Pyrosales
Total Sensor Solutions

AST
Accurate Sensors Technologies

Infrared Non Contact Pyrometers

We measure accurate temperature in extreme conditions

PRODUCT OVERVIEW

- **Single Color Pyrometers**

- **Two Color Pyrometers**

- **Focusable Pyrometers**

- **Fiber Optic Pyrometers**

- **Special Pyrometers**

- **Software**

- **Accessories**

Models	E250 PL	E450 PL	E450C PL	EL50 & EL50H
Features	Digital IR Pyrometer with extended Sensor head, Analog output, Digital interface, Relay output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & Keypad for parameterization	Digital IR Pyrometer with extended Sensor head, Analog output, Digital interface, Relay output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & Keypad for parameterization	Digital two color pyrometer with extended Sensor head, Analog output, Digital interface, Relay output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & Keypad for parameterization	Digital IR Pyrometer with extended Sensor head. Analog output, Digital interface, Relay output, USB 2.0, Inbuilt LCD & Keypad for parameterization
Temperature Range (Sub Range Adjustable)	250°C - 1000° C 300°C - 1300°C 350°C - 1800° C	600°C - 1900° C	800°C - 2500°C	0°C - 800° C
Emissivity	0.1....1.0 adjustable	0.1....1.0 adjustable	0.75....1.25 Slop adjustable	0.1....1.2 adjustable
Spectral Range	1.6µm	1µm	0.7......1.15µm	8......14µm
Photodetector Type	InGaAs	Si	Si/Si	Thermopile
Distance to Spot Size Ratio	20 : 1 40 : 1 80 : 1	80 : 1	80 : 1	2 : 1 15 : 1
Response Time	2 msec. adjustable upto 10 sec.	2 msec. adjustable upto 10 sec.	20 msec. adjustable upto10 sec.	20 msec. adjustable upto 10 sec.
Accuracy	±0.3% of the measured value +1°C	±0.3% of the measured value +1°C	±0.5% of the measured value +1°C	±1.0% of the measured value or 3°C whichever value is greater
Repeatability	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.3% of reading in °C +1°C
Analog Output (User selectable)	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10 V	4 - 20mA, 0 - 20mA, 0 - 10V, J & K type T/C (user selectable)
Digital Output	USB 2.0 RS-232 / RS-485 (Optional)	USB 2.0 RS-232 / RS-485 (Optional)	USB 2.0 RS-232 / RS-485 (Optional)	USB 2.0 RS-232 / RS-485 (Optional)
Sighting	Laser	Laser	Laser	N/A
Operating Temperature Range	Electronic Box and Sensor head upto 70°C	Electronic Box and Sensor head upto 70°C	Electronic Box and Sensor head upto 70°C	Electronic Box upto 70°C Sensor head - 120°C (EL50) Sensor head - 180°C (EL50-H)
Power Supply	24V DC	24V DC	24V DC	24V DC
Power Consumption	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt
Protection Class	IP65	IP65	IP65	IP65
Storage Temperature	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C
Dimensions(mm) & Weight	112.5 x 82.5 x 33 (l x w x h) Weight = 600g	112.5 x 82.5 x 33 (l x w x h) Weight = 600g	112.5 x 82.5 x 33 (l x w x h) Weight = 600g	112.5 x 82.5 x 33 (l x w x h) Weight = 600g

We measure accurate temperature in extreme conditions

A - Series

AL - Series

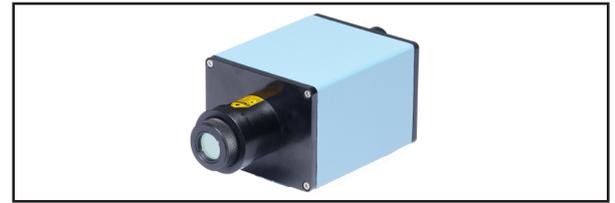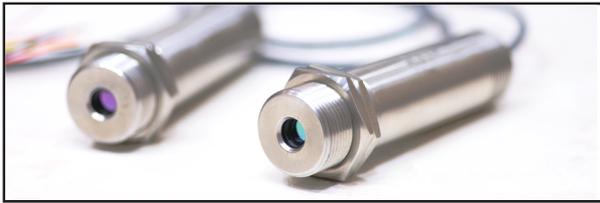| A250	A450	A450C	A150	AI30	AI514	AI390
Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting or Through the lens view finder	Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting or Through the lens view finder	Digital two color pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting or Through the lens view finder	Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting or Through the lens view finder	Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting light	Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting light	Digital IR Pyrometer with Analog output & Digital interface, USB 2.0 output & Laser targeting light
250°C - 1000°C 300°C - 1300°C 350°C - 1800°C 500°C - 3000°C	600°C - 1900° C 750°C - 2500° C	600°C - 1600° C 800°C - 2500° C	150°C - 700° C	0°C - 1000° C 75°C - 1000°C	300°C - 1400°C 400°C - 2500°C	300°C - 1400°C
0.1...1.0 adjustable	0.1...1.0 adjustable	0.75...1.25 Slope adjustable	0.1...1.0 adjustable	0.1...1.2 adjustable	0.1 … 1.2 adjustable	0.1 … 1.2 adjustable
1.6 µm	1.0 µm	0.7......1.15 µm	2 to 2.6 µm	8......14µm	5.14 µm	3.9 µm
InGaAs	Si	Si/Si	Extended InGaAs	Thermopile	Thermopile	Thermopile
50 : 1 100 : 1 200 : 1 200 : 1	200 : 1	100 : 1 200 : 1	50 : 1	50 : 1 100 : 1	50 : 1	50 : 1
2 msec adjustable upto 10 sec	2 msec adjustable upto 10 sec	20 msec adjustable upto 10 sec	2 msec adjustable upto 10 sec	60 msec adjustable upto 10 sec	60 msec adjustable upto 10 sec	60 msec adjustable upto 10 sec
±0.3% of the measured value +1°C	±0.3% of the measured value +1°C	±0.5% of the measured value +1°C	Upto 400°C : 3°C T> 400°C : 0.5% of measured value in °C +1°C	T< 200°C ; ±1.5% of measured value or 3°C T≥ 200°C ; ±1.0% of measured value or 4°C	T< 500°C ; ±1.5% of measured value T≥ 500°C ; ±1.0% of measured value	T< 500°C ; ±1.5% of measured value T≥ 500°C ; ±1.0% of measured value
0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.3% of reading in °C +1°C	0.3% of reading in °C +1°C	0.3% of reading in °C +1°C
4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V
USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)
Laser Pilot light or Through the lens sighting	Laser Pilot light or Through the lens sighting	Laser Pilot light or Through the lens sighting	Laser Pilot light or Through the lens sighting	Laser pilot light	Laser pilot Light	Laser pilot Light
0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)	0°C - 70°C 0°C - 200°C (With water cooling jacket)
24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt
IP65	IP65	IP65	IP65	IP65	IP65	IP65
-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C
Dia = Ø49.5mm; L = 118mm W = 0.6kg	Dia = Ø49.5mm; L = 118mm W = 0.6kg	Dia = Ø49.5mm; L = 118mm W = 0.6kg	Dia = Ø49.5mm; L = 118mm W = 0.6kg	Dia = Ø49.5mm; L = 118mm W = 0.6kg	Dia.= Ø49.5mm L= 118mm W= 0.6 kg	Dia.= Ø49.5mm L= 118mm W= 0.6 kg

Fiber Optics   T - Series

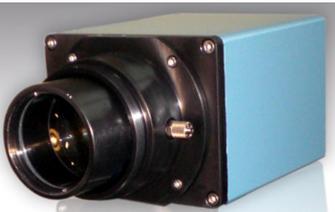| Instruments	A250 FO-PL	A450 FO-PL	A450C FO-PL	T2-250
Features	Digital IR Pyrometer with mono fiber optic cable, Laser Pilot light, Useful in high ambient temperature conditions with Digital interface, Analog output & USB 2.0 output.	Digital IR Pyrometer with mono fiber optic cable, Laser Pilot light, Useful in high ambient temperature conditions with Digital interface, Analog output & USB 2.0 output.	Digital two color Pyrometer with mono fiber optic cable, Laser Pilot light, Useful in high ambient temperature conditions with Digital interface, Analog output & USB 2.0 output.	Digital IR Pyrometer in two wire technique, Analog output, TTL output, Laser pilot light & USB interface for parameter setting
Temperature Range (Sub Range Adjustable)	250°C - 1300°C 300°C - 1800° C	600°C - 1900°C 750°C - 2500° C	800°C - 2500° C 1000°C - 3200° C	300° - 1300°C 500° - 1500°C
Emissivity	0.1........1.0 adjustable	0.1........1.0 adjustable	0.75......1.25 Slope adjustable	0.1......1.0 adjustable
Spectral Range	1.6µm	1.0 µm	0.7......1.15µm	1.6µm
Photodetector Type	InGaAs	Si	Si/Si	InGaAs
Distance to Spot Size Ratio	Min spot 1mm	Min spot 1mm	Min spot 1mm	100:1 200:1
Response Time	2 msec. adjustable upto 10 sec	2 msec adjustable upto 10 sec	20 msec. adjustable upto 10 sec	50 msec. adjustable upto 10 sec
Accuracy	±0.3% of the measured value +1°C	±0.3% of the measured value +1°C	±0.5% of measured value +1°C	±0.8% of measured value +1°C
Repeatability	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.1% of reading in °C +1°C	0.4% of the measured value
Analog Output (User selectable)	4-20 mA, 0-20 mA, 0-10V	4-20 mA, 0-20 mA, 0-10V	4-20 mA, 0-20 mA, 0-10V	4-20 mA
Digital Output	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	USB 2.0 RS-232 / RS - 485 (User Selectable)	TTL output
Sighting	Laser pilot light	Laser pilot light	Laser pilot light	Laser pilot light
Operating Temperature Range	Pyrometer 0°C - 70°C Optical Head & Fiber Optic Cable upto 250°C	Pyrometer 0°C - 70°C Optical Head & Fiber Optic Cable upto 250°C	Pyrometer 0°C - 70°C Optical Head & Fiber Optic Cable upto 250°C	0°C - 70°C
Power Supply	24V DC	24V DC	24V DC	12V - 25V DC stabilized
Power Consumption	Max. 2.5 watt	Max. 2.5 watt	Max. 2.5 watt	For laser targeting max 0.75 watt For device max 0.625 watt
Protection Class	IP65	IP65	IP65	IP65
Storage Temperature	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C
Dimensions(mm) & Weight	Dia. = Ø49.5mm L = 118mm W = 0.6kg	Dia. = Ø49.5mm L = 118mm W = 0.6kg	Dia. = Ø49.5mm L = 118mm W = 0.6kg	Dia. = Ø25mm L = 140mm W = 0.250 kg

T - Series		Glass Industry	A+ - Series	

| T2-450	TI8	450 G-2	A250+	A450+
Digital IR Pyrometer in two wire technique, Analog output, TTL output, Laser pilot light & USB interface for parameter setting	Digital IR Pyrometer with Analog output, TTL output & USB interface for parameter setting	Special 2 wire pyrometer for glass industry with Digital output & heavy duty fibre optic cable useful in high ambient temperature conditions	Focusable Digital IR Pyrometer with Analog output, Digital interface, Laser targeting, Through the lens view finder, Video module, Parameterizing Keys & LCD Display	Focusable Digital IR Pyrometer with analog output and digital interface, Laser targeting, View finder, Video module, Parameterizing keys & LCD display
600°C - 1600°C 700°C - 2100°C	0°C - 500°C	600°C - 1800° C	300°C - 1300°C 350°C - 1800°C 450°C - 2500°C	600°C - 1900°C 700°C - 2500°C
0.1......1.0 adjustable	0.1....1.2 adjustable	0.05........1.0 adjustable via DIP switch	0.1........1.0 adjustable	0.1........1.0 adjustable
1.0 µm	8.....14 µm	1.0 µm	1.6 µm	1.0 µm
Si	Thermopile	Si	InGaAs	Si
100:1 200:1	15:1	100 : 1 Min. spot size 16mm	Focusable	Focusable
50 msec adjustable upto 10 sec	100 msec adjustable upto 10 sec	250 msec adjustable upto 10 sec	2 msec adjustable upto 10 sec	2 msec adjustable upto 10 sec
±0.8% of measured value +1°C	±2% of measured value or ±3°C whichever is greater	±0.3% of the measured value or ±3°C whichever is greater	±0.3% of the measured value +1°C	±0.3% of the measured value +1°C
±0.4% of measured value	±0.5% of measured value or ±1°C whichever is greater	±0.2% of reading in °C +1°C	±0.1% of reading in °C +1°C	±0.1% of reading in °C +1°C
4-20 mA	0 - 5V, 0 - 20mA, 4 - 20mA, J type or K type T/C	4......20mA	4 - 20 mA, 0 - 20 mA, 0 - 10V	4 - 20 mA, 0 - 20 mA, 0 - 10V
TTL output	TTL output	USB 2.0	RS-232 /RS-485 (User Selectable)	RS-232 /RS-485 (User Selectable)
Laser pilot light	N/A	N/A	Laser Pilot light, Through the lens sighting, Video module (optional)	Laser Pilot light, Through the lens sighting, Video module (optional)
0 - 70°C	0 - 70°C	Pyrometer 0°C - 70°C Optical head & Fiber optic max 250°C	0 to 70°C	0 to 70°C,
12V - 25V DC stabilized	24V DC, I<50mA	24V DC	24V DC	24V DC
For laser targeting max 0.75 watt For device max 0.625 watt	Max 1.2 watt	Max 0.5 watt	Max 5.0 watt	Max 5.0 watt
IP65	IP65	IP65	Ip65	IP65
-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20°C to +70°C
Dia. = Ø25mm L = 140mm W = 0.250 kg	Dia. = Ø25mm L = 103 mm W = 0.200 kg	112.5 x 82.5 x 33.0 (L x W x D)	137 x 60 82 (L x W x H) Weight = 0.64kg	139 x 112 x 90 (L x W x H) Weight = 1.5kg

Special Aluminum / Non-Ferrous Pyrometers

Instrument	AST A4-S-IN	AST A4-S-EX	AST A4-IN	AST A4-EX
Applications	Molten Metal, Extruded profiles,Rolled aluminium surface, Continuous casting, Aluminium Billets, Slabs etc.	Molten Metal, Extruded profiles,Rolled aluminium surface, Continuous casting, Aluminium Billets, Slabs etc.	Molten Metal, Extruded profiles,Rolled aluminium surface, Continuous casting, Aluminium Billets, Slabs etc.	Molten Metal, Extruded profiles,Rolled aluminium surface, Continuous casting, Aluminium Billets, Slabs etc.
Features	Digital and Analog, automatic compensation of emissivity changes, calculates & displays both temperature and target emissivity, Measures, through smoke, dust, water vapor etc.			
Temperature Range	300°C to 670°C	350°C to 850°C	400°C to 1000°C	550°C to 1270°C
Emissivity	0.1 - 1.0			
Default Value	Multiple spectral range			
Response Time	0.1 - 1.0 sec			
Accuracy & Repeatibilty	±1% of measured value (verified in real world application)			
Analog Output	4 - 20mA, 0 - 20 mA , 0 - 10V, K Type T/C			
Digital output	RS - 232, RS - 422, USB, Bluetooth			
Digital Display	P110			
Storage temperature	- 20°C + 70°C			
Sighting	Integrated Laser Pilot Light			
Operating temperature range	0°C - +50°C			
Power	24 V DC			
Humidity	Unlimited for the sensor-head			

MoMAS

MoMAS is a system for optimizing the operation of extruders for aluminum with the goal of achieving high productivity and enhance product quality. Basis for the mastering of the thermal processes underlaying the extrusion process. In particular MoMAS consist of measurement and control sub-systems which serve to achieve tight control of crucial variables such as extrusion rate and exit temperature. MoMAS provides operators and managers of extrusion plant with a flexible and effective tool which can be employed to achieve various optimization and automation goals. Thereby the operation can himself select the degree of autonomy with which MoMAS operates. Most importantly, he can operate the extruder manually and still exploit the information of process variable acquired and supplied MoMAS.

This provision for introducing the automation in step alleviates its application and makes it easy acceptable on the part of operating personnel.

MoMAS controls the exit temperature by suitably varying the extrusion rate automatically. It can be employed to achieve a reduction in the extrusion time per billet by employing exit temperature control in conjunction with a successive lowering of the furnace temperature. In case controlled tapered heating is possible, MoMAS can be employed to obtain constant exit temperature with control ram velocity.
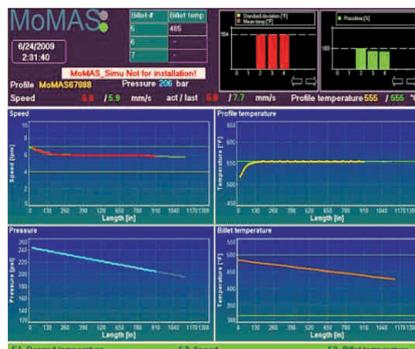
PS 3000 Scanning System

Features:
- Plug & Play, Simple to install.
- Fully automatic tracking.
- Manual option of camera aiming.
- Allows for continuous reliable.
- Temperature Measurement.
- Tracking of individual profile temperatures in Multi Cavity Die.

Selection of scanning modes:
- Hottest point.
- Smooth point.
- Program points (pendulum mode).
- Continues point (pendulum mode).

Adjustable scanning rate upto ±25°
Adjustable scanning step from 0.10° to 5°
Adjustable scanning time
Minimum working distance 1 meter
Maximum working distance target size dependence

Metal Processing Application:
Profile, Billet, Strip and Bar.

Black Body

Device Type	Calsys500	Calsys1200	Calsys1500	Calsys1700
Temperature Range	50°C to 500°C	300°C to 1200°C	500°C to 1500°C	500°C to 1700°C
Stability	± 1.0°C at 500°C	± 0.5°C at 1200°C	± 1.0°C at 1500°C	± 2.0°C at 1700°C
Time to Reach Max Temp.	45 Mins	1.5 Hrs.	1.5 Hrs.	3 Hrs.
Controlling Sensor	T/C "N" Type	Precision PT/RH-PTT/C	PT-RH/PTT/C	Precision PT/RH-PTT/C
Emissivity	0.95 ± 0.01	0.99 ± 0.01	0.99 ± 0.01	0.97 ± 0.01
Temperature Controller	Digital self tuned PID controller with automatic super fine adjustment			
Computer Interface	RS - 232			
Temperature Resolution	0.1°C	1.0°C	1.0°C	0.1°C
Cavity	-	Silicon Carbide	Silicon Carbide	End Closed Tube
Aperture Dia	100 mm	40 mm	40 mm	29 mm
Power Supply	230V AC 50/60 Hz			
Power Consumption	1.0 KW	2.5 KW	3.0 KW	3.0 KW
Dimension (H x W x D) mm Weight	320 x 355 x 255 mm 10 Kg	500 x 400 x 490 mm 50 Kg	570 x 450 x 520 mm 55 Kg	640 x 500 x 550 mm 80 Kg

AST PS250 Scanner

- ❖ **Scan amplitude** : 0° to 12° adjustable via pot (12° corresponds to a scanning amplitude of 21% of measuring distance)
- ❖ **Scan frequency** : 1 ... 5 Hz adjustable via pot
- ❖ **Internal Optical path** : 70 mm from pyrometer lens to front window
- ❖ **Operation indicator** : Green LED, flashing with scan frequency
- ❖ **Power supply** : 24 V DC
- ❖ **Power consumption** : 3 VA
- ❖ **Operating temp. range** : 0 ... 70 °C
- ❖ **Storage temp. range** : -20 ... +70 °C
- ❖ **Weight** : 0.55 kg, 0.7 kg (with Air Purge Unit)
- ❖ **Safety System** : IP65

Accessories

Temperature Indicator with Parameterizer

Temperature Indicator

Power Supply Unit

Digital Converter
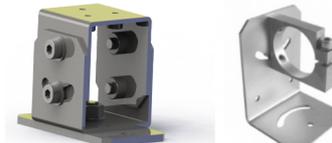
Fiber Optic Cable

Air Purge Unit

Water Cooling Jacket

Adjustable Mounting Stand
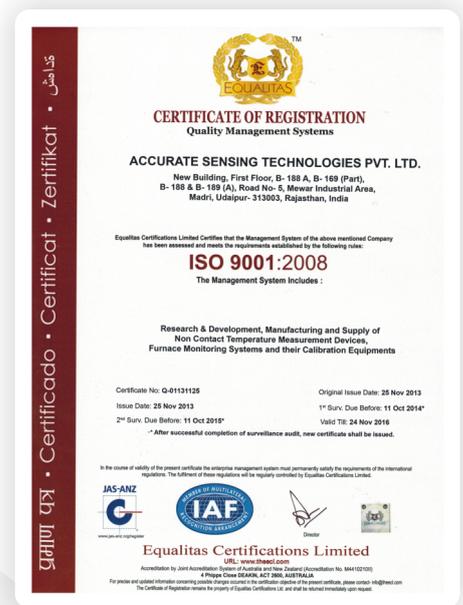
Connection Cables

AST - Accurate Sensors Technologies

Accurate Sensors Technologies (earlier "3T" True Temperature Technologies) established in 1994 focusing on the development and commercialization of non-contact temperature measurement technologies.

Based on these technologies, AST/3T has bought to the market a line of pyrometers for the remote measurement of target temperatures using no physical contact. AST/3T pyrometers use a totally new approach for remote temperature measurement achieving high accuracy.

The following products are available from AST/3T

- ❖ Single color pyrometer
- ❖ Ratio (2 color) pyrometer
- ❖ Fiber optics pyrometer
- ❖ Multi wavelength pyrometer specially for Aluminum & other Non ferrous application
- ❖ Black Body calibration sources
- ❖ Special system for automatic Isothermal Extrusion (MoMAS)
- ❖ Parameter setting Devices

AST
Accurate Sensors Technologies

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