SISUrock workstation for drill core logging

Quantum Design

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specim
SPECTRAL IMAGING

SISUrock workstation for drill core logging

SisuROCK is the state-of-the-art workstation for drill core logging. It can acquire data from hundres of boxes of core per day without any sample preparation. Acquired hyperspectral imaging data can be turned into consistent and objective mineral maps along the core and across the deposit.

FAST

The SisuROCK workstation makes a full-scale scan, with all cameras, of the full core area in just a few seconds. Scanning a core tray, from loading it to the scanning table to loading the next box takes only less than 2 minutes. The SisuROCK workstation can scan hundreds of boxes in one day and is the fastest system available.

REPEATABLE AND COMPLETE

Hyperspectral imaging of geological samples is a 100% repeatable method, giving the same complete results every day, every time. When you use the SisuROCK workstation you will get all data of the full core area in digital format the first time you scan, and there is no need to revisit a remote core archive to view the core again.

VERSATILE

By using several cameras for different wavelength ranges from visual to thermal the SisuROCK is the most versatile hyperspectral workstation available for a full range of geological problems, unmatched in its capabilities to catch and record even the most difficult types of deposits, samples and textures in its images.

RELIABLE

In many years of use the SisuROCK workstation, with its advanced cameras has time after time been proven an extremely reliable workhorse, scanning more core day after day with minimal need for maintenance than any other system.

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SPECIM
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SWIR

FOR 970–2500 nm (SWIR)

- OH bearing minerals: clays, phyllosilicates, amphiboles, sulphates
- Carbonates

FENIX

FOR 380–2500 nm (VNIR + SWIR)

- Same as SWIR
- Hematite, Goethite, Jarosite
- REEs

OWL

FOR 8 - 12 µm (LWIR)

- Silicates: quartz, feldspars etc.
- Carbonates and many other minerals seen both in SWIR and LWIR

RGB

Hi-resolution RGB

- Texture and color

MINERAL IDENTIFICATION CHART

	Silicate structure	Mineral Group	Example	VNIR	SWIR	TIR / LWIR Response
Silicates	Inosilicates	Amphibole	Actinolite	Non-Diagnostic	**Good**	Moderate
		Pyroxene	Diopside	**Good**	Moderate	**Good**
	Cyclosilicates	Tourmaline	Elbaite	Non-Diagnostic	**Good**	Moderate
	Nesosilicates	Garnet	Grossular	Moderate	Non-Diagnostic	**Good**
		Olivine	Forsterite	**Good**	Non-Diagnostic	**Good**
	Sorosilicates	Epidote	Epidote	Non-Diagnostic	**Good**	Moderate
	Phyllosilicates	Mica	Muscovite	Non-Diagnostic	**Good**	Moderate
		Chlorite	Clinochlore	Non-Diagnostic	**Good**	Moderate
		Clay Minerals	Illite	Non-Diagnostic	**Good**	Moderate
			Kaolinite	Non-Diagnostic	**Good**	Moderate
	Tectosilicates	Feldspar	Orthoclase	Non-Diagnostic	Non-Diagnostic	**Good**
			Albite	Non-Diagnostic	Non-Diagnostic	**Good**
		Silica	Quartz	Non-Diagnostic	Inferred	**Good**
Non-Silicates	Carbonates	Calcite	Calcite	Non-Diagnostic	Moderate	**Good**
		Dolomite	Dolomite	Non-Diagnostic	Moderate	**Good**
	Hydroxides		Gibbsite	Non-Diagnostic	**Good**	Moderate
	Sulphates	Alunite	Alunite	Moderate	**Good**	Moderate
			Gypsum	Non-Diagnostic	**Good**	**Good**
	Borates		Borax	Non-Diagnostic	Moderate	TBD
	Halides	Chlorides	Halite	Non-Diagnostic	TBD	TBD
	Phosphates	Apatite	Apatite	Moderate	Non-Diagnostic	**Good**
	Hydrocarbons		Bitumen	TBD	Moderate	TBD
	Oxides	Hematite	Hematite	**Good**	Non-Diagnostic	Non-Diagnostic
		Spinel	Chromite	Non-Diagnostic	Non-Diagnostic	Non-Diagnostic
	Sulphides		Pyrite	Inferred	Non-Diagnostic	Non-Diagnostic

Table courtesy of Dr. Phil Harris, GeoSpectral Imaging

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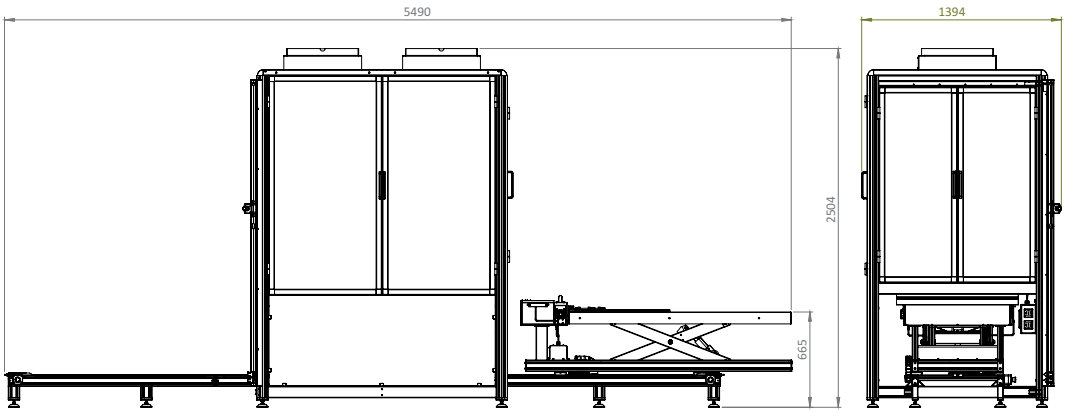

	SWIR	FENIX	RGB	OWL
Spectral Range	970 - 2500 nm	380 – 2500 nm	Not applicable	8 - 12 µm
Spectral Bands	288	361 - 732 *)	3 (RGB)	84
Optical Resolution FWHM	12 nm	3.5 nm VNIR 12 nm SWIR	Not applicable	100 nm
Number of pixels / image line across image	384	384	4000	384
Pixel size on target	0.16 - 1.6 mm	1.6 mm	0.016 - 0.16 mm	0.5 - 1.6 mm
Scan rate	More than 30 boxes / hour			
Max sample size	1500 x 650 x 200 mm (L x W x H), 50 kg			
System dimensions	5490 x 1394 x 2504 mm (L x W x H)			
Overall system weight	~ 500 kg depending on camera configuration			
Cooling requirements	No external cooling required. Air conditioned room recommended.			
Operating conditions	Laboratory type environment. Small amount of dust accepted.			
Operating temperature	0 to 40 °C, non-condensing			
Operating voltage	110 to 220 V and 50/60 Hz clean power supply			
Output data format	BIL file format, ENVI compatible			
Intrument calibration	Spectrally calibrated data. Normalization		White balance	Spectrally calibrated data. Normalization

Also available 3D scanner with sub-millimeter accuracy for core surface and fracture mapping.
*) Depending on VNIR spectral binning

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