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








E - Series

Instruments	AST E250 PL	AST E450 PL	AST E450C PL	AST EL50 & EL50H
Features	Digital pyrometer with extended Sensor head. Analog and digital output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & keypad for parameterization	Digital pyrometer with extended Sensor head. Analog and digital output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & keypad for parameterization	Digital two color pyrometer with extended Sensor head. Analog and digital output, USB 2.0 Output, Inbuilt LCD, Laser Targeting & keypad for parameterization	Digital pyrometer with extended Sensor head. Analog and digital output, USB 2.0, Inbuilt LCD & keypad for parameteri zation
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 adjustable	0.1....1 adjustable	0.75....1.25 Slop adjustable	0.1....1 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	10 msec. adjustable upto 10s	10 msec. adjustable upto 10s	20 msec. adjustable upto10s	60 msec. adjustable upto 10s
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	±1.5% of temperature reading or 2°C
Analog Output (User selectable)	4 - 20 mA or 0 - 20 mA or 0 - 10V	4 - 20 mA or 0 - 20 mA or 0 - 10V	4 - 20 mA or 0 - 20 mA or 0 - 10 V	4 - 20 mA, 0 - 20mA, 0 - 10V, J & K type T/C (optional)
Digital Output	USB 2.0, RS-485 / RS-232 (Optional)	USB 2.0, RS-485 / RS-232 (Optional)	USB 2.0, RS-485 / RS-232 (Optional)	USB 2.0, RS-485 / RS-232 (Optional)
Sighting	Laser	Laser	Laser	N/A
Operating Temperature Range	Electronic and sensor head 0....70°C	Electronic and optical head 0....70°C	Electronic and optical head 0....70°C	Electronics 0....70°C Sensor Head 0...70°C 0....180°C (EL50H)
Power	24V DC	24V DC	24V DC	24V DC
Protection Class	IP65	IP65	IP65	IP65
Storage Temperature	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C -20 to 180°C (EL50H)
Dimensions & Weight	112.50 x 82.50 x 33 (l x w x h) Weight = 600g	112.50 x 82.50 x 33 (l x w x h) Weight = 600g	112.50 x 82.50 x 33 (l x w x h) Weight = 600g	112.50 x 82.50 x 33 (l x w x h) Weight = 600g

A - Series

AL - Series

AST A250	AST A450	AST A450C	AST A150	AST AL30	AST AL514	AST AL390
Digital pyrometer with analog output & digital interface, USB output & laser targeting or view finder	Digital pyrometer with analog output & digital interface, USB output & laser targeting or view finder	Digital two color pyrometer with analog output & digital interface, USB output& laser targeting or view finder	Digital pyrometer with analog output & digital interface, USB output & laser targeting for metallic surface at low temperature	Digital pyrometer with analog output & Digital Interface, USB output & laser targeting	Digital pyrometer with analog output & Digital Interface, USB output & laser targeting	Digital pyrometer with analog output & Digital Interface, USB output & laser targeting
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	100°C - 700° C	0°C - 1000° C 75°C - 1000°C	300 - 1400°C 400 - 2500°C	300°C - 1400°C
0.1...1 adjustable	0.1...1 adjustable	0.75...1.25 Slop adjustable	0.1...1 adjustable	0.1...1 adjustable	0.2 … 1 adjustable	0.1 … 1 adjustable
1.6µm	1µm	0.7.....1.15µm	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 : 1 200 : 1	100 : 1 200 : 1	50 : 1	50 : 1 100 : 1	50 : 1	50 : 1
2 msec. adjustable upto 10s	2 msec. adjustable upto 10s	20 msec. adjustable upto 10s	2 msec. adjustable upto 10s	60 msec. adjustable upto 10s	60 msec. adjustable upto 10s	60 msec. adjustable upto 10s
±0.3% of the measured value +1°C	±0.3% of the measured value +1°C	±0.5% of the measured value +1°C	Up to 400°C: 3°C above 400°C: 0.5% of measured value in °C + 1°C	T = 0 to 200°C ±2% of reading in °C or 3 °C, T = 201°C to 1000°C ±1.5% of reading in °C or 4°C	< 500°C accuracy is 1.5% of temperature reading, ≥ 500°C accuracy is 1% of temperature reading	1.5 % of Temperature reading
4 - 20 mA or 0 - 20 mA or 0 - 10V	4 - 20 mA or 0 - 20 mA or 0 - 10V	4 - 20mA or 0 - 20 mA or 0-10V	4 - 20 mA or 0 - 20 mA or 0 - 10V	4.....20mA or 0-20mA or 0-10V	4-20 mA or 0-20 mA or 0-10V	4-20 mA or 0-20 mA or 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 485 / RS 232 (User Selectable)	USB 2.0, RS 485 / RS 232 (User Selectable)	USB 2.0, RS 485 / RS 232 (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	Laser pilot light	Laser pilot Light	Laser pilot Light
0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C	0 to 70°C
24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
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
Ø49.5mm; L = 118mm & W = 0.6kg	Ø49.5mm; L = 118mm & W = 0.6kg	Ø49.5mm; L = 118mm & W = 0.6kg	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	AST A250 FO-PL	AST A450 FO-PL	AST A450C FO-PL	AST T2-250
Features	Digital Pyrometer with mono fiber optic cable. Laser Pilot light. Usable in high ambient temperature. Digital & analog output, USB output.	Digital Pyrometer with mono fiber optic cable. Laser Pilot light. Usable in high ambient temperature. Digital & analog output, USB output.	Digital two color Pyrometer with mono fiber optic cable. Laser Pilot light. Usable in high ambient temperature. Digital & analog output, USB output.	Digital Pyrometer in two wire technique, TTL output & USB dongle for parameter setting & laser pilot light
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	350° - 1200°C 500° - 1500°C
Emissivity	0.1.....1 adjustable	0.1.....1 adjustable	0.75.....1.25 Slop adjustable	0.1.....1.0 adjustable
Spectral Range	1.6µm	1µm	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 10s	2 msec. adjustable upto 10s	20 msec. adjustable upto 10s	50 msec. adjustable upto 10s
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
Analog Output (User selectable)	4-20 mA or 0-20 mA or 0-10V	4-20 mA or 0-20 mA or 0-10V	4-20 mA or 0-20 mA or 0-10V	4-20 mA
Digital Output	USB 2.0, RS 485 / RS 232 (User Selectable)	USB 2.0, RS 485 / RS 232 (User Selectable)	USB 2.0, RS 485 / RS 232 (User Selectable)	TTL output
Sighting	Laser pilot light	Laser pilot light	Laser pilot light	Laser pilot light
Operating Temperature Range	Max. 250°C at fiber optic cable & optical head, 0 to 70°C at pyrometer end	Max. 250°C at fiber optic cable & optical head, 0 to 70°C at pyrometer end	Max. 250°C at fiber optic cable & optical head, 0 to 70°C at pyrometer end	0 - 70°C
Power	24V DC	24V DC	24V DC	24V DC
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 & 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

AST T2-450
Digital Pyrometer in two wire technique, TTL output & USB dongle for parameter setting & laser pilot light
600° - 1600°C 700° - 2100°C
0.1.....1.0 adjustable
1.0 µm
Si
100:1 200:1
50 msec. adjustable upto 10s
±0.8% of measured value +1°C
4-20 mA
TTL output
Laser pilot light
0 - 70°C
24V DC
IP65
-20 to 70°C
Dia. = Ø25mm L = 140mm & W = 0.250 kg

Glass Industry

AST TL8
Digital Pyrometer with TTL output & USB dongle for parameter setting
0° - 500°C
0.10....1.20 adjustable
8.....14.0 µm
Thermopile
15:01
100msec. adjustable upto 10s
±2% of temp. reading or ±3°C
0 - 5 V or T/C type J or K 4...20mA (Optional)
TTL output
N/A
0 - 70°C
12V to 25V DC, I<80mA
IP65
-20 to 70°C
Dia. = Ø25mm L = 103 mm & W = 0.200 kg

AST 450 G-2
Special 2 wire pyrometer for glass industry fast digital and analog interface with heavy duty optic cable usable in high ambient temperature without cooling
600°C - 1800° C
0.05.....1 adjustable
1µm
Si
100 : 1 (approx.),Min. spot size 10mm
250 msec. adjustable upto 10s
±0.3% of the measured value or 3°C which is geater
4.....20mA
USB 2.0
N/A
Max. 250°C at fiber optic cable & optical head, 0 to 70°C at pyrometer end
24V DC
IP65
-20 to 70°C
115 x 65 x 55mm (L x W x D)

A+ - Series

AST A250+
Focusable Digital pyrometer with analog output and digital interface.Laser targeting, View finder or video module, Parameterizing keys & LCD display
350°C - 1300°C 350°C - 1800°C 450° - 2500°C
0.1.....1 adjustable
1.6µm
InGaAs
Focusable
2 msec. adjustable upto 10s
±0.3% of the measured value +1°C
4 - 20 mA or 0 - 20 mA or 0 - 10V
USB 2.0, RS 485 / RS 232 (User Selectable)
Laser Pilot light or through the lens sighting Video (optional)
0 to 70°C
24V DC
IP65
-20 to 70°C
137 x 60 82 (L x W x H) Weight = 0.64kg

AST A450+
Focusable Digital pyrometer with analog output and digital interface.Laser targeting, View finder or video module, Parameterizing keys & LCD display
750°C - 2500° C
0.1.....1 adjustable
1µm
Si
Focusable
2 msec. adjustable upto 10s
±0.3% of the measured value +1°C
4 - 20 mA or 0 - 20 mA or 0 - 10V
USB 2.0, RS 485 / RS 232 (User Selectable)
Laser Pilot light or through the lens sighting Video (optional
0 to 70°C,
24V DC
IP65
-20°C to +70°C
137 x 60 82 (L x W x H) Weight = 0.64kg

Special Aluminum / Non-Ferrous Pyrometers

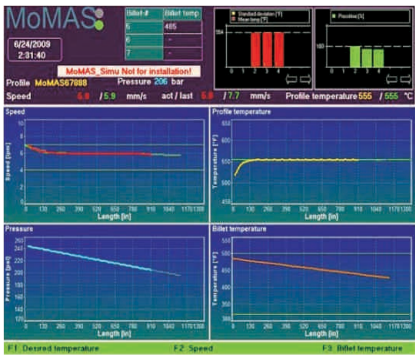
Instrument	AB3000	AE3000	AC3000	AM3000	P3000	FR3000
Application	**Aluminium billet**	**Extrusion, Press exit**	**Extrusion, cooling table, Hot rolling**	**Molten Aluminum**	**Multi purpose, Aluminum forging, Aluminum / Copper Continuous casting**	**Aluminum forging, continuous casting, rolling**
Features	Digital and analog ,automatic compensation of emissivity changes calculate & display both temperature and target emissivity.Measures, through smoke, dust, water vapor etc					
Temperature Range	300°C to 600°C	350°C to 650°C	200°C to 600°C	450°C to 900°C	300°C to 1000°C	100°C to 600°C
Emissivity	Special algorithm					
Spectral Range	Multiple spectral range					
Response Time	0.1 to 10sec. adjustable					
Accuracy & Repeatibilty	±1% of measured value (verified in real world application)					
Analog Output	4.....20mA or 0-20mA / 0-10V (optional)					
Serial output	COM1: RS-232; COM2 : RS-422 / RS-485					
2 Alarm Signals	Open drain					
8 Digital Inputs	for PS 3000 Scanner Remote Control					
Sighting	Continuous laser					
Operating temperature range	0°C…....50°C or 0°C.....70°C with air cooling jacket					
Power	24 V DC					
Protection class	IP65					

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.

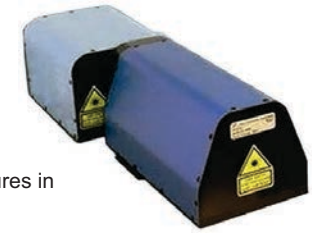
MoMAS controls the exit temperature by suitably varying the extrusion rate automatically. It can be employed to achieve a reduction in the extrusion time per billet by employing exit temperature control in conjunction with a successive lowering of the furnace temperature. In case controlled tapered heating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



PS 3000 Scanning System

Features:

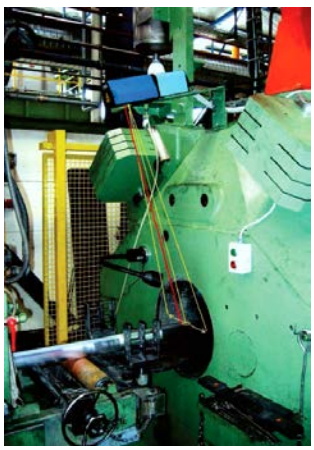
- Plug & Play, Simple to install.
- Fully automatic tracking.
- Manual option of camera aiming.
- Allows for continuous reliable.
- Temperature Measurement.
- Tracking of individual profile temperatures in Multi Cavity Die.



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	± 0.5°C	± 1.0°C	± 1.5°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 PID controller with automatic super fine adjustable			
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	46 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)	320 x 355 x 255 mm	500 x 400 x 490 mm	570 x 450 x 520 mm	640 x 500 x 550 mm

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

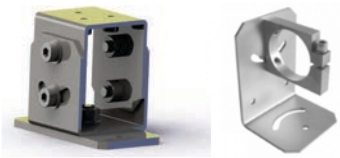
Digital Converter

Fiber Optic Cable

Air Purge Unit

Water Cooling Jacket

Adjustable Mounting Stand



Connection Cables

AST - Accurate Sensors Technologies

Accurate Sensors Technologies along with 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 Israel