SCANNERS: GOOD, BETTER, BEST

INTRODUCTION

Digitization has become an integral activity for many cultural heritage institutions. For these institutions, a good scanner is essential. Scanners enable cultural institutions to convert text and photographs into a digital format that can be shared and, in the case of text, made searchable.

This document compares different scanner options for standard flatbed scanners and oversized scanners. There is also a short list of specialty scanners, specifically a microfilm scanner and a book scanner. The specific products mentioned in this document are either currently used by Washington State University or another cultural institution, with the possible exception of the Epson Perfection V550.

The *good*, *better*, *best* judgments are based on the assumption that one will want to produce a high volume of high quality scans. The scanners listed here simply provide benchmarks on what one might look for when purchasing scanners in different price ranges. Just because our mid-range flatbed scanner does not digitize negatives, for example, it does not mean that there aren't similarly priced scanners that do.

GENERAL NOTE ON SELECTING SCANNERS

Before comparing scanners, it is crucial to evaluate the needs of your institution. For example, here at Washington State University, we love our oversized scanner, but this purchase would have made little sense if we had not planned to mass digitize over 100 years of the University's newspaper, in addition to dozens of maps for the Early Washington Maps collection. When weighing digitization options, we also advise exploring options for contracting out digitization work in addition to reviewing scanners for in house use. It often makes financial sense to farm out scanning if the digitization of a particular format is not going to be an activity performed on a routine basis.

NEGATIVE SCANNERS

It is important to note that negative scanners are not included in this document. While some flatbed scanners are capable of digitizing negatives, it may be worthwhile to consider other options if you plan to digitize a large quantity of negatives or exclusively negatives.

BASIC CRITERIA

Basic criteria when evaluating flatbed scanners include: scanning quality, durability, the size of the scanning surface, and the compatibility between the scanner's software and the platform in which you will process the scans.

- **Image quality and durability:** At the end of this document, we provide a comparison between the Epson Expression 10000 XL, which is a high quality industry standard scanner, and a Canon LiDE 110, which is an extremely inexpensive scanner. The scans provided were created from a 3x5 print at 770 dots per inch (dpi), which was the standard for resolution for many years. While the results from this one photo are comparable, the consistency and durability of the high end Epson scanners make them a good option for many cultural heritage institutions.
- **Scanning surface:** While it is possible to digitally piece together an oversized document rendered in two or more scans, this process is tedious, to say the least. For this reason, surface is a limiting factor in determining what can and can't be feasibly scanned on a regular basis.
- **Compatibility:** In terms of capability, we've received one comment that the Fujitsu fi-7260 doesn't work well with Macs when trying to import through Adobe Photoshop. In this case, the combination of scanner, operating system, and photo editing software could create workflow problems.

GOOD

Model and brand	Reported OS compatibility	Additional features	Price
Epson Perfection V550	- Windows XP, 7, and 8 - Macintosh 10.5x and 10.8x	- Negative scanning capability - Scan area: 8.5 x 11	About $200
	Comments: This happens to be a low-end scanner that received a good review from PC Magazine. Scanners of this class are not ideal for scanning large volumes of materials		

BETTER

Model and brand	Reported OS compatibility	Additional features	Price
Fujitsu Fi-6770, Fi-7260.	• Windows 2000/XP, Vista, Windows 7 • Windows Server 2003/2003 R2, Server 2008/2008 R2	• High volume, high quality, Auto-document Feeder from 80 pages to 200 • Scan area: 8.5 x 14	**Fi-6770** $5000-$6000 **Fi-7260** $1200-$1500
	Comments: These scanners are useful for scanning unbound non-unique multipage documents. We have used these to scan books that of which we own multiple copies. In these cases, the bindings are removed for quick conversion.		

BEST

Model and brand	Reported OS compatibility	Additional features	Price
Epson Expression 11000XL	• Windows XP – 7 • Macintosh 10.5.x, 10.6.x, 10.7.x, 10.8.x	• Negative scanning capability and tray	$2000-3000
	Comments: These scanners are pricey but are definitely worth it in the long run – very long lasting with fantastic quality. We use this model almost exclusively for small format flatbed photos and documents.		
HP Scanjet N9120	• Windows Vista, 7, and 8	• High volume, high quality. • Auto-document feeder • Scan area: 11 x 17	$2750-$5000
	Comments: This scanner can scan larger documents than the Fujitsu at a higher color bit-depth.		

LARGE FORMAT SCANNERS

As mentioned in the discussion on flatbed scanners, size of the scanning area limits your ability to digitize oversize materials. Large format scanners cost well over $10,000. One of the more commonly used large format scanners used in libraries is the Bookeye 4, which costs several thousand dollars. Roll scanners can be slightly less expensive, but do not allow for the possibility of digitizing books, which is a secondary advantage of large format overhead scanners like the Bookeye. We've included a copy stand for the low-end option, which is a camera mount that will allow you to photograph a reasonably large document with a camera that can be mounted into a standard tripod.

GOOD

Model and brand	Reported compatibility	Additional features	Price
Kaiser RS 1 copy stand	• Cameras using a 1/4" or 3/8" screw will fit onto this stand. • Maximum suggested camera weight: 4 kg (8.8 lbs).	• 39" tall stand that can support a document that is at most 17.7"x19.7" • Can improvise support to photograph a larger document, depending upon the surface the stand is placed on	About $600
	Copy stands run anywhere from $60 to well over $1000, with this one costing about $600. Some copy stands come with lights and vary in terms of height and strength. It is often a good idea to photograph a document prior to encapsulation, as light and the flash will create glare.		

BETTER

Model and brand	Reported compatibility	Additional features	Price
DLSG Bookeye 4 V1 A	• Windows, • Linux, • Mac OS, • Unix	• 33.5 x 25 inch scan bed with book cradle • High speed and heavy duty scanning • Ability to print to any network device.	$27,950
	Comments: This scanner purports to have some unique capabilities, with one being the ability to take a full scan into onboard memory. This should speed up the overall scan time significantly.		

BEST

Model and brand	Reported compatibility	Additional features	Price
Zeutschel OS14000 AO	This scanner usually comes bundled with a computer to ensure compatibility of the Omniscan software. This allows you to run and capture images from the Zeutschel.	• Overhead scanner with self-opening glass plate and book cradle, • Maximum physical size of scanned object (33.1 in x 46.8)	About $125,000
	Comments: This scanner allows us to scan items that are we could not otherwise scan due to size or condition.		

SPECIALTY SCANNERS

Listed below are two specialty scanners, one which can be useful for scanning bound volumes and another for scanning microfilm and microfiche.

BOOK SCANNER

Model and brand	Reported compatibility	Additional features	Price
Atiz BookDrive Pro	• Windows XP (SP 3), Vista and 7	• 16.5 x 24.2 scan bed with book cradle • Can add on an auto capture switch that allows for high volume scanning of bound or similarly sized materials, like issues from the same newspaper run	$14,000 + price of 2 cameras
	Comments: One of the most intriguing features is the ability to upgrade optics easily (since it uses two high end cameras for image capture those cameras can be upgraded without purchasing an entire separate setup).		

MICROFORM SCANNER

Model and brand	Reported compatibility	Additional features	Price
e-ImageData Scanpro 2000	Windows 7 and 8 (64 and 32 bit)	• Microform types: Fiche, Jackets, Ultra Fiche, Micro Books and Opaques (optional), Aperture Cards, 35mm and 16mm roll film, and Cartridge(M) roll film • AUTO-Scan feature that allows for auto scanning of entire rolls of microfilm.	$10,000
	Comments: We primarily use this for scanning published materials for document delivery but are considering projects that incorporate archival use as the scanner is a perfect candidate for large scale microfilm conversion projects (without getting into the more cost prohibitive production scanners).		

COMPARISON BETWEEN EPSON 10000 AND CANON LIDE 110

The images below are two scans of the same image made at 770 dpi and a 48 color bit-depth. The images have been cropped so they fit on the page. While the resolution is comparable, the color varies. The Epson scan is closer to the original photograph, while the Canon image is faded. From just this one image, it's impossible to tell if the results will be similar with other images.

Epson 10000XL

Canon LiDE 110