

## PT 70 Series Low Emissions Specification



Powertherm PT 70 Series of CHP units, has one of the cleanest emissions qualities in the industry. A thoroughbred series of clean burn gas engines, married to the best control technology provides very low pollutant content. This makes the units ideally suited to applications in urban areas.

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Combined Heat and Power is all about reducing energy cost in a manner that benefits the environment. The Carbon Footprint reduction capabilities of a powertherm CHP are well known, but the good news is, this is achieved with very low impact on the environment in which the unit operates.

How is it so good? We start with basic principles –

Firstly, a gas powered engine burns clean to start with. We use a stoichiometric engine process which gives the most complete combustion of the fuel possible.

Secondly, our engine design is very efficient, in order to get the most performance from the least amount of fuel burned. Efficiency is the bedrock of low emission technology.



Next, keeping an eye on the performance is essential. We do this with an active intelligent closed loop proprietary controller, which employs a UEGO concept wideband oxygen sensor. The system receives data from various other sensors all over the engine, and uses this information many times a second to issue commands to the fuel controller, engine spark timing devices and other aspects of the digital engine management. This is coupled to a self diagnostic unit which constantly tests and adjusts the whole system in real time. Direct management of the actual combustion conditions in each individual cylinder allows us to emit the least possible exhaust.



Finally, we have a high efficiency post combustion Catalytic Converter, which treats up to 99% of the most harmful pollutants remaining in the exhaust.

The results are striking. The figures below show the specification for our European build standard, but we even have a version of these units which conform to the California Air Resources Board (CARB) standards. These are among the most difficult to meet in the whole world. These machines are clean indeed.

Emissions Content	Electrical Output	Total Output
NOx	167mg/kWh	54.3mg/kWh
CO	671mg/kWh	218mg/kWh
PM10	< 1 mg/kWh	< 0.3mg/kWh
NMHC	111mg/kWh	38.7mg/kWh
Max Exhaust Flow	5.23 m <sup>3</sup> /min	



All data values subject to fuel quality and calorific value etc. All data based on ISO standard atmospheric conditions such as barometric pressure, ambient temperature, relative humidity and altitude. De-rates may apply for extreme conditions. Values subject to a tolerance of +/- 5%. Data is taken under laboratory test conditions. All specifications subject to change as part of our policy of continuous improvement. E & O E.