Radiant Boiler — Carolina Type

RBC

Design features:
Arranged with a natural circulation, water-cooled dry-bottom furnace, and superheater, reheater, economizer and air heater components — the Carolina design employs a horizontal convection pass and vertical pendant heat transfer surfaces.

Capacity, steam output:
About 700,000 lb/h (88 kg/s) to a maximum that may exceed 7,000,000 lb/h (880 kg/s).

Pressure:
Subcritical, usually 1800 to 2600 psi (12.4 to 17.9 MPa) throttle pressure with 5% overpressure capability.

Superheater and reheater outlet temperatures:
As required, usually in the range of 1000 to 1050F (538 to 566C).

Fuel:
Pulverized coal.
Radiant Boiler — El Paso Type

RBE

Design features:
Arranged with a water-cooled hopper-bottom furnace, and superheater, reheater, economizer and air heater components — the El Paso unit provides a compact design which includes upflow and downflow horizontal convection passes.

Capacity, steam output:
About 700,000 lb/h (88 kg/s) to a maximum that may exceed 7,000,000 lb/h (880 kg/s).

Pressure:
Subcritical, usually 1800 to 2600 psi (12.4 to 17.9 MPa) throttle pressure with 5% overpressure capability.

Superheater and reheater outlet temperatures:
As required, usually in the range of 1000 to 1050°F (538 to 566°C).

Fuels:
Natural gas and/or oil, blast furnace gas, and combustible byproduct gases.
Radiant Boiler — Tower Type

RBT

Design features:
Arranged with a water-cooled dry-bottom furnace, and superheater, reheater, economizer and air heater components — the Tower design employs all horizontal convection surfaces.

Capacity, steam output:
About 700,000 lb/h (88 kg/s) to a maximum that may exceed 7,000,000 lb/h (880 kg/s).

Pressure:
Subcritical, usually 1800 to 2600 psi (12.4 to 17.9 MPa) throttle pressure with 5% overpressure capability.

Superheater and reheater outlet temperatures:
As required, usually in the range of 1000 to 1050F (538 to 566C).

Fuels:
Pulverized coal, natural gas, oil.
Radiant Boiler — Downshot

Design features:
Arranged with a water-cooled dry-bottom furnace, and superheater, re heater, economizer and air heater components — the Downshot design features an enlarged, refractory-lined furnace for low rank coals resulting in a hotter furnace to sustain combustion.

Capacity, steam output:
About 700,000 lb/h (88 kg/s) to a maximum that may exceed 7,000,000 lb/h (880 kg/s).

Pressure:
Subcritical, usually 1800 to 2600 psi (12.4 to 17.9 MPa) throttle pressure with 5% overpressure capability.

Superheater and reheater outlet temperatures:
As required, usually in the range of 1000 to 1050F (538 to 566C).

Fuels:
Coals with low volatile matter content, particularly anthracites, that are difficult to ignite and burn.