



## PTW ASIA PTE LTD

| ASM International A412 Doped Poly Vertical LPCVD Furnace |                        |
|--|------------------------|
| Manufacturer   | ASM                    |
| Model  | A412                   |
| Product Description                                      | Vertical LPCVD Furnace |
| Year of Manufacture                                      | 2006                   |
| Serial Number  | 30295                  |
| Wafer Size   | 300mm                  |
| Software version   | 6.80C                  |
| Heater Type  | MRL                    |
| Process  | Poly                   |
| Loader configuration, 4 or 5 loader - 4                  |                        |
| Quartzware Configuration (Not included)                  |                        |
| Outer tube   | Quartz                 |
| Inner tube   | Quartz                 |
| Boat   | SiC boat               |
| Boat fix ring/Cap quartz                                 | Quartz                 |
| Adiabatic plate quantity                                 | 6                      |
| Back N2, Qty   | N/A                    |
| BCl3, Qty & Type (L-type, Straight, Diffuser, Shower)    | N/A                    |
| SiH4, Qty & Type (L-type, Straight, Diffuser, Shower)    | Multihole (1) U/D/L    |
| O2, Qty & Type (L-type, Straight, Diffuser, Shower)      | Multihole (1) E        |
| PH3, Qty & Type (L-type, Straight, Diffuser, Shower)     | Multihole (1) U/D/L    |
| ClF3, Qty & Type (L-type, Straight, Diffuser, Shower)    | N/A                    |
| Vacuum Line configuration                                |                        |
| Design   | original config        |
| 10 Torr Baratron model                                   | MKS                    |
| 10 Torr Baratron full scale setting                      | 10(F/S)                |

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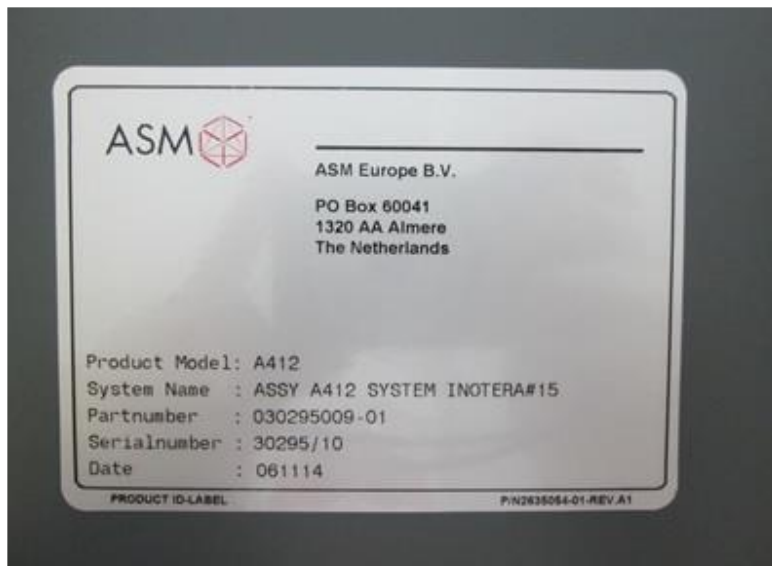
|   |  |
|---|--|
| 1000 Torr Baratron model  | MKS  |
| 1000 Torr Baratron full scale setting                                 | 1000(F/S)                                  |
| ATM sensor model  | MKS  |
| Vent Valve 1 (VV1) normally closed/open,plunger, diaphragm            | Normally open,plunger<br>Check valve model |
| Check valve model   | Fujikin                                    |
| Check valve resistance pressure                                       | 2.26 Kpa                                   |
| Mainvalve type, Kitz or CKD   | MKS  |
| Slow valve, incorporated with mainvalve or separate(AV72,AV77)        | Separate (PV003)                           |
| Slow valve orifice size   | 2.0mm (PV003)                              |
| Pressure range of vacuum gauge(Inficon Pirani gauge)                  | 10T  |
| <b>Control Table</b>  |  |
| Alarm Watch/Table setting   |  |
| Temp (Low Alarm Limit(deg)/High Alarm Limit(deg)/Check Time(min))     |  |
| U   | 0.7/0.7/30S                                |
| CU  | 0.7/0.7/30S                                |
| C   | 0.7/0.7/30S                                |
| CL  | 0.7/0.7/30S                                |
| L   | 0.7/0.7/30S                                |
| Pressure (Low Alarm Limit(Torr)/High Alarm Limit(Torr)/Check Time(S)) | 0.02/0.02/30S                              |
| <b>MFC (Low Alarm Limit(%)/High Alarm Limit(%)/Check Time(S))</b>     |  |
| MFC1  | N2: 2%/2%/10sec                            |
| MFC2  | N2: 2%/2%/10sec                            |
| MFC3  | N2: 2%/2%/10sec                            |
| MFC4  | N2: 2%/2%/10sec                            |
| MFC5  | SiH4: 2%/2%/10sec                          |
| MFC6  | SiH4: 2%/2%/10sec                          |
| MFC7  | SiH4: 2%/2%/10sec                          |
| MFC8  | 1%O2/Ar: 1%/1%/10sec                       |
| MFC9  | 5%PH3/N2: 2%/2%/10sec                      |
| MFC10   | 5%PH3/N2: 2%/2%/10sec                      |
| MFC11   | 5%PH3/N2: 2%/2%/10sec                      |
| MFC12   | ClF3: 10%/10%/10sec                        |
| MFC13   | N/A  |
| MFC14   | N/A  |
| MFC15   | N/A  |
| MFC16   | N/A  |

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|   |                    |
|---|--------------------|
| MFC17   | N/A                |
| MFC18   | N/A                |
| MFC19   | N/A                |
| MFC20   | N/A                |
| MFC21   | N/A                |
| APC Valve Action (High (%), Low (%), Time(s)) | N/A                |
| Transfer Table                                |                    |
| Wafer Charge command (charge/discharge)       |                    |
| Side Dummy                                    | Upper:5 / Lower:10 |
| Product                                       | 100                |
| Monitor                                       | 5                  |
| Product & Monitor                             | 105                |
| Time  |                    |
| 2nd charge time(min)                          | 0                  |
| wafer cool time(min)                          | 20min              |
| Leak Rate Table                               |                    |
| Base pressure low Limit(Torr)                 | 1%                 |
| Base pressure High Limit(Torr)                | 1%                 |
| Leak Check check time(s)                      | 60s                |
| Leak Check delay time(s)                      | N/A                |
| Leak limit(Torr)                              | 1%                 |
| Retry Limit(count)                            | 2                  |
| <b>Loadlock Settings</b>                      |                    |
| Loadlock configuration                        |                    |
| O2 analyser model, NGK or Toray               | PBI3.1 / PBI4.0    |
| Process                                       |                    |
| L/A Keep Value (ppm)                          | 10ppm              |
| N2 Flow max (L)                               | 1300L              |
| N2 Flow min (L)                               | 300L               |
| Check Stability Time(s)                       | N/A                |
| Ready   |                    |
| L/A Keep Value (ppm)                          | 10ppm              |
| N2 Flow max (L)                               | 1300L              |
| N2 Flow min (L)                               | 300L               |
| Check Stability Time(s)                       | N/A                |
| Idle  |                    |
| L/A Keep Value (ppm)                          | 10ppm              |
| N2 Flow max (L)                               | 1300L              |
| N2 Flow min (L)                               | 300L               |
| Check Stability Time(s)                       | N/A                |

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|  |       |
|--|-------|
| L/A O2 check time (min)                              | N/A   |
| L/A O2 limit (ppm)                                   | 10ppm |
| POD opener O2 limit (ppm)                            | N/A   |
| POD O2 check time(min)                               | N/A   |
| POD check retry                                      | N/A   |
| <b>Missing/Damaged Parts List:</b>                   |       |
| <b>None report, please inspect tool to reconfirm</b> |       |



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**Micron FAB11 APDPBC0D00(LPDE210 30295)**



**Tool Status**

R1 SCS



R2 SCS



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### Robot Status

CHR



WHR



### Power Supply Brake

R1



R2



### TCP/ECP

R1



R2



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### Supply Gas Status



### Gas Flow Panel Status



### Heater Status

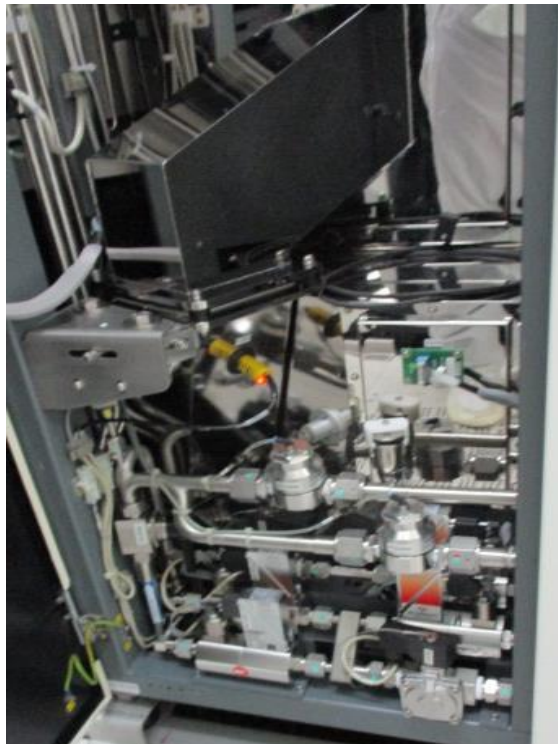


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TCF Status



N2 Purge Source Line



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## Software Versions

Display all Versions [User: m00704] [Automatic log out after 14:39 idle] [Tool: AS15] [Tube: LPDE2100]

| Software versions |         |            |             |       |             |      |           |
|-------------------|---------|------------|-------------|-------|-------------|------|-----------|
| Software release  |         | 6.80D      |             |       |             |      |           |
| Tool controllers  |         |            |             |       |             |      |           |
|                   | Model   | Version    | Date        |       |             |      |           |
| MSC               | A412    | 7.13       | 28-May-18   |       |             |      |           |
| WHC               | A412    | 8.02       | 11-Oct-11   |       |             |      |           |
| CHC               | A412    | 5.10       | 12-Oct-11   |       |             |      |           |
| BTC               | A412    | 2.JG       | 03-Feb-11   |       |             |      |           |
| Tube controllers  |         |            |             |       |             |      |           |
| T1 LPDE210A       |         |            | T2 LPDE210B |       |             |      |           |
|                   | Model   | Version    | Date        | Model | Version     | Date |           |
| DPC               | A412    | 2.W2       | 28-Sep-11   | DPC   | A412        | 2.W2 | 28-Sep-11 |
| DTC               |         |            |             | DTC   |             |      |           |
| MTC               | A412PN  | 2.23       | 04-Feb-11   | MTC   | A412PN      | 2.23 | 04-Feb-11 |
| Robot controllers |         |            |             |       |             |      |           |
|                   | Serial# | Version    | MCL Version |       | DEE Version |      |           |
| WHR               | 812030  | GB4S-4.29A | 2.93        |       |             |      |           |
| CHR               | 20712   | GB4.4.03FC | 2.25        |       |             |      |           |

## Digital I/O R1

Recipe status

Recipe: STDB\_PR8 Step#: 13

| Digital Inputs |          |        |    |          |          | Digital Outputs |          |        |    |          |         |
|----------------|----------|--------|----|----------|----------|-----------------|----------|--------|----|----------|---------|
| Nr             | Name     | Status | Nr | Name     | Status   | Nr              | Name     | Status | Nr | Name     | Status  |
| 1              | H2-Press | OK     | 17 | PmpWarn  | OK       | 1               | SH4-D    | CLOSED | 17 | PresCntr | LOW     |
| 2              | CA-Press | OK     | 18 | PmpAlarm | OK       | 2               | SH4-L    | CLOSED | 18 | FastPmp  | OPEN    |
| 3              | EdrGasC  | OK     | 19 |          |          | 3               | SH4-U    | CLOSED | 19 | SlowPmp  | CLOSED  |
| 4              | RecdPns  | OK     | 20 | ManHMod  | AUTOMATC | 4               | PH3-D    | CLOSED | 20 | EvacSH4  | CLOSED  |
| 5              | PumpPres | OK     | 21 | CntrRem  | AUTOMATC | 5               | PH3-L    | CLOSED | 21 | PH3-HL   | PH3-LOW |
| 6              |          |        | 22 |          |          | 6               | PH3-U    | CLOSED | 22 | SH4-Src  | CLOSED  |
| 7              | Prochbk  | OK     | 23 |          |          | 7               | H2       | CLOSED | 23 | H2-LUM   | CLOSED  |
| 8              | CarDoors | OK     | 24 |          |          | 8               | FlgTmplw | HIGH   | 24 | CF3-Prg  | CLOSED  |
| 9              | FlgTrep  | OK     | 25 |          |          | 9               | H2-D     | OPEN   | 25 | SH4-Prg  | CLOSED  |
| 10             | EinReact | OK     | 26 |          |          | 10              | H2-L     | CLOSED | 26 | PH3-Prg  | CLOSED  |
| 11             | TubeCool | CLOSED | 27 | FFmpSens | OPEN     | 11              | H2-U     | CLOSED | 27 | PH3-Src  | CLOSED  |
| 12             | OverHeat | OK     | 28 |          |          | 12              | SH4-D-M  | CLOSED | 28 | CF3-Evc  | CLOSED  |
| 13             | H20-Rec  | OK     | 29 | Elevrth  | NOT ACTV | 13              | SH4LL-M  | CLOSED | 29 | H2-D-E-M | OPEN    |
| 14             |          |        | 30 | ScrtFal  | OK       | 14              | H2-E     | OPEN   | 30 | CF3-M    | CLOSED  |
| 15             |          |        | 31 | GasAlarm | OK       | 15              | CF3      | CLOSED | 31 | PH3-M    | CLOSED  |
| 16             | Tube-ATM | VACUUM | 32 | GasWarn  | OK       | 16              | H2-LUM   | CLOSED | 32 | H2-D-M   | CLOSED  |

## Digital I/O R2

Recipe status

Recipe: STDB\_PR8 Step#: 13

| Digital Inputs |          |        |    |          |          | Digital Outputs |          |        |    |          |         |
|----------------|----------|--------|----|----------|----------|-----------------|----------|--------|----|----------|---------|
| Nr             | Name     | Status | Nr | Name     | Status   | Nr              | Name     | Status | Nr | Name     | Status  |
| 1              | H2-Press | OK     | 17 | PmpWarn  | OK       | 1               | SH4-D    | CLOSED | 17 | PresCntr | LOW     |
| 2              | CA-Press | OK     | 18 | PmpAlarm | OK       | 2               | SH4-L    | CLOSED | 18 | FastPmp  | OPEN    |
| 3              | EdrGasC  | OK     | 19 |          |          | 3               | SH4-U    | CLOSED | 19 | SlowPmp  | CLOSED  |
| 4              | RecdPns  | OK     | 20 | ManHMod  | AUTOMATC | 4               | PH3-D    | CLOSED | 20 | EvacSH4  | CLOSED  |
| 5              | PumpPres | OK     | 21 | CntrRem  | AUTOMATC | 5               | PH3-L    | CLOSED | 21 | PH3-HL   | PH3-LOW |
| 6              |          |        | 22 |          |          | 6               | PH3-U    | CLOSED | 22 | SH4-Src  | CLOSED  |
| 7              | Prochbk  | OK     | 23 |          |          | 7               | H2       | CLOSED | 23 | H2-LUM   | CLOSED  |
| 8              | CarDoors | OK     | 24 |          |          | 8               | FlgTmplw | HIGH   | 24 | CF3-Prg  | CLOSED  |
| 9              | FlgTrep  | OK     | 25 |          |          | 9               | H2-D     | OPEN   | 25 | SH4-Prg  | CLOSED  |
| 10             | EinReact | OK     | 26 |          |          | 10              | H2-L     | CLOSED | 26 | PH3-Prg  | CLOSED  |
| 11             | TubeCool | CLOSED | 27 | FFmpSens | OPEN     | 11              | H2-U     | CLOSED | 27 | PH3-Src  | CLOSED  |
| 12             | OverHeat | OK     | 28 |          |          | 12              | SH4-D-M  | CLOSED | 28 | CF3-Evc  | CLOSED  |
| 13             | H20-Rec  | OK     | 29 | Elevrth  | NOT ACTV | 13              | SH4LL-M  | CLOSED | 29 | H2-D-E-M | OPEN    |
| 14             |          |        | 30 | ScrtFal  | OK       | 14              | H2-E     | OPEN   | 30 | CF3-M    | CLOSED  |
| 15             |          |        | 31 | GasAlarm | OK       | 15              | CF3      | CLOSED | 31 | PH3-M    | CLOSED  |
| 16             | Tube-ATM | VACUUM | 32 | GasWarn  | OK       | 16              | H2-LUM   | CLOSED | 32 | H2-D-M   | CLOSED  |

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## Analog I/O R1

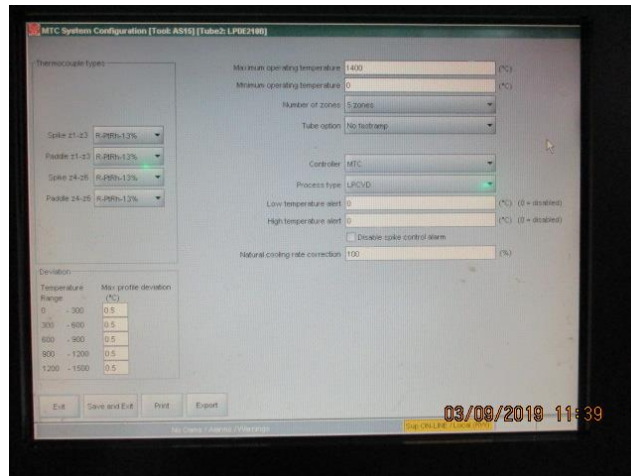
| Process Status [User: m09784] [Automatic log out after 14:55 idle] [Took AS15] [Tube1: LPDE210A] |                  |          |           |               |          |               |          |          |        |       |       |
|--|------------------|----------|-----------|---------------|----------|---------------|----------|----------|--------|-------|-------|
| Recipe   |                  |          |           |               | Elevator |               |          |          |        |       |       |
| Recipe   | N2               | STDB     | PRS       | Process Time  | 00:35:20 |               | Position | 1300     | mm     |       |       |
| StepName   | STANDEY/N2-PURGE | WaitFor  | Start     | Step          | 13       | Time          | 00:00:10 | Setpoint | 1300   |       |       |
|  |                  |          |           |               |          |               | Speed    | 0        | mm/min |       |       |
| Temperature  |                  |          |           |               |          |               |          |          |        |       |       |
| Zone   | Paddle           |          |           | Spike         |          |               | Ramp     |          | Power  |       |       |
|  | Setpoint         | Actual   | Deviation | Max. setpoint | Setpoint | Min. setpoint | Actual   | To       | Rate   |       |       |
| °C   | °C               | °C       | °C        | °C            | °C       | °C            | °C       | °C       | °C/min |       |       |
| Zone 1   | 500.0            | 500.0    | 0.0       | 488.1         | 441.9    | 405.1         | 441.8    | 500.0    | 0.00   |       |       |
| Zone 2   | 500.0            | 500.0    | 0.0       | 506.2         | 445.5    | 385.2         | 445.5    | 500.0    | 0.00   |       |       |
| Zone 3   | 500.0            | 500.0    | 0.0       | 485.6         | 448.0    | 404.6         | 448.0    | 500.0    | 0.00   |       |       |
| Zone 4   | 500.0            | 500.0    | 0.0       | 528.2         | 454.2    | 383.2         | 454.2    | 500.0    | 0.00   |       |       |
| Zone 5   | 500.0            | 500.0    | 0.0       | 509.1         | 475.7    | 447.1         | 475.7    | 500.0    | 0.00   |       |       |
| Top Zone   |                  |          |           |               |          |               |          |          | 16     |       |       |
| Analog I/O   |                  |          |           |               |          |               |          |          |        |       |       |
| ID   | Name             | Setpoint | Actual    | HL-LL         | Unit     | Inp           | Name     | Setpoint | Actual | HL-LL | Unit  |
| 1  | SH4-D            | 0.00     | 0.00      | 2.70          | SLM      | 1             | Pre-Prs  | 0.00     | 0.00   | 0.00  | Torr  |
| 2  | SH4-L            | 0.000    | 0.000     | 0.100         | SLM      | 2             | PH3-Prs  | 0.0      | 2.4    | 0.0   | BarG  |
| 3  | SH4-U            | 0.000    | 0.000     | 0.100         | SLM      | 3             | H2-Prs   | 0.0      | 0.0    | 0.0   | BarG  |
| 4  | PH3-D            | 0        | 0         | 450           | SCCM     | 4             | Vlv-Pos  | 0.0      | 30.7   | 0.0%  | %     |
| 5  | PH3-L            | 0.0      | 0.0       | 90.0          | SCCM     | 5             | LeakRate | 0.0      | 300.0  | 0.0   | mTorr |
| 6  | PH3-U            | 0.0      | 0.1       | 90.0          | SCCM     | 6             | Leak-In  | 0.0      | 50.0   | 0.0   | mTorr |
| 7  | H2               | 0        | 1         | 50            | SCCM     | 7             | N2PrgCar | 1        | 295    | 0     | SLM   |
| 8  | Leak-Prs         | 500      | 501       | 20            | mTorr    | 8             | SH4-Prs  | 0.0      | 3.0    | 0.0   | BarG  |

## Analog I/O R2

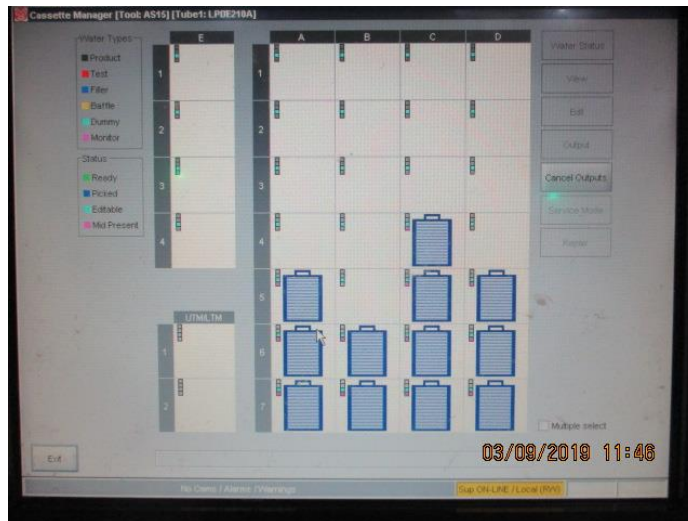
| Process Status [User: m09784] [Automatic log out after 14:56 idle] [Took AS15] [Tube2: LPDE210B] |                  |          |           |               |          |               |          |          |        |       |       |
|--|------------------|----------|-----------|---------------|----------|---------------|----------|----------|--------|-------|-------|
| Recipe   |                  |          |           |               | Elevator |               |          |          |        |       |       |
| Recipe   | N2               | STDB     | PRS       | Process Time  | 00:35:20 |               | Position | 1300     | mm     |       |       |
| StepName   | STANDEY/N2-PURGE | WaitFor  | Start     | Step          | 13       | Time          | 00:00:10 | Setpoint | 1300   |       |       |
|  |                  |          |           |               |          |               | Speed    | 0        | mm/min |       |       |
| Temperature  |                  |          |           |               |          |               |          |          |        |       |       |
| Zone   | Paddle           |          |           | Spike         |          |               | Ramp     |          | Power  |       |       |
|  | Setpoint         | Actual   | Deviation | Max. setpoint | Setpoint | Min. setpoint | Actual   | To       | Rate   |       |       |
| °C   | °C               | °C       | °C        | °C            | °C       | °C            | °C       | °C       | °C/min |       |       |
| Zone 1   | 500.0            | 500.0    | 0.0       | 478.3         | 443.5    | 411.3         | 443.5    | 500.0    | 0.00   |       |       |
| Zone 2   | 500.0            | 500.0    | 0.0       | 482.5         | 451.2    | 411.5         | 451.2    | 500.0    | 0.00   |       |       |
| Zone 3   | 500.0            | 500.0    | 0.0       | 498.7         | 452.1    | 407.7         | 452.2    | 500.0    | 0.00   |       |       |
| Zone 4   | 500.0            | 500.0    | 0.0       | 504.5         | 463.2    | 415.5         | 463.3    | 500.0    | 0.00   |       |       |
| Zone 5   | 500.0            | 500.0    | 0.0       | 522.8         | 486.2    | 454.8         | 486.2    | 500.0    | 0.00   |       |       |
| Top Zone   |                  |          |           |               |          |               |          |          | 15     |       |       |
| Analog I/O   |                  |          |           |               |          |               |          |          |        |       |       |
| ID   | Name             | Setpoint | Actual    | HL-LL         | Unit     | Inp           | Name     | Setpoint | Actual | HL-LL | Unit  |
| 1  | SH4-D            | 0.00     | 0.00      | 2.70          | SLM      | 1             | Pre-Prs  | 0.00     | 0.00   | 0.00  | Torr  |
| 2  | SH4-L            | 0.000    | 0.000     | 0.100         | SLM      | 2             | PH3-Prs  | 0.0      | 2.4    | 0.0   | BarG  |
| 3  | SH4-U            | 0.000    | 0.000     | 0.100         | SLM      | 3             | H2-Prs   | 0.0      | 0.0    | 0.0   | BarG  |
| 4  | PH3-D            | 0        | 0         | 450           | SCCM     | 4             | Vlv-Pos  | 0.0      | 30.0   | 0.0%  | %     |
| 5  | PH3-L            | 0.0      | 0.0       | 90.0          | SCCM     | 5             | LeakRate | 0.0      | 300.0  | 0.0   | mTorr |
| 6  | PH3-U            | 0.0      | 0.0       | 90.0          | SCCM     | 6             | Leak-In  | 0.0      | 50.0   | 0.0   | mTorr |
| 7  | H2               | 0        | 0         | 50            | SCCM     | 7             | N2PrgCar | 1        | 300    | 0     | SLM   |
| 8  | Leak-Prs         | 500      | 502       | 20            | mTorr    | 8             | SH4-Prs  | 0.0      | 2.5    | 0.0   | BarG  |
| Analog I/O   |                  |          |           |               |          |               |          |          |        |       |       |
| ID   | Name             | Setpoint | Actual    | HL-LL         | Unit     | Inp           | Name     | Setpoint | Actual | HL-LL | Unit  |
| 9  | N2-D             | 3.00     | 2.99      | 0.00          | SLm      | 9             | N2-Prs   | 0.0      | 2.7    | 0.0   | BarG  |
| 10   | N2-L             | 0.0      | 0.1       | 5.0           | SCCM     | 10            | CF3-Prs  | 0.0      | 0.1    | 0.0   | BarG  |
| 11   | N2-U             | 0.0      | 0.0       | 5.0           | SCCM     | 11            | ATM-Prs  | 0        | 3      | 0     | Torr  |
| 12   | O2-Level         | 1        | 2         | 0             | PPM      | 12            | TempRing | 60.0     | 61.1   | 0.0   | °C    |
| 13   | H2-Prs           | 0.00     | 0.48      | 0.00          | Torr     | 13            | ATM-Setp | 0        | 681    | 0     | Torr  |
| 14   | N2-E             | 0.500    | 0.497     | 0.000         | SLm      | 14            | PH3-Prs  | 0.0      | 0.0    | 0.0   | BarG  |
| 15   | CF3              | 0.00     | 0.00      | 0.50          | SLm      | 15            | FingLit  | 60.0     | 64.4   | 0.0   | °C    |
| 16   |                  |          |           |               |          | 16            |          |          |        |       |       |

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## Temperature control system MTC R2



## Stoker status



## Motion part control status

| Control 1-16 |                               |            |        | Control 17-32 |                     |            |        |
|--------------|-------------------------------|------------|--------|---------------|---------------------|------------|--------|
| #            | Name                          | Status     | detail | #             | Name                | Status     | detail |
| 1            | Loaddoor shields Left/Right   | Undermaint | detail | 17            | WHR                 | Ok         | detail |
| 2            | Loaddoor doors Left/Right     | Ok         | detail | 18            | Boat Pickup STM     | Ok         | detail |
| 3            | Cassette IO transfer          | Out of Ink | detail | 19            | Gate Valve          | Warning    | detail |
| 4            | Upper/Lower Cassette Transfer | Ok         | detail | 20            | Reactor Carousel    | Out of Ink | detail |
| 5            | Upper/Lower Cassette Clamp    | Warning    | detail | 21            | Tube Elevator R1/R2 | Out of Ink | detail |
| 6            | Stoker Carousel               | Ok         | detail | 22            | Boat Rotation R1/R2 | Ok         | detail |
| 7            | UTM, TM                       | Out of Ink | detail | 23            | Boat pickup R1      | Warning    | detail |
| 8            | CHR elevator                  | Ok         | detail | 24            | Boat pickup R2      | Warning    | detail |
| 9            | Cassette Calibration          | Warning    | detail | 25            | Tube Shutter R1/R2  | Warning    | detail |
| 10           | Pick/Pol Cassette             | Ok         | detail |               |                     |            |        |
| 11           | Upper/Lower purge door        | Out of Ink | detail |               |                     |            |        |
| 12           | Upper/Lower WHR door          | Ok         | detail |               |                     |            |        |
| 13           | STM arm                       | Out of Ink | detail |               |                     |            |        |
| 14           | STM elevator                  | Out of Ink | detail |               |                     |            |        |
| 15           | WHR elevator                  | Out of Ink | detail |               |                     |            |        |
| 16           | Boat Calibration/Leveling     | Ok         | detail |               |                     |            |        |

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## Boat setting status R1 Boat wafer slot setting

| Type   | Wafer size (mm) | Slots | Pitch (1/10000") | Delta pitch | Offset | Lift/Drop | Distance | Calibration | Depth | Warning space | Max space | Warning lift | Max lift | Phys. space |     |
|--------|-----------------|-------|------------------|-------------|--------|-----------|----------|-------------|-------|---------------|-----------|--------------|----------|-------------|-----|
| Boat A | 300mm120        | 300   | 120              | 3006        | 0      | 1000      | 150      | 100         | 90    | 100           | 225       | 250          | 80       | 100         | 130 |
| Boat B | 300mm120        | 300   | 120              | 3006        | 0      | 1000      | 150      | 100         | 90    | 100           | 225       | 250          | 80       | 100         | 130 |
| Boat C | None            |       |                  |             |        |           |          |             |       |               |           |              |          |             |     |

## R2 Boat wafer slot setting

| Type   | Wafer size (mm) | Slots | Pitch (1/10000") | Delta pitch | Offset | Lift/Drop | Distance | Calibration | Depth | Warning space | Max space | Warning lift | Max lift | Phys. space |     |
|--------|-----------------|-------|------------------|-------------|--------|-----------|----------|-------------|-------|---------------|-----------|--------------|----------|-------------|-----|
| Boat A | 300mm120        | 300   | 120              | 3006        | 0      | 1000      | 150      | 100         | 90    | 100           | 225       | 250          | 80       | 100         | 130 |
| Boat B | 300mm120        | 300   | 120              | 3006        | 0      | 1000      | 150      | 100         | 90    | 100           | 225       | 250          | 80       | 100         | 130 |
| Boat C | None            |       |                  |             |        |           |          |             |       |               |           |              |          |             |     |

## Alarm log

### R1 alarm log by 3 month

### R1 alarm log by 3 month

## Alarm log

### R2 alarm log by 1 month

### R2 alarm log by 1 month

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