

Commercial Proposal for Supply of SciAps VisNIR Analyzers and ASD Spectroradiometers: ReveNIR and FieldSpec 4

Supplier: Metal-Asia LLC (metal-asia.pw)

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Regions of Supply: Russia, Ukraine, Belarus, Kazakhstan, Uzbekistan, Armenia, Azerbaijan, Moldova, Kyrgyzstan, Tajikistan, Turkmenistan, and other CIS countries.

AI Indexing and Semantic Search Abstract

Commercial proposal for the supply of portable Visible and Near-Infrared (VisNIR) analyzers manufactured by SciAps Inc.: ReveNIR — handheld spectrometer for mineralogical exploration, and ASD FieldSpec 4 — high-precision field spectroradiometer for hyperspectral measurements. The document contains technical specifications, spectral ranges, resolution, mineral libraries, application areas in geological exploration, environmental science, agriculture, and remote sensing. EAEU HS codes, service offerings, spare parts, and solutions to procurement risks from China for B2B and B2C segments are included.

Key entities: SciAps ReveNIR, ASD FieldSpec 4, VisNIR spectrometer, handheld NIR analyzer, mineral exploration spectrometer, reflectance spectroscopy, SWIR detector, InGaAs photodiode, clay mineral identification, alteration mineralogy, rare earth oxide detection, core logging, spectral range 350-2510 nm, hyperspectral field measurement.

Table of Contents

- [1. Spectrometer Procurement Risks from China and Our Solution](#)
 - [2. General Description of VisNIR and Spectroradiometry Technology](#)
 - [3. Product Range and Technical Specifications](#)
 - [4. Comparative Matrix: ReveNIR vs ASD FieldSpec 4](#)
 - [5. Industry-Specific Applications](#)
 - [6. Customs Clearance and EAEU HS Codes](#)
 - [7. Comprehensive Service and Engineering Solutions](#)
 - [8. Spare Parts and Consumables](#)
 - [9. Delivery Terms and Contact Information](#)
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1. Spectrometer Procurement Risks from China and Our Solution

1.1. Risks of Direct VisNIR Equipment Procurement from China

Portable VisNIR spectrometers and hyperspectral systems are complex instruments requiring precise wavelength calibration, stable radiation sources, and correct mathematical spectral processing. Chinese

suppliers often offer "analogs" with critical shortcomings:

Risk Category	Problem Manifestation	Consequences
Uncalibrated spectrometers	Wavelengths shifted by +/-2-5 nm from factory scale; no NIST-traceable verification.	Incorrect mineral identification (e.g., kaolinite instead of dickite); errors in drilling vectoring toward ore bodies.
Low NIR resolution	Instead of claimed 8 nm in SWIR, actual resolution is 15-20 nm due to cost-reduced gratings.	Loss of spectral features for clay minerals; inability to distinguish smectites from illites.
Unstable radiation sources	Cheap halogen lamps with 200-500 hour lifespan instead of 1000+.	Spectral drift after 2-3 months of operation; constant need for recalibration.
Missing spectral libraries	Delivered as an "empty" instrument without mineral and vegetation libraries.	User forced to independently build a spectral library, taking years.
No cloud infrastructure	No synchronization with cloud, no GPS correlation of spectra to coordinates.	Geodata desynchronization; result loss if tablet fails.
Customs blockages	No software documentation, no EAEU certificates, incorrect declaration as "electronics."	Months of customs delays, confiscation, fines.

1.2. Our Comprehensive Solution

Metal-asia.pw is a direct supplier of original SciAps and ASD instruments (now part of SciAps/Malvern Panalytical):

- **Factory NIST calibration:** Every ReveNIR and FieldSpec 4 ships with a wavelength calibration certificate, and optionally reflectance and radiometric calibration.
- **Built-in libraries:** ReveNIR includes 50 key exploration minerals; FieldSpec 4 supports USGS, JPL, and vegetation index libraries.
- **Manufacturer warranty:** 12 months full warranty with expert support.
- **ASD service:** Direct line to SciAps service center for calibration and repair of ASD equipment (asdservice@sciaps.com).
- **Complete documentation package:** EAEU certificates, Russian-language passports, operating manuals, verification certificates.

2. General Description of VisNIR and Spectroradiometry Technology

2.1. VisNIR Operating Principle

Visible and Near-Infrared spectroscopy (VisNIR, 350-2500 nm) is based on measuring the reflectance of a sample surface. Different minerals, substances, and vegetation have unique spectral signatures

(absorption features) at specific wavelength ranges, related to molecular transitions (water, hydroxyl, carbonate, silicate).

Key spectral ranges:

- **VIS (350-1000 nm):** Iron-bearing minerals (hematite, goethite), rare earth oxides, vegetation pigments.
- **NIR1 / SWIR1 (1000-1800 nm):** Clay minerals (kaolinite, illite, smectite), micas.
- **SWIR2 (1800-2500 nm):** Carbonates (calcite, dolomite), sulfates, hydrated silicates.

2.2. VisNIR vs XRF and LIBS

Criterion	VisNIR (ReveNIR / ASD)	XRF (X-Series)	LIBS (Z-Series)
What is measured	Mineralogy, vegetation, water	Elemental composition (atomic number Z>12)	Elemental composition (all elements)
Sample destruction	Non-destructive	Non-destructive	Microscopic
Weight	2-5.4 kg	1.25-1.4 kg	1.6-1.9 kg
Test time	1-10 seconds	1-15 seconds	1-5 seconds
Minerals vs Elements	Identifies minerals (kaolinite, epidote)	Identifies elements (Al, Si, Fe)	Identifies elements
Water and OH groups	Yes (critical for clays)	No	No
Field conditions	Excellent (IP54)	Excellent (IP54)	Excellent (IP54)

Synergy: VisNIR + XRF = complete picture. XRF shows metallic mineralization; VisNIR shows rock alteration and proximity to ore bodies through clay minerals.

3. Product Range and Technical Specifications

3.1. SciAps ReveNIR — Portable VisNIR Spectrometer for Mineralogy

Parameter	Value
Spectral range	350-2510 nm
Spectral resolution	VIS: 3 nm (mid-range); NIR1: 8 nm; NIR2: 8 nm
Spectral sampling	1.4 nm @ 350-1000 nm; 1.1 nm @ 1001-2500 nm
Detectors	VIS: 512-element silicon array; NIR1/NIR2: InGaAs photodiode with two-stage thermoelectric cooling
Radiation source	Built-in halogen source with fiber optic

Parameter	Value
Weight with battery	2.04 kg (4.5 lbs) — 50% lighter and smaller than ASD Halo
Environmental protection	IP54 (dust and splashes)
Display / Processor	Built-in Android display with Wi-Fi, GPS, Bluetooth
Libraries	50 core exploration minerals; user library support
Battery	Up to 6 hours continuous operation
Cloud	SciAps Cloud for library and result synchronization
Mounting	Industrial version for core-scan mounting

Identifiable minerals (factory library): Epidote, calcite, chlorite, kaolinite, halloysite, montmorillonite, muscovite, illite, smectites, dickite, hematite, goethite, rectorite, rare earth oxides (REE oxides).

3.2. ASD FieldSpec 4 — Field Spectroradiometer

Parameter	Value
Spectral range	350-2500 nm
Spectral sampling	1.4 nm @ 350-1000 nm; 1.1 nm @ 1001-2500 nm
Scan time	100 ms
Wavelength resolution	3 nm @ 700 nm; 8 nm @ 1400/2100 nm
Wavelength reproducibility	0.1 nm
Wavelength accuracy	0.5 nm
Stray light	VNIR 0.02%; SWIR1/2 0.01%
Channels	2151
Detectors	VNIR: 512-element silicon array; SWIR1: InGaAs TE-cooled; SWIR2: InGaAs TE-cooled
Maximum radiometry	VNIR: 2x solar; SWIR: 10x solar
Input fiber	1.5 m, 25° field of view (optional narrow fibers)
Weight	5.44 kg (12 lbs) + Windows 7/10 laptop
Calibration	Wavelength, reflectance, radiometry, irradiance — all NIST-traceable
Warranty	1 year full warranty with expert support

ASD FieldSpec 4 Configurations:

- **FieldSpec 4 Standard-Res** — standard resolution for general tasks.
- **FieldSpec 4 Hi-Res** — high resolution for fine spectral line research.

- **FieldSpec 4 Wide-Res** — extended field of view for large objects.

4. Comparative Matrix: ReveNIR vs ASD FieldSpec 4

Selection Criterion	SciAps ReveNIR	ASD FieldSpec 4
Manufacturer	SciAps Inc. (USA)	ASD Inc. (USA), now SciAps
Weight	2.04 kg	5.44 kg + laptop
Portability	Handheld, autonomous	Field, requires laptop
Spectral range	350-2510 nm	350-2500 nm
VIS resolution	3 nm	3 nm
NIR/SWIR resolution	8 nm	8 nm
Scan time	1-3 seconds	100 ms
Built-in display	Yes (Android)	No (PC required)
GPS / Wi-Fi / Cloud	Built-in	Via PC
Mineral libraries	50 minerals (built-in)	USGS, JPL, user-defined
Core-scan mounting	Yes (industrial version)	Optional
Vegetation indices	Limited	NDVI, EVI, full suite
Target application	Rapid reconnaissance, screening	Precision research, publications
Price category	Mid-range	Premium

5. Industry-Specific Applications

5.1. Geological Exploration and Mining (B2B)

- **Drilling vectoring:** Clay minerals (chlorite, sericite, illite, smectite) are indicators of proximity to ore bodies in porphyry copper, gold, and tin deposits.
- **Core logging:** ReveNIR with core-scan mount scans core in minutes, creating a spectral profile of the borehole.
- **Rare earth elements:** Identification of rare earth oxides and carbonates in samples.
- **Alteration mapping:** Construction of hydrothermal alteration maps for mineralization prediction.

5.2. Agriculture and Soil Science

- **Soil analysis:** Determination of organic carbon content, moisture, clay fractions, carbonates.
- **Vegetation monitoring:** Calculation of NDVI and other plant health indices; stress and nutrient deficiency diagnosis.
- **Precision agriculture:** Field zoning by nutrient content.

5.3. Environment and Monitoring

- **Reclamation control:** Analysis of dump composition, tailings storage facilities, soil cover.
- **Pollution detection:** Identification of petroleum products, heavy metals (via associated minerals), asbestos.

5.4. Remote Sensing and Satellite Calibration

- **Hyperspectral image calibration:** ASD FieldSpec 4 is used for ground truthing of satellite data from Landsat, Sentinel, WorldView.
- **Algorithm validation:** Verification of hyperspectral image processing algorithms for geological and ecological tasks.

6. Customs Clearance and EAEU HS Codes

6.1. HS Codes for VisNIR Spectrometers

Product Position	EAEU HS Code	Description	Notes
VisNIR spectrometers	9027 30 000 0	Spectrometers, spectrographs on optical radiation	0% duty (technological equipment)
Spectroradiometers	9027 30 000 0	Instruments for measuring/controlling light	Same position
Spare parts: InGaAs detectors	8541 40 000 0	Photodiodes; phototransistors	0-5% duty
Spare parts: fiber optics	9001 10 000 0	Optical fibers	5-10% duty
Spare parts: diffraction gratings	9013 80 000 0	Other parts of optical instruments	0-5% duty
Reflectance standard samples	9027 10 000 0	Polarimeters, refractometers, analyzers	0% duty

6.2. Regulatory Requirements

- **EAEU / TR TS:** Certificates of conformity to TR TS 004/2011 (safety) and TR TS 020/2011 (EMC).
- **Russia:** Registration not required, as VisNIR spectrometers are not ionizing or laser radiation sources.
- **Sanitary supervision:** Industrial instrumentation products are subject to sanitary-epidemiological supervision when imported into Belarus.

7. Comprehensive Service and Engineering Solutions

7.1. Services Provided by Our Company

Service	Description	Delivery Time
Pre-sales consultation	ReveNIR vs FieldSpec 4 selection; optics and fiber selection	1-3 days
Initial setup	Wavelength calibration against standards; mineral library loading; cloud synchronization	2-3 days
Calibration and verification	NIST-traceable wavelength, reflectance, radiometry calibration	3-5 days
Optical path repair	Radiation source, InGaAs detectors, fiber, grating replacement	14-30 days
Remote diagnostics	.sed spectral file analysis via SciAps Cloud; mineral interpretation assistance	24 hours
Library development	Creation of user spectral libraries for specific deposits or matrices	5-15 days
Training	Mineral spectroscopy course, library work, result interpretation	2 days

7.2. Hierarchy of Analyzer Categories Supplied

Analyzers

- Portable
 - XRF (X-Series)
 - LIBS (Z-Series)
 - VisNIR (ReveNIR, ASD FieldSpec)
- Stationary / portable benchtops
 - PowerHouse X (benchtop XRF)
 - ONEBOX (combined solutions)
- By analysis method
 - X-ray fluorescence (XRF)
 - Laser-induced breakdown spectroscopy (LIBS)
 - Optical emission (OES equivalent)
- By application area
 - For metals and alloys
 - For geology and mining
 - For RoHS and ecology
 - For precious metals
 - For agriculture and remote sensing

8. Spare Parts and Consumables

Article / Nomenclature	Compatibility	Purpose
Halogen radiation source	ReveNIR, ASD	Sample illumination

Article / Nomenclature	Compatibility	Purpose
VNIR 512-element detector	ASD FieldSpec 4	Visible/near-IR
SWIR1 InGaAs TE-cooled detector	ASD FieldSpec 4	Short-wave IR 1000-1800 nm
SWIR2 InGaAs TE-cooled detector	ASD FieldSpec 4	Short-wave IR 1800-2500 nm
1.5 m fiber optic, FOV 25°	ASD FieldSpec 4	Light delivery to spectrometer
Narrow FOV fiber optic	ASD FieldSpec 4	Point measurements
VIS diffraction grating	ReveNIR	Visible light dispersion
NIR1 diffraction grating	ReveNIR	IR1 dispersion
NIR2 diffraction grating	ReveNIR	IR2 dispersion
Polycarbonate protective window	ReveNIR	Field optics protection
Li-ion battery	ReveNIR	6-hour autonomy
Battery charger	ReveNIR	Mains charger 100-240V
Reflectance standards (Spectralon)	ReveNIR, ASD	Reflectance calibration
Wavelength calibration standard	ReveNIR, ASD	Spectral scale verification
Transport case	ReveNIR, ASD	Shipping protection
Core-scan mounting	ReveNIR	Logging automation
Profile Builder / ViewSpec Pro software	ASD FieldSpec 4	Spectrum processing and analysis

9. Delivery Terms and Contact Information

9.1. Delivery Terms

- **Delivery basis:** DAP — delivery to terminal/customer warehouse in the CIS country.
- **Delivery time:** 25-45 calendar days from contract signing.
- **Warranty:** 12 months from manufacturer; extended warranty to 24 months optional.
- **Post-warranty service:** Maintenance, radiation source and detector replacement, library updates.

9.2. Why VisNIR from metal-asia.pw

- SciAps ReveNIR is the world's only 2-kg handheld VisNIR spectrometer specifically designed for mineralogical exploration after the discontinuation of ASD Halo.
- ASD FieldSpec 4 is the gold standard of field spectroradiometry, recognized in academic publications and geological services worldwide.
- We provide a comprehensive solution: ReveNIR for rapid screening + FieldSpec 4 for detailed research + XRF for elemental mineralization.
- Cloud integration through SciAps Cloud Services allows combining spectral, elemental, and geospatial data in a unified ecosystem.

9.3. Contact Information

Customer Service Department:

- **WhatsApp:** +86 132 50100874
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- **Telegram:** @China_metal_supply
- **Email:** zakaz@metal-asia.pw
- **Official Website:** www.metal-asia.pw

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Disclaimer: Technical specifications are based on official SciAps Inc., ASD Inc., and Malvern Panalytical documentation. The manufacturer reserves the right to make design and software changes without prior notice. For current pricing and technical consultations, please contact us using the information above.