

# Proven Qualified

# 40 Years



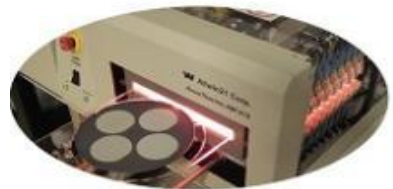
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## AccuThermo AW 820M Rapid Thermal Processor



# Giant Fabs/Labs



- Universities
- Institutes
- Companies
- IC
- MEMS
- Biomedical
- Nanotechnology
- Sensors
- Solar
- LED
- ...

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AccuThermo AW 820M Rapid Thermal Processor

**Proven Qualified Rapid Thermal Processor**

# **Production 24/7**

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**AccuThermo AW 820M Rapid Thermal Processor**



# Proven Qualified Rapid Thermal Processor



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AccuThermo AW 820M Rapid Thermal Processor



# Proven Qualified Rapid Thermal Processor

# Originated From Heatpulse® 610



**AG ASSOCIATES**

**INDUSTRY STANDARD**

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**The Dominant Manufacturer of RTP Systems in 80's,90's**

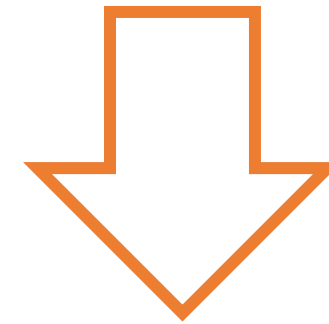
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## AccuThermo AW 820M Rapid Thermal Processor

**W**  
**Allwin21** Corp.

# Advanced Technologies

## Compact AI Chamber Design ~8"



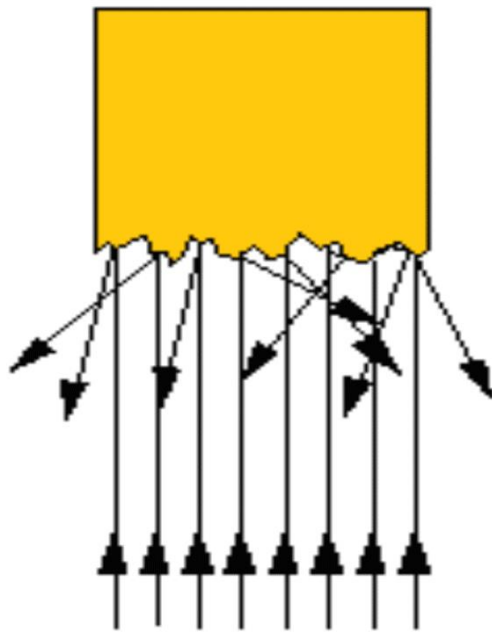
- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Lamp IR Light Scattering on Gold Plated Chamber Surface



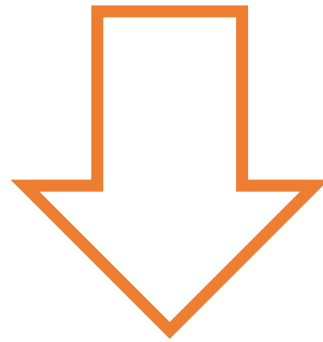
- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Special Cooling Water Passage



- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Top and Bottom IR Lamp Power Distribution

Bottom and top heating with 27 (1.5 KW ea, TOP 13 lamps, BOTTOM 14 lamps) radiation heating lamp module with **10 bank zones**:

1. ZONE1-5, Top, from front to rear
  1. ZONE( 1 ), TOP ( front ) ( 2 ) lamps
  2. ZONE( 2 ), TOP ( ) ( 3 ) lamps
  3. ZONE( 3 ), TOP ( center ) ( 4 ) lamps
  4. ZONE( 4 ), TOP ( ) ( 3 ) lamps
  5. ZONE( 5 ), TOP ( rear ) ( 2 ) lamps
2. ZONE6-10, Bottom, from front to rear
  1. ZONE( 6 ), BOTTOM ( front ) ( 2 ) lamps
  2. ZONE( 7 ), BOTTOM ( ) ( 3 ) lamps
  3. ZONE( 8 ), BOTTOM ( center ) ( 3 ) lamps
  4. ZONE( 9 ), BOTTOM ( ) ( 3 ) lamps
  5. ZONE( 10 ), BOTTOM ( rear ) ( 2 ) lamps



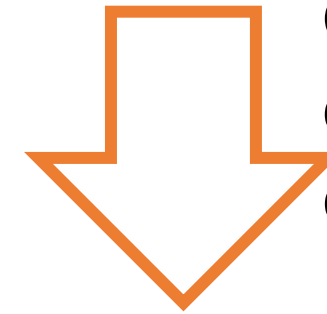
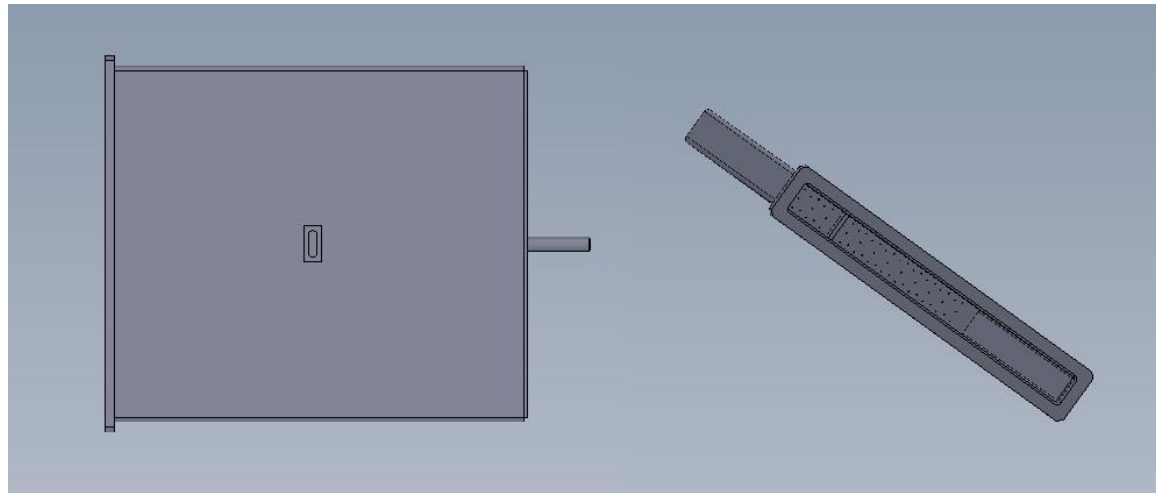
- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Thin Isolated Quartz Tube ~8"



**Get rid of  
contamination  
easily**

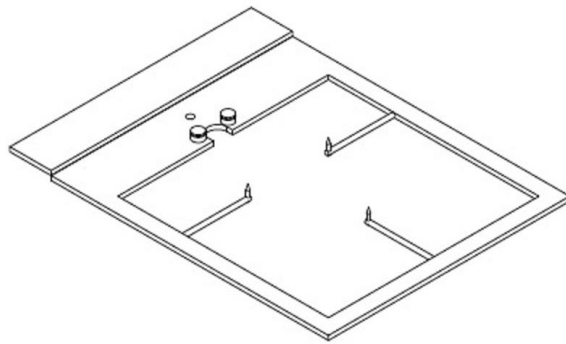
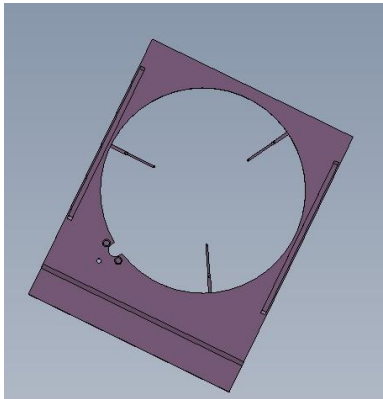
- Repeatabile
- Uniform
- Stable

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# Advanced Technologies

## Quartz Trays ~8", Customized for Your Needs



- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Susceptors 3"~8", Customized for Your Needs



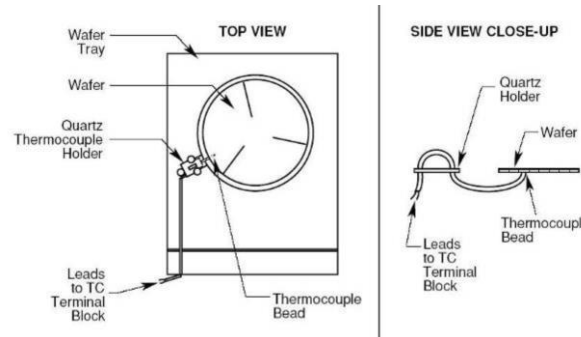
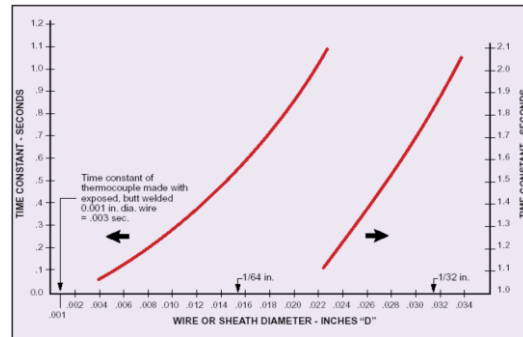
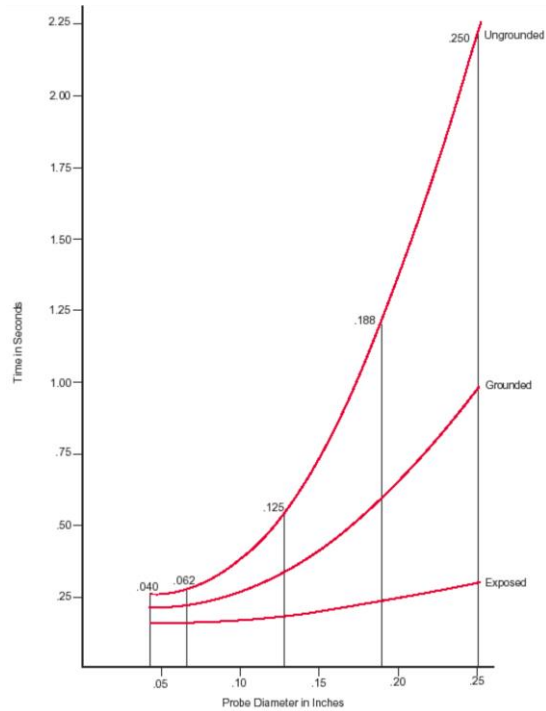
- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Thin K Type Thermocouple (Bare)



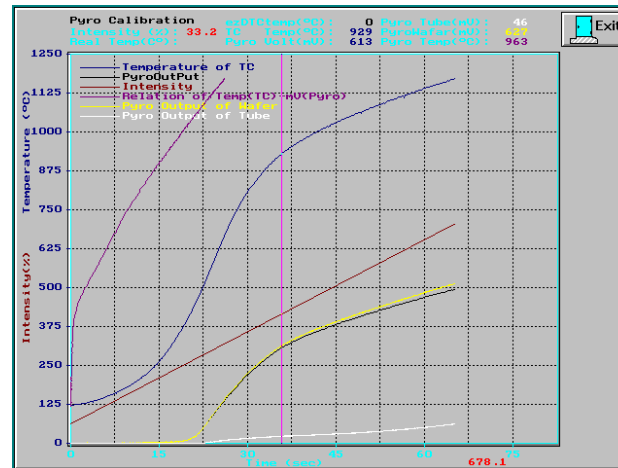
- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Patented Non-Contact ERP Pyrometer



**Quickest Response**

- 400-1250 C
- 350-400 C ; > 1250 C are optional

- Repeatable
- Uniform
- Stable

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# Advanced Technologies

## Proprietary Allwin21 Algorithm&Control



- Repeatable
- Uniform
- Stable

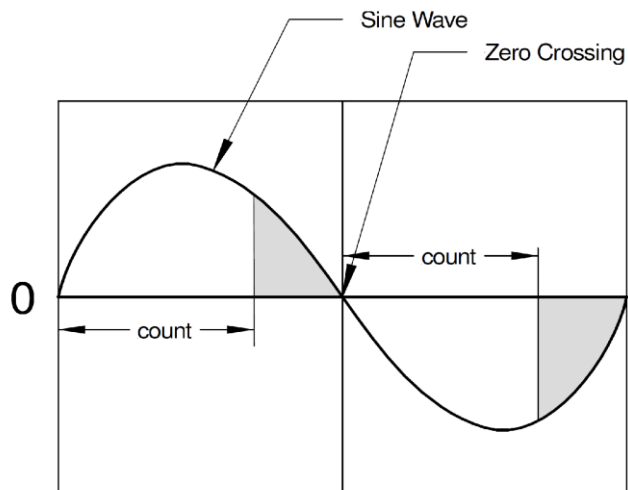
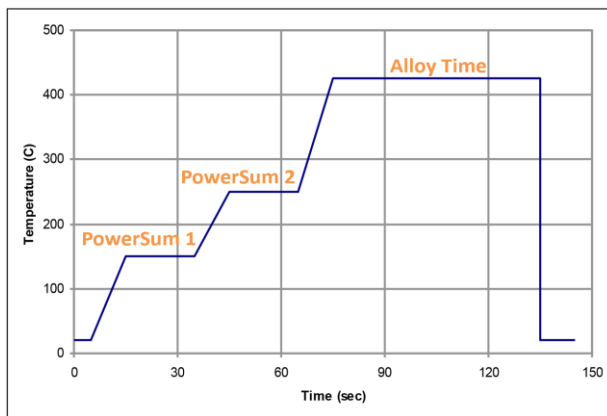
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AccuThermo AW 820M Rapid Thermal Processor

# Advanced Technologies

## Proprietary Allwin21 Algorithm&Control

- Lamp Power Algorithm and Control
- ERP Pyrometer Calibration Methods
- PowerSum Function to help save valuable wafers
- Watchdog for Safety



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## AccuThermo AW 820M Rapid Thermal Processor



# Advanced Technologies

## Compact Footprint

- 70" H
- 39" W
- 54" D



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# Advanced Technologies

## Specifications

- **Ramp up rate:** 10°C - 200°C per second.
- **Recommended steady state duration:** 0-300 seconds per step.
- **Ramp down rate:** 10°C - 250°C per second
- **Recommended steady state temperature range:** 150°C – 1150°C. Maximum 1250°C; 1500°C is optional.
- **ERP temperature accuracy:**  $\pm 1^\circ\text{C}$
- **Thermocouple temperature accuracy:**  $\pm 0.5^\circ\text{C}$
- **Temperature repeatability:**  $\pm 0.5^\circ\text{C}$  or better
- **Temperature uniformity:**  $\pm 7^\circ\text{C}$  across a 8" (200 mm) wafer at 1150°C. (This is a one sigma deviation 100 angstrom oxide.) For a titanium silicide process, no more than 7% increase in non-uniformity during the first anneal at 650°C to 700°C.

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# Various Configurations

**Wafer Size:**

**Round or Square**

**Small Samples,  
2",3",4",5",6",8"**

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# Various Configurations

## Quartz Trays:

- 5"-8", Round
- 5"-8", Square
- Customized

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# Various Configurations

**Gas Lines:**

**1-6 with MFCs**

**Typical Gas Types: N<sub>2</sub> , O<sub>2</sub> , Forming Gas , Ar , N<sub>2</sub>O<sub>2</sub> , NH<sub>3</sub> etc.**

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**AccuThermo AW 820M Rapid Thermal Processor**



# Various Configurations

## Susceptors:

- **4X2", 3X3", 16X2", 5X3", 4X4"**
- **3", 4", 6", 8"**
- **Customized**

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**AccuThermo AW 820M Rapid Thermal Processor**



# Various Configurations

## Temperature Sensors:

- **Thin TC:150-840°C**
- **Non-Contact ERP**

**Pyrometer: 400-1250°C**

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# Various Configurations

## Power:

- **3 Phase**
- **50/60 Hz**
- **208V/220V/380V/415V**

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# Various Configurations-Options



**Double O Ring**



**O2 Sensor/Analyzer**

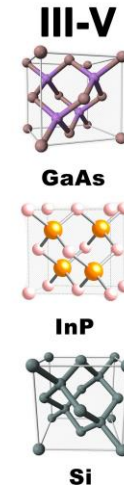
**GEM/SECS  
Function**

**We recommend these only for production.**

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# Let's *All win* in the 21<sup>st</sup> Century



Email: [sales@allwin21.com](mailto:sales@allwin21.com)

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