



Innovative Banknote Printing

Functional Design—Integrated Security



Giesecke & Devrient

Creating Confidence.



Combined Expertise in Security and Design

A leader in banknote printing, paper production, and currency automation: Giesecke & Devrient (G&D) drives innovation in banknote security technologies. Worldwide. With over 150 years' experience.

G&D is ringing in a new era in banknote printing with its BN2008 sample note. A product equipped with brand-new, highly sophisticated security features. These include optical variable, tactile, interactive, and hidden effects. When combined intelligently, they offer unprecedented protection against unauthorized reproduction. As well as easy identification by consumers and businesses.

G&D, a trail-blazer in integrated design, is also expanding the banknote's look. The new design is clear and allows even more intricate interplays of optical and tactile elements. At the same time, each security feature blends in harmoniously with the overall look.

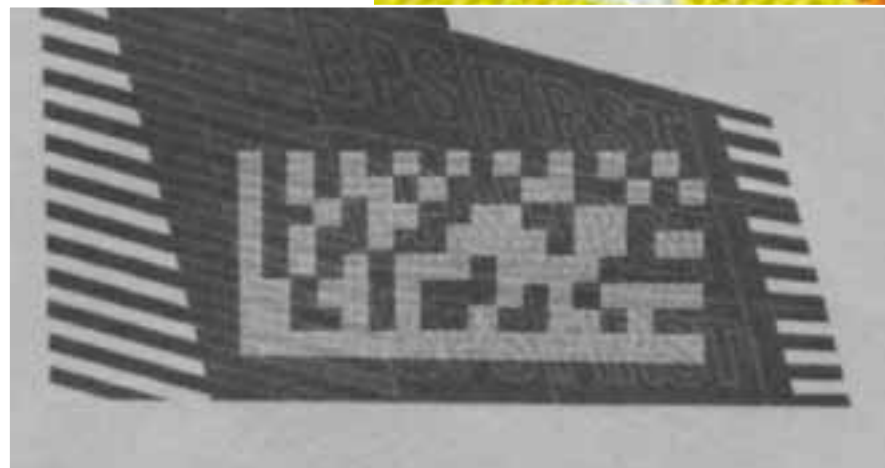
G&D's BN2008 sample note features King Ludwig II of Bavaria. As a patron of the arts and the sciences, he embodies the key characteristics of G&D banknote printing: art and technological innovation.



FIRST™



Top technology for the future: FIRST™ produces hidden codes on printed banknotes using lasers. Invisible to the naked eye, the codes can only be read with infrared light available on special machines. Unlike the traditional shablone technique used for infrared splits in intaglio printing, the **Fine Infra Red Split Technology** keeps the full range of intaglio inks. For total design freedom and outstanding security, thanks to its unique combination of innovative material properties and intelligent process engineering.



Clean and crisp in infrared light: hidden code in intaglio images, as a batch feature, or even in individual numbering





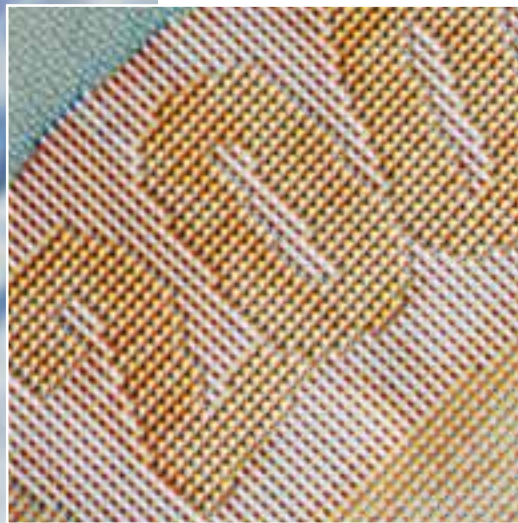
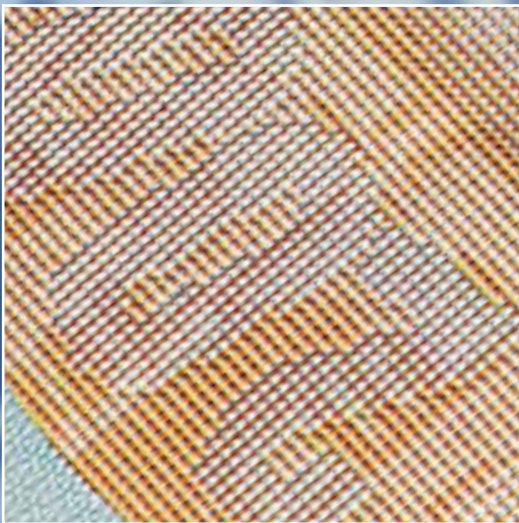




PEAK[®] pixel



A secure perspective: PEAK[®] pixel—the new **Printed Embossed Anticopy Key**—produces multicolored printed images from tiny dots (pixels). Tilting or turning the banknote reveals a second image that changes color depending on the viewing angle. With its visual image and multiple colors, this feature fits in perfectly with any design. Also, the bold embossing adds a tactile experience to the visual one.



A point that you can't miss: PEAK[®] pixel from above (left) and tilted—with image. The new security feature carries visible, tactile, and hidden information.

TWIN™



Keeps counterfeiters from making easy money —with the transparent TWIN™ see-through window (Transparent **W**indow). This reliably embedded foil is specially printed with utmost precision on both sides to display different images under direct lighting and back lighting. To do this, TWIN™ match uses the potential of simultaneous printing. Color photocopiers cannot reproduce the effect.



Direct view versus transmission:
The BN2008 sample note shows
an eight on the front side of the
window foil (left). Looking
through the foil reveals a swan.



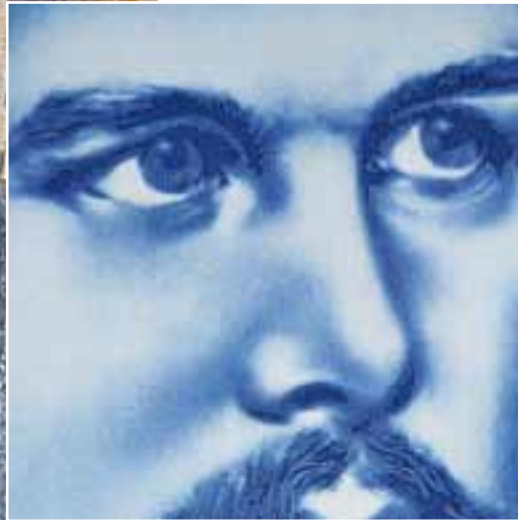




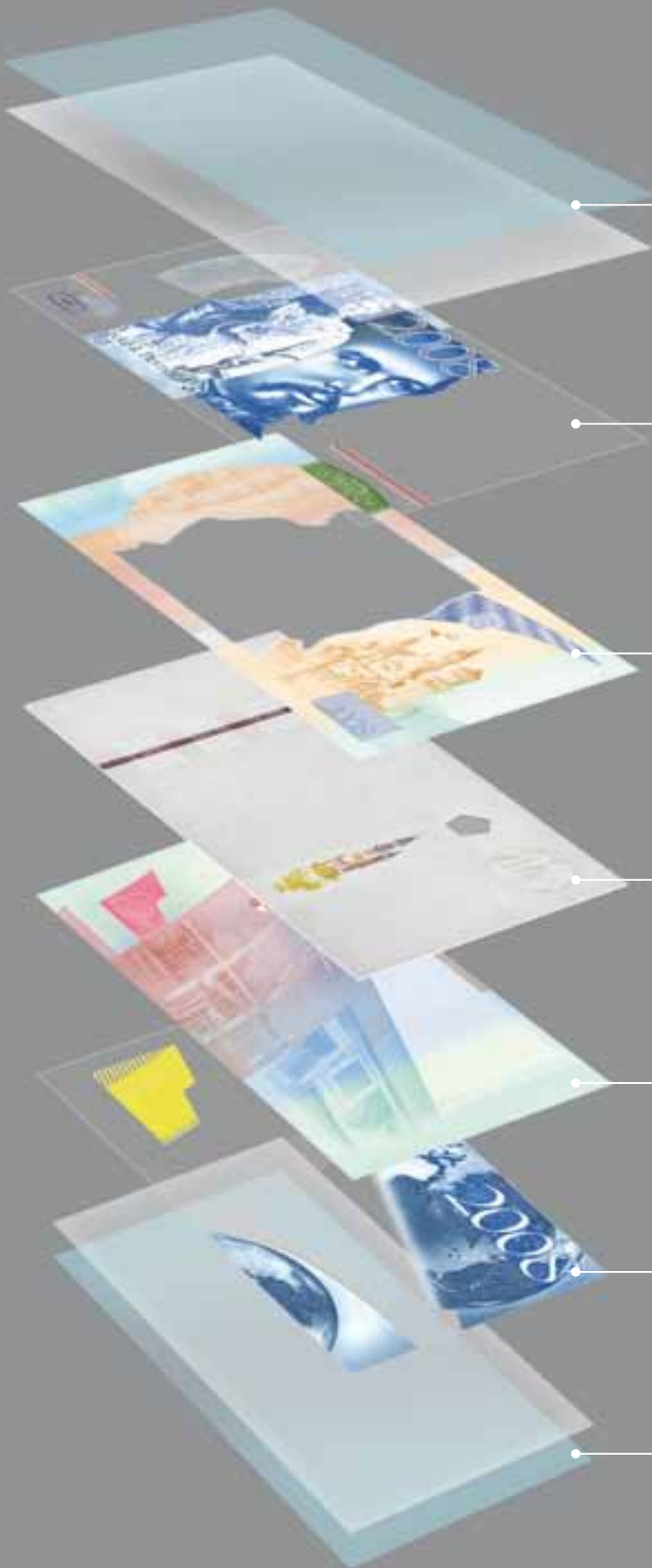
FIT[®] halftone



A milestone: G&D has realized intaglio printing in halftones for the first time ever. This produces an extraordinarily realistic 3D portrait with subtle color gradations. Additional tactile elements are provided by superimposed classic line intaglio. Offering better security and design, since the new look and feel can be combined in countless complex ways.



A closer look: intaglio printing in its traditional line form (left) and in halftones. Crisp contours, tactile areas, and gradual color changes come together beautifully.



Protecting the front: Two layers of varnish sustainably and consistently repel dirt.

Digital intaglio printing on the front side: Fine color gradations (halftones) fill out the line intaglio. Producing new security features such as the interactive FEEL® and PEAK® pixel with its realistic 3D effect. The lines and images fill the banknote format right to the very edge—for even better quality.

The front side background: Printed simultaneously with the reverse side, all printed images are placed exactly on and next to each other. The transparent window shows different information under direct lighting and back lighting.

The banknote paper: Equipped with multitoneal watermarks, highlight watermarks, and premium foil elements such as window coverings, security threads with color shift effects, and holograms.

The reverse side background: As with the front side background, the window functionality is highly advanced. As is an optically variable 3D image with varying information depending on light and viewing angle (PEAK®ink).

Digital intaglio printing on the reverse side: Traditional line intaglio combines with innovative halftone images. Not to mention the machine-readable FIRST® infrared feature—a clever blend of lasering and intaglio.

Protecting the reverse: Two layers of varnish sustainably and consistently repel dirt.



Tactile graphic elements



FEEL®—
Fast Energy Effective Link



Security thread with color
shift effect



LOOK®—
Laser Originated Optical Key



Multitone watermark

More Security, Layer for Layer

Manufacturing banknotes requires a wide range of experience and expertise—from paper production and printing technology to physics and chemistry to logistics and process engineering. G&D has embraced all these disciplines. In-depth knowledge and impeccable craftsmanship go into every single banknote. And that translates into more security, layer for layer.

Two further security features are FEEL® and LOOK®. The interactive **F**ast **E**nergy **E**ffective **L**ink reveals information when warmed under human touch or other sources. The **L**aser **O**ri-
nated **O**ptical **K**ey individually changes existing security features using lasers, producing new elements in the process. High-security solutions top off the G&D portfolio. We see each banknote as a unique solution, to be individually developed together with our customers.

A Masterpiece from a Trusted Name

Giesecke & Devrient presents the new BN2008 sample banknote—the result of leading-edge research, development, and design expertise. For you to see, touch and feel.

The front side is dedicated to the arts. It combines a portrait and a full figure depiction of King Ludwig II. To the right is Neuschwanstein Castle, a masterpiece of royal architecture. The reverse side explores themes from science and technology, symbolized in cutting-edge buildings, high-performance industrial plants, and global vision.





Reliable at Every Level: Authentication

Is it a real banknote or a fake? Only authentication on four levels will tell. The first level is for the general public. Users see, feel, and hear various security features—usually subconsciously. New G&D innovations such as the interactive FEEL® provide an additional incentive to look more closely.

Level two involves simple tools such as UV lamps and magnifying glasses. They are used selectively by grocery store or filling station personnel. At level three, automated systems check machine-readable features. Commercial banks, casinos, or security transport companies identify magnetic, electrically conductive, infrared, and luminescent features. Above that are high-level security features known only to central banks.



**Authentication Level 1:
General Public**

Checking with the unaided senses: seeing, feeling, and listening. Consciously and unconsciously.



**Authentication Level 2:
Locations with Large Cash
Turnovers (Retail)**

Checking with simple tools: UV lamp, magnifying glass, and STEP® Watcher for specific optical effects



**Authentication Level 3:
Mechanical Processing
(Commercial Banks)**

Checking machine-readable features with special sensors: magnetism, electrical conductivity, infrared properties, as well as luminescence



**Authentication Level 4:
Central Banks**

Checking high-level security features. Also includes magnetism, electrical conductivity, infrared properties, luminescence, and highly confidential, individually integrated features



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