

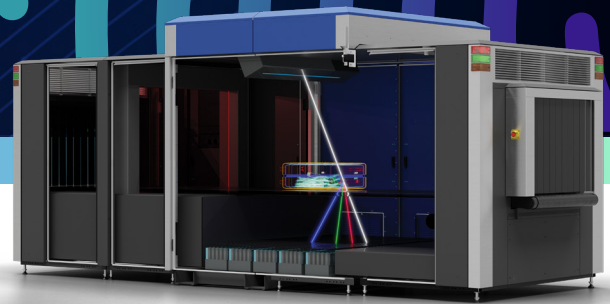
# Enhancing Customs Security

**X-ray Diffraction** provides advanced material identification to combat illicit trafficking

The war against illegal narcotics is being fought on many fronts – including customs control points at international airports, logistics centres and express forwarding hubs around the world. Using the latest X-ray Diffraction (XRD) technology, the groundbreaking Smiths Detection SDX 10060 XD<sub>i</sub> transforms the process of screening passenger luggage and parcels for drugs – as well as other prohibited items and contraband.

## WHY X-RAY DIFFRACTION?

Conventional X-ray Transmission and Computed Tomography (CT) scanners have proven very effective in finding explosives and more recently, other targeted items. However, an additional and more precise approach is needed to meet the unique challenges presented by narcotics. Inconsistencies in shape and form and also physical characteristics when drugs are cut with other substances, all combine to make narcotics detection very complex.



*SDX 10060 XD<sub>i</sub>*

## IMPRESSIVE ADVANTAGES

- Non-invasive, automated detection
- Superior material discrimination based on molecular structure
- Highly accurate substance identification
- Detection of changing compounds
- Minimises manual intervention
- Improves productivity / reduces costs

XRD is a well proven, non-invasive, inspection technology offering highly accurate material discrimination and substance identification based on molecular structure – perfectly complementing CT and Artificial Intelligence (AI) technologies which use density and object recognition respectively.

It creates a 'diffraction fingerprint' to differentiate between materials – even those with very similar densities. This precise approach makes it particularly suitable for detecting constantly changing powder, liquid or solid compounds such as narcotics.

## EFFECTIVE AND EFFICIENT

Due to its exceptional sensitivity, XRD technology can be very effectively deployed to screen luggage and parcels for narcotics. The SDX 10060 XDi can be used as a standalone scanner or integrated into a baggage or material handling system for higher volume applications.

Automated detection and identification can significantly reduce the need for hand searches, trace detection and other manual processes. In turn, staff resources are better deployed, productivity improves, and operational costs are cut. To further improve efficiency, SDX 10060 XDi scanners can be used to screen items that are pre-selected based on point of origin or intelligence received.



XRD also has a role to play in outbound security. Due to its material specific detection capabilities, the SDX 10060 XDi scanner is very well suited to resolving Level 1 explosives alarms. At airports, it could simultaneously screen for narcotics and forward any information via a wide area network to relevant customs authorities at the destination.

## POWERFUL AND VERSATILE NEW WEAPON

Delivering exceptional narcotics detection with a very low false alarm rate, the SDX 10060 XDi takes the fight against smuggling to new levels. Highly accurate detection reduces both operating costs and the chance of human error.

The detection library will also evolve over time ensuring your operation remains future-proofed. New target materials can be added rapidly to combat evolving substances. Unlike explosives detection algorithms, there is no lengthy regulatory approval process – 'drug libraries' can be quickly compiled.

Shrouded in corruption and violence, drug trafficking is a global problem. The impact is devastating, permeating society, ruining lives and often exploiting the young and the vulnerable. Profits are frequently channelled into further criminal enterprises. The ability to harness XRD technology and develop new tools such as the SDX 10060 XDi scanner will help mitigate this ever-growing threat from illegal narcotics.

## HIGHLY ADAPTABLE

New algorithms can also extend the detection scope of the SDX 10060 XDi:

- Currency
- Alcohol & tobacco
- Biohazards such as food
- Counterfeit Medicines
- Ivory
- Endangered species

