

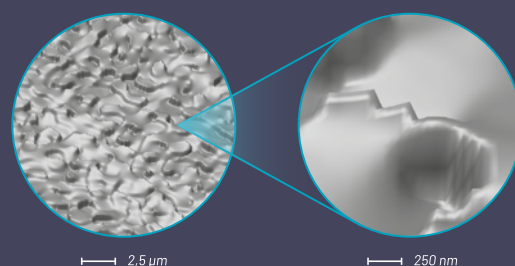
# Signature effects for IDs and passports



## nanoDOVID®

### High-security technology for identity documents

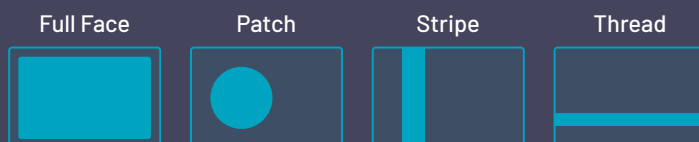
nanoDOVID® is an advanced diffractive optically variable image device (DOVID) based on nanostructures, offering the highest level of protection for IDs, banknotes, and documents against counterfeiting on a global scale.










nanoDOVID® provides multi-level authentication, including overt, covert, and forensic. It also allows for digital authentication using a smartphone.



nanoDOVID® can be applied in various formats, including full face, patch, stripe, and thread.



EFFECTS CATEGORIZATION	Category	Level	Effects	
	Higher	1	Pastel Bas-relief	
	Deeper		Deep Space	
			Deep Flop	
			Deep Rotation	
	Hidden	2	Ghost	
Smaller	3	Nanograf		
Robotic	4	Robotic ID		

# IDs and passports signature effects description

Higher

## Pastel Bas-relief

- 3D object as a sculpture
- Rising above the plane
- No haptic response (feels flat)
- Chromatic with pastel colors
- Visible under all lighting conditions



Color (for transparent areas)

White (for metallic areas)

Deeper

## Deep Space

### Color/White

- Wireframe (3D object outline)
- Hovering above or below the plane
- Different depth levels
- Tilt the card around the vertical and horizontal axis to observe the object

### Color

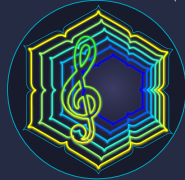
- 3D space appears when the card is tilted around the vertical axis
- Color changes when the card is tilted around the horizontal axis

### White

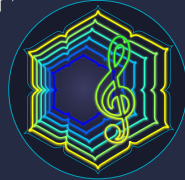
- 3D space appears when the card is tilted around the horizontal and vertical axis



single parallax



Left tilt



Right tilt

full parallax



Left tilt



Right tilt

## Deep Flop

### Color/White

- Flipping wireframes (3D object outlines)
- Hovering above or below the plane
- Different depth levels
- Two flipping objects interchange when the card is tilted around the horizontal axis

### Color

- 3D space appears when the card is tilted around the vertical axis
- Color changes when the card is tilted around the horizontal axis

### White

- 3D space appears when the card is tilted around the horizontal and vertical axis



Down tilt



Up tilt



Down tilt



Up tilt

## Deep Rotation

### Color/White

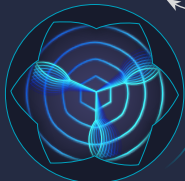
- Rotating wireframe object (object outline)
- Tilt the card around the vertical and horizontal axis to observe the object

### Color

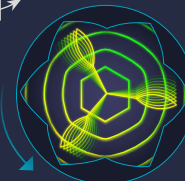
- Object rotates when the card is tilted around the vertical axis
- Color changes when the card is tilted around the horizontal axis

### White

- Object rotates when the card is tilted around the horizontal axis
- 3D space appears when the card is tilted around the horizontal and vertical axis



Left tilt



Right tilt



Down tilt



Up tilt

Hidden

## Ghost

- Objects visible when lit by red light or a smartphone torch from the right side
- 3D objects, letters, or symbols
- Hovering deep below the plane



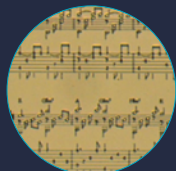
Smaller

## Nanograf

- Grayscale image at the nano or micro scale
- Bitmap structure with a resolution of 254,000 DPI
- Visible under a magnifying lens - contains finer details only visible with a forensic microscope



50  $\mu$ m



20  $\mu$ m



10  $\mu$ m



80  $\mu$ m



80  $\mu$ m

Robotic

## Robotic ID

- Machine-readable effect
- Recognition of 3D object transformations
- Authenticated by smartphone using the IQ Check application



Down tilt



Up tilt