

META®
Go Beyond.



Optimal Banknote Security

QUANTUM™ stripe

Optimal Banknote Security with Engaging and Intuitive Authentication Effects

QUANTUM™ stripe enables new dimensions of security and storytelling for banknotes. It combines multi-directional movement, 3D stereo depth, high resolution, and multiple colours to deliver unique visual effects that are easy to authenticate and difficult to replicate. It is backed by META's award-winning nano-optic display technology, KolourOptik®, that is exclusive to the banknote and secure document industry.

QUANTUM™ stripe provides a high level of public engagement while enhancing the overall theme of a banknote through a toolkit of engaging, highly customizable, and intuitive authentication effects.

Our pure plasmonic colour pixels, patterned on ultra-thin microstructures, create 'always on' effects that are unique, simple to understand, memorable and highly secure.

This ultra-thin, surface-applied form factor makes QUANTUM™ stripe compatible with all banknote substrates and production equipment, removing the risk of banknote distortion without requiring specialized application machinery or changes to existing processes.

Key Benefits



MEMORABLE VISUAL EFFECTS

QUANTUM™ stripe security features instantly draw attention and promote a memorable self-authentication experience.



DURABLE

Highly robust, formulated to meet or exceed industry standards. Exceptional best-in-class durability.



EASY AUTHENTICATION

Highly visible, easily triggered authentication across wide viewing angles and complex lighting conditions.



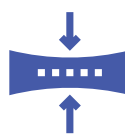
SUSTAINABLE SECURITY

Built on a single layer of embossed material, without inks or dyes, making it one of the greenest security features available.



FLEXIBLE PRODUCTION COMPATIBILITY

Ultra-thin, surface-applied, and compatible with existing banknote industry production processes, substrates, and application machinery.



75% THINNER THAN MICRO-LENS TECHNOLOGY

The inherent strength and integrity of nanoscale structures guarantee a highly durable feature with a thickness of under ten microns.

Customizable Effects

Give your banknotes a distinctive identity with the QUANTUM™ stripe. Effect, colours, shapes, movement, and depth can be customized to complement any design theme and tell your unique banknote design story.



GLIDE
Images at multiples layers of depth that move in opposite directions.



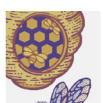
DRIFT
Simple patterns that move in a single direction.



REVEAL
Shapes that move in opposite directions to reveal and conceal an image.



MESH
Multi-layered patterns that move in all directions.



HIVE
Keyhole mesh effect, offering a 3D view of the synergy of the hive.



COUNTER
Counter with 3D, animated effect. Hexagons exhibit fast movement with glide effect.



BEE/FLOWERS/GRASS
Glide effect applied to flowers and hovering bee with 3D see-through, fluttering wings.

Sustainability

Metamaterials do more with less - using a fraction of the material of competing micro-lens solutions, there is no need for laminated layers of lens-arrays, focal spacers, and inks or dyes. Visual effects are produced from the single layer of embossed structures.

→ Reduce the quantity and variety of material for enhanced sustainable security.

→ Reduce the number of production variables while increasing durability and consistency.

→ Secure production facility powered by renewable hydroelectric energy.

→ Plasmonic metastructures require no dyes, inks, micro-lenses, or gratings.

Overt Security Features

- MULTIPLE 3D ELEMENTS ✓
- MULTIPLE COLOURS ✓
- OMNI-DIRECTIONAL MOVEMENT ✓
- OVERPRINTING ✓

Technical Specifications

APPLIED FOIL THICKNESS	< 10 µM
MAXIMUM RESOLUTION	25,400 PPI
COLOUR PALETTE	200+ COLOUR PALETTE
WIDTH	CUSTOMIZABLE, UP TO 25 MM

Covert Security Features

- MICROTEXT ✓
- NANOTEXT ✓
- NANO-IMAGERY ✓



Scan to view META's full portfolio of banknote security products



©2023 Meta Materials Inc. All rights reserved.
60 Highfield Park, Dartmouth, Nova Scotia B3A 4R9 Canada
+1.902.482.5729 | sales@metamaterial.com | metamaterial.com