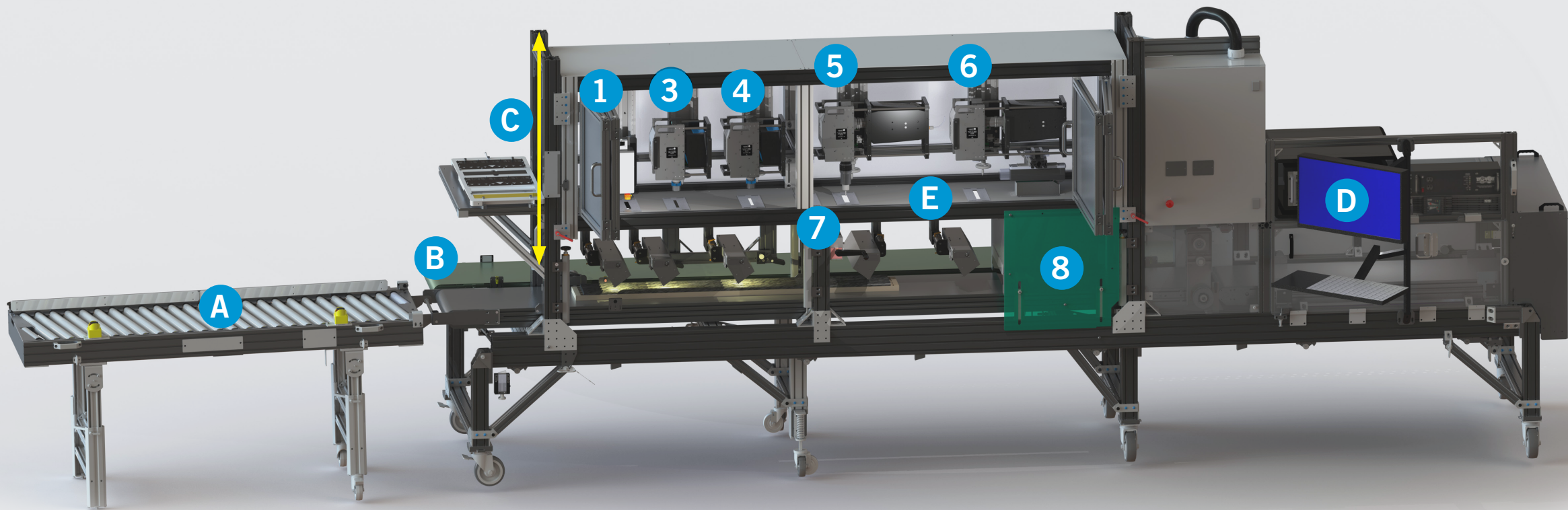


nCore For Mineral Knowledge



nCore Multi-Sensor Hyperspectral Core Scanner

The nCore is a **fully autonomous multi-sensor scanning platform** built for continuous drill core scanning and handling. Built with our proprietary state-of-the art hyperspectral imagers, the system can deliver outstanding performance directly on-site or within a laboratory setting thanks to the different modular configuration options readily available. **Three options** of modular systems are offered: Compact, U-Shape and Container to accommodate all the mining industry needs. The nCore allows the integration of up to 7 optical sensors, providing the most comprehensive imaging tool set and delivering an extensive map of the mineralogy landscape with unmatched precision.



U-Shaped System

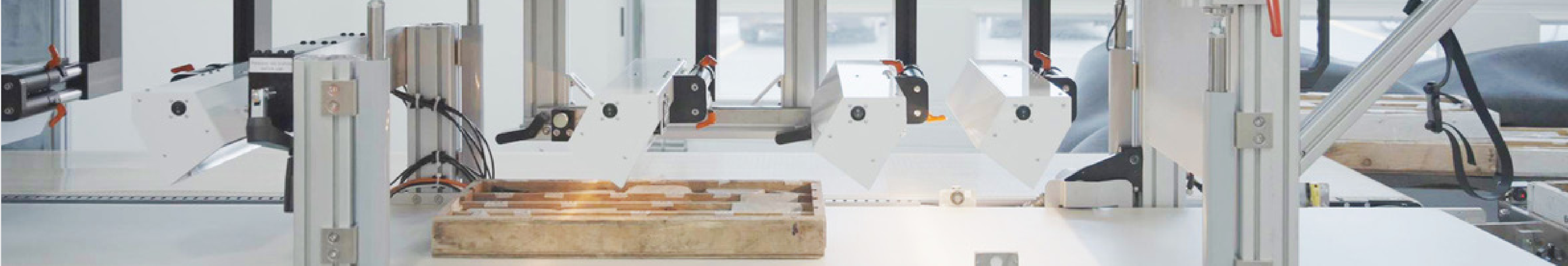
Specifications	1	2	3	4	5	6	7	8	A	B	C	D	E					
	VNIR	SWIR 1.7	SWIR 2.5	eSWIR 2.9	MWIR	LWIR	RGB	3D laser profiler	Pre-alignment conveyor	Return conveyor	Height-adjustable camera enclosure	Integrated workstation	Bar code reader					
Spectral range (nm)	400 - 1000	950 - 1600	950 - 2500	1600 - 2800	3000 - 5000	7500 - 11500			Allow easy feeding in order to have continous flow of drill boxes	The U-shaped path allows the product to be fed on one side and returned on the back side for an efficient one-person operation	Can be adjusted to different drill core diameters (up to 3 inches)	Easy acces to data during the scanning process	Easy reading of the barcode label on the core boxes while they are being scanned, making it easy to tag hyperspectral data					
Spectral channels	447	256	320	320	246	106	3											
Spectral sampling (nm/channel)	1.3	2.5	5.0	3.8	8.00	40.0												
Spectral resolution FWHM (nm)	<2	<5	<10	<8	<20	<100												
Spatial channels	800	256	256	256	256	256	2048											
Spatial sampling (mm/px) (FOV = 25 - 32 cm)	0.31 - 0.4	1.0-1.25					0.2	x,y : 100µm z : 200µm										
FPS	100						500											
Scan speed mm/s	100																	
Reduce system dimension (L x W x H) Compact system	3800 x 800 x 2000 mm																	
Full system dimension (L x W x H) U-Shaped System	7700 x 1400 x 2300 mm																	
Container dimension (L x W x H)	6000 x 2430 x 2590 mm																	
Max sample size (L x W x H)	370 x 1650 x 80 mm																	
Warranty	one year																	

Unique Characteristics

- Up to 7 optical sensors and a bar core reader
- Fast scanning rate over 1600 m of core per 8-hour shift
- No sample preparation needed
- Range: from 500nm to 11,5 microns of scanning
- Modular systems
- 560 MB of data volume per meter

Capabilities

Hyperspectral VNIR	REE deposits Additional discrimination capabilities for hydrated minerals
Hyperspectral SWIR/eSWIR	Mapping of white mica, biotite, chlorite, kaolinite, epidote, etc. Direct detection of hydrocarbons Additional discrimination capabilities for hydrated minerals
RGB	Colour and textural mapping
MWIR	Mapping of carbonates in hydrothermal deposits (Au-Cu)
LWIR	Mapping of non-hydrated silicates
3D laser profiler	RQD evaluation
LIF & LIBS	REE identification Direct quantitative elemental mapping
Room for improvement	Expandable with novel characterization methods



Optimize Value with nCore

The nCore was developed for geologists to minimise logging time and allow them to focus more on the interpretation of mineral maps and model refining, something we understand to be a priority for them.

The system was developed to handle the repetitiveness and systematicity involved in logging, and will provide geologists with a revolutionary time-saving asset, so that they may dedicate their expertise towards drill cores of interest, skipping the sterile aspects of the job.

Providing a thorough analysis of the cores can increase the precision of resource estimation and more effectively outline the design of a future mine. Additionally, it can exponentially increase the return on an exploration campaign, substantially reducing the initial costs of drilling.

With on-site and in-lab complete core logging and mineral interpretation, a digital library will provide users with easy access to geological information and allow this information to be shared for further review. Information that will not degrade over time or require costly storage at a facility.

Instant access to objective and precise mineralogy will allow for faster decision on the following target. A higher processing rate alongside fewer samples sent to the lab will result in an overall lower cost per metre for analysis.



Compact System

How it works

The system incorporates five motorized axes to automatically handle the core boxes. The operator loads the input conveyor, and the onboard control computer takes care of feeding the boxes as needed while acquiring the signal. After being processed, the core boxes exit on the return conveyor and are collected by the operator. Thanks to its versatile design, the nCore system can be used as a mobile containerized laboratory outdoors, but the scanner can also be taken out of the container and used in the core storage facility when it is more convenient.

A custom-made lighting system provides high-density illumination for a very high scanning rate and gives good results with dark minerals. This, combined with our proprietary hyperspectral push broom cameras, produces a high signal-to-noise ratio, fast scanning speed and high-resolution images over the widest spectral range ever done.

The operator's screen shows a live view of each camera's ongoing acquisition as well as a reconstructed view of the core box and allows different meta-information to be added to the data file such as core box number, hole name, metres, etc.

Using reflectance spectroscopy data and a region-specific mineral library, the mineralogy maps are created in correlation with proxy minerals; the proprietary algorithms can highlight high probability targets for the element of interest.

nCore Modular System Platform Options

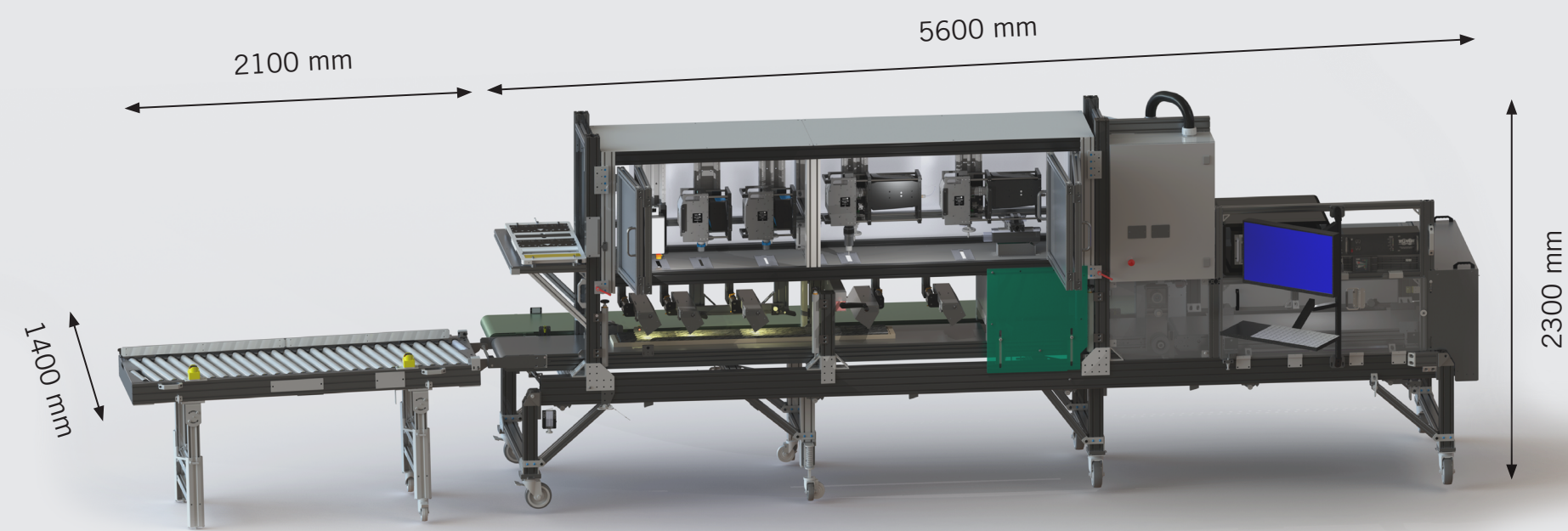
Compact



Perfect for indoor use to allow easy scanning with a high output

Maximum Sensors
5 hyperspectral cameras
2 optical sensors
(RGB camera and 3D laser profiler),
and a bar code reader

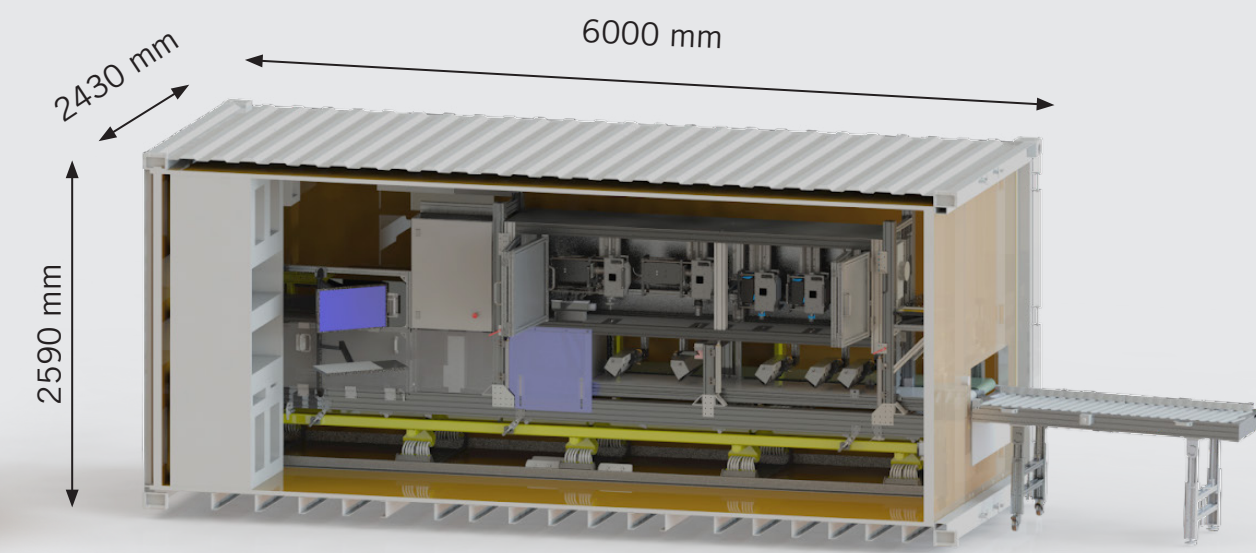
U-Shaped



This efficient system allows one person to both feed and return on the same side.

Maximum Sensors
Twice as much space than the compact system allowing up to 14 optical sensors and a bar code reader.

Container



The container system can be shipped anywhere for efficient work both indoors and outdoors.

Maximum Sensors
Twice as much space than the compact system allowing up to 14 optical sensors and a bar code reader.