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Job Number:	IN1320	Date:	03/07/2023

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ADDITIONAL:

Payment Terms:

50% / 40% / 10%

Other: please specify _____

Penalty Clause Yes / No

Please specify: _____

Blue Book Completion:

Signed	<i>G. O'Connor</i>	Date	11/5/24
Verified	<i>S. Massey</i>	Date	11/5/24

3 - MACHINE SPECIFICATION

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
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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	Y
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	
10202/13	iso-EArth+	
10202/14	PyroEArth	Y
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)	Y
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)	
70801-6	Pyrolysis Kit	Y
71701-1	Sub Microgram Nitrogen Analysis Start Up Kit	
SI2040	PN150 Pneumatic Autosampler with one no.50 pos, carousel	
SI2345	ME Micro Balance	Y
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	Y
11103-1	µCarbs for DI	
11601	200 Place Dual Heated Block 240 Volt	
11801	Sercon XYZ Gas Autosampler	
71107-5	µCarbs for CF Start Up kit	Y
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)	Y
10901	Nitrogen Option (71301-1 N Spares kit Included)	
HP7890/1	Agilent 7890B GC System	
HP7890/2	Agilent 7890B GC with Auto Injector	
HP8890/3	Agilent 7890B GC + Auto Injector + 150 Vial Sample Tray	Y
SI2561	Nexis GC 2010 Plus	

3 - MACHINE SPECIFICATION

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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	Y
70901-4	GC Pyrolysis H Spares Kit	
70901-5	GC Combustion C Spares Kit (approx. 5000 samples)	Y
70901-6	GC Pyrolysis h Start Up Kit (approx. 5000 samples)	Y
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 (<i>Inc. With ABCA2</i>)	
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 <i>Helicobacter pylori</i> infection	
SC9974	<i>Helicobacter</i> 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 (<i>Inc. With Integra2</i>)	
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	

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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	Y
Printer	Printer	
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	1 year warranty	Y
WARR2	2 year warranty	Y
TRAIN	Training in UK for one person for 3 days	
SCONTRACT	Maintenance Service Contract – 1 year	

3 - MACHINE SPECIFICATION

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
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SPECIFICATION REQUIREMENTS		
Voltage	240 Volts 50/60Hzs	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	Y
	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	Y
	Complies with all Export Requirements	

4 - LOG SHEET

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

Date	Action Taken	By Whom
21-8-23	PC Set up and Software installed.	aw
21-8-23	No Comms and Turbos not Spooling up. Rotary working and Turbos getting power.	aw
1-9-23	Leak test exhaust Isolation Valve and repair 6th to it - vac hit $1e-8$ before fitting He flow set 15ml/min CO ₂ ref gas crimped to 2.5 ml/min N ₂ ref gas crimped to 2.0 ml/min H ₂ ref gas crimped to 2.0 ml/min	JH
1-9-23	Filament conditioned @ $1.6e-7$ vac	JH
08/9/23	new bath Filament Part on SN 239060 Conditioned well	SM
	CO ₂ peak + Stability Good	SM
	Ref gas CO ₂ precision on - 0.01% (ST) ✓	SM
	Linearity CO ₂ - 0.70 x	
	Reband Source lowered Focus by 2v	
	Linearity CO ₂ - 0.76% ✓	
	Agilent PC user name admin password 3000hanover	
12/8/23	Filament changed due to strange effects in source - BN 277013	
13/8/23	Started conditioning filament	8.10 Am

4 - LOG SHEET

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

Date	Action Taken	By Whom
18/9/23	Tuned system to run H ₂ gas. Precision run SD: 0.05	JB
19/9/23	Returned Emag to CO ₂ & N ₂ settings Returned N ₂ , run gas specs - prec + Lin	JM
19.9.23	↳ Passed prec + Lin both N ₂ + CO ₂ He line swapped for Pyro Earth line He	JM
26.9.23	ALL FURNACES CHECKED EXCEPT GC+TCD V2 RELAY NOT WIRED CORRECTLY	
26/9/23	Heated Pyro Furnace upto 1400 reached 1100 then Major electrical Fault appeared	
①	Fault was incorrect gauge wire used to element. PH replaced 1/2 day lost	SM/ PH
27/9/23	Wire now replaced. heating up once more: Instrument watched whilst heating up.	SM.
3/10/23	Versa Set up by Wayne Sampler moved to end point but stopped at mid point for some reason. to be monitored.	
4/10/23	Pumps off to fit trapping loop and 6th	SM.
04Oct23	Began training on instrument with customers / agents. As part of training set up pyro earth relay & precabs. Specs all good. IK-GC still needs more work.	DOH



Test acceptance - 6

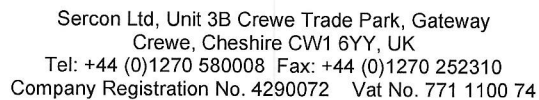
Sercon Ltd, Unit 3B Crewe Trade Park, Gateway
Crewe, Cheshire CW1 6JT, UK
Tel: +44 (0)1270 580008 Fax: +44 (0)1270 252310
Company Registration No. 4290072 Vat No. 771 1100 74

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

Special tests

Sales Signature: <i>J O'Connor</i>	Date: <i>25/10/2023</i>
Test Signature: <i>S. Masell</i>	Date: <i>25/10/23</i>



Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985		Date: 06/01/2023
Job Number:	IN1320		Date: 03/07/2023

S029_v3

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

HS20-22				
Reference Gas Precision (n=5)				
¹³ C	(CO ₂)	0.06	0.016 %	✓
¹⁵ N		0.06	0.056 %	✓
¹⁸ O	(CO ₂)	0.06	0.046 %	✓
³⁴ S	(SO ₂)	0.1		
² H		0.4	0.052 %	✓

Reference Gas Linearity				
¹³ C	≤0.02‰/nA	0.3-314 nA	0.203 %	✓
¹⁵ N	≤0.02‰/nA	0.3	0.148 %	✓

DJA 130423

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		100 µg N	0.15	

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		

6 - TEST / ACCEPTANCE SPECIFICATION

Customer:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

HT-EA				
Pyrolysis (n=5)				
¹⁸ O	100 µg O or 1 µl water	0.3	0.0927%	✓
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	0.047%		✓
¹⁸ O	100 µg CaCO ₃	0.1	0.0567%		✓
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 ₂ O	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		

7: ASSEMBLY AND TEST RECORD

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

PRODUCT:

MS2022

SERIAL NUMBER:

20402/3-2023/1320

 ASSEMBLED:
 (Name)

P. Hays

Date:

19/8/23

 PRE-TEST
 INSPECTION:
 (Production name)

P. Hays

Date:

19/8/23

 PRE-TEST
 INSPECTION:
 (Test name)

S. Madz

Date:

19/8/23

 SYSTEM TEST:
 (Name)

S. Madz

Date:

25/10/23

 PRE-DESPATCH
 INSPECTION:
 (Name)

P. Hays

Date:

25/10/23

P.A.T. Test results

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

Earth Continuity

0.062 Ω

Insulation

7300 $M\Omega$

Earth Leakage Current

0.70 mA. @ 0.05 kVA.

Tested by:

P. Hays

Date:

19/8/23

7: ASSEMBLY AND TEST RECORD

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

PRODUCT:

PROFARTH.

SERIAL NUMBER:

10202/14-2023/1320

 ASSEMBLED:
 (Name)

[Signature]

Date:

14/9/23

 PRE-TEST
 INSPECTION:
 (Production name)

P. Ray.

Date:

14/9/23.

 PRE-TEST
 INSPECTION:
 (Test name)

S. Masdu

Date:

14/9/23

 SYSTEM TEST:
 (Name)

S. Masdu

Date:

25/10/23

 PRE-DESPATCH
 INSPECTION:
 (Name)

P. Ray.

Date:

25/10/23

P.A.T. Test results

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

Earth Continuity

0.065
 Ω

Insulation

>300
 $M\Omega$

Earth Leakage Current

0.75.

mA. @

0.24

kVA.

Tested by:

14/9/23.

Date:

[Signature]

7: ASSEMBLY AND TEST RECORD

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

PRODUCT:

Orchid system

SERIAL NUMBER:

10402/2-2023/1320

 ASSEMBLED:
 (Name)

P. Hayes

Date:

6/9/23

 PRE-TEST
 INSPECTION:
 (Production name)

J. M.

Date:

6/9/23

 PRE-TEST
 INSPECTION:
 (Test name)

S. Mason

Date:

6/9/23

 SYSTEM TEST:
 (Name)

S. Mason

Date:

25/10/23

 PRE-DESPATCH
 INSPECTION:
 (Name)

P. Hayes

Date:

28/10/23

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

0.75

mA. @

0.05k

kVA.

Tested by:

P. Hayes

Date:

9/9/23

7: ASSEMBLY AND TEST RECORD

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

PRODUCT:

yCarbs for CF

SERIAL NUMBER:

11103/2023/1320

 ASSEMBLED:
 (Name)

P. Humpo.

Date:

6/9/23

 PRE-TEST
 INSPECTION:
 (Production name)

Humpo

Date:

6/9/23

 PRE-TEST
 INSPECTION:
 (Test name)

S. Masels

Date:

6/9/23

 SYSTEM TEST:
 (Name)

S. Masels

Date:

25/10/23

 PRE-DESPATCH
 INSPECTION:
 (Name)

P. Hump

Date:

25/10/23

P.A.T. Test results

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

Earth Continuity

Insulation

Earth Leakage Current

Tested by:

Date:

Ω
 $M\Omega$
 mA. @ _____ kVA.

8 - Serial Numbers Record Document

Client:	Universiti Malaya, Malaysia C/O: Kinematic Resources Sdn Bhd		
Quotation Number:	14985	Date:	06/01/2023
Job Number:	IN1320	Date:	03/07/2023

Units S/N

MS/ABCA 20402/3-2023/1320

Integra 2 /

PRO Prep Unit 1 10202/14/2023/1320

Prep Unit 2/Misc uCarbs

Electronics Upgrade 11103/2023/1320

CETAC

Gas Box

Autosampler 42480

BCR

Dual Heater Block

Pump Kit and Optics S/N

Turbo pump S 230316129

Turbo pump A 2303 16127

Rotary Pump 2303 23480

Voltage 110 / (240)

Gauge S 230260311

Gauge A 230173929

Source 20102MS-225

Collector 1 20301-145

Collector 2 20501-059

Magnet 121

Parts S/N

Fan PSU /

24V PSU /

PCBs S/N

Electronics Box 20230017

 Prep PCB ^{origin} 20230005 20230006

VFC PCB 23002

Watchdog PCB /

Head Amp PCB 1 23019

Head Amp PCB 2 23014

Electromagnet RP /

Furnaces S/N

Combustion

Reduction

HT-EA

GC Oven AGILENT CN2302A143

Furnace 1

Furnace 2

PC S/N

PC CAD PPV3

Monitor FXKQIP3

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:

 ORCID - ~~20402/3~~

10402/2-2023/1320.

ELITE ANALYSE - 3794/07/23