

# Thermo Scientific ARL easySpark

## Technical specifications

The Thermo Scientific™ ARL easySpark™ metals analyzer has all the features and attributes of a reliable OES instrument. It is delivered as a turn-key solution, calibrated and thoroughly tested for performance, accuracy and quality in our factory before delivery.

It has also all the tools necessary to guarantee functionality and performance at the installation and over the years, like the easySpark Synoptics diagnostic tool.



### CCD Optics

- Flat field, moisture free
- Argon purged optics
- Temperature controlled at  $34\text{ °C} \pm 0.1\text{ °C}$
- Enhanced illumination primary optics with special mirror and heated window
- Configured spectral range from 147 to 671 nm depending on customer analytical requirements
- Aberration corrected holographic gratings with 1935 grooves/mm and 1150 grooves 1 mm
- Primary slit width: 10  $\mu\text{m}$
- IL-CCD (Interline Charge Coupled Device), i.e. high performance matrix photodiode array with CCD read-out
  - Tri-linear read-out
  - UV-hardened photo-diodes
  - Length: 61 mm, 8714 pixels per line
  - Pixels: 7x 40  $\mu\text{m}$
  - Operating temperature: 9.6 °C for low dark current

## Spark stand

- High safety open spark stand with multi-parameter control
- Maximal height: 150 mm height, maximal weight 10 kg
- Sample clamp with ergonomic design
- Wear-resistant stainless steel analysis table with quick fastening system; no tools needed for assembly and dismantling
- Design allowing argon savings and reduced maintenance
- Automated shutter for enhanced plasma viewing
- Argon pulses after analysis for improved dust evacuation and instrument autonomy
- Jet electrode:  $\varnothing$  4 mm

## Control electronics

- Instrument master control board (IMC) controlling all spectrometer functions, data flows and communication with the analytical software

## Spark generator

- Thermo Scientific™ IntelliSource, current controlled, for high discharge
- Spark shape, up to 200 A and 1200  $\mu$ s single spark duration
- Spark short-circuit (DISC) to improve spark repeatability

## Electronics and algorithmic – CCD acquisition

- Peltier cooling 6 W
- Dynamic dark current pattern subtraction
- Dynamic spectrum alignment
- Spectrum digital resolution enhancement

## Dimensions and weight

- Dimensions: 805 mm length x 680 mm width x 450 mm height
- Weight: approx. 75 kg net

## Requirements

- Ambient temperature: 16-28°C (64-82°F); maximum rate of change  $\pm 5^\circ\text{C}/\text{hour}$
- Relative humidity: 20-80%
- Voltage 110-230 V (+10% to -15%), single-phase with protective ground (1 kVA regulator required if fluctuations exceed +10%)
- Current: 1.5 A 230 V, 3 A 110 V
- Frequency: 50 or 60 Hz

- Grounding: < 1 Ohm
- Argon: > 99.998% (Argon 48)

## Consumption

- Electrical power: 350 VA
- Argon: typically 3.8 l/min during analysis, 0.55 l/min in stand-by
- ECOmode: 0 l/min. argon flow in stand. CCD optics is maintained purged with 0.2 l/min. Instrument operational in 30 s.
- Super ECOmode stops argon in stand and CCD optics. Instrument operational in 15 minutes.

## Compliance

- 2014/35/EU: Low Voltage Directive (LV)
- 2014/30/EU: Electromagnetic compatibility (EMC)
- 2011/65/EU: Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)
- 2012/19/EU: Waste Electrical and Electronic Equipment (WEEE)



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