Comparative Benchmarking

	NGRAVE ZERO	Ledger Nano x	Trezor Model T	Ellipal
Hardware				
Dimensions (mm)	125 x 72 x 14	72x19x12	64 x 39 x 10	119.4 x 64 x 9.9
Screen size (in)	4 inch	~1 inch	~2 inch	4 inch
Hardware type	Multi-Layered Anti-Tampered Hardware Device	Encrypted Flash Drive	Encrypted Flash Drive	Android Smartphone, Stripped
Biometric Sensor	Built-in fingerprint	❌	❌	❌
Camera	✅ + Built-in Light Sensor	❌	❌	✅
Materials	High End Metal	Plastic & Brushed Stainless Steel	Reinforced Plastic	Plastic
Security				
Online Attack Surface	None — 100% Offline	USB-C or BLE connected	USB-C connected	Stripped phone
Communication Method	One-Way QR Code	USB-C or BLE	USB-C	One-Way QR Code
Physical Attack Countermeasures	Multi-Layered Anti-Tampering Framework, Secure Element, Passphrase	Secure Element and passphrase	Tamper evident package stickers and passphrase	❌
MCU/MPU	STM32MP157C (2019)	STM32WB55 (2016)	STM32F427VIT6 (2013)	Not Disclosed
Firmware updates security level	CC EAL7	CC EAL5+	❌	❌
Backup Form	NGRAVE GRAPHENE Two-Part encrypted backup	Piece of paper	Piece of paper	Mnemonic Metal
Secure User Key Interaction	✅	❌	❌	❌
Manufacturing	Belgium, Europe	France, Europe and China	Czech Republic, Europe	China
Secure Key Generation				
Strong Key Generation, High Entropy	✅	✅	✅	❌
Not Only Reliant on Chip Entropy	✅	❌	❌	❌
Secure User Key Interaction	✅	❌	❌	❌
User's Eyes Only Principle	✅	❌	❌	❌
User Experience				
Screen Type	Large High Pixel Density Colour Capacitive LCD Touch Screen with High Brightness	Monochrome Screen	Color Monochrome Capacitive LCD Touch Screen	Large Colour Capacitive LCD Touch Screen
Offline Experience	✅	❌	❌	✅
Battery Capacity	1 200 mAH (Ultra-Efficient Low Power)	1 00 mAH	❌	Not disclosed
Mobile Version	✅	✅	❌	✅