perspective).

## Adaptive Compression

A type of compression software commonly used to back up files. The method of compression will change with the type of file, and is not recommended for photographic images because it may destroy original data.

## Additive Colours

A colour model associated with the RGB (red, green, blue) method of representing colour. Equal amounts of the primaries will combine to produce the perception of white light. This is normally used in video systems, television screens & computer monitors.

## Addressable Resolution

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

## Adhesion

The measure of the strength by which two materials bond together (which often changes with time).

## Adobe Illustrator®

A vector based software package for designing and illustrating, capable of all vector formats and almost all raster formats. Some features include a complete set of drawing tools, on-screen drawing and EPS-file formatting.

## Airbrushing Effect

A software tool found in many image-editing programs that simulates the paint/air-mixture effect of a mechanical airbrush.

## Airbrush Printer

A large, digital-print machine (for printing billboards, etc.) that uses compressed air to drive inks through the print head.

## 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.

## American National Standards Institute (ANSI)

The institute that developed the SCSI interface standard. American National Standards Institute is now the U.S. member of the International Standards Organization (ISO), responsible for industry standards.

### Analogous Colours

Colours that are close to each other on the colour wheel, and are also harmonious. For example, blues and purples are analogous.

### Anti-aliasing

A technique that smoothes the printed appearance of stair-stepped (jagged) lines. One method is to fill the edges of the line with varying shades of colour (or gray). This method averages the brightness values of the edges.

### Apparent Dot Area

The percentage of dot coverage in a specific area, as measured using a densitometer.

### Apparent Dot Gain

The difference between the Apparent Dot Area of the film, as measured by a transmission densitometer, and the Apparent Dot Area of the proof or printed sheet, as measured with a reflection densitometer.

### Application

A computer software program that performs specific functions such as page layout, word processing, accounting, drawing and spreadsheet formation.

### Application Tapes

A tacky adhesive tape used in the transfer of pressure-sensitive-vinyl-based letters and graphics from the liner to the sign, wall, truck, or window surface. Also called transfer tape or pre-mask tape. Available in low, medium and high tack versions, as well as clear, to suit various applications and materials.

### Archive File

A single file containing many files, often in compressed form. Example: a .zip file format.

### Archival Inks

Inks used in fine art reproduction that have been optimized for permanence

### Archiving

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

### Artist Proof

Frequently, an edition will include a number of prints called Artist Proofs. These proofs are normally printed at the time of the initial printing of the edition and are outside of the numbered series. AP's frequently sell for more than prints from an edition.

### Array Processor

A specific portion of a large computer system that assists processing data quickly. An array processor is sometimes capable of performing several operations simultaneously.

### ASCII (American standard code for information interchange pronounced as-kee)

ASCII is a computer code used to transfer numbers and text data between computers that run different software applications.

### Aspect Ratio

The ratio of width to height. Used in the imaging industry to define applicability of an image to fit a page, screen, monitor, or frame.

### ATM® (Adobe Type Manager)

Utility program that improves a computer monitor's display of type at any size.

### Attraction Panel

Area of a sign or marquee designed so that messages can be changed. Also referred to as reader panel, reader board, marquee, or changeable copy panel.

# Bb

## Background Processing

Allows assignment of specific operations to the background while the computer continues to perform previously assigned instructions.

## Banding

In digital printing, this term refers to patterns on a print caused by insufficient colour or gray-scale ranges within the output device's image processor. Banding can also be caused by faulty print heads or unskilled creation of lineal gradation.

## Bandwidth

The 'size' or throughput capacity of a network, usually measured in bits per second; or, less often, the range of frequencies in a signal. The amount of data you can send through a connection.

## Barrel Distortion

Image effect that spreads the centre dimensions of the picture.

## Batch Scan

The process of scanning numerous pages that contain similar data; for example, a number of photos or a multiple-page text document.

## Baud

A measure of speed in data transmission. Baud has the same meaning as bits per second.

## Bench-marking

A set of tests to determine performance of an item or system.

## Beta Site

A business or location involved in testing a specific product just prior to release.

## Beta Test

The testing of a software product in the field under real operating conditions prior to general release.

## Bezier Curve

Curved-line segments created mathematically by establishing endpoints and corresponding adjustable anchor points.

## Bi-Cubic Inter-Polation

One of three algorithms used for interpolation, Bi-cubic employs a matrix for comparison of central pixels to surrounding pixels. Used to increase the apparent resolution of a digital image.

## Binary

A system based on the numbers 0 and 1 as on-off switches. There is no middle ground; electrical signals are represented by electrical current being positive or negative, on or off. All computer data is based on the binary system. Binary files are about half the size of similar ASCII files.

## BIT

Derived from Binary digit. The smallest unit of information in a computer. 8 bits = 1 byte. Measurements of computer data. The bit, or binary digit (0 or 1), is the smallest unit of information a computer can work with. Because computers represent all data in numbers or digits, they are digital devices. Thus, these digits are measured in bits; each electronic signal becomes one bit. However, to represent more complex data, computers must combine these bit signals into larger groups called bytes.

## Bit Depth

In digital imaging, the maximum number of bits that are used to define a pixel.

## Bitmap

A rasterized graphic image formed by a rectangular grid of pixels or dots. Generally, a bitmap is associated with graphics objects. The bits are a direct representation of the picture image. In a monochrome system, one bit in the bitmap represents one pixel on screen. With colour (or gray-scale) systems, several bitmaps in the bitmap represent one pixel or group of pixels.

## Black

The fourth colour in four-colour printing. It is listed as the K in 'CMYK.' Black is required in the printing process because equal amounts of cyan, magenta and yellow inks will not produce a true black; ideally, the complete absorption of incident light; the absence of any reflection. In the practical sense, any colour which is close to this ideal in a relative viewing situation, i.e. a colour of very low saturation and of low luminance.

## Black And White Drawing Region

A region of a view area of the scan used for areas with only black and white lines or shapes. Photos show depth, while drawings are flat. A drawing region is also used to capture text that includes graphical elements.

### **Black And White Photo Region**

A region of a view area of the scan used for areas that include images with shades of gray in addition to black and white. Photos show depth, while drawings are flat.

### **Black Generation**

The addition of black ink to the other process colours when separating an RGB colour image into CMYK colours. Black generation is typically handled in one of two ways, GCR or UCR.

### **Black Point**

Colour that when scanned produces values of 0, 0, 0 in an 8-bit scanner. Ideally, the black point is 0% neutral reflectance or transmittance (See also White Point).

### **Bleed**

Extension of an image or background beyond the trim edge of a page, for cropping, guillotining and cutting.

### **Bleed Through Image**

An image that is viewable from both sides, but the back side is mirrored or reversed, and results when the image is printed onto a material that is not opaque but is partially or fully transparent. This may not be a problem with graphics, but makes text unreadable. (See also Double Faced and Double Sided)

### **Blend**

In computer-graphics software, the intermediate steps between two objects created when the objects are merged together via a specified number of intermediate steps. The number of steps dictates the size of the file and the smoothness of the transition.

### **Blooming**

A visual effect caused by exposing a CCD to too much light, causing distortions of the subject and/or colour.

### **Blue**

One of the three additive primary colours of light (Red, Green, Blue).

### **Blur**

The softening of image detail, usually accomplished through software averaging of pixel values to soften edges.

### **BMP File**

A Windows bitmap file, with the suffix 'bmp' that defines an image (such as the image of a scanned page) as a pattern of dots (pixels).

### **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.

### **BPI (Bits Per Inch)**

A term defining the density of data in a bitmap image.

### **BPS (Bits Per Second)**

A measurement of the speed of data transfer, used interchangeably with the term baud per second.

### **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. Also the dimension of colour that is referred to as an achromatic scale, ranging from black to white; also called lightness or luminous reflectance or transmittance (q.v.).

### **Brush**

In many image-editing programs, a special effects filter that performs a specific function, such as smoothing selective edges.

### **BYTE**

A standard unit of measure. 8 bits = 1 byte. Each 8-bit byte represents a character.



#### **Cable Modem**

An end-user device that allows for the transmission of data (e.g. Internet) over coaxial or fiber-optic cable-television systems.

#### **CAD (Computer Aided Design)**

Vector based software used to produce designs, and drawings for architectural, engineering and scientific applications.

#### **Calendered Vinyl**

A vinyl film manufactured by passing solid sheets of PVC between two polished rollers under high pressure. Usually refers to self adhesive vinyl, but may apply to any materials.

#### **Calibrate**

Setting up a scanner, monitor, printer, etc., so that the system produces accurate and consistent results. Because equipment and systems vary, to calibrate is to normalize a system's internal and received information so that it presents predictable colours. If devices or consumables change, recalibration is necessary.

#### **CAM**

Acronym for computer-assisted manufacturing.

#### **CAM (Common Access Method)**

An ANSI standard interface for SCSI controllers.

#### **Capture**

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

#### **Card**

A circuit board that performs a specific computer function (eg. video display, sound or communication) between computers, via modem or on a network.

#### **CAS (Computer-Aided Sign-Making)**

Refers to sign-related software and computer-driven, sign-making equipment.

#### **Cast Vinyl**

A vinyl film manufactured by float coating a liquid, plastic resin onto a moving belt or other type of mold. This is the highest quality material and offers many advantages.

#### **Cast**

To manufacture letters, plaques, etc. by pouring (floating) material into molds, rather than being fabricated.

#### **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.

#### **CCD Array**

An arrangement of CCD sensors mounted in close proximity that allows for the simultaneous capturing of many pixels with one exposure.

#### **CCITT (Consultative Committee for International Telephony and Telegraphy)**

Organization for specifying standards for communications throughout the world.

#### **CD-XA (Extended Architecture)**

A specific type of compact disc read-only devices that are compatible with the Photo CD format and other CD's. Multiple session Photo CD's cannot be fully utilized on non-XA drives.

#### **CD-DA Digital Audio**

Standard audio CD format.

#### **CD Interactive (CD-I)**

Multimedia system that uses a CD-ROM XA disc for simultaneous presentation of video, audio, data and text, allowing the user to interact by responding to prompts generated by software.

#### **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 (CD-ReWritable)**

A CD format that allows users to record and erase data.

#### **Certificates**

A non-forgable, tamper-proof way of verifying validity in electronic commerce.

#### **CGM (Computer Graphics Metafile)**

A vector-based standard for graphics files that allows images to be transferred between applications.

### Charge-coupled device (CCD)

A miniature photometer that detects light intensity and represents the intensity with an analog voltage. A CCD array is made up of CCD elements, the smallest discrete CCD.

### Checksum

A small integer used to detect whether errors occur when communicating data from one place to another.

### Choke

In printing, a term describing a relationship between a foreground element and a background colour or element. To create a trap between a foreground element that knocks out a background, the background may be 'choked' or slightly encroached upon.

### Chooser

A function on Macintosh computers for viewing and connecting to any device on a LAN.

### Chroma

The hue or colour information associated with an image.

### Chromatic

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

### Chromatic Attributes

Those attributes associated with the spectral distribution of light.

### Chromaticity

That part of colour specification which does not involve illuminance. Chromaticity is two-dimensional and is specified by pairs of numbers such as dominant wavelength and purity.

### Chrominance

The portions of a signal that are dedicated to describing the hue and saturation. Used in measuring the difference between two colours of equal brightness.

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

An international colour standards group sometimes known as the Intl. Committee on Illumination. In 1931, using a spectrophotometer to precisely measure colour, this group defined a colour model where numbers describe colours along three axes. Because this system can be used to store colour information, it has become a crucial part of device-independent, digital-print systems. There are newer colour models in addition to the CIE.

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

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

### Clipping

The grouping (usually unwanted) of all tones or colours above or below a certain value into one composite tone.

### Clipping Path

A path embedded into an image file in order to create a mask. Also known as 'Deep Etching.'

### Cloning

The process of producing an exact copy of existing digital-image data, either to another image file or copying an area of an image within the same file.

### Closed Architecture

Computer systems with a specific design that severely limits the addition of peripheral devices or other software/hardware to the system, especially from other manufacturers.

### CLUT (Colour Look-Up Table)

Another term for a correction table.

A colour-management software reference file that maintains the proper calibration of devices, such as monitors, printers and scanners (See also LUT).

### CMS (Colour Management System)

The process of using device calibration and profiling, software-based colour correction, and other utility applications to obtain predictable, quality-printed output. The output must remain within the limitations of the different devices that make up a digital-production system.

### CMY (Cyan, Magenta, Yellow)

Three subtractive primary colours used in colour-negative printing, and some colour-output devices, to produce a full gamut of colour. The combination of pure CMY inks produces black, and the elimination of all three produces white.

### CMYK (cyan, magenta, yellow and black)

The four colours in the four-colour process. The primary additive colours, red, green and blue, when added together, produce white light. When overlapped, red and blue form magenta, green and red form yellow, and green and blue form cyan. These resulting colours are subtractive and when added together, they produce a dark brown. In order to create an accurate photographic reproduction, the colour black must be added.

### Coated Paper Stock

A printing paper having a transparent, smooth layer added to one or both sides that changes the look or characteristics of the final printing. Coatings are normally defined as hard glossy, semi-glossy or matte surfaces.

### Coating

A coating provides protection from UV induced fading and some protection from smudging and fingerprints. It may not materially improve the permanence of the print because most fading is due to visible light. On some material (as an example canvas) coating can render the print water-resistant allowing the print to be framed without glass.

### Colour Attribute

A three-dimensional characteristic of the appearance of an object. One dimension usually defines the lightness, the other two together define the chromaticity.

### Colour Bar (or Production Control Bar)

A series of ink patches printed on a press sheet that may include solids of cyan, magenta, yellow, black, and spot colour ink; 25%, 50%, and 75% tints of those colours; and two-colour overprints using those colours.

### Colour Calibration

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

### Colour Compression

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

### Colour Correction

The process of simulating the colours or original shade by using colour management software. Often, an inkjet printer serves as the CMYK output device. This process is important because spot colours cannot be acceptably reproduced with the CMYK colour model without making adjustments.

### Colour Curve

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

### Colour Difference

Magnitude and character of the difference between two colours under specified conditions.

### Colour Gamut

Any colour medium representing its own range of colours, including that which is applied to film, a monitor, printed images, or the human eye. The total range of colours that can be reproduced by the combination of equipment and materials.

### Colour Management

An advanced technology that uses profiles of the input and output devices to maximize colour accuracy. Targets that include over 3000 colours are printed and measured with a colourimeter to create profiles for the various equipment, ink and media combinations.

### Colour Matching Functions

Relative amounts of three additive primaries required to match each wavelength of light. The term is generally used to refer to the CIE Standard Observer colour matching functions.

### Colour Measurement

The scientific determination of colour. It uses specialized measuring machines to compare colours numerically. There is a CIE worldwide standard that helps the industry compare and match colours.

### Colour Mode

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

### Colour Model

Also referred to as colour space. A colour model is a geometric or mathematical representation of visible colours. Well-known colour models include, CMYK, RGB and HLS (hue, lightness, saturation).

### Colour Photo Region

A region of a view area of the scan used for areas that include an image with colour graduations in addition to blocks of solid, uniform colour. Photos show depth, while drawings are flat.

### Colour Profile

Also called device profile. This term refers to the relationship between the colour models of the system devices.

### Colour Proof

A colour sample that attempts to represent the final printed image that will result when a piece is printed. Colour proofs can be generated from film separations prior to using the separations to make printing plates, or produced digitally to represent final output. Common types are Cromalin, MatchPrint, ink jet, dye sublimation, laser copies, or photographic film or paper.

### **Colour Saturation**

The sum of the amounts of ink in a given area of a particular image. In theory, an area of a four-colour image that is total black has a colour saturation value of 400 (100C 100M 100Y 100K).

### **Colour Separation**

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

### **Colour Space**

Three-dimensional model enclosing all possible colours. The dimensions may be described in various geometries giving rise to various spacings.

### **Colour Specification**

Tristimulus values, chromaticity coordinates and luminance value, or other colour-scale values, used to designate a colour numerically in a specified colour system.

### **Colour System**

A concept that relates colours for description or reproduction. Models in imaging include CIE, PMS and Photo YCC, among others.

### **Colour Temperature**

The manufacturer's method of indicating the colour of a light source in degrees Kelvin ( $_K$ ); i.e. 2700\_K (yellow/white), 4100\_K (white), 5500\_K (blue/white).

### **Colour Transparency**

A photographic or line-art image printed in colour on clear film.

### **Colour Wheel**

The visible spectrum's continuum of colours arranged into a circle, where complementary colours such as red and green are located directly across from each other.

### **Colourants**

Materials used to create colours-dyes, pigments) toners, waxes, phosphors.

### **Colourblind Colour Management**

A high-end software package used to tune colour input and output to give the best possible matched output results across various platforms, software and devices.

### **Colourimeter**

A device for measuring colour values; an optical measurement instrument that responds to colour in a manner similar to the human eye by filtering reflected light into its dominant regions of red, green, and blue.

### **Colourimetric**

Of, or relating to, values giving the amounts of three coloured lights or receptors-red, green, and blue.

### **Comp**

An abbreviation for composite or comprehensive. A layout that is produced during the design process providing a preview of the finished print job.

### **Compiling**

The process of translating source code into object code. To convert code into machine language and match software to the central processing unit.

### **Complements**

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

### **Composite**

The process of combining images, artwork, lineart and type either photomechanically or by computer. Also used in the combining of colour separations.

### **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.

### **Computer Aided Design (CAD) or Graphics (CAG)**

System used to generate and reproduce full-colour (designs) artwork, photographs, etc., through use of a computer, plotter, printer, keyboard, etc.

### **Computer Aided Manufacturing (CAM)**

Generally describes any programmable, computerized, motor-driven system of components that functions in a manufacturing capacity.

### **Connectivity**

The ability to connect electronic imaging components together so they function in harmony.

### **Continuous Tone**

Like original photographs, drawings or paintings, continuous-tone images contain real gradients of grays or colours. For printing purposes, continuous-tone images are converted to dot patterns (halftones).

### **Contrast**

The difference between the dark and light areas of an image. The lower the number value, the more closely the shades will resemble each other. The higher the number, the more the shades will stand out from each other.

### **Conversion**

In computer imaging, to change a CMYK file to RGB, Photo YCC, or vice versa, or to convert one file format to another.

### **Copy Work**

Refers generally to the process of copying original art work for purposes of reproduction.

### **Correlated Noise**

A recognizable pattern of change in an image file. The change is an increase or a decrease in the brightness of the pixels compared to what they should be.

### **Corrugated**

Material that has a wavy, undulating 'washboard' surface.

### **CPSI**

Adobe's software-based Configurable PostScript Level 2 Interpreter that performs the interpretation and rasterization function typically done by hardware-based RIPs.

### **CPU (Central Processing Unit)**

The main processing portion of a computer. This section contains processing and control circuitry along with internal storage areas.

### **Crazing**

A 'spider-web' cracking of paints or plastic, caused by weathering, cleaning with strong solvents, or the use of improper paints.

### **Crop**

To remove part of an image by creating a frame around the desired portion. Everything outside the frame is then deleted leaving only the final or 'cropped' image.

### **CT Merge**

The process of combining two continuous tone image tiles to create a seamless blending of the two images.

### **Cutting Plotter**

A vector-driven device (similar to CAS plotters) for cutting sign-making substrates. Recent designs include digital-print (inkjet) systems combined with cutting-plotter systems. (See also, Plotter and Printer/cutter.) Used extensively for accurately cutting self-adhesive vinyl lettering and logos.

### **Cyan**

One of the three subtractive primary colours. Produced by mixing equal amounts of blue and green projected light. Cyan is also one of the four colours used in four-colour printing.

# D d

## D-MAX

Highest level of density.

## D-MIN

Lowest level of density.

## D-RAM (Dynamic Random Access Memory)

A computer memory device offering high data packing density and data rates.

## DAT (Digital Audio Tape)

A recording format commonly used for data storage and data backup because of its low cost per megabyte (See also Dynamic Address Translation).

## Data

The numbers that make up a digital file.

## Database

An organized collection of data or information.

## Data Warehouse

The concept of using a mainframe or other large computer as a mass storage device for data in which many users can have access to data using tools like relational databases and GIS.

## Day-Night Effect

The effect created by a channel letter or sign that has a translucent face, such as Solar Plexiglas. It is backed with a translucent, light-diffusing material such as white plastic, vinyl diffuser film, or paint, and is internally lit.

## DDCP (Direct Digital Colour Proof)

A sample produced directly from a digital file and imaged onto various media.

## DDE

Dynamic Data Interchange. The ability to take data created in one application and use it in another.

## DDES

Digital Data Exchange Standard, Standard formats for transferring digital prepress production images for printed materials. Developed by suppliers and end users of digital-imaging processing equipment to enable image data to be transported between systems.

## DDS (Digital Data Service)

Umbrella term that covers all digital connections available from phone companies, including Switched 56 and T1.

## Decal

Graphics, long or short-term, printed on adhesive coated vinyls or transfer materials, such as wall-mount, window stickers, vehicle transfers and stickers, labels etc. May be small or large, but are pre-adhesived ready for application.

## Decided Edges

Fine watercolour 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.

## Default

Automatic decision or setting with computer software and hardware programs, to be carried out unless changed by the user.

## Degauss

Process of eliminating magnetism, such as with a colour monitor, to eliminate distortion.

## Delamination

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

## Delta (D)

A symbol used to indicate deviation or difference.

## Densitometer

An instrument that measures transmitted or reflected light by indicating the percentage of a given area that is covered by halftone dots. This instrument is used to ensure consistency between films, proofs and printed pieces.

## Density

The degree of opacity of an image. 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.

**Density Range**

See dynamic range.

**Depth Of Field**

See focal range.

**Descreening**

In scanning, the method of applying a controlled blur to erase discreet components of a halftone image and make it appear more like a continuous-tone image. This process will minimize effects of causing moire patterns if the image is re-screened.

**Desktop**

In Mac and Windows, desktop simulates the top of the user's desk; the simulated environment appears on the computer monitor being used. The user's virtual desktop is organized through the tiling, cascading or overlaying of Windows.

**Desktop Video Conferencing**

A system which allows a user to conduct a video conference, usually using ISDN or a Fractional T1 circuit, at individual computer workstations.

**Device Driver**

Software that tells the computer how to communicate with a peripheral device, i.e. printer, CD-ROM.

**Device-Dependent**

Describes a colour space that can be defined only by using information on the colour-rendering capabilities of a specific device.

**Device-Independent**

Describes a colour space that can be defined using the full gamut of human vision, as defined by a standard observer, independent of the colour-rendering capabilities of any specific device.

**Diamond Grade**

Highly retroreflective sheeting made of prismatic lenses formed in a durable resin, sealed with a white film and backed with a pressure-sensitive adhesive.

**DIB File Format**

Device-independent bitmap format.

**Dichroic Filter**

A glass plate coated with a number of thin layers of material that will reflect all but one very specific colour. Also called dichroic mirror.

**Die-Cut**

Cutting of material to a specific shape using dies.

**DIF (Data Interchange Format)**

A standardized format that allows for the exchanging of digital data between different programs.

**Diffuse Dither**

A method for printing continuous-tone images on laser printers in which the grayscale information is represented by randomly located printer dots.

**Diffuser**

The translucent-white, acrylic sheet on the bottom of the transparency adapter that evens out the light coming from the lamps inside the transparency adapter.

**Digital**

Image and line data that has been translated into numerical values for manipulation and reproduction.

**Digital Camera**

Portable optical recorder that captures images on an internal memory chip, removable PC cards, or other digital media. Images can be transferred electronically to a computer for manipulation, emailing or website creation.

**Digital Colour Printing**

To use multiple printheads that place specified colours of inks in predetermined places. The results are similar to photographs, but are often larger. In fact, some are billboard size.

**Digital Colour-Printing Software**

The computer programs that create digital colour printing. The process uses mathematical algorithms to enlarge and print an image. Also, this software often includes add-on features such as colour-calibration software, various pattern selections or a print-instruction screen. (See also, RIP).

**Digital Fine Art Print**

A fine art print, with resolution higher than 300dpi, made by any digital process.

**Digital Halftone**

The process of obtaining various tones by breaking up the image into a graduated series of dots. The dots repeat in a regular pattern, creating the illusion of continuous tone. The digital printing process is controlled by the size and shape of dots.

**Digital Imaging/Digital Printing**

Digital imaging refers to the routines that take place before the output methods occur. These routines include scanning, photo manipulation, colour correction and RIPping. Digital printing, on the other hand, refers to a variety of computer controlled output methods such as inkjet, computer airbrush, thermal transfer and electrostatic printers and laser printers & copiers.

### **Digital Internegatives**

Internegs that are produced by digitally scanning the original transparency to create a digital file, then imaging the digital data using a film recorder to record the image onto a negative film stock.

### **Digital Printer**

Any printing device that is capable of translating digital data into hardcopy output.

### **Digital Signal Processors (DSP)**

Microprocessor chips specially designed to convert, modify and manipulate streams of digitized signals in real time. These chips allow for faster telephony, faxing, and audio/video capture and editing.

### **Digital Signature**

A means of authenticating electronic documents. A digital signature is actually a special kind of encrypted message needed for electronic commerce.

### **Digitize**

The process of converting analog data to digital information. Can be done automatically in some cases, but mostly requires manual intervention to fine-tune and correct.

### **Digitizing Platform**

A work table that is a flat electronic sensor on which a 'mouse' is used to input custom drawings into a computer.

### **Dimensional Stability**

The ability to resist dimensional change due to environmental conditions; i.e. the amount of shrinkage or expansion.

### **DIC (Device Independent Colour)**

The goal of DIC is to provide an independent, universal standard against which colour spaces of all devices in a system can be referenced. DIP (Document Image Processing) Systems and software that stores, manages, and retrieves documents as digital images.

### **DIP (Dual In-line Package as in DIP Switches)**

Small switches used on some computer peripherals in order to change operating settings.

### **Direct Illumination**

Signs lit from the outside with floods, spots, etc.

### **Direct Memory Access**

The ability to use memory without a software interface.

### **Direct-to-Press**

The technique of applying digital image data directly to the press, eliminating the need to burn plates, films or screens.

### **Direct-to-Print**

Printing devices that allow for the elimination of film separations from the printing process. These systems utilize a computer controlled system employing lasers to 'write' digital data to a plate that is already mounted on the press.

### **Directional Sign**

A display showing guidance information used either outside and inside buildings.

### **Directory**

A display which shows location information and tenant information; also, a logical segment of a storage disk that is used to group and arrange files so they can be easily found.

### **Disc**

The spelling variation of 'disk' referring to compact discs such as Photo CD or other CD-ROM.

### **Distributed Computing**

A broad term used to describe computations involving multiple computers.

### **Distributed Database**

A database where unique but related components are stored in dispersed locations.

### **Dithering**

A graphics display or printing process that uses a combination of dots or textures to simulate an original image on an output device. The purpose is to create the impression of a continuous-tone gray-scale or colour image.

### **Document Management**

An integrated system for handling the electronic retrieval, analysis, communication, and management of digitized images of paper documents.

### **Domain**

A part of a naming hierarchy for the Internet. A domain name consists of a sequence of parts separated by dots, such as 'look.com.au', which is the domain for Look Print.

### **Dot**

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

### **Dot Gain**

A term that refers to the 'weight gain' of halftone dots. The phenomenon that occurs when ink expands its coverage after printing onto a substrate often caused by abnormal or excessive absorption by the substrate. Because this is an inherent part of the printing process, the effect of increased dot size should be anticipated ahead of time.

### **Dot Pitch**

The distance between the dots on a computer monitor, typically 0.2 to 0.3 millimeters. The closer the dots the sharper the image on the monitor.

### **Dots Per Inch (DPI)**

The resolution of an output device or how many dots are defined in the boundary of an inch. Generally, more dots per inch means a higher resolution or a greater amount of visible detail in the image. Often incorrectly used when describing the resolution of an input data which is measured in 'Pixels Per Inch' (See also PPI).

### **Double Faced**

An image that is readable from both sides. Generally, the same copy is shown on both sides. Where the image is the same but is mirrored, this is a Bleed Through Image (see also Double Sided and Duplex).

### **Double Sided**

An image that is readable from both sides. Generally, the same copy is shown on both sides (See also Double Faced, Duplex, Bleed Through Image & Mirrored).

### **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.

### **Drag and Drop**

Terminology used to describe an option in graphical user interfaces where tasks can be accomplished by simply moving an icon to a specified area.

### **Drive**

An internal or external assembly that can read and/or write electronic data using disk-storage media. For example, a disk operates much like a cassette recorder/player, with the cassette tape acting as the disk-storage media (eg. Hard Disk, ZIP Drive, CD-ROM Drive).

### **Driver**

A software program that links together the computer and its components and peripherals (printers, scanners and monitors) by delivering device specifications or limitations.

### **Drop-Shadow**

The shadowing effect on letters, to simulate light being cast at an angle.

### **Dropout Colour**

Colour that is invisible when scanning a colour object in grayscale mode, causing any detail in this colour to disappear.

### **Drum Scanner**

A type of optical scanner where the reflective or transmissive art is mounted to a rotating drum. As the drum spins, light from the image enters a lens allowing the image to be recorded in a series of fine lines.

### **DTP**

Acronym for desktop publishing, including typesetting, image handling and page composition.

### **Dual Processors**

Two central processing units in one computer.

### **Duotone**

A monochromatic printed image created by two overlapping halftone screens of different colours; generally created from a black and white photographic original in order to add additional tonal range, or to create a tinted or coloured appearance.

### **Duplex**

To print on both sides of a single opaque or predominantly opaque page (see Double Sided).

### **Durability**

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

### **DVD (Digital Versatile Disc)**

A technology similar to Compact Disc, but far superior in its storage capacity. A DVD can contain about 4.7 GB of data in its single-sided, single-density version, and 18 GB or more in a double-sided, double-density version.

### **Dye**

A soluble colourant; as opposed to pigment, which is insoluble.

### **Dye Sublimation**

An imaging process that vaporizes colourant with heat and pressure, and deposits it on to a substrate in order to simulate a continuous tone image. The original digital file is printed to a special media and then placed face down onto the material to which it is to be sublimated. The combination of heat and pressure transfers the colourant onto the material, to which it is then chemically and permanently bonded.

### **Dynamic Range**

The measurable difference between the brightest highlight and the darkest value that any system can scan, create, manipulate or write. The range of gray values that a system can reproduce.

# Ee

## E-stat

Short form for electrostatic.

## EDI

Abbreviation for Electronic Data Interchange. Protocols that allow for two organizations (such as a supplier and a manufacturer) to share electronic information and conduct transactions without the need for paper.

## EGA

Abbreviation for Extended Graphics Adapter. A medium resolution (640 x 350 pixels) video card for PCs.

## EISA (Extended Industry-Standard Architecture)

A bus standard introduced in 1988 and intended to provide greater performance than ISA and still be compatible with all ISA cards.

## EISA Bus

A type of 32-bit data bus used in PCs.

## Electroinks

Used in direct-to-press printing applications. They work in a manner similar to a laser copier's toners.

## Electro-magnetic Spectrum

The massive band of electromagnetic waves that pass through the air in different sizes, as measured by wavelength. Different wavelengths have different properties, but most are invisible-and some completely undetectable to the human eye.

## Electronic Dot Generation (EDG)

Process used in digital halftone production that allows negatives or plates to be generated by grouping micro dots into regular groups to function in the same manner as a photographically produced halftone.

## Electrostatic

Printing process that uses a special paper which is charged by an electron beam. Toner sticks to the charged areas similar to but not the same as colour laser copies.

## Electrostatic Printing

Printing large-format prints in a process similar to, but not the same as, colour photocopiers. The images are used for billboards, truck graphics, banners, signs or murals.

## Elongation

Measurement of the amount of stretching.

## Emissive Object

An object that emits light. Usually some sort of chemical reaction, such as the burning gasses of the sun or the heated filament of a light bulb.

## Enamel

An oil-base ink system producing a glossy surface.

## Encapsulated Postscript (EPS)

A graphic file format which can be either raster or vector. EPS translates graphics and text into a code which many printers can read and print. EPS files hold both low resolution view files and high-resolution PostScript image descriptions.

## Encryption

The process of scrambling a signal or digital file so that special hardware or software is needed for a receiver to reconstitute the image.

## Enhancement

The editing of an image either through colour and/or density change.

## EPS

See Encapsulated PostScript.

## Equalization

An-image processing technique where the range of tones or colours in an image file is expanded in order to produce a more pleasing image.

## Error Diffusion

In actuality, error diffusion is a random dot-placement strategy (or dithering method), spreading out the inherent failing until it is indistinguishable to the unaided eye.

## Ethernet

Networking system that allows for data transfer between computers and peripherals of up to 100 megabytes per second using coaxial cable. A commonly used computer network for the movement of PostScript files from one computer to another.

## Extended Architecture

A type of CD-ROM drive that allows for the use of multisession discs, such as Photo CD.

# Ff

## Fading

The loss of or change of colour intensity, generally accelerated by exposure to the Ultra Violet spectrum of sunlight.

## Feathering

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

## Fiber Optic Cables

Cables made of very thin glass fibers that use light pulses to transmit data instead of electricity. These cables have greater bandwidth than electrical transmission through wires.

## File Converters

Hardware or software that is used to convert files from one type of file format to another format.

## File Format

The particular arrangement of digital information that is saved from an application program. The method of arrangement or storage is unique for any particular application program, but most applications can import and export standardized graphics and text. A file format is indicated by a period followed by a three- or four-letter suffix, for example, .COM. The suffix indicates what type of file it is; a document, spreadsheet, drawing, Internet web page, etc. By knowing the properties of the various types of file formats, users can determine which files to open and read, which to import into other files and which offer the best options for scanning.

## File Server

A centralised storage computer which feeds data to other workstations or devices.

## Filters

3rd party plug-in software used to modify digital images by altering the values or arrangement of selected image pixels.

## Finish

The surface property of a material determined by its surface contour and gloss.

## Firmware

Programming embedded onto a computer's ROM chips. This information is permanently burned into the chip and cannot be changed.

## First Surface

The outside or exposed surface of the sign face. Usually used when discussing rigid transparent faces (See also Second Face).

## FITS (Functional Interpolating Transformational System)

A software technology that allows the user to edit very large image files in near real-time by accessing only the image data being edited.

## Fixed Disk

Another term used to describe a hard disk drive. A hard drive that cannot be removed is a fixed drive.

## Flair

The phenomenon where the colour of an object changes in appearance under different illuminants. Also see Metamerism, which involves the relationship between two colours under different lighting. In photography, deficiencies in the bellows of a camera lens.

## Flash Memory

A special type of RAM memory that stores data without electrical current. This type of memory is currently used in a number of digital cameras and some portable computers through the use of credit-card sized devices.

## FlashPix

An image file format developed and supported by Eastman Kodak Co., Microsoft Corp., Hewlett-Packard, Live Picture and other companies. An emerging World Wide Web standard for images, the FPX file format stores one version of the file for onscreen display and one for printing. This format is useful for a single image to place on the Web.

## Flat Colour

A technique of imaging graphics from regions of solid colour with no gradations at all. Often used in fabric and wallpaper imaging.

## Flat Or Matte Finish

A very low-sheen finish, with very little reflective quality. Ideal for viewing images from various angles without hotspots of light detracting from the image. Used extensively for exhibitions and retail displays.

## Flatbed Scanner

A scanner which utilizes CCD linear arrays, where the image is placed on a glass platen, and the array moves past the artwork.

### **Flicker**

A perceivable fluctuation of the brightness levels of a displayed image. This problem is often present in CRT monitors that have a vertical scan rate that is lower than 50Hz.

### **Flow Control**

Control of the rate that data is sent from one computer to another via telecommunications. This allows a fast computer or modem to communicate with a slower one.

### **Fluorescence**

A physical process at which the material's pigments absorb light and transform this light into different colour, giving the colour of the material extra light or brilliance.

### **Flush**

Refers to an object that is mounted directly to a surface, with no raised surface space between ie. flush mount letters.

### **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.

### **Foam Tape**

Self-adhesive tape, single or double-sided, with a core of high- or low-density foam. Used for weatherproofing and attaching signs to smooth surfaces.

### **Focal Range**

The portion of an object that is in focus. Also called depth of field.

### **Foil**

Term for donor medium for thermal-transfer printing; usually involves wax-based or resin-based colourant on rolls that travel over heated print head and are placed on a substrate by combinations of heat and pressure by the printer. Also, a very thin, metal sheet of various alloys, used mainly as an overlay, veneer, or cutout applique.

### **Font**

Historically, an assortment of letters and/or numbers, all the same size and type having a pre-determined amount of each letter or number. The term today refers generically to letter styles. There are more than 50,000 fonts in circulation, many with exactly the same name but from different sources that may be similar or may be different. Fonts should always be supplied with the file or converted to curves within the file to ensure correct printing.

### **Four-Colour Process**

A system of printing an illustration or design reproducing all colours in the original by printing dots of magenta, cyan, yellow and black.

### **FPO (For Position Only)**

A representation (usually low-resolution) that indicates the position on a page of an object, but is not meant to represent the output quality of the object.

### **FPX**

See FlashPix.

### **Fractal**

A mathematically generated pattern that is reproducible at any magnification or reduction.

### **Frame Buffer**

An area in RAM memory set aside to specifically hold the data for the screen display.

### **Frame Grabber**

A computer expansion board (card) which actually grabs a signal from TV or video and converts it into a digital computer image.

### **Frame Image**

A video image that is the combination of two fields and includes the odd and evenly scanned lines. One frame represents 1/30 of a second of video viewing time.

### **Frequency Response**

See optical frequency response.

### **FTP (File Transfer Protocol)**

The language used to facilitate the transfer of files from a server on the Internet to another location, such as a desktop computer or another server.

### **Full Bleed**

Printing term used when an image or background extends to the final trim edge of a printed page.

### **Full-size Transparency**

A transparency sized up to 216-by-297 mm.

### **Future Ink Test Print**

From time to time, new inks are released to the marketplace that offer improved longevity, a larger colour space (gamut), or both. A printer may switch production to new inks if the improvements are material and have been certified by an independent laboratory. Prints created from files that were imaged using older inks will look different when printed with new inks. The future ink test print gives you an opportunity to evaluate the effect of new inks on the print.

# Gg

## Gamma

A mathematical curve representing both the contrast and brightness of an image. Moving the curve in one direction will make the image both darker and decrease the contrast. Moving the curve the other direction will make the image both lighter and increase the contrast.

## Gamma Correction

The nonlinear tonal correction editing an 'images' gamma curve. This is typically used to manipulate image shadow detail and lighten the image without washing out the highlight areas.

## Gamma Curve

The shape of a line connecting the input and output values responsible for generating an image. In digital graphics it is output versus input.

## Gamut

The range of colours that can be captured or represented by a device. When a colour is outside a devices' gamut, the device represents that colour as some other colour.

## Gamut Compression

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

## Gamut Mapping

The plotting of an image colour gamut into the CITE colour space.

## Ganging (a.k.a Gang Scanning)

Putting a group of images or jobs on the scanner or press at one time.

## Gateway

A computer server that allows for the connection of different computer networks using protocol conversions.

## Gaussian Blur

An image-softening effect utilizing a bell shaped Gaussian distribution to apply the softening effect. A 'Gaussian' curve (a/k/a 'bell curve') is a bell-shaped curve showing a distribution of probability associated with different values of a variate.

## GCR (Gray Component Replacement)

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

## Generation Loss

The loss of quality that is unavoidable in any type of analog duplication such as an internet. Digital images do not suffer this loss of quality when duplicated.

## Ghosting

The effect of changing an object's level of opacity.

## Giclée (Fr. 'a spraying of ink')

A specific printer, the name of which is now so generic that it is also used to describe the printing of fine art prints or reproductions. Giclée prints should be treated like any other work of art on paper. Prints should be protected from moisture and exposure to direct sunlight

## 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.

## Gigabyte

1,073,741,824 or 1 billion bytes.

## GIGO

Garbage in, garbage out (a slang term).

## Gloss

The reflection of light from a surface.

## Gloss Finish

The application of a high sheen surface to a print, to protect and/or enhance the image.

## Gradation

The transition between colours or shades. Gradation occurs by mixing percentages of dominant and secondary colour and then altering those colours to bring about a change.

## Grain

The smallest component of a photographic image. A cluster of silver particles or dye.

### **Grand Format/Superwide**

Greater than 60" (1524mm) width digital-print machines. Their printing process was usually driven by air, but recent machines may piezo print directly onto a substrate using solvent based inks.

### **Graphics Accelerator**

A computer expansion board that is specifically designed to increase the performance of graphics software tasks.

### **Graphics Tablet**

A device that allows the user to plot position points on a tablet using a mouse or stylus to input drawing coordinates.

### **Gray Levels**

The number of steps available to reproduce a colour in an imaging system. Typically, in an 8 bit system there are 256 gray levels per colour component.

### **Grayscale**

An image containing a range of gray levels as opposed to only pure black and pure white.

### **Green**

One of the three additive primary colours of light (Red, Green and Blue).

### **GUI (Graphical User Interface)**

Abbreviation for Graphical User Interface, a computer operating or control system that applies graphics for the operator to command the computer with a mouse or stylus.



### 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 perceived visual quality of the reproduction.

### Halftone Cell

A square area in a halftone grid that holds an array of printer dots. A halftone cell can represent a discrete number of gray levels equal to the maximum number of printer dots that the halftone cell can hold, plus 1.

### Halo

A bright line tracing the edge of an image. This is usually an anomaly of excessive digital processing to sharpen or compress an image.

### Handshaking

This is a method that allows computers or communications equipment to coordinate transmissions. This is particularly important in higher speed communications.

### Hard Drive

The unremovable part of a computer that houses programs and data, using a solid disk as opposed to a floppy disk.

### HDCP (High Definition Colour Printing)

A specialized colour printing process that uses balanced dot frequency and screen rulings as fine as 625 lpi to produce near photographic quality images (Screen printing is typically around 50 dpi or 50 - 85 lpi).

### Header

The portion of a data packet or e-mail preceding the actual information that contains the source and destination address plus error checking fields.

### Heat Transfer

The movement of a printed image from a holding (or donor) substrate to another surface by applying a certain temperature and pressure force.

### Hertz (Hz.)

A scale used for measuring the number of cycles per second.

### Hexachrome®

A colour-matching system that allows the addition of orange and green to the four process colours, in order to create a larger gamut of reproducible colour than is otherwise available.

### Hi-Fl Colour

An alternative printing process that extends the capabilities of printing presses. This system uses stochastic screening, 6-colour printing (the addition of light cyan and light magenta), and other techniques to expand the possible colour gamut well beyond that of traditional 4-colour processes.

### Hiding Power

Opacity, generally the ability to hide contrasting colours.

### High Key Image

An image which is mostly white.

### Highlight

The brightest/lightest area within an image.

### High Resolution Scan

Professional scan at an output resolution of 150 dpi or 300 dpi using colour tables optimized for archival inks on fine art media. The 300 dpi file size for a 400 x 500mm print is about 109 megabytes.

### Histogram

A graphical display which 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 colour model based on these three coordinates of colour.

### House Papers

Papers that are stocked by a printer.

### Horizontal Resolution

The number of vertical lines that a system is capable of producing (counted on a horizontal axis).

### Host

Usually referring to a computer server that can be accessed over a network.

### **Hot Spot**

An area of image face or backlit sign or letter that is brighter than the rest, usually due to lamps or other interior lighting that is too close to the face, or lamps spaced too far apart so that the lighting appears uneven, and brighter in some areas (See also Gloss).

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

A colour model that utilizes Hue, Saturation, and Brightness as the three coordinates.

### **HTML (Hypertext Markup Language)**

A computer language and format that describes the components of graphics and text material presented on the World Wide Web in a consistent manner.

### **HTTP (Hypertext Transfer Protocol)**

The method that is used to retrieve HTML documents on the World Wide Web. This takes place transparently to the user once the URL (Uniform Resource Locator) address is accessed. (For example, Look Print is located at <http://www.look.com.au>)

### **Hue**

A specific shade or tint of a given colour. Hue is the measurement of the wavelength of light which gives the position in the colour spectrum.



### **I/O Addresses (Input/Output Addresses)**

Locations within the input/output address space of your computer that are used by devices such as printers, modems, or scanners. I/O addresses are used for communications between software and the device to which the address is assigned.

### **Imagesetter**

A laser output device to image bitmap data onto separation film or paper. Comes in drum and flatbed models.

### **Imaging Mode**

Refers to the dithering of an image as it is scanned. With this scanner, the mode can be error diffusion (photographs and graphics) or threshold dithering.

### **Indexed Colour**

A colour system that defines a palette of colours to be used in a specific image. Often this makes images small and manageable.

### **Industry-Standard Architecture (ISA)**

An unofficial designation for the bus design of the IBM PC/AT.

### **Ink Adhesion**

The bond between ink and media.

### **Inkjet, Bubblejet**

Specifically, Bubblejet is a tradename for a Canon desktop inkjet printer. Bubblejet is also a name used to describe 'thermal' type inkjets.

### **Inkjet, Phase Change**

This type of inkjet technology uses solid wax inserts instead of traditional inks. The wax is heated to a fine liquidity and deposited onto the substrate through the print head. Phase Change prints are high quality but subject to immediate and irrecoverable loss when exposed to heat.

### **Inkjet Printer**

A type of printer that sprays tiny streams of quick-drying ink onto the paper. An inkjet printer produces high-quality printing like that of a laser printer. There are several types, including Phase Change Inkjet, Thermal Inkjet and Piezo Inkjet.

### **Instrument Metamerism**

A phenomenon in a scanner in which two colours that look the same to an observer look different to the scanner, or two colours that look different to an observer look the same to a scanner.

### **Integrity**

The comparison of the current state of data to its original state. If it has changed, integrity has been breached.

### **Intensity**

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

### **Interface**

The communication that takes place between a system's hardware and software components.

### **Internal Illumination**

Lighting an image from within or behind the frame containing the image.

### **Internet**

An international network connecting participating computers.

### **Interoperability**

The ability of computers from multiple vendors to work together, communicate, and share resources using a common set of protocols. An essential characteristic of modern information technology hardware.

### **Interpolated 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.

### **Interpolated Sample**

A sample that is created by interpolation as opposed to real samples that are created during the scan. ie, computer enhanced.

### **Interpolation**

A technique for increasing the size of a graphic file by creating pixels. Also an extrapolation algorithm. There are three types, typically represented in PhotoShop bi-linear, bi-cubic and nearest neighbour.

### **Interrupt Request Line (IRQ)**

A hardware line over which devices can send signals indicating that they are ready to send or receive information (interrupts). Each device that uses interrupts should use a separate IRQ to avoid conflicts.

## **IP**

Abbreviation for Internet Protocol. A digital address for data packets that computers utilize when they communicate using the Internet.

## **Iris Print**

Prints created on the Iris Ink Jet Printer.

## **IRQ (Interrupt Request Line)**

A hardware line over which devices can send signals indicating that they are ready to send or receive information (interrupts). Each device that uses interrupts should use a separate IRQ to avoid conflicts.

## **Irreversible Transformation**

A change in an image during scanning and postscan image editing in which information about the image is irretrievably lost.

## **ISA (Industry-Standard Architecture)**

An unofficial designation for the bus design of the IBM PC/AT.

## **ISDN**

Abbreviation for Integrated Services Digital Network technology that supports both voice and data services over copper telephone lines.

## **ISO**

Abbreviation for the International Standards Organization, which designates international information technology standards.

## **ITS**

A colour-calibration target used in many systems to create profiles.



### Jaggies

The effect caused by the edge of an image or line not being clearly defined. It can easily be explained 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-colour or gray-scale images.

### Just-Noticeable Difference

In the CIELAB colour model, a difference in hue, chroma, or intensity, or some combination of all three, that is apparent to a trained observer under ideal lighting conditions.

The image shows the letters 'K' and 'k' in a bold, sans-serif font. The uppercase 'K' is on the left, and the lowercase 'k' is on the right. Both letters are a vibrant orange color. The 'K' has a thick vertical stem and two diagonal arms that meet at a sharp point. The 'k' has a similar structure but is smaller in scale.

#### **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.

#### **Kernel Size**

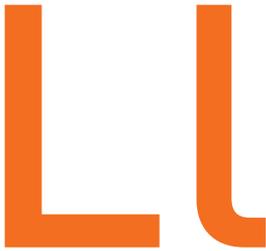
The number of pixels sampled as a unit during image manipulation and sharpening processes.

#### **Kerning**

Adjusting inter-character spacing of letters. Typically for pairs of letters that need special spacing treatment to make them look more aesthetically pleasing.

#### **Kiss Cutting**

A method of cutting the film and adhesive but leaving the liner intact.



### Lacquer

Fast-drying clear varnish with plastic, film-former base.

### Laminate

To apply film to a surface by hand or by mechanical applicators, using heat and/or pressure. A web or sheet material formed by bonding materials together.

### Lamination

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

### LAN

Local area network. A small network of a few (or many) computers in one central area.

### Large-format

ISO A3 or greater (ISO A3 = 11.69" X 16.54" or 297 mm x 420 mm)

### Layouts

Documents describing the precise layout of a print or prints on a sheet of paper. The layout indicate both the exact size of the prints and the amount of white space around each print.

### Lay Flat

Release liner that does not change when exposed to changes in humidity.

### Light

Electromagnetic radiation of which a human observer is aware through the visual sensations that arise from the stimulation of the retina of the eye.

### Lightness

Perception by which white objects are distinguished from gray objects and light from dark-coloured objects.

### Like Differences

Differences in colour or lightness that are of similar magnitude to the average observer.

### Line Art

1. Single colour 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. These images require a higher resolution to create the sharpness that is necessary.

### Line Drawing

A drawing that consists only of black and white with no intermediate grayscale information.

### Line Dropping

Subsampling to reduce the number of raster lines in an image by dropping every nth raster line from the scan (See also pixel dropping).

### Line Replication

Creating more raster lines than are actually scanned by replicating every nth raster line from the scan (See also pixel replication).

### Linearity

The degree to which the input of a signal is proportional to the output.

### Liner

See Release Liner.

### Link

A connection to a program or device that you can use to send information to other programs, such as e-mail, electronic fax, and OCR links. Also Internet definition, referring to a URL address that, when 'clicked' on, automatically moves the user to a new web site.

### Link Preferences

The options, such as what program and which file format, you choose to associate with a particular link, These preferences can be customized, depending on the software installed on your computer and your needs for the final file format.

### Linked Program

A program installed on your computer that you can use with other software.

### Lithographic

A method of printing from a plane surface. The printing image is ink-receptive.

### Local Bus

A super fast PC bus to transport data across the bus from the central processor to RAM to graphics.

### Lossless Compression

A compression technique that will retain all of the file's original image characteristics. The perfect lossless compression technique remains elusive.

### Lossy Compression

A compression technique that will sacrifice some image quality at low levels and continue to degrade more image quality as compression levels increase.

### Low Key

A photograph or other image whose tonal range is mostly in the shadow regions.

### LPI (Lines Per Inch)

The number of lines per inch on a halftone screen. As a general rule, the higher the lpi, the higher the printed resolution.

### LPM

Abbreviation for line pairs per millimeter.

### LUTS

Look-Up Tables: A digital processing method to modify data from the input to the output.

### LZW

The Lempel-Ziv-Welch image compression technique.

# Mm

## Macro Mode

Setting that allows a camera to focus on objects which are very near. Found on some 35mm, APS, and digital cameras.

## Magnetic Optical

Generic name for computer storage media, including floppy disks, tapes and any other magnetic storage devices.

## Mask

To block off a background or other area, so that letters or other pre-designed shape can be sprayed or manipulated individually.

## Masking

Technique that allows manipulation of one area of an image while other areas remain unaffected.

## Masstone

A area of solid printed colour compared to halftone printed.

## Match Print™

A direct digital colour-proofing process that allows the printer to see the colours desired in the final printing.

## Matrix

Array of CCD elements especially in the receptor of a digital camera.

## Matte Finish

A very low reflective finish (See Flat).

## MCA (Micro Channel Architecture)

The design of computers that allows expansion through plug-in modules.

## MCSTM (Matched Component System)

3M® devised system where one manufacturer makes all the components of a system; film, the ink, the clear coat, the premask, etc. Although a guarantee often accompanies such products, they come at a substantial premium. The guarantee only covers the cost of materials, not of production or loss.

## Media

1. A term for substrate or the materials to be printed, such as watercolour papers, canvas, copper, wood veneer, cotton, and plastic (See Substrate). Common inkjet printers generally require media that have special topcoats to achieve proper adhesion and proper drying characteristics.  
2. Digital media refers to the actual disks and tapes used to store data, as opposed to the storage device itself.

## Megabyte (MB)

A million bytes. (approx 1,073,742 bytes)

## Metafile

Files that can be shared by more than one application program.

## Metamerism

Two colours that appear the same under certain light conditions while differing under other light conditions.

## Midtones

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

## Mirrored

Software function that vertically or horizontally reverses an image. Also used to describe the result that occurs when an image is on a material that is partially transparent and the image shows through to the second surface as being 'mirrored' ie, as though you are viewing the original in a mirror.

## MO Disks (Magneto-Optical)

These use a combination of magnetic and optical technology to allow for erasable optical storage disks.

## Modulated Transfer Function (MTF)

Test that measures the optical frequency response of a scanner or other optical system. (See also transfer function).

## Modem

A device that transfers computer information across telephone lines. A modem will work with various types of communications software.

## 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 colours. A moiré pattern is created by juxtapositions of two repetitive graphic structures, reliant on halftone screen angles.

### Monitor Calibration

The process used to bring a monitor's specifications of colour, saturation and brightness into synchronization with the final output device, allowing the user to assume that what is seen on the screen will be extremely close to the final output.

### Monochrome

An image made of a range of only one colour.

### Monument Sign

A large ground-level sign usually used as a company's or location's main identification.

### Morphing

Moving smoothly from one image to another by having the computer animate a sequence transposing points in the starting image to corresponding points in the final image.

### Mottling

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

### Multiplexing

A single processing channel that simultaneously allows many tasks or outputs.

### Multisession

A designation that means that data can be written to a Photo CD on more than one occasion. Munsell System of Colour Notation identifies precise, specific colours and shows relationships among colours, relying upon three attributes: hue, value and chroma. The system consists of over 3 million observations of what people perceive to be like differences in hue, chroma, and intensity, choosing samples they perceived to have like differences.

# Nn

## Native Files

The original computer files, in their original application forms, for a digital graphic or publication; as opposed to an export format, Postscript print to disk format, or other transformed format which can no longer be opened and edited.

## Negative

Film containing a reversal of an image, such that the values of the original are reversed with light becoming dark, and vice versa.

## Network

A group of computers interconnected by hardware and software.

## Newton Rings

Concentric multicoloured rings caused by the pressing of film to glass; a problem in scanning from negatives or transparencies. Often reduced or eliminated by placing the image to be scanned between the glass with an oil seal.

## Nip

The point on a laminator at which two rollers come together to apply controlled pressure.

## Noise

A distortion of an image's analog signal. This distortion can be correlated or noncorrelated. Noise is an analog problem that is confined to the analog electronics in a scanner. Once a signal is digitized, it is relatively immune to noise. See also correlate. Also, unrelated data that appears on a scan or digital image.

## Non-Impact Printer

A printing process that transfers the ink to the paper without pressure.

## Non-Interlaced

Refreshing the monitor screen without using a method that scans odd lines followed by the scanning of the even lines.

## Non-Wet

A defect where the ink will not cover the film, usually due to a contaminate preventing the ink from 'wetting' the surface.

## Noncorrelated Noise

A random distortion in an analog signal causing snow or speckles (random spots throughout the image). The distortion can be the result of electrical spikes somewhere in the system (the scanner, printer, or monitor).

## Nonrecover-able Error

A deviation from the original colour in an image that cannot be corrected by a mathematical operation using a colour-matching function. (See also colour-matching function & recoverable error).

## NuBus

A hardware interface in Macintosh computers that allows the connection of various peripherals or specialized circuit boards to the computer. Most Macs now use a PCI bus (See also PCI).



### **Object**

A graphic or picture that is embedded in a document file by using Object Linking and Embedding (OLE). A scanned picture can be an object.

### **Object Linking And Embedding (OLE)**

An industry-standard method for inserting an object into a document. The document retains a connection, or link, with its original program so that double-clicking on the object in the document opens the object's original program.

### **ODC (On-Demand Colour)**

This term typically refers to short run colour printing. These processes include inkjet, electrostatic and direct-to-press. (all of which are offered as in house services by Look Digital)

### **OEM**

Original Equipment Manufacturer, a firm that licenses other companies to badge and sell their products.

### **Off-Line Storage**

Storage system that is not resident within the computer and can be removed; i.e., floppy disks, SyQuest™ disks, Zip™ disks, etc.

### **Offset Printing (Offset Lithography)**

A common printing process that makes prints by transferring ink to a rotating 'blanket' that contacts the paper.

### **On-Line Storage**

Storage systems or media device that is connected to the CPU.

### **Opacity**

The measure of the amount of light that can pass through a material. Also, the property of a film which prevents 'show through' of dark printing or marks on a substrate (media).

### **Opaque**

Impervious to light transmission.

### **OPI (Open Prepress Interface)**

Also known as image-swapping technology, this is the process that allows low-resolution copies of images inserted into a page-layout program for some prepress tasks, and then swapped with the high-resolution versions for output.

### **OPI Server**

The device that creates the low resolution images and maintains the high-resolution versions.

### **Optical Character Recognition (OCR)**

A technology that can recognize letters from a scanned image and convert them into ASCII characters to be saved as an editable text file.

### **Optical Disk**

A digital storage system commonly used for mass storage.

### **Optical Resolution**

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

### **Optical Storage**

A storage device that is designed to store large amounts of data, CD and 'flopticals' being the prime examples of this system.

### **Orientation (See Landscape and Portrait)**

Landscape refers to width being greater than height and portrait is the reverse of this rule ie. height is greater than width.

### **Overlaminates**

A protective clear film that extends an image's outdoor life and enhances its visual quality.

### **Overlaminating**

Application of a clear film to a graphic for the purpose of protection or to enhance the graphic quality.

### **Overprinting**

Printing one ink or tint build over another, most commonly for trapping purposes.

### **Oversampling**

Scanning at more than an optimum sampling rate (See also subsampling).

### **Oxidation**

The action of sun and weather on paint and certain metals that causes rust.

# Pp

## Page Layout

The process and software that prepares artwork, text and other elements to be collected and prepared for printing within a specific area.

## Pagemaker®

An Adobe® layout (or composition) program that integrates text and graphics for the production of printed communications.

## Pagination

Electronic formatting of multiple pages in a file for output.

## PAL (Phase Alternation Line)

A 625-line 50 Hz TV standard used in most of Europe and Australia.

## Palette

The number of colours a device is capable of displaying and producing. Also the tools used in paint programs, typically referred to as the 'floating palletes' within the application containing variables or information.

## Panel

Also called a tile. A division of a job based on a device's production area which enables a large print to be divided and produced as a series of smaller prints.

## Pantone® Matching System (PMS®)

A company producing numerous colour matching systems for print and computer applications. The PMS® colour-matching system is commonly used to represent 3,000 distinct colours through a numbering system. They are created using a combination of 14 spot colours, and many other specialty colours. Digital printing is four colour process (and uses just the combinations of four colours) many PMS® colours are not exactly available. In fact digital process printing creates an illusion of the colour, or as close as it can get, with the use of dot array.

## Paperport Software Viewer

A type of software that allows someone who does not have the PaperPort software to view a PaperPort software document. The viewer does not allow someone to change the document.

## Parallel Cable

The cable connection between the computer and another device's parallel ports, which allows a computer to send a printer several bits of data simultaneously.

## Parallel Port

A connector on your computer that allows you to connect to other devices, such as a printer. Another name for parallel port is LPT port.

## PCL (Printer Control Language)

The printer language that drives HP DeskJet, HP LaserJet, and other Hewlett Packard printers. PCL defines a standard set of commands enabling programs to communicate with HP or HP-compatible printers.

## PCMCIA Cards (Personal Computer Memory Card Information Association)

A storage memory or connection device the shape of a thick credit card, inserted into a specially designed slot of a computer. Most often found with portable computers; now referred to commonly as PC cards.

## PDF® (Portable Document Format)

An electronic document format from Adobe® that allows the distribution of digital files across any platform that can display a document, as originally designed and formatted, without having the software application or fonts on the viewing computer.

## Performance Life

Useful life or life as determined and defined by specification.

## Permanent Adhesive

Pressure Sensitive Adhesive (PSA) that is difficult to remove after application without leaving adhesive on the substrate.

## Peripheral Equipment

This term refers to external input or export devices that are physically not part of a computer's housing. Examples include printers, scanners, external drives, modems, monitors, etc.

## Phase Change Printer

An inkjet printer where the ink starts as a solid which is then heated and liquefied.

### Photo CD

A process for scanning transparencies and storing them on CD in a format known as Photo CD. Acceptable results can be achieved from Photo-CDs, but the professional version is required to create large enough files.

### Photo Composing

Typically, this term is used to describe the process of combining all or part of more than one image into one image, possibly with text.

### Photoshop®

An image-processing program by Adobe® for creation, enhancement, retouching and output of digital files.

### PICT

Picture file format: A black-and-white limited colour bit maps and object format.

### Pictorial

Generally refers to decoration on a sign that is other than copy. Specifically, one colour or multicoloured illustrations on signs and billboards, including photographic images, enlargements, portraits, scenes, etc.

### Piezo-Electric

An inkjet printing technology that uses a mechanical-electric charge instead of heat to drive microdroplets through the nozzle. More reliable and versatile than Thermal Inkjet Technology, Piezo prints are stable in external light conditions and in some cases can be waterproof without coating or finishing.

### Pigment

The colour substance in inks that absorbs and reflects light.

### Pigmented

Film in which the colour is an internal part of the film rather than as an ink applied to the surface.

### Pincushion Distortion

A distortion where the image compresses toward the centre with distortion most noticed at the centre of horizontal or vertical edges.

### Pinholes

Small, dot-like failures of a printed ink to form a continuous film.

### Pixel

The smallest unit of data in a digital image. Together, the small discrete elements constitute an image that can be seen on a monitor or printed on a substrate. A pixel's code contains information relating to colour, tone and placement within the larger image.

### Pixel Depth

The number of bits of tonal range capability assigned to the pixels in an image. For example RGB 24 bit colour means a pixel depth of 24 bits, 8 bits (or 256 levels) per colour.

### Pixel Dropping

Sub sampling to reduce the number of pixels in an image by dropping every nth pixel from the scan. a/k/a pixel skipping.

### Pixel Replication

Creating more pixels than are actually scanned by replicating every nth pixel to create the n+ 1 pixel.

### Pixelization

Graininess in an image that results when the pixels are too big.

### Pixels Per Inch (PPI)

The resolution of an input device (eg scanner/monitor) or how many pixels are defined in the boundary of an inch. Generally, more pixels per inch means a higher resolution, a greater amount of visible detail in the image, and a larger file size.

### Plasma Display

A display screen that has a gas contained between two panels. When specific x-axis (horizontal) and y-axis (vertical) dots on the panels are electrically charged, the gas in that area glows.

### Platform

Refers to the particular proprietary computer hardware design. This can be a Intel, Windows, Macintosh, Sun, Mainframe, etc.

### Plotter

A term applied to a peripheral unit that, through computer control, transfers and represents data via the Cartesian coordinate system.

### Plug and Play

A given computer system or peripheral device that is ready to use upon its removal from the box.

### PMSA®

See Pantone® Matching System.

### Point

A unit of measurement used in the graphic arts industry. There are 12 points to a Pica. One point equals approximately 0.3mm (See also Postscript® Point).

### Point Of Purchase Display (P.O.P.)

An image, sign or display used in close proximity to the actual retail product being sold. Also known as Point Of Sale (POS).

### Pointer Tool

The tool on the Annotation Tool Bar for selecting an annotation to cut, copy, or paste.

### Port

An outlet or connection location on a computer which allows a peripheral device to operate. A communications port (COM port) allows the modem to operate, and a local port (LPT) enables the printer to operate.

### Portable Document Viewer

A mini-program that can be attached to an electronic document and e-mailed. The recipient will be able to view, annotate, and print the document, no matter what program was used to create the document.

### Portrait

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.

### Positionability

Characteristic of allowing a marking to be moved after initial contact by use of a combination of a two-step adhesive system. A low-tack adhesive is on the surface for moving a marking; then, under pressure, a higher-tack adhesive is released to permanently set the marking.

### Post-And-Panel Signs

Type of sign that is composed of a face supported by round or square supports, usually informational in nature, and mounted low to the ground. They can be either internally or externally illuminated, or non-illuminated.

### Posterisation

A special effect created by using a limited number of gray levels within an image. In computers it is created by setting a defined number of gradient steps in a bitmapped image.

### PostScript®

An Adobe® programming language that enables text and graphic images to be output from different devices with consistent and predictable results.

### PostScript® Point

A revision to the 'Point' measurement unit. A Postscript point is exactly 1/72 of an inch. Most graphics software utilize this unit.

### PowerPC

A powerful microprocessor chip jointly developed by Apple, IBM and Motorola. It will emulate every popular PC operating system including Apple Mac, OS, OS/2, Windows, DOS, and TJNTX.

### PPD

Refers to PostScript® Page Description, a small file used to describe a particular printer's characteristics and capabilities to a graphics or word-processing software.

### PPP (Point to Point Protocol)

Software that is typically used to connect a computer to the Internet using a modem.

### PPI (pixels per inch)

A measurement of resolution. A pixel is a unit of data that should not be confused with dpi (dots per inch) or lpi (lines per inch). If there are more pixels per inch, the image will be sharper.

### PPTP

Abbreviation for Point To Point Tunneling Protocol. A protocol that enables Virtual Private Networks over the Internet (e.g. allows you to have a private network without investing in one).

### PRAM - Parameter RAM or parameter random access memory

A special battery-powered form of RAM where vital system information such as the date and time are stored. PRAM also contains computer configuration information, such as what's connected to each port on the computer. Because an internal battery powers PRAM, the information isn't lost when you turn the computer off as it is with regular RAM.

### Pre-Flighting

A process of checking a job for possible problems before the job is sent for final output. This process is used to find problems such as missing fonts, postscript errors and colour problems (See also Prepress).

### Premask

Application tape to help application and protect markings.

### Prepress

The process of getting an image ready to go on press. Digital prepress denotes the entire preparation of a digital file for printing in either a digital or conventional system. Prepress is the process of preparing artwork, film and screens for conventional printing methods (See also Preflighting).

### Prespaced

Individual pieces or letters held in correct placement by tape.

### Pressmatch, Proofprint

The proof accepted by the artist that is used as the standard for comparing all subsequent prints.

### Pressure Sensitive (PS)

A laminate consisting of a film, an adhesive and a silicone-coated liner. The adhesive is activated by pressure and requires no heat, solvent, or other preparation for adhesion to smooth, clean surfaces.

### Pressure Sensitive Pen

A tool that allows for information to be put into the computer with a stylus in a manner similar to writing or drawing.

### Pressure Sensitive Adhesive (PSA)

A viscoelastic material that is: 1. aggressively and permanently tacky; 2. adheres without the need of more than a finger or hand pressure; and 3. requires no activation by water, solvent or heat.

### Primary Colour

A colour that is the basis for all other colour combinations. The primary colours are Red, Green and Blue (RGB) in light; Cyan, Magenta and Yellow (CMY) in colour photographic printing. In digital colour printing, black (K) is added to CMY inks for more accurate colour.

### Print File

The file used to produce a final proof that is archived for producing current and future printings of an edition.

### Print On Demand

The ability to reproduce prints over a long period of time with consistency. This allows orders of a small number of prints when needed. While the process does offer a high degree of consistency over time, editions that require exact matching should be printed at one time.

### Printer Dot

The individual pixel in a halftone image. The size of a printer dot is variable, ranging from zero (all white) to the size of the halftone screen (all black). See also halftone cell, halftone dot.

### Printer/Cutter

Devices with the ability to print and perform vector cutting of an image, usually on vinyl.

### PRNU (Photo Response Nonuniformity)

Pixel-to-pixel variation in the response of a CCD array to a fixed-intensity light. Ideally, the response to each CCD element in the array is identical; deviations from that response are caused by PRNU.

### Process Colour

The process colours Cyan, Magenta, Yellow, and Black are used in traditional colour printing to reproduce a full colour range.

### Profile

A database or file of values that apply to an imager to make its colour capability equivalent to other imagers in the same process.

### Proof

A smaller print, often A4, used to evaluate a file prior to printing.

### Proprietary

The design of programs, systems or equipment that are owned by an entity. This technology may be licensed for use in other applications or systems. Materials or software designed for use with one specific machine.

### Protocol

The set of conventions between communication lines. It exists to exchange information between a host computer and its interface. The way information is placed on a network. The steps needed to communicate or activate an operation or exchange of information in or between computers.

### Proxy

A representative version or sample of a larger image.

### Proxy Image

A low-resolution image used in any software programs to show the effects of changes without performing transformations on high resolution files.

# Qq

## **Quality Factor**

Q is a measure of the ratio of pixels per halftone screen ruling. A factor of 2 would require a scanning 2 pixels per screen line.

## **Quantization**

The artificial forcing of like gray levels to the same gray level as a result of limited tonal resolution in a scanner. Quantization is most often seen in the shadow portion of scanned images (See also Tonal Resolution).

## **Quarternone**

On both ends of the image, those tones that lie between shadow and midtone and also between highlight and midtone.

## **Queue**

The line of events scheduled to occur with a computer or peripheral.

## **Qwerty**

A standard keyboard layout based on the American standard typewriter.

## **Quicktime**

The architecture of Macintosh AVI platforms that integrates audio and visual data.

# Rr

## **RAID (Redundant Array of Inexpensive Disks)**

A performance-enhancing group of disks that work together to speed data transfer and access.

## **RAM (Random Access Memory)**

The high-speed portion of the computers memory that is held on special chips for use in current applications or procedures.

## **RAS (Remote Access Server)**

A server that allows access to various computers through modems.

## **Raster**

The process of rendering an image or a page using the technology that helped create the television. It involves rendering the particular image or page, pixel by pixel, in a sweeping vertical or horizontal motion, like a rake drawing lines in the dirt.

## **Raster Image**

An image that is defined as a collection of pixels arranged in a rectangular array (See also Bitmap).

## **Raster Line**

A thin horizontal strip across an image. Raster lines are captured one at a time by the CCD elements in a scanner. When displayed or printed in sequence, raster lines make up the image.

## **Rasterization**

Changing vector-type image information to raster image information.

## **Rasterized Type**

Type that has rough or stair-stepped edges. The type does not appear smooth because it has been rendered at a resolution that is too low.

## **Raw Data**

Data that is not formatted or processed.

## **Real-Time**

The concept of seeing on the screen the actions of the computer as though the activity were happening at a natural pace.

## **Reboot**

The process of turning a computer system or printer off and then back on again, to reload the software.

## **Reflectance**

The fraction of the light incident on a surface that is reflected and varies according to the wavelength distribution of the light. Also called reflectivity.

## **Reflective**

Refers to print material that is viewed with the light on the same side of the image as the viewer.

## **Refresh Rate**

The rate at which an image is redrawn on a CRT. This is needed because the phosphors at each pixel are stimulated by the electron gun for only a brief time. The faster the refresh rate, the more stable an image will appear on the screen.

## **Region**

A distinct area of a scan. A region is either a text, photograph, or drawing type.

## **Region Tool**

A tool used to select or clear an automatically identified or previously-created region. The region tool is also used to manually create a border, adjust borders, and drag and drop a region to a destination.

## **Release Liner**

A base silicon carries material to which self adhesive materials are applied for handling, from which they release cleanly.

## **Removable Media**

Any storage medium that can be removed from a digital camera or drive (i.e. PC Cards, floppy disks).

## **Rendering**

Applying shading and lighting effects to a two dimensional image.

## **Resampling**

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

## **Resize**

It is generally possible to resize files so prints can be made either smaller or larger. For Large Format printing, the files are normally upsized substantially, so the original file must be of suitable resolution and quality for output size required. Attention to detail is imperative as the smallest error becomes very noticeable.

**Resolution**

The particular pixel density of an image, or the number of dots per inch a device is capable of recognizing or producing. See 'DPI' and 'PPI.'

**Retouching**

Removing imperfections or unwanted portions of an image.

**RGB**

A colour model using red, green, and blue; the additive primary colours. Video display systems use RGB data to create screen images. RGB is an additive colour model used in colour monitors, conventional photo film and paper to create full colour.

**RIFF (Raster Image File Format)**

A storage format used with gray-scale images.

**RIP (Raster Image Processing)**

A process using mathematical algorithms to enlarge and print an image. Also, this software often includes 'add-on' features, such as colour-calibration software, various pattern selections, toots or a print-instruction screen.

**ROM (Read-Only Memory)**

A memory type that cannot be changed or rewritten, and will not lose information when a computer is shut down.

**Rosette**

The pattern created in a colour halftone by the placement of dots of different hues.

**RPI (Rels [recorder elements] Per Inch)**

A measurement of the number of discrete steps that exposure units in imagesetting devices can make per inch.

**RTF (Rich Text Format)**

A format that accepts both text and images, and retains text formatting and page layout.

# Ss

## Sampling Rate

The number of points of data, in pixels per inch, that are created by a scanner per linear distance. In this book, sampling rate means the optical sample rate changed by interpolation or subsampling. Also called ppi rate (See also optical sampling).

## Satellite Communication

Radio communications between satellites or satellites and ground stations. Commonly used for long-distance telephone calls, including internet or mobile phone type calls.

## Saturation

A measure of purity of colour. Saturated colours contain pure colour only, colours desaturate to gray. Saturation is a measure of the degree of pureness or movement away from gray.

## 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 artwork or transparency into digital information.

## Scan Rate (Refresh Rate)

The rate that a display changes its image in a given time.

## Scan-and-Print

To produce 'instant' posters, banners or other wide-format output, this type of system scales, interpolates and diffuses bitmapped images captured by a scanner. The information is then sent directly to a printing device. The purpose is to reduce the turnaround time and complexity in producing short-term display graphics.

## Scanner

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

## Scanning

The process of converting a transparency, negative, or print to a digital file (See High Resolution Scan).

## Scoring

Cutting through the liner but not the film to aid in liner removal.

## Scotchprint

3M® Graphics System designed for transferring images onto vinyl for outdoor display. Printing is on an electrostatic device.

## Screen

A halftone screen on film used in conjunction with photographic film or paper to produce a halftone image from continuous tone art.

## Screen Angles

In half-tone printing, the coordinated placement of screens to avoid moiré patterns on the final image. The most commonly used angles are: Black, 45°; Magenta, 75°; Yellow, 90°; Cyan, 105°.

## Screen Frequency

The measure of lines on a screen given in lines per unit measure as in LPI.

## Screen Ruling

The resolution of a screen measured in lines per unit measure.

## Screening

The process of using screens or digital methods to create halftone screen representations of continuous tone images.

## Screenprinting

The technique of applying material (usually screen printing ink) to a surface by forcing it through a stretched fabric that has a stencil applied.

## Scrim

The woven fabric base of flexible material. For example, 10 x 12 scrim would have 10 threads per inch in one direction, 12 in the other.

## SCSI (small computer system interface, pronounced sku-zee)

SCSI is a standard method of connecting devices to computers. For example, SCSI is used for connecting a peripheral device, such as an external hard drive or a tape backup system to a computer's port (outlet).

## Second Face

The back or reverse side of a sign face. Graphics that are mounted on the second surface are protected by the plastic.

### Secondary Colour

The subtractive primaries. Cyan, Magenta, and Yellow.

### Selection Tool

An annotation tool used to select part of an item to cut and paste to the Clipboard.

### Self Adhesive

Generally, the same as pressure sensitive, in that it has pre-applied adhesive on one or both sides.

### Separation

The process printers use to break down a colour image into its components of cyan, magenta, yellow, and black for the purposes of printing. An image that has been processed this way is also known as a separation.

### Service Bureau

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

### SGO (Second Generation Original)

An output from the imaging process producing transparencies or negative that will serve as an original in other operations.

### Shade

The brightness or luminance of an image when compared to a gray scale.

### Shadow

Detail or information contained in dark areas of an image.

### 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.

### Shadowing

The shadow area on a sign face caused by a sign component coming between the light source and the sign face.

### Sharpen Edges

An image editor 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.

### Sharpening Filters

A series of digital processes or algorithms that will enhance the sharpness of an image. Each operates slightly differently and is more or less desirable to produce a different effect.

### Shear Adhesion

Measure of internal strength of an adhesive; i.e. 'cohesive' strength.

### Sheets

The sheet of paper or other material that will be printed. Large Format Printers accommodate sheets up to 1500mm and larger for grand format printers.

### Silhouetting

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

### Silk Screen

The technique of applying screen process paste to a surface by forcing it through a stretched fabric that has a stencil applied. An archaic term, since most screen printing is done with synthetic-fabric screens.

### SIMM (Single Inline Memory Module)

Chip used to add additional RAM memory to computers.

### Slide

A 35mm transparency. Not recommended for art Copy Work. High-quality 35mm slides can be enlarged depending on the nature of the image, grain of the film, and the "look" desired by the client.

### Slitting

Continuous cutting of film to make narrower rolls from wider ones.

### Smooth

A process, that of an image, colour or pattern via softening, blurring or other means.

### Sneakernet

A slang term for physically carrying disks from unit to unit to transfer data.

### 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.

### Soft-Edge Masking

A technique used to isolate a portion of an image with an edge that allows for a smoother transition to areas around the masked part.

### **Solvent**

A substance capable of dissolving something.

1. Liquid used to thin paint and cement.
2. Thin solution used to soften acrylics for welding.
3. A cleaning agent.

### **Spatial Resolution**

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

### **Specification**

Written statement defining the materials and processing procedures necessary to meet the end user customer's stated performance needs.

### **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. Overall, an instrument that measures the spectral wavelength of colour. Also, this instrument calibrates output devices or monitors, and measures dot gain and colour density.

### **Spectrophotometric Curve**

A curve measured on a spectrophotometer; hence a graph of relative reflectance or transmittance (or absorption) as the ordinate, plotted versus wavelength or frequency as the abscissa.

### **Spooler**

A function of the computer that collects output instructions and data and stores them in memory before sending them to a printer.

### **Spot Colours**

These colours are printed as solid areas and used when fewer than four colours are needed or when the four-colour process (CMYK) is unable to accurately reproduce a PMS colour.

### **Spread**

In offset printing, a term describing a trapping relationship between a foreground element, and a background colour or element. To create a trap between a foreground element that knocks out a background, the foreground may be "spread" or slightly enlarged

### **Squeegee**

1. Small plastic device used to burnish down self-adhesive vinyl;
2. Screenprinting blade.

### **Step and Repeat**

The process of duplicating an image into a fixed position for use in a printing process. This procedure can take place within a computer prior to printing.

### **Sticker**

Low-cost, short-term graphics usually printed on inexpensive, adhesive-coated paper, vinyl or vinyl impregnated paper.

### **Stochastic**

An alternative to traditional halftone dots, this random-placement dot strategy is used to render enlarged images on large-format printing devices. Stochastic dots are uniformly sized microdots, and their placement and frequency vary with the tone of the image.

### **Stochastic Screening**

FM, or Stochastic screening is a technique to produce screens that are or appear to be randomly distributed. This is the technique that makes photorealistic images possible in large format printing.

### **Stock Photos**

An already existing picture that can be purchased for use instead of having a photograph specifically made.

### **Streak Noise**

Vertically correlated noise in a scan (See also correlated noise).

### **Stripping**

The process of assembling individual elements to make a composite page for use in the offset printing process.

### **Stroke**

A term referring to a line segment in a graphics program. Lines or 'strokes' can be straight or curved, open or closed.

### **Stroke Width**

The thickness or thinness of a letter stroke or bar, horizontal or vertical.

### **Stuffit**

An archiving compression product that emphasizes maximum compression for files and folders. Used for backups, file transfers and access to files compressed or encoded on non-Macintosh platforms.

### **Sub-Sample**

To access and use a small portion of an image file.

### **Subsampling**

Scanning at a less than optimum sampling rate (See also oversampling).

### **Substrate**

Ultimately, the material that receives the printed image. Sometimes called 'media.'

### **Subtractive Colour/Reflective Colour**

The term refers to the CMYK colour space used by conventional and digital printing devices to produce full-colour printing. (See also, CMYK.).

### **Subtractive Primaries**

These are the three colours that are used to create all other colours in colour photographic printing. (Cyan, Magenta and Yellow)

### **Summary Information**

Information about the item, such as the creator or keywords, which can be added in the Summary Information dialog box to help you find the item quickly.

### **Superimpose**

To place one element over another to create stacking of images or overlays.

### **Support**

Various forms of technical assistance offered by hardware and software companies.

### **SWOP (Specifications for Web Offset Printing)**

Refers to a set of standards for conveying and representing colour information, This standard is based on the characteristics of web-offset presses.

### **Systems-integrator**

A company that integrates various products made by several manufacturers into a single operating system.

### **SyQuest™ Cartridges**

An older style of magnetic removable storage disks. (Not used by Look Print) Refer Zip™, Jazz™, CD.



#### **Tack**

The property which enables the adhesive to form a unit with the surface of another material upon brief contact under light pressure.

#### **Tape Storage**

A mass storage device that uses removable tape as a medium.

#### **Target**

In the context of testing, the portion of the original to be scanned.

#### **TCP/IP (Terminal Control Protocol/Internet Protocol)**

TCP/IP originated in the UNIX environment and is the basis of Internet communications. It is supported as a secondary network protocol by nearly all vendors because its networks can be joined with many gateways and bridges.

#### **Tear Strength**

Property measured by the force required to tear a specimen under specified test conditions.

#### **Terabyte**

1,099,511,627,776 bytes of computer memory. (1,000 Gigabytes approx)

#### **Terminator**

A device that prevents data signal reflection from the end of an electrical conductor. This ensures that the reflected signals do not mix with the primary signals and confuse any devices that need the data being sent on the conductor.

#### **Texturing**

Impressing a pattern into the surface of a film.

#### **Thermal film**

Heat-sensitive film that carries an image from a thermal imagesetter. When this clear film encounters heat, it turns black and is transformed to an imaged positive.

#### **Thumbnail**

A small, low-resolution version of an image.

#### **TIE (Tagged Image Extraction)**

A technology that extracts only the part of the image from a server needed for display on a screen. This is used to reduce network traffic when viewing an image.

#### **TIFF (Tagged Image File Format)**

A type of image file format, TIFF files can include colour or grayscale. The quality of the image is determined by its resolution or dpi. Especially useful for graphics that will be used in many applications or on more than one computer platform.

#### **Tiling**

The process of breaking down an image or page into sections for editing or printing purposes. See 'Panel' The process of dividing a very large-format image into smaller sections that can be output on the digital device.

#### **Tint**

Some percentage of a solid ink. Tints are created by using a screen to create the impression of a lighter colour when the ink is printed onto paper or another medium.

#### **Token Ring**

A type of network that has significant advantages over Ethernet. It enhances network performance in image-intensive environments.

#### **Tonal Resolution**

The number of bits per pixel used in the digital representation of an image. The intensity and colour of each pixel in the image are represented by an integer value or set of integer values.

#### **Tone Curves**

See Gamma curves. A representation of the tonal range of an image showing the progress from black to white. Some image editors allow these to be adjusted for very fine tuning of the image.

#### **Toner**

A coloured chemical used to print onto various materials on non-impact printers, such as electrostatics.

#### **Topcoat**

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

#### **Tracking**

The adjustment of the overall spacing between all text characters in a word or words.

**Transfer Rate**

The rate at which data can be transferred, usually expressed as Kilobits per second (Kbps) or bytes per second (Bps).

**Transform**

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

**Translucent**

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

**Transmission Densitometer**

An instrument that measures the amount of light that is transmitted through film from a measured light source.

**Transmittance**

The fraction of the light that passes through an object.

**Transparency, Museum Quality**

High-quality reproduction requires copy transparencies made by photographers experienced in art reproduction. Lighting is very important in terms of evenness, colour, and lack of any specular highlights. Transparencies should either be 4"x5" or 8"x10". The pre-press process tries to create a print that looks like the transparency, not the original, so the transparency should reflect the original as accurately as possible.

**Transparent**

Adjective to describe a material which transmits light without diffusion or scattering.

**Trapping**

An overlap between abutting colours/elements. Traditionally done by using chokes and spreads, but graphics software gives users the ability to do trapping for type and objects.

**TWAIN**

An industry-standard for scanners and software. Using a TWAIN-compliant scanner with a TWAIN-compliant program, you can initiate a scan from within the program.

**Tweening**

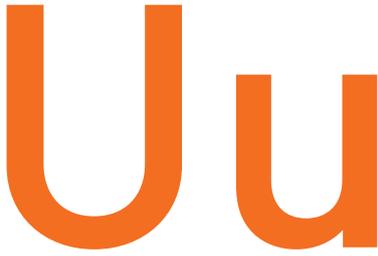
Placing between or interpolating the area between beziers or pixels.

**Two-Way Markings**

A marking with clear adhesive that can be viewed on the first surface or through the adhesive.

**Typeface**

The style and design of a particular alphabet.



#### **UV Curable Ink**

Inks that become fixed/set by exposure to a U.V. light source.

#### **U.V. Resistant**

Combats degradation by ultraviolet light; i.e. maintains original characteristics longer than non-U.V. resistant materials.

#### **UCR (Under Colour Removal)**

The removal of cyan, magenta and yellow from neutral colour areas (primarily shadow tones) and their replacement with black.

#### **UGR**

Undercolour Gray Removal.

#### **Ultraviolet Light (U.V.)**

Wavelengths of light outside the visible spectrum. Found in sunlight and causes colour fading.

#### **Underwriter's Laboratories (U.L.)**

A non-profit corporation operating in the public interest, endeavoring to maintain safety standards in electrical equipment and appliances. Licensed use of its label requires close adherence to their specifications.

#### **Unsharp Mask**

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

#### **Unstack**

To separate one or more pages from a stack and place them as individual items on the PaperPort software's Desktop.

#### **UnZip**

To decompress a file (usually text) using PKUNZIP or WinZip, two popular programs.

#### **Upgrade**

To improve some aspect of a computer system. Upgrades include the newest versions of software applications, computer models or peripheral devices. Usually, upgrades are denoted by a version number.

#### **USM**

Unsharp Masking Value. A measure from white to black, the higher the value, the darker the image.

#### **UV Inks**

Inks that contain pigments or other methods to resist UV fade from direct sunlight and other UV light sources.

#### **UV resistance**

The resistance to fading under direct sunlight and other UV light sources.



#### Value

Indicates the degree of lightness or darkness of a colour in relation to a neutral gray scale. The scale of value ranges from 0 for pure black to 10 for pure white.

#### Vaporware

A term referring to 'Not-Yet-Released' software.

#### Vector

A term given to a mathematically calculated graphic drawing, specified as a colour, start and end point, and applied to line segments, type and tints. An image plotted by lines on an X-Y axis. This image is different from a bitmap, which is composed of bits.

#### Vector Image

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

#### Versatec

Company that pioneered production of large electrostatic plotters in the 1980s, later sold to Xerox (See also Electrostatic).

#### Vignette

A transition from one colour or intensity to another.

#### Vinyl

Film from resins made of vinyl monomers.

#### Vinyl Die-Cut

Letters and graphics that are cut from pressure-sensitive, vinyl sheet using steel-rule dies.

#### Vinyl Ink

An ink designed for use on vinyl films.

#### Virtual

Having the 'appearance' of existence as opposed to actual reality, i.e. 3-D form.

#### Virtual Memory

A system of managing RAM and disk space so that a computer appears to have more memory than it actually does. Data is moved back and forth between the system memory and disk.

#### Virtual Reality

Interactive digitally created graphics (realities). Simulates realism to users in application areas ranging from scientific visualization and visual simulation to high-definition design and digital film production.

#### Virus

An malicious implant put into software that is intended to make devices behave irrationally, and can cause failures of systems such as data or memory loss.

#### Viscometer

An instrument to measure the viscosity (thickness) of a liquid.

#### Viscosity

The term used to describe the degree of fluidity of a liquid.

#### Visible Light

The portion of the electromagnetic spectrum that the human eye can see.



#### **WAN (Wide Area Network)**

A type of network used to link several LANs through gateways and bridges.

#### **Wash**

A term meaning to affect colour or tint by adding saturation or chroma.

#### **Weatherability**

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

#### **Weed**

To remove from the backing sheet (liner) the portion of the sheet or letters of cut material that will not be used; usually performed with pressure-sensitive vinyl. For direct copy, the background is weeded out, and for reverse copy the copy is weeded out.

#### **White**

The result of combining the additive primary colours (Red, Green and Blue).

#### **White Balance**

The balancing of colour components to create pure white when scanning a white object.

#### **WMF (Windows Metafile Format)**

Graphics format from Windows and used for some operating-system graphics, among other items. Generally considered inadequate for output of colour graphics.

#### **Working Files**

Files that have been used to generate a graphic file such as an EPS file. Software applications such as Macromedia™ FreeHand®, Adobe® Illustrator®, and QuarkXPress™ can all generate EPS files. The editable application file is called the working file.

#### **Workstation**

A microcomputer attached to a LAN and used to perform user tasks.

#### **WORM (Write-Once Read Many Times)**

A storage device that uses a medium that once written to can not be written over. Photo CD is an example.

#### **Write**

The act of creating, sending or transferring data to an output or storage device.

#### **WWW (World Wide Web)**

A hypertext-based, multimedia distribution system on the Internet. Sometimes abbreviated as W3.

#### **WYSIWYG (What You See Is What You Get)**

A monitor configured to represent the images displayed in a manner consistent with the desired printed result. Pronounced 'wizzy-wig.'



**X-Rite**

Manufacturer of densitometers and colour control systems for desktop publishing and graphic design.

Yy

**Yellow**

A subtractive primary colour for colour printing. It is made up of equal parts of red and green projected light.

# Zz

## Zip

To compress a file (usually text) using PKZIP or WinZIP, two popular programs. Commonly used to reduce the size of a file to speed up transmission over the Internet or an on-line service.

## Zip™ Drive

Removable storage device employing a small disk similar in design to a floppy disk, but offering significantly more storage space (approximately 100 - 250MB) and speed.

## Zoom

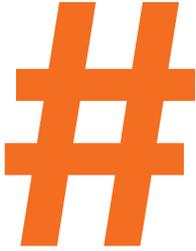
Making the image or image part become larger (zooming in) or smaller (zooming out) as it appears on the monitor.

## Zoom In

To make a page larger on the screen so you can see more detail.

## Zoom Out

To make a page smaller on the screen so you can have a broader view of the page.



#### **10 Base-T**

Ethernet Local Area Network wiring standard that uses two pairs or unshielded twisted-pair copper wire. It has a bandwidth of 10 megabits per second (Mbps).

#### **100 Base-T**

Ethernet LAN wiring standard that operates at 100 Mbps.

#### **1000 Base-T**

Ethernet LAN wiring standard that operates at 1000 Mbps

#### **16 Base**

The 2048 x 3072 pixels image scanned and stored on a Photo CD, and suitable for digital-imaging and desktop-publishing applications.

#### **24-bit Colour**

Digital colour model that uses eight bits each for the three additive colours red, green, and blue.

#### **32 Bit Colour**

Digital image format that incorporates 256 shades in 8-bits for each of three colour channels (ROB) and includes a mask (alpha) channel with a possible 256 levels of opacity.

#### **56K Line**

Type of telephone circuit on copper wire that uses 56 Kbps of capacity for data or voice traffic and 8 Kbps for signaling.

#### **64 Base**

The maximum resolution image file that is available on Pro Photo CD disks. This 4000 x 6000 pixel file produces a 72 MB colour image.

#### **64K Line**

Type of telephone circuit on copper wire that uses all 64 Kbps of capacity for data or voice traffic.



277 Parramatta Road Leichhardt NSW 2040  
PO Box 337 Westgate NSW 2048  
T 02 9568 6855 F 02 8585 1100 E [sales@look.com.au](mailto:sales@look.com.au)  
[www.look.com.au](http://www.look.com.au)