



Item	Description	Quantity	Price (US\$)
1.0	<p>LPX APS Etch System</p> <p>This System will be built to standard specifications according to the configuration below:</p> <ul style="list-style-type: none"> • LPX Transport Module • One APS Process Module <p>Standard System Features</p> <ul style="list-style-type: none"> • System configured for 100.5mm carrier wafers • Windows based control software • 10 m free cable to electronics rack • Electronics cabinet • One set of system manuals 	1	[REDACTED]

System Model Descriptions

1.1	<p>LPX Wafer Transport Module</p> <ul style="list-style-type: none"> • Fully Automatic single wafer vacuum Loadlock • Single Substrate Loader • Pneumatically driven robot arm • Rectangular transfer gate • Edwards Pirani vacuum gauge 	1	Included
1.2	<p>APS Process Module</p> <p>Configured for SiC & GaN etch-processing as demonstrated during SPTS demo activity.</p> <ul style="list-style-type: none"> • Low pressure, high density plasma • PLC control system • MKS RF generator (source) • MKS RF generator (bias) • Bias power matching unit • Source power matching unit • Heated VAT pendulum valve • Heated chamber & foreline • Electro-static chuck with mechanical clamp, PSU & He back-pressure control • Extracted gas box • Leybold temperature managed turbo pump • Lower electrode and antenna • Turbo by-pass for module roughing • Chamber capacitance manometer (0.1 torr) • Foreline mini-capacitance manometer <p>Options:</p> <ul style="list-style-type: none"> • Optical endpoint system • Size change kit for 108mm carrier wafers 	1	Included

2.0 System Optional Features:

2.1	<p>Consumable Parts Package - <i>(one set of consumable spares included)</i></p> <ul style="list-style-type: none"> - Additional 12 months warranty (equivalent to \$80,000). - Additional Consumable Parts Packages - High uptime spares package - Essential Spares Package - Up to four weeks of additional UK demo support up to the point of system acceptance. <p>Scheduling to be mutually agreed, with minimum four weeks' notice of requested dates from MACom.</p>		<p>Included</p> <p>Included</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>/week</p>
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Item	Description	Quantity	Price (US\$)
2.5	Documentation:		
-	Documentation supplied on CD-ROM. Includes: <ul style="list-style-type: none"> Facilities Installation Manual Operator manual Maintenance Manual Modular (spare) parts manual Set of electrical schematics OEM documentation (Manuals are available on CD-ROM media only)	1	Included
2.6	Training:		
-	Operation and Maintenance System Training. Includes: <ul style="list-style-type: none"> One-week course for one person (Customer is responsible for the travel, meals, and lodging expenses of their trainee employees) 	2	Included
-	Additional System Training Credit for one week- optional (Advanced Module and Advanced Handler courses available)		person
-	Optional On-site training Class: <ul style="list-style-type: none"> Training class performed at customer's facility for group of up to six (6) attendees, Please arrange mutually convenient dates through your SPTS account representative 		\$POA
<p>*Training credits are valid for one-year from the system ship date. Each credit may be applied towards a one-week training course for one person. SPTS Uptime warranty may be invalid if training is not taken.</p>			

3.0 DRY PUMPS

	<u>Transport Module</u> Alcatel ACP28 backing pump or equivalent	1	Customer to supply
	<u>Process Module</u> Edwards iH80 backing pump or equivalent	1	Customer to supply

4.0 GAS ABATEMENT

	<u>Gas Abatement</u> Each Process Module requires one gas abatement system, Edwards GRC or equivalent	1	Customer to supply
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5.0 CHILLERS

	<u>Chillers:</u> Re-circulating chillers per process module	1	Included
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SPTS LPX



Therm
SALINE





Warning
Strong magnetic field at all times

Persons with pacemaker or implant must keep into close proximity of this equipment

WARNING
RISK OF CUT/ABRASION WHEN REMOVING PROCESS WETTED CERAMIC COMPONENTS

WARNING
ON electrical parts increased surface temperature may be observed on chamber

!
Purge and bring chamber pressure to ambient temperature before working - Refer to supplier's instructions

CAUTION
HOT SURFACE BEHIND PANEL
Risk of skin burns if removed
Allow To Cool Before Handling and wear suitable gloves

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Risk of skin burns if removed
Allow To Cool Before Handling and wear suitable gloves



STATION 1

HAZARDOUS GAS
LINES MUST BE
EVACUATED AND CYCLE
PURGED WITH NITROGEN
BEFORE MAINTENANCE
ON THEM IS STARTED

WARNING
EQUIPMENT HOSES CONTAIN
HAZARDOUS GASES
ACCESS TO UNTRAINED
PERSONNEL ONLY



CAUTION
HOT SURFACE
BEHIND PANEL
Do not touch the hot surface
of the instrument. Contact
your service representative
for more information.

GAS
● C
● T



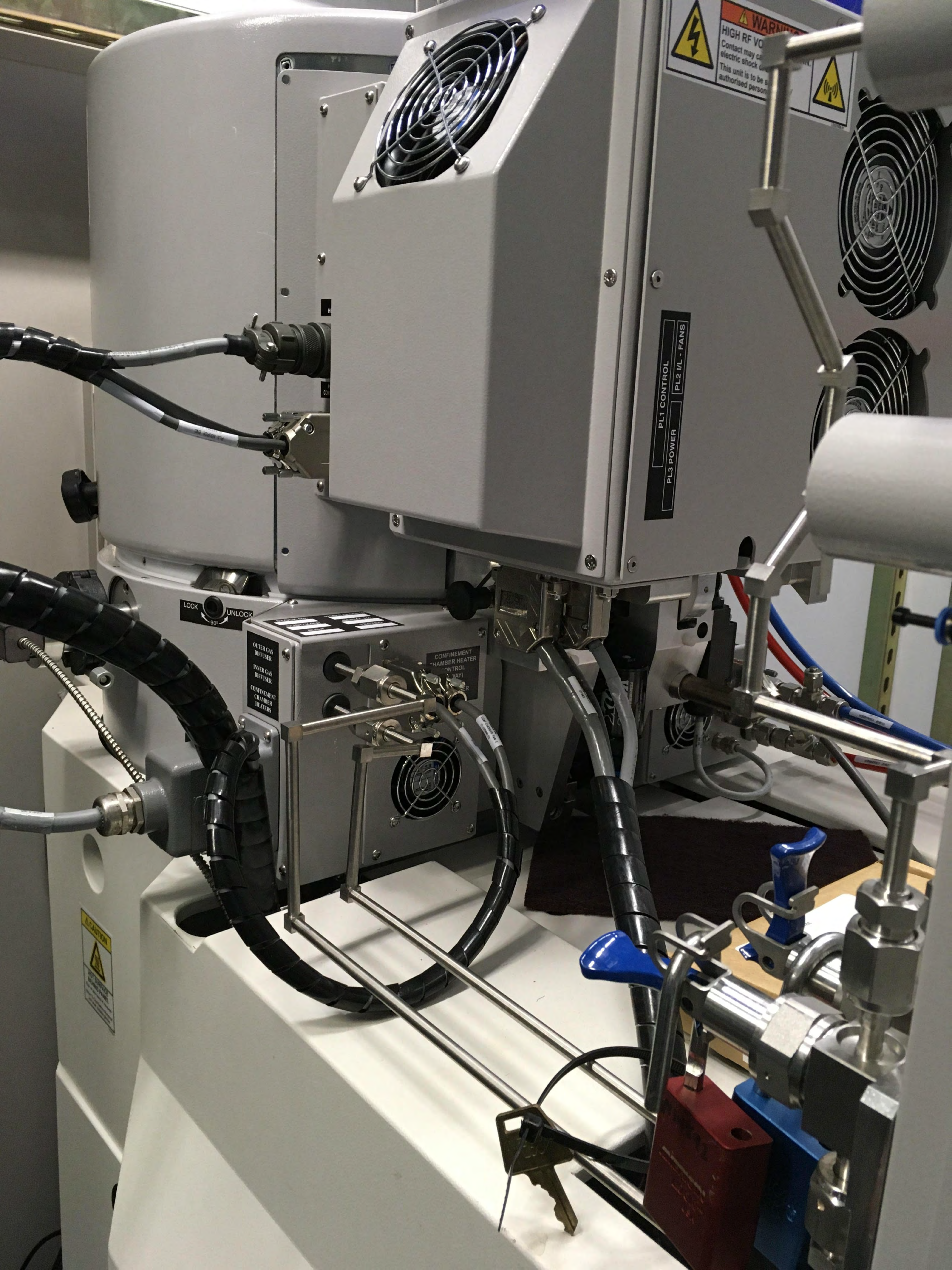
GAS
●
●
●

WARNING
HIGH RF VOLTAGE ACTIVE
Contact the local safety officer at both ends of the cable.
This unit is to be serviced by authorized personnel only.

RF WATER-POWER

LOCK UNLOCK

INTERLOCK SYSTEM
POWER ON
POWER OFF
CONNECTIONS
CHECKED
OK



WARNING
HIGH RF VOLTAGE
Contact may cause
electric shock
This unit is to be
operated by an
authorised person

PL1 CONTROL
PL2 I/L - FANS
PL3 POWER

LOCK
UNLOCK
90°

OUTER GAS
DIFFUSER
INNER GAS
DIFFUSER
CONFINEMENT
CHAMBER
HEATERS

CONFINEMENT
CHAMBER HEATER
CONTROL
(WAY)

CAUTION
X-RAY RADIATION
Hazardous to health



HAZARDOUS GAS
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ON THEM IS STARTED



WARNING
EQUIPMENT INSIDE CONTAINS
HAZARDOUS GASES
ACCESS TO AUTHORIZED
ENGINEERS ONLY



CB11	CB4
NOT USED	24V DC PSU
CB12	CB5
NOT USED	AUX POWER STRIP
CB13	CB6
PLATEN CHILLER	NOT USED
CB14	CB7
SOURCE/COIL RF	NOT USED
CB15	CB8
SOURCE CHILLER	CHAMBER POWER

WARNING
HAZARDOUS VOLTAGE.
 Contact only those
 specific points of fault
 isolate and repair before
 returning power.

Manufacturer: 815
 Model: Pegasus Electronics Rack
 Type: 1 Enclosure





Verity

HCM 0,12M-12000

fluo

UNIT ON



HIGH VOLTAGE MODULE

0,+5kV max.0pA

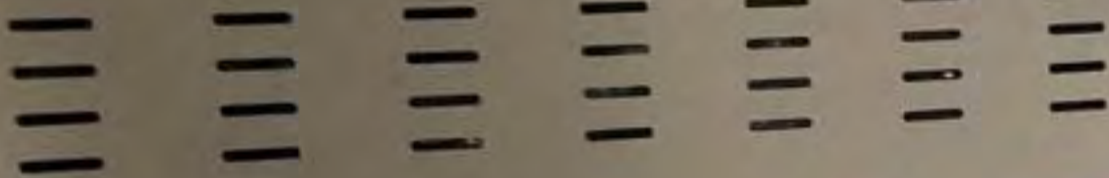
Control panel with digital display, buttons (Power, Stop, Run, Hold, Input, Output, Alarm), and a rotary knob.

STATION 1



HAZARDOUS GAS

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BEFORE MAINTENANCE
ON THEM IS STARTED



WARNING
EQUIPMENT INSIDE CONTAINS
HAZARDOUS GASES.
ACCESS TO AUTHORISED
ENGINEERS ONLY.





CAUTION



HOT SURFACE
BEHIND PANEL
Risk of skin burns if removed
Allow To Cool Before Removal
and wear protective gloves

WARNING

CB1 CB2 CB3 CB4 CB5 CB6 CB7
ETHERNET FIBERLINE CONTROL DATA



Cl₂
GAS LINE
06

N₂
GAS LINE
PURGE 06

SF₆
GAS LINE
05

He
GAS LINE
04

CF₄
GAS LINE
03

Ar
GAS LINE
02

O₂
GAS LINE
01

VENT LINE
AIR SUPPLY
OFF  ON





NOT IN USE

THERMO CHILLER



Control panel with a small LCD screen and several buttons:

- REMOTE (toggle)
- RUN (toggle)
- ALARM (toggle)
- SEL (button)
- ENT (button)
- START/STOP (button)
- RESET (button)
- Navigation arrows (up, down, left, right)



LOCAL EMO
THIS EMO WILL NOT
ACTIVATE THE MACHINE EMO

EMO



WARNING
HAZARDOUS VOLTAGE
Contact may cause
electric shock or burn.
Turn off & lock out
system before servicing.



Refrigerant Pressure Gauge
High Press
0.5-2.0MPa (7.5-29.5PSI)

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HAZARDOUS VOLTAGE
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SPTS
Ringland Way
Newport NP18 2TA
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Machine Type PRO APS

Power Supply 400v 50/60Hz
3P 80AMP 39KVA

Manufactured FEB 14

"Overcurrent protection provided at machine supply terminals"