



**INDUSTRIAL
BOILERS LTD.**

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**INDUSTRIAL
BOILERS LTD.**

IBL
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- Nairobi - Kenya
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- Toronto - Canada
- Yangon - Myanmar

RADON®

POWERING THE FUTURE

The IBL Group of Companies enjoys a reputation of being leaders in cutting-edge technology, innovation and highly trained and efficient Engineers.

Industrial Boilers Ltd. are pioneers in Fluidised Bed Combustion Technology (FBC Boilers) in India. These FBC boilers are automatic, simple to operate and provide maximum efficiency with minimum fuel consumption. IBL has also developed Brownian Motion Furnace (BMF) Technology for efficient utilisation of Agro and Industrial Waste fuels.

RADON is the latest and most advanced Boiler designed by IBL for absorbing maximum Radiation energy from Combustion.



INDUSTRIAL BOILERS LTD.



Industrial Boilers Ltd. is one of the largest manufacturers of Boilers in India. Today IBL caters to a range of industries in India and globally owing to its rich history, efficiency and research strength.

IBL is one of the Largest exporter of Process Boilers from India. 30 to 40% of IBL Boilers are exported Worldwide. IBL focuses on building great products, innovating rapidly to improve them and keep them both affordable and highly efficient.




IB TURBO PRIVATE LIMITED



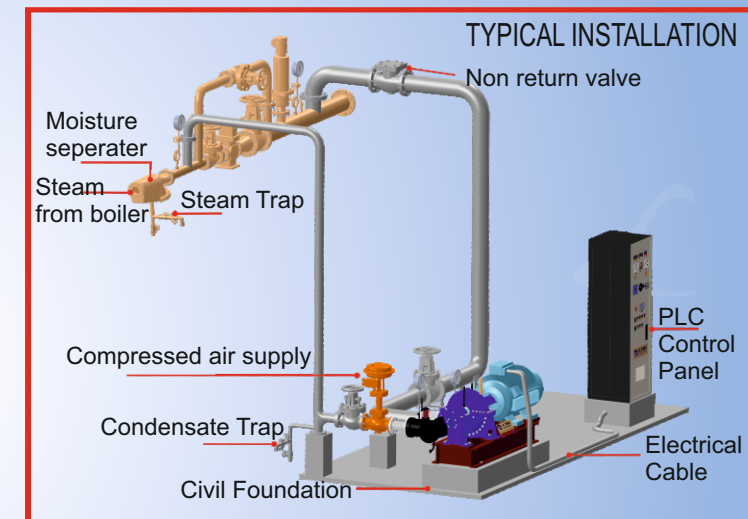
IB Turbo has consistently delivered efficient and reliable steam turbines in India and has supplied over 4200 MW of net electricity generating equipment with more than 650 turbines running in over 25 countries.

IB Turbo has earned a strong reputation of being a trusted and respected name in mini power plants in India. IB Turbo range includes PRT Turbines, Multistage Turbines and Condensing Turbines.



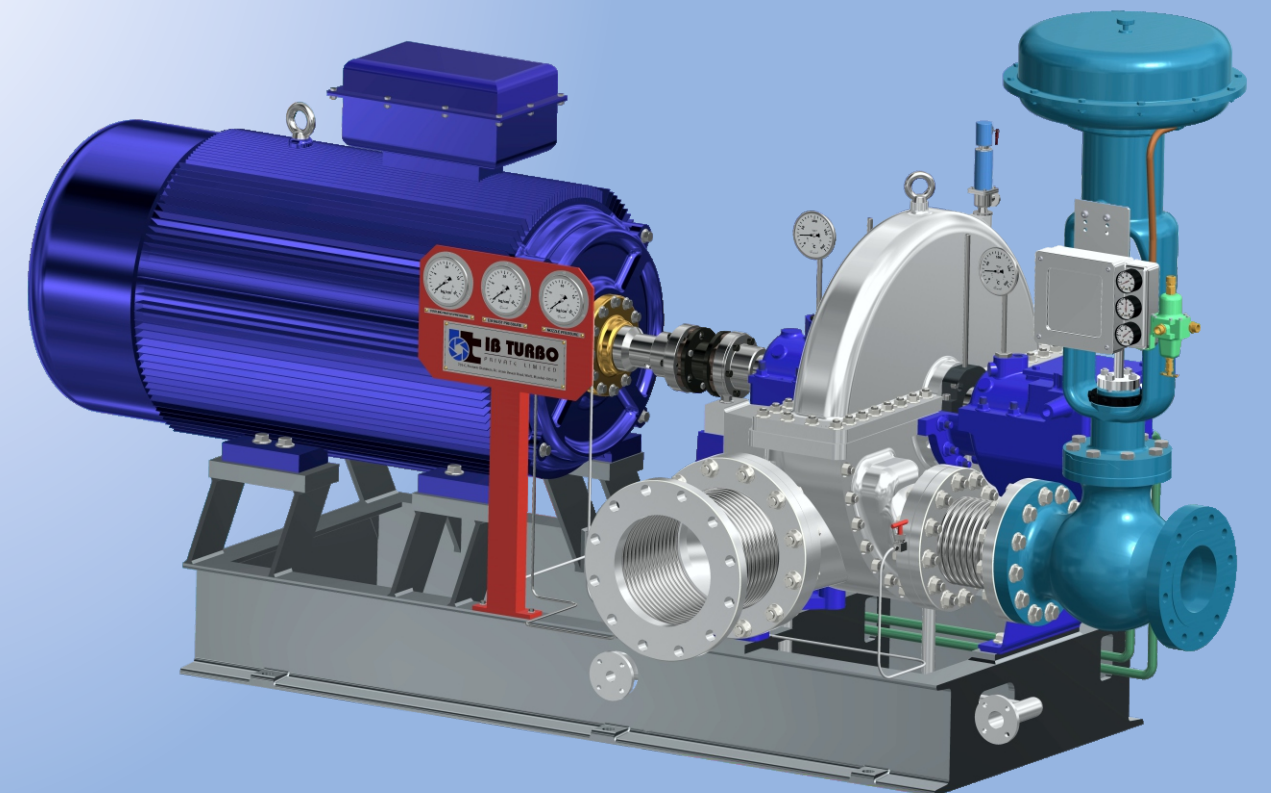
STEAM TURBINES

PRT[®] PRESSURE REDUCING TURBINE



The Pressure Reducing Turbine (PRT[®]) is a special purpose steam turbine to bypass the Pressure Reducing Station (PRS) while simultaneously generating power.

- ✓ India's first Pressure Reducing Turbine (PRT[®]) on Steam from Process Boiler.
- ✓ Fully grid synchronised with PLC control.
- ✓ Maintains constant back pressure for process and generates power accordingly.
- ✓ Electronic setting of Process (Back) Pressure on Control Panel.
- ✓ Designed to generate power with steam flow from 4 ton/hr onwards.
- ✓ Typical steam outlet pressure for process use - 2 to 5 kg/cm²g



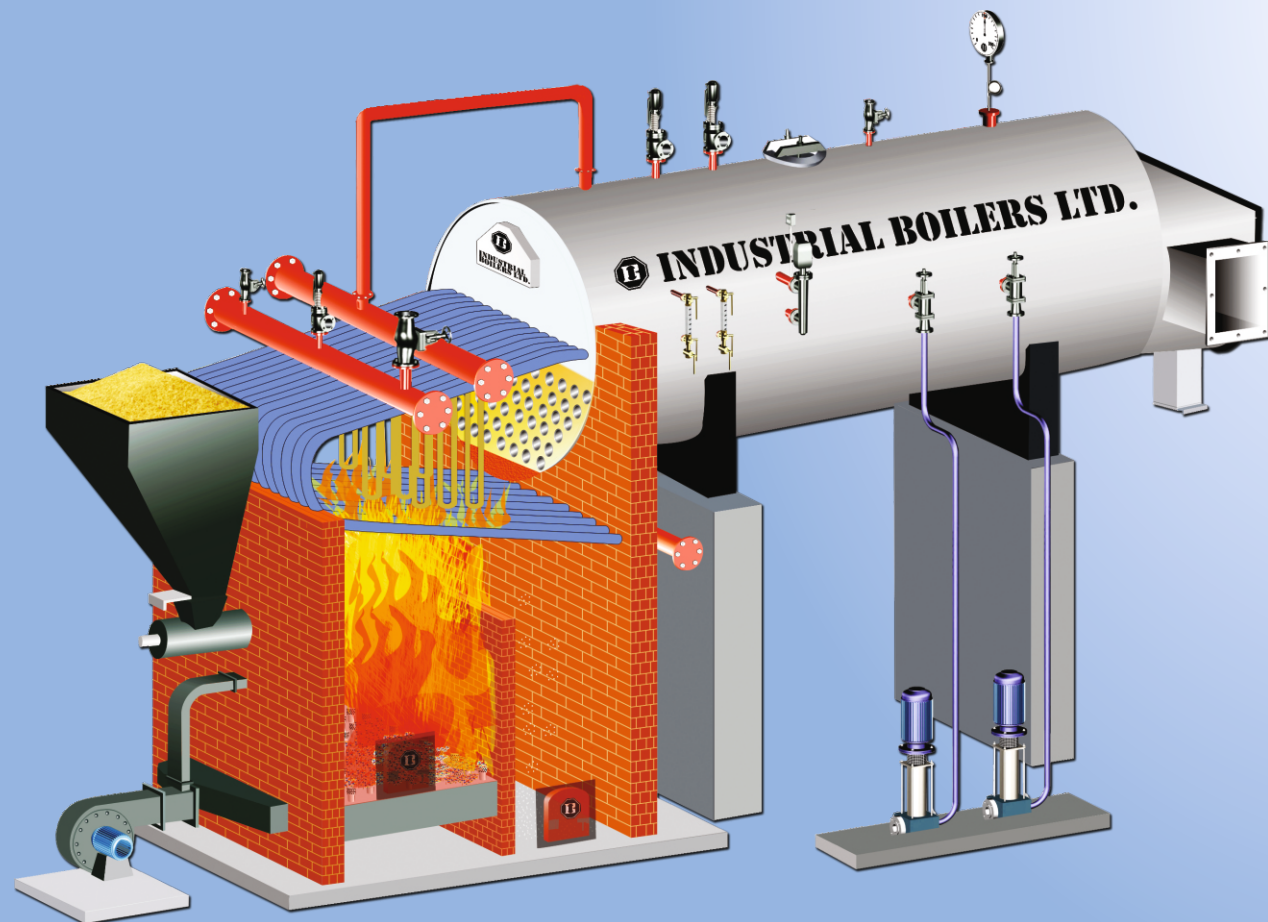


POWER BOILERS

Supergen, the Higher Pressure variant of Radon has an in-built Radiant Super Heater in Pendant Configuration.

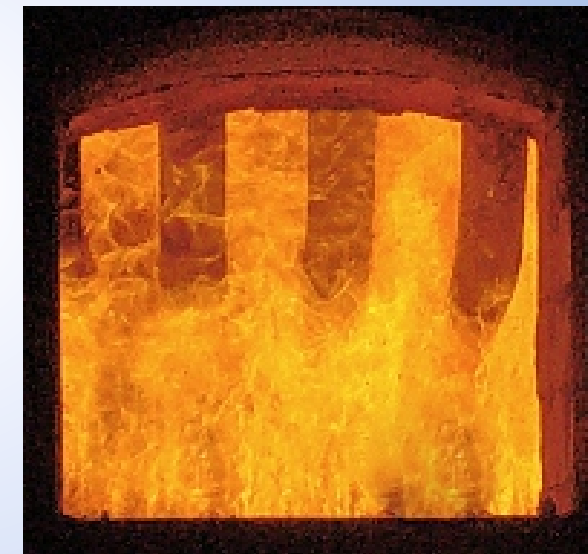
A Special Alloy material is used to provide long life to the Superheater.

Supergen is a High Efficiency Packaged Boiler that can be erected in the shortest possible time and gives excellent performance for small Co-gen systems and complements the BT-4, 6SS and PRT® series of Steam Turbines.



ABOUT RADON

*In an Era where Packaged Boilers are being marketed to 'Save Space and Erection Time', The **Radon** on the other hand has been designed to 'Save Fuel' which is a continuous saver over the Long lifetime of the boiler.*



Thermal radiation is energy transfer by the emission of electromagnetic waves which carry energy away from the emitting object. For ordinary temperatures (less than red hot), the radiation is in the infrared region of the electromagnetic spectrum.

The challenge for Boiler designers worldwide has been to effectively multiply the Radiation so as to achieve quantum Radiative Heat absorption rates within the Furnace.

The theory of Thermal Radiation lays down the theory of Quantum Mechanics, by using physics to relate to molecular, atomic and sub-atomic levels.

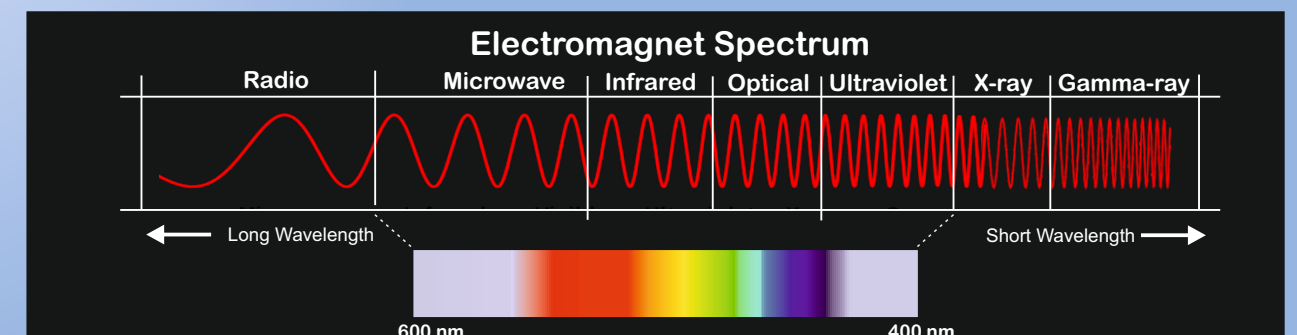
The research of Stefan-Boltzmann (Jožef-Ludwig), Max Planck, Wilhelm Wien and Makarov led to some amazing discoveries and fundamental laws of physics.

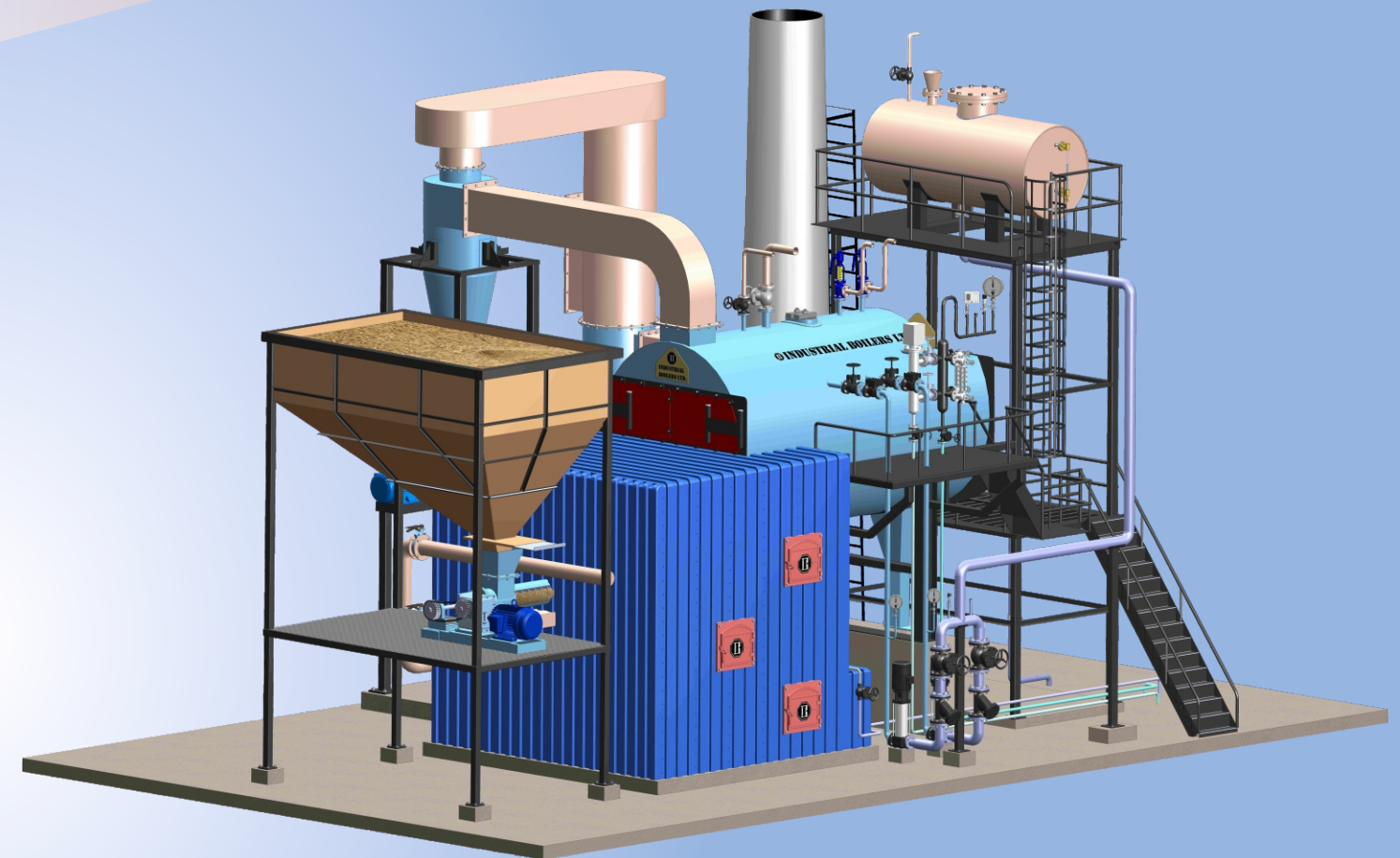
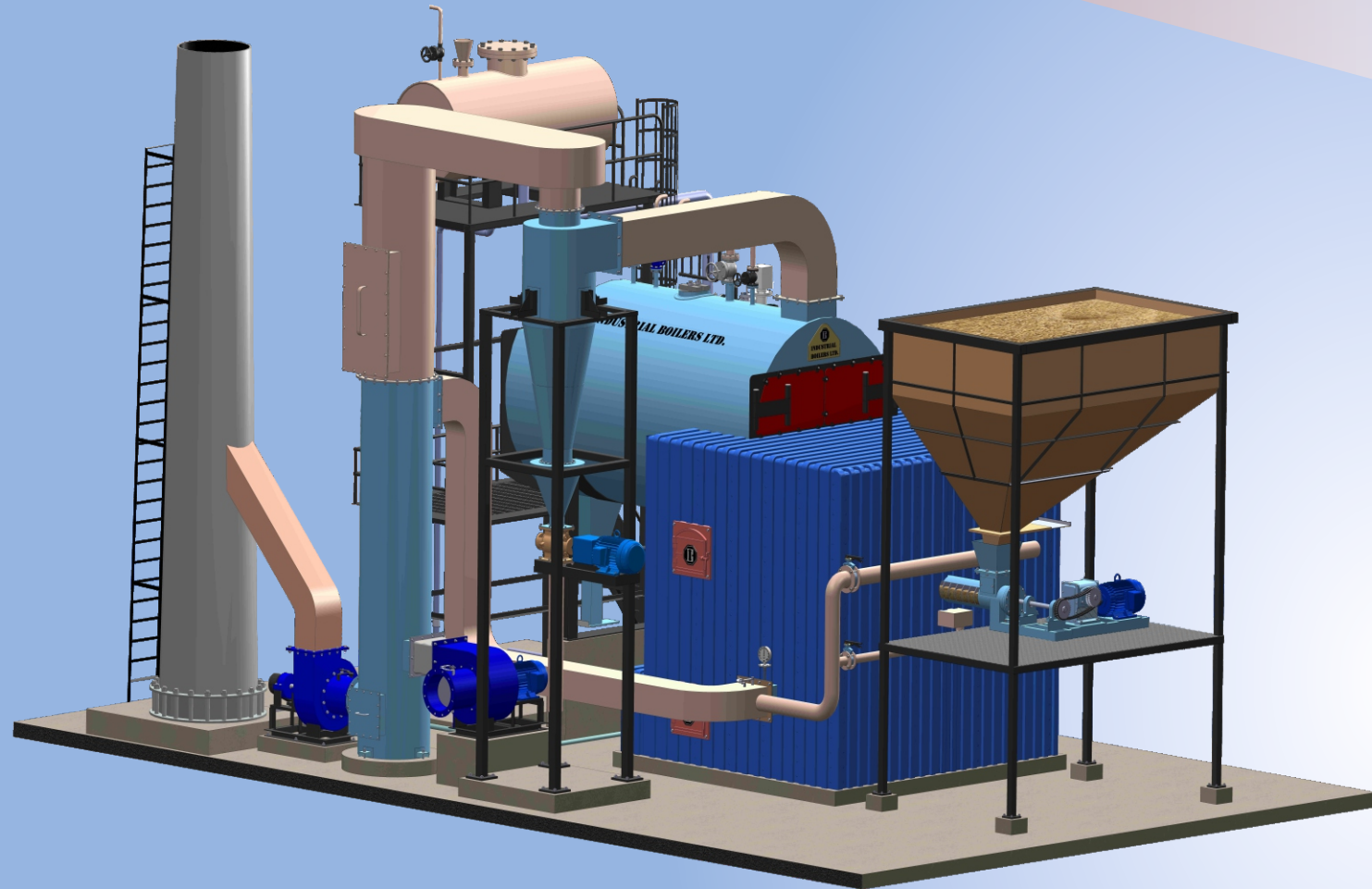
These laws of heat radiation from black body and gas volumes influence Boiler Design and Combustion technology.

When appropriately designed, absorption of heat radiation from ionized and non-ionized gas volumes leads to substantial energy saving.

Radiation fluxes from torch, heated surfaces and combustion products can be exponentially increased by multiple reflections and absorptions. The beam path length from quadrillions of radiating atoms, and the local angular coefficients of radiation from radiation flux densities on the Heating Surface area leads to a high heat flux density and the heating rate increases by over 15%.

The furnace design of RADON is that of a regenerative soaking pit. While designing the RADON furnace, IBL engineers have effectively increased the Radiation torch power by 17 to 20%.





RADON - FBC

Radon - FBC is a compact, quick steaming, high efficiency FBC boiler with a large furnace volume, performing extremely well with high volatile fuels like Husk and Saw dust. It has an over-bed microprocessor based fuel feeding system, generous water and steam space and stainless steel FBC nozzles and ferrules. Radon -FBC is the most successful small FBC boiler with hundreds' of satisfied customers who vouch for its performance, trouble free operation and fuel savings.

RADON - M

Radon - M is a modern Hand Fired Boiler that replaces the obsolete internally fired boiler. Radon is suitable for coal, wood, lignite, baled bagasse, groundnut husk and other similar fuels. Radon is easily expandable and convertible to fluidised bed firing.

RADON - BMF

Radon - BMF is a versatile Multifuel Waste Fuel boiler with the revolutionary Brownian Motion Furnace. Radon - BMF is suitable for Bagasse, Mustard Straw, Wood, Saw Dust, Groundnut Husk, Uple, Chicken Litter and other similar fuels.

UNIQUE FEATURES

- ✓ Generates Steam in 25 minutes
- ✓ Very High Radiation Heat Transfer
- ✓ Saves Fuel due to Quick Response to Load
- ✓ Minimum Site Erection. Low Footprint.
- ✓ Highest Combustion Efficiency.
- ✓ Radiation absorbing Tubular surfaces.
- ✓ Radiation multiplying Refractory zone.
- ✓ Water Tube Furnace Roof.
- ✓ Inbed Tubes for Coal Firing and Higher Capacities.
- ✓ Stainless Steel FBC Nozzles

* Furnace panelling shown in the Graphic is optional and charged extra.