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Top 5 Considerations when aligning your school's ID badging requirements with the right printer

In an effort to both ensure the security and safety of students and faculty as well as continuously improve the overall efficiency of their ID badging programs, today's K-12 schools and community colleges are hard-pressed to carefully evaluate multiple ID card printing options and weigh various models and feature sets against their own unique needs and priorities to determine a best-fit solution.

Based on direct customer feedback, the majority of today's learning institutions have five major priorities they must consistently manage and take into consideration when evaluating:

1. Security and safety
2. Speed and efficiency
3. ID card durability and longevity
4. Print quality
5. Cost

Now couple that with the broad spectrum of printer offerings and their various features and configurations—and you can see how complex and seemingly overwhelming the evaluation process can become. With so many variables to consider, how do you determine the right solution for your institution?

To simplify this process and aid you in selecting the ideal solution for your campus, this paper will examine the aforementioned top five criteria that today's discerning learning institutions employ when evaluating an ID card printing solution.

1. SECURITY AND SAFETY

School security has never been more top of mind than it is now. A steady rise in violence both in and out of the classroom has school administrators and staff, board members and families across the nation searching for answers. As such, the ID badge is no longer a mere commodity but a true security asset that at its very core, is now designed specifically to reduce threats and mitigate risk in the event that a crisis should arise. More and more, schools are requiring those in regular attendance to wear their badge at all times during the day. ID badges are no longer hidden in the bottom of a student backpack or faculty briefcase but instead are on display as a readily visual form of identification.

Beyond a simple photo ID, many of today's badges also employ access control technology. Combined, these elements provide a simple yet effective way to keep your school safe as they afford a means for knowing who is in the building at all times and the ability to verify their identity.

Another security consideration of today's forward-thinking schools is protection against fraudulent credentials. An ID that is printed on a plain white plastic card (no matter how detailed that card text may be) offers no protection against counterfeiting. To protect against this risk, today's educational institutions are evolving their badge programs to incorporate Visual Security Elements (VSEs) that can be applied to their cards and IDs. Such VSEs not only make school IDs easily verifiable as genuine, they enhance a card's protection against would-be counterfeiters.

Today's ID card printers offer a variety of security options from the inclusion of watermarks and UV printing to the application of standard or custom holographic films and overlaminates. Depending on your specific security needs, badging program priorities and/or program limitations, each of the following options will have both advantages and disadvantages worthy of consideration.

WATERMARKS

Several printer models offer the ability to alter or manipulate the overlay panel of ID cards to provide a stock or customizable watermark. For many, it is a very cost-effective way to add a visual security element to your cards and increase security without having to make investments in additional hardware. However, one drawback to manipulating the protective overlay panel is that with high usage, the watermark and printed imagery can wear off more quickly than visually similar security elements that can be achieved with lamination.

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UV PRINTING

Ultraviolet (UV) printing is a covert security feature available with select printer models. Color ribbons that include a fluorescent panel allow you to print grayscale text or images that are only visible under specific frequencies of ultraviolet light. UV printing makes counterfeiting extremely difficult while ensuring cards and IDs can be easily authenticated as genuine. Being that UV printing is a covert security element means that it cannot be seen with the naked eye. Therefore, UV printing as a means of card security is only effective for badging programs that incorporate a process for verifying UV-printed IDs under ultraviolet light.

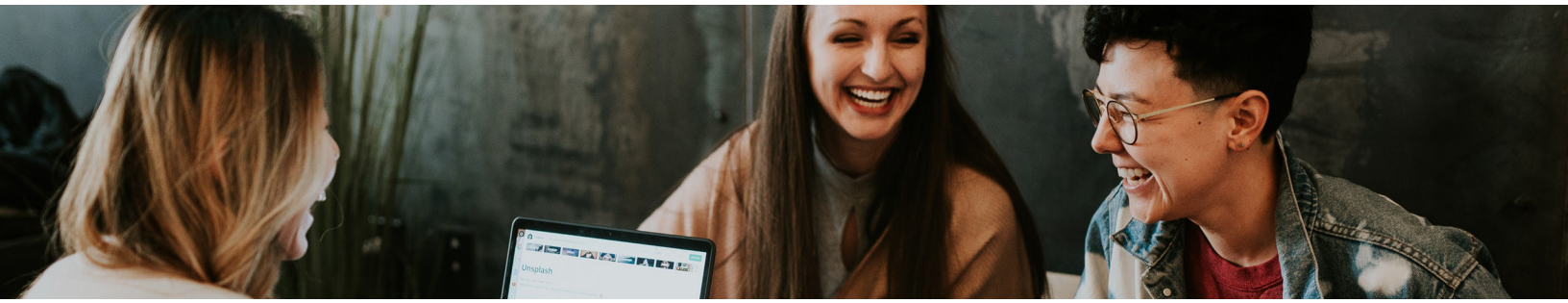
HOLOGRAPHIC FILM OR HOLOGRAPHIC LAMINATION

If your badging program incorporates a retransfer printer, holographic film application can be an excellent security option. Retransfer printing is a card printing method where text and images are first printed onto a retransfer film. Through heat and pressure, the film is then fused to the surface of the card. For added security, many employ a holographic film featuring either a standard or custom holographic design that is virtually impossible to duplicate. Cards produced by retransfer solutions are more secure and durable than other types of cards in that they are inherently tamper-evident. If a counterfeiter tries to peel apart the layers, the image essentially destroys itself. Retransfer-printed cards also resist wear and tear by putting a durable layer of retransfer film between the card image and the outside world.

Another option worthy of consideration is holographic lamination. Available for both retransfer and DTC (Direct-to-Card) card printers that include a lamination module, holographic lamination consists of applying a standard- or custom-designed holographic overlaminate patch to a printed card. Holographic overlaminates can include a variety of visual security elements—from microtext to Guilloche patterns and beyond—each of which can be incorporated into the design as a standalone element or in combination with one another. It should be noted however, that minimum order quantities required for custom designs tend to make this option more appropriate for schools that print cards in higher volumes.

2. SPEED AND EFFICIENCY

As most schools personalize and print ID badges in-house, administrators know all too well the pressure of having to issue a large number of credentials all at once and in a timely fashion. They realize that expedited card printing speeds have a direct impact on minimizing wait times and eliminating long lines for students and staff—especially those that are typically experienced at the beginning of the academic year. In short, the more quickly that IDs can be printed, the better.



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Given this need, many schools opt for DTC (Direct-to-Card) printers over retransfer printers as in most cases, they tend to be the fastest. Because DTC printers print images and text directly onto the surface of the cards, a full-color, single-side card can be printed in just 16 seconds resulting in up to 225 cards per hour. Conversely, because retransfer printers first print onto film and then fuse that film to the card surface during a slightly lengthier printing process, a full-color, single-side card can take up to 29 seconds per card, producing up to 124 cards per hour.

Along with speed, overall efficiency should also be taken into account. Of the printers you are evaluating, do they support high-capacity consumables that enable longer, uninterrupted runs—or only low-capacity consumables that require more frequent ribbon changes and subsequent printer downtime? Additionally, does the printer support a dual input feature that would allow you to print two different types of cards at once, such as those for students and staff? The option to add a dual input card hopper allows administrators to easily manage multiple card types at higher volumes without interruption as no manual invention is required to swap out card hoppers.

Dependent on your institution's overall card volume, ID types and issuance processes, the above considerations may be of utmost priority. However, in cases where issuance is staggered or print jobs are batched to service smaller, more manageable groups, speed and efficiency may not play as significant a role as other factors in your evaluation.

3. ID CARD DURABILITY AND LONGEVITY

Many institutions report that it can be a real challenge ensuring that student ID badges last throughout the entire school year given the elements and increased handling they may be subjected to within a rough-and-tumble K-12 school environment. Faculty members, on the other hand, tend to treat badges much kinder but unlike students, staff members need their credentials to last over a longer period of time, which in most cases, can equate to many years.

Durability and longevity become even more prominent considerations for multi-use cards that do more than serve as a visual ID card. Examples include cards that have been encoded to allow physical access to buildings or rooms, track time and attendance, serve as cashless payment for lunch and other food service programs, enable library and media resource checkout or even those that grant entry to school events. Considering how often multi-use cards may be handled during the course of any given day, it soon becomes evident that in order for that card to last, you're going to want to investigate options for making those cards more resilient.

So, how can you make your IDs more durable and increase their longevity? One option is to print your cards using a retransfer printer. As stated previously, because images and text are first printed onto the underside of retransfer film before it is adhered to the card, the film itself acts as a natural barrier to wear. As such, retransfer-printed badges can be up to 25% more durable than DTC-printed cards.

However, for the ultimate in durability, many institutions find that laminating their cards is their safest bet. Lamination entails adhering an overlaminate patch to the surface of your printed cards. Lamination patches not only protect card images,

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text and barcodes from abrasion but also from dye migration which can be a problem for DTC-printed cards. Dye migration occurs when all or part of the card imagery is transferred to the interior of a plastic badge holder or inside the vinyl window of a wallet.

What's more, overlaminates are available in many varieties. For example, UV-resistant overlaminates include added UV protection for reducing image fade caused by exposure to light. For multi-use cards that employ the use of magnetic stripes or contact chips, half-patch or square cut-out overlaminates can be applied—providing protection for images and text while simultaneously leaving barcodes and/or contact chips unencumbered. Varying levels of thickness are also available. Beyond their versatility and durability, overlaminates may also incorporate standard or custom holographic elements for added security.

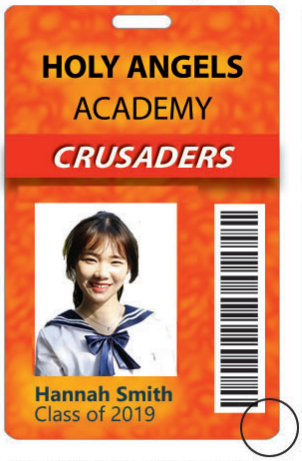
It should be noted however, that overlaminates will require that the printer you select is equipped with a lamination module and will also necessitate the purchase of additional laminate consumables—both of which will impact both your initial printer investment and your average cost-per-card over time.

4. PRINT QUALITY

Retransfer printing allows for more superior-quality finished cards as images are sharper and more vibrant—and text and barcodes are generally bolder and crisper than with DTC printing. Due to their underlying technology, retransfer printers are just simply inherently capable of printing more precisely defined images and text than Direct-to-Card printers. Additionally, the standard resolution for most DTC printers is 300 dpi (dots per inch), whereas 600 or greater dpi is more readily available on retransfer printer models.

In addition, cards that contain embedded electronics are not recommended for DTC printing. This is because the ridges formed by embedded electronics within the card can affect image quality. What's more, because the printhead comes in direct contact with the card surface, embedded electronics have the potential to damage the DTC printhead.

Reverse-transfer printing sample



Reverse-transfer printing provides vibrant photographic quality images and "over the edge" printing.

Direct-to-card printing sample

Direct-to-card printing provides less vibrant images and leaves an un-printed, white edge on cards.

On the other hand, retransfer printing is highly recommended for cards that contain embedded chips or antennae for best image quality results. Because the retransfer film is fused to the surface of proximity and/or smart cards, it naturally conforms to ridges and indentations formed by the embedded electronics inside the card. As a result, images and text printed on the card are smooth, crisp and do not suffer irregularities. More importantly, the printhead never comes in contact with the uneven card surfaces formed by underlying embedded electronics so there is virtually no potential for printhead damage.

Another consideration is the total print area. DTC printing provides what is referred to as "edge-to-edge" coverage where images and text can be printed just up to the edges of the card. Because there is a slight margin between the card's edge and the print ribbon, finished cards usually have a slight (but barely visible) blank white border at the outer edges.

Conversely, retransfer printers print over the entire card's surface. This is known as "over-the-edge" or "full bleed" coverage. With retransfer printing, there is no blank border at the outer edges of finished cards as this method provides complete card coverage.

From the above, it can be surmised that overall print quality will be impacted depending on whether you select a retransfer or DTC card printer. However, if image quality is not as high on your list of priorities as other factors such as speed and cost, a Direct-to-Card solution might be more ideal for your badging program.

5. COST

DTC printers are generally less expensive than retransfer printers. Consumables costs also tend to be lower as no additional film is required when printing directly to the card. You need only purchase print ribbons. Additionally, due to the increased speed and efficiency of DTC card printers, factoring in productivity gains may translate to tangible savings when you consider the TCO (Total Cost of Ownership) of your overall badging program.

However, retransfer-printed cards are inherently more durable and tend to resist wear better than DTC-printed cards—even without added lamination. So, while there may be added cost associated with your initial retransfer printer investment and ongoing consumables, your cards may last significantly longer—and you'll need to replace them far less often—which may lower your TCO in the long run.

ALIGNING PRINTER OPTIONS WITH YOUR PRIORITIES

To meet your school's ID badging program needs, ID Wholesaler offers its latest XE series of printers: the DTC1500XE and HDP5600XE. Affordable, reliable, and highly versatile, these solutions provide both built-in features and optional configurations that directly align with your school's ID program priorities.

DTC1500XE

Built on 20 years of proven direct-to-card printing expertise, the DTC1500XE card printer offers the convenience and lower cost of high-capacity consumables along with a comprehensive feature set—enabling organizations to routinely issue highly secure cards and IDs at a fraction of the cost.

- **Is card security keeping you up at night, but tight budgets limit your options?** Look no further than the DTC1500XE: Innovative, built-in and easy-to-implement security features such as resin scramble data protection

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and custom overlay watermark come standard on every unit—allowing you to increase card security and prevent counterfeiting without additional investments in holographic overlaminates.

- **Have a need for speed?** If so, the DTC1500XE might just be the card printer for you! With a print speed just a mere 16 seconds per card or up to 225 cards per hour—along with high-capacity ribbons that support efficient, uninterrupted issuance—long lines of students waiting outside your card office will be a thing of the past.
- **Desire durability?** Simply add the DTC1500XE's optional card lamination module and you're all set! Apply overlaminates to produce highly secure and durable cards.
- **Bolder is better.** For bolder text and barcodes, the DTC1500XE includes a unique resin threshold feature. Resin threshold allows for true "K-panel" printing when desired by allowing printer operators to manually set and adjust precisely when the resin K panel is utilized based on color concentration. As a result, text and barcodes are darker and more crisply defined.
- **Is cost your number one concern?** Feature-rich yet affordable, the DTC1500XE fits the bill for even the most budget-conscious institutions. Economically priced with support for low-cost, high-capacity, full and half-panel color ribbons, the DTC1500XE not only significantly lowers your cost-per-card—but reduces total cost of ownership. What's more, your overall printer investment is protected! The DTC1500XE includes:
    - Three-year printer warranty including three years of printer loaner support
    - Three-year printhead warranty

HDP5600XE

Only one card printer offers 5th generation retransfer technology for every need—from sharp and vibrant photo ID cards to multi-functional, high security applications—the HDP5600XE delivers on the promise of highly secure and durable card production, ultimate image quality and reliability.

- **Maximum security, minimum worry.** With its advanced retransfer technology, cards produced by the HDP5600XE are not only more secure but tamper evident. Because images and text are first printed onto the underside of retransfer film before being adhered to the card, duplication is virtually impossible as any attempt to remove the film will destroy it. For even greater security, you have the option of adding a standard or custom holographic design not only to retransfer films but to optional overlaminates. Beyond card security, optional hardware locks for card hoppers and consumables access prevent consumables theft and mitigate counterfeit risk.
- **When efficiency is essential.** An optional 200-card input hopper supports uninterrupted productivity as the frequency at which you'll need to manually reload blank cards is literally cut in half. An optional dual input card hopper enables the simultaneous management of two different ID types such as those for students versus those for faculty. Gone are the days of having to stop mid-production to swap out individual card hoppers to accommodate multiple card types.
- **Durability on demand.** Because the HDP5600XE employs retransfer technology, the retransfer film itself acts as a natural barrier to wear. As such, retransfer-printed badges can be up to 25% more durable than DTC-printed cards. What's more, optional lamination further enhances your ability to increase card durability and longevity with high-quality overlaminates.

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- **Precision print quality.** Innate to retransfer printing, finished credentials exhibit superior image and text quality when compared to DTC printing methods. Not only are colors more brilliant and images sharper, but with its optional, 600 dpi resin printing capabilities, you'll be able to precisely print small text and crisply defined barcodes like never before. When quality matters, count on the HDP5600XE for flawless, sharp looking cards that will bring your school logo to life and aid in visual ID verification.
- **When cost is a consideration.** Although more expensive than DTC card printers, the HDP5600XE is still one of the most economically priced reverse transfer printers on the market today and offers the most affordable 600 dpi solution available. Moreover, retransfer-printed cards are inherently more durable and tend to resist wear better than DTC-printed cards. So, depending on your specific needs, an additional investment in lamination hardware may not be necessary. What's more, your overall printer investment is protected! The HDP5600XE includes:
    - Three-year printer warranty including three years of printer loaner support
    - Printhead—Lifetime

BRINGING IT ALL TOGETHER

Depending on your school's ID badging program goals and priorities, one solution is sure to be a better fit over others. Use the table on the next page to find out how your most critical priorities align with the various available printer options to determine the solution that's right for you. Printer features are rated in order from least aligned with each priority to most aligned with each priority on the following scale: Good, Very Good, Great, and Best.

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PROGRAM PRIORITIES	DTC1500XE	DTC1500XE WITH LAMINATION	HDP5600XE	HDP5600XE WITH LAMINATION
Security and Safety	**Good** • Built-in Watermark and Resin Scramble	**Very Good** • Built-in Watermark and Resin Scramble • Holographic overlaminate options	**Great** • Tamper-evident film • UV printing • Holographic film options • Locks for hopper access	**Best** • Tamper-evident film • UV printing • Holographic film/ overlaminate options • Locks for hopper access
Speed and Efficiency	**Best** • Print speed of 16 seconds per card or up to 225 cards per hour • High-capacity ribbons that require less frequent replenishment	**Very Good** • Expedited print speeds over retransfer printing but lamination will add time to finished card-out speeds • High-capacity ribbons that require less frequent replenishment	**Great** • Print speed of 29 seconds per card or up to 124 cards per hour (YMCK with transfer) • 200-card input hopper option • Dual input card hopper option enables multiple card types (student versus staff)	**Good** • Print speed for YMCK with transfer and dual-sided lamination of 35 seconds per card or up to 102 cards per hour • 200-card input hopper option • Dual input card hopper option enables multiple card types (student versus staff)
ID Card Durability and Longevity	**Good** • YMCKO color ribbons include an overlay panel for color fade prevention	**Very Good** • YMCKO color ribbons include an overlay panel for color fade prevention • Optional lamination provides increased card durability and longevity	**Great** • Retransfer-printed badges can be up to 25% more durable than DTC-printed cards	**Best** • Retransfer-printed badges can be up to 25% more durable than DTC-printed cards • Optional lamination further enhances card durability and longevity
Print Quality	**Good** • Inclusive resin threshold generates sharper text and barcodes • Not recommended for technology cards with embedded chips or antennae	**Very Good** • Inclusive resin threshold generates sharper text and barcodes • Print quality is never compromised due to abrasion or dye migration • Not recommended for technology cards with embedded chips or antennae	**Great** • Superior image and text quality when compared to DTC1500XE • Optional 600 dpi resolution ensures sharp, precise printing of small text and barcodes • Recommended for use with technology cards: images and text printed on the card are smooth, crisp and do not suffer irregularities	**Best** • Superior image and text quality when compared to DTC1500XE • Optional 600 dpi resolution ensures sharp, precise printing of small text and barcodes • Recommended for use with technology cards: images and text printed on the card are smooth, crisp and do not suffer irregularities • Print quality is never compromised due to abrasion
Cost	**Best** • Economically priced with support for low-cost, high-capacity, full color ribbons • Supports half-panel ribbons which can reduce your cost per image	**Great** • Economically priced with support for low-cost, high-capacity, full color ribbons. • Supports half-panel ribbons which can reduce your cost per image • Even with added lamination, still slightly less expensive than other retransfer options	**Very Good** • One of the most economically priced reverse transfer printers on the market today and offers the most affordable 600 dpi solution available • Supports half-panel ribbons which can reduce your cost per image up to 30% • Retransfer-printed cards are inherently more durable	**Good** • One of the most economically priced reverse transfer printers on the market today and offers the most affordable 600 dpi solution available • Supports half-panel ribbons which can reduce your cost per image up to 30%

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In addition to the above attributes, the DTC1500XE and the HDP5600XE BOTH offer:

- Password-protected printer operation: Ensures only authorized personnel can access the printer and associated data.
- AES data encryption: Encrypts sensitive cardholder data when in transit between your PC and the card printer.
- Resin scramble data protection: Provides an additional layer of security by hiding any information printed with a resin panel—rendering panels on used ribbons unreadable.
- Optional dual-side printing: Print text and/or images on both sides of your cards.
- Optional single- or dual-side lamination: Apply durable and secure overlaminates to one or both sides of your cards with a convenient and easy-to-add lamination module.
- Optional standard or custom designed overlaminates: Significantly increase the security of your cards with standard or custom-designed holographic overlaminate patches.
- Optional Encoding Modules: Print and encode your cards in a single, seamless step. Encoder options include those for magnetic stripe, contact or contactless smart cards, HID® iCLASS® cards and proximity cards.
- Optional WiFi® accessory: Provides the flexibility and convenience to use your card printer anytime from anywhere. Ideal for schools that need a more mobile solution for enrollment and issuance, the Wi-Fi accessory allows you to remotely configure your wi-fi network and security settings, manage print jobs and execute card printing.
- Inclusive three-year warranty

MORE TO EXPLORE!

Learn more about the DTC1500XE:

FARGO® 70001 DTC1500XE Single-sided ID Card Printer

FARGO® 70002 DTC1500XE Dual-sided ID Card Printer

Learn more about the HDP5600XE:

FARGO® HDP5600XE Single-sided ID Card Printer – 300dpi

FARGO® HDP5600XE Dual-sided ID Card Printer – 300dpi

FARGO® HDP5600XE Single-sided ID Card Printer – 600dpi

FARGO® HDP5600XE Dual-sided ID Card Printer – 600dpi

CONCLUSION

To help ensure your ID card printing solution best aligns with your school's specific needs and priorities, trust ID Wholesaler. Since 2004, ID Wholesaler has partnered with hundreds of schools across the nation to significantly increase the security level and overall efficacy of school ID card programs—affordably and sustainably.

Let's discuss what's right for your school or school district today! Call us at (800) 321-4405 or email us at sales@idwholesaler.com. We know ID. It's what we do.

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