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innovators in isotopes

Sercon Ltd, Unit 3B Crewe Trade Park, Gateway
Crewe, Cheshire CW1 6JT, UK
Tel: +44 (0)1270 580008 Fax: +44 (0)1270 252310
Company Registration No. 4290072 Vat No. 771 1100 74

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Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

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ADDITIONAL:

Payment Terms:
50% / 40% / 10%
Other: please specify

	Date
Shipped	3/11/26
Installed	16/12/20
Installation by	Lm
Warranty expires	15/12/21

Penalty Clause Yes / No
Please specify:

Blue Book Completion:

Signed	S. Mast	Date	17/12/20
Verified	I. Hugo	Date	22/9/21

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4 - LOG SHEET

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Date	Action Taken	By Whom
17/8/20	ISO EARTH (10202/11-2020/1238) PLACED INTO TEST. HALOGEN LAMP FITTED INTO GC BOX. AWAITING FEEDBACK FROM ENGINEERS TO SIGN OFF DESIGN+BUILD LOG (LOG NO 1)	P.H.

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4 - LOG SHEET

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Date	Action Taken	By Whom
20/8/20	20-22 Source pipe installed and pumps	
	turned on to pump down. EA with furnaces	
	and GC boxes have all heated up to	
	temperature	D. Walker
25-AUG-20	REF He + REF GASES SET. N2 AND O2	
	PEAK SHAPE GOOD. ISSUE WITH EPC READBACKS	
	NEEDS RESOLVING	LM
27/8/20	C + N Peak Shapes and Stabilities	SM
	are good	
	CO2 Ref gas Specs ran	
	Precision 0.01✓	SM
	Linearity 0.09✓ %onA 0.03	
28/8/20	N2 Ref gas ran	
	Precision = 0.04✓	SM.
	Linearity = 0.20✓ %onA 0.05.	
07-SEP-20	ISOEARTH (EA IC CHECKED). FURNACES UP TO	
	TEMPERATURE	LM
08-SEP-20	CUSTOMER SAMPLER FITTED for BLANK TESTING	LM
09-SEP-20	ORIGINAL AUTOSAMPLER 42623 REFITTED	

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4 - LOG SHEET

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Date	Action Taken	By Whom
14/9/20	20-22 Set-up magnet in position	
	Source conditioned and tuned ready	SM.
	to run Ref gas Specs	
	CO2 + N2 Peak Shapes good also 3/1	SM
	looks great and Stable 2/1 Traces	
	CO2 Ref Gas Specs ran.	SM
	Precision - 0.01 ✓	
	Linearity - 0.09 ✓	
	~~Linearity~~	
	N2 Ref gas Specs ran	SM
	Precision - 0.05 ✓	
	Linearity - 0.10 ✓	
	iso. Earth Set up crimps and flows set	SM
	and leak tight ready to run Samples	
15/9/20	Dropped Samples of 400/100 Beet mix	SM
	to adjust timing windows.	
	Baked out GC overnight.	SM.
16/9/20	new Combustion tube Put in Chemically	SM
	had a gap in between Quartz and	
	Copper Oxide.	
	Dual Precision of 400/100 Put on.	SM

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

HS20-22				
Reference Gas Precision (n=5)				
^{13}C	(CO_2)	0.06	0.01	✓
^{15}N		0.06	0.04	✓
^{18}O	(CO_2)	0.06		
^{34}S	(SO_2)	0.1		
^{2}H		0.4		

Reference Gas Linearity			
^{13}C	≤0.02‰/nA	0.04‰nA (STD 0.08)	✓
^{15}N	≤0.02‰/nA	0.05‰A (STD Deviation 0.2)	✓

IsoEArth & IsoEArth+							
Combustion (n=5)							
^{13}C	100 µg C	0.1		10 µg C	0.8		
^{15}N	100 µg N	0.15		10 µg N	1.5		
^{34}S	25 µg S	0.3		10 µg S	1.0		
Dual	400 µg C	0.1 0.08	✓	100 µg N	0.15 0.05		✓
Dual linearity spec	250µgC	0.3 0.08		100µgN	0.3 0.09		

Integra2			
^{13}C	100 µg C	0.2	
^{15}N	100 µg N	0.3	
Dual	100 µg N & 400 µg C	0.4 & 0.15	
^{34}S	30 µg S	0.5	
^{18}O	100 µg O	0.5	

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

HT-EA			
Pyrolysis (n=5)			
^{18}O	100 µg O or 1 µl water	0.3	
^{2}H	200 µg H or 1 µl water	1.0	

Aqua, µCarbs & GasBox						
Equilibrations (n=5)						
^{18}O	0.2 ml water	0.1				
^{2}H	0.2 ml water	2.0				
Carbonates (n=5)						
^{13}C	100 µg $CaCO_3$	0.08				
^{18}O	100 µg $CaCO_3$	0.1				
Gas Analysis (n=5)						
^{13}C	5% CO_2	0.1		Air CO_2	0.1	
^{18}O	5% CO_2	0.1		Air CO_2	0.2	
^{2}H	0.5 ml H_2	1.5				
^{15}N	0.5 ml N_2	0.1		100 ppm N_2O	0.5	
^{13}C	Breath (12 ml)	0.1				
DIC (n=5)						
^{13}C	15ppm (0.5ml)	0.15				

LC-I			
(n=5)			
^{13}C		0.2	

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

GC Orchid							
Combustion (n=3 for each analyte)							
^{13}C	3 Alkanes	100 ng C	0.2		10 ng C	0.5	
^{15}N	2 Amines	100 ng N	0.5		14 ng N	1.5	
Pyrolysis (n=3 for each analyte)							
^{2}H	3 Alkanes	250 ng H	3.0		25 ng H	10.0	
^{18}O	3 FAMES	100 ng O	0.5		20 ng O	2.0	
Water pyrolysis (n=5)							
^{2}H	0.1 µl water	3.0					
^{18}O	0.1 µl water	0.4					

CryoRange						
(n=5)						
^{13}C	Air CO_2 (12ml)	0.1		Air CH_4 (125ml)	0.2	
^{15}N	Air N_2 (1ml)	0.1		Air N_2O (125ml)	0.4	
^{18}O	Air CO_2 (12ml)	0.15		Air N_2O (125ml)	0.7	
^{18}O	Air O_2 (1ml)	0.1				
^{2}H	Air CH_4	3.0				
^{13}C	TOC (5ppm)	0.4				
^{13}C	Laser	0.3				

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Geo2			
Internal precision (no change overs)			
^{2}H	200 Bar µl	0.15	
^{13}C	100 Bar µl	0.01	
^{15}N	100 Bar µl	0.01	
^{18}O	100 Bar µl	0.015	
^{34}S	100 Bar µl	0.015	
Single cold finger volumes (10 change overs)			
^{13}C	20 Bar µl	0.01	
^{18}O	20 Bar µl	0.015	
^{13}C	3 Bar µl	0.02	
^{18}O	3 Bar µl	0.03	
CAPS (n=5)			
^{13}C	50 µg $CaCO_3$	0.03	
^{18}O	50 µg $CaCO_3$	0.06	
WES (n=5)			
^{2}H		1.0	
^{18}O		0.05	
Manifold (10 tubes)			
^{2}H		0.5	
^{13}C		0.02	
^{15}N		0.02	
^{18}O		0.03	
^{34}S		0.03	

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7: ASSEMBLY AND TEST RECORD

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

PRODUCT: EAath

SERIAL NUMBER: 10202/11-2020/1238

ASSEMBLED: (Name) D. Walker Date: 17/8/20

PRE-TEST INSPECTION: (Production name) P. Hayes Date: 17/8/20

PRE-TEST INSPECTION: (Test name) LEE MARTIN JMA Date: 25-AUG-20

SYSTEM TEST: (Name) S. [illegible] Date: 4/11/20

PRE-DESPATCH INSPECTION: (Name) P. Hayes Date: 4/11/20

P.A.T. Test results

In compliance with Low Voltage directive 73/23/EEC
To Low Voltage standard EN61010 – 1:1993

Earth Continuity 0.070 Ω

Insulation 45.7 MΩ

Earth Leakage Current 0.75 mA. @ <0.05 kVA.

Tested by: D. Walker

Date: 17/8/20

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7: ASSEMBLY AND TEST RECORD

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

PRODUCT: 10802/8 CRYOFLEX(LA)

SERIAL NUMBER: 10802/8-2020/1238

ASSEMBLED: (Name) D. Walker Date: 3/9/20

PRE-TEST INSPECTION: (Production name) P. Mayo Date: 3/9/20

PRE-TEST INSPECTION: (Test name) S. Mass Date: 3/9/20

SYSTEM TEST: (Name) S. Mass Date: 4/11/20

PRE-DESPATCH INSPECTION: (Name) P. Mayo Date: 4/11/20

P.A.T. Test results

In compliance with Low Voltage directive 73/23/EEC
To Low Voltage standard EN61010 – 1:1993

Earth Continuity 0.076 Ω

Insulation >300 MΩ

Earth Leakage Current 0.75 mA. @ <0.05 kVA.

Tested by: D. Walker

Date: 3/9/20

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7: ASSEMBLY AND TEST RECORD

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

PRODUCT: HS20-22

SERIAL NUMBER: 20402/1-2020/1238

ASSEMBLED: (Name) P. Hayes Date: 15/7/20

PRE-TEST INSPECTION: (Production name) D. Walker Date: 5/8/20

PRE-TEST INSPECTION: (Test name) LEE MARTIN Date: 25-AUG-20

SYSTEM TEST: (Name) S. [illegible] Date: 4/11/20

PRE-DESPATCH INSPECTION: (Name) P. Hayes Date: 4/11/20

P.A.T. Test results

In compliance with Low Voltage directive 73/23/EEC
To Low Voltage standard EN61010 – 1:1993

Earth Continuity 0.076 Ω

Insulation >300 MΩ

Earth Leakage Current 0.30 mA. @ 0.05 kVA.

Tested by: P. Hayes.

Date: 15/7/20

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8 - Serial Numbers Record Document

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Units	S/N
MS/ABCA	20402/1-2020/1238
Integra 2	
Prep Unit 1	10202/11-2020/1238
Prep Unit 2/Misc	10802/8-2020/1238
Electronics Upgrade	
CETAC	/
Gas Box	/
Autosampler	/ 42623
BCR	/
Dual Heater Block	/

Pump Kit and Optics	S/N
Turbo pump S	200345138
Turbo pump A	200345130
Rotary Pump	20018857
Voltage	110 / 240
Gauge S	190355561
Gauge A	190519318
Source	20102HS-188
Collector 1	20301-094
Collector 2	—
Magnet	23-5-19 (6)

Parts	S/N
Fan PSU	/
24V PSU	/

PCBs	S/N
Electronics Box	20200006 LEARTH
Prep PCB	20190018 20190019
VFC PCB	/
Watchdog PCB	/
Head Amp PCB 1	1916
Head Amp PCB 2	/
Electromagnet RP	/

Furnaces	S/N
Combustion	
Reduction	
HT-EA	
GC Oven	
Furnace 1	3739/09/20
Furnace 2	

PC	S/N
PC	54HFLT2
Monitor	
Printer	

Key

Pumps:	E: Edwards P: Pfeiffer
Furnaces:	V/S: Vecstar E: Elite
Magnet:	E: Electromagnet S: Standard
Turbos & Gauges:	S: Source A: Analyser
Collectors:	Std: Standard S: Sulphur HD: Hydrogen Deuterium

Additional System Info:

LASER-195011

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

HS20-22				
Reference Gas Precision (n=5)				
^{13}C	(CO_2)	0.06	0.01	✓
^{15}N		0.06	0.04	✓
^{18}O	(CO_2)	0.06		
^{34}S	(SO_2)	0.1		
^{2}H		0.4		

Reference Gas Linearity			
^{13}C	≤0.02‰/nA	0.04‰nA (STD 0.08)	✓
^{15}N	≤0.02‰/nA	0.05‰A (STD Deviation 0.2)	✓

IsoEArth & IsoEArth+							
Combustion (n=5)							
^{13}C	100 µg C	0.1		10 µg C	0.8		
^{15}N	100 µg N	0.15		10 µg N	1.5		
^{34}S	25 µg S	0.3		10 µg S	1.0		
Dual	400 µg C	0.1 0.08	✓	100 µg N	0.15 0.05		✓
Dual linearity Spec	≥50µgC	0.3 0.08		100µgN	0.3 0.09		

Integra2			
^{13}C	100 µg C	0.2	
^{15}N	100 µg N	0.3	
Dual	100 µg N & 400 µg C	0.4 & 0.15	
^{34}S	30 µg S	0.5	
^{18}O	100 µg O	0.5	

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

HT-EA			
Pyrolysis (n=5)			
^{18}O	100 µg O or 1 µl water	0.3	
^{2}H	200 µg H or 1 µl water	1.0	

Aqua, µCarbs & GasBox						
Equilibrations (n=5)						
^{18}O	0.2 ml water	0.1				
^{2}H	0.2 ml water	2.0				
Carbonates (n=5)						
^{13}C	100 µg $CaCO_3$	0.08				
^{18}O	100 µg $CaCO_3$	0.1				
Gas Analysis (n=5)						
^{13}C	5% CO_2	0.1		Air CO_2	0.1	
^{18}O	5% CO_2	0.1		Air CO_2	0.2	
^{2}H	0.5 ml H_2	1.5				
^{15}N	0.5 ml N_2	0.1		100 ppm N_2O	0.5	
^{13}C	Breath (12 ml)	0.1				
DIC (n=5)						
^{13}C	15ppm (0.5ml)	0.15				

LC-I			
(n=5)			
^{13}C		0.2	

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

GC Orchid							
Combustion (n=3 for each analyte)							
^{13}C	3 Alkanes	100 ng C	0.2		10 ng C	0.5	
^{15}N	2 Amines	100 ng N	0.5		14 ng N	1.5	
Pyrolysis (n=3 for each analyte)							
^{2}H	3 Alkanes	250 ng H	3.0		25 ng H	10.0	
^{18}O	3 FAMES	100 ng O	0.5		20 ng O	2.0	
Water pyrolysis (n=5)							
^{2}H	0.1 µl water	3.0					
^{18}O	0.1 µl water	0.4					

CryoRange						
(n=5)						
^{13}C	Air CO_2 (12ml)	0.1		Air CH_4 (125ml)	0.2	
^{15}N	Air N_2 (1ml)	0.1		Air N_2O (125ml)	0.4	
^{18}O	Air CO_2 (12ml)	0.15		Air N_2O (125ml)	0.7	
^{18}O	Air O_2 (1ml)	0.1				
^{2}H	Air CH_4	3.0				
^{13}C	TOC (5ppm)	0.4				
^{13}C	Laser	0.3				

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Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Geo2			
Internal precision (no change overs)			
^{2}H	200 Bar µl	0.15	
^{13}C	100 Bar µl	0.01	
^{15}N	100 Bar µl	0.01	
^{18}O	100 Bar µl	0.015	
^{34}S	100 Bar µl	0.015	
Single cold finger volumes (10 change overs)			
^{13}C	20 Bar µl	0.01	
^{18}O	20 Bar µl	0.015	
^{13}C	3 Bar µl	0.02	
^{18}O	3 Bar µl	0.03	
CAPS (n=5)			
^{13}C	50 µg $CaCO_3$	0.03	
^{18}O	50 µg $CaCO_3$	0.06	
WES (n=5)			
^{2}H		1.0	
^{18}O		0.05	
Manifold (10 tubes)			
^{2}H		0.5	
^{13}C		0.02	
^{15}N		0.02	
^{18}O		0.03	
^{34}S		0.03	

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6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Special tests

Sales Signature: D. O'Connor	Date: 4/11/20
Test Signature: S. Mesilla	Date: 4/11/20

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Proforma Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No.	13108a
Invoice/Tax Date	11/08/2020
Due Date	11/08/2020
Account No.	WSL002

Customer Order No: 5236002435

Instrument No. IN1238

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		HS2022			
1	20402/1	HS2022 + P-Mag			
1	CFINTERFACE	Continuous Flow interface system			
		TRACE GAS SYSTEMS			
1	10802/8	CryoFlex (LA)			
1	71001-1	Cryoprep Spares Kit			
1	SI2533	Silicon Carbide Horizontal tube furnace model TSH15/16/125 Pyrolysis Option			
		LASER ABLATION SYSTEM			
1	SI2731	213nm LASER ABLATION SYS.			
1	SI2733	isoScell 100 sample chamber			
		EA			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	INST	Installation and start up training at Customer's site			
1	WARR2	2 year warranty			
1	DAP	DELIVERED AT PLACE			
		SERVICE CONTRACT			
3	SCONTRACT	Maintenance Service Contract - 1 Year Contract to consist of 1 visit of 4 days on-site per annumn			

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Proforma Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No. 13108a
Invoice/Tax Date 11/08/2020
Due Date 11/08/2020
Account No. WSL002

Customer Order No: 5236002435

Instrument No. IN1238

Quantity	Product Code	Product Description		Net Amount £	VAT Rate %	VAT Amount £
		Total amount of order:	290,712.00			
		50% payable with order:		145,356.00	0.00	0.00
		40% payable on delivery:	116,284.80			
		10% payable on installation:	29,071.20			

Delivery address:
Dr. Matthias Saurer
Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland,

This invoice is issued in: Pound Sterling

Total Net Amount	£	145,356.00
Total VAT Amount	£	0.00
Invoice Total	£	145,356.00

Payment Details:-
Payment is required within 30 DAYS of invoice date by bank transfer.
All bank transfer charges are the responsibility of the customer.

Sercon Bank Details:-
National Westminster Bank, 36 High Street,
Nantwich, Cheshire CW5 5GA U.K.

IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

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Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No. 13108a
Invoice/Tax Date 11/08/2020
Due Date 11/08/2020
Account No. WSL002

Customer Order No: 5236002435
Instrument No. IN1238

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		HS2022			
1	20402/1	HS2022 + P-Mag			
1	CFINTERFACE	Continuous Flow interface system			
		TRACE GAS SYSTEMS			
1	10802/8	CryoFlex (LA)			
1	71001-1	Cryoprep Spares Kit			
1	SI2533	Silicon Carbide Horizontal tube furnace model TSH15/16/125 Pyrolysis Option			
		LASER ABLATION SYSTEM			
1	SI2731	213nm LASER ABLATION SYS.			
1	SI2733	isoScell 100 sample chamber			
		EA			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	INST	Installation and start up training at Customer's site			
1	WARR2	2 year warranty			
1	DAP	DELIVERED AT PLACE			
		SERVICE CONTRACT			
3	SCONTRACT	Maintenance Service Contract - 1 Year Contract to consist of 1 visit of 4 days on-site per annumn			

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Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No. 13108a
Invoice/Tax Date 11/08/2020
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Customer Order No: 5236002435

Instrument No. IN1238

Quantity	Product Code	Product Description		Net Amount £	VAT Rate %	VAT Amount £
		Total amount of order:	290,712.00			
		50% payable with order:		145,356.00	0.00	0.00
		40% payable on delivery:	116,284.80			
		10% payable on installation:	29,071.20			

Delivery address:
Dr. Matthias Saurer
Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland,

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SWIFT/BIC: NWBKGB2LXXX

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Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No. 13108b
Invoice/Tax Date 06/11/2020
Due Date 06/11/2020
Account No. WSL002

Customer Order No. 5236002435
Instrument No. IN1238

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		HS2022			
1	20402/1	HS2022 + P-Mag			
1	CFINTERFACE	Continuous Flow interface system			
		TRACE GAS SYSTEMS			
1	10802/8	CryoFlex (LA)			
1	71001-1	Cryoprep Spares Kit			
1	SI2533	Silicon Carbide Horizontal tube furnace model TSH15/16/125 Pyrolysis Option			
		LASER ABLATION SYSTEM			
1	SI2731	213nm LASER ABLATION SYS.			
1	SI2733	isoScell 100 sample chamber			
		EA			
1	10202/11	iso-EArth			
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)			
1	INST	Installation and start up training at Customer's site			
1	WARR2	2 year warranty			
1	DAP	DELIVERED AT PLACE			
		SERVICE CONTRACT			
3	SCONTRACT	Maintenance Service Contract Contract to consist of 1 visit of 4 days on-site per annumn			

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Invoice

Invoice to:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Invoice No. 13108b
Invoice/Tax Date 06/11/2020
Due Date 06/11/2020
Account No. WSL002

Customer Order No. 5236002435

Instrument No. IN1238

Quantity	Product Code	Product Description	Net Amount £	VAT Rate %	VAT Amount £
		Total amount of order: 290,712.00			
		40% payable on delivery:	116,284.8	0.00	0.00
		10% payable on installation:	29,071.20	0.00	0.00

Delivery address:
Dr. Matthias Saurer
Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland, Mobile: 0041 79 210 91 10

This invoice is issued in: Pound Sterling

Total Net Amount	£	145,356.00
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National Westminster Bank, 36 High Street,
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IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

General terms and conditions (GTC) Applicable to the Contracts for Procurement of Goods Awarded by the Domain of the Swiss Federal Institutes of Technology

1 Scope

1.1 These general terms and conditions (GTC) govern the conclusion, content and performance of contracts for the procurement of goods (including any assembly).

1.2 Anyone (seller) who submits an offer to the buyer is thus deemed to have accepted the present GTC. The parties may agree deviations in writing in the contract, provided they are objectively justified.

2 Offer

2.1 The offer is to be prepared on the basis of the buyer's quote request.

2.2 The seller shall indicate value added tax and transport costs separately in the offer.

2.3 The offer, including any demonstrations, is free of charge unless stated otherwise in the quote request.

2.4 The offer remains binding for the period indicated in the quote request. If there is no such indication, a period of three months after receipt of the offer shall apply.

3 Involvement of third parties

If the seller calls upon third parties (sub-suppliers, subcontractors) for contract performance, the seller shall impose the obligations set out in sections 4 (health and safety standards, conditions of employment and equal pay for men and women), 13 (confidentiality) and 14 (data protection and data security) on them. The seller shall remain liable for service provision in accordance with the contract by the third parties called upon.

4 Health and safety standards, conditions of employment and equal pay for men and women

4.1 Sellers with their headquarters or a branch in Switzerland shall comply with the health and safety standards and conditions of employment applicable in Switzerland, as well as with the principle of equal pay for men and women. The conditions of employment shall be deemed to encompass collective and standard employment contracts or, where no such contracts exist, the actual conditions of employment customary for the location and occupation. Sellers headquartered abroad shall comply with the corresponding conditions applicable where the service is rendered abroad, but at least with the Core Conventions of the International Labour Organization.[1]

4.2 If the seller seconds workers from a foreign country to Switzerland to render the service, compliance with the provisions of the Posted Workers Act[2] of 8 October 1999 must be ensured.

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[1] ILO conventions: No. 29 of 28 June 1930 concerning Forced or Compulsory Labour (SR 0.822.713.9), No. 87 of 9 July 1948 concerning Freedom of Association and Protection of the Right to Organise (SR 0.822.719.7), No. 98 of 1 July 1949 concerning the Application of the Principles of the Right to Organise and to Bargain Collectively (SR 0.822.719.9), No. 100 of 29 June 1951 concerning Equal Remuneration for Men and Women Workers for Work of Equal Value (SR 0.822.720.0), No. 105 of 25 June 1957 concerning the Abolition of Forced Labour (SR 0.822.720.5), No. 111 of 25 June 1958 concerning Discrimination in Respect of Employment and Occupation (SR 0.822.721.1), No. 138 of 26 June 1973 concerning Minimum Age for Admission to Employment (SR 0.822.723.8), No. 182 of 17. June 1999 concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour (SR 0.822.728.2)

[2] SR 823.20

4.3 If the seller violates obligations arising from section 4, it shall be liable to pay a contract penalty unless it proves that it is not at fault. The penalty shall amount to 10% of the entire remuneration per case of violation, but no more than CHF 100,000 in total. Payment of the contract penalty shall not release the seller from compliance with these obligations.

5 Place of performance and transfer of risk

5.1 The buyer determines the place of performance.

5.2 Title and risk are transferred to the buyer at the place of performance.

6 Materials supply, models and equipment

6.1 *Materials supply:* If the buyer supplies the seller with materials needed for contract performance, these shall remain the property of the buyer. They have to be designated as such and excluded. The seller shall check the materials upon receipt. Any damage detected is to be notified to the buyer immediately in writing.

6.2 *Models and equipment:* If the buyer provides the seller with models or equipment for offer preparation or contract performance, they may be used solely for that purpose. They shall remain the property of the buyer, have to be designated as such by the seller, have to be stored with care and have to be returned upon request.

7 Import regulations

The seller ensures compliance with any export restrictions and import regulations from the place of origin to the place of delivery in accordance with the contract. The seller informs the buyer in writing about any export restrictions in the country of origin.

8 Handover and assembly

8.1 The goods are handed over upon signature of the delivery note at the place of performance designated in accordance with section 5.

8.2 If the contract also covers assembly of the goods, the buyer shall give the seller the necessary access to its premises.

8.3 The seller shall comply with the internal regulations of the buyer, in particular the safety provisions and house rules.

8.4 The buyer shall inspect the goods without delay, but no later than 30 days after delivery.

9 Remuneration

9.1 The seller shall render the services at fixed prices.

9.2 The remuneration covers all work which is necessary for proper performance of the contract. In particular, the remuneration covers packaging, transport and insurance costs, expenses, royalties and all public levies (e.g. value added tax).

9.3 The seller will issue invoices in accordance with the payment plan. If no such plan was agreed, invoicing shall be after all services have been provided. Value added tax is to be indicated separately in the invoice. Unless otherwise agreed, payment will be within 30 days of receipt of the properly issued invoice.

10 Default

10.1 If the seller fails to meet firmly agreed deadlines (expiry date transactions), it shall immediately be deemed to be in default, and in all other cases upon receiving a reminder setting a reasonable grace period.

10.2 If the seller is in default, it shall be liable to pay a contract penalty amounting to 0.1% of the remuneration per day of delay, but no more than 10% of the entire remuneration, unless it proves that it is not at fault.

10.3 Payment of the contract penalty shall not release the seller from compliance with the contractual obligations. Contract penalties are offset against any compensation for damages.

11 Liability

11.1 The parties are liable for all damages they cause to the other party, unless they can prove that they are not at fault. Liability for loss of profits is excluded.

11.2 The parties shall be liable for the conduct of their auxiliaries and third parties called upon (e.g. sub-suppliers, subcontractors) in the same way as for their own conduct.

12 Warranty

12.1 As a specialist and being aware of the intended use of the goods to be supplied, the seller guarantees that the goods have the promised features, that they comply with the statutory regulations and that they are free of any material or legal defects which decrease their value or suitability for the intended use.

12.2 In the event of a defect, the buyer can choose between:
- deducting the value reduction from the remuneration,
- withdrawing from the contract,
- requesting flawless goods or
- requesting rectification.

12.3 The guarantee period expires 24 months after delivery and any assembly of the goods. The buyer shall immediately notify the seller in writing about defects.

12.4 If defects have to be remedied or parts replaced during the guarantee period, the guarantee will start to run for the components concerned from the time of remediation or replacement.

13 Confidentiality

13.1 The parties shall treat as confidential all facts and information that are neither obvious nor generally accessible and for which an interest in maintaining confidentiality exists in good faith because of their nature. In case of doubt, facts and information are to be treated confidentially. The confidentiality obligation shall exist before the contract is concluded and shall persist after termination of the contractual relationship.

13.2 The confidentiality obligation will not apply for the buyer if it is obliged to publish the following facts and information: name and location of the seller, object of the procurement and value of the contract, tender procedure carried out, date of contract conclusion and timeframe of contract execution. This shall be without prejudice to the mandatory duties of disclosure under Swiss law (e.g. as per the Freedom of Information Act[3] and the Public Procurement Act[4]).

13.3 Without the written consent of the buyer, the seller may not advertise the fact that cooperation exists or existed with the buyer, and the seller may not list the buyer as a reference either.

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[3] SR 152.3
[4] SR 172.056.1

13.4 If the parties violate obligations arising from section 13 above, they shall be liable to pay a contract penalty unless they prove that they are not at fault. The penalty shall amount to 10% of the entire remuneration per case of violation, but no more than CHF 100,000 in total. Payment of the contract penalty shall not release the parties from compliance with these obligations.

14 Data protection and data security

The parties undertake to comply with the provisions of Swiss data protection legislation and to effectively protect data arising in the framework of contract performance against unauthorised access by third parties.

15 Assignment and pledging

The seller may not assign or pledge claims vis-à-vis the buyer unless the buyer has consented in writing.

16 Contract amendments, inconsistencies and partial invalidity

16.1 Amendments and addenda to the contract as well as cancellation of the contract must be in writing.

16.2 In the event of inconsistencies between the provisions, the following order of precedence shall apply: contractual document, GTC, quote request, offer.

16.3 If individual provisions of the contract prove to be invalid or unlawful, this shall not affect the validity of the contract.

17 Applicable law and place of jurisdiction

17.1 Swiss law alone shall apply to the contractual relationship.

17.2 Application of the provisions of the United Nations Convention on Contracts for the International Sale of Goods of 11 April 1980 (Vienna Convention)[5] is expressly excluded.

17.3 The exclusive place of jurisdiction for buyers of the central Federal Administration and the units of the decentralised Federal Administration without legal personality is Bern, and it shall be at the buyer's headquarters in all other cases.

Federal Procurement Conference (FPC)
Edition: September 2016
Status as at: September 2016

[5] SR 0.221.211.1

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Pre-Installation Guide
HS2022



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Pre-Installation Guide
HS2022

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2. Introduction

This pre-installation guide is issued to help users prepare a site for the installation of Sercon instruments prior to the arrival of the installation engineer on site. The guide gives details of the system's bench space, electrical, environmental and gas requirements. Observing the site requirements will avoid delays during installation.

When all the requirements have been met, please complete and return the pre-installation survey to Sercon and an installation date will be confirmed.

3. Bench space

The table below gives the dimensions and weight of the HS2022, and inlets which may be associated

System	Width	Height	Depth	Weight
HS2022	820 mm	800 mm	610 mm	120 kg
EA	820 mm	800 mm	700 mm	100 kg
HT-EA	600 mm	570 mm	700 mm	
GC	580 mm	500 mm	540 mm	50 kg
Orchid	500 mm	600 mm	570 mm	20 kg
Furnace controller	400 mm	400 mm	400 mm	20kg
Cryo Range	820 mm	550 mm	590mm	110 kg
µCarbs	570 mm	520 mm	500 mm	100 kg
Aqua	570 mm	520 mm	500 mm	100 kg

The bench needs to be sturdy to support the weights shown above. Access to the back of the units is required, so please ensure that the benches are not against the walls. A minimum clearance of 50cm is required at the back of unit.

Additional space is required for the PC, monitor and printer.



4. Power Requirements

All mass spectrometers require a clean, stable source of power.

The system should be connected to a separate single-phase, continuous duty, 220-240 VAC, 48-62 Hz power line, with a maximum break of 10 ms. 1500 VA minimum service is required for the system.

110V compatible instruments can also be supplied.

In the case of a differing mains voltage, a transformer must be used.

Summary of power requirements of the HS2022, and inlets which may be associated

System	Power	Power Point
HS2022	0.8 kVA	1
EA	1.5 kVA	1
HT-EA	3.0 kVA	1*
GC	3.0 kVA	1
Orchid	1.0 kVA	1
Furnace controller	0.8 kVA	1
Cryo Range	0.8 kVA	1
µCarbs	2.5 kVA	2
Aqua	2.5 kVA	2

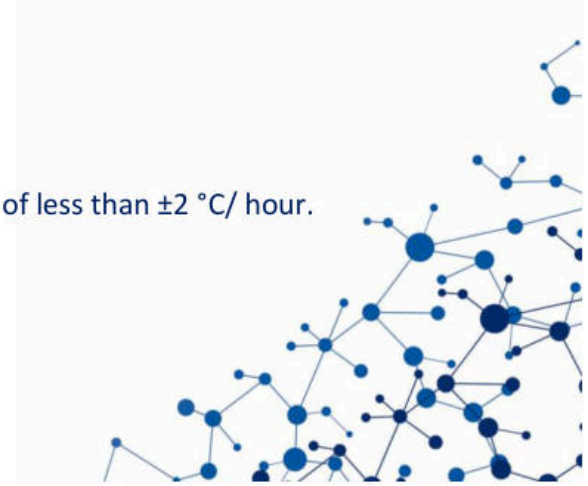
In situations where power breaks may exceed 10 milliseconds, a UPS is required. A UPS also helps to smooth out the power supply if it is not particularly stable. Please contact Sercon for information on suitable UPS units.

5. Environmental Requirements

5.1 Room temperature

The permissible temperature range is 17°C - 30°C.

Approximately 20°C is preferable with temperature variations of less than ±2 °C/ hour.



5.2 Humidity

The relative humidity must not be lower than 20% and not exceed 70% at any temperature.

The optimum relative humidity level is 40%-60%.

5.3 Air conditioning

We recommend the installation of air conditioning, if the specified limits will be frequently exceeded on account of unfavourable climatic conditions. Direct sunlight on the system should be avoided.

Please ensure that the air-conditioning unit is not blowing across the electromagnet.

6. Gases

The system requires gas cylinder connections with 1/8" compression fittings (Swagelok or similar) and 1/8" diameter GC grade stainless steel or copper tubing for all gases (except the compressed air). The length of the tubing will be entirely dependent upon where your gas bottles are located in the lab. This should ideally be kept to a minimum. Standard 2-stage regulators that are capable of delivering a pressure of at least 3.5 Bar are required.

A 1/8" Swagelok Tee Union is required for splitting the helium (and hydrogen for the GC, if used). Additional Tee unions are needed to split the helium for additional inlets, unless connections are provided on the bench for each one.

Helium

Carrier gas. 99.998% with 10vpm or less of N_2.

A large (10 m^3) cylinder should last at least 6 weeks.

Oxygen

Required for combustion and re-oxidising catalysts in some inlets.

99.998% with 0.5 - 5vpm or less of N_2.

A large (10 m^3) cylinder should last several years under normal operating conditions.

Reference Gases



The HS2022 mass spectrometer is fitted with a reference gas injector system. Appropriate reference gases should be available for the samples you are interested in - CO_2, N_2, H_2, etc. These should be of high purity – 99.99%. Please check the Gas Requirement Check List at the end of this document

Compressed Air

A compressed air supply of 50 – 60 psi (approx. 3.5 Bar) is needed for pneumatic solenoid operations. This can be from a compressor or gas bottle. Alternatively, the valves can be operated using the helium supply but this will increase helium consumption. The compressed air is connected to the instruments by 1/8" nylon tubing.

For additional inlet-specific gases please see the Gas Requirement Check List at the end of this document

7. Installation and Service

7.1 Instrument Arrival

When the instrument arrives, please make an immediate visual inspection for damage. If any damage is apparent, please take the following steps:

- Note the nature and extent of the damage, including photographs
- Request an inspection and written damage report from a representative of the carrier to signify their concurrence with your observation.
- Contact Sercon and report the damage.

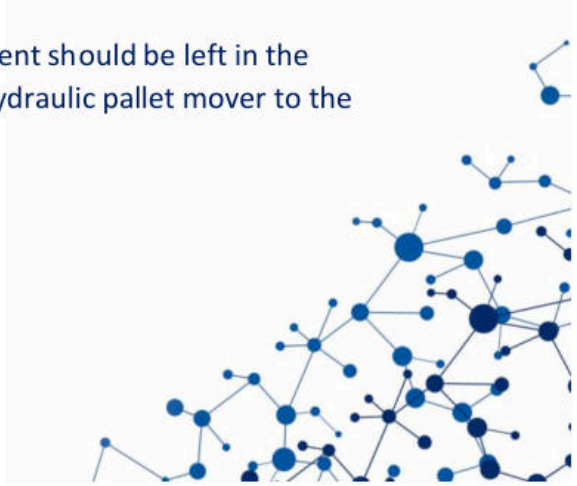
Caution:

Damage discovered 15 days after delivery of the equipment generally cannot be recovered. Such damage will be at the expense of the customer.

If the delivery receipt indicates that material has been received in apparent good order and condition and no exceptions are taken, Sercon will not accept liability for damage

7.2 Moving the equipment

Do not drop or mishandle the shipping containers. The equipment should be left in the shipping crates and, upon delivery, be taken by a forklift or a hydraulic pallet mover to the installation site.



7.3 Installation

When the instrument is on site and ready for installation, please contact Sercon who will arrange for an engineer to install it if arrangements have not already been made.

During the installation, the engineer will train the customer in the fundamentals of mass spectrometer operation and routine maintenance as well as application and software training. To receive maximum benefit from this onsite training opportunity, the instrument operator(s) should be available during the entire installation.

Additional training courses are available at our factory - please contact us for details.

8. Reference Materials

The HS2022 measures stable isotope abundances in your samples and compares them to reference materials of known isotopic composition. We suggest that you obtain a variety of suitable working reference materials, which can then be used to calibrate your instrument.

An effective reference compound is one that closely matches your samples in both elemental composition and isotopic enrichment.

Sercon is a supplier of reference materials. Please see https://serconlimited.com/sercon_systems/standards/

9. Consumables for Elemental Analyser Systems

New systems are supplied with appropriate start-up kits to allow system specification tests during installation. Further consumable supplies are available from Sercon. Please contact consumables@sercongroup.com or browse our online catalogue at sercon-consumables.com

10. Pre-Installation Survey

To ensure an efficient, trouble-free, installation of your Sercon instrument, could you please complete the attached questionnaire.

Simply answer each of these brief questions to confirm compliance with the pre-installation requirements, and return to service@sercongroup.com



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Pre-Installation Guide
HS2022



Pre-Installation Guide
HS2022

Pre-Installation Checklist

1.	Bench and storage space is sufficient	x
2.	Main power 110V or 220-240V	x
3.	There are enough electricity plugs for the system	x
4.	Room temperature and humidity is adequate	x
5.	Gases, regulators & connecting tubing are on site	x
6.	All relevant safety precautions are complied with	x
7.	Sercon instrument has arrived on site	x
8.	Sercon instrument has been inspected for shipping damage	x
9.	System moved to installation site	x

Gas Requirement Check List for Sercon Instruments

Please check you have all of the required gases necessary for analysis using the table for the inlets you have ordered.



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Pre-Installation Guide
HS2022

Gas	Grade	Use	
HS2022			
Helium	99.998	Carrier	x
Nitrogen	99.999	Tuning / Stability / ref gas	x
Carbon dioxide	99.999	Tuning / Stability / ref gas	x
Hydrogen	99.999	Tuning / Stability / ref gas	x
EA			
Helium	99.998	Carrier	x
Oxygen	99.998	Combustion	x
Compressed Air		Solenoid Operation	x
HT-EA			
Helium	99.998	Carrier	☐
Compressed Air		Solenoid Operation	☐
GC-CP			
Helium	99.998	Carrier	☐
Oxygen	99.998	Oxidation of combustion tube	☐
Synthetic Air [Zero Grade]	20% O_2 /80% N_2	Flame Ionization Detector	☐
Hydrogen	99.999	Flame Ionization Detector	☐
Liquid Nitrogen		If N_2 combustion option selected	☐
Cryo Range			
Helium	99.998	Carrier	x
Oxygen	99.998	Oxidation of combustion tube	x
µCarbs* **			
Helium	99.998	Carrier	☐
Aqua			
Helium	99.998	Carrier	☐
Carbon dioxide	99.999	Equilibration Gas**	☐
Hydrogen	99.999	Equilibration Gas**	☐

*** Phosphoric acid is required for carbonate / DIC measurements

**Pure H_2 and CO_2 can be used for the equilibration of water samples but may affect the results of smaller water samples (<100µL). 5% gases (i.e. 5% H_2 or CO_2 in helium) are preferable for smaller samples and give more manageable sample sizes in general. The use of 5% gases is recommended but is at the customer's discretion.



Pre-Installation Guide
HS2022

Contact Name:	Matthias Saurer	
Customer Name:		
Address:		
Swiss Federal Research Institute WSL, Zürcherstrasse 111		
8903 Birmensdorf, Switzerland		
Tel No:	0041 44 739 2198	Email: matthias.saurer@wsl.ch
Fax:		
Date of delivery:	10. Nov 2020	
Customer Signature		
Date:	16. Nov 2020	

Please return to service@sercongroup.com



Pre-Installation Guide
HS2022

Service/ Maintenance email support: service@sercongroup.com
Sales: sales@sercongroup.com
Website: www.sercongroup.com
Telephone: +44 (0) 1270 580 008
Fax: +44 (0) 1270 252 310

Sercon Ltd,
Unit 3B,
Crewe Trade Park,
Gateway,
Crewe, CW1 6JT.
UK.

Tel No : +44 (0)1270 580008
Fax No : +44 (0) 1270 252310



COMMERCIAL INVOICE

Date: 05/10/2021

Customer Reference: 0000453

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade Park
Gateway
Crewe
CW1 6JT
UK

Contact: Joanne O'Connor
Tel: +44 (0) 1270 580008
Invoice Reference: 13146 IN1221

Delivery Address:

Universidad Nacional De San Agustin
UNSA - School of Chemistry
Arequipa
Peru

Contact Name: Nadine Scarlet Medina
Cust Tel Number: 5154282269

Country of Export: UK
Country of Manufacture: UK
Country of Destination: PE Peru

Shipping Marks /

10 BOXES

UK Commodity Code: 90273000

Quantity	Product Code	Product Description	Amount $
		IRMS HS2022	
1	20402/4	HS2022 + Hd Collector + E-Mag + Trap Loop including service	110,750.00
		EA	
1	10202/13	iso-EArth+ including 70501-8 consumables kit and service	62,281.00
		HT-EA	
1	11501/4	HT-EA Wave including CIP	21,000.00
		CARBONATE AND DIC ANALYSIS	
1	11103	µCarbs for CF	47,400.00
		CRYOFLEX AND TOC	
1	10802/6	CryoFlex	47,932.00
1	SI2135	Thermalox Environmental TOC Analyser	45,124.00
1	WARR	1 year warranty	0.00
1	SC2572	NIST 1547 Peach Leaves Standard 50g	605.00
1	SC0382	DL-Alanine OAS 1g	25.00
1	SC0461	Low Organic Content Soil IRMS Standard OAS/Isotope 5g	95.00
1	SC0459	High Organic Content Sediment IRMS Standard OAS/Isotope 5g	950.00
1	SC8050	USGS24 Graphite (Carbon Isotopes in Graphite) 0.8g	250.00
1	SC9261	Carrara marble powder IRMS standard for 13C & 18O 0.5g	85.00
1	SC2462A	2H and 18O isotope standard Set of 5 water working standards	430.00
1	CON001	DOC standards - glucose and sucrose	500.00
		Payment Terms: 50% advance payment 50% after installation**	

None of the goods contained in this consignment are restricted by IATA or shipping regulations

Total Invoice Value: **$ 337,427.00**

Signed .....

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310

www.sercongroup.com
VAT No.: 771 1100 74

sercon
innovators in isotopes

Sercon Ltd, Unit 3B Crewe Trade Park, Gateway
Crewe, Cheshire CW1 6YY, UK
Tel: +44 (0)1270 580008 Fax: +44 (0)1270 252310
Company Registration No. 4290072 Vat No. 771 1100 74

12 – Installation Acceptance and Warranty Certificate

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Contact:	Matthias Saurer
System:	Laserprep and IsoEArth + HS2022
Software:	V 40.2.0
Engineer:	Lee Martin
Installation Date:	8th – 16th December 2020

Warranty commences:	17th December 2020
Warranty Expires:	17th December 2021

Customer Acceptance:

Name: Matthias Saurer

Signature: M. Saurer

Date: 16.12.2020

Engineer's Signature:
On behalf of Sercon Limited

Name: LEE MARTIN

Signature: LM

Date: 16-DEC-20

Notes:

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Sercon Ltd, Unit 3B Crewe Trade Park, Gateway
Crewe, Cheshire CW1 6YY, UK
Tel: +44 (0)1270 580008 Fax: +44 (0)1270 252310
Company Registration No. 4290072 Vat No. 771 1100 74

11 – Installation Report

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Contact:	Matthias Saurer		
Date of Visit:	8th December – 16th December 2020	No. of Days:	7
Engineer:	Lee Martin		

Details of visit:

08-Dec-20
Units unboxed and positioned in lab. HS2022 pumping and source on. Emission good. IsoEArth connected to helium and furnaces up to temperature after making up the furnace tubes. Cryoflex also powered up to check comms. Everything communicating well. Swiss plug fitted to laser prep furnace which arrived with UK one attached.

09-Dec-20
Laser unboxed and fitted onto the top of the Cryoflex. Chiller filled with coolant and pump primed. Shroud fitted, shipping support and camera cap removed. Unit powered on with coolant flowing successfully. All readbacks ok upon starting Chromium.

10-Dec-20
Problems with gases as they are all at a pressure of 6 bar. Most of the day spent sourcing regulators. Some troubleshooting needed to home the laser stage and get camera communicating properly. Resolved by the end of the day with help from Teledyne.

11-Dec-20
IsoEArth connected to the mass spec and oxygen rigged up. Sample dropped ok. Blank ok. Dual linearity pass, 15N 0.20 permil on 20-200ug N range and 13C 0.11 permil on 50-500ug C range. Dual precision pass, 15N 0.06 permil on 100ug N and 13C 0.04 permil on 400ug C. Ref gas precision pass for both N and C, 15N 0.02 permil and 13C 0.02 permil. Laser furnace up to temperature.

14-Dec-20
Sample ablated successfully. Cellulose standard batch completed with 13C precision of 0.17 permil.

15-Dec-20
2 day customer training course commenced, covering basic IRMS operation and elemental analysis. Purge line crimped down to 45 ml/min as this had loosened in transit. Laser training to be commenced the following day to complete the course. Batch of PEF standard run at the end of the day with 0.47 permil result and 31.856 permil average with expected -31.8 permil for the standard. Another precision set off before leaving.

16-Dec-20
PEF precision of 0.13 permil attained. Laser training course conducted before concluding the visit.

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Crewe, Cheshire CW1 6YY, UK
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Company Registration No. 4290072 Vat No. 771 1100 74

11 – Installation Report

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Recommendations:

Contact Sercon with any issues.

Faults and Shortages:

None

Follow up:

Customer wishes to configure the instrument for 18O pyrolysis at a later date. Contact Serson for collaboration on this. Regular service to be performed.

Teledyne to conduct a remote training session. This will be arranged for a later post install date.

Customer wishes to switch to a non Sercon PC. Software team to be contacted to discuss feasibility.

Engineer: (LEE MARTIN) Date: 16-DEC-20

Signed:

13108
IN1238

Order Acknowledgement

Order Date	11/08/2020
Order Ref.	13108
Cust. Ref.	5236002435
Account Ref.	WSL002

Invoice address
Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT No.

Delivery address
Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact: Dr. Matthias Saurer
Tel: 0041 44 739 2198

Quantity Ordered	Product Code	Product Description	Unit Price £	Net Price £
		HS2022		
1	20402/1	HS2022 + P-Mag Continuous flow isotope ratio mass spectrometer. Including high sensitivity source and permanent magnet. System configured for m/z 28 to 46 for the analysis of CO2, N2, N2O, NO, O2, SO, CO and CH4 (converted to CO2). Windows based data system and printer. 70201-1 - Analyser spares kit inlcudes a filament, copper gaskets, source tool kit, pump oil, snoop and ferrules	76,000.00	76,000.00
1	CFINTERFAC	Continuous Flow interface system to permit interfacing with all peripherals	0.00	0.00
		TRACE GAS SYSTEMS		
1	10802/8	CryoFlex (LA) Trace gas analyser optimised for connection to peripherals which require a cryogenic focussing module. Includes liquid nitrogen based trapping system, gas chromatography and a micro-combustion stage. Includes XYZ Gas Autosampler.	42,400.00	42,400.00
1	71001-1	Cryoprep Spares Kit	1,600.00	1,600.00
1	SI2533	Silicon Carbide Horizontal tube furnace model TSH15/16/125 Furnace hight is adjustable. Temperature control by Eurotherm type 3216CC PID controller with "R" type thermocouple. The temperature controls are housed in a bench standing panel. A disconnect system of plug/socket arrangements is provided for furnace/panel separation. Rated 230V. Single phase as before. Heating by a single ended double spiral silicon carbide element. The furnace to have a single 6.5mm. diameter hole. Pyrolysis Option	8,100.00	8,100.00
		LASER ABLATION SYSTEM		

sercon
innovators in isotopes

13108
IN1238

Order Acknowledgement

Order Date	11/08/2020
Order Ref.	13108
Cust. Ref.	5236002435
Account Ref.	WSL002

Invoice address

Swiss Federal Research Institute WSL
Central Invoice Reception
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT No.

Delivery address

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact: Dr. Matthias Saurer
Tel: 0041 44 739 2198

Quantity Ordered	Product Code	Product Description	Unit Price £	Net Price £
1	SI2731	213nm LASER ABLATION SYS. LSX-213 G2+ system features the latest in optical design technology to target areas of interest. Dedicated, frequency quintupled 213 nm Quantel "Ultra" CompactQ-Switched Nd:YAG MIL-SPEC LaserPulse length< 5nsPulse to pulse stability< 2% RMSPulse Energy> 4 mJ/pulse source energy (high density homogenized beam) from the laser headProfileFlat-Top Energy ProfileRepetition Rate1–20 Hz	90,000.00	90,000.00
1	SI2733	isoScell 100 sample chamber isoScell 100 sample chamber for laser ablation, optimized for IRMS applications. Including mounting bracket for the CETAC LSX213 G2+	6,000.00	6,000.00
		EA		
1	10202/11	iso-EArth High performance elemental analyser including TCD. Flexible system can be configured for CN or S analysis. Includes autosampler for solids. 70501-3 - Includes sample preparation kit - micro spatula, mirror, forceps, sample tray and syringe 70501-1 - Includes start up consumables kit for C and N combustion	32,400.00	32,400.00
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)	2,212.00	2,212.00
1	INST	Installation and start up training at Customer's site	10,500.00	10,500.00
1	WARR2	2 year warranty	0.00	0.00
1	DAP	DELIVERED AT PLACE Excluding any local duties and taxes that may apply.	2,000.00	2,000.00
		SERVICE CONTRACT		
3	SCONTRACT	Maintenance Service Contract - 1 Year Contract to consist of 1 visit of 4 days on-site per annumn	6,500.00	19,500.00

Total Net Amount	£	290,712.00
Total VAT Amount	£	0.00
Order Total	£	290,712.00

sercon

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: GB 771 1100 74

Recipient

SERCON LIMITED
CREWE TRADE PARK GATEWAY UNIT 3B
Crewe CW1 6JT
United Kingdom

INVOICE

Invoice Number	8642003648
Date	11-NOV-2020
Account no.	40809948
Debtor Number	769432
Issuer	Chris Mcguinness
Issuer phone	+441618864204
Issuer email	Chris.Mcguinness@uk.rhenus.com

ORIGINAL

Our shipment nr: 12010702.287644, Your reference: PO 20928
Goods: 6 BOXE(S) / 697.0 KG / 5.3978 M3. Per Road
From Manchester - ETD 05-11-2020 to Basel - ETA 11-11-2020
Loaded in cntr#:
Consignee: Swiss Federal Research Institute WS, BIRMENSDORF, SWITZERLAND
Delivery condition: DAP 8903 BIRMENSDORF

Pos.	Description	Reference/Remark	VAT [%]	Amount GBP
001	TRANSPORT CHARGES	PO20928	0	695.00
002	DOCUMENTS	EUR1	0	35.00
			Total excl. VAT	730.00
			VAT	0.00
			Total GBP	**730.00**

Zero-rated supply for VAT purposes
VAT 0.0 % on 730.00 : 0.00 GBP

Invoice payable by return unless other credit terms agreed.
Any questions or problems relating to this invoice please contact our
credit control department on tel nr. 0161 8864265 or fax nr 0161 8720293

Payment within 20 day(s) after invoice date.
Payment due: 01-DEC-2020
When remitting please quote your account number and our invoice number.

Bank Details:GBP: 40-11-56 | 30645826 | GB65HBUK40115630645826
Bank Details:EUR: 40-12-76 | 83915660 | GB34HBUK40127683915660
Bank Details:USD: 40-12-76 | 83915652 | GB56HBUK40127683915652

Registered in England No. 4401654 Registered Office: Liverpool Road, Eccles, Manchester, M30 7RF VAT Reg No GB146 8926 28 All business is undertaken subject to the British International Freight Association (BIFA) Standard Trading Conditions (Latest Edition)

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International Forwarding Ltd
Station **Road** Coleshill
Birmingham B46 IHT

6th November 2020

Dear Sirs,

Subject: Completion of EURI Movement Certificates

Please accept this letter as our authority for International Forwarding Ltd to complete the above on our behalf for our exports of Isotope Ratio Mass Spectrometers•
for a period of twelve months commencing 1st November 2020 and ending 31st October 2021.

We confirm that we will only request you to complete certificates for consignments which comply with origin rules as set out in HM Customs & Revenue Public Notice 827.

- UK Commodity Code: 90273000

Isotope Ratio Mass Spectrometers

faithfully,

M O'Connor

Print Name.....Mark O'Connor (Directro).....

(Director/Company Secretary)

Sercon Ltd
Unit 3B Crewe Trade Park
Gateway, Crewe, Cheshire
CW1 6JT United Kingdom

Phone: +44 (0)1270 580008
Email: info@sercongroup.com
www.sercongroup.com

Registered in England and Wales: 4290072. VAT No.: 771 110074

LLOYD'S REGISTER · LRQA
ISO 9001 · ISO 13485
UKAS MANAGEMENT SYSTEMS
001

sercon
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Packing List

Customer Reference: 5236002435

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 6

	Quantity	Product Code	Product Description	Serial Number: *if available*
☑	1	SI2731	Laser Ablation System	195011

Packed by: P. Hayes

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74

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Packing List

Customer Reference: 5236002435

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 5

Quantity	Product Code	Product Description	Serial Number: *if available*
☑ 1	SI0101	Magnet and feet	23-5-19 (6)
☑ 1	SI0103	Rotary pump and oil Filter	200118857
☑ 1	SI0155	PC	54HFLT2
☑ 1	70501-6	C and N Combustion only con kit	
☑ 5		Swiss mains leads (3 x long, 2 x short)	
☑ 1		Box of Lasor spares. (tubes etc)	
☑ 1		Connecting tubing.	

Packed by: P. Hayes

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
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sercon
innovators in isotopes

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Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 4

	Quantity	Product Code	Product Description	Serial Number: *if available*
☑	1	71001-1	Cryoprep spares kit	
☑	1	70501-1	Start up consumables kit for C and N combustion	
☑	1	70501-3	Sample Prep Kit	
☑	3	SC9131	Scrubber Tube 6mmODx4mmIDx370mmLong Pk/1	
☑	1	70201-1	Analyser Spares kit.	
☑	1		ISO Cell mounting bracket	
☑	1	SI0219	S/Steel Dewer	
☑	1		Manual which includes -	
☑			1 x Laser software USB	
☑			1 x Back up software USB	
☑			2 x Laser cooler keys	
☑	1	SI2391	PC Monitor	
☑	1	SI2533	Horizontal tube furnace and controller system.	3739/09/20
☑	1	SI2737/A	Sercon 50 Position Autosampler Assy	42623

Packed by: P. Hayes

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

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Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

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Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 3

Quantity	Product Code	Product Description	Serial Number: *if available*
☑ 1	10802/8	CRYOFLEX (LA)	10802/8-2020/1238

Packed by: P. Hayes

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
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VAT No.: 771 1100 74

Packing List

Customer Reference: 5236002435

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 2

Quantity	Product Code	Product Description	Serial Number: *if available*
☑ 1	20402/1	HS-2022	20402/1-2020/1238

Packed by: P. Mayo

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74

sercon
innovators in isotopes

Packing List

Customer Reference: 5236002435

Shipper / Exporter:

Sercon Limited
Unit 3B Crewe Trade park
Gateway
Crewe
CW1 6JT
UK

Tel: +44 (0)1270 580008
Reference: IN1238

Consignee:

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

Contact Name: Dr. Matthias Saurer
Contact Tel Number: 0041 44 739 2198

BOX: 1

	Quantity	Product Code	Product Description	Serial Number: *if available*
☑	1	10202/11	ISO Earth	10202/11-2020/1238

Packed by: P. Mayo

Date: 3/11/20

Claims for damage or shortages must be made within 3 days

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
Fax: +44 (0) 1270 252310
sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74

GLOB SPED AG

www.glob-sped.ch

Ihr Kontakt:
Jessica Kukic
Telefon-Nr (+41) 62 887 40 84
eMail j.kukic@glob-sped.ch

Glob-Sped AG, Breitackerstrasse 10, CH-5505 Brunegg

Absender:
SERCON LIMITED
UNIT 3B CREWE TRADE PARK
GB-CW1 6JT CREWE

Empfänger:
SWISS FERERAL RESEARCH INSTITUTE WS
Eidg. Forschnungsanstalt WSL
Zürcherstrasse 111
8903 BIRMENSDORF

Lieferschein

Produkt:

Zustellung durch: , ,

Sendungs-Nr: GBR-503325-GBR-1 Relation: 411
Datum: 06.11.2020

Zeichen/Nr	Anz.	Verp.	Inhalt	Gewicht	LDM	CBM
	6	CLL	BOXES SCIENTIFIC EQUIPMENT UK ORIGIN C/CODE 90273000 IFL TO COMPLETE EUR 1 NO S 0350610 L: 0.98m B: 0.85m H: 1.08m	697.0		5.398
Summe	**6**	**CLL**		**697.0**		**5.398**

CLL=Colli

Zustellhinweis: HB! Anlieferung avisieren unter 0447392198
Zustelltermin: 09.11.2020 - 10.11.2020

Die Sendung in einwandfreiem Zustand erhalten

10.11.2020 _____ _____
Datum/Zeit Unterschrift Klarschrift

Wir arbeiten ausschliesslich aufgrund der Allgemeinen Bedingungen des Verbandes schweizerischer Speditions- und Logistikunternehmen (AB SPEDLOGSWISS) neueste Fassung.

Our reference T. Scherrer
Phone +41 (0) 81 417 02 20
Fax +41 (0) 81 417 01 10
E-Mail tatjana.scherrer@wsl.ch
Order date 21.07.2020

Swiss Federal Research Institute WSL
Eidg. Forschungsanstalt WSL
Institut fédéral de recherches WSL
Istituto federale di ricerca WSL

Shipping address:

Eidg. Forschungsanstalt WSL
Zürcherstrasse 111
8903 Birmensdorf
Switzerland

Sercon Limited
Unit 3B Crewe Trade Partk
Gateway, Crewe
Cheshire
CW1 6JT
United Kingdom

Billing address:

Swiss Federal Research Institute WSL
Central Invoice Reception
Zürcherstrasse 111
8903 Birmensdorf
Switzerland

Purchase order 5236002435

Please indicate on all documents

Delivery date	01.10.2020
Supplier Number	5200020872
Terms of payment	30 days net
Terms	FH - Free house
Recipient	Saurer Matthias

We order the goods specified in this document in accordance with the general term and conditions of the Swiss Federal Institutes of Technology (from 1 January 1998, version 16 April 2013) which are published on http://www.wsl.ch/beschaffung/agbs

Referenz: Quotation 13108 vom 08.06.2020 für Erweiterung Isotopenlabor

Item	Article/Description	Quantity	Unit	Price per Unit	Amount in GBP
10	**LA-IRMS**	1.00	PC	290,712.00 / 1	290,712.00
Total amount in GBP					**290,712.00**

Best regards
Swiss Federal Institute for Forest, Snow and Landscape Research WSL

Christoph Hegg
Stv. Direktor

Herbert Kurmann
Leiter Einkauf

13108

Quotation

To: Swiss Federal Institute for Forest, Snow
and Landscape Research WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Quotation Date: 08/06/2020
Quotation Reference: 13108
Customer Ref:
Account Ref. WSL002
Quotation Validity: 08/09/2020

Quantity	Product Code	Product Description	Unit Price £	Net Price £
		HS2022		
1	20402/1	HS2022 + P-Mag Continuous flow isotope ratio mass spectrometer. Including high sensitivity source and permanent magnet. System configured for m/z 28 to 46 for the analysis of CO2, N2, N2O, NO, O2, SO, CO and CH4 (converted to CO2). Windows based data system and printer. 70201-1 - Analyser spares kit inlcudes a filament, copper gaskets, source tool kit, pump oil, snoop and ferrules	76,000.00	76,000.00
1	CFINTERFACE	Continuous Flow interface system to permit interfacing with all peripherals		
		TRACE GAS SYSTEMS		
1	10802/8	CryoFlex (LA) Trace gas analyser optimised for connection to peripherals which require a cryogenic focussing module. Includes liquid nitrogen based trapping system, gas chromatography and a micro-combustion stage. Includes XYZ Gas Autosampler.	42,400.00	42,400.00
1	71001-1	Cryoprep Spares Kit	1,600.00	1,600.00
1	SI2533	Silicon Carbide Horizontal tube furnace model TSH15/16/125 Furnace hight is adjustable. Temperature control by Eurotherm type 3216CC PID controller with "R" type thermocouple. The temperature controls are housed in a bench standing panel. A disconnect system of plug/socket arrangements is provided for furnace/panel separation. Rated 230V. Single phase as before. Heating by a single ended double spiral silicon carbide element. The furnace to have a single 6.5mm. diameter hole.	8,100.00	8,100.00

13108

Quotation

To: Swiss Federal Institute for Forest, Snow and Landscape Research WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Quotation Date: 08/06/2020
Quotation Reference: 13108
Customer Ref:
Account Ref. WSL002
Quotation Validity: 08/09/2020

Quantity	Product Code	Product Description	Unit Price £	Net Price £
		Pyrolysis Option		
		LASER ABLATION SYSTEM		
1	SI2731	213nm LASER ABLATION SYS. LSX-213 G2+ system features the latest in optical design technology to target areas of interest. Dedicated, frequency quintupled 213 nm Quantel "Ultra" CompactQ-Switched Nd:YAG MIL-SPEC LaserPulse length< 5nsPulse to pulse stability< 2% RMSPulse Energy> 4 mJ/pulse source energy (high density homogenized beam) from the laser headProfileFlat-Top Energy ProfileRepetition Rate1–20 Hz	90,000.00	90,000.00
1	SI2733	isoScell 100 sample chamber isoScell 100 sample chamber for laser ablation, optimized for IRMS applications. Including mounting bracket for the CETAC LSX213 G2+	6,000.00	6,000.00
		EA		
1	10202/11	iso-EArth High performance elemental analyser including TCD. Flexible system can be configured for CN or S analysis. Includes autosampler for solids. 70501-3 - Includes sample preparation kit - micro spatula, mirror, forceps, sample tray and syringe 70501-1 - Includes start up consumables kit for C and N combustion	32,400.00	32,400.00
1	70501-6	C & N Combustion Only Consumables Kit (approx. 5000 samples)	2,212.00	2,212.00
1	INST	Installation and start up training at Customer's site	10,500.00	10,500.00
1	WARR2	2 year warranty		
1	DAP	DELIVERED AT PLACE Excluding any local duties and taxes that may apply.	2,000.00	2,000.00

13108

Quotation

To: Swiss Federal Institute for Forest, Snow
and Landscape Research WSL
Zurcherstrasse 111
8903 Birmensdorf
Switzerland

VAT Reg No: CH

Quotation Date: 08/06/2020
Quotation Reference: 13108
Customer Ref:
Account Ref. WSL002
Quotation Validity: 08/09/2020

Quantity	Product Code	Product Description	Unit Price £	Net Price £
		SERVICE CONTRACT		
3	SCONTRACT	Maintenance Service Contract - 1 Year Contract to consist of 1 visit of 4 days on-site per annumn	6,500.00	19,500.00

This quotation is issued in **Pound Sterling**

Total Net Amount	£	290,712.00
Total VAT Amount	£	0.00
Order Total	£	290,712.00

*** The price quoted does not include any local taxes or duties**
See separate document for terms and conditions

Delivery: within 90 days of receipt of order

Payment Details:-
50% with order, 40% on delivery and 10% installation
Payment is required within 30 DAYS of invoice date by bank transfer.
All bank transfer charges are the responsibility of the customer.

Sercon Bank Details:-
National Westminster Bank, 36 High Street,
Nantwich, Cheshire CW5 5GA U.K.

IBAN: GB74NWBK54101736755133
SWIFT/BIC: NWBKGB2LXXX

Sercon Limited
Unit 3B Crewe Trade Park
Gateway, Crewe
CW1 6JT U.K.
Company Registration No.: 4290072

Phone: +44 (0) 1270 580008
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3 - MACHINE SPECIFICATION

Client:	Swiss Federal Research Institute WSL		
Quotation Number:	13108	Date:	08/06/2020
Job Number:	IN1238	Date:	04/08/2020

Ref No.	Product Description	Required
HS2022 (continuous flow)		
20402/1	HS2022 Ref Gas + P Mag	Y
20402/2	HS2022 Ref Gas + E-Mag	
20402/3	HS2022 Ref Gas + Hd Collector + E-Mag	
20402/4	HS2022 Ref Gas + Hd Collector+E-Mag+Trap Loop	
20501	Hd Collector Assy ***	
50101/2	Trapping Loop Assy	
70201-1	*70201-1 Analyser spares kit – Included*	*Y*
EA Units		
10202/11	iso-EArth	Y
10202/13	iso-EArth+	
10202/6	GSL Large Hole Autosampler Option	
11802/1	EArth	
11802/2	EArth+Clarity+PC	
70501-1	*Consumables for C and N for Combustion Only*	*Y*
70501-11	*Simultaneous CNS Consumables Kit (approx. 10000 analysis)*	
70501-3	*Sample Prep Kit (Inc.)*	*Y*
70501-4	*GSL Combustion and Gas C & N Start Up Kit*	
70501-5	*Simultaneous NCS Consumables Kit*	
70501-6	*C&N Combustion Only Consumables Kit (approx. 5000 samples)*	*Y*
70501-8	*Simultaneous CNS Consumables Kit (approx. 5000 samples)*	
70601-1	*Sulphur Start Up Kit (Inc. with Sercon EA Systems)*	
70601-2	*Sulphur Consumables Kit for 1000 Samples*	
70601-4	*Sulphur Consumables Kit (approx. 5000 Samples)*	
70801-2	*Pyrolysis Consumables Kit-Low temp for Solids*	
71701-1	*Sub Microgram Nitrogen Analysis Start Up Kit*	
SI1275	*Sercon standard SL Autosampler*	
SI1551	*Double Sample Dispenser*	
SI1744	*Sealed Autosampler*	
SI2040	*PN150 Pneumatic Autosampler with one no.50 pos, carousel*	
SI2345	*ME Micro Balance*	
SI2368	*Zero-Blank Autosampler 120 samples*	
SI2392	*Additional Carousel 180 samples (5mm)*	
Headspace Equilibration		
10202/10	XYZ Gas Sampling Control Box	
10302/1	Aqua System	
11103	µCarbs for CF	
11103-1	µCarbs for DI	
11601	200 Place Dual Heated Block 240 Volt	
11801	Sercon XYZ Gas Autosampler	
71107-1	*CF oxygen-18 equilibration kit*	
71107-2	*DI Oxygen-18 Equilibration kit*	
71201-1	*CF deuterium equilibration kit*	
71201-2	*DI Deuterium Equilibration kit*	
71801-1	*WES-DI start up kit (Inc. with WES-DI)*	
GC Units		
10402/2	Orchid Combustion/Pyrolysis module 1500C (Will run Hd 70901-1 C Spares Kit Inc)	
10901	Nitrogen Option (71301-1 N Spares kit Included)	
HP7890/1	Agilent 7890B GC System	
HP7890/2	Agilent 7890B GC with Auto Injector	
HP7890/3	Agilent 7890B GC + Auto Injector + 150 Vial Sample Tray	
SI2561	Nexis GC 2010 Plus	

*** When ordered alone IN no. / Blue book **NOT** required

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Client:	Swiss Federal Research Institute WSL		
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Ref No.	Product Description	Required
GC Units ***continued***		
SI2564	Nexis GC-2030	
70901-3	*GC-CP Pyrolysis H and O Start Up Kit*	
70901-4	*GC-CP Pyrolysis H Spares Kit*	
70901-5	*GC-CP Combustion C Spares Kit (approx. 5000 samples)*	
70901-6	*GC-CP Pyrolysis h Start Up Kit (approx. 5000 samples)*	
ABCA2 Units		
10502/1	ABCA2 Sercon XYZ Autosampler	
10602	ABCA2 Gas Box	
20602	Complete Sercon ABCA2 system	
70101-1	*ABCA2 spares kit (Inc.With ABCA2)*	
70101-2	*ABCA2 Spares Kit for AB Analitica Systems*	
70101-3	*ABCA2 Autosampler Upgrade Kit*	
SI1767	*CVL505 – Barcode Reader*	
Integra2 Units		
20802/4	Integra Wave	
70201-2	*Integra2 ama;yser spares kit - Included*	
70401-1	*Integra-2 consumables (Inc. With Integra2)*	
SI2224	TCD2 Detector With Controller	
Trace Gas Systems		
10802/4	CryoPrep	
10802/5	Automated LN refiller	
10802/6	CryoFlex	
10802/7	CryoGas	
10802/8	CryoFlex (LA)	*Y*
71001-1	Cryoprep Spares Kit	*Y*
SI2135	Thermalox Environmental TOC Analyser	
SI2136	Thermalox TOC Autosampler	
SI2140	TOC Start up spares kit	
SI2180	Carbon (CO2) detector	
SI2393	Carrier gas scrubber furnace and dryer	
SI2431	5100 NOx Box	
GEO 20-22 (dual inlet)		
10702	GEO 20-22 Water Equilibration System (D & 18O)	
21802/1	GEO 20-22	
21802/2	GEO 20-22 + E-Mag	
21802/3	GEO 20-22 + E-Mah +Hd	
21802/4	GEO 20-22 Inlet	
70301-1	*GEO start up kit - Included*	
70301-3E	*Comprehensive GEO 20-22 spares kit for 5 years operation*	
HT-EA		
11501/4	HT-EA Wave	
10202/10	HT-EA Gas Sample Control Box	
SI2622	CTC PAL3-LSI-L-S	
SI2624	CTC PAL3-Kit-Standalone	
70801-1	*Pyrolysis Consumables Kit-High Temp for Solids*	
71501-1	*HT-EA Pyrolysis Start Up kit O and H*	
71501-2	*HT-EA Pyrolysis Kit for Water injections*	
71501-3	*HT-EA Sensitivity Start Up Kit for O & H in small samples*	
71501-4	*HT-EA Sensitivity Consumables Kit for O & H in small samples*	
71501-5	*HT-EA Sensitivity Kit for O&H in Small Samples (5000 samples)*	
71501-7	*HT-EA Kit for Room Temp Equilibration*	
71501-8	*HT-EA Pyrolysis Kit for Water injections (approx.1 year kit)*	

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3 - MACHINE SPECIFICATION

Client:	Swiss Federal Research Institute WSL		
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Ref No.	Product Description	Required
Upgrades		
12101	Evacuation System ***	
12102	2 Ref Gas+ Dilutor Box ***	
20101	Standard Source Assy ***	
20102	HS Source Assy ***	
20301	Standard Collector Assy ***	
30202/1	System Control Upgrade (Pmag) installation not included	Edwards Or Pfeiffer
30202/2	System Controller Upgrade (Emag) installation not included	Edwards Or Pfeiffer
10202/7	Preparation PCB Upgrade	
30202/3	Hijack Box ***	
30302/1	Edwards Pumping System Upgrade Single - installation not included	
30302/2	Edwards Pumping System Upgrade Dual - installation not included	
30302/3	Edwards Pumping System Upgrade Triple- installation not included	
SI2542	ABCA2 Upgrade Kit	
CALLISTOW	Callisto software upgrade ***	
Specials		
11702	LC-I interface	
12202	Leco Interface Unit	
SI2320	Agilent 1260 Series Refractive Index Detection HPLC System	
71401-1	*ABCA-G Start Up/Spares Kit*	
71401-2	*ABCA-G Equilibration Spares Kit - Room temp O only*	
71401-3	*ABCA-G Equilbration Spares Kit - Room Temp O & H*	
71601-1	*LC Interface Spares Kit*	
71801-1	*WES-DI start up kit (Inc. with WES-DI)*	
ADDITIONS		
PC	Windows 7 based PC System with Callisto Software	Y
Printer	Printer	Y
INST1	Installation and start up training at customer's site by **Sercon** Engineer	Y
INST2	Installation and start up training at customer's site by **Agents** Engineer	
WARR	Extension of warranty to one year	
WARR2	Extension of warranty to two years	Y
SERV	Service contract for second year	
TRAIN	Training in UK for one person for 3 days	
SPECIFICATION REQUIREMENTS		
Voltage	230Volts 50/60Hrzs	Y
Plug Type	SI2510 3 Metre USA/Japan plug to IEC C 13	
	SI2511 2.5 Metre Australian plug to IEC C 13	
	SI2512 3 Metre UK 13 amp Fused plug to IEC C 13	
	SI2523 3metre Schuko(Euro) Plug to IEC C13 Socket	Y
	SI2514 2.5 metre Chinese mains to IEC C13	
Pallet	Stamped for export heat treated for 30 min @ 56 °C	Y
	Complies with all Export Requirements	

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3 - MACHINE SPECIFICATION

Client:	Swiss Federal Research Institute WSL		
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Job Number:	IN1238	Date:	04/08/2020

SPECIAL REQUIREMENTS (DETAILED SPECIFICATION)
SI2533 Vertical tube furnace
SI2731 Laser Ablation System
SI2733 isoScell
Service visit to consist of 4 days on site per annumn.

Approved by Sales: *G Armstrong*	Date: 12/08/20
Approved by Tech.: *M O'Connor*	Date: 12/08/20

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Client:	Swiss Federal Research Institute WSL		
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Job Number:	IN1238	Date:	04/08/2020

No.	ACTIONS FROM MEETING	ACTIONEE	RESPONSE