



Allwin21 Corp. Merits of AccuThermo RTP



- Since its introduction in 1982, the AG Associates Heatpulse line has been the favored RTP system throughout the world, and Allwin21 has the exclusive manufacturing rights for the Heatpulse 610 from Metron (an Applied Materials company).Our AccuThermo RTP systems have a **proven track record for reliability and simplicity.**



- Allwin21 Corp. AccuThermo RTP systems run at atmospheric pressure and rely on a pre-process nitrogen or argon purge prior to wafer processing. They are being used



around the world in manufacturing, R&D and Universities. These RTP systems have a proven track record for reliability and simplicity.

Vacuum RTP systems are a relatively new machine. Actually, they are a strip-down version of a RTCVD. Most vacuum RTP systems being produced today started only a few years ago.

**Vacuum RTP VS Atmospheric Pressure RTP**

| <b>Atmospheric RTP</b>   | <b>Vacuum RTP</b>   |
|--|---|
| 30 years proven track record   | Only a few years record   |
| Low price  | High price  |
| Low usage cost   | High usage cost   |
| Simplicity   | More complex  |
| Short process time   | Long process time   |
| Small footprint  | Additional space and facility requirement   |
| Bottom and top lamps heat for better ramp rate, uniformity and repeatability   | Only top lamps heat which will low the ramp rate, uniformity and repeatability.   |
| Clean environment due to Isolated Quartz Tube which is easy to clean.  | No isolated quartz tube; The wafer is in SST or AI Chamber which is difficult to clean often.   |
| After R&D, the process is transferred easily to production since RTP systems for the mass production of wafers are Atmospheric RTP.  | After R&D, the process cannot be transferred to production since there are no vacuum RTP systems for the mass production of wafers.   |
| The atmospheric RTP system has a removable quartz isolation chamber. This chamber is removed and cleaned periodically, like the window. However, it can be cleaned hundreds of times. While the quartz chamber is being cleaned, a spare quartz chamber can be installed. Thus, the down-time is just a few minutes. | The vacuum RTP system has a quartz window that allows the radiant heat from the tungsten halogen lamps into the process chamber to heat the wafer. This window has to be cleaned periodically. It can only be cleaned about 3 times before it has to be replaced. It is recommended to clean this window about once every month. If the process is dirty and outgases, the quartz window has to be cleaned more frequently. This becomes a very expensive disposable item, in excess of \$300 each. |

- Allwin21 Corp proprietary advanced AW Software which provides the following significant advantages.

1. Integrated process control system



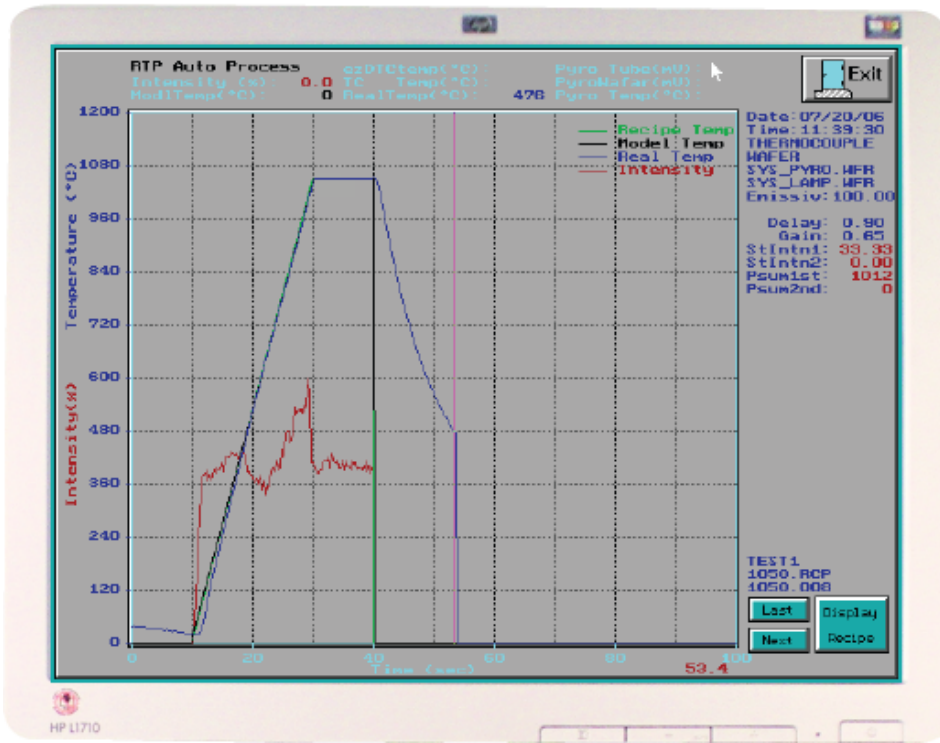
2. Real time graphics display
3. Real time process data acquisition, display, and analysis
4. Programmed comprehensive calibration and diagnostic functions
5. Better performance and maintenance than the original systems



- The AccuThermo AW410, AW610 and the AW810 are all modeled after the AG Associates Heatpulse 610 and are designed for the low budget, high performance users in mind. The AccuThermo systems are new and improved. Allwin21 has upgraded the electronics and control software. The electronic PC boards have been reduced in size and modernized to use today's technology. Additional features have also been added, like control for up to four MFCs. This allows the AW610 to come equipped with at least one MFC as standard equipment.



- Precise Temperature/Time control, Temperature measuring precision  $\pm 1^{\circ}\text{C}$ . The new software with power summary function to detect either lamp failure or sensor failure to maintain the system repeatability and process control repeatable ability.

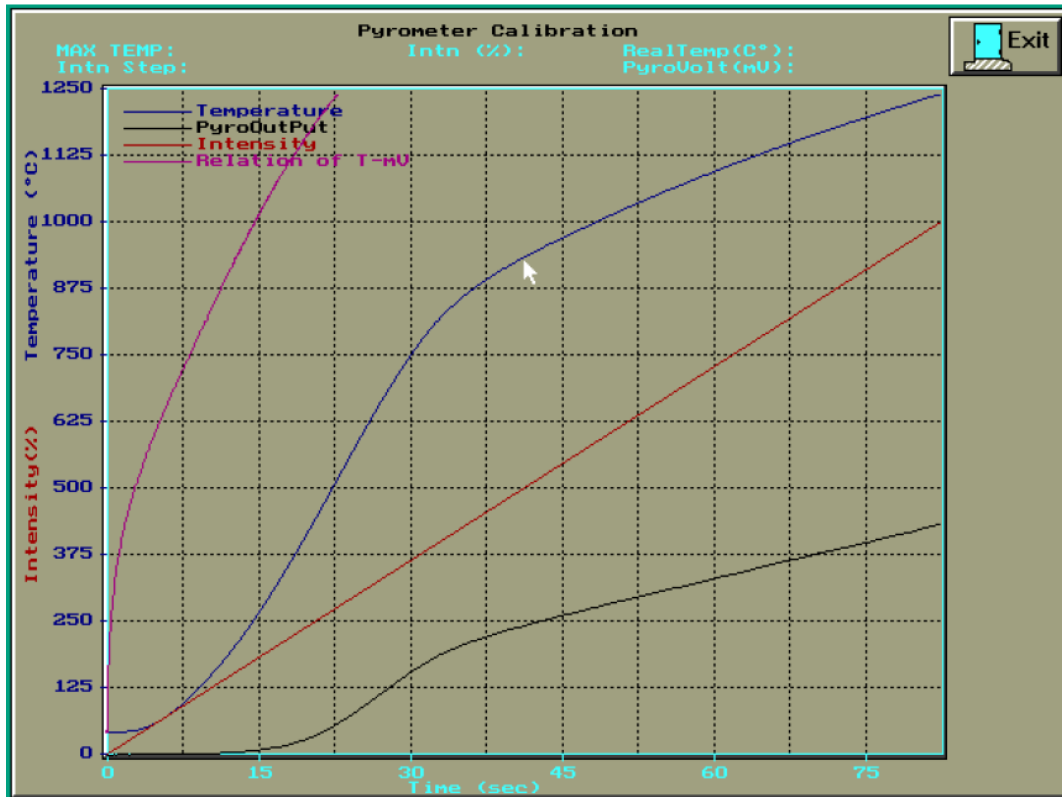


- Advanced [ERP Pyrometer](#) for precise high temperature measurement instead of Single Pyrometer or only Thermocouple.





- Software Pyrometer calibration to get more accurate temperature control. Get rid of hardware pyrometer calibration with using linearity board, which has many adjustable resistances to be adjusted to make output voltage same as the output voltage of TC box. It is a complete procedure for the original Heatpulse 610 method. With using new software method it needs only run one single time to get the relationship between output voltage of pyrometer and the TC temperature. It is more accurate and much easier calibration method.



- Software tricking watch-dog to avoid damage machine during the high intensity when computer locks up caused by some reason like power glitch etc. Software tricks the hardware switch every second, and if the hardware is not tricked after one second it will turn off the lamp automatically. This will protect the machine won't be damaged by the lamp 100% turn on for a long time accidentally by the computer locks up.