

## A SmartClean™ Solution

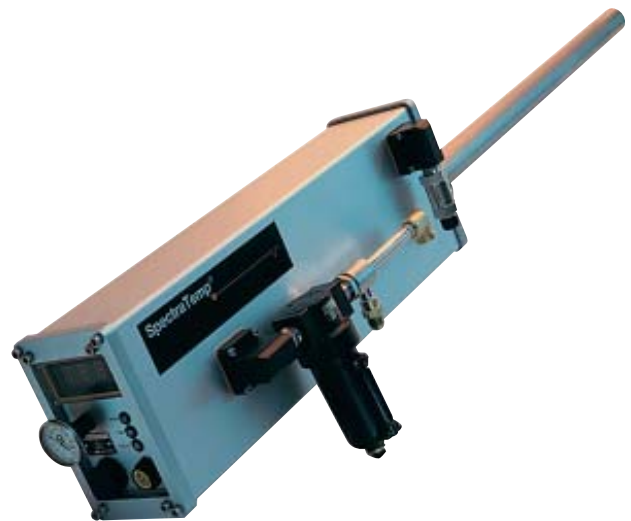
### The Need

SpectraTemp™ is an optical temperature measurement system that provides continuous, accurate, and reliable temperature monitoring of hot, particulate-laden gas streams.

SpectraTemp has most commonly been used for monitoring furnace exit gas temperature in utility and industrial boilers fired by coal, heavy oil, wood, or municipal waste. In these installations, SpectraTemp reduces operating costs by providing

- **better control of furnace wall blowers and soot blowers,**
- **better burner control (tilt and excess air), and**
- **superior steam temperature control.**

SpectraTemp can also be used for improved process optimization in other industrial processes where accurate control of the temperature of particulate laden gas streams is important.



### Applications

- Furnace wall blowers and soot blowers
- Burner tilt and excess air
- Steam temperature
- Urea or ammonia injection
- Furnace gas temperature and boiler performance

### Superior Benefits

- Improved boiler efficiency
- Less boiler tube damage
- More precise steam temperature control
- Lower NOx emissions

### Direct Measurement

SpectraTemp determines particulate temperature by measuring light emissions for the particulates at three different wavelengths. These wavelengths are selected to avoid interferences from cool, heat-transfer surfaces (e.g. boiler walls). SpectraTemp's design gives it a unique capability to determine a line-of-sight average temperature all the way across a particulate-laden stream. Automatic calibration, fault detection, and alarms are incorporated into SpectraTemp; and both analog and digital outputs are supplied for interfacing with plant control systems.

## SPECTRATEMP PERFORMANCE SPECIFICATIONS

**Lowest Measurable Temperature:** 675°F (360°C)

**Highest Measurable Temperature:** 2900°F (1600°C)

### **FEGT Measurement:**

Absolute accuracy:  $\pm 50^{\circ}\text{F}$  ( $\pm 30^{\circ}\text{C}$ )

Relative accuracy:  $\pm 30^{\circ}\text{F}$  ( $\pm 17^{\circ}\text{C}$ )

Resolution: 20°F (11°C) over range

**Measurement Field-of-View:** 6° cone

**Temperature Readout Update Period:** 4 seconds

**Dynamic Response Time:** 90 seconds nominal

### **Relay Contacts:**

High temperature alarm

Low temperature alarm

Annunciator SPDT, 120 VAC, 1A, Resistive load

### **Data Outputs:**

Analog:

Voltage: 0-10 VDC

Current: 4-20 mA

1500V isolation

Serial:

EIA RS232

ASCII characters

4800 Baud

No parity, 8 data bits

1 stop bit

No handshaking

**Power Requirement:** 120 VAC, 60 Hz, 2A

### **Cooling Requirement:**

80 to 100 psig

35 scfm compressed air at less than 130°F (less than 55°C)

### **Operating environment:**

Ambient temperature: -40° to 140°F (-40° to 60°C)

Humidity: Up to 100% RH condensing

**Installation:** On boiler side wall with 2 inch port