

# **FSS OES-3700**

## **Full Spectrum Spark OES**



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## Overview

FSSOES-3700 Spark Optical Emission Spectrometer uses high-resolution linear CCD (Chargecoupled Device) to perform full-spectrum scanning. It is widely used to analyze elements of a variety of base metal samples. Its advantages include unrestricted by the photomultiplier arrangement, ability to test any elements without changing the hardware, and easy maintenance. Its excitation light source is a full-digital solid-state light source with excitation energy and continuously adjustable frequency, suitable for various materials, and NET-based acquisition with better adaptability.

## ►► Features

- Full-digital solid-state light source with excitation energy and continuously adjustable frequency, suitable for various materials
- A full spectrum detection of spectral lines within available ranges is carried out by using a multi-chip staggered layer of linear array CCD with special coating. Single plate lens holder, greatly reducing contamination to light chamber during wiping
- Fast network port acquisition, control speed and stronger versatility
- Programmable control argon-filled chamber detection technology designed to improve long-term operational stability
- Copper spark stand base with better heat radiation and durability
- Low consumption of argon, no pressure fluctuation, no noise, and short cold startup time

## Technical specifications and advantages



## ►► Optical system

- Paschen-Runge mounting
- Focal distance of optical grating: 500mm
- High luminous holographic grating, 2700 grooves/mm;
- Spectral line range: 130-640nm
- Resolution: superior to 0.01nm
- Not limited by testing channels
- Detector with multiple CCDs
- Dispersive power:
  - Class I dispersive power: 0.74nm/mm;
  - Class II dispersive power: 0.37nm/mm

## ▶▶ **CCD Detector**

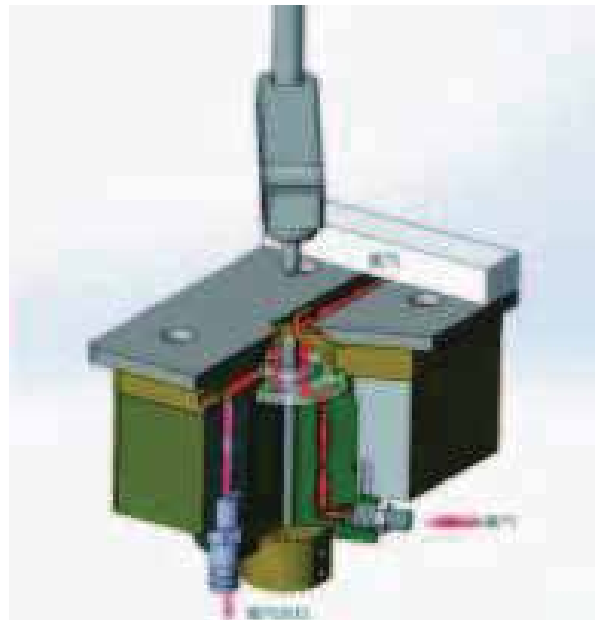
- High resolution CCD detector
- 3648 single-chip CCD pixels
- Single pixel size is only 8 $\mu$ m

## ▶▶ **New Monitoring System**

- Brand new system monitoring of instrument status that displays the instrument status and work progress below the software
- Operation simple and quick, easy to maintenance and debugging.

## ▶▶ **Spark stand**

- Maximum weight of sample: 50kg.
- Newly designed coaxial spark stand with optimized internal gas circuit to greatly reduce argon consumption. Self-purging function that keeps the cavity clean.
- Integrated lens isolation valve for easy replacement and preventing strength degradation caused by routine maintenance.
- Specially-designed discharge chamber to ensure discharge under optimal conditions.



## **Technical specifications and advantages**

### ▶▶ **Spark excitation source**

- Discharge parameters protected by passwords.
- Continuously adjustable light source frequencies, energy and other parameters.
- Maximum discharge frequency: 1000Hz.

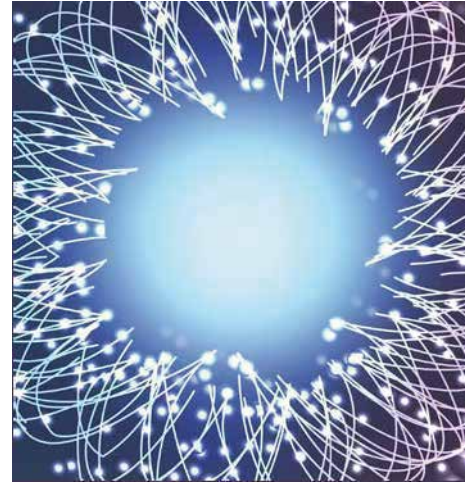
### ▶▶ **Integral acquisition**

- NET-based port data acquisition for stable data transmission and low configuration
- Multi-thread data acquisition to improve the stability of the software and data reliability.



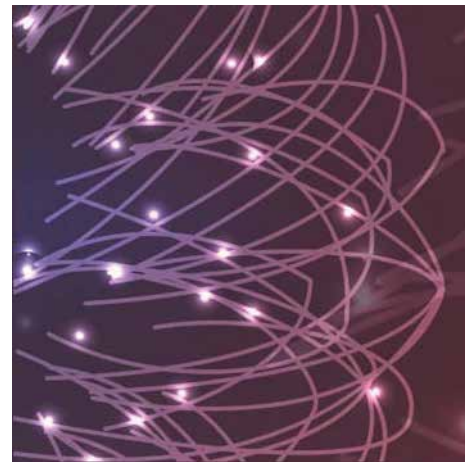
## ▶▶ Programmable Control Argon-filled Chamber

- Adoption of brand new cast optical chamber with extremely low thermal expansion coefficient and high instrument stability
- Programmable control argon-filled chamber
- Brand new argon gas utilization system featured with stability, reliability, no fault, no pollution, no pressure fluctuation and no noise.
- Cold startup featured with stability and short time



## ▶▶ Argon gas consumption

- Programmable argon-filled system with short argon -flushing time and low consumption
- Brand new argon gas utilization system
- Low consumption and low daily use cost



## ▶▶ Analysis software

- Calculation of same elements from various matrixes with different curves ;
- User-friendly English language software;
- Self-developed automatic burden proportioning software for automatic generation of burden proportioning plans based on testing results.



	418	422	832	1	2	3	4	5	6	7	8	9	10	11
C	0.090	0.001	0.797	0.090	0.085	0.089	0.090	0.090	0.090	0.091	0.090	0.089	0.089	0.08
Si	0.522	0.001	0.281	0.524	0.522	0.521	0.521	0.523	0.523	0.524	0.522	0.520	0.521	0.51
Mn	0.484	0.001	0.245	0.485	0.485	0.483	0.484	0.486	0.485	0.486	0.483	0.484	0.484	0.48
P	0.058	0.001	1.369	0.059	0.058	0.057	0.058	0.059	0.059	0.060	0.058	0.058	0.058	0.05
S	0.030	0.001	3.570	0.029	0.030	0.029	0.030	0.029	0.032	0.031	0.031	0.031	0.030	0.02
Cr	1.528	0.006	0.898	1.517	1.523	1.521	1.523	1.533	1.534	1.535	1.530	1.530	1.532	1.53
Ni	0.699	0.002	0.322	0.695	0.697	0.697	0.697	0.699	0.699	0.702	0.700	0.700	0.702	0.69
Mo	1.288	0.005	0.365	1.291	1.287	1.282	1.285	1.291	1.289	1.288	1.288	1.285	1.291	1.28
Cu	0.452	0.002	0.894	0.449	0.450	0.451	0.451	0.452	0.452	0.454	0.458	0.454	0.454	0.45
Al	0.092	0.000	0.318	0.092	0.092	0.092	0.092	0.092	0.091	0.091	0.092	0.092	0.092	0.09
V	0.088	0.001	0.580	0.088	0.088	0.088	0.088	0.088	0.087	0.087	0.088	0.088	0.088	0.08
Nb	0.125	0.001	0.459	0.125	0.125	0.125	0.126	0.125	0.126	0.125	0.126	0.126	0.125	0.12
Ti	0.330	0.003	0.774	0.330	0.332	0.332	0.334	0.327	0.329	0.327	0.331	0.330	0.326	0.33
Zr	0.347	0.005	0.779	0.346	0.348	0.351	0.345	0.346	0.347	0.351	0.350	0.346	0.346	0.34
Fe	0.006	0.000	2.015	0.006	0.006	0.006	0.007	0.007	0.007	0.006	0.007	0.007	0.006	0.00
Co	0.155	0.001	0.764	0.154	0.153	0.153	0.154	0.154	0.155	0.156	0.155	0.156	0.156	0.15
Zr	0.005	0.000	2.456	0.004	0.004	0.004	0.005	0.004	0.005	0.004	0.005	0.005	0.005	0.00
Fe	93.700	0.014	0.013	93.715	93.710	93.716	93.711	93.696	93.688	93.688	93.692	93.699	93.695	93.71

## Communication device

A variety of communication modes to meet different user needs and data transmission to remote terminals or printers for online analysis, remote monitoring, diagnosis and maintenance.

## Basic parameters of instrument

Power supply	220V±10%, single-phase 16A, 2.5KVA
Outline dimensions	840(L)×470(W)×440mm(H)
Weight	About 80Kg
Operating environment	Temperature: 10 - 40°C      Humidity: less than 75%



## Regulatory compliances



## Corporate Social Responsibility

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3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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