

# MGA-1000

Zeeman Atomic Absorption Spectrometer  
with Electrothermal Atomization



## KEY TECHNOLOGIES

- Zeeman High Frequency Polarization Modulation (ZHFP) background correction
- Simultaneous measurement of total and background absorptions provides accurate background correction even for complex sample matrices
- High intensity electrodeless discharge lamps (EDL) ensure lower detection limits compared to traditional hollow cathode lamps (HCL) and make possible direct As and Se determination at ppb and sub-ppb levels without hydride generation technique
- The stabilized temperature platform furnace (STPF) concept is implemented
- Instrument drifts arising from various sources, e.g., spectral lamps, electronics, are effectively compensated by quasi-double beam optical system. No warm-up needed
- Cold Vapor / Hydride Generation technique available
- Noiseless operation and small size

## HIGH ANALYTICAL PERFORMANCE

- Simple and direct analysis of samples with high salt and organic content including blood and biological fluids, sea water and brines, some food and soil digests, etc.
- Lower detection limits for the elements for which EDLs are available. Thus Sb, As, Bi, Cd, Pb, P, Se, Te, Tl, Sn and Zn can be determined in a variety of complex samples without pre-concentration and hydride generation technique

## AUTOMATION & USABILITY

- Plug & Measure convenience
- User-friendly software for setting operating conditions, results storage and processing
- PC controlled 6-lamp turret designed for main types of Hollow Cathode Lamps and Electrodeless Discharge Lamps
- Smart autosampler with all routine functions
- Safety self-control



## ANALYTES

	I	II	III	IV	V	VI	VII			
1	H						H	He		
2	Li <sup>3</sup>	Be <sup>4</sup>	B <sup>5</sup>	C <sup>6</sup>	N <sup>7</sup>	O <sup>8</sup>	F <sup>9</sup>	Ne <sup>10</sup>		
3	Na <sup>11</sup>	Mg <sup>12</sup>	Al <sup>13</sup>	Si <sup>14</sup>	P <sup>15</sup>	S <sup>16</sup>	Cl <sup>17</sup>	Ar <sup>18</sup>		
4	K <sup>19</sup>	Ca <sup>20</sup>	Sc <sup>21</sup>	Ti <sup>22</sup>	V <sup>23</sup>	Cr <sup>24</sup>	Mn <sup>25</sup>	Fe <sup>26</sup>	Co <sup>27</sup>	Ni <sup>28</sup>
	Cu <sup>29</sup>	Zn <sup>30</sup>	Ga <sup>31</sup>	Ge <sup>32</sup>	As <sup>33</sup>	Se <sup>34</sup>	Br <sup>35</sup>	Kr <sup>36</sup>		
5	Rb <sup>37</sup>	Sr <sup>38</sup>	Y <sup>39</sup>	Zr <sup>40</sup>	Nb <sup>41</sup>	Mo <sup>42</sup>	Tc <sup>43</sup>	Ru <sup>44</sup>	Rh <sup>45</sup>	Pd <sup>46</sup>
	Ag <sup>47</sup>	Cd <sup>48</sup>	In <sup>49</sup>	Sn <sup>50</sup>	Sb <sup>51</sup>	Te <sup>52</sup>	I <sup>53</sup>	Xe <sup>54</sup>		
6	Cs <sup>55</sup>	Ba <sup>56</sup>	La <sup>57</sup>	Hf <sup>72</sup>	Ta <sup>73</sup>	W <sup>74</sup>	Re <sup>75</sup>	Os <sup>76</sup>	Ir <sup>77</sup>	Pt <sup>78</sup>
	Au <sup>79</sup>	Hg <sup>80</sup>	Tl <sup>81</sup>	Pb <sup>82</sup>	Bi <sup>83</sup>	Po <sup>84</sup>	At <sup>85</sup>	Rn <sup>86</sup>		

<0.1 ppb

0.1-1 ppb

>1 ppb

s - elements

p - elements

d - elements

## INDUSTRIES

Graphite Furnace Atomic Absorption Spectroscopy (GFAAS) is an excellent solution for trace element analysis in various fields:

- Environmental monitoring
- Water treatment
- Food and Beverages
- Agriculture
- Pharmaceuticals and Life science
- Medicine and Biochemistry
- Forensics and Clinical research
- Petrochemistry and Refineries
- Process control and Material analysis
- Science and Research

For laboratories with not too high sample throughput, GFAAS secures optimal combination of high selectivity, sensitivity and low-cost analysis.

The lists of standards (ISO, ASTM, EN, EPA, AOAC, etc.) applicable to MGA-1000 spectrometer are available at [www.lumexinstruments.com](http://www.lumexinstruments.com)

## LOW COST ANALYSIS

- Standard graphite tubes (28 mm) of both Massman and L'vov types are available
- The autosampler accommodates standard plastic vials and Eppendorf®-type tubes
- Prolonged tube lifetime

## SPECIFICATIONS

Spectral range	185–900 nm
Furnace heating rate	up to 4500 K/sec
Argon flow rate (high purity argon)	< 1 l/min
Maximum temperature of the furnace atomizer	3000 °C
Tube lifetime	800 heating cycles
Size	800x475x310 mm
Weight	50 kg

## SERVICE & SUPPORT

- Trainings and Seminars
- Warranty and Post-warranty Service
- Customized analytical procedures by request and Validation Support
- Consumables Supply

**LUMEX**  
INSTRUMENTS

The information and specifications in this publication are subject to change without notice.

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17LEN07.15/01-1