



CodeFacts

AIDC (Automated Identification and Data Collection) Technical & Informational Documents
Written for Everyone

A Primer on the Use of Bar Code Technology in Libraries

A bar code symbol is simply an array of bars and spaces, which represent a group of numbers and/or letters. These characters, in turn, typically represent something tangible: a product code, serial number, employee ID, etc. In the case of library applications, the symbol is typically one-of-a-kind and printed on a label, which is applied to library material. This single symbol (data) is related back to a record in a database, which contains all of information related to that book or item, such as title, author, etc. Multiple copies of the same title all get labels with different symbols on them as each title is tracked as a single, unique entity.

Once a bar code symbol is applied to a book and the symbol is linked to a database record, the book will circulate through the automated system by scanning the bar code symbol into the computer software's circulation function. Scanning bar codes is much faster than keying in the data, and infinitely more accurate.

Bar Code Symbols

There are two avenues available to libraries regarding the bar code labeling of library materials. The first, and most popular, is by adopting the North American de facto library standard of a 14-digit label, using the Codabar symbology. (A symbology is much like a language of bar codes.) This 14-digit symbol is broken down in the following way:

Digit #	Description
1	Either '2' or '3'. 2 signifies a patron label, 3 a title label
2	Four-digit library identifier
5-13	Consecutive number
14	Check digit

The main reason for this standard, to our understanding, was to allow the circulation of library materials from one library system to another (i.e., interlibrary loans) by keeping a

consistent method of identifying the materials. This, in practice, may only apply to larger library systems, such as big municipal and university libraries.

The other avenue is to not adopt the de facto standard and to simply identify library materials with five, six or seven digit Code 39 or Code 128 symbology labels. Keep in mind that the name of the library is always printed on the top of the bar code label to identify the owner and that a six-digit number allows for a million different symbol permutations!

Our labels can be produced using one of three print technology methods: photocomposition, laser and thermal transfer. Each has its distinct advantages.

Photocomposition Labels

This technology, essentially, is photographically based and produces bar code symbols of the highest quality (with the highest per-label price). The label material is archival photographic paper and the face of the label can be protected with a polymer (lacquer-like) finish or mylar overlamine. The former is recommended as the latter labels tend to delaminate in library applications. These labels, in many situations, can be applied and left "bare" on the outside of the library materials and adhere and remain scannable for many years.

Laser Labels

The bar codes that we produce on a laser printer are made at a resolution of 600 dots-per-inch on 8½ X 11 inch sheets. The face of the label is unprotected, requiring mylar tape to be placed over the label to allow it to survive through normal wear and tear.

Thermal Transfer Labels

The quality of the bar codes themselves are of better quality than laser and approaching the quality of the photocomposed labels. The attributes of the text on the label, however, are not quite as good as the other print methods, mostly due to thermal transfer print technology using a square dot to form the text images.

Thermal transfer labels are available with either a paper substrate, or polyester. The latter are substantially more durable and longer lasting and typically eliminate any need to add an extra overlamine to protect the labels.

Bar Code Readers

Our bar code readers are very simple to connect and configure for attachment to most any computer system in the IBM-PC family, Macintosh or "dumb" terminals. All of AURORA's bar code readers are guaranteed to operate flawlessly with any library software sold in North America. (Don't ever be swayed into thinking someone's library system is

"proprietary" as far as bar code scanning goes, with one rare exception that we've found—it's just not true.)

Essentially, two components make up the bar code reading system: a decoder and an input device. The decoder forms the "brains" of the system and the input device is the "eyes." Input devices can take the form of a contact scanning device, typically referred to as a wand (pen) or they can be of the non-contact variety and use a CCD (charge coupled device), imager, or laser to scan the bar codes. Decoders are really just a small, ubiquitous box that contains a lot of chips, circuits and magic. Most systems sold these days have the decoder circuitry integrated into the scanner.

The wand (often erroneously referred to as a light pen, which is a completely different device) has been a popular reader in libraries, mostly because of its relatively low cost. It does, however, typically present more scanning problems than the other systems. There is definitely a developed "knack" to using a wand, a knack that some folks find difficult to master!

The CCD scanner is becoming very popular in libraries, as its cost has gone down in recent years. To use a CCD scanner, all one has to do is place the reading head over the bar code symbol and press a button (trigger) on the handle of the scanner. The simple analogy is that the CCD scanner "vacuums" up the bar code! Some CCDs are "triggerless", that is that they automatically scan with no triggering required.

Laser and imager scanners offer the greatest ease of use, but come at the highest expense. They are definitely the most versatile of all the available bar code scanners. They can be operated in hand-held mode by simply aiming an emitted beam of light at the bar code symbol from about six inches away and pulling the scanner's trigger. Alternately, they can be placed in a hands-free countertop stand and operated automatically simply by placing an item beneath the cradled scanner. The versatility of being able to easily move from hand-held to hands-free mode allows for the easy scanning of borrowed library materials through a circulation desk, or the en masse scanning of returned books from a wheeled cart beside the scanning station, gives the ultimate in flexibility in a library situation.

Summation

Effectively, like most things in life, when it comes to bar code labels and scanners, you get what you pay for. That is why, recognizing that many libraries are under extremely tight budget restrictions, we provide a range of products in many price ranges. If you can't seem to get a handle on just what makes, say, an imager scanner so much better than a wand, just give us a call. We'll arrange to loan you a system for a few days so that you can try it out and judge for yourselves just what is the most cost-effective solution in your situation.

Just contact our library scanning specialist at 1.800.689.7696, ext. 28 if you need any more information or wish to place an order.