

CONTENTS PAGE

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

- ☒ 1 QUOTATION
- ☒ 2 CUSTOMER ORDER
- ☒ 3 MACHINE SPECIFICATION DOCUMENT_S027_v11
- ☒ 4 LOG SHEET_S028_v3
- ☒ 5 FAULT REPORTING DOCUMENT_S029_v3
- ☒ 6 TEST ACCEPTANCE SPECIFICATION_S030_v9
- ☒ 7 ASSEMBLY AND TEST RECORD_S023_v5
- ☒ 8 SERIAL NUMBER FORM_S053_v4
- ☒ 9 TEST DATA
- ☒ 10 PACKING LIST_S035b_v6
- ☒ 11 INSTALLATION REPORT_S057_v6
- ☒ 12 INSTALLATION ACCEPTANCE AND WARRANTY CERTIFICATE_S071_v3

ADDITIONAL:

Payment Terms:

50% / 40% / 10%

Other: please specify

Penalty Clause Yes / No

Please specify: _____

Blue Book Completion:

Signed	<i>D. O'Connor</i>	Date	<i>21/9/25</i>
Verified	<i>S. Moore</i>	Date	<i>31/9/25</i>

Quotation

To: University of Edinburgh
Accounts Payable
Finance Department
9 - 16 Chambers Street
EDINBURGH
EH1 1HT

VAT No. 592 9507 00

Quotation Date: 14/02/2025
Quotation Reference: 17883
Customer Ref: Dr Benjamin G. Jackson
Account Ref: EDI001
Quotation Validity: 14/04/2024

Quantity	Product Code	Product Description	Unit Price £	Discount £	Net Price £
Proposal for LA Interface system					
1	CALLISTOSW	Callisto software upgrade, includes new PC	3,000.000	300.00	2,700.00
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 isoSell 100 sample chamber. 71001-1 Cryoprep Spares Kit	53,000.000	5,300.00	47,700.00
Swapped for 71001-6 Cryo LA Spares Kit 8/4/25 - SS					
1	12102	2 Ref gas / dilutor valve box	5,000.000	500.00	4,500.00
1	10802/5	Automated LN refiller Including 50 litre dewar, 230 VAC transformer, sensors, fill tube, cables ect	7,400.000	0.00	7,400.00
1	INST	Installation and start up training at Customer's site	7,420.000	0.00	7,420.00
1	DEL	Delivery to Edinburgh	500.000	0.00	500.00
1	WARR2	2 year warranty	0.000	0.00	0.00
Lab Gas Supply Aecessories					
1	SI3238	REG HD 300-10-7 (1-10 bar)	353.790	35.38	318.41
3	SI3250	REG HBS 200-10-3, 5 BS3	716.220	214.87	1,933.79
3	SI3251	CONN. G3/8 BSPP M-CF 1/8 BRASS-CR	32.200	9.66	86.94
1	SI3252	INLET CONN. HP SS BS341-3	160.750	16.07	144.68
1	SI0713	Tubing Stainless Steel 1/8" ODX 2.10mm ID 25m	328.150	32.81	295.34
1	SI3253	Trap, Carbon Dioxide 1/8in. SS	549.500	54.95	494.55
1	SI3254	Trap, Moisture High Capacity, 1/8"	345.800	34.58	311.22
20	SI0195	Nut 1/8 SS	3.630	7.26	65.34

8/4/25 (Not required SS)



THE UNIVERSITY
of EDINBURGH

Purchase Order:
Date of Issue:

UOE1549979
31/03/2025

Page 1 of 1

SERCON LTD
3B CREWE TRADE PARK
GATEWAY
CREWE
CW1 6JT

Payment Terms: 30 Days From Invoice Date
Contract
Agreement No: PAG11627
Buyer Name: Robbie McCaig
Buyer Email: RMCCAIG3@ED.AC.UK
Buyer Telephone
No:
Currency: GBP

Line No.	UoE Item No.	Supplier Item No.	Item Description	Requestor	Date Due	Unit Cost	Qty	Net Total GBP
Ship to: Crew Laboratory, Kings Buildings, Edinburgh, EH9 3JN, GB								
1			Sercon CryoFlex Trace Gas Handling System	Jackson, Ben	31/03/2025	74,426.0 5	1	74,426.05
Net Total GBP								74,426.05
VAT Total								14,885.21
Gross Total								89,311.26

The Purchase Order number must be quoted on all delivery and invoice documents – failure to comply may result in the invoice being returned.

Invoices must be emailed to apinvoices@ed.ac.uk. Any queries regarding invoices or payments should be sent to finance.help@ed.ac.uk.

Special Instructions	
Line No.	Notes
1	

3 - MACHINE SPECIFICATION

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Ref No.	Product Description	Required
HS2022 (continuous flow)		
20402/1	HS2022 Ref Gas + P Mag	
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	
EA Units		
10202/11	iso-EArth	
10202/13	iso-EArth+	
10202/14	iso-Earth HT Furnace Upgrade	
10202/15	Iso-Earth (Without Autosampler)	
11802/1	Earth+PC	
11802/2	EArth+Clarity+PC	
70501-1	Consumables for C and N for Combustion Only	
70501-11	Simultaneous CNS Consumables Kit (approx. 10000 analysis)	
70501-3	Sample Prep Kit (Inc.)	
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)	
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	
SI2040	PN150 Pneumatic Autosampler with one no.50 pos, carousel	
SI2345	ME Micro Balance	
SI2737/A	Sercon 50 Position Autosampler Assy	
SI2789	Extra 50 Position Carousel	
SI2744	Automatic Liquid Sampler 15 Position	
SI2743	Liquid Sampler Mounting Plate	
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 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	

3 - MACHINE SPECIFICATION

Client:	University of Edinburgh		
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Ref No.	Product Description	Required
GC Units <i>continued</i>		
SI2564	Nexis GC-2030	
70901-3	GC Pyrolysis H and O Start Up Kit	
70901-4	GC Pyrolysis H Spares Kit	
70901-5	GC Combustion C Spares Kit (approx. 5000 samples)	
70901-6	GC Pyrolysis h Start Up Kit (approx. 5000 samples)	
71301-1	GC N Spares kit	
ABCA2 Units		
10502/1	ABCA2 Sercon XYZ Autosampler	
10602	ABCA2 Gas Box	
20602	Complete Sercon ABCA2 system	
20603	ABCA IR Analyser	
70101-1	ABCA2 spares kit (Inc. With ABCA2)	
70101-2	ABCA2 Spares Kit for AB Analytica Systems	
70101-3	ABCA2 Autosampler Upgrade Kit	
SI1767	CVL505 – Barcode Reader	
SC9973	13C Urea breath test kit for Helicobacter pylori infection	
SC9974	Helicobacter Test kit for children age 3-11 (45mg)	
Integra2 Units		
20802/4	Integra2	
70201-2	Integra2 analyser spares kit - Included	
70401-1	Integra-2 consumables (Inc. With Integra2)	
Trace Gas Systems		
10802/4	CryoPrep	
10802/5	Automated LN refiller	
10802/6	CryoFlex (TOC)	
10802/7	CryoGas	
10802/8	CryoFlex (LA)	
SI2533	Silicon Carbide Vertical Furnace	
SI2731	213nm Laser Ablation System	
SI2733	isoScell 100 sampler chamber	
71001-1	Cryoprep Spares Kit	
71001-5	CryoGas Consumables Kit	
TOC Units		
14001	Thermalox Environmental TOC-IRMS	
14002	Thermalox Environmental TOC-Standalone	
14003	Thermalox Environmental TOC-Standalone No Sampler	
SI2772	CO2 Detector, High sensitivity Option	
SI2773	NOx detector Option	
SI2774	Vacuum pump Option	
SI2775	Stirred Vial rack Option	
72101-1	TOC Start Up Kit	
72101-2	TOC Chem Pack	
72101-3	TOC & TN Instrument with heavy usage - one year	
72101-4	TOC only - economy holding	
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	

3 - MACHINE SPECIFICATION

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21802/3	GEO 20-22 + E-Mag +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 (With Autosampler)	
11501/5	HT-EA With Liquid Option	
11501/6	HT-EA Stand Alone	
11501/7	HT-EA (Without Autosampler)	
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)	

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 ***	
30302/4	nEXT85 Edwards Pumping System Upgrade Single - installation not included	
30302/5	nEXT85 Edwards Pumping System Upgrade Dual - installation not included	
30302/6	nEXT85 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 Equilibration Spares Kit - Room Temp O & H	
71601-1	LC Interface Spares Kit	
ADDITIONS		
PC	Windows 7 based PC System with Callisto Software	
Printer	Printer	
INST1	Installation and start up training at customer's site by Sercon Engineer	
INST2	Installation and start up training at customer's site by Agents Engineer	
WARR	1 year warranty	
WARR2	2 year warranty	
TRAIN	Training in UK for one person for 3 days	
SCONTRACT	Maintenance Service Contract - 1 year	

3 - MACHINE SPECIFICATION

Client:	University of Edinburgh		
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SPECIFICATION REQUIREMENTS			
Voltage	Volts 50/60Hzs		
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	
	SI2514	2.5 metre Chinese mains to IEC C13	
Pallet	Stamped for export heat treated for 30 min @ 56 °C		
	Complies with all Export Requirements		



innovators in isotopes

Sercon Ltd, Europa House, Coppicemere Drive

Crewe, Cheshire CW1 6GZ, UK

Tel: +44 (0)1270 580008

Company Registration No. 4290072 Vat No. 771 1100 74

3 - MACHINE SPECIFICATION

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

SPECIAL REQUIREMENTS (DETAILED SPECIFICATION)

[illegible]

Approved by Sales: (Name)		Date: 31/3/25
Approved by Tech.: (Name)		Date: 31/3/25



Sercon Ltd, Europa House, Coppicemere Drive,
Crewe, Cheshire CW1 6GZ, UK
Tel: +44 (0)1270 580008
Company Registration No. 4290072 Vat No. 771 1100 74

4 - LOG SHEET

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Date	Action Taken	By Whom
14/5/25	QUARTRY CHECKED	AD/SSD
14/5/25	PLACED INTO TEST.	PH PH
12/6/25	Gases plumbed in. Ref gas He valve swapped from position 15 to 5, trigger valve uses 15. Manifold for air not plugged completely and air flow for arms backwards. Swapped arm flow and plugged up manifold. Naffion crimp set to 40 ml/min	AD
13/6/25	Ref gas flow set to 15 ml/min, CO ₂ , N ₂ and HD crimps set to around 1 ml/min for now	AD/HC
16/6/25	GC put in and flow sent to MS. Pressure test whole line - pass. Sent the System ref gas to external furnace to make a replicate line for cryo use. He ref gas set to 30 ml/min	
16/6/25	Ran ref gas (CO ₂) through and got small pulses. Filled bucket with LN ₂ and tested 5 sec ref gas pulses - after LN ₂ temp settled peaks looked good. left ref gas running overnight - pass at 0.09 std dev System turned off	AD/HC

19/01/2017

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

HS20-22

Reference Gas Precision (n=5) x5 Ref gas pulses of 5 seconds to be used.

¹³ C	(CO ₂)	0.06		
¹⁵ N		0.06		
¹⁸ O	(CO ₂)	0.06		
³⁴ S	(SO ₂)	0.1		
² H		0.4		

Reference Gas Linearity ref gas pulses ranging from 1-second trough to 10 seconds

¹³ C	≤0.02‰/nA STD Deviation <0.30		
¹⁵ N	≤0.02‰/nA STD Deviation <0.30		

IsoEarth & PyroEarth

**Combustion (n=5) (For NCS use 0.3mg of Cystine) (Pyrolysis use silver caps)
 0.4mg of Cystine for ¹⁸O and 4 mg of Cystine for H₂**

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		100 µg N	0.15	
¹⁸ O	100 µg or 1 µl water	0.3				
² H	200 µg H or 1 µl water	1.0				

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	University of Edinburgh		
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EArth

Solid specs to be completed using 2mg methionine calibration against 1,2,3mg (n=3) cystine. Combustion (n=5)

		Accuracy (avg)	Precision (std dev)
¹³ C		+/- 0.4%	0.2
¹⁵ N		+/- 0.4%	0.2
² H		+/- 0.4%	0.2
³⁴ S		+/- 0.4%	0.2
¹⁸ O	Pyrolysis	+/- 0.4%	0.2

Liquid injections n=5 using 5µl methanol calibrated against 2,4,6µl injections of ethanol

		Accuracy (avg)	Precision (std dev)
¹⁸ O	Pyrolysis	+/- 0.4%	0.2

Integra2

Specs to be completed using AS beet mix 400C/100N for precision & 250C/100N for linearity

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	
Dual	100 µg N & 250 µg C	0.5	

HT-EA (Pyrolysis use silver caps)

0.4mg of Cystine for ¹⁸O and 4 mg of Cystine for H₂

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	

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	University of Edinburgh		
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Aqua, μ Carbs & GasBox

Equilibrations (n=5)

^{18}O	0.2 ml water	0.1	
^2H	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	
^2H	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	
-----------------	--	-----	--

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	

6 - TEST / ACCEPTANCE SPECIFICATION

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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 ₂ O (125ml)	0.4	
¹⁸ O	Air CO ₂ (12ml)	0.15		Air N ₂ O (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					

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)			

6 - TEST / ACCEPTANCE SPECIFICATION

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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	

Special tests

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	University of Edinburgh		
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Sales Signature: <i>Go'connor</i>	Date: <i>24/06/25</i>
Test Signature: <i>AS</i>	Date: <i>24/06/25</i>

7: ASSEMBLY AND TEST RECORD

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

PRODUCT:

CryoFlex (LA)

SERIAL NUMBER:

10802/8-2025/1359

ASSEMBLED:

(Name)



Date:

14/05/25

 PRE-TEST
 INSPECTION:

(Production name)



Date:

14/5/25

 PRE-TEST
 INSPECTION:

(Test name)



Date:

24 June 25

SYSTEM TEST:

(Name)



Date:

24 Jun 25

 PRE-DESPATCH
 INSPECTION:

(Name)



Date:

24.6.25

P.A.T. Test results

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

Earth Continuity

0.072
 Ω

Insulation

>300
 $M\Omega$

Earth Leakage Current

0.80

mA. @

0.05

kVA.

Tested by:



Date:

14/05/25

8 - Serial Numbers Record Document

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Units	S/N
MS/ABCA	
Integra 2	
Prep Unit 1	1080218-2025/1359
Prep Unit 2/Misc	
Electronics Upgrade	
CETAC	
Gas Box	
Autosampler	
BCR	
Dual Heater Block	

Pump Kit and Optics	S/N
Turbo pump S	
Turbo pump A	
Rotary Pump	
Voltage	110 / 240
Gauge S	
Gauge A	
Source	
Collector 1	
Collector 2	
Magnet	

Parts	S/N
Fan PSU	
24V PSU	

PCBs	S/N
Electronics Box	
Prep PCB	20250007
VFC PCB	
Watchdog PCB	
Head Amp PCB 1	
Head Amp PCB 2	
Electromagnet RP	

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

PC	S/N
PC	FT68774
Monitor	C1Q2734
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:

FURNACE 3857/04/25

Packing List

Customer Reference: UOE1549979

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Tel: +44 (0)1270 580008
Reference: IN1359

Consignee:

University of Edinburgh
Crew Laboratory
Kings Buildings
Edinburgh
EH9 3BF
Scotland

Contact Name: Dr Benjamin G. Jackson
Contact Tel Number: 07593026604

BOX: 1

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	10802/8	Cryoflex LA	10802/8-2025/1359
☒ 1	1210/2	2 ref gas / dilutor valve box (built into cryoflex	
☒ 1	SI2391	Monitor	G1Q2Y34
☒ 1	71001-6	Cryoflex spare parts	
☒ 1		Mains cable for cryoflex and lazar trigger cable	
☒		Parts for automated LM refiller	
☒ 1	SI1198	GC column	

Packed by:



Date:

24/06/25

Claims for damage or shortages must be made within 3 days



Packing List

Customer Reference: UOE1549979

Shipper / Exporter:

Sercon Limited
Europa House
Coppicemere Drive
Crewe
CW1 6GZ
UK

Tel: +44 (0)1270 580008
Reference: IN1359

Consignee:

University of Edinburgh
Crew Laboratory
Kings Buildings
Edinburgh
EH9 3BF
Scotland

Contact Name: Dr Benjamin G. Jackson
Contact Tel Number: 07593026604

BOX: 2

Quantity	Product Code	Product Description	Serial Number: if available
☒ 1	SI2918	PC (USBs inside PC box)	FT68T74
☒ 1	10802/5	Automated LM refiller	
		Software back USB inside PC box	
		Windows recovery USB inside PC box	

Packed by:

Date:


24/06/26

Claims for damage or shortages must be made within 3 days



S035b_v6

Sercon Limited
Europa House, Coppicemere Drive
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Company Registration No.: 4290072

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sales@sercongroup.com
www.sercongroup.com
VAT No.: 771 1100 74
19/01/2017



COLLECTION NOTE

Job Number: **IN1359**
Customer: University of Edinburgh
Contact: **Ben Jackson**

DELIVERY ADDRESS:

University of Edinburgh
Crew Laboratory
Kings Buildings
Edinburgh
EH9 3BF
Scotland

Fao: Dr Benjamin G. Jackson
Tel: +44(0)7593026604

Collection on
Date:

26/6/25

No.
of boxes:

2

By:
Company:

Speedy Freight.

Vehicle

Reg No.

CP71 KMY.

Signature:

[Handwritten Signature]

Print:

Simon Holloway



S062_v3

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www.sercongroup.com
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19/01/2017

11 – Installation Report

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Contact:	Ben Jackson		
Date of Visit:	18 August 2025	No. of Days:	5
Engineer:	Henry Connell Cooke		

Details of visit:

Sercon CryoFlex to be installed in between an Elemental Scientific ESI Laser and a CAS detector

Day 1

- Arrived to CryoFlex already on bench and plugged in, benchtop is of similar depth to the CryoFlex, leaving very minimal room to access the back of the system. No visible damage to the system
- System was switched on and Comm port set to allow communication with software
- Elite tube furnace and power box were setup on top of the CryoFlex
- GC fitted and flow was detected through the sample output, no leaks detected with He sniffer, flow set to 20 mLmin⁻¹
- Combustion tube was packed with Chromium Oxide. Difficulty was had in trying to fit the combustion tube into the furnace, showing insulation inside the furnace must have shifted during transport. Combustion tube was eventually fitted, resulting in a fair amount of dust falling out of the furnace.
- Peak tubing was fitted on both sides of the combustion tube, as well as from the laser to the back of the CryoFlex, completing the sample line
- No leaks detected and flow through the laser was set to 20mLmin⁻¹
- Ref gas line set to 20 mLmin⁻¹
- Furnace started heating for sample running the next day, ramped to 550°C before leaving for the day

Day 2

- Furnace ramped to 950°C operating temperature
- CO₂ pulses ran through ref gas directly into CAS detector. Long delay was observed between sample pulse and detection. after many different flows were tried, 2mLmin⁻¹ gave the fastest peaks and least change in pressure in the detector, since the flow was low enough to remove the bottleneck when entering the detector. Ref gas in this state is not useful for customer, since they need %CO₂ in the gas stream to be comparable to a sample ~ 0.1%. This low percentage cannot be achieved with 2mLmin⁻¹ He flow.
- LN₂ added by hand to the dewer
- When setting sample flow to 2mLmin⁻¹ no sample was observed and pressure was not consistent in detector, regardless of the pressure set on the EPC in the CryoFlex. When bypassing the GC, sample was present with a very narrow peak, customer decided there was no need to use the GC, since the CAS detector does not experience interference from other species, it can only detect CO₂
- Trigger cable was made to combine the D-Type connection leaving the CryoFlex and the BNC connection needed for contact closure for the laser

Day 3

- Trigger cable started successfully triggering the laser after the customer changed settings in the laser's software
- Runs with no laser shot were completed to show blank peaks, less than 10% peak height of a sample peak and below the detectors LOQ
- Customer spent some time changing laser settings to observe their effect on sample response
- Bitmap altered to better display the flow of the system

11 – Installation Report

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Recommendations:
Further method development needed with flows and pressures, possible changes to timings, events and plumbing (e.g. reintroduction of O ₂ pulse or a GC) needed to optimise sample response, both on CryoFlex and non-Sercon elements to the system.
Faults and Shortages:
N/A
Follow up:
Please email at henry.cooke@sercongroup.com or service@sercongroup.com with any future questions or problems
Engineer: Henry Connell Cooke
Date: 22 Aug 2025
Signed: <i>Henry Connell Cooke</i>
<i>22 Aug 25</i>

12 – Installation Acceptance and Warranty Certificate

Client:	University of Edinburgh		
Quotation Number:	17883	Date:	14/02/2025
Job Number:	IN1359	Date:	31/03/2025

Contact:	Ben Jackson
System:	CryoFlex
Software:	Callisto V50.0.0
Engineer:	Henry Connell Cooke
Installation Date:	18 Aug 2025

Warranty commences:	22 Aug 2025
Warranty Expires:	21 Aug 2027

Customer Acceptance:

Name: Ben Jackson

Signature: 

Date: 22 Aug. '25

Notes: N/A

Engineer's Signature:

On behalf of Sercon Limited

Name: Henry Connell Cooke

Signature: 

Date: 22 Aug 2025