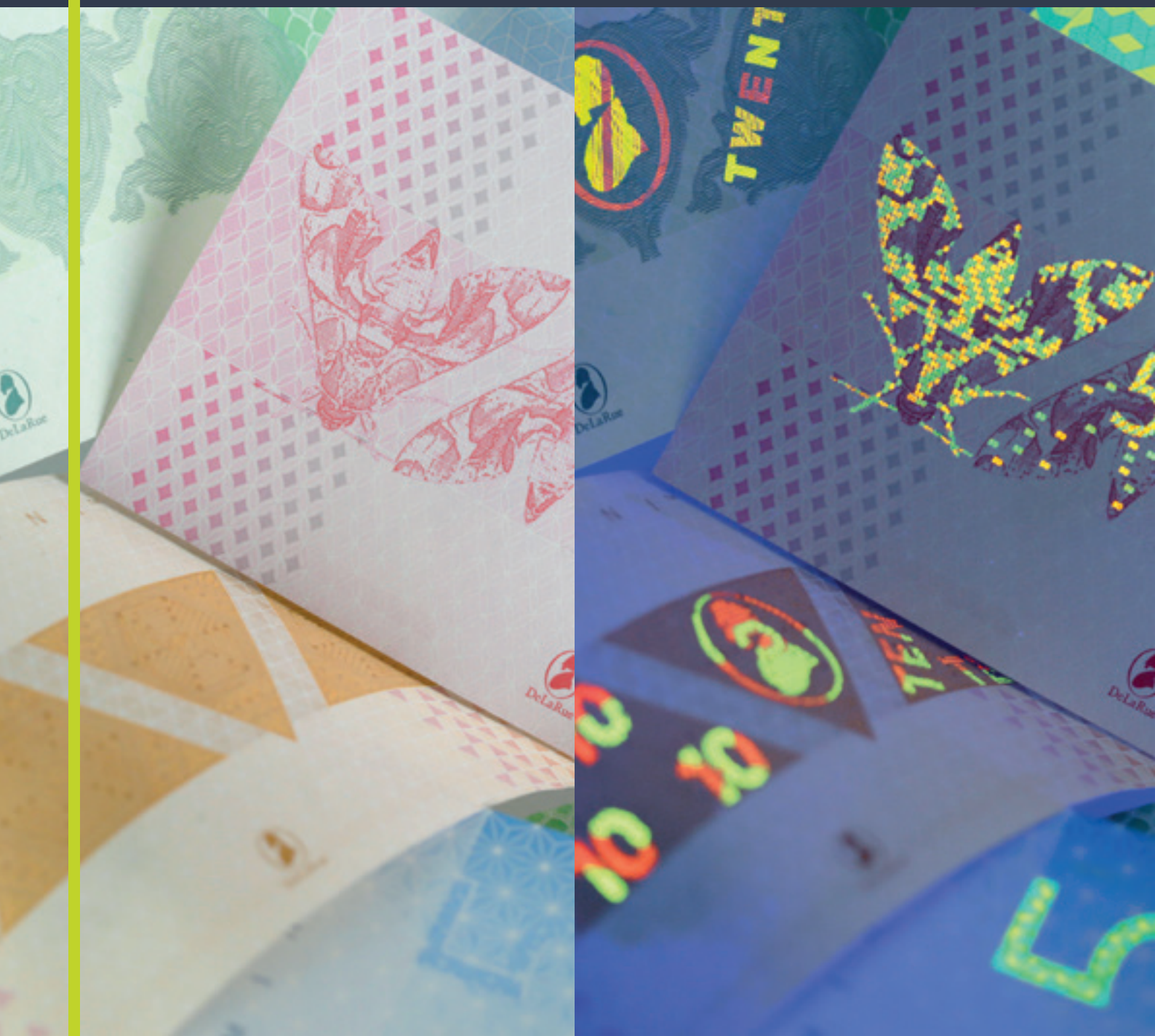




DeLaRue

Gemini™

Security through design and technology



Gemini™ - Strong, dependable security for cash handling professionals

Anti-counterfeiting security relies on the integration of many different kinds of protection into a banknote. Public recognition, machine readable and features for professional banknote handlers must all be incorporated, a process which requires the highest levels of design excellence and manufacturing capability.

Ultra violet (UV) security features are well understood and widely used by bank tellers and retailers throughout the world. UV light equipment is widely available and easy to use.

Gemini™ allows the meshing of an ultra-violet (UV) security feature with an aesthetically pleasing visual design. By using two UV fluorescent inks that appear as one colour under normal lighting conditions but as two different colours under UV illumination, Gemini™ creates a significant counterfeiting barrier. However, through careful design Gemini™ remains simple to use and authenticate.

Gemini™ is applied in the lithographic printing stages, allowing it to easily integrate with other security features in an overall banknote design.

One of the most widely used security features, Gemini™ has been chosen by over 45 central banks and integrated into more than 180 different denominations as at March 2017.

Bahamas \$10



Seychelles 50 Rupee



Macedonia 2000



Owl house note



Gemini™ - Enhanced protection through design

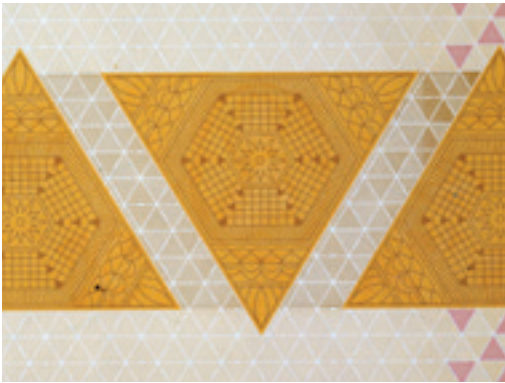
De La Rue's continuous improvement in both design and manufacturing capability means that Gemini™ can now be applied in new and engaging variants. These make it much harder for a counterfeiter to use common techniques to replicate the feature and allow an additional authentication step to be performed.

The accompanying four house notes showcase the four Gemini™ design variants that are now available. The front of each note demonstrates the ways that each variant can be constructed. The back of each note shows different methods of integrating the feature into a border, larger image or to indicate denominations

All three new design variants

- create significant complexity for anyone attempting to reproduce the effect
- introduce additional details that allow extra authentication checks to be made on the feature
- allow the feature to be more easily integrated into an overall banknote design.

Gemini™ Blocks - Normal Light



Gemini™ Blocks - Under UV



Gemini™ Lines - Normal Light



Gemini™ Lines - Under UV



Gemini™ Microtext - Normal Light



Gemini™ Microtext - Under UV



Gemini Design Variants

Gemini™ – the original design variant uses two UV visible inks that are precisely colour matched to appear as the same colour in normal lighting conditions. Under UV illumination the two inks fluoresce to give different colours, allowing a quick and appealing way to authenticate the banknote. The use of colour matched inks that fluoresce differently creates an additional barrier for a counterfeiter to overcome compared to standard UV features.



Gemini™ Blocks – in the first newly developed design variant, the Gemini™ inks are applied so that under UV illumination they reveal a pattern made up of geometric shapes rather than solid areas of colour. These patterns increase the complexity of the Gemini™ feature making it harder to reproduce with common counterfeiting techniques.

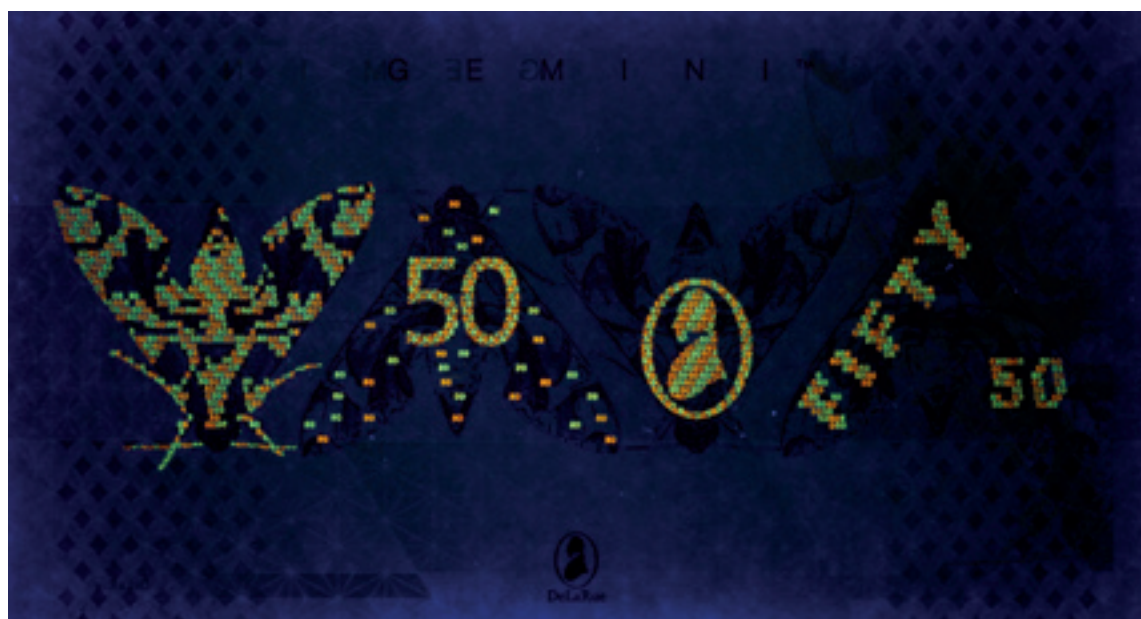


Gemini Design Variants

Gemini™ Lines – in the second design variant the Gemini™ image revealed by UV illumination is made up of interlocking lines rather than solid areas of colour. These line structures significantly increase the complexity of the feature making counterfeits easier to spot.












Gemini™ Microtext – the third design variant uses the Gemini™ inks to form patterns made of tiny alpha numeric text characters. The text can be customised to meet the requirements of an issuing authority and increase the complexity of the feature making it harder for effective counterfeits to be created.



Design Integration

Banknotes are complex secure documents and have many security features that need to be integrated together aesthetically and technically. Gemini™ has been developed to make this as easy as possible and to become an integral part of the design process. For maximum flexibility and visual impact the Gemini™ inks have been developed in a wide range of visual and UV fluorescent colour combinations.

| Visible Colour | | Fluorescent Colours | |
|----------------|---|---|-------------------|
| Purple |  |  | Red and green |
| Pink |  |  | Orange and green |
| Orange |  |  | Red and green |
| Blue |  |  | Yellow and green |
| Grey |  |  | Yellow and green |
| Yellow |  |  | Red and green |
| Brown |  |  | Orange and green |
| Red |  |  | Orange and yellow |
| Light green |  |  | Red and yellow |
| Dark green |  |  | Red and yellow |

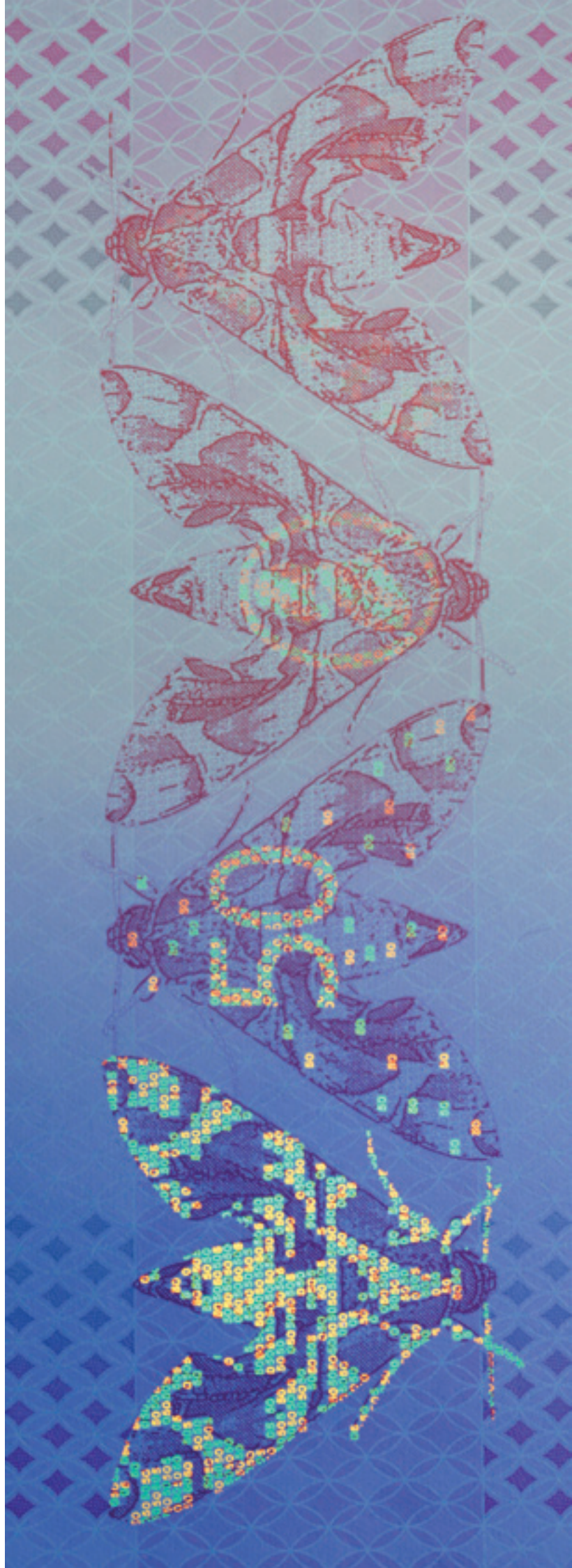
Colours shown are representative only and may differ in tone from those in printed notes. Gemini™ has been proven on both paper and polymer substrates. Gemini™ has been licensed for use by leading commercial banknote printers and some state print works.

Enhanced Security

- New advanced design variants
- Protection from two combined UV colours appearing visually as one

Proven and trusted

- Used in more than 45 currencies
- Integrated into over 180 denominations
- Uses existing and widely available UV light equipment
- Well understood method of authentication
- Used on both paper and polymer substrates





DeLaRue

De La Rue is a leading provider of sophisticated products and services that keep nations, their economies and their populations secure. At the forefront of cash supply chain management and security, De La Rue is a trusted partner of governments, central banks and commercial organisations around the globe. De La Rue is listed on the London Stock Exchange (LON: DLAR).

For further information please contact your regional account manager directly or send an e-mail to marketing@uk.delarue.com

De La Rue International Limited

De La Rue House
Jays Close
Viabes
Basingstoke
Hampshire, RG22 4BS
Registration No. 720284
www.delarue.com

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