

Simple is better. Our world of thermal inkjet technology



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Quality assurance through serialized coding

When manufacturing pharmaceuticals, you want to be protected against counterfeiting while also being compliant with legal and industry-specific regulations.

Videojet helps you in realizing your requirements.

With over 3,500 associates across the globe, Videojet Technologies is a world leader in industrial coding and marking solutions. Our systems provide high-quality and flexible product codes, which help ensure clear traceability, durability and flexibility. As such, you are able to reliably protect your products against counterfeiting.

Our global Pharmaceutical Team supports your organization and supply chain partners with solutions, certifications and fast service. With decades of experience, we are well-versed in industry standards and global regulations, making us the right partner for your coding technology needs.

Advantages of thermal inkjet (TIJ) solutions

Our thermal inkjet solutions, which are marketed under the brand name Wolke, are ranked among the industrial TIJ printers with the highest resolution across the globe. This print quality is achieved through using TIJ cartridges, which have a maximum print resolution of 600 x 600 dpi.

As such, crisp, easily readable codes can be generated, which meet the code standards of GS1, securPharm, HIBCC, and ICCBBA. Regardless of whether alternative character fonts, logos, one-dimensional bar codes or 2D codes are to be used, thermal inkjet provides exactly the code required on your product.

What's more, our TIJ solutions impress customers with their level of cleanliness and minimal maintenance requirements. Since the cartridge houses the printhead and ink supply, there is no need for costly maintenance work often associated with replacing pumps, filters or hoses. Messy ink replacement is now a thing of the past, and there's no need to rinse the nozzles. Ultimately, the simple design also enables smooth operation, thanks to rapid cartridge replacement.

In fact, Videojet expertise does not stop at simply printing high-quality codes, the company also excels when it comes to integrating systems, saving print data and optimizing management. With this in mind, when installing and starting up our coding solutions, we offer process validation based on GAMP[®] 5 standards.

Yet another service offered by Videojet is testing of coding durability. Working alongside the PTS (Paper Technology Institute), we test the dry time, light fastness and water-resistance of the code on your folding boxes. In doing so, you ensure that the code is clearly legible throughout the entire service life of the product.

Follow in the footsteps of many other companies and rely on our decades of experience in the pharmaceutical industry.



Four models for individual requirements

- m600 advanced
- m600 touch
- m600 universal
- m600 oem

Simply flexible

Virtually any specification can be implemented – bar code, fonts, graphics and much more.





Tested code quality for your folding boxes



The Paper Technology Institute tests Videojet inks on your folding boxes.

Tested code quality — so you're always on the safe side!

Pharmaceutical products can be in circulation for several years. In order to enable traceability throughout the entire product life, the code needs to be clearly legible. Nevertheless, influences along the supply chain such as UV radiation or condensate may fade or blur the code.

In order to be able to specify the durability of your code, the PTS tests the light fastness and water-resistance of Videojet inks on the most frequently used collapsible boxes. At the end of the day, the quality of the code is only as good as the substrate used!

In addition, the Paper Technology Institute determines the drying times of the code by means of swab tests.

For regular tests, the PTS cooperates with the world's leading producers of pharmaceutical folding boxes. If your preferred cardboard packaging is not listed, the PTS and Videojet offer individual testing of your material.

Don't hesitate to contact our team if you need any further information.





Particularly in pharmaceutical cold chains, the coding is exposed to moisture. Codes with a low level of waterresistance are easily smeared and may be illegible.

Test criteria of the PTS

- Light fastness according to DIN EN ISO 105-B02
- Water-resistance according to ISO 18935
- Drying time





Depending on the type and duration of product shipment, code colors and cardboard boxes may be faded or turned yellow by UV radiation. Codes with low light fastness have a weaker contrast and can be illegible.

Process validation according to GAMP[®] 5

Process validation for quality from the very beginning

Videojet is well aware of the special requirements placed on manufacturing pharmaceuticals. With this in mind, when installing and starting up our coding solutions, we offer process validation based on GAMP[®] 5 standards.

In doing so, you help ensure that the code is clearly legible throughout the service life of the product.

Our validation model and experienced team offer help in the following areas:

- to reduce costs involved in achieving GAMP[®] 5 compliance
- to identify and eliminate risks and faults at an early stage
- to create an effective process for changes and configurations
- to ensure efficient machine operation and low-cost maintenance

Process validation is performed according to a procedure developed by Videojet, which is externally confirmed. If you have any deviating requirements, we will be glad to support you with customized solutions.

Don't hesitate to contact our team if you need any further information.

The following documents comprise the process validation according to GAMP[®] 5

Standard documents

- Quality Project Plan (QPP)
- Design Specification (DS)
- Installation Qualification (IQ)
- Operation Qualification (OQ)

Additional documents

- Risk Analysis (RA)
- Traceability Matrix (TM)
- Change Control (CC)

m600 advanced

Simply high-performance: the printing expert for complex product codes



Thanks to powerful processing hardware and interfaces, the m600 advanced can also be integrated into a fully automated process controller.



Reliable, clean, and fast

With advanced print technology, the m600 advanced offers crisp, high-resolution images, which are unalterable at high data processing speeds.

Other technical highlights

- Distributed control via PLC and host by using Ethernet-IP and TCP/IP
- All system states can be called in real-time
- Complete Track & Trace processes (serialization) through integration in higher-level 21 CFR Part 11 systems
- Secure, extremely fast processing of 20 individual data records per second



Technical data m600 advanced

HARDWARE

Warranty

5 years

Dimensions L/W/D

• 350/250/141.5mm

Weight

8kg

IP rating

• IP65

Display

• 640 x 240 pixels

Memory

- 48MB flash
- 128MB RAM
- 32-bit data bus
- Additional print processor

Print speed

• Up to 300m/min.

Resolution max.

• Max. 600 x 600 dpi

Connections

- Max. 4 printheads
- Encoder
- 24 V I/O connector
- 5 V I/O connector
- Ethernet, TCP/IP
- USB-B
- RS232

SOFTWARE

- 16 languages
- Free design of the print layout
- Logos
- Text (variable/fixed)
- Counter
- Spitting function
- Unlimited number of lines
- Bar codes: 2D DataMatrix, GS1/PPN/HIBC DataMatrix, QRcode
- XML format
- Automatic operator logout
- Ink parameter optimization
- Automatic print memory update
- Label creator software
- Ethernet Manager

Printhead dimensions

- The printheads are available in four different designs for integration into the respective systems. They differ in terms of length, depth, and cable outlet.
- The following dimensions apply for the blue standard printhead: Length: 115mm Depth: 110mm Width: 60mm
- (with stripper plate)
- Dimensions exclude cartridge and cable connections

Dimensions









m600 advanced

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m600 touch

Simply faster: high-speed optimization



m600 touch





Perfectly integrated in nearly any production environment, the m600 touch works at very high speed.

Technical advantages of the m600 high-speed class

- High-resolution print (up to 600 dpi) for smooth control with downstream image processing systems
- A wide range of bar codes, including DataMatrix and "Stacked" symbologies
- The m600 touch can be intuitively operated via its touchscreen with CLARiTY® interface
- The webserver functionality helps enable seamless and straightforward integration of the m600 touch into industrial processes
- No wear parts or replacement parts, except for inkjet cartridge change
- The exclusive quality assurance concept from Videojet ("Code Assurance") simplifies job selection and data entry

Print speed/print resolution

- Maximum speed: 300m/min.
- Maximum resolution: 600 x 600 dpi
- The max. print resolution is dependent on the print speed

Printing capabilities

- TrueType[®] character fonts
- Fixed and variable text fields
- Flexible date/time and shift code formats
- Auto best before date (BBD)
- Multiple graphics formats supported (up to max. print area)

Bar codes

• EAN 8, EAN 13, UPC-A/E, CODE 39, CODE 128, EAN/ GS1-128, GS1 DataBar (including 2D Composite), DataMatrix, QR, PDF417

Technical data m600 touch

Printheads

- Up to 4 printheads can be connected to the controller each with a print height of 12.7mm (individually or together in a group)
- The printheads can be distinguished from the advanced and oem models by the deviating electrical connecting data

User interface

- 8.4" TFT SVGA (800 x 600), full color LCD and touchscreen
- WYSIWYG print preview
- Complete onboard diagnostics
- Three levels of password protection or advanced configurable password protection
- Extensive language support (22 in total)

Data interfaces

 RS232, Ethernet, USB stick, text communication log, freely parameterizable I/Os (6 inputs, 4 outputs)



Controller dimensions

- Length 244mm
- Width 92mm
- Depth 170mm
- Dimensions without printhead, cable accessories and network connections
- Operating temperature range
- 5°C to 45°C

Power supply

• 100-240 VAC, 50/60 Hz

Controller weight

• Approx. 3.2kg

Printhead dimensions

- The printheads can be delivered in four different designs for integration into the systems in question. They differ in terms of length, depth, and cable outlet.
- The following dimensions apply for the blue standard printhead: Length:115mm
- Depth: 110mm
- Width: 60mm (with stripper plate)
- Dimensions exclude cartridge and cable connections



m600 touch

m600 universal

Simply versatile: clean, fast dry codes perfectly adhered to many substrates



*MEK-based inks are pure solvent inks, which adhere to virtually any surface and dry in no time at all.



Ground breaking print technology which connects high-resolution print with pure solvent inks and therefore facilitates ultrafast drying with superior adhesive properties.

High uptime

- New print array with each cartridge, helping ensure peak performance
- No wear parts or maintenance consumables; no calibration procedures
- Designed and tested for more than 99.9% uptime*
- Rugged, industrial design made to withstand challenging production environments

Integrated productivity

- The Cartridge Readiness System™ (CRS) helps prevent ink from drying in the printer nozzles during production stops. As such, clean, consistently high quality codes are consistently produced without operator intervention.
- Up to two printheads at a height of 12.7mm can be connected to the control unit. This enables simultaneous printing at two different positions.

Code Assurance

- The exclusive quality assurance concept from Videojet ("Code Assurance") simplifies job selection and data entry
- Rules and permissions which can be selected by the customer simplify text selection and reduce human error

Simple usability

- \bullet The m600 universal can be intuitively operated via its touchscreen with CLARiTY^{\odot} interface
- Innovative combination of thermal inkjet simplicity with industrial-grade ink performance for a range of substrates
- Quick and easy cartridge change (in 15 15 seconds or less)
- No time-consuming maintenance work
- Icon-based control with intuitive menu guidance for simple handling

*Results based on testing using the reliability growth curve method for in excess of 70,000 cumulative hours and 75 million prints. Individual results may vary.

Technical data

m600 universal

Dimensions





Line speed/resolution capability

Maximum line speed
240 x 240 dpi = 51m/min.
240 x 180 dpi = 68m/min.
240 x 120 dpi = 102m/min.
The print resolution is dependent on the line speed

Printing capabilities

- TrueType[®] character fonts
- Fixed and variable text fields
- Flexible date/time and shift code formats
- Automatic calculation of best before dates (BBD)
- Multiple graphic formats supported (up to maximum print area)

Print area

- Up to 2 independent 12.7mm high print areas
- Fields can be independently placed within the print area

Bar codes

• EAN 8, EAN 13, UPC-A/E, CODE 39, CODE 128, EAN/GS1-128, GS1 DataBar (incl. 2D Composite), DataMatrix, QR, PDF417

Display

- Color LCD and touchscreen, 8.4" TFT-SVGA (800 x 600)
- WYSIWYG print preview
- Three levels of password protection or advanced,
- configurable password protection
- Extensive language support (22 in total)

Controller dimensions

- 245.70mm wide / 142.90mm deep / 203.20mm high
- Dimensions without cable connections

Controller mounting

- 0 or 180 degree orientation
- Mounting yoke included

Printhead dimensions

- 194.60mm long / 120.80mm high / 122.60mm wide (with stripper plate)
- Dimensions exclude cartridge and cable connections

Printhead fastening

- Side or top orientation
- Directly to conveyance system or optional printhead stand

Industrially robust

- Control unit with display and connections: IP65 protection standard
- 304 stainless steel construction

Ink cartridge

• 42 milliliters nominal / drop size = 48 picoliters / 2 mm recommended distance

Temperature range

• 5 °C to 40 °C

Electrical requirements

• 100-240 VAC, 50/60 Hz

Weight of the controller

• Approx. 4.9kg

Data Interfaces

• RS232, Ethernet, USB memory stick support, Text Communications Protocols

m600 oem

Ease of integration: the benchmark for global Track & Trace applications



m600 oem





Intelligent in design and practical in build, the m600 oem delivers breakthrough integration versatility in packaging machine control cabinets combined with powerful track and trace capabilities.

The m600 oem offers complete compatibility with the known and trusted m600 advanced, allowing use of the same remote communication protocols, printheads, layout files, and accessories.

Ultimate flexibility when integration matters

The m600 oem controller is 60% smaller than comparable thermal inkjet printers. Boasting 18 different mounting versions, the m600 oem controller offers various options when it comes to space-saving integration in the packaging line control cabinet.

The option to connect up to six printheads, with any four running simultaneously, unlocks new possibilities for switching seamlessly between various marking locations without mechanical adjustments.

Printer operations and settings are managed exclusively via the packaging line input terminal. This provides a uniform input screen, which facilitates operating the packaging line and significantly reduces input errors at the same time. This saves time when it comes to training operators, increases operational safety, and reduces the variety of components needed on the packaging line.

The 3.5" m600 oem display is merely used for diagnostic purposes, without having to permit access to the controller.

Meet present and future serialization requirements

The Wolke m600 oem establishes the standard for a new generation of track and trace projects, featuring:

- Powerful new processing hardware and a formidable data buffer for serialized record management
- Validated Wolke remote commands and data handling protocols
- Unicode TrueType®fonts for global projects
- Innovative asynchronous communications practices

Advanced innovation drives productivity

- Dynamic Print Intensity[™] is a new function for optimizing ink consumption
- Perpetuo Print Mode™ extends production runs. Replenish ink without stopping the line.

Technical data

HARDWARE

Line speed/resolution capability

- Max. 300m/min.
- Max. resolution of 600x600 dpi
- Line speed dependent on selected print resolution

Display

• 3.5" resistive display; auto-rotates in any orientation

Memory

- 512MB
- Configurable variable data buffer

Data connectivity

• 5 V encoder, 24 V DC I/O connection, Ethernet, TCP/IP, FTP, USB-A

Controller dimensions

- L/W/D 220/200/80mm
- Without printheads and external connection cables

Printheads

- Connect up to 6 printheads, print with any 4 simultaneously
- Choice of 4 printhead designs for optimal integration in confined spaces
- Printheads identical to m600 advanced

Dimensions

Compact design and various mounting versions



Protection standard

• IP20 (controller)

Environmental conditions

- +5 °C to +45 °C
- Non-condensing humidity

Electrical requirements

• External 24 V DC power supply, 150 Watt

Approximate weight (controller)

• Approx. 2.2kg

SOFTWARE

Web server

• With integrated event logging

Linear bar codes

• EAN8, EAN13, UPC-A/E, CODE128, EAN128/GS1-128, GS1 Databar stacked/limited, 2/5i, Codabar, CODE39



The Wolke m600 oem requires up to 60% less space in the electrical cabinet than comparable thermal inkjet solutions..



2D codes

 Full suite of options, including DataMatrix, GS1/PPN/HIBC, QR code

Language options

• English, Arabic, Bulgarian, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simple Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish, Vietnamese

Wolke Label Creator™

 Supports TrueType®fonts
 Enables processing or conversion of existing m600 advanced labels

Unicode (UTF8)

• Print fully variable codes with non-Latin characters Examples: 구름; облако; €

<u>m600</u> oem

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Cartridges for thermal inkjet

For m600 advanced, touch, and oem





Cartridges

The interaction between original cartridges and standardized inkjet inks from Wolke helps ensure maximum quality. The broad range of inks impresses users with excellent contrast, a high level of light fastness and long de-cap times.

Wolke Premium Black

Premium Black is a fast-drying and highly reliable ink offering unrivaled high contrast prints. It was developed by Videojet and designed with optimum performance for Wolke thermal inkjet systems in mind. The long de-cap time helps ensure excellent writing following longer production line stoppages. The high degree of blackening also allows for very good code legibility. High contrast codes printed with Premium Black ink exhibit excellent light-fastness to stage WS 6 *.

Wolke Universal Black

Wolke Universal Black is a proven standard ink for thermal inkjet systems from Wolke. It comes into its own in the pharmaceutical, tobacco and food industries. It's combination of long de-cap times and short drying time is useful for printing on uncoated and painted cardboard and other paper substrates. Wolke Universal Black impresses customers with its high-quality print, even following long periods out of use.

Wolke Water-Resistant Black

This specialized formulation minimizes bleeding or smearing of ink when the packaging is exposed to moisture or condensation after printing. This solution is particularly useful for pharmaceutical cold chain applications.

Wolke Black Solvent

Black Solvent ink unlocks extraordinary new applications for thermal inkjet marking on many non-porous materials such as glossy cartons, blister foils, coated labels or soft plastics. Black Solvent offers all-new applications for Wolke on pharmaceutical materials beyond paperboard cartons. Available for m600 advanced, touch, and oem.

* WS 6 = very good according to blue wool scale Standard paper APCO II / II in accordance with DIN ISO 12040.



Many other inks are available.

Don't hesitate to contact our team if you need any further information.

Cartridges for thermal inkjet

Exclusively for the m600 universal



Revolutionary cartridge design

The cartridge patented by Videojet for the m600 universal has been developed for fast-dry, solvent-based inks and is suitable, for materials such as:

• Coated folding box surfaces

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- Foils/blister packs
- Plastics (HDPE, PET)

The advantages at a glance

- Consistent, high-contrast print quality even at high speeds
- Ultra-fast dry times
- Very good wipe and abrasion resistance
- Excellent writing behavior of cartridge in combination with the Cartridge Readiness System™ in m600 universal

We would be delighted to provide you with sample prints on your substrate and send them back along with a consumption and cost analysis.

The Cartridge Readiness System[™] (CRS) keeps your production in motion

Like it or not, the flow of product through your production and packaging line has numerous interruptions. In addition to planned breaks, Videojet research shows that the typical packaging line experiences ten interruptions in product flow per hour, with durations ranging anywhere from ten seconds to five minutes. The last thing you want to worry about is a printer not being fully ready when the line restarts. Nor do you want to intervene at the printhead to ensure high quality printing or to avoid unreadable codes.

The Wolke m600 universal eliminates these concerns by combining the patented cartridge with the automated Cartridge Readiness System[™] (CRS). Combining a high speed shutter mechanism, intelligent cartridge design, and smart software, this patent-pending CRS helps ensure the m600 universal is ready when you are. The result is the ability to use fast-drying solvent inks such as MEK and still achieve clean, repeatable codes time after time – regardless of the length of interruption.



The CRS closes the printhead after a period of time programmed by the user. A seal is then created, helping to prevent ink from drying in the nozzle array. If production continues, the Cartridge Readiness System slide opens automatically. The Wolke m600 universal is then able to create high-quality codes again without any intervention.





Printheads Simply brilliant: m600 printheads



High-quality print results are critical when it comes to traceable coding of collapsible boxes, labels, and other packaging.

m600 printheads were specially developed with robust, industrial use in mind.

Various designs guarantee straightforward integration into nearly any system. Depending on individual requirements and the print system, up to six printheads can be connected. These then work individually or as a group.

Alternatively, can be used for
a) m600 advanced and m600 oem
b) m600 touch (identical dimensions, but deviating electrical connection data)



Robust printhead of the m600 universal, suitable for daily wear and tear

- Anodized aluminum design
- Bolts right onto the conveyor or mounts on an adjacent stand
- Integrated product recognition for simple startup

m600 universal printhead



Accessories Simply extended



For you to perform on-site installations quickly and costeffectively, we recommend using exclusively developed original accessories which are specially tailored to your system.

Bracket kits for m600 printheads

Proven, robust bracket kits help enable fast and easy printhead mounting on the production line.



Parallelogram

A parallelogram can be used to compensate for the unevenness on the printed item or vibrations in the product flow. This helps ensure consistently optimum print results.



It can be started up, as required, from above or from the side.

Encoder

The encoder is used to measure the product speed and therefore adjust the print to this. Various measurement wheels as well as connection cables, extension cables, and other accessories are also available.



Advice on the range of accessories

We would be more than happy to provide you with details and options on accessories for the Wolke m600.

Signal lamps

Production also runs smoothly thanks to the LED signal lamps which can be seen from afar. They are designed based on the traffic light system and indicate faults, warnings, and alarm messages on the printer.

Additional accessories available

Software

Added value for the Wolke m600: the perfect software for all m600 models



Software for the m600 advanced and oem models

For simple creation and processing of layouts, professional layout software is already included.

The Label Creator offers the user maximum convenience when creating, processing and loading labels.

Even complex print labels can be easily, reliably, and quickly created and processed on the PC. The Drag and Drop function and simple integration of logos and images facilitate the design phase.

Both Unicode and TrueType[®] fonts are available in the Label Creator for the m600.

Transmitting and saving data and labels is simple and easy.

For secure file management, the m600 Ethernet Manager is offered for the m600 advanced, while the web server with integrated event logging is on hand for the m600oem.

The m600 Ethernet Manager provides secure file management with integrated remote control and monitoring function. m600 advanced print systems can be conveniently controlled via Ethernet from central points.

To enable unrivaled security for the m600, all printer operations and settings are managed exclusively via the host packaging line (HMI).

m600	advanced	oem
Basic Label Designer		
Label Creator	х	х
Ethernet Manager	х	
Webserver		х

Furthermore, the web interface provides simple and flexible set-up with four levels of user password protections and comprehensive logging, guarding printer access and supporting 21 CFR part 11 compliance.





Software for m600 touch and m600 universal

Both devices feature a large touchscreen with the CLARiTY® interface, which users of other CLARiTY-based printers from Videojet will be familiar with.

User interface designed to simplify operation

- Icon-based menus are easily navigated, providing simple prompts to find the function or setting you're looking for
- Fast responding, 8.4" touchscreen enables you to see key operating information at a glance
- Job files can be saved with meaningful names. A preview offers additional security when selecting the right job.
- An Ethernet TCP/IP port can be used for communication with upstream systems and provides the potential for automated job selection and data entry. The built-in web server provides a simple method to view the printer remotely.

Code Assurance

- The exclusive quality assurance concept from Videojet ("Code Assurance") simplifies job selection and data entry. As such, it is possible to quickly and efficiently position the right code at the right point on the right product – time and time again
- Create error-proofing rules even when generating the print job. Determine, for example, whether fields can be edited, which data types should be permitted and which data ranges are to be limited.
- Step-by-step guided data entry uses programmable prompts to walk the operator though creating and loading the print job
- The data entry screen reduces the operator options to a pre-defined selection. What's more, context-dependent input screens are offered, e. g., a calendar for the due date or a drop-down list for a country code.

Advice on the software range

We would be delighted to provide you with details and options on all aspects of software for the Wolke m600.

Peace of mind comes as standard

Videojet Technologies is a world leader in industrial coding and marking solutions with a dedicated global pharmaceutical team supporting organizations and supply chain partners with solutions, certifications and fast, reliable service. A product portfolio including thermal inkjet, laser marking, continuous inkjet and labeling provides consistent, high-quality serialization and traceability codes, helping the pharmaceutical and medical device industries safeguard their products against counterfeiting and protect consumer safety. With a wide range of technologies addressing virtually any application, Videojet is the expert in realizing the specific requirements of a wide range of healthcare applications.

With decades of knowledge, Videojet Technologies' expertise in industry standards and global regulations makes them the right partner for understanding complex coding needs. Videojet solutions code 10 billion products a day worldwide, playing a vital and responsible role in the world.

With over 3,500 associates serving 135 countries, Videojet has the capability to provide local service through global resources.



Call **800-843-3610** Email **info@videojet.com** or visit **www.videojet.com**

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