

ENERGY STAR Copier Buying Guide

Buying a copier that meets ENERGY STAR requirements can result in significant energy and paper savings for businesses. This copier buying guide will help you determine the type of copier and copier features that will meet your business needs and enable you to save on energy and paper costs. Key savings mechanisms include:

- **Choosing the right size copier.** Purchasing a copier that can't manage your paper loads will result in increased wear and tear and a short product life, and force you to replace it sooner, while purchasing one that is far too large for your needs is a waste of financial and energy resources. Determining your actual usage and building in a cushion for growth is one of the most important aspects of choosing a copier.
- **Sleep mode and automatic shut off.** Features that automatically place the machine in a reduced power state after a specified period of inactivity can result in significant energy savings.
- **Automatic double-sided copies/duplexing.** Copiers that can produce images on both sides of the paper by flipping the paper inside the machine (i.e., without a person needing to manually manipulate the paper) make it easier to produce double-sided copies, which cuts down on paper use.

These and other features that reduce energy and paper use will be discussed in the buying guide.

Consider the Copier Types

Analog copiers: Traditional analog machines are reliable and often cheaper than digital models. However, analog copiers lack the advanced features offered by digital copiers. For instance, analog copiers cannot be connected to a network and documents are scanned and copied one page at a time.¹

Digital and digital multifunction copiers: Digital copiers provide extra functionalities and are typically faster and easier to use than analog copiers. Digital copiers allow businesses to store documents electronically and can connect to in-office networks.² This type of copier produces less noise, has fewer moving parts, and produces cleaner images than analog copiers. All in one digital multifunction (printer, fax, scanner, and copier) devices are a popular choice for businesses with extensive and varying document needs.

Digital color copiers: Digital color copiers offer all of the functions of a black and white copier, with the added benefit of color copying. A color copier can cost 20% to 30% more than black and white copiers with similar speeds and volume ratings. Dedicated graphic color copiers cost more because they offer print-quality accuracy in color reproductions and faster processors.

Hybrid copiers: For most businesses that need some color printing and copying, but will primarily print and copy in black and white, a black and white/color copier hybrid makes the best choice. A hybrid enables the user to switch between B&W and color modes, saving money in color copier consumables such as paper, toner, developer, and fuser oil.

¹ Maryland Department of General Services. Undated.

² Startup Nation. 2013.

Consider Your Primary Copier Needs

The primary factors to consider when choosing a copier are: monthly volume, copy speed, color copying needs, memory, and ease of use. For low-volume needs (less than 700 copies per month) a small office copier could work. However, business-grade copiers provide more advanced features and service guarantees while performing at higher volumes and speeds.

How many copies do you plan to make each month?

Why is this important? Manufacturers designate recommended maximum monthly volumes for each copier model and exceeding these recommendations may void the warranty, reduce life expectancy, and increase maintenance costs.³ The energy efficiency benefits of purchasing an ENERGY STAR certified copier, both in terms of cost savings and resource reduction, would be negated by having to purchase a replacement copier due to over-usage. It's important to note that recommended maximum copy volume figures provided by the manufacturer may be inflated.⁴

How to determine your usage needs. If you are replacing a copier, you can determine your actual usage by looking at the counter on your current machine. The counter is typically found under the platen glass. Alternatively, you can estimate your current copy and print usage through your monthly paper consumption or by reviewing copy shop receipts. A general rule of thumb is to increase your figure by 30% to 50% if you plan to use your copier as a network printer and to add at least 15% to account for future growth.

How fast does the copier need to be to meet your demands?

Copier speed, the number of letter-size pages that can be produced in one minute when running at full speed, is measured in copies per minute (cpm), images per minute (ipm), pages per minute (ppm), or outputs per minute (opm). More complex copying jobs (e.g., two-sided copies, larger paper sizes, and sorting/finishing) will take longer. Copier speeds within the 20 to 50 cpm range will meet the needs of most offices. Consider your usage levels during a typical month and whether usage is consistent throughout the month or if the heaviest volume occurs during a smaller period (i.e., the first or last week of the month). If the majority of copies are made in the final week of the month, make sure your unit can handle the necessary volume during that week.⁵ If you expect to make a lot of single copies, ask about first-copy speed, the number of seconds it takes for a copier to produce the first copy.

Do you need color copying?

Though more expensive than black and white copiers⁶, a color copier may be worth the extra investment if the bulk of color copying required for your business makes it more cost-efficient to purchase a color copier than to outsource your color needs.

There are several options for color printing techniques: CMYK, RGB, and "business color". RGB produces the highest quality and highest resolution copies, while "business color" is the least exact and a common choice for most businesses. While RGB can match a print color exactly to a pantone, "business color" approximates a color to match the originals.⁷

³ Infinity Office Equipment. 2007.

⁴ Maryland Department of General Services. Undated.

⁵ Maryland Department of General Services. Undated.

⁶ Startup Nation. 2013.

⁷ Startup Nation. 2013.

In addition to the higher up-front cost associated with color copiers, the consumables (e.g., paper, color toner, developer, and fuser oil) for color copiers are often more expensive than those used by black and white copiers.

How intuitive is the copier to use?

A key consideration should be the experience of those that will be using the machine. Is one machine more intuitive than another? Is the display panel clear and easy to use? Is there a help feature? Is it easy or difficult to reload the paper tray, troubleshoot a paper jam, or replace the toner cartridge?⁸ These are more subjective issues, but they can be worth consideration if it means that people will adapt more quickly to the new machine.

Decide How Much Copier Memory You Need

Copiers use RAM to support features such as “scan once/print many” and automatic page numbering. Copiers come with anywhere from 4 MB to 256 MB and higher of RAM, and additional memory can be installed at any time. Make sure your chosen copier accepts generic, industry-standard memory such as SIMMs so that you can easily purchase more memory if the need arises. The amount of memory your company will need depends mostly on the volume of documents, the length and quality of your documents (in pages and image quality) and the storage format. Consider the level to which you will use scanning or storage functions.⁹

A “scan once/print many” feature enables copiers to produce copies of a previously copied document without re-feeding the originals, by holding a scanned image of each original page in memory. The amount of memory impacts the number of pages that can be duplicated with this “scan once/print many” feature. With less memory, the copier may be unable to complete larger copy jobs in one run. Advanced image editing features often require the purchase of extra memory. If you intend to use image editing features or frequently produce complex documents of over 20 pages, you should get at least 16 MB of copier memory.

Separate memory is also required for the fax and printer capabilities of a multifunction machine.

Evaluate Copier Features

Sleep mode: A reduced power state that the copier automatically enters after a period of inactivity or at a user-set time of day (after business hours). ENERGY STAR required defaults for entering sleep mode range from 30 to 60 minutes of inactivity. An important consideration when purchasing a copier is the amount of time it takes a copier to achieve an active state from sleep mode.

Automatic shut-off: Similar to a sleep mode, an automatic shut-off option saves energy and decreases wear on a copier. However, an automatic shut-off option powers the machine off completely rather than putting it in a reduced power state. This saves more energy, but the machine will take longer to achieve an active state if the automatic shut-off has been activated and an unexpected copying need arises.

Automatic duplexing: Automatic duplexing enables a copier to produce images on both sides of an output sheet without manual manipulation in an intermediate step. Automatic duplexing makes it easier

⁸ Maryland Department of General Services. Undated.

⁹ Startup Nation. 2013.

for users to produce double-sided/duplex copies and reduce the amount of paper used. ENERGY STAR requirements include automatic duplexing as part of the base product in color copiers with product speeds of 35 images per minute (ipm) or more and in black and white (or monochrome) copiers with speeds of 37 ipm or more.

Stackless duplexing: Digital copiers with enough memory can support stackless duplexing by storing each side of the original page in memory, then printing both sides of the copy. Thus, you can create double-sided/duplex copies without needing to re-scan the originals.

Automatic document feeder (ADF): An ADF allows you to copy multi-page documents without having to individually place each sheet under the cover. A stack of up to 50 pages can be placed into the feeder and the ADF automatically pulls each page through. A re-circulating automatic document feeder (RADF) flips pages inside the machine for simplified double-sided/duplex copying.

Sorting: Digital copiers can sort copied sets electronically by placing copies in a single tray at a right angle or offset from each other

Finishing: Finishers are a great feature if you frequently copy many sets of multi-page documents. Finisher types include the automatic stapler, three-hole punches, and saddle stitch binding. Finishers are often optional and cost extra.

Paper supplies: The number of paper sources (paper trays, cassettes, pedestals, or paper feed units) is important if you want to be able to copy onto different paper stocks (e.g., letterhead, legal size stock) without reloading the machine. Paper sources typically hold a minimum of 50 to 100 sheets, and the largest-capacity units can hold up to 3,000 sheets.

Paper trays: Typically, copiers include at least one fixed-size and a couple of adjustable-size paper trays. Heavy paper stock often jams if loaded into a standard paper tray, so most copiers include a bypass tray that provides a straight paper path for heavy paper and labels. It's a good rule of thumb to purchase a copier that has at least one paper tray large enough to hold the amount of paper needed for average daily use. To determine this you can divide your monthly average by 20, multiply by 1.5 to provide a buffer, and round up to the nearest multiple of 500 (a ream is 500 pages).¹⁰

Automatic sizing: An automatic sizing function enables the copier to note the dimensions of your original document and adjust itself using preset reduction/enlargement settings, enabling the user to make copies of a different size than the original.

Basic image editing: Basic editing abilities on many machines include automatically numbering pages, adding watermarks such as "confidential" or "copy," adding a date stamp while they make duplicates, rotating scanned images to match the orientation of the available paper supply or combining images in creative ways, such as copying a two-sided original onto one page, or reducing and combining originals to put two, four, or eight pages onto one page.

Security: Many digital models allow for code-enabled copying that provides a level of security, prevents unauthorized usage, and allows you to analyze current usage patterns by department. Some machines can also hold documents in memory until the correct code is entered, which prevents confidential documents from being left in the output tray.

¹⁰ Maryland Department of General Services. Undated.

References

Ebay. Undated. Copier Buying Guide. Accessed August 6, 2013. Available on the Internet at: <http://www.ebay.com/gds/Copier-Buying-Guide/69/g.html>.

Startup Nation. 2013. Office Copiers: A Startup Nation Buyer's Guide. Accessed August 6, 2013. Available on the Internet at: <http://www.startupnation.com/buyersguides/137/9381/5/1/machine-speed-volume.htm>.

Infinity Office Equipment. 2007. Copier Buyers Guide. Accessed August 6, 2013. Available on the Internet at: <http://infinityoe.com/files/Copier%20Buyers%20Guide.pdf>.

Maryland Department of General Services. Undated. A Guide to Purchasing Copiers. Accessed August 6, 2013. Available on the Internet at: <http://www.dllr.state.md.us/procurement/purchasingcopiers.pdf>.