



Onshore Air Inlet Filtration System

Solar's onshore air inlet filtration system enables Solar gas turbines to operate in a broad range of land-based environments while helping reduce operating and maintenance costs and improving production output.

Primary Goals	
●	Operational Efficiency
●	Machinery Efficiency
●	Optimize Productivity

Solar® gas turbines operate in all types of geographical locations and as a result are exposed to a variety of airborne contaminants. For coastal and inland installations, these contaminants will vary by location and can include salt, dust, sand, industrial gases, and exhaust fumes containing oil and fuel vapors.

Particulates such as chemicals, fertilizers, mineral ores, and factory by-products may also be present. Such airborne contaminants can vary daily or seasonally, and are subject to climatic conditions such as wind direction and speed, temperature, relative humidity and precipitation.

Maintaining its industry leadership position, Solar is continually researching and improving its onshore air inlet filtration system, developing new products that enable its family of gas turbine engines to operate more efficiently while minimizing downtime.

Benefits

- Reduced turbine blade fouling and erosion through high removal efficiency of particles 0.8 microns and larger with nanofiber media.
- Increased removal efficiency of particles 0.2 microns and larger by using optional high efficiency filter elements with synthetic /ePTFE membrane media.
- Lower overall operating costs by protecting gas turbine performance and maximizing unit life cycle.
- Greater operational uptime through reduced water wash frequency.

Selectable Filter Elements to Best Meet a Specific Operating Environment

Regardless of the operating environment, gas turbines ingest large quantities of air. Contaminants in this air will enter the gas turbine airflow unless they are filtered out. This makes the suitability of a filter for its application a critical factor in maintaining gas turbine performance and reliability while carefully managing operating and maintenance costs.

Worldwide Turbomachinery Support

To meet the needs of the broadest range of operating environments, Solar offers several filter element options.

Filter Options

Synthetic Filter Media

The Synthetic Filter Media offers increased dust holding capacity and lower differential pressure.

Nanofiber Media

The Nanofiber Media offers the highest dust holding capacity, and should be considered for environments that offer a considerable risk of fouling.

High Efficiency Synthetic/ePTFE Membrane Media

This media offers the highest efficiency and should be considered for environments that contain a high concentration of small particulates.

Pre-Filter Wrap

The Pre-Filter Wrap offers a low-cost means of reducing operating costs, extending the life of static filters and extending times between water wash. Pre-filters offer an effective method of capturing larger air-borne particles such as seeds, ash, and other types of seasonal debris.

Barrier Static Cross-Flow System

The Barrier Static Cross-Flow System provides good protection from larger particle ingestion, and offers a lower initial filtration system cost.

Self-Cleaning System

The Self-Cleaning System provides a means of lowering operating costs and extending filter life. The system pulses periodically, based on differential pressure across the filter— blowing a pulse of pressurized air into the filter in a direction opposite the gas turbine's intake air flow. This dislodges dust and debris held by the filter.

Additional Information

For more information about Solar's onshore air inlet filtration system upgrade, contact Solar's Field Office nearest you or visit us at www.solarturbines.com.

Performance Data			
Filter Option/Class*	Synthetic - F9	Nanofiber - F9	Synthetic/ePTFE-E10
Type	Static/Self-Cleaning	Static/Self-Cleaning	Static/Self-Cleaning
Test Air Flow Rate (m³/s)	0.769	0.769	0.769
Test Air Flow Rate (cfm)	1630	1630	1630
Initial Resistance (in. WG & Pascal)	1.5 / 373	1.5 / 373	0.82 / 204
Dust Holding Capacity (grams)	877.79	1279.8	1035

*CEN/EN 779 Class

