

CONSUMABLES



**Thermo Scientific  
Trace Elemental**  
Parts and Consumables  
*(includes iCAP 6000 Series,  
iCE 3000 Series, and  
M and S Series)*



## iCAP 6000 Series

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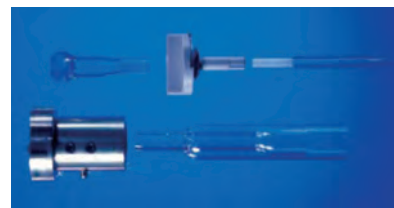
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## Radial Sample Handling Kits

The Thermo Scientific iCAP 6000 Series offers optimized sample handling kits for the main application types. These are all plug and play, self-aligning modules that make routine cleaning and alignment operations extremely simple.

The semi-demountable torch modules (original Tulip design and the new EMT design) do not require the manual making and breaking of gas connections during maintenance as the torch base clips into place while automatically making gas-tight connections. A software controlled torch aligning routine completes the process. Note: The new EMT Torch design is a standard component of the Sample Handling Kits. This torch design has been developed to provide enhanced matrix tolerance and analytical performance for organic solvents and high dissolved solids samples.

Radial view systems are the preferred type for some organics analysis, such as used lubricating oils. Also, in situations where high interferences may be encountered, it is likely that the Radial view type will minimize their effect. Two types of pump tubing are available, one for use with aqueous-based solutions and one for organics-based solutions. Whatever the sample, the iCAP 6000 Series has the answer.



### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Radial EMT Standard Kit <i>For normal aqueous sample solutions containing relatively low acid contents (except for hydrofluoric acid) or up to 3% m/v dissolved solids. The concentric glass nebulizer is not suitable for solutions containing large particulates due to the risk of blockages. The kit includes:</i>	8423 120 51791	\$ 977.00	\$1,172.00
<i>EMT Radial Quartz Torch</i>	8423 120 51741	\$ 176.00	\$ 211.00
<i>EMT Quartz Center Tube, 1.5 mm ID</i>	8423 120 51951	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Radial Spray Chamber Adapter</i>	8423 120 51151	\$ 105.00	\$ 126.00
<i>Glass Spray Chamber</i>	8423 120 51411	\$ 370.00	\$ 444.00
<i>Concentric Glass Nebulizer</i>	8423 120 51431	\$ 357.00	\$ 428.00
<i>Ball Joint Clip</i>	8423 120 51421	\$ 28.50	\$ 34.25
<i>Pump Sample Tubing, Aqueous</i>	8423 120 51511	\$ 31.50	\$ 37.75
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
Radial EMT Organics Kit <i>For sample solutions containing relatively non-volatile organic solvents, such as xylene, toluene, white spirit and kerosene. These solvents are the ones most likely to be used for lubricating oils analysis, both of additive compounds in fresh oil and wear metals in used oil. Radial view ICP systems are better suited to this type of analysis. The kit includes:</i>	8423 120 51701	\$1,462.00	\$1,754.00
<i>EMT Radial Quartz Torch</i>	8423 120 51741	\$ 176.00	\$ 211.00
<i>EMT Quartz Center Tube, 1 mm ID</i>	8423 120 51941	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Radial Spray Chamber Adapter</i>	8423 120 51151	\$ 105.00	\$ 126.00
<i>Spray Chamber, Organics</i>	8423 120 51311	\$ 277.00	\$ 332.00
<i>V-Groove Nebulizer</i>	8423 120 51321	\$1,321.00	\$1,585.00
<i>Ball Joint Clip</i>	8423 120 51421	\$ 28.50	\$ 34.25
<i>Pump Sample Tubing (Viton), Organics</i>	8423 120 51531	\$ 165.00	\$ 198.00
<i>Pump Drain Tubing (Viton), Organics</i>	8423 120 51541	\$ 165.00	\$ 198.00

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## Radial Sample Handling Kits

Continued



### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Radial EMT Volatile Organics Kit <i>For sample solutions containing the more volatile organic solvents, such as some ketones, alcohols and aldehydes. These are often found in petrochemical analysis, both for by-products such as plastics and for petrol itself. An additional cold water supply or chiller will be required to cool the spray chamber. The kit includes:</i>	8423 120 51711	\$ 996.00	\$1,195.00
<i>EMT Radial Quartz Torch</i>	8423 120 51741	\$ 176.00	\$ 211.00
<i>EMT Quartz Center Tube, 1 mm ID</i>	8423 120 51941	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Concentric Glass Nebulizer</i>	8423 120 51431	\$ 357.00	\$ 428.00
<i>Pump Sample Tubing (Viton), Organics</i>	8423 120 51531	\$ 165.00	\$ 198.00
<i>Pump Drain Tubing (Viton), Organics</i>	8423 120 51541	\$ 165.00	\$ 198.00
Radial IsoMist Kit <i>Note: The Radial IsoMist Kit should be ordered separately from the Radial Volatile Organics Kit to cool the Spray Chamber.</i>	8423 120 51651	\$4,176.00	\$5,011.00
Radial EMT HF-Resistant Kit <i>For sample solutions containing uncomplexed hydrofluoric acid. These are typically obtained during the analysis of geological samples, soils, sediments, ceramics, bricks and cement together with some types of high temperature alloys. Components in contact with the solutions are made from resistant fluoro plastic and alumina ceramic. The kit includes:</i>	8423 120 51721	\$1,967.00	\$2,360.00
<i>EMT Radial Quartz Torch</i>	8423 120 51741	\$ 176.00	\$ 211.00
<i>EMT Quartz Center Tube, 2 mm ID, Ceramic</i>	8423 120 51961	\$ 56.00	\$ 67.00
<i>Radial Spray Chamber, HF</i>	8423 120 51451	\$1,089.00	\$1,307.00
<i>Mira Mist Nebulizer</i>	8423 120 51471	\$ 593.00	\$ 712.00
<i>Pump Sample Tubing, Aqueous</i>	8423 120 51511	\$ 31.50	\$ 37.75
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
Radial EMT High Solids Kit <i>For the purposes of ICP analysis, high solids is defined as up to 20% m/v solutions, especially samples such as sea waters, brines and ground waters, geochemical samples and fusion mixtures. Used in conjunction with the argon humidifier (Part number 8423 120 52081 – see price below) allows for extended analysis time. The kit includes:</i>	8423 120 51731	\$ 979.00	\$1,175.00
<i>EMT Radial Quartz Torch</i>	8423 120 51741	\$ 176.00	\$ 211.00
<i>EMT Quartz Center Tube, 2 mm ID</i>	8423 120 51971	\$ 112.00	\$ 134.00
<i>Radial Spray Chamber Adapter</i>	8423 120 51151	\$ 105.00	\$ 126.00
<i>Spray Chamber Organics</i>	8423 120 51311	\$ 277.00	\$ 332.00
<i>Aerosalt Nebulizer</i>	8423 120 51331	\$ 545.00	\$ 654.00
<i>Ball Joint Clip</i>	8423 120 51421	\$ 28.50	\$ 34.25
Argon Humidifier	8423 120 52081	\$1,230.00	\$1,476.00

## Radial EMT Torch Kits

These torch kits provide all components to enable simple transition from the original Tulip to the EMT torch design as required. Tulip and EMT torch designs are compatible on all iCAP 6000 Series instruments.

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Radial EMT Torch Kit – Aqueous (Radial Parallel Torch Upgrade Kit)	8423 120 52021	\$ 818.00	\$ 982.00
<i>(x2) EMT Radial Torch</i>	<i>8423 120 51741</i>	\$ 176.00	\$ 211.00
<i>(x2) EMT Center Tube 1.5 mm ID</i>	<i>8423 120 51951</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Radial EMT Torch Kit – Organics (Radial Organics Parallel Torch Upgrade Kit)	8423 120 52011	\$ 818.00	\$ 982.00
<i>(x2) EMT Radial Torch</i>	<i>8423 120 51741</i>	\$ 176.00	\$ 211.00
<i>(x2) EMT Center Tube 1.0 mm ID</i>	<i>8423 120 51941</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Radial EMT Torch Kit – Volatile Organics (Radial Organics Parallel Torch Upgrade Kit)	8423 120 52011	\$ 818.00	\$ 982.00
<i>(x2) EMT Radial Torch</i>	<i>8423 120 51741</i>	\$ 176.00	\$ 211.00
<i>(x2) EMT Center Tube 1.0 mm ID</i>	<i>8423 120 51941</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Radial EMT Torch Kit – HF (Radial HF Parallel Torch Upgrade Kit)	8423 120 52041	\$ 700.00	\$ 840.00
<i>(x2) EMT Radial Torch</i>	<i>8423 120 51741</i>	\$ 176.00	\$ 211.00
<i>(x2) EMT Center Tube 2.0 mm (ceramic)</i>	<i>8423 120 51961</i>	\$ 56.00	\$ 67.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Radial EMT Torch Kit – High Solids (Radial Parallel Torch Upgrade Kit)	8423 120 52031	\$ 818.00	\$ 982.00
<i>(x2) EMT Radial Torch</i>	<i>8423 120 51741</i>	\$ 176.00	\$ 211.00
<i>(x2) EMT Center Tube 2.0 mm ID</i>	<i>8423 120 51971</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00

## Duo Sample Handling Kits

The Duo view system of the iCAP 6000 Series offers the option of using either axial or radial view to provide the widest choice of alternatives. Furthermore, the iCAP 6000 Series has a number of optimized sample handling kits available, covering the main application types to reduce performance problems. These are all plug and play, self-aligning kits. Routine cleaning and alignment operations are extremely simple to carry out. The semi-demountable torch modules (original Tulip and new EMT Torch designs) simply clips into place while automatically making gas-tight connections. Note: The new EMT Torch design is a standard component of the Sample Handling Kits. This torch design has been developed to provide enhanced matrix tolerance and analytical performance for organic solvents and high dissolved solids samples.



The standard sample handling kit is fitted to all systems, and optional kits for organics, volatile organics, HF-based and high solids solutions are available to fit Duo view systems. The axial view mode is preferred for clean water analysis, such as drinking water, where it gives the best detection limits. However, in situations where high interferences may be encountered, the radial mode may provide better performance. For organics like lubricating oils, it is likely that the dedicated Radial view system is best. Two types of pump tubing are available, one for use with aqueous-based solutions and one for organics-based solutions. Whatever the sample, the iCAP 6000 Series has the answer.



### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Duo EMT Standard Kit <i>For normal aqueous sample solutions containing relatively low acid contents (except for hydrofluoric acid) or up to 3% m/v dissolved solids. The axial view system is especially good for clean (i.e. drinking) water and some environmental samples which require the best detection limits. The kit includes:</i>	8423 120 51891	\$1,049.00	\$1,259.00
<i>EMT Duo Quartz Torch</i>	8423 120 51841	\$ 241.00	\$ 289.00
<i>EMT Quartz Center Tube, 2 mm ID</i>	8423 120 51971	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Duo Spray Chamber Adapter</i>	8423 120 51251	\$ 79.00	\$ 95.00
<i>Glass Spray Chamber</i>	8423 120 51411	\$ 370.00	\$ 444.00
<i>Concentric Glass Nebulizer</i>	8423 120 51431	\$ 357.00	\$ 428.00
<i>Ball Joint Clip</i>	8423 120 51421	\$ 28.50	\$ 34.25
<i>Pump Sample Tubing, Aqueous</i>	8423 120 51511	\$ 31.50	\$ 37.75
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
Duo EMT Organics Kit <i>For sample solutions containing relatively non-volatile organic solvents, such as xylene, toluene, white spirit and kerosene. The Duo option is not recommended for use in lubricating oils analysis, especially of wear metals in used oil. Dedicated radial view ICP systems are likely to be better suited. The kit includes:</i>	8423 120 51801	\$1,500.00	\$1,800.00
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
<i>EMT Quartz Center Tube, 1 mm ID</i>	8423 120 51941	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Duo Spray Chamber Adapter</i>	8423 120 51571	\$ 52.00	\$ 62.00
<i>Spray Chamber, Organics</i>	8423 120 51311	\$ 277.00	\$ 332.00
<i>V-Groove Nebulizer</i>	8423 120 51321	\$1,321.00	\$1,585.00
<i>Ball Joint Clip</i>	8423 120 51581	\$ 22.00	\$ 26.00
<i>Pump Sample Tubing (Viton), Organics</i>	8423 120 51531	\$ 165.00	\$ 198.00
<i>Pump Drain Tubing (Viton), Organics</i>	8423 120 51541	\$ 165.00	\$ 198.00

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## Duo Sample Handling Kits

Continued



### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Duo EMT Volatile Organics Kit <i>For sample solutions containing the more volatile organic solvents, such as some ketones, alcohols and aldehydes. These are often found in petrochemical analysis, both for by-products such as plastics and for petrol itself. An additional cold water supply or chiller is required to cool the spray chamber. The kit includes:</i>	8423 120 51811	\$ 987.00	\$1,184.00
<i>EMT Duo Quartz Torch</i>	8423 120 51841	\$ 241.00	\$ 289.00
<i>EMT Quartz Center Tube, 1 mm ID</i>	8423 120 51941	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	8423 155 50171	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	8423 155 50181	\$ 61.00	\$ 73.00
<i>Concentric Glass Nebulizer</i>	8423 120 51431	\$ 357.00	\$ 428.00
<i>Pump Sample Tubing (Viton), Organics</i>	8423 120 51531	\$ 165.00	\$ 198.00
<i>Pump Drain Tubing (Viton), Organics</i>	8423 120 51541	\$ 165.00	\$ 198.00
Duo IsoMist Kit <i>Note: The Duo IsoMist kit should be ordered separately from the Radial Volatile Organics Kit to cool the Spray Chamber.</i>	8423 120 51641	\$4,140.00	\$4,968.00
Duo EMT HF-Resistant Kit <i>For sample solutions containing uncomplexed hydrofluoric acid. These are typically obtained during the analysis of geological samples, soils, sediments, ceramics, bricks and cement together with some types of high temperature alloys. Components in contact with the solutions are made from resistant fluoro plastic and alumina ceramic. The kit includes:</i>	8423 120 51821	\$2,231.00	\$2,677.00
<i>EMT Duo Quartz Torch</i>	8423 120 51841	\$ 241.00	\$ 289.00
<i>EMT Quartz Center Tube, 2 mm ID, Ceramic</i>	8423 120 51961	\$ 56.00	\$ 67.00
<i>Duo Spray Chamber, HF</i>	8423 120 51461	\$1,158.00	\$1,390.00
<i>Mira Mist Nebulizer</i>	8423 120 51471	\$ 593.00	\$ 712.00
<i>Pump Sample Tubing, Aqueous</i>	8423 120 51511	\$ 31.50	\$ 37.75
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
Duo EMT High Solids Kit <i>For the purposes of ICP analysis, high solids is defined as up to 20% m/v solutions, especially samples such as sea waters, brines and ground waters, geochemical samples and fusion mixtures. Used in conjunction with the argon humidifier (Part number 8423 120 52081 – see price below) allows for extended analysis time. The kit includes:</i>	8423 120 51831	\$ 994.00	\$1,193.00
<i>EMT Duo Quartz Torch</i>	8423 120 51841	\$ 241.00	\$ 289.00
<i>EMT Quartz Center Tube, 2 mm ID</i>	8423 120 51971	\$ 112.00	\$ 134.00
<i>Duo Spray Chamber Adapter</i>	8423 120 51251	\$ 79.00	\$ 95.00
<i>Spray Chamber Organics</i>	8423 120 51311	\$ 277.00	\$ 332.00
<i>Aerosalt Nebulizer</i>	8423 120 51331	\$ 545.00	\$ 654.00
<i>Ball Joint Clip</i>	8423 120 51421	\$ 28.50	\$ 34.25
<i>Pump Sample Tubing, Aqueous</i>	8423 120 51511	\$ 31.50	\$ 37.75
<i>Pump Drain Tubing, Aqueous</i>	8423 120 51521	\$ 31.50	\$ 37.75
Argon Humidifier	8423 120 52081	\$1,230.00	\$1,476.00

## Duo EMT Torch Kits

These kits provide all torch components to enable a simple transition from the original Tulip to the EMT torch design as required. Tulip and EMT torch designs are compatible on all iCAP 6000 Series instruments.

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Duo EMT Torch Kit – Aqueous (Duo Parallel Torch Upgrade Kit)	8423 120 51991	\$ 830.00	\$ 996.00
<i>(x2) EMT Duo Torch</i>	<i>8423 120 51841</i>	\$ 241.00	\$ 289.00
<i>(x2) EMT Center Tube 2.0 mm ID</i>	<i>8423120 51971</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Duo EMT Torch Kit – Organics (Duo Organics Parallel Torch Upgrade Kit)	8423 120 51981	\$ 830.00	\$ 996.00
<i>(x2) EMT Duo Torch</i>	<i>8423 120 51841</i>	\$ 241.00	\$ 289.00
<i>(x2) EMT Center Tube 1.0 mm ID</i>	<i>8423 120 51941</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Duo EMT Torch Kit – Volatiles Organics (Duo Organics Parallel Torch Upgrade Kit)	8423 120 51981	\$ 830.00	\$ 996.00
<i>(x2) EMT Duo Torch</i>	<i>8423 120 51841</i>	\$ 241.00	\$ 289.00
<i>(x2) EMT Center Tube 1.0 mm ID</i>	<i>8423 120 51941</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Duo EMT Torch Kit – HF (Duo HF Parallel Torch Upgrade Kit)	8423 120 52001	\$ 712.00	\$ 854.00
<i>(x2) EMT Duo Torch</i>	<i>8423 120 51841</i>	\$ 241.00	\$ 289.00
<i>(x2) EMT Center Tube 2.0 mm ID (Ceramic)</i>	<i>8423 120 51961</i>	\$ 56.00	\$ 67.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00
Duo EMT Torch Kit – High Solids (Duo Parallel Torch Upgrade Kit)	8423 120 51991	\$ 830.00	\$ 996.00
<i>(x2) EMT Duo Torch</i>	<i>8423 120 51841</i>	\$ 241.00	\$ 289.00
<i>(x2) EMT Center Tube 2.0 mm ID</i>	<i>8423 120 51971</i>	\$ 112.00	\$ 134.00
<i>EMT Torch Holder Assembly</i>	<i>8423 155 50171</i>	\$ 76.00	\$ 91.00
<i>EMT Center Tube Holder Assembly</i>	<i>8423 155 50181</i>	\$ 61.00	\$ 73.00



## Sample Introduction Items

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
EMT Radial Torch <i>Quartz torch for use with iCAP 6000 Series Radial instruments only.</i>	8423 120 51741	\$ 176.00	\$ 211.00
Radial Torch (Tulip) <i>Quartz torch for use with iCAP 6000 Series Radial instruments only.</i>	8423 120 51141	\$ 233.00	\$ 280.00
Radial Spray Chamber Adapter <i>Adapter for connecting the spray chamber to center tube holder, for use with iCAP 6000 Radial instruments only.</i>	8423 120 51151	\$ 1005.00	\$ 126.00
Radial Ceramic Cone <i>Replaceable ceramic cone forming the purgeable interface between the plasma and optical system. For use with iCAP 6000 Series Radial instruments only.</i>	8423 120 51151	\$ 105.00	\$ 126.00
EMT Duo Torch <i>Quartz torch for use with iCAP 6000 Series Duo instruments only.</i>	8423 120 51841	\$ 241.00	\$ 289.00
Duo Torch (Tulip) <i>ICP quartz torch for use with iCAP 6000 Series Duo instruments only.</i>	8423 120 51241	\$ 279.00	\$ 335.00
Duo Spray Chamber Adapter <i>Adapter for connecting the spray chamber to center tube holder, for use with iCAP 6000 Series Duo instruments only.</i>	8423 120 51251	\$ 79.00	\$ 95.00
Duo Ceramic Cone <i>Replaceable ceramic cone forming the purgeable interface between the plasma and optical system. For use with iCAP 6000 Series Duo instruments only.</i>	8423 120 51261	\$ 530.00	\$ 636.00
Organics Spray Chamber <i>Spray chamber with baffle to reduce the amount of sample that reaches the plasma. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51311	\$ 277.00	\$ 332.00
V-Groove Nebulizer <i>Nebulizer intended for the analysis of samples containing very high solids (30% or more) or used oils. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51321	\$1,321.00	\$1,585.00
Aerosalt Nebulizer <i>Nebulizer intended for the analysis of samples containing relatively high solids (up to 15%). Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51331	\$ 545.00	\$ 654.00
EMT Center Tube 1 mm ID <i>Center tube intended for use with organic samples (to be used in conjunction with the organics spray chamber). Note: only for use with the EMT Torch</i>	8423 120 51941	\$ 112.00	\$ 134.00
Center Tube 1 mm ID (Tulip Torch) <i>Center tube intended for use with organic samples (to be used in conjunction with the organics spray chamber). Note: only for use with the Tulip Torch</i>	8423 120 51341	\$ 126.00	\$ 151.00
EMT Center Tube 1.5 mm ID <i>Center tube intended for use with aqueous samples and provided as standard on iCAP 6000 Series Radial systems. Note: only for use with the EMT Torch.</i>	8423 120 51951	\$ 112.00	\$ 134.00
Center Tube 1.5 mm ID (Tulip Torch) <i>Center tube intended for use with aqueous samples. Note: only for use with the Tulip Torch.</i>	8423 120 51351	\$ 126.00	\$ 151.00

Continued

## Sample Introduction Items

Continued

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
EMT Ceramic Center Tube 2.0 mm ID <i>Ceramic center tube intended for the analysis of samples containing HF acid. Note: only for use with EMT Torch.</i>	8423 120 51961	\$ 56.00	\$ 67.00
Center Tube Ceramic 2 mm ID (Tulip Torch) <i>Center tube intended for the analysis of samples containing HF acid. Note: only for use with the Tulip Torch.</i>	8423 120 51361	\$ 117.00	\$ 140.00
EMT Center Tube 2.0 mm ID <i>Center tube is supplied as standard with current iCAP 6000 Series Duo Systems and is also used in conjunction with the high solids nebulizer. Note: only for use with EMT Torch.</i>	8423 120 51971	\$ 112.00	\$ 134.00
Center Tube 2 mm ID (Tulip Torch) <i>Center tube previously supplied as standard with iCAP 6000 Series Duo Systems and is also used in conjunction with the high solids nebulizer. Note: only for use with the Tulip Torch.</i>	8423 120 51371	\$ 126.00	\$ 151.00
EMT Center Tube Holder Assembly <i>Accommodates all EMT Torch center tubes and provides a mount to the torch and torch holder. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 155 50181	\$ 61.00	\$ 73.00
Center Tube Holder (Tulip Torch) <i>Accommodates all Tulip Torch center tubes and provides a mount to the torch and torch holder. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51381	\$ 116.00	\$ 139.00
Sampling O-Ring Kit (for Tulip and EMT Torches) <i>Kit containing all appropriate O-rings for the spray chamber, center tube holder and torch components. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51401	\$ 44.50	\$ 53.00
EMT Torch Holder Assembly <i>Provides a mount to all EMT Radial and Duo Torches. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 155 50171	\$ 76.00	\$ 91.00
Spray Chamber <i>Standard glass cyclonic spray chamber provided with all iCAP 6000 Series Spectrometers. Requires an appropriate Adapter dependent on whether a Radial or Duo instrument is used.</i>	8423 120 51411	\$ 370.00	\$ 444.00
Ball Joint Clip <i>Metal ball joint clip for connecting spray chamber and Adapter. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51421	\$ 28.50	\$ 34.25
Nebulizer <i>Standard concentric nebulizer for use with samples containing up to 3% TDS. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51431	\$ 357.00	\$ 428.00
Spray Chamber Jacketed <i>Water cooled organics spray chamber, for use with volatile organic sample. Requires an additional chiller for operation. Compatible with all iCAP 6000 Series Spectrometers. Requires a special Jacketed spray chamber Adapter which is also dependent on whether a Radial or Duo instrument is used.</i>	8423 120 51441	\$ 319.00	\$ 383.00
Radial Spray Chamber, HF-Resistant <i>Hydrofluoric acid (HF) resistant spray chamber, intended for the analysis of samples containing HF acid. For use with iCAP 6000 Series Radial instruments only. Does not require a spray chamber</i>	8423 120 51451	\$1,089.00	\$1,307.00

Continued

## Sample Introduction Items

Continued

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Duo Spray Chamber, HF-Resistant <i>Hydrofluoric acid (HF) resistant spray chamber, intended for the analysis of samples containing HF acid. For use with iCAP 6000 Series Duo instruments only. Does not require a spray chamber Adapter or ball joint clip.</i>	8423 120 51461	\$1,158.00	\$1,390.00
Mira Mist Nebulizer, HF-Resistant <i>Hydrofluoric acid (HF) resistant nebulizer, intended for the analysis of samples containing HF acid. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51471	\$ 593.00	\$ 712.00
Capillary Tubing <i>Tubing for connection of sample probe to nebulizer, autosampler and drain. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51481	\$ 5.00	\$ 6.00
Sampling Probe to Capillary Sleeving <i>Sleeve to allow connection of capillary tubing to sample probe. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51491	\$ 57.00	\$ 68.00
Sampling Probe <i>Sampling probe manufactured of Ultem. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51501	\$ 134.00	\$ 161.00
Pump Sample Tube Aqueous <i>Standard Tygon™ orange/white pump tubing. One pack of six. Compatible with all iCAP 6000 Series Spectrometers</i>	8423 120 51511	\$ 31.50	\$ 37.75
Pump Drain Tube Aqueous <i>Standard Tygon white/white pump tubing. One pack of six. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51521	\$ 31.50	\$ 37.75
Pump Sample Tube Organics <i>Viton orange/white pump tubing suitable for use in the analysis of organic based samples. One pack of six. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51531	\$ 165.00	\$ 198.00
Pump Drain Tube Organics <i>Viton white/white pump tubing suitable for use in the analysis of organic based samples. One pack of six. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51541	\$ 165.00	\$ 198.00
Internal Standards Kit <i>Internal standards mixing kit, comprising Tygon orange/white and blue/white pump tubing, y-piece, mixing loop and connecting tube for fitting. Compatible with all iCAP 6000 Series Spectrometers.</i>	8423 120 51551	\$ 57.00	\$ 68.00
Sleeve for Duo Torch <i>Provides a spare sealing window for the radial view periscope on duo systems. Compatible with all iCAP 6000 Series Duo Spectrometers.</i>	8423 120 51591	\$ 120.00	\$ 144.00

## Chillers

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Isomist Radial Kit <i>Peltier Spray Chamber cooling kit for volatile organics samples. Recommended for use with Radial iCAP 6000 Series instruments with the Radial Volatile Organics Kit.</i>	8423 120 51651	\$4,176.00	\$5,011.00
Isomist Duo Kit <i>Peltier Spray Chamber cooling kit for volatile organics samples. Recommended for use with Duo iCAP 6000 Series instruments with the Duo Volatile Organics Kit</i>	8423 120 51641	\$4,140.00	\$4,968.00
Water Recirculator (60 Hz) <i>A compact, portable, refrigerated water recirculator with cooling capacity up to 900 watts, providing powerful cooling capacity, a variety of standard features and options, and a space saving design.</i>	9423 393 97003	\$3,584.00	\$4,301.00
Water Recirculator (50 Hz) <i>A compact, portable refrigerated water recirculator with cooling capacity up to 750 watts, providing powerful cooling capacity, a variety of standard features and options, and a space saving design.</i>	9423 393 97005	\$3,914.00	\$3,914.00

## Solid Sampling Accessories






Description	Part Number	Price (US)	Price (CAN)
Argon Humidifier <i>An accessory which is used in conjunction with the High Solids Kit to prevent the nebulizer and center tube from blocking when analyzing samples containing high salts. Minimizes time consuming and potentially expensive blockages of glass concentric nebulizers when analyzing samples containing high levels of dissolved solids</i>	8423 120 52081	\$1,230.00	\$1,476.00
Cetac™ UT5000AT™ Ultrasonic Nebulizer <i>Accessory for ultra trace element detection, used in conjunction with the ICP spectrometer to enhance performance by improving nebulization and sample transport efficiency; allowing sub ppb detection limits for many elements. Can also be used to simplify the analysis of volatile organic solvents.</i> • Suitable for 100 – 240 v: 50/60Hz operation.	8423 180 51001		CALL
Laser Solid Sampling System <i>Separate laser accessory for the analysis of solids and pressed powders by ablation. 266 nm UV Nd-YAG laser ablation system designed specifically for ICP solid sampling analysis. Incorporates a 30 m to 750 m aperture imaged beam delivery system. Full computer control of system functions.</i>	8423 180 52001		CALL
SSEA - Solid Sampling System <i>Separate Sample and Excitation Accessory. Allows direct analysis of solid samples with sub ppm detection limits. Ideal for applications requiring analysis of both liquid and solid samples with a single spectrometer. Solid state spark source ablates metal particles from the surface of the sample and an argon stream carries the resulting metal aerosol into the plasma for excitation.</i>	8423 170 50001		CALL
<i>Requires Accessory Interface Kit</i>	8423 180 52001		CALL



## Autosampling Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Cetac ASX-520 Autosampler <i>Random access large capacity autosampler for ICP and AAS analysis. 84 to 360 solution capacity dependent on rack configuration. Standards rack (10 positions) and 4 sample racks of 60 positions are supplied as standard. Includes a pumped wash facility, PTFE probe and RS232C Adapter.</i>	9423 470 04001		CALL
			
Cetac ASX-260 Autosampler <i>Random access compact autosampler for ICP and AAS analysis. 42 to 180 solution capacity dependent on rack configuration. Standards rack (10 positions) and 2 sample racks of 60 positions are supplied as standard. Includes a pumped wash facility, PTFE probe and RS232C Adapter.</i>	9423 470 04002		CALL
			
Tray for Cetac ASX-260 Autosampler <i>Drip tray for liquids for use under sample racks on a Cetac ASX-260 autosampler.</i>	8423 470 03961	\$ 414.00	\$ 497.00
Cetac EXR-8 Autosampler <i>Random access extremely large capacity autosampler for ICP analysis. 168 to 720 solution capacity dependent on rack configuration. Standards rack (10 positions) and 8 sample racks of 60 positions are supplied as standard. Includes a pumped wash facility, PTFE probe and RS232C Adapter.</i>	8423 470 04003		CALL
			
Tray for Cetac EXR-8 Autosampler <i>Drip tray for liquids for use under sample racks on a Cetac EXR-8 autosampler.</i>	8423 470 03971	\$ 414.00	\$ 497.00
21 Position Rack <i>Capable of holding 21 (50 mL Tubes)</i>	9423 470 03901	\$ 58.00	\$ 70.00
50 mL Tubes Polypropylene <i>Use with 21 Position Rack (9423 470 03901)</i>	9423 470 04151	\$ 477.00	\$ 572.00
24 Position Rack <i>Capable of holding 24 (30 mL Tubes)</i>	9423 470 03911	\$ 33.00	\$ 39.50
30 mL Tubes Polypropylene <i>Use with 24 Position Rack (9423 470 03911)</i>	9423 470 04111	\$ 307.00	\$ 368.00
40 Position Rack <i>Capable of holding 40 (20 mL Tubes)</i>	9423 470 03921	\$ 57.00	\$ 68.00
20 mL Tubes Polypropylene <i>Use with 40 Position Rack (9423 470 03921)</i>	9423 470 04161	\$ 307.00	\$ 368.00
60 Position Rack <i>Capable of holding 60 (14 mL Tubes)</i>	9423 470 03931	\$ 55.00	\$ 66.00
14 mL Tubes Polypropylene <i>Use with 60 Position Rack (9423 470 03931)</i>	9423 470 04131	\$ 288.00	\$ 346.00
90 Position Rack <i>Capable of holding 90 (8 mL Tubes)</i>	9423 470 03941	\$ 57.00	\$ 68.00
8 mL Tubes Polypropylene <i>Use with 90 Position Rack (9423 470 03941)</i>	9423 470 04141	\$ 553.00	\$ 664.00

## Hydride Accessories

### Ordering Information



Description	Part Number	Price (US)	Price (CAN)
Basic Hydride System <i>A basic hydride generation kit with tubing for sample and reductant which attaches to the existing spectrometer peristaltic pump, for enhancing the sensitivity performance of certain element determinations.</i>	8423 180 50001	\$ 57.00	\$ 68.00
Enhanced Hydride System <i>A hydride generation accessory, with full gas/liquid separator and connecting sample and drain tubing for full integration with ICP spectrometer, providing improved levels of sensitivity for certain element determinations</i>	8423 180 50101	\$ 650.00	\$ 780.00
Replacement Tubing Kit for Enhanced Hydride System <i>Sets of spare peristaltic pump tubing for use with the enhanced hydride system.</i>	8423 120 51611	\$ 185.00	\$ 222.00

## iTEVA Software

The iCAP 6000 Series is supplied complete with the Thermo Scientific iTEVA ICP-OES PC software, which is compatible with Windows®, XP and Vista operating systems. The software provides an easy-to-navigate software platform that allows operators to add wavelengths, create methods, analyze samples and post-process the data. The unique IntelliFrame feature and full frame imaging allows the analyst to capture and record the entire spectrum of any or all samples for permanent records or semi-quantitative analysis. An intuitive graphical user interface coupled with integrated SQL server technology and Ethernet connectivity provide multiple internal standards capability referenced to multiple lines, complemented with many different reporting formats.

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
iCAP 6000 Series - iTEVA Software Upgrade <i>Upgrade iTEVA Software providing the latest version of software for the iCAP 6000 Series ICP-OES spectrometers, and includes both Data Station Windows software and spectrometer firmware.</i>	8423 130 50001		CALL
iCAP 6000 Series Operator's Manual <i>Contains customer instructions on the iCAP 6000 Series ICP hardware and customer instructions on the functionality, the navigation and obtaining the best results from the iTEVA software used with iCAP 6000 Series ICP-OES spectrometers.</i>	8499 400 90001	\$ 688.00	\$ 826.00

## Data Station Information

### Requirements

The Data Station requirements will normally be met by a PC, meeting the minimum specification

- Windows XP Professional
- 20 Gb Hard drive
- 512 Mb RAM
- Dedicated Ethernet card for spectrometer communication
- A second Ethernet card will be required for networking
- Some accessories require a dedicated RS232 port
- A printer port may be required

### Ordering Information

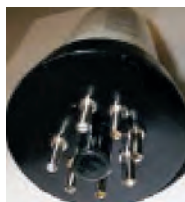
Description	Part Number	Price (US)	Price (CAN)
iCAP ICP Data Station - USA <ul style="list-style-type: none"> <li>• Microsoft Windows compatible PC with appropriate specification for iCAP.</li> <li>• Two (2) Ethernet ports included.</li> <li>• Suitable for 110 – 120 v: 50/60 Hz operation.</li> </ul>	840-179000	\$2,065.00	\$2,478.00

## Manuals

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
iCAP 6000 Series Operator's Manual <i>Contains instructions on the iCAP 6000 Series ICP hardware and on the functionality, the navigation and obtaining the best results from the iTEVA software used with iCAP 6000 Series ICP-OES spectrometers.</i>	8499 400 90001	\$ 688.00	\$ 826.00
Pre-Installation Manual - iCAP 6000 Series <i>Contains advice and instructions regarding site set up for installation of the iCAP 6000 Series.</i>	8499 400 30001		CALL

## Single-Element Lamps – Data Coded



Coded Identification  
Seven (7) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific iCE 3000 Series spectrometers. The spectrometers read the element contained in the lamp and the maximum permissible lamp current from the data coding, providing maximum convenience and removing the possibility of damaging the lamp with excessive currents. Single-element lamps provide the best possible analytical performance. All Thermo Scientific Data Coded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	942339030131	\$ 320.00	\$ 384.00	Nickel	Ni	942339030281	\$ 368.00	\$ 442.00
Antimony	Sb	942339030511	\$ 397.00	\$ 476.00	Niobium	Nb	942339030411	\$ 418.00	\$ 502.00
Arsenic	As	942339030331	\$ 397.00	\$ 476.00	Osmium	Os	942339030761	\$ 641.00	\$ 769.00
Barium	Ba	942339030561	\$ 368.00	\$ 442.00	Palladium	Pd	942339030461	\$ 484.00	\$ 581.00
Beryllium	Be	942339030041	\$ 680.00	\$ 816.00	Phosphorus	P	942339030151	\$ 484.00	\$ 581.00
Bismuth	Bi	942339030831	\$ 368.00	\$ 442.00	Platinum	Pt	942339030781	\$ 518.00	\$ 622.00
Boron	B	942339030051	\$ 484.00	\$ 581.00	Potassium	K	942339030191	\$ 397.00	\$ 476.00
Cadmium	Cd	942339030481	\$ 431.00	\$ 517.00	Praseodymium	Pr	942339030591	\$ 539.00	\$ 647.00
Calcium	Ca	942339030201	\$ 368.00	\$ 442.00	Rhenium	Re	942339030751	\$ 539.00	\$ 647.00
Cesium	Cs	942339030551	\$ 484.00	\$ 581.00	Rhodium	Rh	942339030451	\$1,074.00	\$1,289.00
Chromium	Cr	942339030241	\$ 368.00	\$ 442.00	Rubidium	Rb	942339030371	\$ 505.00	\$ 606.00
Cobalt	Co	942339030271	\$ 431.00	\$ 517.00	Ruthenium	Ru	942339030441	\$ 505.00	\$ 606.00
Copper	Cu	942339030291	\$ 320.00	\$ 384.00	Samarium	Sm	942339030621	\$ 505.00	\$ 606.00
Dysprosium	Dy	942339030661	\$ 505.00	\$ 606.00	Scandium	Sc	942339030211	\$ 641.00	\$ 769.00
Erbium	Er	942339030681	\$ 539.00	\$ 647.00	Selenium	Se	942339030341	\$ 518.00	\$ 622.00
Europium	Eu	942339030631	\$ 505.00	\$ 606.00	Silicon	Si	942339030141	\$ 397.00	\$ 476.00
Gadolinium	Gd	942339030641	\$ 539.00	\$ 647.00	Silver	Ag	942339030471	\$ 368.00	\$ 442.00
Gallium	Ga	942339030311	\$ 505.00	\$ 606.00	Sodium	Na	942339030111	\$ 368.00	\$ 442.00
Germanium	Ge	942339020321	\$ 498.00	\$ 598.00	Strontium	Sr	942339030381	\$ 397.00	\$ 476.00
Gold	Au	942339030791	\$ 484.00	\$ 581.00	Tantalum	Ta	942339030731	\$ 418.00	\$ 502.00
Hafnium	Hf	942339030721	\$ 505.00	\$ 606.00	Tellurium	Te	942339030521	\$ 484.00	\$ 581.00
Holmium	Ho	942339030671	\$ 505.00	\$ 606.00	Terbium	Tb	942339030651	\$ 539.00	\$ 647.00
Indium	In	942339030491	\$ 452.00	\$ 542.00	Thallium	Tl	942339030811	\$ 484.00	\$ 581.00
Iridium	Ir	942339030771	\$ 539.00	\$ 647.00	Thorium	Th	942339030901	\$ 700.00	\$ 840.00
Iron	Fe	942339030261	\$ 368.00	\$ 442.00	Thulium	Tm	942339030691	\$ 728.00	\$ 874.00
Lanthanum	La	942339030571	\$ 418.00	\$ 502.00	Tin	Sn	942339030501	\$ 397.00	\$ 476.00
Lead	Pb	942339030821	\$ 368.00	\$ 442.00	Titanium	Ti	942339030221	\$ 320.00	\$ 384.00
Lithium	Li	942339030031	\$ 416.00	\$ 499.00	Tungsten	W	942339030741	\$ 431.00	\$ 517.00
Lutetium	Lu	942339030711	\$ 505.00	\$ 606.00	Uranium	U	942339030921	\$1,428.00	\$1,714.00
Magnesium	Mg	942339030121	\$ 368.00	\$ 442.00	Vanadium	V	942339030231	\$ 397.00	\$ 476.00
Manganese	Mn	942339030251	\$ 368.00	\$ 442.00	Ytterbium	Yb	942339030701	\$ 539.00	\$ 647.00
Mercury	Hg	942339030801	\$ 397.00	\$ 476.00	Yttrium	Y	942339030391	\$ 505.00	\$ 606.00
Molybdenum	Mo	942339030421	\$ 320.00	\$ 384.00	Zinc	Zn	942339030301	\$ 368.00	\$ 442.00
Neodymium	Nd	942339030601	\$ 505.00	\$ 606.00	Zirconium	Zr	942339030401	\$ 397.00	\$ 476.00



## Single-Element Lamps – Uncoded



Uncoded Identification  
Two (2) Pins

High quality hollow cathode lamps optimized for use with the Thermo Scientific iCE 3000 Series spectrometers. Single-element lamps provide the best possible analytical performance.

All Thermo Scientific Uncoded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	942339020131	\$ 279.00	\$ 335.00	Nickel	Ni	942339020281	\$ 327.00	\$ 392.00
Antimony	Sb	942339020511	\$ 356.00	\$ 427.00	Niobium	Nb	942339020411	\$ 377.00	\$ 452.00
Arsenic	As	942339020331	\$ 356.00	\$ 427.00	Osmium	Os	942339020761	\$ 600.00	\$ 720.00
Barium	Ba	942339020561	\$ 327.00	\$ 392.00	Palladium	Pd	942339020461	\$ 443.00	\$ 532.00
Beryllium	Be	942339020041	\$ 659.00	\$ 791.00	Phosphorus	P	942339020151	\$ 464.00	\$ 557.00
Bismuth	Bi	942339020831	\$ 327.00	\$ 392.00	Platinum	Pt	942339020781	\$ 478.00	\$ 574.00
Boron	B	942339020051	\$ 464.00	\$ 557.00	Potassium	K	942339020191	\$ 356.00	\$ 427.00
Cadmium	Cd	942339020481	\$ 391.00	\$ 469.00	Praseodymium	Pr	942339020591	\$ 498.00	\$ 598.00
Calcium	Ca	942339020201	\$ 327.00	\$ 392.00	Rhenium	Re	942339020751	\$ 498.00	\$ 598.00
Cesium	Cs	942339020551	\$ 464.00	\$ 557.00	Rhodium	Rh	942339020451	\$1,013.00	\$1,216.00
Chromium	Cr	942339020241	\$ 327.00	\$ 392.00	Rubidium	Rb	942339020371	\$ 464.00	\$ 557.00
Cobalt	Co	942339020271	\$ 391.00	\$ 469.00	Ruthenium	Ru	942339020441	\$ 464.00	\$ 557.00
Copper	Cu	942339020291	\$ 279.00	\$ 335.00	Samarium	Sm	942339020621	\$ 464.00	\$ 557.00
Dysprosium	Dy	942339020661	\$ 464.00	\$ 557.00	Scandium	Sc	942339020211	\$ 600.00	\$ 720.00
Erbium	Er	942339020681	\$ 498.00	\$ 598.00	Selenium	Se	942339020341	\$ 478.00	\$ 574.00
Europium	Eu	942339020631	\$ 464.00	\$ 557.00	Silicon	Si	942339020141	\$ 356.00	\$ 427.00
Gadolinium	Gd	942339020641	\$ 498.00	\$ 598.00	Silver	Ag	942339020471	\$ 327.00	\$ 392.00
Gallium	Ga	942339020311	\$ 464.00	\$ 557.00	Sodium	Na	942339020111	\$ 327.00	\$ 392.00
Germanium	Ge	942339020321	\$ 498.00	\$ 598.00	Strontium	Sr	942339020381	\$ 356.00	\$ 427.00
Gold	Au	942339020791	\$ 443.00	\$ 532.00	Tantalum	Ta	942339020731	\$ 377.00	\$ 452.00
Hafnium	Hf	942339020721	\$ 464.00	\$ 557.00	Tellurium	Te	942339020521	\$ 464.00	\$ 557.00
Holmium	Ho	942339020671	\$ 464.00	\$ 557.00	Terbium	Tb	942339020651	\$ 498.00	\$ 598.00
Indium	In	942339020491	\$ 411.00	\$ 493.00	Thallium	Tl	942339020811	\$ 443.00	\$ 532.00
Iridium	Ir	942339020771	\$ 498.00	\$ 598.00	Thorium	Th	942339020901	\$ 659.00	\$ 791.00
Iron	Fe	942339020261	\$ 327.00	\$ 392.00	Thulium	Tm	942339020691	\$ 687.00	\$ 824.00
Lanthanum	La	942339020571	\$ 377.00	\$ 452.00	Tin	Sn	942339020501	\$ 356.00	\$ 427.00
Lead	Pb	942339020821	\$ 327.00	\$ 392.00	Titanium	Ti	942339020221	\$ 279.00	\$ 335.00
Lithium	Li	942339020031	\$ 313.00	\$ 376.00	Tungsten	W	942339020741	\$ 411.00	\$ 493.00
Lutetium	Lu	942339020711	\$ 464.00	\$ 557.00	Uranium	U	942339020921	\$1,387.00	\$1,664.00
Magnesium	Mg	942339020121	\$ 327.00	\$ 392.00	Vanadium	V	942339020231	\$ 356.00	\$ 427.00
Manganese	Mn	942339020251	\$ 327.00	\$ 392.00	Ytterbium	Yb	942339020701	\$ 498.00	\$ 598.00
Mercury	Hg	942339020801	\$ 356.00	\$ 427.00	Yttrium	Y	942339020391	\$ 464.00	\$ 557.00
Molybdenum	Mo	942339020421	\$ 279.00	\$ 335.00	Zinc	Zn	942339020301	\$ 327.00	\$ 392.00
Neodymium	Nd	942339020601	\$ 464.00	\$ 557.00	Zirconium	Zr	942339020401	\$ 377.00	\$ 452.00

## Multi-Element Lamps – Data Coded



Coded Identification  
Seven (7) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific iCE 3000 Series spectrometers. The spectrometers read the list of elements contained in the lamp and the maximum permissible lamp current from the data coding, providing maximum convenience and removing the possibility of damaging the lamp with excessive currents. Multi-element lamps provide analytical performance comparable with single-element lamps, while reducing your lamp inventory and increasing the ease of use. All Thermo Scientific Data Coded Multi-Element Lamps carry a 5000 mA/Hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum/Magnesium	Al/Mg	942339331051	\$ 484.00	\$ 581.00
Aluminum/Silicon	Al/Si	942339331041	\$ 505.00	\$ 606.00
Aluminum/Silicon/Titanium	Al/Si/Ti	942339331391	\$ 559.00	\$ 671.00
Aluminum/Titanium	Al/Ti	942339331381	\$ 505.00	\$ 606.00
Barium/Calcium	Ba/Ca	942339331571	\$ 505.00	\$ 606.00
Barium/Calcium/Strontium	Ba/Ca/Sr	942339331601	\$ 559.00	\$ 671.00
Barium/Strontium	Ba/Sr	942339331591	\$ 505.00	\$ 606.00
Cadmium/Zinc	Cd/Zn	942339331611	\$ 484.00	\$ 581.00
Calcium/Magnesium	Ca/Mg	942339331011	\$ 484.00	\$ 581.00
Calcium/Magnesium/Silicon	Ca/Mg/Si	942339331061	\$ 559.00	\$ 671.00
Calcium/Silicon	Ca/Si	942339331081	\$ 505.00	\$ 606.00
Calcium/Strontium	Ca/Sr	942339331581	\$ 505.00	\$ 606.00
Calcium/Zinc	Ca/Zn	942339331471	\$ 505.00	\$ 606.00
Chromium/Copper	Cr/Cu	942339331131	\$ 505.00	\$ 606.00
Chromium/Copper/Manganese/Nickel	Cr/Cu/Mn/Ni	942339331171	\$ 607.00	\$ 728.00
Chromium/Copper/Nickel	Cr/Cu/Ni	942339331151	\$ 539.00	\$ 647.00
Chromium/Copper/Silver	Cr/Cu/Ag	942339331501	\$ 559.00	\$ 671.00
Chromium/Manganese	Cr/Mn	942339331141	\$ 505.00	\$ 606.00
Chromium/Manganese/Nickel	Cr/Mn/Ni	942339331161	\$ 539.00	\$ 647.00
Chromium/Molybdenum	Cr/Mo	942339331371	\$ 484.00	\$ 581.00
Chromium/Nickel	Cr/Ni	942339331121	\$ 484.00	\$ 581.00
Chromium/Silver	Cr/Ag	942339331481	\$ 505.00	\$ 606.00
Cobalt/Copper	Co/Cu	942339331181	\$ 505.00	\$ 606.00
Cobalt/Copper/Iron	Co/Cu/Fe	942339331281	\$ 559.00	\$ 671.00
Cobalt/Copper/Iron/Manganese	Co/Cu/Fe/Mn	942339331331	\$ 607.00	\$ 728.00
Cobalt/Copper/Manganese/Nickel	Co/Cu/Mn/Ni	942339331341	\$ 607.00	\$ 728.00
Cobalt/Iron	Co/Fe	942339331191	\$ 505.00	\$ 606.00
Cobalt/Iron/Manganese/Nickel607	Co/Fe/Mn/Ni	942339331351	\$ 607.00	\$ 728.00
Cobalt/Manganese	Co/Mn	942339331201	\$ 505.00	\$ 606.00
Cobalt/Manganese/Nickel	Co/Mn/Ni	942339331291	\$ 559.00	\$ 671.00

Description	Element	Part Number	Price (US)	Price (CAN)
Cobalt/Molybdenum	Co/Mo	942339331111	\$ 505.00	\$ 606.00
Cobalt/Nickel	Co/Ni	942339331211	\$ 505.00	\$ 606.00
Copper/Gold/Nickel	Cu/Au/Ni	942339331421	\$ 607.00	\$ 728.00
Copper/Iron	Cu/Fe	942339331221	\$ 505.00	\$ 606.00
Copper/Iron/Manganese/Nickel	Cu/Fe/Mn/Ni	942339331361	\$ 607.00	\$ 728.00
Copper/Iron/Manganese/Zinc	Cu/Fe/Mn/Zn	942339331561	\$ 586.00	\$ 703.00
Copper/Iron/Zinc	Cu/Fe/Zn	942339331531	\$ 559.00	\$ 671.00
Copper/Manganese	Cu/Mn	942339331231	\$ 505.00	\$ 606.00
Copper/Manganese/Iron	Cu/Mn/Fe	942339331311	\$ 539.00	\$ 647.00
Copper/Manganese/Nickel	Cu/Mn/Ni	942339331301	\$ 559.00	\$ 671.00
Copper/Manganese/Zinc	Cu/Mn/Zn	942339331541	\$ 559.00	\$ 671.00
Copper/Nickel	Cu/Ni	942339331241	\$ 505.00	\$ 606.00
Copper/Silver	Cu/Ag	942339331491	\$ 505.00	\$ 606.00
Copper/Zinc	Cu/Zn	942339331031	\$ 484.00	\$ 581.00
Gold/Copper	Au/Cu	942339331401	\$ 559.00	\$ 671.00
Gold/Nickel	Au/Ni	942339331411	\$ 559.00	\$ 671.00
Gold/Platinum	Au/Pt	942339331451	\$ 607.00	\$ 728.00
Gold/Silver	Au/Ag	942339331431	\$ 559.00	\$ 671.00
Gold/Silver/Platinum	Au/Ag/Pt	942339331461	\$ 666.00	\$ 799.00
Iron/Manganese	Fe/Mn	942339331251	\$ 484.00	\$ 581.00
Iron/Manganese/Nickel	Fe/Mn/Ni	942339331321	\$ 559.00	\$ 671.00
Iron/Manganese/Zinc	Fe/Mn/Zn	942339331551	\$ 559.00	\$ 671.00
Iron/Nickel	Fe/Ni	942339331261	\$ 505.00	\$ 606.00
Iron/Zinc	Fe/Zn	942339331511	\$ 484.00	\$ 581.00
Magnesium/Silicon	Mg/Si	942339331091	\$ 505.00	\$ 606.00
Manganese/Nickel	Mn/Ni	942339331271	\$ 505.00	\$ 606.00
Manganese/Zinc	Mn/Zn	942339331521	\$ 505.00	\$ 606.00
Platinum/Silver	Pt/Ag	942339331441	\$ 559.00	\$ 671.00
Potassium/Sodium	K/Na	942339331021	\$ 484.00	\$ 581.00
Silicon/Titanium	Si/Ti	942339331101	\$ 505.00	\$ 606.00

## Multi-Element Lamps – Uncoded



Uncoded Identification  
Two (2) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific iCE 3000 Series spectrometers. Multi-element lamps provide analytical performance comparable with single-element lamps, while reducing your lamp inventory and increasing the ease of use. All Thermo Scientific Uncoded Multi-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum/Magnesium	Al/Mg	942339321051	\$ 464.00	\$ 557.00	Cobalt/Molybdenum	Co/Mo	942339321111	\$ 464.00	\$ 557.00
Aluminum/Silicon	Al/Si	942339321041	\$ 464.00	\$ 557.00	Cobalt/Nickel	Co/Ni	942339321211	\$ 464.00	\$ 557.00
Aluminum/Silicon / Titanium	Al/Si/Ti	942339321391	\$ 518.00	\$ 622.00	Copper/Gold/Nickel	Cu/Au/Ni	942339321421	\$ 566.00	\$ 679.00
Aluminum/Titanium	Al/Ti	942339321381	\$ 464.00	\$ 557.00	Copper/Iron	Cu/Fe	942339321221	\$ 443.00	\$ 532.00
Barium/Calcium	Ba/Ca	942339321571	\$ 464.00	\$ 557.00	Copper/Iron/ Manganese/Nickel	Cu/Fe/Mn/Ni	942339321361	\$ 566.00	\$ 679.00
Barium/Calcium/Strontium	Ba/Ca/Sr	942339321601	\$ 518.00	\$ 622.00	Copper/Iron/ Manganese/Zinc	Cu/Fe/Mn/Zn	942339321561	\$ 545.00	\$ 654.00
Barium/Strontium	Ba/Sr	942339321591	\$ 464.00	\$ 557.00	Copper/Iron/Zinc	Cu/Fe/Zn	942339321531	\$ 518.00	\$ 622.00
Cadmium/Zinc	Cd/Zn	942339321611	\$ 443.00	\$ 532.00	Copper/Manganese	Cu/Mn	942339321231	\$ 464.00	\$ 557.00
Calcium/Magnesium	Ca/Mg	942339321011	\$ 443.00	\$ 532.00	Copper/Manganese/Iron	Cu/Mn/Fe	942339321311	\$ 518.00	\$ 622.00
Calcium/Magnesium/Silicon	Ca/Mg/Si	942339321061	\$ 518.00	\$ 622.00	Copper/Manganese/Nickel	Cu/Mn/Ni	942339321301	\$ 518.00	\$ 622.00
Calcium/Silicon	Ca/Si	942339321081	\$ 464.00	\$ 557.00	Copper/Manganese/Zinc	Cu/Mn/Zn	942339321541	\$ 518.00	\$ 622.00
Calcium/Strontium	Ca/Sr	942339321581	\$ 464.00	\$ 557.00	Copper/Nickel	Cu/Ni	942339321241	\$ 464.00	\$ 557.00
Calcium/Zinc	Ca/Zn	942339321471	\$ 464.00	\$ 557.00	Copper/Silver	Cu/Ag	942339321491	\$ 464.00	\$ 557.00
Chromium/Copper	Cr/Cu	942339321131	\$ 464.00	\$ 557.00	Copper/Zinc	Cu/Zn	942339321031	\$ 443.00	\$ 532.00
Chromium/Copper/ Manganese/Nickel	Cr/Cu/Mn/Ni	942339321171	\$ 566.00	\$ 679.00	Gold/Copper	Au/Cu	942339321401	\$ 518.00	\$ 622.00
Chromium/Copper/Nickel	Cr/Cu/Ni	942339321151	\$ 518.00	\$ 622.00	Gold/Nickel	Au/Ni	942339321411	\$ 518.00	\$ 622.00
Chromium/Copper/Silver	Cr/Cu/Ag	942339321501	\$ 518.00	\$ 622.00	Gold/Platinum	Au/Pt	942339321451	\$ 566.00	\$ 679.00
Chromium/Manganese	Cr/Mn	942339321141	\$ 464.00	\$ 557.00	Gold/Silver	Au/Ag	942339321431	\$ 518.00	\$ 622.00
Chromium/Manganese/Nickel	Cr/Mn/Ni	942339321161	\$ 498.00	\$ 598.00	Gold/Silver/Platinum	Au/Ag/Pt	942339321461	\$ 625.00	\$ 750.00
Chromium/Molybdenum	Cr/Mo	942339321371	\$ 464.00	\$ 557.00	Iron/Manganese	Fe/Mn	942339321251	\$ 464.00	\$ 557.00
Chromium/Nickel	Cr/Ni	942339321121	\$ 443.00	\$ 532.00	Iron/Manganese/Nickel	Fe/Mn/Ni	942339321321	\$ 518.00	\$ 622.00
Chromium/Silver	Cr/Ag	942339321481	\$ 464.00	\$ 557.00	Iron/Manganese/Zinc	Fe/Mn/Zn	942339321551	\$ 518.00	\$ 622.00
Cobalt/Copper	Co/Cu	942339321181	\$ 464.00	\$ 557.00	Iron/Nickel	Fe/Ni	942339321261	\$ 464.00	\$ 557.00
Cobalt/Copper/Iron	Co/Cu/Fe	942339321281	\$ 518.00	\$ 622.00	Iron/Zinc	Fe/Zn	942339321511	\$ 464.00	\$ 557.00
Cobalt/Copper/ Iron/Manganese	Co/Cu/Fe/Mn	942339321331	\$ 566.00	\$ 679.00	Magnesium/Silicon	Mg/Si	942339321091	\$ 464.00	\$ 557.00
Cobalt/Copper/ Manganese/Nickel	Co/Cu/Mn/Ni	942339321341	\$ 566.00	\$ 679.00	Manganese/Nickel	Mn/Ni	942339321271	\$ 464.00	\$ 557.00
Cobalt/Iron	Co/Fe	942339321191	\$ 464.00	\$ 557.00	Manganese/Zinc	Mn/Zn	942339321521	\$ 464.00	\$ 557.00
Cobalt/Iron/ Manganese/Nickel	Co/Fe/Mn/Ni	942339321351	\$ 566.00	\$ 679.00	Platinum/Silver	Pt/Ag	942339321441	\$ 518.00	\$ 622.00
Cobalt/Manganese	Co/Mn	942339321201	\$ 464.00	\$ 557.00	Potassium/Sodium	K/Na	942339321021	\$ 443.00	\$ 532.00
Cobalt/Manganese/Nickel	Co/Mn/Ni	942339321291	\$ 518.00	\$ 622.00	Silicon/Titanium	Si/Ti	942339321101	\$ 464.00	\$ 557.00

## Value-Range Lamps – Uncoded



Uncoded Identification  
Two (2) Pins



A limited range of cost effective hollow cathode lamps for use with the Thermo Scientific iCE 3000 Series spectrometers. Value Range Single-Element Lamps provide analytical performance comparable with normal lamps, at a significantly reduced cost. All Thermo Scientific Value Range Uncoded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	94233902013V	\$ 218.00	\$ 262.00
Antimony	Sb	94233902051V	\$ 239.00	\$ 287.00
Arsenic	As	94233902033V	\$ 278.00	\$ 334.00
Bismuth	Bi	94233902083V	\$ 239.00	\$ 287.00
Cadmium	Cd	94233902048V	\$ 239.00	\$ 287.00
Calcium	Ca	94233902020V	\$ 239.00	\$ 287.00
Chromium	Cr	94233902024V	\$ 239.00	\$ 287.00
Cobalt	Co	94233902027V	\$ 239.00	\$ 287.00
Copper	Cu	94233902029V	\$ 211.00	\$ 253.00
Gold	Au	94233902079V	\$ 310.00	\$ 372.00
Iron	Fe	94233902026V	\$ 239.00	\$ 287.00
Lead	Pb	94233902082V	\$ 239.00	\$ 287.00
Magnesium	Mg	94233902012V	\$ 217.00	\$ 260.00
Manganese	Mn	94233902025V	\$ 239.00	\$ 287.00
Mercury	Hg	94233902080V	\$ 262.00	\$ 314.00
Molybdenum	Mo	94233902042V	\$ 239.00	\$ 287.00
Nickel	Ni	94233902028V	\$ 239.00	\$ 287.00
Potassium	K	94233902019V	\$ 239.00	\$ 287.00
Selenium	Se	94233902034V	\$ 295.00	\$ 354.00
Silver	Ag	94233902047V	\$ 239.00	\$ 287.00
Sodium	Na	94233902011V	\$ 217.00	\$ 260.00
Tin	Sn	94233902050V	\$ 288.00	\$ 346.00
Zinc	Zn	94233902030V	\$ 239.00	\$ 287.00

## Deuterium Lamp

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
QuadLine Deuterium Source	942342030004	\$ 402.00	\$ 482.00



## Graphite Furnace Cuvettes and Supplies

Description	Part Number	Price (US)	Price (CAN)
Graphite Cuvettes, Ridged and Uncoated (10)	942339395031	\$ 690.00	\$ 828.00
Graphite Cuvettes, Ridged and Coated (10)	942339395071	\$ 824.00	\$ 989.00
Extended Lifetime Cuvettes (ELC) (10)	942339395041	\$ 973.00	\$1,168.00
Extended Lifetime Cuvettes (ELC) (20)	942339395051	\$ 1,703.00	\$2,044.00
Omega Platform Cuvettes (10)	942349020101	\$ 1,516.00	\$1,819.00
Contact Cones for Standard Furnace (GFS33 and GFS35)	942339395011	\$ 91.00	\$ 109.00
Contact Cone Replacement Tool for Standard Furnace (GFS33 and GFS35)	942339395101	\$ 255.00	\$ 306.00
Standard Furnace User Spares Kit	942345020002	\$ 2,201.00	\$2,641.00
Zeeman Furnace User Spares Kit	942345020003	\$ 2,419.00	\$2,903.00
Cuvette Alignment Tool	401316683401	\$ 73.00	\$ 88.00
Forceps Plastic (cuvette removing tool)	281306098037	\$ 8.00	\$ 9.75

Continued

## Graphite Furnace Cuvettes and Supplies

*Continued*

Description		Part Number	Price (US)	Price (CAN)
Center Block (GFS33 and GFS35)		401317278261	\$1,368.05	\$1,642.00
Center Block Window (window with the holder) (GFS33 and GFS35)		401317278301	\$ 331.00	\$ 397.00
Sample Sleeve (GFS33 and GFS35)		401316681211	\$ 72.00	\$ 86.00
Contact Cones for Zeeman Furnace (GFS35Z not GFS95Z)		942339395161	\$ 129.20	\$ 155.00
Contact Cone Replacement Tool for Zeeman Furnace (GFS35Z not GFS95Z)		942339395181	\$ 331.00	\$ 397.00
Center Block (GFS35Z)		401317284231	\$1,207.00	\$1,448.00
9 mm Window Holder for Centre Block (GFS35Z)		401316683791	\$ 83.00	\$ 100.00
Sample Sleeve (GFS35Z)		401317277931	\$ 400.00	\$ 480.00
Magnet Bolt (GFS35Z)		401316691311	\$ 252.00	\$ 302.00
Cuvette Alignment Tool (Zeeman)		401316686261	\$ 102.00	\$ 122.00
Var Pipetman		942335705421	\$ 928.00	\$1,114.00
Pipette Tips (1000) for 20 mL Micropipette		942335705431	\$ 184.00	\$ 221.00

## Gas Handling Supplies

### Ordering Information









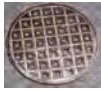

Description	Part Number	Price (US)	Price (CAN)
Acetylene Regulator	05143100	\$ 426.00	\$ 511.00
Nitrous Oxide Regulator	05142000	\$ 485.00	\$ 582.00

## Air Supply

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Air Compressor (220/240 V, 50 Hz) (includes filter/regulator)	942339334225	\$1,226.00	\$1,471.00
Air Compressor (220/240 V, 60 Hz) (includes filter/regulator)	942339334226	\$1,672.00	\$2,006.00
Air Compressor (110/120 V, 50 Hz) (includes filter/regulator)	942339334115	\$1,672.00	\$2,006.00
Air Compressor (110/120 V, 60 Hz) (includes filter)	942339334116	\$1,672.00	\$2,006.00

## Flame Compartment and Sample Introduction Parts










Description	Part Number	Price (US)	Price (CAN)
Flame Compartment User Spares	942345030001	\$1,551.00	\$1,813.00
Spray Chamber (includes baffle and spider)	401317203243	\$ 596.00	\$ 715.00
			
Baffle for Spray Chamber	401316413822	\$ 41.50	\$ 50.00
			
Spider for Spray Chamber	401316413832	\$ 17.75	\$ 21.25
			
Spray Chamber Renovation Kit	942339005461	\$ 635.00	\$ 762.00
<ul style="list-style-type: none"> <li>• O-ring Kit (Solvent Kit) – 9423 390 05151</li> <li>• Impact Bead – 4013 164 13796</li> <li>• Baffle – 4013 164 13822</li> <li>• Spider – 4013 164 13832</li> <li>• Alumina Disc – 4013 164 13841</li> <li>• Explosion Disc (overpressure) – 4013 164 13881</li> <li>• Nebulizer (retaining spring coated) – 4013 166 80061</li> <li>• Acetylene Connection Kit – 4013 172 91782</li> </ul>			
Screw Adjustable Bead Assembly	942339005401	\$ 772.00	\$ 926.00
Drain Vessel AA (5 Liter)	942339005471	\$ 138.00	\$ 166.00
Solvent Resistant Drain Tube Assembly	942339005491	\$ 571.00	\$ 685.00
Solvent Resistant Flame Kit	942342031051	\$1,347.00	\$1,616.00
Universal Finned (50 mm) Titanium Burner	942352031011	\$2,170.00	\$2,604.00
			
Slotted Tube Atom Trap (STAT)	942342035011	\$1,922.00	\$2,306.00
<ul style="list-style-type: none"> <li>• STAT Accessory</li> </ul> <p><i>Note: Requires use of a 50 mm universal burner as supplied with instrument. This can be installed by a field service engineer or customer. It will require reconfiguration or optimization.</i></p>			
Air/Acetylene (100 mm) Titanium Burner	942342031021	\$2,386.00	\$2,863.00
			
Retrofit 100mm Ti Burner	942342035021	\$2,025.00	\$2,430.00
<ul style="list-style-type: none"> <li>• 100 mm burner head (Titanium)</li> </ul> <p><i>This can be installed by a field service engineer or customer. It will require reconfiguration or optimization.</i></p>			
O-ring Kit - (entire spray chamber)	942339005151	\$ 34.00	\$ 41.00
			
Burner Slot Cleaner	420216600942	\$ 21.75	\$ 26.00
			
Burner Handle (photo w/out cable and ignitor)	420216601631	\$ 68.00	\$ 82.00
			
Gauze Disc for Fuel Line	401316183842	\$ 11.00	\$ 13.25
			
Spring Washer for Fuel Line	251371306001	\$ 0.75	\$ 1.00
			

Continued



## Flame Compartment and Sample Introduction Parts

Continued

Description		Part Number	Price (US)	Price (CAN)
Spacer for Fuel Line		401316495812	\$ 7.50	\$ 9.00
Bond Seal for Fuel Line		262208002005	\$ 5.25	\$ 6.25
Inert Nebulizer		942339005481	\$ 782.00	\$ 938.00
Nebulizer Probe		942339005441	\$ 14.00	\$ 17.00
Nebulizer Spring (retaining spring coated)		401316680061	\$ 35.50	\$ 43.00
Nebulizer Sample Uptake Tubing 0.5 mm ID		942339005421	\$ 2.00	\$ 2.50
Nebulizer Uptake Tube 0.4 mm ID 9423 390 05411 (for reduced uptake rate)		942339005411	\$ 4.75	\$ 5.75
Spray Chamber End Cap (inside view)		401317203234	\$ 131.00	\$ 157.00
Impact Bead		401316413796	\$ 14.00	\$ 17.00
SP9 Alumina Disc		401316413841	\$ 60.00	\$ 72.00
SP9 SEAL		401316413761	\$ 6.00	\$ 7.25
End-cap Screws (set of 4)		401317294561	\$ 254.00	\$ 305.00
Drain Kit (with black tube, Teflon cone and clip)		420117208121	\$ 478.00	\$ 574.00
Drain Tube (2 meters)		401316694811	\$ 13.00	\$ 16.00
SP9 Disc Overpressure		420216601851	\$ 3.50	\$ 4.25

## iCE 3400 and iCE 3500 Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
FUSE 20 x 5 5A "F"	242208600051	\$ 9.50	\$ 11.50
STD Clip (hose)	251370613606	\$ 3.50	\$ 4.25
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Socket Wrench 2.5 mm	262215009009	\$ 0.75	\$ 1.00
Socket Wrench BLK 3 A/F (102103)	262215009011	\$ 7.25	\$ 8.75
SP9 Nipple	291300598001	\$ 5.75	\$ 7.00
SP9 Nipple (ref 032030 B.O.C.)	291300598006	\$ 5.75	\$ 7.00
SP9 Nut (to attach nipple to gauge head)	291301490001	\$ 4.75	\$ 5.75
SP9 Nut	291301490002	\$ 5.00	\$ 6.00
STD Label Warning-drain Vessel	401316179782	\$ 8.75	\$ 10.50
929 Drain Tube Clip	401316672921	\$ 22.75	\$ 27.25
Gas Stop End	401316691961	\$ 14.50	\$ 17.50
Drain Tube (2 Meters)	401316694811	\$ 13.00	\$ 15.50
SP9 Jig Burner Setting	401317204391	\$ 52.00	\$ 62.00
Hose Assembly N2O	401317273243	\$ 75.00	\$ 90.00
SP9 Mirodent™ Disp. Mouth Mirror	401322805811	\$ 2.50	\$ 3.00
PL Hand for Mirodent Mirror	401322805821	\$ 8.25	\$ 10.00
9200 Stop End 1/4	401322836581	\$ 6.25	\$ 7.50
12 mm A/F SPANNER	401322846801	\$ 22.75	\$ 27.25
14 mm A/F SPANNER	401322846811	\$ 24.00	\$ 28.75
Spray Chamber Renovation Kit	942339005461	\$ 635.00	\$ 762.00
Inert Nebulizer 9400/9000	942339005481	\$ 782.00	\$ 938.00
QuadLine Deuterium Source	942342030004	\$ 402.00	\$ 482.00

## Graphite Furnace TeleVision (GFTV)



Capillary too low



Capillary too high



Correct injection depth

Optional on all Thermo Scientific iCE 3400/3500 and M Series Spectrometers, the GFTV accessory provides high definition images of events inside the Graphite Furnace Cuvette, allowing monitoring of the sample injection, dry and ash phases of the furnace program. A CCD camera mounted in the instrument produces live video for display on the Data Stations screen through the GFTV Software and Interface Kit, or on an external monitor. The external monitor should be monochrome, PAL compatible with a minimum screen resolution of 400 lines, and a coaxial video cable with BNC plug for connection to the spectrometer.

### Necessary Additional Items

- Free USB port or free PCI expansion slot
- Video adapter that supports Direct Draw

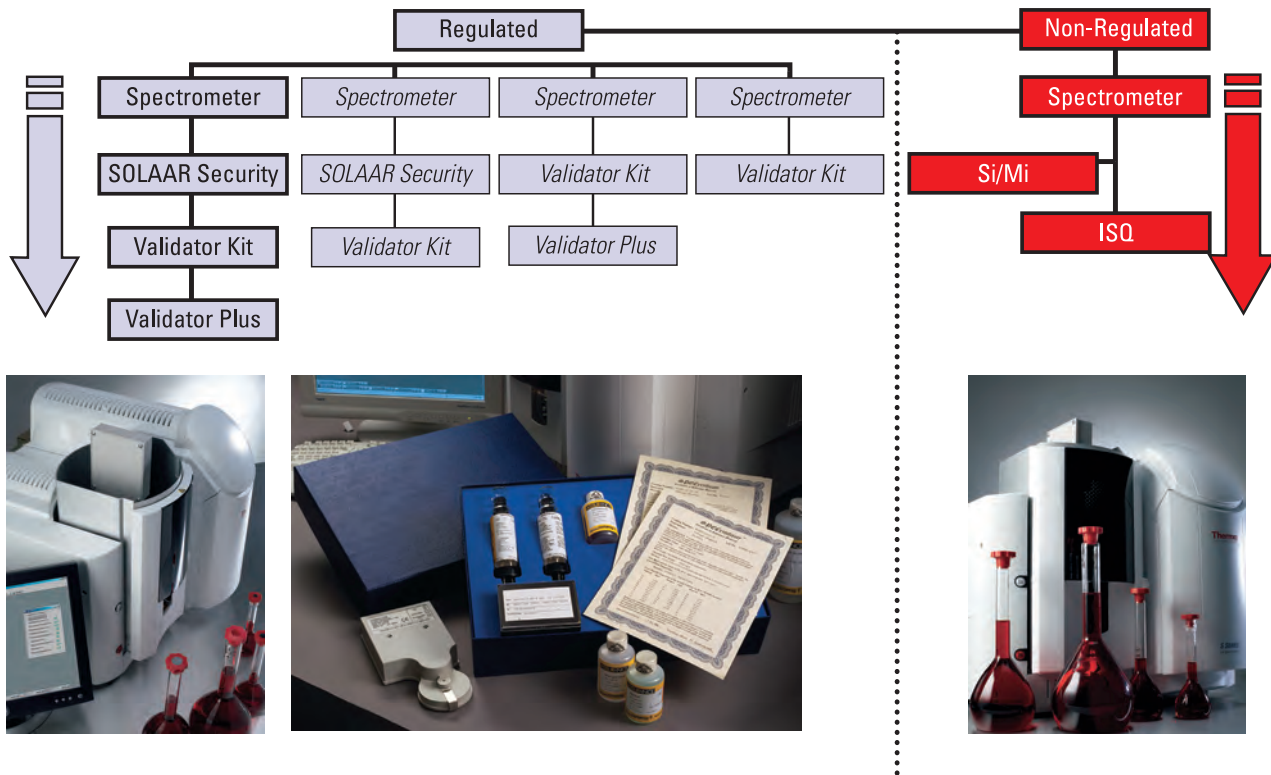
### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse (20 x 5) IEC 127	401320700201	\$ 8.25	\$ 10.00
GFTV Software and Interface Kit (USB version)	942339396051	\$ 580.00	\$ 696.00

## iCE 3300 Spare Parts

## Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse 20 x 5 5A "F"	242208600051	\$ 9.50	\$ 11.50
Standard Clip (hose)	251370613606	\$ 3.50	\$ 4.25
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Spring Washer *302* S/S	251371306001	\$ 0.75	\$ 1.00
Socket Wrench 2.5 mm	262215009009	\$ 0.75	\$ 1.00
Socket Wrench BLK 3 A/F (102103)	262215009011	\$ 7.25	\$ 8.75
SP9 Nipple	291300598001	\$ 5.75	\$ 7.00
SP9 Nipple (ref 032030 B.O.C.)	291300598006	\$ 5.75	\$ 7.00
SP9 Nut (to attach nipple to gauge head)	291301490001	\$ 4.75	\$ 5.75
SP9 Nut	291301490002	\$ 5.00	\$ 6.00
Standard Label Warning-drain Vessel	401316179782	\$ 8.75	\$ 10.50
Gauszee Disc	401316183842	\$ 11.00	\$ 13.25
Impact Bead	401316413796	\$ 14.00	\$ 16.75
Baffle	401316413822	\$ 41.50	\$ 50.00
Spider	401316413832	\$ 17.75	\$ 21.25
SP9 Alumina Disc	401316413841	\$ 60.00	\$ 72.00
SP9 Disc Overpressure	401316413881	\$ 0.50	\$ 0.75
SPACER	401316495812	\$ 7.50	\$ 9.00
929 Drain Tube Clip	401316672921	\$ 22.75	\$ 27.25
Standard Retaining Spring (coated)	401316680061	\$ 35.50	\$ 42.50
Gas Stop End	401316691961	\$ 14.50	\$ 17.50
Drain Tube (2 meters)	401316694811	\$ 13.00	\$ 15.75
SP9 Mirodent Disp. Mouth Mirror	401322805811	\$ 2.50	\$ 3.00
Handle for Mirodent Mirror	401322805821	\$ 8.25	\$ 10.00
9200 Stop End 1/4	401322836581	\$ 6.50	\$ 7.75
12 mm A/F Spanner	401322846801	\$ 22.75	\$ 27.25
14 mm A/F Spanner	401322846811	\$ 24.00	\$ 29.00
Special Solvents Kit	942339005151	\$ 34.00	\$ 40.75
Nebulizer Probe	942339005441	\$ 14.00	\$ 17.00
Spray Chamber Renovation Kit	942339005461	\$ 635.00	\$ 762.00
Inert Nebulizer 9400/9000	942339005481	\$ 782.00	\$ 938.00
QuadLine Deuterium Source	942342030004	\$ 402.00	\$ 482.00



## Intelligent Spectrometer Qualification (iSQ)



Consisting of a motorized filter wheel containing a set of calibrated filters, the iSQ module is mounted in the instrument, and is driven by the software to provide a suite of automated system performance checks on iCE 3000 Series spectrometers:

- Wavelength Accuracy
- Photometric Stability
- Monochromator Resolution
- D2 Background Correction Accuracy
- Lamp Peaking Test
- Beam Selector Movement Test
- Polarizer Orientation and Repeatability Test (for Zeeman instruments only)

The kit is comprised of a Validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

### Ordering Information

Description	Part Number	Price
iSQ Enhancement (Intelligent Spectrometer Qualification) for iCE 3300 Series <ul style="list-style-type: none"> <li>• iSQ Module</li> <li>• Coded Ca/Mg Lamp</li> <li>• LH Accessory Mount</li> </ul>	942342030001	CALL
iSQ Enhancement (Intelligent Spectrometer Qualification) for iCE 3400/3500 Series <ul style="list-style-type: none"> <li>• iSQ Module</li> <li>• Coded Ca/Mg Lamp</li> <li>• RH Accessory Mount</li> </ul>	942342020001	CALL

## SOLAARsecurity

Added e-signatures, event logs, audit trails and access controls meet all the requirements set out in the 21 CFR Part 11 Rule without compromising the software's renowned usability.

Network aware, Thermo Scientific SOLAARsecurity can be set up and administered from the central administrator application. Digital signatures can be executed to all e-records ensuring not only that the identity of the creator is recorded, but also including an encryption algorithm to detect any changes.

Signature status is immediately apparent, thanks to the easy to interpret color-coded display; the Audit Trail reveals the details of all post measurement manipulations.

### Ordering Information

Description	Part Number	Price
SOLAARsecurity Upgrade Software	942343030001	CALL
<ul style="list-style-type: none"> <li>• Includes latest version of Standard SOLAAR Software</li> <li>• Validator Package also highly recommended.</li> </ul>		

## iCE 3000 Series Flame AA Validator Kit



Kit provides a unique validation package permitting the complete system validation of a iCE Series Flame AA spectrometer running under Thermo Scientific SOLAAR AA software, working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
iCE 3000 Series FAAS Validator Package	9423VAL10001	CALL
<ul style="list-style-type: none"> <li>• Validator Log Book</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Nickel Validation Standard</li> <li>• Chromium Validation Standard</li> <li>• Water Blank Validation Standard</li> <li>• Calibrated Validation Unit (CVU)</li> </ul>		

## iCE 3000 Series Graphite Furnace AA Validator Kit



Package provides a unique validation package permitting the complete system validation of a iCE Series Graphite Furnace AA spectrometer (both standard and Zeeman) running under Thermo Scientific SOLAAR AA software, working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
iCE 3000 Series GFAAS Validator Package	9423VAL10002	CALL
<ul style="list-style-type: none"> <li>• Validator Log Book</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Pyrolytically Coated Cuvettes</li> <li>• Manganese Validation Standard</li> <li>• Water Blank Validation Standard</li> <li>• Calibrated Validation Unit (CVU)</li> </ul>		

## iCE 3000 Series Flame and Graphite Furnace AA Validator Package



Package provides a unique validation package permitting the complete system validation of a iCE 3000 Series Flame and of Graphite Furnace AA spectrometer (both standard and Zeeman) running under Thermo Scientific SOLAAR AA software, working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
iCE 3000 Series FAAS/GFAAS Validator Package	9423VAL10003	CALL
<ul style="list-style-type: none"> <li>• Validator Log Book</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Pyrolytically Coated Cuvettes</li> <li>• Chromium Validation Standard</li> <li>• Nickel Validation Standard</li> <li>• Manganese Validation Standard</li> <li>• Water Blank Validation Standard</li> <li>• Calibrated Validation Unit (CVU)</li> </ul>		

## iCE 3000 Series CD of Validator Report Templates

All the validator report templates on CD. This CD is currently included with each iCE 3000 Series system validator packages.

### Ordering Information

Description	Part Number	Price
iCE 3000 Series Validator Report Templates on CD	9499VAL92001	CALL

## Validation Standards

### Ordering Information

Description	Part Number	Price
Nickel Validation Standard	9423VAL00011	CALL
Chromium Validation Standard	9423VAL00012	CALL
Manganese Validation Standard	9423VAL00013	CALL
Water Blank Validation Standard	9423VAL00014	CALL
Re-calibration of CVU Accessory (validator plus)	9423VALR0004	CALL

## RH Universal Accessory Mount

Accessory mount that is required when you want to use:

- An EC90 in the right-hand side of an iCE spectrometer
- An HS90 in the right-hand side of an iCE spectrometer
- A Mercury Cold Vapor Kit in the right-hand side of an iCE spectrometer
- A Calibration Unit (validator plus accessory) in an iCE spectrometer

The listed items above can also be used in the left-hand side of the iCE 3300/3500 spectrometers. The necessary fittings are included as standard with the accessories.

### Ordering Information

Description	Part Number	Price
RH Sample Compartment Universal Accessory Mount (for use with iCE 3400/3500)	942342020005	CALL

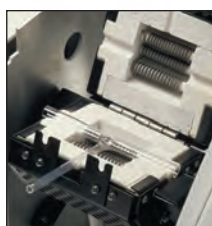
## LH Universal Accessory Mount

Accessory mount for use in the iCE 3000 Series left-hand sample compartments. This is necessary for mounting the EC90 furnace head in the sample compartments. This is for use with an iCE 3300 and 3500.

### Ordering Information

Description	Part Number	Price
LH Sample Compartment Universal Accessory Mount (for use with iCE 3300/3500)	942342021005	CALL

## VP100 Continuous Flow Vapor System



The Thermo Scientific VP100 Continuous Flow Vapor System performs hydride and mercury vapor measurements with significant sensitivity improvement over normal flame techniques. An air/acetylene flame or an electrically heated cell is used for atomization, avoiding the need to use hydrogen as the fuel gas. The VP100 unit incorporates the reagent reservoirs, a variable speed 4 channel peristaltic pump, control electronics and gas-liquid separator. An integrated mass flow controller allows the carrier gas flow to be controlled and monitored through the system software, and the continuous flow principle eliminates the need to clean the reaction vessel after each sample. The VP100 operates automatically under data station control, and can provide full autosampling operation with a suitable autosampler. When used with the EC90 electrically heated atomization cell, unattended operation is possible.

The VP100 is compatible with all Thermo Scientific iCE 3000 Series AA spectrometers. The VP100 requires SOLAAR software v10.1, and spectrometer firmware v1.25, or higher.

If the VP100 is ordered with a spectrometer; the correct software will be supplied automatically. If it is ordered as an upgrade to an existing spectrometer, the correct software must also be ordered. (SOLAAR Software Upgrade 9423 430 20001)

### Standard Items

- T Cell (2), Mercury Cell, Spare Pump Tubing, Spare Glass Beads, Spare Semi-permeable Membrane

### Necessary Additional Items:

An appropriate accessory mount is required to fit the long path mercury cell to the spectrometer. Note: that the use of the mercury cell is not obligatory; mercury can be measured using the standard 'T' cell, which does not require an accessory mount.

### Absorption Cells

- Open ended, T-shaped silica cell. 120 mm long. 8 mm internal diameter
- Long path (150 mm) mercury absorption cell

**Cell Heating:** Air/acetylene flame on 50 mm universal burner. Electrical heating using EC90

**Carrier/Purge Gas:** Argon or nitrogen

**Gas Inlet Pressure:** 0.35 – 1 bar (5 – 14 psi)

**Gas Consumption:** Up to 500 mL/min.

**Reducing Agents:** Sodium borohydride. Tin (II) chloride may be used for mercury analysis

**Solution Transport:** Variable speed, 4 channel peristaltic pump, using continuous flow principle

**Sampling Volume:** 1 to 70  $\mu$ L

**Solution Flow Rates:** Reductant – 3.2 mL/min. Sample – 7.8 mL/min.

**Carrier Gas Flow Rates:** Variable 50 – 500 mL/min. Electronic control via mass flow controller.

**Reagent Containers:** Two 1 Liter plastic bottles

**Power:** 220/240 V, 50 Hz or 110/120 V, 60 Hz

**Power Consumption:** 30 VA.

**Dimensions (mm):** 475 W x 300 H x 200 D. Dimensions (mm): 475 W x 300 H x 200 D.

### Absorption Cells

- Open ended, T-shaped silica cell. 120 mm long. 8 mm internal diameter.
- Long path (150 mm) mercury absorption cell

### Ordering Information

Description	Part Number	Price
VP100 Continuous Flow Vapor System	942346010001	CALL



## VP100 – Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse (20 x 5 ) IEC 127	401320700201	\$ 8.25	\$ 10.00
Switching Mode Power Supply Unit	401320700307	\$ 399.00	\$ 479.00
Switching Mode Power Supply Unit	420416600111	\$ 247.00	\$ 296.00
Mains Inlet Connector	420422800003	\$ 8.25	\$ 10.00
Mains Rocker Switch	420422800004	\$ 8.25	\$ 10.00
Front Cover	420516600022	\$ 55.00	\$ 66.00
GLS Manifold	420516600043	\$ 451.00	\$ 541.00
GLS Top Cup	420516600052	\$ 107.00	\$ 128.00
Bottle	420516600061	\$ 59.00	\$ 71.00
Plumbing Kit	420517200003	\$ 576.00	\$ 691.00
VP100 Led (Power ON ) C/F	420517210011	\$ 14.50	\$ 17.50
VP100 PCB Assembly	420517912732	\$1,221.00	\$1,465.00
VP100 Mass Flow Controller	420522800001	\$1,545.00	\$1,854.00
Silicone Tubing 1/32 ID x 1/16 Wall	420522800021	\$ 17.00	\$ 20.50
Tygon Tubing 1.6 mm ID x 0.8 mm Wall	420522800031	\$ 17.75	\$ 21.25
Peristaltic Pump Head Assembly	430122820001	\$ 580.00	\$ 696.00
Set of VP100 Pump Tubing	942346010011	\$ 138.00	\$ 166.00
Membrane DIA 47 PTFE	942346010021	\$ 116.00	\$ 139.00
Spare VP100 Semi-permeable Membranes	942346010021	\$ 116.00	\$ 139.00
VP100 4 mm Glass Beads	942346010031	\$ 40.00	\$ 48.00
Spare Glass Beads for VP100 Gas Liquid Separator	942346010031	\$ 40.00	\$ 48.00

## ID100 Autodilutor



The Thermo Scientific ID100 Autodilutor provides rapid, in-line preparation of calibration standards and intelligent, or fixed ratio dilution of samples for flame measurements. It is based on a high precision multi-piston pump that is calibrated for life, and does not require any consumable items. It can be used with manual sampling or with any of the flame autosamplers.

**Standard Items:** ID100 Autodilutor

**Necessary Additional Items:** None

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 85 VA

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
ID 100 Autodilutor	942347003201		CALL
ID 100 Consumable Kit	942345003201	\$ 410.00	\$ 492.00

## Slotted Tube Atom Trap



The Thermo Scientific Slotted Tube Atom Trap (SLAT) accessory provides a useful increase in flame analytical sensitivity for volatile elements, such as Cd, Zn, Pb, and Cu. It provides a potential of 2 to 5 times improvement in sensitivity for certain volatile elements on flame systems when employing a 50 mm burner. The tube is slotted to allow the atom cloud residence time to be significantly increased in the measuring optical beam.

The SLAT consists of a silica cell with a mount for 50 mm burners and enables the tube to be rotated into, and out of, the actual flame.

### Standard Items

- STAT Holder
- 5 Quartz STAT tubes

**Necessary Additional Items:** 50 mm Universal Titanium Burner

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 85 VA

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Slotted Tube Atom Trap (STAT)	942339035011	\$1,198.00	\$1,438.00

## Variable Flow Auxiliary Oxidant Kit

The Thermo Scientific Variable Flow Auxiliary Oxidant Kit allows the flow rate of the auxiliary oxidant gas that can be supplied to an air/acetylene flame to be varied over a wide range in order to allow the flame chemistry to be optimized when using less common organic solvents. Note: all flame instruments include a fixed flow rate auxiliary oxidant facility for air/acetylene flames that is suitable for the organic solvents most commonly used.

### Standard Items

- Variable Flow Auxiliary Oxidant Kit

**Necessary Additional Items:** None

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Variable Flow Auxiliary Oxidant Kit	942339346111	\$1,003.00	\$1,204.00

## EC90 Electrically Heated Atomization Cell

The Thermo Scientific EC90 is an electrically heated atomization cell for flameless vapor generation AAS. It provides improved analytical performance, unattended operation and reduced operating costs in comparison with a flame heated atomization cell. The EC90 must be used with the VP90 or F190, and is suitable for all hydride forming elements.

- Extensive range of cuvettes available including electrographite, platform, and extended lifetime
- Optical temperature control is provided for max sensitivity and reproducibility
- Independently controlled internal and external cuvette gases provide long cuvette lifetime (2 gases)
- Safety interlocks for pressure, inert gas, door, head tilt, temp, magnet open, power and cuvette failure
- Intelligent coolant temperature sensor automatically modifies drying phase if coolant temperature varies
- Includes cuvette lifetime counter

### Standard Items

- EC90 Furnace Head
- EC90 Furnace Power Supply
- 2 Silica T Cells

### Necessary Additional Items:

- VP90 or F190 Continuous Flow Vapor System
- Accessory Mount

**Control System:** From external power supply

**Temperature Range:** Ambient to 1000 °C in 1 °C steps

**Power:** 220/240 V, 50 Hz or 110/120 V, 60 Hz

**Power Consumption:** 700 VA

**Dimensions (mm):** 280 W x 140 H x 290 D (Power supply)

**Weight:** Approximately 13 kg

### Ordering Information

Description	Part Number	Price
EC90 Electrically Heated Atomization Cell	942339360061	CALL

*Must be used with a VP90 or F190 Vapor System and a Universal Accessory Mount to provide a working system. It is essential for vapor analysis with the MQZ and MQZe spectrometers.*

## FS95 Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
PTFE Sampling Needle 80 cm	401322836641	\$ 91.00	\$ 109.00
Syringe (side ported)	401322845021	\$ 414.00	\$ 497.00
Seal Cone Inverted PTFE	401322845141	\$ 4.00	\$ 4.75
Spare Samp Capillary Tips (Pk 10)	942339381261	\$ 83.00	\$ 100.00

## GFS35 Graphite Furnace (Available for iCE 3500 Series Model Only)

The GFS35 graphite furnace for use on iCE 3500 Series model has the following features:

- Controlled by data workstation
- Temperature control is by optical sensing for long term reproducibility
- Instant release cuvette contacts provide a total graphite working environment with pressure sealing to improve cuvette lifetimes.
- Choice of inert and additional alternative gas
- 20 temperature and 20 ramping phases plus unique non-linear ramping
- Full safety interlocks for coolant, inert gas, door open, temperature, power and cuvette failure
- Cuvette lifetime counter
- Installs without the need to disconnect or remove spray chamber or gas lines.
- Extensive range of cuvettes available including electrographite, platform, and extended lifetime

### Standard Items

- Standard (GFS35) Furnace Head
- Power Supply
- Fixed Mount (GFS35)
- Normal Electrographite Cuvettes (10)

### Necessary Additional Items:

- Additional Cuvettes as required

### Ordering Information

Description	Part Number	Price
GFS35 Graphite Furnace and Autosampler (iCE 3500 spectrometers only)	942359020002	CALL

## GFS35 Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Standard Fuse	242208601005	\$ 0.50	\$ 0.75
Fuse 1 Amp 20 x 5	242208601021	\$ 0.25	\$ 0.50
Fuse 1 Amp 32 x 6 250 V	242208601114	\$ 34.75	\$ 42.00
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Gas Seal	401316681501	\$ 13.50	\$ 16.25
Cuvette Alignment Tool	401316683401	\$ 73.00	\$ 88.00
Window 15.5 mm DIA x 1 mm	401316856822	\$ 49.25	\$ 59.00
Probe Plug with Insert	401317278271	\$ 426.00	\$ 511.00
Center Block Window	401317278301	\$ 331.00	\$ 397.00
O-ring for Window	401317278311	\$ 14.50	\$ 17.50
SP9 Fuse 32a hrc type niTD	401322906281	\$ 10.75	\$ 13.00
Water Filter O-ring	420122900051	\$ 0.50	\$ 0.75
Water Conn O-ring	420122900061	\$ 0.75	\$ 1.00
Water Filter Disc	420122900071	\$ 3.50	\$ 4.25
Argon Filter (spare)	420122900271	\$ 135.00	\$ 162.00
Set of Graphite Contact Cones	942339395011	\$ 91.00	\$ 109.00
CVU Norm Electrographitbox 10 Cuvettes	942339395031	\$ 690.00	\$ 828.00
Contact Cone Replacement Tool	942339395101	\$ 255.00	\$ 306.00

## GFS35Z Zeeman Graphite Furnace (Available for iCE 3000 Series Spectrometers with MQZ and MQZe Spectrometers)

The Thermo Scientific GFS35Z Zeeman graphite furnace for use on iCE 3000 Series with MQZ and MQZe spectrometers has the following features:

- Extensive range of cuvettes available including electrographite, platform, and extended lifetime
- Optical temperature control is provided for max sensitivity and reproducibility
- Independently controlled internal and external cuvette gases provide long cuvette lifetime (2 gases)
- Safety interlocks for pressure, inert gas, door, head tilt, temp, magnet open, power and cuvette failure
- Intelligent coolant temperature sensor automatically modifies drying phase if coolant temperature varies
- Includes cuvette lifetime counter

### Standard Items

- Zeeman (GFS35Z) Furnace Head
- Power Supply
- Tilt Mount (GFS35Z)
- Normal Electrographite Cuvettes (10)

### Necessary Additional Items:

- Additional cuvettes as required

### Ordering Information

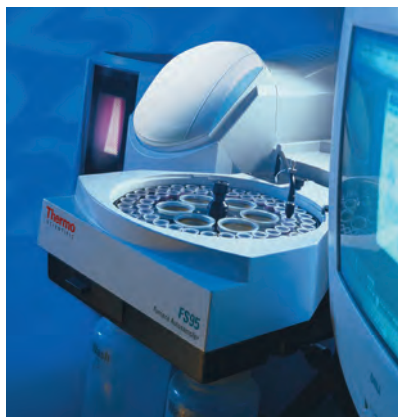
Description	Part Number	Price
GFS35(Z) Graphite Furnace and Auto-sampler (N. America)	942359020052	CALL
GFS35(Z) Graphite Furnace and Auto-sampler with Rhodium Plated Centre Block (N. America)	942359020062	CALL
Rhodium Plated Centre Block for GFS35(Z) – retrospective fitting	942359020069	CALL

## GFS35Z Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Standard Fuse	242208601005	\$ 0.50	\$ 0.75
Fuse 1 Amp 20 x 5	242208601021	\$ 0.25	\$ 0.50
Fuse 1 Amp 32 x 6 250 V	242208601114	\$ 34.75	\$ 42.00
Plastic Forceps	281306098037	\$ 8.00	\$ 9.75
Gas Seal	401316681501	\$ 13.50	\$ 16.25
Window 15.5 mm DIA x 1 mm	401316856822	\$ 49.25	\$ 59.00
Window 09x1	401316858231	\$ 44.75	\$ 54.00
Lens KBX 022	401322842461	\$ 250.00	\$ 300.00
SP9 Fuse 32a hrc type niTD	401322906281	\$ 10.75	\$ 13.00
Water Filter O-ring	420122900051	\$ 0.50	\$ 0.75
Water Conn O-ring	420122900061	\$ 0.75	\$ 1.00
Water Filter Disc	420122900071	\$ 3.50	\$ 4.25
Argon Filter (spare)	420122900271	\$ 135.00	\$ 162.00
CVU Standard Electro Graphite Cuvettes (10/box)	942339395031	\$ 690.00	\$ 828.00
Graphite Cones Zeeman Furnace	942339395161	\$ 129.00	\$ 155.00
Cone Replacement Tool Zeeman	942339395181	\$ 331.00	\$ 397.00

## FS95 Furnace Autosampler



The attractively styled Thermo Scientific FS95 Furnace Autosampler will accommodate up to 60 samples in the large carousel. Carousel changeover allows up to 500 samples per run. Six (6) large reagent cups enable up to six (6) matrix modifiers to be employed. Using the cup reducing ring, smaller sample cups can be used in the reagent cup positions to reduce modifier consumption. The sample is collected and dispensed via an inert PTFE capillary with rapidly interchangeable tips. Viscous and normal modes of injection ensure that samples are handled appropriately, and an enhanced wash program eliminates contamination. Fast furnace operation provides concurrent operation of the furnace, spectrometer, and autosampler sample uptake procedures, minimizing overall furnace cycle time.

The syringe is visible and easily accessible for routine maintenance. A large, 1-liter capacity wash vessel for long, unattended analysis is complemented by an on-board waste vessel, removing the need for inconvenient waste collection on the laboratory floor. All facilities are programmed from the SOLAAR software and sampling facilities. Matrix modification (wet or dry mixing), standards addition, dilution, re-concentration and automatic standards preparations can be rapidly set up. Automatic re-scaling and recalibration functions are provided. If a sample falls outside the calibration range the system automatically and intelligently calculates the most appropriate dilution factor required to bring the sample back within range. Autosampler loading guides indicate the optimum carousel layout.

### Standard Items

- Furnace Autosampler
- Polypropylene Sample Cups (1000)
- Polypropylene Reagent Cups (50)
- Spare Capillary Tips (10)

**Necessary Additional Items:** None

**Carousel Capacity:** 60 sample cups, 6 reagent cups

**Cup Types:** Polypropylene sample and reagent, fluoroplastic sample, reduced Volume sample

**Cup Volume (nominal):** Sample 2 mL, reduced volume 1.5 mL, reagent 25 mL

**Matrix Modifiers:** Up to 6 per method

**Resamples:** 1 to 99 per measurement

**Sampling System:** 100  $\mu$ L syringe (side port)

**Sampling Volume:** 1 to 70  $\mu$ L

**Reproducibility of Injected Volume:** Better than 1% (by mass) at volumes  $\Rightarrow$  than 10  $\mu$ L

**Accuracy of Injected Volume:**  $\pm 0.5 \mu$ L

### Inert Gas Pressure

- Nominal – 0.34 bar (5 psi)
- Minimum – 0.20 bar (3 psi)
- Maximum – 0.68 bar (10 psi)

**Wash and Waste Container Volume:** 1 liter each

**Dimensions (mm):** 296 W x 380 H x 320 D

**Weight:** Approximately 7.3 kg

### Ordering Information

Description	Part Number	Price
FS95 Furnace Autosampler	942348020001	CALL

## Furnace Autosampler Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Furnace Autosampler User Spares Kit	942345020004	\$1,225.00	\$1,470.00
Polypropylene Reagent Cups (Pk of 50) • Polypropylene Reagent Cups • Flat bottomed (volume 20 mL) (50)	942339380021	\$ 28.75	\$ 34.50
Polypropylene Sample Cups (Pk of 1000) • Polypropylene Sample Cups • Flat bottomed (maximum volume 1.8 mL) (1000)	942339380031	\$ 116.00	\$ 139.00
Fluoroplastic Sample Cups (Pk of 20) • PTFE Sample Cups • Flat bottomed (max volume 1.8 mL) (20)	942339380051	\$ 355.00	\$ 426.00
Reduced Volume Cups (Pk of 20) • Polypropylene Reduced Volume Sample Cups • Conical bottomed (maximum volume 1.3 mL) (20)	942339380061	\$ 203.00	\$ 244.00
Cup Reducing Ring (Pk of 1) • Cup Reducing Ring Adaptor Ring for the use of the Sample Cups (P/N 942339380031 or P/N 942339380051) or low volume sample cups (P/N 942339380061) in the reagent cup positions.	942339380071	\$ 37.50	\$ 45.00
Spare Samp Capillary Tips (Pk of 10) • Spare Sampling Capillary Tips for Sample Arm. Cone and Capillary already assembled. Unscrew black cap remove old tip and replace with new. If capillary OD appears to be too large may need to enlarge hole in black cap. (10)	942339381261	\$ 83.00	\$ 100.00
PTFE Sampling Capillary • Replacement Capillary from Syringe to end of Sampler Arm. Kit includes tubing (syringe fitting attached) and Teflon cone.	942339382261	\$ 250.00	\$ 300.00
Carousel and Tray Replacement or Spare (sample holder)	942339383261	\$ 515.00	\$ 618.00
Wash and Waste Bottles	401317290831	\$ 416.00	\$ 499.00
Seal Cone Inverted PTFE	401322845141	\$ 4.00	\$ 4.75
Syringe (side ported)	401322845021	\$ 414.00	\$ 497.00

## Continuous Flow and SFI Vapor Systems

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
T Cell	942339060101	\$ 51.00	\$ 61.00
Spare Peristaltic Pump Tubing	942339360041	\$ 183.00	\$ 220.00
Spare Gas/Liquid Separator	942339360051	\$ 434.40	\$ 521.00
FI90 Support/Spares Kit	942339368011	\$1,955.00	\$2,346.00
Manual Sample Accessory for FI90	942339368021	\$ 802.00	\$ 962.00
Reagent Bottle (1 Liter)	401322937761	\$ 16.50	\$ 19.75

## CETAC ASX-520 Flame Autosampler

The CETAC ASX-520 Flame Autosampler is a random access, large capacity flame/vapor autosampler with 84 to 360 maximum sample capacity, dependent on rack configuration. Optional racks for 21, 24, 40, 60 or 90 samples. Smaller sample capacities imply larger available volume per sample.

### Standard Items

- Random access x-y autosampler mechanism
- Standards rack (10 position)
- 4 sample racks (60 position each)
- 10 standard and 240 sample polypropylene sample tubes
- 0.5 mm ID and 0.8 mm ID PTFE sample probes
- Pumped wash facility
- RS232C adaptor

**Necessary Additional Items:** None

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 50 VA

### Ordering Information

Description	Part Number	Price
CETAC ASX-520 Autosampler 110 – 120 V/200 – 240 V	942347004001	CALL



## CETAC Flame and Vapor Autosampler Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
CETAC Rack 21 Position • 21-position Sample Tube Rack for CETAC Autosampler, holes are 30.6 mm diameter	942347003901	\$ 58.00	\$ 70.00
CETAC Rack 24 Position • 24-position Sample Tube Rack for CETAC Autosampler, holes are 25.0 mm diameter	942347003911	\$ 33.00	\$ 39.50
CETAC Rack 40 Position • 40-position Sample Tube Rack for CETAC Autosampler, holes are 21.0 mm diameter	942347003921	\$ 58.00	\$ 70.00
CETAC Rack 60 Position • 60-position Sample Tube Rack for CETAC Autosampler, holes are 16.5 mm diameter	942347003931	\$ 55.00	\$ 66.00
CETAC Rack 90 Position • 90-position Sample Tube Rack for CETAC Autosampler, holes are 13.5 mm diameter	942347003941	\$ 57.00	\$ 68.00
CETAC 30 mL Poly Tubes (500) for Rack 24 • 30 mL Polypropylene Tubes (24-position rack) (500) • Test tube, polypropylene, 30 mL, 25 mm x 93 mm, package of 500, for Cetac 24 position rack	942347004111	\$ 307.00	\$ 368.00
CETAC 20 mL Poly Tubes (500) for Rack 40 • 20 mL Polypropylene Tubes (40-position rack) (500) • Test tube, polypropylene, 20 mL, 20 mm x 97 mm, package of 500, for Cetac 40 position rack	942347004161	\$ 307.00	\$ 368.00
CETAC 14 mL Poly Tubes (1000) for Rack 60 • 14 mL Polypropylene Tubes (60-position rack) (1000) • Test tube, polypropylene, 14 mL, 15 mm x 100 mm, package of 1000, for Cetac 60 position rack	942347004131	\$ 288.00	\$ 346.00
CETAC 8 mL Poly Tubes (1000) for Rack 90 • 8 mL Polypropylene Tubes (90-position rack) (1000) • Test tube, polypropylene, 8 mL, pkg of 1000, for Cetac 90 pos	942347004141	\$ 553.00	\$ 664.00
CETAC 50 mL Poly Standard Rack Tubes (500) • 50 mL Polypropylene Standards Tubes (500) • Test tube, polypropylene, 50 mL, 29 mm x 117 mm, package of 500, for Cetac standards tubes	942347004151	\$ 477.00	\$ 572.00
CETAC Sample Probe Assembly • Drive assembly for Cetac probe. Includes cable, slide mechanism and block for holding cable.	942347003981	\$ 522.00	\$ 626.00
CETAC Sample Probe, 12" 0.5 mm ID • Probe and tubing for Cetac Autosampler 0.5 mm ID	703-010700	\$ 226.00	\$ 271.00
CETAC Sample Probe, .8 mm ID • Probe and tubing for Cetac Autosampler 0.8 mm ID	SP5328	\$ 241.00	\$ 289.00
CETAC Sample Probe, 0.5 mm ID	942347003991	\$ 198.00	\$ 238.00
CETAC Sample Probe, 0.8 mm ID	942347004171	\$ 407.00	\$ 488.00
CETAC Tray and Standards Rack – 10 Stan • Tray Sub-assembly with a Standards Rack for CETAC Autosampler	942347003951	\$ 318.00	\$ 382.00
CETAC Rinse Station • Rinse Station for CETAC Autosampler	942347003961	\$ 354.00	\$ 425.00
CETAC Drain Pump Tubing and Connector Kit • Drain Pump Tubing and Connector Kit • This contains one tube and two end fittings. May need two; one to pump the rinse solution into the rinse station and one to pump from rinse station to waste	942347003971	\$ 72.00	\$ 86.00

## Software and Upgrades

## Data Station Software

### Ordering Information

Description	Part Number	Price
SOLAAR Software Suite	942339329901	CALL
SOLAARsecurity Software – ordered with iCE 3000 Series spectrometer	942343030011	CALL
SOLAARsecurity Software upgrade – for iCE 3000 series, M series and S series only	942343030001	CALL

The Thermo Scientific SOLAAR Data Station Software runs on the AA Series Data Station and will control iCE 3000, M and S Series spectrometers. The software is aware of the type of spectrometer that it is controlling, and will only provide relevant parameters and options for each instrument type and configuration. The Data Station Software supports all the facilities provided by all the AA Series Accessories.

The software features a range of Wizard based procedures and a tabbed methods dialogue to make setting up even complex analyses fast and easy. All raw data, results and parameters are stored in a single database for easy retrieval. True Windows multi-tasking is available so that SOLAAR can be iconized while running an analysis, allowing concurrent use of other applications. Methods can be created, edited and saved, and earlier results can be reviewed, edited and printed while an analysis is underway.

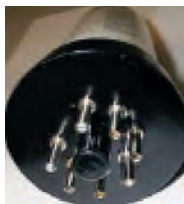
SOLAAR software enables full 16 element methods to be performed automatically. The flexible and comprehensive tabbed methods dialogue box guides the user through setting up complex, multi-element analyses. Data coded HCLs are fully supported, and facilities are provided to record lamp usage. Up to 10 calibration standards and a blank can be used, with segmented curve, linear, or quadratic least squares, fit calibration algorithms. Normal, standard addition and standard curve calibration methods are supported, with full graphical display and print out of the calibration curve. Full alpha-numeric sample details including sample mass and dilution correction can be entered for each sample, or imported via text files.

Comprehensive furnace signal graphics are provided; automated ash-atomize plots produce graphical data for furnace program optimization and will even suggest optimum values. For flame systems, fully automatic fuel gas flow and burner height optimization with graphical presentation are provided.

Extensive on line, fully context sensitive, Help facilities are available. Carefully structured “books” allow easy browsing and searching, as well as, direct access to any Help topic. Trouble-shooting and diagnostics sections describe simple experiments to first locate the problem then to rectify it. A full “cookbook” with default parameters for all elements, common interferences, and the means of overcoming them is included.

SOLAAR software provides comprehensive printer support through the Windows operating system. Report formatting enables customization of the sample details, results, summaries, methods, system parameters and graphical displays that are to be included in the report. All reports, as well as individual results, are time and date stamped. Flexible and comprehensive results database filters select and display the required data, which can be exported to other applications for further processing. All results are able to be edited, and are automatically audit trailed. Password protection and the Audit Trail maintain the validity of the data for accreditation purposes.

## Single-Element Lamps – Data Coded



Coded Identification  
Seven (7) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific M Series and S Series spectrometers. The spectrometers read the element contained in the lamp and the maximum permissible lamp current from the data coding, providing maximum convenience and removing the possibility of damaging the lamp with excessive currents. Single-element lamps provide the best possible analytical performance. All Thermo Scientific Data Coded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	942339030131	\$ 320.00	\$ 384.00	Nickel	Ni	942339030281	\$ 368.00	\$ 442.00
Antimony	Sb	942339030511	\$ 397.00	\$ 476.00	Niobium	Nb	942339030411	\$ 418.00	\$ 502.00
Arsenic	As	942339030331	\$ 397.00	\$ 476.00	Osmium	Os	942339030761	\$ 641.00	\$ 769.00
Barium	Ba	942339030561	\$ 368.00	\$ 442.00	Palladium	Pd	942339030461	\$ 484.00	\$ 581.00
Beryllium	Be	942339030041	\$ 680.00	\$ 816.00	Phosphorus	P	942339030151	\$ 484.00	\$ 581.00
Bismuth	Bi	942339030831	\$ 368.00	\$ 442.00	Platinum	Pt	942339030781	\$ 518.00	\$ 622.00
Boron	B	942339030051	\$ 484.00	\$ 581.00	Potassium	K	942339030191	\$ 397.00	\$ 476.00
Cadmium	Cd	942339030481	\$ 431.00	\$ 517.00	Praseodymium	Pr	942339030591	\$ 539.00	\$ 647.00
Calcium	Ca	942339030201	\$ 368.00	\$ 442.00	Rhenium	Re	942339030751	\$ 539.00	\$ 647.00
Cesium	Cs	942339030551	\$ 484.00	\$ 581.00	Rhodium	Rh	942339030451	\$1,074.00	\$1,289.00
Chromium	Cr	942339030241	\$ 368.00	\$ 442.00	Rubidium	Rb	942339030371	\$ 505.00	\$ 606.00
Cobalt	Co	942339030271	\$ 431.00	\$ 517.00	Ruthenium	Ru	942339030441	\$ 505.00	\$ 606.00
Copper	Cu	942339030291	\$ 320.00	\$ 384.00	Samarium	Sm	942339030621	\$ 505.00	\$ 606.00
Dysprosium	Dy	942339030661	\$ 505.00	\$ 606.00	Scandium	Sc	942339030211	\$ 641.00	\$ 769.00
Erbium	Er	942339030681	\$ 539.00	\$ 647.00	Selenium	Se	942339030341	\$ 518.00	\$ 622.00
Europium	Eu	942339030631	\$ 505.00	\$ 606.00	Silicon	Si	942339030141	\$ 397.00	\$ 476.00
Gadolinium	Gd	942339030641	\$ 539.00	\$ 647.00	Silver	Ag	942339030471	\$ 368.00	\$ 442.00
Gallium	Ga	942339030311	\$ 505.00	\$ 606.00	Sodium	Na	942339030111	\$ 368.00	\$ 442.00
Germanium	Ge	942339020321	\$ 498.00	\$ 598.00	Strontium	Sr	942339030381	\$ 397.00	\$ 476.00
Gold	Au	942339030791	\$ 484.00	\$ 581.00	Tantalum	Ta	942339030731	\$ 418.00	\$ 502.00
Hafnium	Hf	942339030721	\$ 505.00	\$ 606.00	Tellurium	Te	942339030521	\$ 484.00	\$ 581.00
Holmium	Ho	942339030671	\$ 505.00	\$ 606.00	Terbium	Tb	942339030651	\$ 539.00	\$ 647.00
Indium	In	942339030491	\$ 452.00	\$ 542.00	Thallium	Tl	942339030811	\$ 484.00	\$ 581.00
Iridium	Ir	942339030771	\$ 539.00	\$ 647.00	Thorium	Th	942339030901	\$ 700.00	\$ 840.00
Iron	Fe	942339030261	\$ 368.00	\$ 442.00	Thulium	Tm	942339030691	\$ 728.00	\$ 874.00
Lanthanum	La	942339030571	\$ 418.00	\$ 502.00	Tin	Sn	942339030501	\$ 397.00	\$ 476.00
Lead	Pb	942339030821	\$ 368.00	\$ 442.00	Titanium	Ti	942339030221	\$ 320.00	\$ 384.00
Lithium	Li	942339030031	\$ 416.00	\$ 499.00	Tungsten	W	942339030741	\$ 431.00	\$ 517.00
Lutetium	Lu	942339030711	\$ 505.00	\$ 606.00	Uranium	U	942339030921	\$1,428.00	\$1,714.00
Magnesium	Mg	942339030121	\$ 368.00	\$ 442.00	Vanadium	V	942339030231	\$ 397.00	\$ 476.00
Manganese	Mn	942339030251	\$ 368.00	\$ 442.00	Ytterbium	Yb	942339030701	\$ 539.00	\$ 647.00
Mercury	Hg	942339030801	\$ 397.00	\$ 476.00	Yttrium	Y	942339030391	\$ 505.00	\$ 606.00
Molybdenum	Mo	942339030421	\$ 320.00	\$ 384.00	Zinc	Zn	942339030301	\$ 368.00	\$ 442.00
Neodymium	Nd	942339030601	\$ 505.00	\$ 606.00	Zirconium	Zr	942339030401	\$ 397.00	\$ 476.00

## Single-Element Lamps – Uncoded



Uncoded Identification  
Two (2) Pins

High quality hollow cathode lamps optimized for use with the Thermo Scientific M Series and S Series spectrometers. Single-element lamps provide the best possible analytical performance. All Thermo Scientific Uncoded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	942339020131	\$ 279.00	\$ 335.00	Nickel	Ni	942339020281	\$ 327.00	\$ 392.00
Antimony	Sb	942339020511	\$ 356.00	\$ 427.00	Niobium	Nb	942339020411	\$ 377.00	\$ 452.00
Arsenic	As	942339020331	\$ 356.00	\$ 427.00	Osmium	Os	942339020761	\$ 600.00	\$ 720.00
Barium	Ba	942339020561	\$ 327.00	\$ 392.00	Palladium	Pd	942339020461	\$ 443.00	\$ 532.00
Beryllium	Be	942339020041	\$ 659.00	\$ 791.00	Phosphorus	P	942339020151	\$ 464.00	\$ 557.00
Bismuth	Bi	942339020831	\$ 327.00	\$ 392.00	Platinum	Pt	942339020781	\$ 478.00	\$ 574.00
Boron	B	942339020051	\$ 464.00	\$ 557.00	Potassium	K	942339020191	\$ 356.00	\$ 427.00
Cadmium	Cd	942339020481	\$ 391.00	\$ 469.00	Praseodymium	Pr	942339020591	\$ 498.00	\$ 598.00
Calcium	Ca	942339020201	\$ 327.00	\$ 392.00	Rhenium	Re	942339020751	\$ 498.00	\$ 598.00
Cesium	Cs	942339020551	\$ 464.00	\$ 557.00	Rhodium	Rh	942339020451	\$1,013.00	\$1,216.00
Chromium	Cr	942339020241	\$ 327.00	\$ 392.00	Rubidium	Rb	942339020371	\$ 464.00	\$ 557.00
Cobalt	Co	942339020271	\$ 391.00	\$ 469.00	Ruthenium	Ru	942339020441	\$ 464.00	\$ 557.00
Copper	Cu	942339020291	\$ 279.00	\$ 335.00	Samarium	Sm	942339020621	\$ 464.00	\$ 557.00
Dysprosium	Dy	942339020661	\$ 464.00	\$ 557.00	Scandium	Sc	942339020211	\$ 600.00	\$ 720.00
Erbium	Er	942339020681	\$ 498.00	\$ 598.00	Selenium	Se	942339020341	\$ 478.00	\$ 574.00
Europium	Eu	942339020631	\$ 464.00	\$ 557.00	Silicon	Si	942339020141	\$ 356.00	\$ 427.00
Gadolinium	Gd	942339020641	\$ 498.00	\$ 598.00	Silver	Ag	942339020471	\$ 327.00	\$ 392.00
Gallium	Ga	942339020311	\$ 464.00	\$ 557.00	Sodium	Na	942339020111	\$ 327.00	\$ 392.00
Germanium	Ge	942339020321	\$ 498.00	\$ 598.00	Strontium	Sr	942339020381	\$ 356.00	\$ 427.00
Gold	Au	942339020791	\$ 443.00	\$ 532.00	Tantalum	Ta	942339020731	\$ 377.00	\$ 452.00
Hafnium	Hf	942339020721	\$ 464.00	\$ 557.00	Tellurium	Te	942339020521	\$ 464.00	\$ 557.00
Holmium	Ho	942339020671	\$ 464.00	\$ 557.00	Terbium	Tb	942339020651	\$ 498.00	\$ 598.00
Indium	In	942339020491	\$ 411.00	\$ 493.00	Thallium	Tl	942339020811	\$ 443.00	\$ 532.00
Iridium	Ir	942339020771	\$ 498.00	\$ 598.00	Thorium	Th	942339020901	\$ 659.00	\$ 791.00
Iron	Fe	942339020261	\$ 327.00	\$ 392.00	Thulium	Tm	942339020691	\$ 687.00	\$ 824.00
Lanthanum	La	942339020571	\$ 327.00	\$ 452.00	Tin	Sn	942339020501	\$ 356.00	\$ 427.00
Lead	Pb	942339020821	\$ 327.00	\$ 392.00	Titanium	Ti	942339020221	\$ 279.00	\$ 335.00
Lithium	Li	942339020031	\$ 313.00	\$ 376.00	Tungsten	W	942339020741	\$ 411.00	\$ 493.00
Lutetium	Lu	942339020711	\$ 464.00	\$ 557.00	Uranium	U	942339020921	\$1,387.00	\$1,664.00
Magnesium	Mg	942339020121	\$ 327.00	\$ 392.00	Vanadium	V	942339020231	\$ 356.00	\$ 427.00
Manganese	Mn	942339020251	\$ 327.00	\$ 392.00	Ytterbium	Yb	942339020701	\$ 498.00	\$ 598.00
Mercury	Hg	942339020801	\$ 356.00	\$ 427.00	Yttrium	Y	942339020391	\$ 464.00	\$ 557.00
Molybdenum	Mo	942339020421	\$ 279.00	\$ 335.00	Zinc	Zn	942339020301	\$ 327.00	\$ 392.00
Neodymium	Nd	942339020601	\$ 464.00	\$ 557.00	Zirconium	Zr	942339020401	\$ 377.00	\$ 452.00

## Multi-Element Lamps – Data Coded



Coded Identification  
Seven (7) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific M Series and S Series spectrometers. The spectrometers read the list of elements contained in the lamp and the maximum permissible lamp current from the data coding, providing maximum convenience and removing the possibility of damaging the lamp with excessive currents. Multi-element lamps provide analytical performance comparable with single-element lamps, while reducing your lamp inventory and increasing the ease of use. All Thermo Scientific Data Coded Multi-Element Lamps carry a 5000 mA/Hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)	Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum/Magnesium	Al/Mg	942339331051	\$ 484.00	\$ 581.00	Cobalt/Molybdenum	Co/Mo	942339331111	\$ 505.00	\$ 606.00
Aluminum/Silicon	Al/Si	942339331041	\$ 505.00	\$ 606.00	Cobalt/Nickel	Co/Ni	942339331211	\$ 505.00	\$ 606.00
Aluminum/Silicon/Titanium	Al/Si/Ti	942339331391	\$ 559.00	\$ 671.00	Copper/Gold/Nickel	Cu/Au/Ni	942339331421	\$ 607.00	\$ 728.00
Aluminum/Titanium	Al/Ti	942339331381	\$ 505.00	\$ 606.00	Copper/Iron	Cu/Fe	942339331221	\$ 505.00	\$ 606.00
Barium/Calcium	Ba/Ca	942339331571	\$ 505.00	\$ 606.00	Copper/Iron/Manganese/Nickel	Cu/Fe/Mn/Ni	942339331361	\$ 607.00	\$ 728.00
Barium/Calcium/Strontium	Ba/Ca/Sr	942339331601	\$ 559.00	\$ 671.00	Copper/Iron/Manganese/Zinc	Cu/Fe/Mn/Zn	942339331561	\$ 586.00	\$ 703.00
Barium/Strontium	Ba/Sr	942339331591	\$ 505.00	\$ 606.00	Copper/Iron/Zinc	Cu/Fe/Zn	942339331531	\$ 559.00	\$ 671.00
Cadmium/Zinc	Cd/Zn	942339331611	\$ 484.00	\$ 581.00	Copper/Manganese	Cu/Mn	942339331231	\$ 505.00	\$ 606.00
Calcium/Magnesium	Ca/Mg	942339331011	\$ 484.00	\$ 581.00	Copper/Manganese/Iron	Cu/Mn/Fe	942339331311	\$ 539.00	\$ 647.00
Calcium/Magnesium/Silicon	Ca/Mg/Si	942339331061	\$ 559.00	\$ 671.00	Copper/Manganese/Nickel	Cu/Mn/Ni	942339331301	\$ 559.00	\$ 671.00
Calcium/Silicon	Ca/Si	942339331081	\$ 505.00	\$ 606.00	Copper/Manganese/Zinc	Cu/Mn/Zn	942339331541	\$ 559.00	\$ 671.00
Calcium/Strontium	Ca/Sr	942339331581	\$ 505.00	\$ 606.00	Copper/Nickel	Cu/Ni	942339331241	\$ 505.00	\$ 606.00
Calcium/Zinc	Ca/Zn	942339331471	\$ 505.00	\$ 606.00	Copper/Silver	Cu/Ag	942339331491	\$ 505.00	\$ 606.00
Chromium/Copper	Cr/Cu	942339331131	\$ 505.00	\$ 606.00	Copper/Zinc	Cu/Zn	942339331031	\$ 484.00	\$ 581.00
Chromium/Copper/Manganese/Nickel	Cr/Cu/Mn/Ni	942339331171	\$ 607.00	\$ 728.00	Gold/Copper	Au/Cu	942339331401	\$ 559.00	\$ 671.00
Chromium/Copper/Nickel	Cr/Cu/Ni	942339331151	\$ 539.00	\$ 647.00	Gold/Nickel	Au/Ni	942339331411	\$ 559.00	\$ 671.00
Chromium/Copper/Silver	Cr/Cu/Ag	942339331501	\$ 559.00	\$ 671.00	Gold/Platinum	Au/Pt	942339331451	\$ 607.00	\$ 728.00
Chromium/Manganese	Cr/Mn	942339331141	\$ 505.00	\$ 606.00	Gold/Silver	Au/Ag	942339331431	\$ 559.00	\$ 671.00
Chromium/Manganese/Nickel	Cr/Mn/Ni	942339331161	\$ 539.00	\$ 647.00	Gold/Silver/Platinum	Au/Ag/Pt	942339331461	\$ 666.00	\$ 799.00
Chromium/Molybdenum	Cr/Mo	942339331371	\$ 484.00	\$ 581.00	Iron/Manganese	Fe/Mn	942339331251	\$ 484.00	\$ 581.00
Chromium/Nickel	Cr/Ni	942339331121	\$ 484.00	\$ 581.00	Iron/Manganese/Nickel	Fe/Mn/Ni	942339331321	\$ 559.00	\$ 671.00
Chromium/Silver	Cr/Ag	942339331481	\$ 505.00	\$ 606.00	Iron/Manganese/Zinc	Fe/Mn/Zn	942339331551	\$ 559.00	\$ 671.00
Cobalt/Copper	Co/Cu	942339331181	\$ 505.00	\$ 606.00	Iron/Nickel	Fe/Ni	942339331261	\$ 505.00	\$ 606.00
Cobalt/Copper/Iron	Co/Cu/Fe	942339331281	\$ 559.00	\$ 671.00	Iron/Zinc	Fe/Zn	942339331511	\$ 484.00	\$ 581.00
Cobalt/Copper/Iron/Manganese	Co/Cu/Fe/Mn	942339331331	\$ 607.00	\$ 728.00	Magnesium/Silicon	Mg/Si	942339331091	\$ 505.00	\$ 606.00
Cobalt/Copper/Manganese/Nickel	Co/Cu/Mn/Ni	942339331341	\$ 607.00	\$ 728.00	Manganese/Nickel	Mn/Ni	942339331271	\$ 505.00	\$ 606.00
Cobalt/Iron	Co/Fe	942339331191	\$ 505.00	\$ 606.00	Manganese/Zinc	Mn/Zn	942339331521	\$ 505.00	\$ 606.00
Cobalt/Iron/Manganese/Nickel	Co/Fe/Mn/Ni	942339331351	\$ 607.00	\$ 728.00	Platinum/Silver	Pt/Ag	942339331441	\$ 559.00	\$ 671.00
Cobalt/Manganese	Co/Mn	942339331201	\$ 505.00	\$ 606.00	Potassium/Sodium	K/Na	942339331021	\$ 484.00	\$ 581.00
Cobalt/Manganese/Nickel	Co/Mn/Ni	942339331291	\$ 559.00	\$ 671.00	Silicon/Titanium	Si/Ti	942339331101	\$ 505.00	\$ 606.00

## Multi-Element Lamps – Uncoded



Uncoded Identification  
Two (2) Pins



High quality hollow cathode lamps optimized for use with the Thermo Scientific M Series and S Series spectrometers. Multi-element lamps provide analytical performance comparable with single-element lamps, while reducing your lamp inventory and increasing the ease of use. All Thermo Scientific Uncoded Multi-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum/Magnesium	Al/Mg	942339321051	\$ 464.00	\$ 557.00
Aluminum/Silicon	Al/Si	942339321041	\$ 464.00	\$ 557.00
Aluminum/Silicon / Titanium	Al/Si/Ti	942339321391	\$ 518.00	\$ 622.00
Aluminum/Titanium	Al/Ti	942339321381	\$ 464.00	\$ 557.00
Barium/Calcium	Ba/Ca	942339321571	\$ 464.00	\$ 557.00
Barium/Calcium/Strontium	Ba/Ca/Sr	942339321601	\$ 518.00	\$ 622.00
Barium/Strontium	Ba/Sr	942339321591	\$ 464.00	\$ 557.00
Cadmium/Zinc	Cd/Zn	942339321611	\$ 443.00	\$ 532.00
Calcium/Magnesium	Ca/Mg	942339321011	\$ 443.00	\$ 532.00
Calcium/Magnesium/Silicon	Ca/Mg/Si	942339321061	\$ 518.00	\$ 622.00
Calcium/Silicon	Ca/Si	942339321081	\$ 464.00	\$ 557.00
Calcium/Strontium	Ca/Sr	942339321581	\$ 464.00	\$ 557.00
Calcium/Zinc	Ca/Zn	942339321471	\$ 464.00	\$ 557.00
Chromium/Copper	Cr/Cu	942339321131	\$ 464.00	\$ 557.00
Chromium/Copper/ Manganese/Nickel	Cr/Cu/Mn/Ni	942339321171	\$ 566.00	\$ 679.00
Chromium/Copper/Nickel	Cr/Cu/Ni	942339321151	\$ 518.00	\$ 622.00
Chromium/Copper/Silver	Cr/Cu/Ag	942339321501	\$ 518.00	\$ 622.00
Chromium/Manganese	Cr/Mn	942339321141	\$ 464.00	\$ 557.00
Chromium/Manganese/Nickel	Cr/Mn/Ni	942339321161	\$ 498.00	\$ 598.00
Chromium/Molybdenum	Cr/Mo	942339321371	\$ 464.00	\$ 557.00
Chromium/Nickel	Cr/Ni	942339321121	\$ 443.00	\$ 532.00
Chromium/Silver	Cr/Ag	942339321481	\$ 464.00	\$ 557.00
Cobalt/Copper	Co/Cu	942339321181	\$ 464.00	\$ 557.00
Cobalt/Copper/Iron	Co/Cu/Fe	942339321281	\$ 518.00	\$ 622.00
Cobalt/Copper/Iron/ Manganese	Co/Cu/Fe/Mn	942339321331	\$ 566.00	\$ 679.00
Cobalt/Copper/ Manganese/Nickel	Co/Cu/Mn/Ni	942339321341	\$ 566.00	\$ 679.00
Cobalt/Iron	Co/Fe	942339321191	\$ 464.00	\$ 557.00
Cobalt/Iron/ Manganese/Nickel	Co/Fe/Mn/Ni	942339321351	\$ 566.00	\$ 679.00
Cobalt/Manganese	Co/Mn	942339321201	\$ 464.00	\$ 557.00
Cobalt/Manganese/Nickel	Co/Mn/Ni	942339321291	\$ 518.00	\$ 622.00

Description	Element	Part Number	Price (US)	Price (CAN)
Cobalt/Molybdenum	Co/Mo	942339321111	\$ 464.00	\$ 557.00
Cobalt/Nickel	Co/Ni	942339321211	\$ 464.00	\$ 557.00
Copper/Gold/Nickel	Cu/Au/Ni	942339321421	\$ 566.00	\$ 679.00
Copper/Iron	Cu/Fe	942339321221	\$ 443.00	\$ 532.00
Copper/Iron/ Manganese/Nickel	Cu/Fe/Mn/Ni	942339321361	\$ 566.00	\$ 679.00
Copper/Iron/ Manganese/Zinc	Cu/Fe/Mn/Zn	942339321561	\$ 545.00	\$ 654.00
Copper/Iron/Zinc	Cu/Fe/Zn	942339321531	\$ 518.00	\$ 622.00
Copper/Manganese	Cu/Mn	942339321231	\$ 464.00	\$ 557.00
Copper/Manganese/Iron	Cu/Mn/Fe	942339321311	\$ 518.00	\$ 622.00
Copper/Manganese/Nickel	Cu/Mn/Ni	942339321301	\$ 518.00	\$ 622.00
Copper/Manganese/Zinc	Cu/Mn/Zn	942339321541	\$ 518.00	\$ 622.00
Copper/Nickel	Cu/Ni	942339321241	\$ 464.00	\$ 557.00
Copper/Silver	Cu/Ag	942339321491	\$ 464.00	\$ 557.00
Copper/Zinc	Cu/Zn	942339321031	\$ 443.00	\$ 532.00
Gold/Copper	Au/Cu	942339321401	\$ 518.00	\$ 622.00
Gold/Nickel	Au/Ni	942339321411	\$ 518.00	\$ 622.00
Gold/Platinum	Au/Pt	942339321451	\$ 566.00	\$ 679.00
Gold/Silver	Au/Ag	942339321431	\$ 518.00	\$ 622.00
Gold/Silver/Platinum	Au/Ag/Pt	942339321461	\$ 625.00	\$ 750.00
Iron/Manganese	Fe/Mn	942339321251	\$ 464.00	\$ 557.00
Iron/Manganese/Nickel	Fe/Mn/Ni	942339321321	\$ 518.00	\$ 622.00
Iron/Manganese/Zinc	Fe/Mn/Zn	942339321551	\$ 518.00	\$ 622.00
Iron/Nickel	Fe/Ni	942339321261	\$ 464.00	\$ 557.00
Iron/Zinc	Fe/Zn	942339321511	\$ 464.00	\$ 557.00
Magnesium/Silicon	Mg/Si	942339321091	\$ 464.00	\$ 557.00
Manganese/Nickel	Mn/Ni	942339321271	\$ 464.00	\$ 557.00
Manganese/Zinc	Mn/Zn	942339321521	\$ 464.00	\$ 557.00
Platinum/Silver	Pt/Ag	942339321441	\$ 518.00	\$ 622.00
Potassium/Sodium	K/Na	942339321021	\$ 443.00	\$ 532.00
Silicon/Titanium	Si/Ti	942339321101	\$ 464.00	\$ 557.00

## Value Range Lamps – Uncoded



Uncoded Identification  
Two (2) Pins



A limited range of cost-effective hollow cathode lamps for use with the Thermo Scientific M Series and S Series spectrometers. Value Range Single-Element Lamps provide analytical performance comparable with normal lamps, at a significantly reduced cost. All Thermo Scientific Value Range Uncoded Single-Element Lamps carry a 5000 mA/hr lifetime guarantee.

### Ordering Information

Description	Element	Part Number	Price (US)	Price (CAN)
Aluminum	Al	94233902013V	\$ 218.00	\$ 262.00
Antimony	Sb	94233902051V	\$ 239.00	\$ 287.00
Arsenic	As	94233902033V	\$ 278.00	\$ 334.00
Bismuth	Bi	94233902083V	\$ 239.00	\$ 287.00
Cadmium	Cd	94233902048V	\$ 239.00	\$ 287.00
Calcium	Ca	94233902020V	\$ 239.00	\$ 287.00
Chromium	Cr	94233902024V	\$ 239.00	\$ 287.00
Cobalt	Co	94233902027V	\$ 239.00	\$ 287.00
Copper	Cu	94233902029V	\$ 211.00	\$ 253.00
Gold	Au	94233902079V	\$ 310.00	\$ 372.00
Iron	Fe	94233902026V	\$ 239.00	\$ 287.00
Lead	Pb	94233902082V	\$ 239.00	\$ 287.00
Magnesium	Mg	94233902012V	\$ 217.00	\$ 260.00
Manganese	Mn	94233902025V	\$ 239.00	\$ 287.00
Mercury	Hg	94233902080V	\$ 262.00	\$ 314.00
Molybdenum	Mo	94233902042V	\$ 239.00	\$ 287.00
Nickel	Ni	94233902028V	\$ 239.00	\$ 287.00
Potassium	K	94233902019V	\$ 239.00	\$ 287.00
Selenium	Se	94233902034V	\$ 295.00	\$ 354.00
Silver	Ag	94233902047V	\$ 239.00	\$ 287.00
Sodium	Na	94233902011V	\$ 217.00	\$ 260.00
Tin	Sn	94233902050V	\$ 288.00	\$ 346.00
Zinc	Zn	94233902030V	\$ 239.00	\$ 287.00

## Deuterium Lamp

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
QuadLine Deuterium Source <i>For serial number of GE 650000 and above.</i>	942342030004	\$ 402.00	\$ 482.00
M Series Deuterium Source <i>For serial number of GE649999 and lower.</i>	942342020004	\$ 590.00	\$ 708.00



## Graphite Furnace Cuvettes and Supplies

Description	Part Number	Price (US)	Price (CAN)
Graphite Cuvettes, Ridged and Uncoated (10)	942339395031	\$ 690.00	\$ 828.00
Graphite Cuvettes, Ridged and Coated (10)	942339395071	\$ 824.00	\$ 989.00
Graphite Cuvettes, Unridged and Coated (10)	942339395091	\$ 527.00	\$ 633.00
Extended Lifetime Cuvettes (ELC) (10)	942339395041	\$ 973.00	\$1,168.00
Extended Lifetime Cuvettes (ELC) (20)	942339395051	\$1,703.00	\$2,044.00
Omega Platform Cuvettes (10)	942349020101	\$1,515.14	\$1,819.00
Graphite Contact Cones (GFS97)	942339395011	\$ 91.00	\$ 109.00
Contact Cone Replacement Tool (GFS97)	942339395101	\$ 255.00	\$ 306.00








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## Graphite Furnace Cuvettes and Supplies

Continued





Description		Part Number	Price (US)	Price (CAN)
Cuvette Alignment Tool		401316683401	\$ 72.00	\$ 88.00
Forceps Plastic (cuvette removing tool)		281306098037	\$ 8.00	\$ 9.75
Center Block		401317278261	\$1,368.00	\$1,642.00
Center Block Window (window with the holder)		401317278301	\$ 331.00	\$ 397.00
Sample Sleeve		401316681211	\$ 72.00	\$ 86.00
Graphite Contact Cones (GFS95Z)		942339395161	\$ 129.00	\$ 155.00
Contact Cone Replacement Tool (GFS95Z)		942339395181	\$ 331.00	\$ 397.00
Center Block (Zeeman)		401317284231	\$1,207.00	\$1,448.00
9 mm Window Holder for Centre Block (GF90Z)		401316683791	\$ 83.00	\$ 100.00
Sample Sleeve (Zeeman)		401317277931	\$ 400.00	\$ 480.00
Magnet Bolt (Zeeman)		401316691311	\$ 252.00	\$ 302.00
Cuvette Alignment Tool (Zeeman)		401316686261	\$ 102.00	\$ 122.00
Var Pipetman®		942335705421	\$ 928.00	\$1,114.00
Pipette Tips (1000) for 20 mL Micropipette		942335705431	\$ 184.00	\$ 221.00

## Gas Handling Supplies

## Flame Compartment and Sample Introduction Parts

### Ordering Information





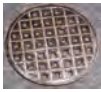






Description	Part Number	Price (US)	Price (CAN)
Acetylene Regulator	05143100	\$ 426.00	\$ 511.00
Nitrous Oxide Regulator	05142000	\$ 485.00	\$ 582.00

Description	Part Number	Price (US)	Price (CAN)
Spray Chamber (includes baffle and spider) 	401317203243	\$ 596.00	\$ 715.00
Baffle for Spray Chamber 	401316413822	\$ 41.50	\$ 50.00
Spider for Spray Chamber 	401316413832	\$ 17.75	\$ 21.25
Spray Chamber Renovation Kit <ul style="list-style-type: none"> <li>• O-ring Kit (solvent kit) – 942339005151</li> <li>• Impact Bead – 401316413796</li> <li>• Baffle – 401316413822</li> <li>• Spider – 401316413832</li> <li>• Alumina Disc – 401316413841</li> <li>• Explosion Disc (overpressure) – 401316413881</li> <li>• Nebulizer Retaining Spring Coated – 401316680061</li> <li>• Acetylene Connection Kit – 401317291782</li> </ul>	942339005461	\$ 635.00	\$ 762.00
Screw Adjustable Bead Assembly	942339005401	\$ 772.00	\$ 926.00
Drain Vessel AA (5 Liter)	942339005471	\$ 138.00	\$ 166.00
Solvent Resistant Drain Tube Assembly	942339005491	\$ 571.00	\$ 685.00
Universal 50 mm Ti Burner 	942342031011	\$1,652.00	\$1,982.00
Stainless Steel 50 mm Burner <ul style="list-style-type: none"> <li>• 50 mm Burner Head (stainless steel)</li> </ul> <p>Note: For serial number of GE649999 and lower. This is for MARK I M Series Solaar AA. The system can be upgraded to Titanium burner head, see burner retrofit kit.</p> 	942339335081	\$2,278.00	\$2,734.00
Retrofit 50 mm Ti Burner <ul style="list-style-type: none"> <li>• 50 mm Burner Head Retrofit Kit (titanium)</li> </ul> <p>Note: For serial number of GE649999 and lower. This can be installed by a field service engineer or customer. It will require reconfiguration or optimization.</p>	942342035011	\$1,922.00	\$2,306.00
100 mm Slot Ti Burner 	942342031021	\$2,386.00	\$2,863.00

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## Flame Compartment and Sample Introduction Parts



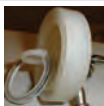








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Description		Part Number	Price (US)	Price (CAN)
Stainless Steel 100 mm Burner • 100 mm Burner Head (stainless steel) <i>Note: For serial number of GE649999 and lower. This is for MARK I M Series Solaar AA. The system can be upgraded to Titanium burner head, see burner retrofit kit.</i>		942339335071	\$2,463.00	\$2,956.00
Retrofit 100 mm Ti Burner • 100 mm Burner Head (titanium) <i>Note: For serial number of GE649999 and lower. Note: This can be installed by a field service engineer or customer. It will require reconfiguration or optimization.</i>		942342035021	\$2,025.00	\$2,430.00
O-ring Kit (entire spray chamber)		942339005151	\$ 34.00	\$ 41.00
Burner Slot Cleaner		420216600942	\$ 21.75	\$ 26.00
Burner Handle (photo w/out cable and ignitor)		420216601631	\$ 68.00	\$ 82.00
Gauze Disc for Fuel Line		401316183842	\$ 11.00	\$ 13.25
Spring Washer for Fuel Line		251371306001	\$ 0.75	\$ 1.00
Spacer for Fuel Line		401316495812	\$ 7.50	\$ 9.00
Bond Seal for Fuel Line		262208002005	\$ 5.25	\$ 6.25
Inert Nebulizer		942339005481	\$ 782.00	\$ 938.00
Nebulizer Probe		942339005441	\$ 14.00	\$ 17.00
Nebulizer Spring (retaining spring coated)		401316680061	\$ 35.50	\$ 43.00

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## Flame Compartment and Sample Introduction Parts

*Continued*

Description		Part Number	Price (US)	Price (CAN)
Nebulizer Sample Uptake Tubing 0.5 mm ID		942339005421	\$ 2.00	\$ 2.50
Nebulizer Sample Uptake Capillary Tube 0.4 ID 1 m		942339005411	\$ 4.75	\$ 5.75
Spray Chamber End Cap (inside view)		401317203234	\$ 131.00	\$ 157.00
Impact Bead		401316413796	\$ 14.00	\$ 17.00
SP9 Alumina Disc		401316413841	\$ 60.00	\$ 72.00
SP9 SEAL		401316413761	\$ 6.00	\$ 7.25
End-cap Screws (set of 4)		401317294561	\$ 254.00	\$ 305.00
Drain Kit (with black tube, Teflon® cone and clip)		420117208121	\$ 478.00	\$ 574.00
Drain Tube (2 Meters)		401316694811	\$ 13.00	\$ 16.00
SP9 Disc Overpressure		420216601851	\$ 3.50	\$ 4.25
Explosion Disc Clamp Ring		401316413872	\$ 49.25	\$ 59.00

## M Series Spare Parts

## Ordering Information

Description	Part Number	Price (US)	Price (CAN)
FUSE 20 x 5 5A "F"	242208600051	\$ 9.50	\$ 11.50
STD Clip (hose)	251370613606	\$ 3.50	\$ 4.25
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Socket Wrench 2.5 mm	262215009009	\$ 0.75	\$ 1.00
Socket Wrench BLK 3 A/F (102103)	262215009011	\$ 7.25	\$ 8.75
SP9 Nipple	291300598001	\$ 5.75	\$ 7.00
SP9 Nipple (ref 032030 B.O.C.)	291300598006	\$ 5.75	\$ 7.00
SP9 Nut (to attach nipple to gauge head)	291301490001	\$ 4.75	\$ 5.75
SP9 Nut	291301490002	\$ 5.00	\$ 6.00
STD Label Warning-Drain Vessel	401316179782	\$ 8.75	\$ 10.50
929 Drain Tube Clip	401316672921	\$ 22.75	\$ 27.25
Gas Stop End	401316691961	\$ 14.50	\$ 17.50
Drain Tube (2 Meters)	401316694811	\$ 13.00	\$ 16.00
SP9 Jig Burner Setting	401317204391	\$ 52.00	\$ 62.00
Hose Assembly N2O	401317273243	\$ 72.00	\$ 90.00
SP9 Mirodent™ Disp. Mouth Mirror	401322805811	\$ 2.50	# 3.00
PL Hand for Mirodent Mirror	401322805821	\$ 8.25	\$ 10.00
9200 Stop End 1/4	401322836581	\$ 6.25	\$ 7.50
12 mm A/F SPANNER	401322846801	\$ 22.75	\$ 27.25
14 mm A/F SPANNER	401322846811	\$ 24.00	\$ 28.75
Spray Chamber Renovation Kit	942339005461	\$ 635.00	\$ 762.00
Inert Nebulizer 9400/9000	942339005481	\$ 782.00	\$ 938.00
M Series Deuterium Source	942342020004	\$ 590.00	\$ 708.00

## Graphite Furnace TeleVision (GFTV)



Capillary too low



Capillary too high



Correct injection depth

Optional on all Thermo Scientific M Series Spectrometers, the GFTV accessory provides high definition images of events inside the Graphite Furnace Cuvette, allowing monitoring of the sample injection, dry and ash phases of the furnace program. A CCD camera mounted in the instrument produces live video for display on the Data Stations Screen through the GFTV Software and Interface Kit, or on an external monitor. The external monitor should be monochrome, PAL compatible, with a minimum screen resolution of 400 lines, and a coaxial video cable with BNC plug for connection to the spectrometer.

## Necessary Additional Items

- Free USB port or free PCI expansion slot
- Video adapter that supports Direct Draw

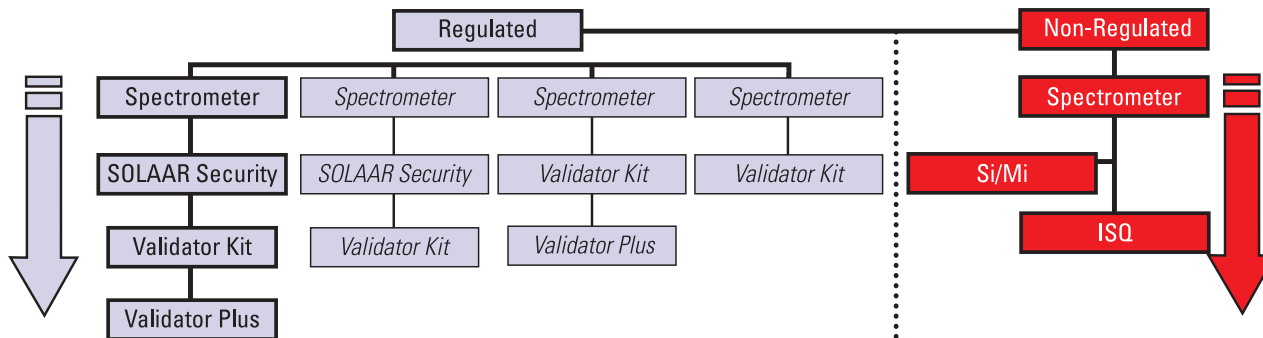
## Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse (20 x 5) IEC 127	401320700201	\$ 8.25	\$ 10.00
GFTV Software and Interface Kit (USB version)	942339396051	\$ 580.00	\$ 696.00

## S Series Spare Parts

## Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse 20 x 5 5A "F"	242208600051	\$ 9.50	\$ 11.50
Standard Clip (hose)	251370613606	\$ 3.50	\$ 4.25
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Spring Washer *302* S/S	251371306001	\$ 0.75	\$ 1.00
Socket Wrench 2.5 mm	262215009009	\$ 0.75	\$ 1.00
Socket Wrench BLK 3 A/F (102103)	262215009011	\$ 7.25	\$ 8.75
SP9 Nipple	291300598001	\$ 5.75	\$ 7.00
SP9 Nipple (ref 032030 B.O.C.)	291300598006	\$ 5.75	\$ 7.00
SP9 Nut (to attach nipple to gauge head)	291301490001	\$ 4.75	\$ 5.75
SP9 Nut	291301490002	\$ 5.00	\$ 6.00
Standard Label Warning-Drain Vessel	401316179782	\$ 8.75	\$ 10.50
Gauze Disc	401316183842	\$ 11.00	\$ 13.25
Impact Bead	401316413796	\$ 14.00	\$ 17.00
Baffle	401316413822	\$ 41.50	\$ 50.00
Spider	401316413832	\$ 17.75	\$ 21.25
SP9 Alumina Disc	401316413841	\$ 60.00	\$ 72.00
SP9 Disc Overpressure	401316413881	\$ 0.50	\$ 0.75
SPACER	401316495812	\$ 7.50	\$ 9.00
929 Drain Tube Clip	401316672921	\$ 22.75	\$ 27.25
Standard Retaining Spring (coated)	401316680061	\$ 35.50	\$ 43.00
Gas Stop End	401316691961	\$ 14.50	\$ 17.50
Drain Tube (2 Meters)	401316694811	\$ 13.00	\$ 16.00
SP9 Mirodent Disp. Mouth Mirror	401322805811	\$ 2.50	\$ 3.00
Handle for Mirodent Mirror	401322805821	\$ 8.25	\$ 10.00
9200 Stop End 1/4	401322836581	\$ 6.25	\$ 7.50
12 mm A/F Spanner	401322846801	\$ 22.75	\$ 27.25
14 mm A/F Spanner	401322846811	\$ 24.00	\$ 28.75
Special Solvents Kit	942339005151	\$ 34.00	\$ 41.00
Nebulizer Probe	942339005441	\$ 14.00	\$ 17.00
Spray Chamber Renovation Kit	942339005461	\$ 635.00	\$ 762.00
Inert Nebulizer 9400/9000	942339005481	\$ 782.00	\$ 938.00
QuadLine Deuterium Source	942342030004	\$ 402.00	\$ 482.00



## Intelligent Spectrometer Qualification (iSQ)



Consisting of a motorized filter wheel containing a set of calibrated filters, the iSQ module is mounted in the instrument and is driven by the software to provide a suite of automated system performance checks on Mi and Si spectrometers:

- Wavelength Accuracy
- Photometric Stability
- Monochromator Resolution
- D2 Background Correction Accuracy
- Lamp Peaking Test
- Beam Selector Movement Test
- Polarizer Orientation and Repeatability Test (for Zeeman instruments only)

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

### Ordering Information

Description	Part Number	Price
iSQ Enhancement (Intelligent Spectrometer Qualification) for S Series <ul style="list-style-type: none"> <li>• iSQ Module</li> <li>• Coded Ca/Mg Lamp</li> <li>• LH Accessory Mount</li> </ul>	942342030001	CALL
iSQ Enhancement (Intelligent Spectrometer Qualification) for M Series <ul style="list-style-type: none"> <li>• iSQ Module</li> <li>• Coded Ca/Mg Lamp</li> <li>• RH Accessory Mount</li> </ul>	942342020001	CALL

## SOLAARsecurity

Added e-signatures, event logs, audit trails and access controls meet all the requirements set out in the 21 CFR Part 11 Rule without compromising the software's renowned usability.

Network aware, Thermo Scientific SOLAARsecurity can be set up and administered from the central administrator application. Digital signatures can be executed to all e-records ensuring not only that the identity of the creator is recorded, but also including an encryption algorithm to detect any changes.

Signature status is immediately apparent, thanks to the easy to interpret color-coded display, and the Audit Trail reveals the details of all post measurement manipulations.

### Ordering Information

Description	Part Number	Price
SOLAARsecurity Upgrade Software for M and S Series	942343030001	CALL
<ul style="list-style-type: none"> <li>• Includes latest version of Standard SOLAAR Software</li> <li>• Validator Package also highly recommended</li> </ul>		

## SOLAAR Flame AA Validator Kit



Kit provides a unique validation package permitting the complete system validation of a Thermo Scientific SOLAAR Flame AA spectrometer running under SOLAAR AA software working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
SOLAAR Flame AA Validator Kit	9423VAL00001	CALL
<ul style="list-style-type: none"> <li>• Validator Logbook</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Nickel Validation Standard</li> <li>• Chromium Validation Standard</li> <li>• Water Blank Validation Standard</li> </ul>		

## SOLAAR Graphite Furnace AA Validator Kit



Package provides a unique validation package permitting the complete system validation of a Thermo Scientific SOLAAR Graphite Furnace AA spectrometer (both standard and Zeeman) running under SOLAAR AA software working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
SOLAAR GFAAS Validator Package	9423VAL00002	CALL
<ul style="list-style-type: none"> <li>• Validator Logbook</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Pyrolytically Coated Cuvettes</li> <li>• Manganese Validation Standard</li> <li>• Water Blank Validation Standard</li> </ul>		



## SOLAAR Flame and Graphite Furnace AA Validator Kit



Package provides a unique validation package permitting the complete system validation of a Thermo Scientific SOLAAR Flame and of Graphite Furnace AA spectrometer (both standard and Zeeman) running under SOLAAR AA software working in the Microsoft Windows environment.

The kit is comprised of a validation log book and hardware package providing all necessary documentation and accessories required to permit the comprehensive validation of the spectrometer by a service engineer, at the point of installation and post-installation.

- Specification and Design Qualification
- System Installation and Operational Qualification
- Software Installation and Operational Qualification
- Analytical Performance Qualification

### Ordering Information

Description	Part Number	Price
SOLAAR FAAS/GFAAS Validator Package	9423VAL00003	CALL
<ul style="list-style-type: none"> <li>• Validator Log Book</li> <li>• Ca/Mg Hollow Cathode Lamp</li> <li>• Ni/Cr/Mn Hollow Cathode Lamp</li> <li>• Pyrolytically Coated Cuvettes</li> <li>• Chromium Validation Standard</li> <li>• Nickel Validation Standard</li> <li>• Manganese Validation Standard</li> <li>• Water Blank Validation Standard</li> </ul>		

## SOLAAR Validator plus Accessory for M and S Series (OQ only)

The CVU contains a set of traceable and certified filters. It is fitted in the spectrometer and controlled by the OQ Test software, and tests the spectrometer resolution, wavelength accuracy, photometric accuracy and stability, and D2 background correction efficiency. The integrated PQ Test software contains a complete set of SOPs and a Wizard to lead the user through the tests needed to validate the instrument analytical performance against the manufacturer's specification.

**Can only be used in RH sample compartment of M Series**

### Necessary Additional Items

- Either the Validator Log Book or the appropriate Validator Kit
- Universal Mount

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 10VA

### Ordering Information

Description	Part Number	Price
SOLAAR Validator plus Accessory for S and M Series (OQ only)	9423VAL00004	CALL
<ul style="list-style-type: none"> <li>• Calibrated Validation Unit (CVU)</li> <li>• Power Supply</li> <li>• RS232 Data Lead</li> </ul>		

## SOLAAR Validator Log Book

All record files are provided in MS Excel® in addition to standard hard copy. Complementing the system validation protocols, reference sections are included that discuss general method development and method validation on a Thermo Scientific SOLAAR AA Spectrometer.

**Can only be used in RH sample compartment of M Series**

### Necessary Additional Items

- Either the Validator Log Book or the appropriate Validator Kit
- Universal Mount

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 10VA

### Ordering Information

Description	Part Number	Price
SOLAAR Validator Log Book (M and S) Version 6	9499VAL90006	CALL
The Validator Log Book includes:		
<ul style="list-style-type: none"> <li>• <i>Overview to SOLAAR Validation</i></li> <li>• <i>Supplier Assessment Questionnaire</i></li> <li>• <i>SOLAAR Specification</i></li> <li>• <i>IQ/OQ/PQ Plans including Relevant Test Criteria</i></li> <li>• <i>Standard Operating Procedures (SOPs) and Test Reporting Facilities</i></li> </ul>		

## Validation Standards

### Ordering Information

Description	Part Number	Price
Nickel Validation Standard	9423VAL00011	CALL
Chromium Validation Standard	9423VAL00012	CALL
Manganese Validation Standard	9423VAL00013	CALL
Water Blank Validation Standard	9423VAL00014	CALL
Re-calibration of CVU Accessory (validator plus)	9423VALR0004	CALL

## RH Universal Accessory Mount

Accessory mount that is required when you want to use:

- An EC90 in the right-hand side of an M spectrometer
- An HS90 in the right-hand side of an M spectrometer
- A Mercury Cold Vapor Kit in the right-hand side of an M spectrometer
- A Calibration Unit (validator plus accessory) in an M spectrometer

The first three listed items above can also be used in the left-hand side of the M5, M6, and MQZe spectrometers. The necessary fittings are included as standard with the accessories.

### Ordering Information

Description	Part Number	Price
RH Sample Compartment Universal Accessory Mount	942342020005	CALL

## LH Universal Accessory Mount

Accessory mount for use in the S Series and left-hand M Series sample compartments. This is necessary for mounting the EC90 furnace head and the mercury absorption cell in these sample compartments. It is also used for mounting the Validatorplus calibration validation unit in the S Series sample compartment.

### Ordering Information

Description	Part Number	Price
LH Sample Compartment Universal Accessory Mount	942342021005	CALL

## VP100 Continuous Flow Vapor System



The Thermo Scientific VP100 Continuous Flow Vapor System performs hydride and mercury vapor measurements with significant sensitivity improvement over normal flame techniques. An air/acetylene flame or an electrically heated cell is used for atomization, avoiding the need to use hydrogen as the fuel gas. The VP100 unit incorporates the reagent reservoirs, a variable speed 4 channel peristaltic pump, control electronics and gas-liquid separator. An integrated mass flow controller allows the carrier gas flow to be controlled and monitored through the system software, and the continuous flow principle eliminates the need to clean the reaction vessel after each sample. The VP100 operates automatically under Data Station Control and can provide full autosampling operation with a suitable autosampler. When used with the EC90 electrically heated atomization cell, unattended operation is possible.

The VP100 is compatible with all Thermo Scientific M Series and S Series AA spectrometers. It is not compatible with earlier AA spectrometers. The VP100 requires SOLAAR software v10.1, and spectrometer firmware v1.25, or higher.

If the VP100 is ordered with a spectrometer, the correct software will be supplied automatically. If it is ordered as an upgrade to an existing spectrometer, the correct software must also be ordered. (SOLAAR Software Upgrade 942343020001)

### Standard Items

- T Cell (2), Mercury Cell, Spare Pump Tubing, Spare Glass Beads, Spare Semi-permeable Membrane

### Necessary Additional Items:

An appropriate accessory mount is required to fit the long path mercury cell to the spectrometer. Note: the use of the mercury cell is not obligatory; mercury can be measured using the standard 'T' cell, which does not require an accessory mount.

For use on Mark 1 M Series instruments only, a STAT/T cell mount compatible with the stainless steel burner will be required. (stainless steel part number 401399900271)

### Absorption Cells

- Open ended, T-shaped silica cell. 120 mm long. 8 mm internal diameter
- Long path (150 mm) mercury absorption cell

**Cell Heating:** Air/acetylene flame on 50 mm universal burner. Electrical heating using EC90.

**Carrier/Purge Gas:** Argon or nitrogen

**Gas Inlet Pressure:** 0.35 – 1 bar (5 - 14 psi)

**Gas Consumption:** Up to 500 mL/min.

**Reducing Agents:** Sodium borohydride. Tin (II) chloride may be used for mercury analysis

**Solution Transport:** Variable speed, 4 channel peristaltic pump, using continuous flow principle

**Sampling Volume:** 1 to 70  $\mu$ L

**Solution Flow Rates:** Reductant – 3.2 mL/min. Sample - 7.8 mL/min.

**Carrier Gas Flow Rates:** Variable 50 – 500 mL/min. Electronic control via mass flow controller.

**Reagent Containers:** Two 1 Liter plastic bottles

**Power:** 220/240 V, 50 Hz or 110/120 V, 60 Hz

**Power Consumption:** 30 VA.

**Dimensions (mm):** 475 W x 300 H x 200 D. Dimensions (mm): 475 W x 300 H x 200 D.

### Absorption Cells

- Open ended, T-shaped silica cell. 120 mm long. 8 mm internal diameter.
- Long path (150 mm) mercury absorption cell

### Ordering Information

Description	Part Number	Price
VP100 Continuous Flow Vapor System	942346010001	CALL

## VP100 – Spare Parts

## Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Fuse (20 x 5) IEC 127	401320700201	\$ 8.25	\$ 10.00
Switching Mode Power Supply Unit	401320700307	\$ 399.00	\$ 479.00
Switching Mode Power Supply Unit	420416600111	\$ 247.00	\$ 296.00
Mains Inlet Connector	420422800003	\$ 8.25	\$ 10.00
Mains Rocker Switch	420422800004	\$ 8.25	\$ 10.00
Front Cover	420516600022	\$ 55.00	\$ 66.00
GLS Manifold	420516600043	\$ 451.00	\$ 541.00
GLS Top Cup	420516600052	\$ 107.00	\$ 128.00
Bottle	420516600061	\$ 59.00	\$ 71.00
Plumbing Kit	420517200003	\$ 576.00	\$ 691.00
VP100 Led (Power ON ) C/F	420517210011	\$ 14.50	\$ 17.50
VP100 PCB Assembly	420517912732	\$1,221.00	\$1,465.00
VP100 Mass Flow Controller	420522800001	\$1,545.00	\$1,854.00
Silicone Tubing 1/32 ID x 1/16 Wall	420522800021	\$ 17.00	\$ 20.50
Tygon Tubing 1.6 mm ID x 0.8 mm Wall	420522800031	\$ 17.75	\$ 21.25
Peristaltic Pump Head Assembly	430122820001	\$ 580.00	\$ 696.00
Set of VP100 Pump Tubing	942346010011	\$ 138.00	\$ 166.00
Membrane DIA 47 PTFE	942346010021	\$ 116.00	\$ 139.00
Spare VP100 Semi-permeable Membranes	942346010021	\$ 116.00	\$ 139.00
Spare Glass Beads for VP100 Gas Liquid Separator	942346010031	\$ 40.00	\$ 48.00

## ID100 Autodilutor



The Thermo Scientific ID100 Autodilutor provides rapid, in-line preparation of calibration standards and intelligent or fixed ratio dilution of samples for flame measurements. It is based on a high precision multi-piston pump that is calibrated for life and does not require any consumable items. It can be used with manual sampling or with any of the flame autosamplers.

**Standard Items:** ID100 Autodilutor

**Necessary Additional Items:** None

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 85 VA

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
ID 100 Autodilutor	942347003201	CALL	
ID 100 Consumable Kit	942345003201	\$ 410.00	\$ 492.00

## Slotted Tube Atom Trap



The Thermo Scientific Slotted Tube Atom Trap (SLAT) accessory provides a useful increase in flame analytical sensitivity for volatile elements, such as Cd, Zn, Pb, and Cu. Provides a potential of 2 to 5 times improvement in sensitivity for certain volatile elements on flame systems when employing a 50 mm burner. The tube is slotted to allow the atom cloud residence time to be significantly increased in the measuring optical beam.

The SLAT consists of a silica cell with a mount for 50 mm burners and enables the tube to be rotated into, and out of, the actual flame.

### Standard Items

- STAT Holder
- 5 Quartz STAT tubes

**Necessary Additional Items:** 50 mm Universal Titanium Burner

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 85 VA

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Slotted Tube Atom Trap (STAT)	942339035011	\$1,198.00	\$1,438.00

## Variable Flow Auxiliary Oxidant Kit

The Thermo Scientific Variable Flow Auxiliary Oxidant Kit allows the flow rate of the auxiliary oxidant gas that can be supplied to an air/acetylene flame to be varied over a wide range, in order to allow the flame chemistry to be optimized when using less common organic solvents. Note: all flame instruments include a fixed flow rate auxiliary oxidant facility for air/acetylene flames that is suitable for the organic solvents most commonly used.

### Standard Items

- Variable Flow Auxiliary Oxidant Kit

**Necessary Additional Items:** None

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Variable Flow Auxiliary Oxidant Kit	942339346111	\$1,003.00	\$1,204.00

## EC90 Electrically Heated Atomization Cell

The Thermo Scientific EC90 is an electrically heated atomization cell for flameless vapor generation AAS. It provides improved analytical performance, unattended operation and reduced operating costs in comparison with a flame heated atomization cell. The EC90 must be used with the VP90 or F190 and is suitable for all hydride forming elements.

- Extensive range of cuvettes available including electrographite, platform, and extended lifetime
- Optical temperature control is provided for max sensitivity and reproducibility
- Independently controlled internal and external cuvette gases provide long cuvette lifetime (2 gases)
- Safety interlocks for pressure, inert gas, door, head tilt, temp, magnet open, power and cuvette failure
- Intelligent coolant temperature sensor automatically modifies drying phase if coolant temperature varies
- Includes cuvette lifetime counter

### Standard Items

- EC90 Furnace Head
- EC90 Furnace Power Supply
- 2 Silica T Cells

### Necessary Additional Items:

- VP90 or F190 Continuous Flow Vapor System
- Accessory Mount

**Control System:** From external power supply

**Temperature Range:** Ambient to 1000 °C in 1 °C steps

**Power:** 220/240 V, 50 Hz or 110/120 V, 60 Hz

**Power Consumption:** 700VA

**Dimensions (mm):** 280 W x 140 H x 290 D (power supply)

**Weight:** Approximately 13 kg

### Ordering Information

Description	Part Number	Price
EC90 Electrically Heated Atomization Cell	942339360061	CALL

*Must be used with a VP90 or F190 Vapor System and a Universal Accessory Mount to provide a working system. It is essential for vapor analysis with the MQZ and MQZe spectrometers.*

## FS95 Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
PTFE Sampling Needle 80 cm	401322836641	\$ 91.00	\$ 109.00
Syringe (side ported)	401322845021	\$ 414.00	\$ 497.00
Seal Cone Inverted PTFE	401322845141	\$ 4.00	\$ 4.75
Spare Samp Capillary Tips (Pk 10)	942339381261	\$ 83.00	\$ 100.00

## GF95 Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Standard Fuse	242208601005	\$ 0.50	\$ 0.75
Fuse 1 Amp 20 x 5	242208601021	\$ 0.25	\$ 0.50
Fuse 1 Amp 32 x 6 250 V	242208601114	\$ 34.75	\$ 42.00
SP1900 Clip (hose)	251370614156	\$ 8.50	\$ 10.25
Gas Seal	401316681501	\$ 13.50	\$ 16.25
Cuvette Alignment Tool	401316683401	\$ 72.00	\$ 88.00
Window 15.5 mm DIA x 1 mm	401316856822	\$ 49.25	\$ 59.00
Probe Plug with Insert	401317278271	\$ 426.00	\$ 511.00
Center Block Window	401317278301	\$ 331.00	\$ 397.00
O-ring (for window)	401317278311	\$ 14.50	\$ 17.50
SP9 Fuse 32a hrc type niTD	401322906281	\$ 10.75	\$ 13.00
GF95 Water Filter O-ring	420122900051	\$ 0.50	\$ 0.75
GF95 Water conn O-ring	420122900061	\$ 0.75	\$ 1.00
GF95 Water Filter Disc	420122900071	\$ 3.50	\$ 4.25
GF95 Argon Filter (spare)	420122900271	\$ 135.00	\$ 162.00
Set of Graphite Contact Cones	942339395011	\$ 91.00	\$ 109.00
CVU Norm Electrographitbox 10 Cuvettes	942339395031	\$ 690.00	\$ 828.00
Contact Cone Replacement Tool	942339395101	\$ 255.00	\$ 306.00

## GF95Z Spare Parts

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Standard Fuse	242208601005	\$ 0.50	\$ 0.75
Fuse 1 Amp 20 x 5	242208601021	\$ 0.25	\$ 0.50
Fuse 1 Amp 32 x 6 250 V	242208601114	\$ 34.75	\$ 42.00
Plastic Forceps	281306098037	\$ 8.00	\$ 9.75
Gas Seal	401316681501	\$ 13.50	\$ 16.25
Cuvette Align Tool GF90Z	401316686261	\$ 102.00	\$ 122.00
Window 15.5 mm DIA x 1 mm	401316856822	\$ 49.25	\$ 59.00
Window 09x1	401316858231	\$ 44.75	\$ 54.00
O-ring (for window)	401317278311	\$ 14.50	\$ 17.50
Lens KBX 022	401322842461	\$ 250.00	\$ 300.00
SP9 fuse 32a hrc type niTD	401322906281	\$ 10.75	\$ 13.00
GF95 Water Filter O-ring	420122900051	\$ 0.50	\$ 0.75
GF95 Water conn O-ring	420122900061	\$ 0.75	\$ 1.00
GF95 Water Filter Disc	420122900071	\$ 3.50	\$ 4.25
GF95 Argon Filter (spare)	420122900271	\$ 135.00	\$ 162.00
CVU Standard Electro Graphite Cuvettes (10/box)	942339395031	\$ 690.00	\$ 828.00
Graphite Cones Zeeman Furnace	942339395161	\$ 129.00	\$ 155.00
Cone Replacement Tool Zeeman	942339395181	\$ 331.00	\$ 397.00



## FS95 Furnace Autosampler



The attractively styled Thermo Scientific FS95 Furnace Autosampler will accommodate up to 60 samples in the large carousel. Carousel changeover allows up to 500 samples per run. Six (6) large reagent cups enable up to six (6) matrix modifiers to be employed. Using the cup reducing ring, smaller sample cups can be used in the reagent cup positions to reduce modifier consumption. The sample is collected and dispensed via an inert PTFE capillary with rapidly interchangeable tips. Viscous and normal modes of injection ensure that samples are handled appropriately, and an enhanced wash program eliminates contamination. Fast furnace operation provides concurrent operation of the furnace, spectrometer, and autosampler sample uptake procedures, minimizing overall furnace cycle time.

The syringe is visible and easily accessible for routine maintenance. A large, 1-liter capacity wash vessel for long, unattended analysis is complemented by an on-board waste vessel, removing the need for inconvenient waste collection on the laboratory floor. All facilities are programmed from the SOLAAR software and sampling facilities. Matrix modification (wet or dry mixing), standards addition, dilution, re-concentration and automatic standards preparations can be rapidly set up. Automatic re-scaling and recalibration functions are provided. If a sample falls outside the calibration range the system automatically and intelligently calculates the most appropriate dilution factor required to bring the sample back within range. Autosampler loading guides indicate the optimum carousel layout.

### Standard Items

- Furnace Autosampler
- Polypropylene Sample Cups (1000)
- Polypropylene Reagent Cups (50)
- Spare Capillary Tips (10)

**Necessary Additional Items:** None

**Carousel Capacity:** 60 sample cups, 6 reagent cups

**Cup Types:** Polypropylene sample and reagent, fluoroplastic sample, reduced volume sample

**Cup Volume (nominal):** Sample 2 mL, reduced volume 1.5 mL, reagent 25 mL

**Matrix Modifiers:** Up to 6 per method

**Resamples:** 1 to 99 per measurement

**Sampling System:** 100  $\mu$ L syringe (side port)

**Sampling Volume:** 1 to 70  $\mu$ L

**Reproducibility of Injected Volume:** Better than 1% (by mass) at volumes  $\Rightarrow$  than 10  $\mu$ L

**Accuracy of Injected Volume:**  $\pm 0.5$   $\mu$ L

### Inert Gas Pressure

- Nominal – 0.34 bar (5 psi)
- Minimum – 0.20 bar (3 psi)
- Maximum – 0.68 bar (10 psi)

**Wash and Waste Container Volume:** 1 Liter each

**Dimensions (mm):** 296 W x 380 H x 320 D

**Weight:** Approximately 7.3 kg

### Ordering Information

Description	Part Number	Price
FS95 Furnace Autosampler (M Series Only)	942348020001	CALL

## Furnace Autosampler Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
Polypropylene Reagent Cups (Pk of 50) • Polypropylene Reagent Cups • Flat bottomed (volume 20 mL) (50)	942339380021	\$ 28.75	\$ 34.50
Polypropylene Sample Cups (Pk of 1000) • Polypropylene Sample Cups • Flat bottomed (maximum volume 1.8 mL) (1000)	942339380031	\$ 116.00	\$ 139.00
Fluoroplastic Sample Cups (Pk of 20) • PTFE Sample Cups • Flat bottomed (max volume 1.8 mL) (20)	942339380051	\$ 355.00	\$ 426.00
Reduced Volume Cups (Pk of 20) • Polypropylene Reduced Volume Sample Cups • Conical bottomed (maximum volume 1.3 mL) (20)	942339380061	\$ 203.00	\$ 244.00
Cup Reducing Ring (Pk of 1) • Cup Reducing Ring Adaptor Ring for the use of the sample cups (P/N 942339380031 or P/N 942339380051) or low volume sample cups (P/N 942339380061) in the reagent cup positions.	942339380071	\$ 37.50	\$ 45.00
Spare Samp Capillary Tips (Pk of 10) • Spare Sampling Capillary tips for sample arm. Cone and capillary already assembled. Unscrew black cap remove old tip and replace with new. If capillary OD appears to be too large may need to enlarge hole in black cap. (10)	942339381261	\$ 83.00	\$ 100.00
PTFE Sampling Capillary • Replacement capillary from syringe to end of sampler arm. Kit includes tubing (syringe fitting attached) and Teflon cone.	942339382261	\$ 250.00	\$ 300.00
Carousel and Tray Replacement or Spare (sample holder)	942339383261	\$ 515.00	\$ 618.00
Wash and Waste Bottles	401317290831	\$ 416.00	\$ 499.00
Seal Cone Inverted PTFE	401322845141	\$ 4.00	\$ 4.75
Plus Syringe (side ported)	401322845021	\$ 414.00	\$ 497.00

## Continuous Flow and SFI Vapor Systems

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
T Cell	942339060101	\$ 51.00	\$ 61.00
Spare Peristaltic Pump Tubing	942339360041	\$ 183.00	\$ 220.00
Spare Gas/Liquid Separator	942339360051	\$ 434.00	\$ 521.00
FI90 Support/Spares Kit	942339368011	\$1,955.00	\$2,346.00
Manual Sample Accessory for FI90	942339368021	\$ 802.00	\$ 962.00
Reagent Bottle (1 Liter)	401322937761	\$ 16.50	\$ 19.75

## CETAC ASX-520 Flame Autosampler

The CETAC ASX-520 Flame Autosampler is a random access, large capacity flame/vapor autosampler with 84 to 360 maximum sample capacity, dependent on rack configuration. Optional racks for 21, 24, 40, 60 or 90 samples. Smaller sample capacities imply larger available volume per sample.

### Standard Items

- Random access x-y autosampler mechanism
- Standards rack (10 position)
- 4 sample racks (60 position each)
- 10 standard and 240 sample polypropylene sample tubes
- 0.5 mm ID and 0.8 mm ID PTFE sample probes
- Pumped wash facility
- RS232C adaptor

**Necessary Additional Items:** None

**Power:** 110 V – 240 V at 50 or 60 Hz

**Power Consumption:** 50 VA

### Ordering Information

Description	Part Number	Price
CETAC ASX-520 Autosampler 110 – 120 V/200 – 240 V	942347004001	CALL

## CETAC Flame and Vapor Autosampler Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
CETAC Rack 21 Position • 21-position Sample Tube Rack for CETAC Autosampler, holes are 30.6 mm diameter	942347003901	\$ 58.00	\$ 70.00
CETAC Rack 24 Position • 24-position Sample Tube Rack for CETAC Autosampler, holes are 25.0 mm diameter	942347003911	\$ 33.00	\$ 39.50
CETAC Rack 40 Position • 40-position Sample Tube Rack for CETAC Autosampler, holes are 21.0 mm diameter	942347003921	\$ 57.00	\$ 70.00
CETAC Rack 60 Position • 60-position Sample Tube Rack for CETAC Autosampler, holes are 16.5 mm diameter	942347003931	\$ 55.00	\$ 66.00
CETAC Rack 90 Position • 90-position Sample Tube Rack for CETAC Autosampler, holes are 13.5 mm diameter	942347003941	\$ 57.00	\$ 68.00
CETAC 30 mL Poly Tubes (500) for Rack 24 • 30 mL Polypropylene Tubes (24-position rack) (500) • Test tube, polypropylene, 30 mL, 25 mm x 93 mm, package of 500, for Cetac 24 position rack	942347004111	\$ 307.00	\$ 368.00
CETAC 20 mL Poly Tubes (500) FOR RACK 40 • 20 mL Polypropylene Tubes (40-position rack) (500) • Test tube, polypropylene, 20 mL, 20 mm x 97mm, package of 500, for Cetac 40 position rack	942347004161	\$ 307.00	\$ 368.00
CETAC 14 mL Poly Tubes (1000) for Rack 60 • 14 mL Polypropylene Tubes (60-position rack) (1000) • Test tube, polypropylene, 14 mL, 15 mm x 100 mm, package of 1000, for Cetac 60 position rack	942347004131	\$ 288.00	\$ 346.00
CETAC 8 mL Poly Tubes (1000) for Rack 90 • 8 mL Polypropylene Tubes (90-position rack) (1000) • Test tube, polypropylene, 8 mL, pkg of 1000, for Cetac 90 pos	942347004141	\$ 553.00	\$ 664.00
CETAC 50 mL Poly Standard Rack Tubes (500) • 50 mL Polypropylene Standards Tubes (500) • Test tube, polypropylene, 50 mL, 29 mm x 117 mm, package of 500, for Cetac standards tubes	942347004151	\$ 477.00	\$ 572.00
CETAC Sample Probe Assembly • Drive assembly for Cetac probe. Includes cable, slide mechanism and block for holding cable.	942347003981	\$ 522.00	\$ 626.00
CETAC Sample Probe, 12" 0.5 mm ID • Probe and tubing for Cetac Autosampler 0.5 mm ID	703-010700	\$ 226.00	\$ 271.00
CETAC Sample Probe, .8 mm ID • Probe and tubing for Cetac Autosampler 0.8 mm ID	SP5328	\$ 241.00	\$ 289.00
CETAC Tray and Standards Rack - 10 Stan • Tray Sub-assembly with a Standards Rack for CETAC Autosampler	942347003951	\$ 318.00	\$ 382.00
CETAC Rinse Station • Rinse Station for CETAC Autosampler	942347003961	\$ 354.00	\$ 425.00
CETAC Drain Pump Tubing and Connector Kit • Drain Pump Tubing and Connector Kit • This contains one tube and two end fittings. May need two one to pump the rinse solution into the rinse station and one to pump from rinse station to waste	942347003971	\$ 72.00	\$ 86.00

## Flame and Vapor Autosampler Accessories

### Ordering Information

Description	Part Number	Price (US)	Price (CAN)
TA Tubes for 24 Position Rack	942347005101	\$ 49.75	\$ 60.00
14 mL Polypropylene Sample Tubes (2000 off)	942347005111	\$ 501.00	\$ 601.00
TA Tubes for 75 Position Rack	942347003311	\$ 274.00	\$ 329.00
TA Rack for 24 Position	942347005901	\$ 140.00	\$ 168.00
TA Rack for 48 Position	12714000	\$ 129.00	\$ 155.00
TA Rack for 75 Position	942347005921	\$ 140.00	\$ 168.00
Rinse Station Assy Autosampler	942347005931	\$ 64.00	\$ 77.00
TA AS2500 Drip Tray	942347005941	\$ 191.00	\$ 229.00
TA AS2500 Standards Rack Extension	942347005951	\$ 284.00	\$ 341.00
TA AS2000 Drip Tray	942347005961	\$ 184.00	\$ 221.00
TA AS2000/2500 Standards Rack	942347005971	\$ 351.00	\$ 421.00

## Software and Upgrades

## Local Control Software

## Data Station Software

### Ordering Information

Description	Part Number	Price
SOLAAR Upgrade Software (includes software for earlier systems)	942343020001	CALL
SOLAARsecurity Upgrade Software	942343030001	CALL

The Thermo Scientific SOLAAR Local Control Software runs on the Local Control Module and will control both M Series and S Series spectrometers. The software is aware of the type of spectrometer that it is controlling, and will only provide relevant parameters and options for each instrument type and configuration. The Local Control Software supports all AA Series accessories, although in some cases provides a more limited range of facilities than does the Data Station Software.

Local Control Software offers linear, curved and standard additions calibration algorithms with blank solution and up to five standards. Live display of calibration and furnace peak graphics are available and can be copied to an Epson™ compatible dot matrix printer. Up to 20 parameter sets can be saved in non-volatile memory (NVM), and multi-element analysis capability is available. Automatic sampling with all flame and furnace autosamplers, and full editable alphanumeric sample details are provided. Parameters, results and graphics can be printed directly to a suitable printer. Results are stored in NVM, and can be reviewed and printed at any time. They will be over-written only when a new analysis is started.

The Thermo Scientific SOLAAR Data Station Software runs on the AA Series Data Station, and will control both S Series and M Series spectrometers. The software is aware of the type of spectrometer that it is controlling, and will only provide relevant parameters and options for each instrument type and configuration. The Data Station Software supports all the facilities provided by all the AA Series Accessories.

The software features a range of wizard based procedures and a tabbed methods dialogue to make setting up even complex analyses fast and easy. All raw data, results and parameters are stored in a single database for easy retrieval. True Windows multi-tasking is available, so that SOLAAR can be iconized while running an analysis, allowing concurrent use of other applications. Methods can be created, edited and saved, and earlier results can be reviewed, edited and printed, while an analysis is underway.

SOLAAR software enables full 16 element methods to be performed automatically. The flexible and comprehensive tabbed methods dialogue box guides the user through setting up complex, multi-element analyses. Data coded HCLs are fully supported, and facilities are provided to record lamp usage. Up to 10 calibration standards and a blank can be used, with segmented curve, linear, or quadratic least squares, fit calibration algorithms. Normal, standard addition and standard curve calibration methods are supported, with full graphical display and print out of the calibration curve. Full alpha-numeric sample details including sample mass and dilution correction can be entered for each sample, or imported via text files.

Comprehensive furnace signal graphics are provided and automated ash-atomize plots produce graphical data for furnace program optimization and will even suggest optimum values. For flame systems, fully automatic fuel gas flow and burner height optimization with graphical presentation are provided.

Extensive on line, fully context sensitive, Help facilities are available. Carefully structured “books” allow easy browsing and searching, as well as, direct access to any Help topic. Trouble-shooting and diagnostics sections describe simple experiments to first locate the problem then to rectify it. A full “cookbook” with default parameters for all elements, common interferences, and the means of overcoming them is included.

SOLAAR software provides comprehensive printer support through the Windows operating system. Report formatting enables customization of the sample details, results, summaries, methods, system parameters and graphical displays that are to be included in the report, and all reports, as well as individual results, are time and date stamped. Flexible and comprehensive results database filters select and display the required data, which can be exported to other applications for further processing. All results are able to be edited, and are automatically audit trailed. Password protection and the audit trail maintain the validity of the data for accreditation purposes.





# LIFECYCLE

## Enterprise Solutions



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### OPERATIONS

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Installation  
Relocation  
Education Services  
Compliance  
Supplies

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**Product Support**

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- Repair Services
- Preventative Maintenance
- Calibration Services
- Parts & Accessories
- Software & Upgrades
- Tech Support
- e-Support
- Consumables

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