Despatch's VOC Thermal Oxidizer was designed to eliminate over 99% of Volatile Organic Compounds (VOCs) from gasses exhausted during the drying step of solar cell manufacturing.

The solar cell manufacturing process creates unwanted environmental pollutants which are byproducts of the drying process, and contain the non metallic ingredients found in the paste material such as ethanol, Texanol™ and terpineol. These pollutants can condense inside facility ductwork and create hazardous conditions. Destroying the VOCs using the Oxidizer eliminates the need to collect and dispose of this waste in a separate process. The exhaust exiting from the VOC Thermal Oxidizer contains only small amounts of CO2 and water vapor.

In industries that emit VOCs and have established pollution control technology criteria, Thermal Oxidizers satisfy Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER).

The operation of the VOC Thermal Oxidizer is based on the principle of combustion which is the most commonly used method to control emissions of organic compounds and is used in a variety of industries. Combustion systems are simple and have very high destruction efficiency.

The VOC Thermal oxidizer maintains a temperature of 760°C (1400°F) to ensure destruction of all VOCs. The oxidation process releases heat and thereby contributes to maintaining the temperature of the oxidizer.
**VOC Thermal Oxidizer**

- Single Lane:
  - Operating temperature: 760°C (1400°F)
  - Residence time: 1.0 seconds
  - Facility exhaust: 250 m³/hr (8500 SCFH)
  - Facility exhaust temperature: 100°C (212°F)
  - Installed heater capacity: 15 kW
  - Heat input at nominal rates: 11 kW
  - Nominal Operating Load: 16 Amps
  - Height from floor to connection point: 308 cm
  - Nominal Operating Costs: $0.09/kWh

- Dual Lane:
  - Operating temperature: 760°C (1400°F)
  - Residence time: 1.0 seconds
  - Facility exhaust: 500 m³/hr (17000 SCFH)
  - Facility exhaust temperature: 100°C (212°F)
  - Installed heater capacity: 30 kW
  - Heat input at nominal rates: 22.5 kW
  - Nominal Operating Load: 32 Amps
  - Height from floor to connection point: 313 cm
  - Nominal Operating Costs: $0.58/hr

*The 400 volt single phase Oxidizer load is balanced on the furnace 3 phase power. Amperage shown is nominal increase to furnace load. No additional power drop required.*

**VOC Condenser**

- Single Lane:
  - Operating temperature: 660°C
  - Residence time: 1.0 seconds
  - Facility exhaust: 250 m³/hr (8500 SCFH)
  - Facility exhaust temperature: 100°C (212°F)
  - Installed heater capacity: 15 kW
  - Heat input at nominal rates: 11 kW
  - Nominal Operating Load: 16 Amps
  - Height from floor to connection point: 308 cm
  - Nominal Operating Costs: $0.09/kWh

- Dual Lane:
  - Operating temperature: 660°C
  - Residence time: 1.0 seconds
  - Facility exhaust: 500 m³/hr (17000 SCFH)
  - Facility exhaust temperature: 100°C (212°F)
  - Installed heater capacity: 30 kW
  - Heat input at nominal rates: 22.5 kW
  - Nominal Operating Load: 32 Amps
  - Height from floor to connection point: 313 cm
  - Nominal Operating Costs: $0.58/hr

**Remote Facility Condenser or Oxidizer**

- Operating temperature: 760°C (1400°F)
- Residence time: 1.0 seconds
- Facility exhaust: 250 m³/hr (8500 SCFH)
- Facility exhaust temperature: 100°C (212°F)
- Installed heater capacity: 15 kW
- Heat input at nominal rates: 11 kW
- Nominal Operating Load: 16 Amps
- Height from floor to connection point: 308 cm
- Nominal Operating Costs: $0.09/kWh

Note: Specifications are subject to change without notice. Contact Despatch for most updated specification.

**Destruction Efficiency (%)**

Tests demonstrate over 99% destruction of VOCs above 760°C.

As tested by American Engineering Testing, Inc. 1/19/2010

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**Despatch’s Thermal Oxidizer**

- Directly couples to drying furnace
- Clean gas only
- Thermally managed for destruction of VOCs (No condensing risk)
- Directly coupled to drying furnace

**VOC Condenser**

- Directly couples to drying furnace
- Clean gas only
- Thermally managed for destruction of VOCs (No condensing risk)
- Directly coupled to drying furnace

**Remote Facility Oxidizer**

- Directly couples to drying furnace
- Clean gas only
- Thermally managed for destruction of VOCs (No condensing risk)
- Directly coupled to drying furnace

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