GASTEMP® RB

optical pyrometer for recovery boilers

The GASTEMP® RB is specifically precalibrated to the boiler width to measure fireside gas temperature. It provides absolute temperature data rather than just the direction of temperature change.
U.S. Patent 6,733,173 B1

The GASTEMP® RB optical pyrometer from Diamond Electronics uses a patented wavelength to directly measure actual furnace gas temperature — including minute changes in flue gas temperatures. The GASTEMP® RB can be used from boiler start-up to full-load operation.

The GASTEMP® RB measures the average gas temperature within its field-of-view, and is independent of gas and fly ash emissivities, as well as cold walls. That means you'll get tremendous accuracy, even with switching to black liquor, fuel oil or natural gas. Plus, the unique wavelength of the GASTEMP® RB optical pyrometer provides the proper measurement depth across the width of the boiler.

Benefits

Improved efficiency, reduced emissions

Measurement of gas temperatures is a critical parameter in monitoring for carryover "sticky" temperature and increased furnace exit gas temperature caused by an improperly elevated combustion zone. The GASTEMP® RB optical pyrometer allows you to monitor elevated temperatures and recognize sticky temperature zones. It also lets you detect improper air delivery and the early indications of pluggage for real-time control of boiler efficiency.

Suitable for fuel switches

The GASTEMP® RB is the only optical pyrometer that accurately measures black liquor, fuel oil and natural gas firing conditions without recalibration. It remains fully functional throughout transition to (or from) natural gas and oil firing.
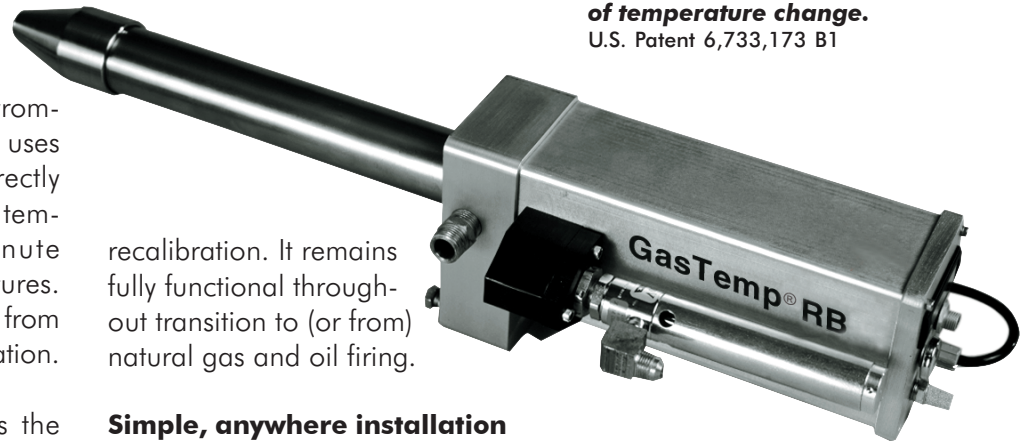
Simple, anywhere installation

The GASTEMP® RB optical pyrometer is shipped as a set of sub-assemblies that are ready for on-site final assembly and start-up. It's easily installed at any location from the furnace exit through the convection pass, including standard furnace observation ports or other wall penetrations.

Dual-use device

Because the GASTEMP® RB optical pyrometer is so reliable, durable and portable, it can be used as a field diagnostic tool or as a permanent installation. For diagnostics, use it as a stand-alone instrument or with data acquisition equipment to record data. Begin immediate data collection usually within 15 to 30 minutes of installation. With the GASTEMP® RB, you can obtain a temperature profile to help you recognize improper air delivery at the tertiary air and upper furnace areas — locations that other infrared pyrometers typically can't see. Or, use as a permanent installation (alone or interfaced with your control system) for automatic monitoring and control.

Features

- Rugged design to withstand the fireside environment.

- Small, lightweight design for easy installation and convenient portability.

- Non-intrusive point-and-shoot.

- Automatic retract and FlexRod™ port rodder options available.

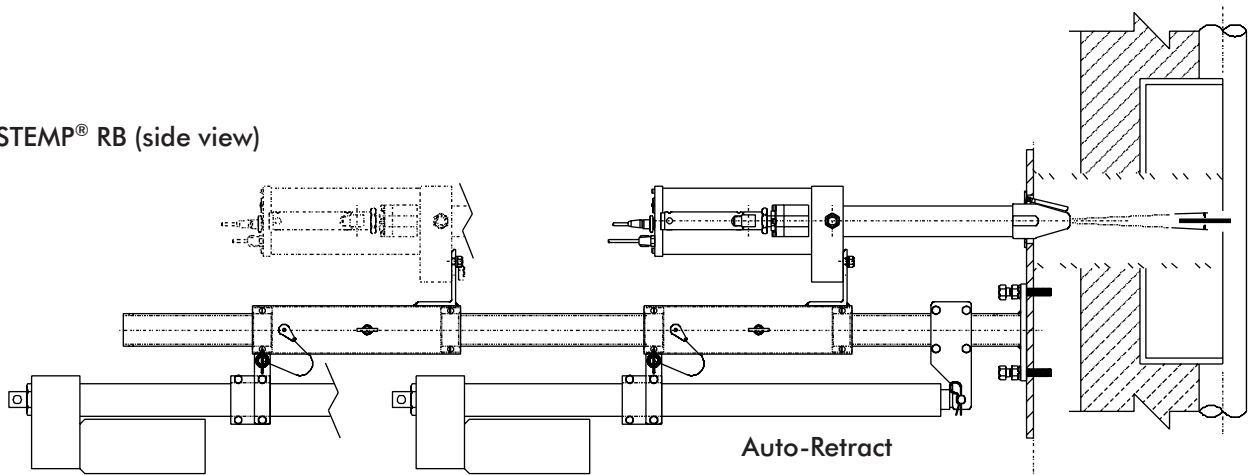- Use in a forced, induced or balanced draft boiler.

Availability

Available as an installed or portable device for all recovery boilers. Directly replaces older, retractable, lance-type temperature probes. The GASTEMP® RB can be incorporated into most boiler-integrated control systems to provide automatic parametric control based on measured fireside gas temperatures. For more information on this device or for other boiler cleaning and performance solutions, contact your Diamond Power International, Inc. representative or call Diamond Electronics at (800) 700-2791.

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Specifications

Accuracy	Absolute: ±50°F (±27.8°C) over full range.
Temperature range	575°F (302°C) to 2800°F (1538°C).
Calibration	Factory set, but field adjustable.
Cooling requirement	60-100 psig, 35 scfm compressed air at <130°F (54°C).
Data outputs	Analog. Self- or loop-powered. 4-20 mA, 1500 volt isolation.
Measurement field-of-view	3° cone.
Operating requirements	Environment: 0-185°F (85°C). Relative humidity: 0 to 90 percent.
Resolution	11°F (5.6°C) over full range.
Temperature display	Four digits, degrees Fahrenheit or degrees Celcius.
Weight	15 lbs (6.8 kg).

GASTEMP® RB (side view)

Auto-Retract

Diamond Electronics is a Diamond Power International, Inc. division.

Diamond Power International, Inc. is the leading name in the design, manufacture and service of ash-handling and boiler-cleaning systems, knowledge-based control systems, and boiler diagnostic, sensor and imaging technology. Diamond Power, headquartered in Lancaster, Ohio, U.S., has more than 80 field sales, service support, distribution, and manufacturing locations worldwide. For more information, visit www.diamondpower.com.

For over a century: *Trusted for experience. Preferred for performance*.

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