

## € Furnace Monitoring Thermal Camera System

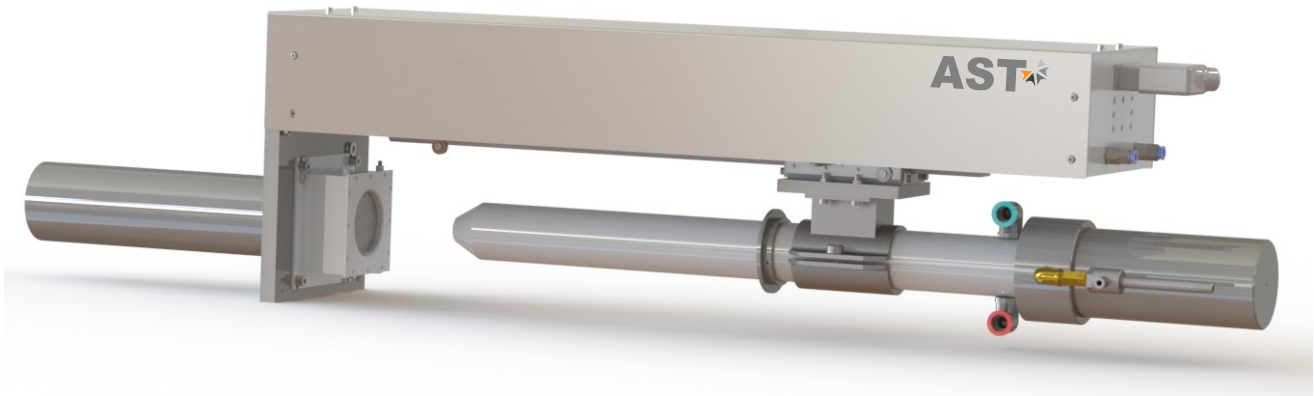
## TE SERIES

High Temperature Furnace monitoring thermal camera system **AST TE-750, TE-750/OV, TE-1100 & TE-1100/OV** provides wide angle view of burner flames, material alignment & other process conditions with temperature in furnace, kiln, boiler, cooler, reheating furnace or other combustion chamber. The **AST TE Series** is mounted on wall of the furnace.

The system has auto-retraction & auto insertion which is regulated by control cabinet with PCB & pneumatic control system.

It uses special Thermal camera with high precision pin hole lens which is mounted inside stainless steel probe. The probe is equipped with vortex air & water cooling system that enables the system to work in high temperature environment & also continuous supply of air keeps the lens clean.

The camera is inserted through a shutter which opens with the force of camera probe & shuts the furnace opening when the probe retracts.

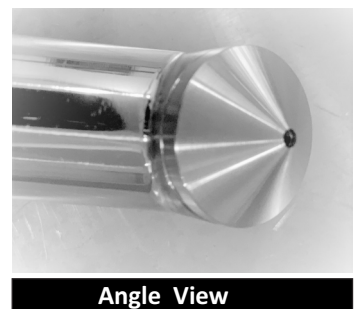
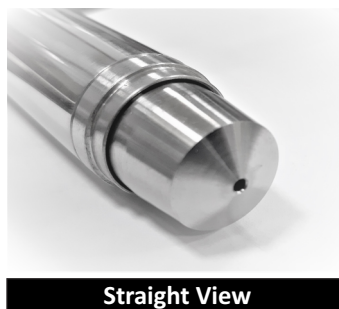


### Features

- Wide measurement range 700 to 1800°C.
- High dynamic CMOS detector with 640 x 480 pixels resolution.
- Fast thermal data acquisition in real time via Gigabit Ethernet.
- Thermal as well as monochrome video display.
- 2 Relay alarm, 4nos 4...20mA analog output for plant DCS.
- OPC connectivity to plant server (Optional).
- Multiple temperature Trending capability, SNAPSHOT, Recording facility and View history.

### Technical Specifications

Pinhole Lens Tube	
Lens Length	820 mm & 1080 mm
Angle of View	Straight view 0° Elbow view 60°
Field of View	HxVxD 65°, 56°, 85°
Mount	CS
Focus & Iris	Manual Adjustable



# Technical Specifications

Technical Data	
Environment	Up to 2000°C
Cooling system	Vortex air cooling/water cooling
Transmission device	Pneumatic air cylinder
Power supply	220VAC 50Hz

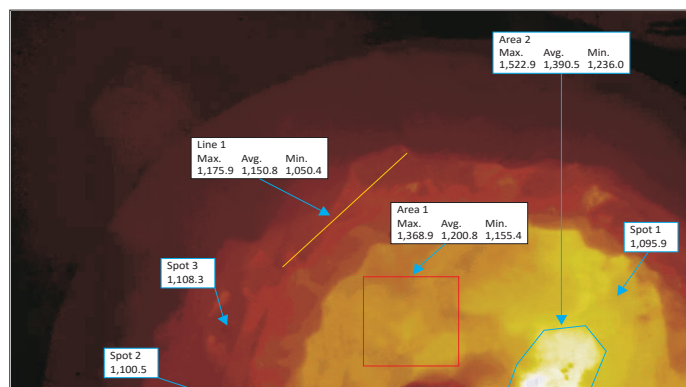
High Temperature Thermal Camera System	
Model	
TE-750	Straight View Thermal Camera
TE-750/OV	Elbow View Thermal Camera
TE-1100	Straight View Thermal Camera
TE-1100/OV	Elbow View Thermal Camera

Requirement of Compressed Air	
Pressure	7 ~ 10 Kg/cm <sup>2</sup>
Volume Flow	50 m <sup>3</sup> /h
Temperature	<35°C
Quality	Dust, Oil & Moisture free clean air

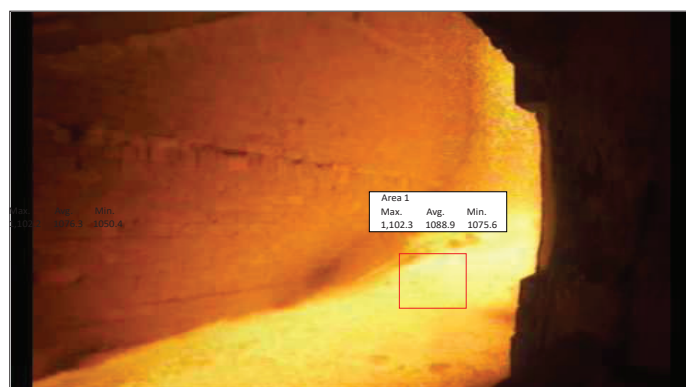
Requirement of Cooling Water	
Inlet pressure	2 ~ 5 Kg/cm <sup>2</sup>
Volume flow	0.2-1 m <sup>3</sup> /h

## Thermal Camera Specifications

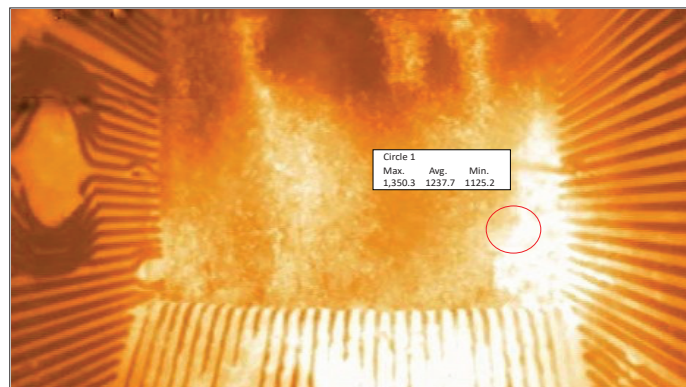
Temperature Range	700 to 1800 deg C
Optical Resolution	640 X 480 Pixels
Frame Rate	25 Hz
Detector	High dynamic CMOS
Spectral Range	0.85 to 1.1 micro meter
Thermal Sensitivity	<1K(700 deg C[<1292 deg F], <2k (1000 deg C)
Video Format for Saving	MPEG-4, AVI
Image Format for Saving	BMP/JPG
Analog Output	4 channel analog current output (4....20mA)
Digital Input/Output	4 active-high, buffered input / 4 open source, Mosfet outputs
Interface	Ethernet/ USB
Protocol	GIGE for ethernet, Proprietary for USB
Shutter	Shutter less
Ambient Temperature	0 - 60°C
Storage Temperature	20 to 70°C
Accuracy	±0.3% of measure value ±1°C



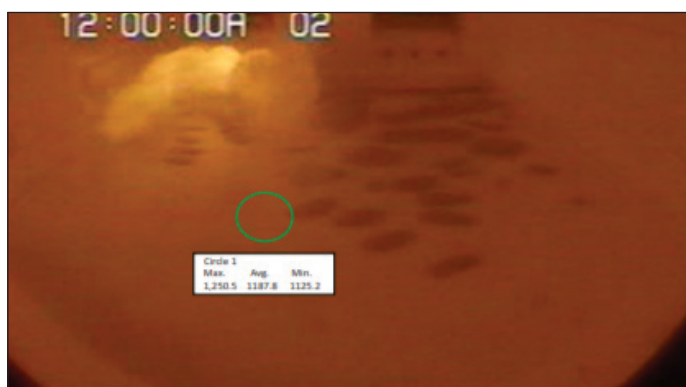
**KILN - THERMAL VIEW CAMERA**



**COOLER - THERMAL VIEW CAMERA**



**BOILER - THERMAL VIEW CAMERA**

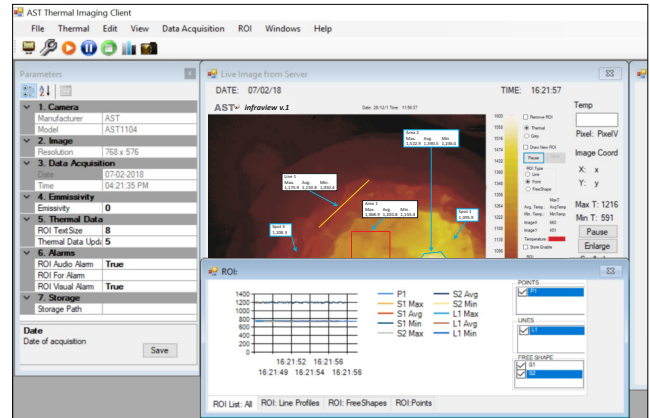
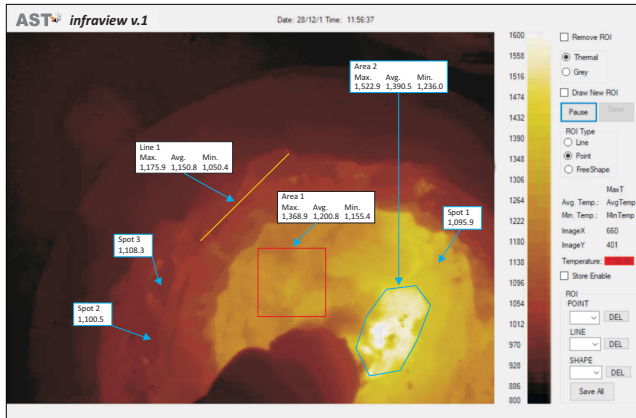


**GLASS-THERMAL VIEW CAMERA**

We measure accurate temperature in extreme conditions

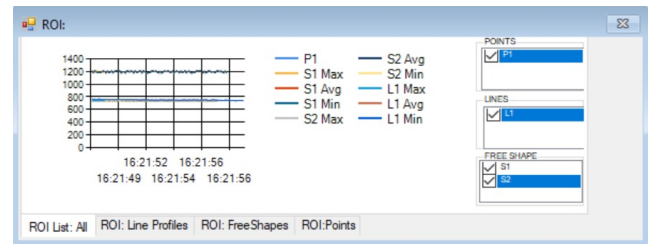
## InfraView (For Thermal View System)

AST INFRAVIEW Software allows you to control the camera and record, view, manipulate and store the captured video / image as well as measured temperature data. This real time software allows simple and fast parameterization for documentation of the temperature data optimizing process control. The modular Windows software INFRAVIEW is customizable as per requirement.



### Special Features

- Configurable ROI's : point, line, free shape
- Histogram and isotherm visualization
- Hot and cold spot detection
- Color pallet scaling
- Trend charts
- Alarm output
- Video and Image export
- Server client configuration



## I/O Module (For Thermal View System)

- Multi Function, Multi-channel module
- Dual ethernet 10/100 ports with built-in switch enables daisy-chain networking
- Four analog output (4-20mA) channels (16 bit DACS) to drive remote instruments, controllers, recorders
- Four discrete Input/Output Channels
- Slim 22.5 mm housing with pluggable terminals
- Din-rail mounting



## Furnace Camera System With Retraction Device

**Pneumatic Retraction Mechanism** : - This includes guide rail, pneumatic rod less cylinder, mounting block. This system inserts / retracts the camera system as per the logic input from the PCB. It also has rugged 10 pin two part connector for connection between control unit and camera system

## CONTROL PANEL SPECIFICATIONS

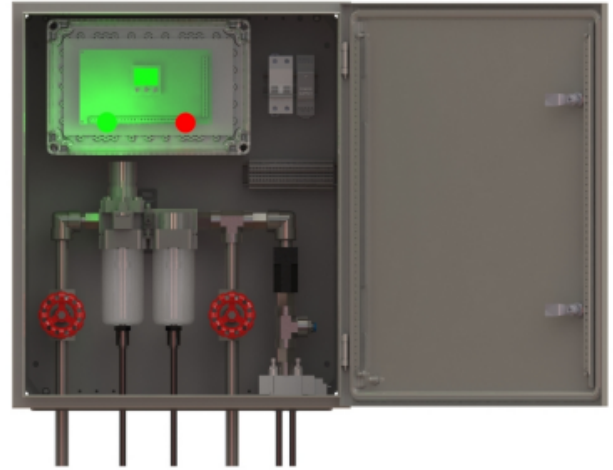
### Components

#### Electronic Components

- PCB
- Display
- Green Push Button
- Red Push Button
- SMPS 24VDC
- Terminal Blocks
- 2 Pole MCB
- Media Converter
- I/O Card
- Gigabit Ethernet Switch
- Temperature Indicator

#### Pneumatic Components

- Air Filter Regulator
- Mist separator
- Digital Pressure Switch
- Speed Controllers
- Solenoid Valve
- Non Return Valve
- Gate Valve



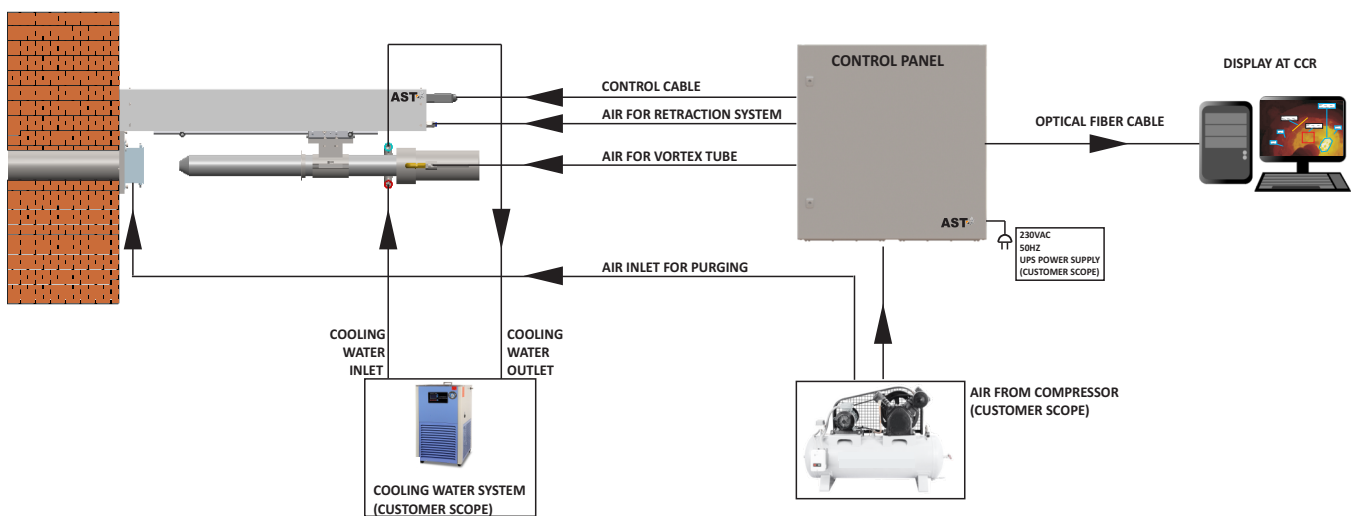
### Safety Logic Lock Points

The auto retraction system will work when any one of the below condition occur

- Temperature Increase
- Water Flow rate Decrease
- Air Pressure Decrease
- Power Failure

**Air Reservoir Tank :** 5 liters Capacity air tank with quick release valve and pressure gauge .

## Schematic Diagram Of Thermal Camera System

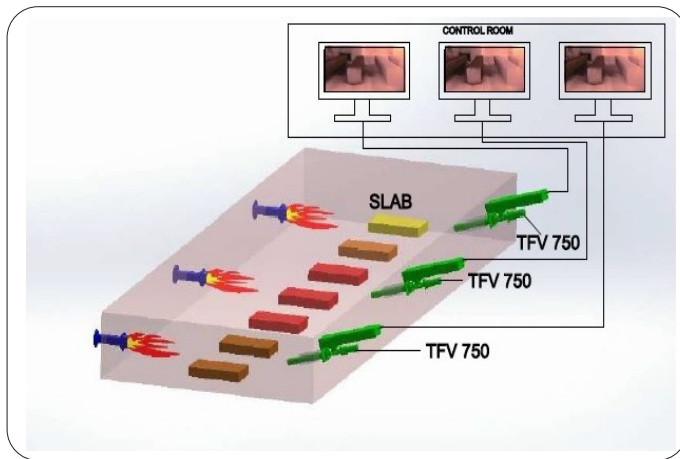


**SCHEMATIC DIAGRAM CAMERA SYSTEM**

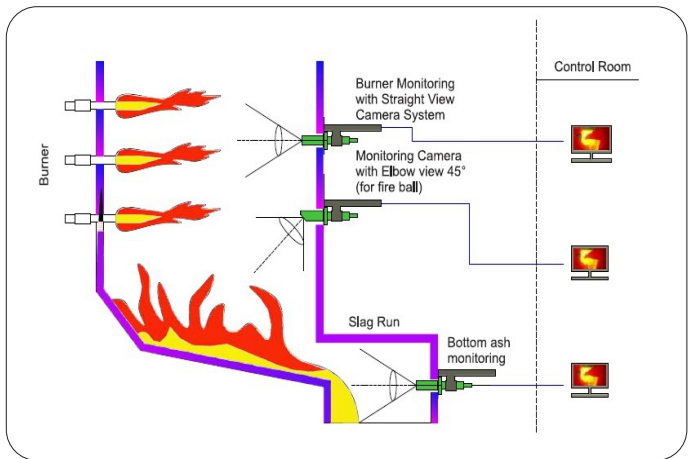
We measure accurate temperature in extreme conditions

- Cement Industries - Kiln & Cooler
- Steel Industries - Reheating Furnace
- Power Industries - Boilers
- Glass Industries - Melting Furnace
- Incinerator
- Waste Heat Treatment Boiler
- Bio Mass Boiler
- Gas and Oil Industries

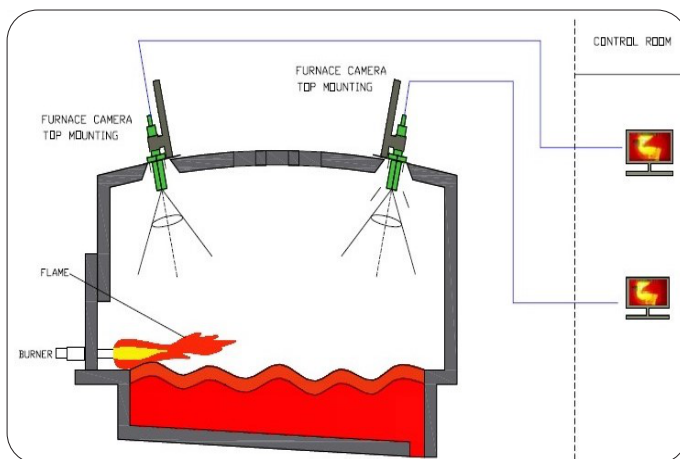
## Steel Industries



## Power Industries



## Glass Industries



## Cement Industries

