

INCINER8

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**INCINER8 18-PCS
& HEAT EXCHANGER
TECHNICAL DATASHEET**



The i8-PCS is our pollution control device that is designed to cool combustion gases at the first stage to around 425°C to prevent de novo formation of dioxins and furans. The consistent process then passes the combustion gases through a catalytic converter using hydrated lime to act as a reagent to remove acid gases and capture the resulting solids. The resultant combustion gases are then filtered through ceramic filtration to directly capture and remove particulates. All this is done to achieve a pollution-free environment.

SYSTEM OVERVIEW

Increasingly stringent EU and worldwide environment legislation present fresh challenges to the many different industries generating hot polluted gas as a waste product from their operations. From incineration of medical waste to a variety of hazardous waste, the hot gases generated must be treated and cleaned before they can be discharged into the atmosphere. Our i8-PCS can remove particulate emissions to below 3 mg/m³, typically around 1mg/m³ and can remove all acid gases.

SYSTEM OVERVIEW

The i8-PCS is designed to do the following:

- Remove particulates by direct capture in the ceramic filter
- Handle up to 6,500 m³/hr of gas flow
- Ideal for control of dioxin and particulate emissions
- Remove acidic gases by reaction with hydrated lime and capture of the resulting solid
- Avoid 'De Novo' dioxin formation by removing necessary reactants before the gasses cool to the temperature window where formation occurs
- Remove condensed heavy metals as particulates in the filter
- Instruments to display temperature and pressure
- A hood to fit over the existing Incinerator flue gas outlet to collect the flue gas with a small amount
- Compressed air reverse pulse cleaning system and impact vibrator.

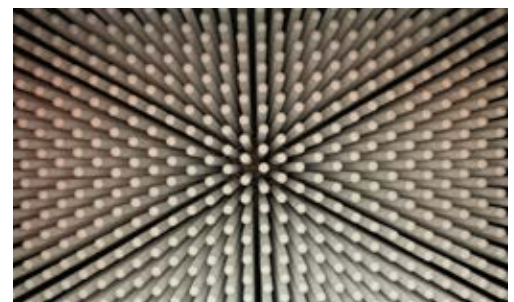


HOW THE I8-PCS WORKS

Our i8-PCS is a highly complex pollution control unit using some of the highest quality materials we produce in order to achieve the absolute minimum pollution levels whilst running our incinerators. Below will show you a step by step process of how our i8-PCS works and how it delivers such great results.

ABOUT HOT GAS FILTRATION

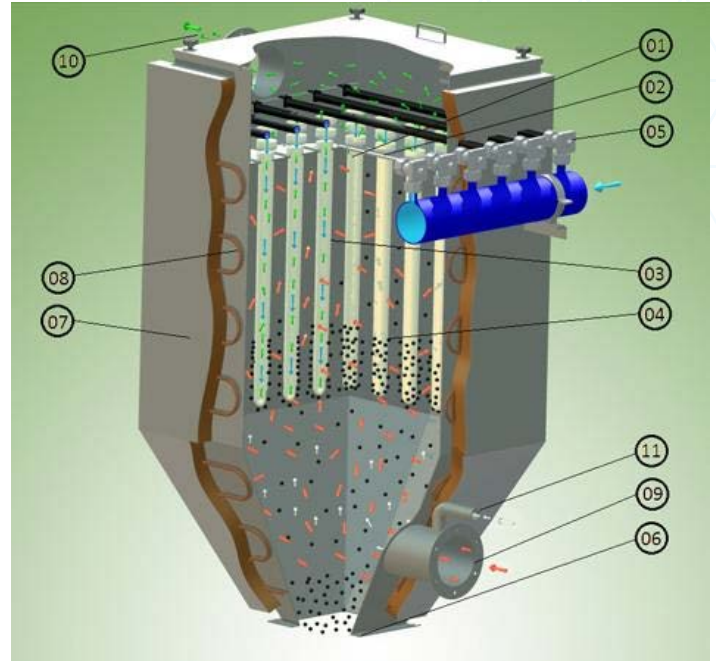
Hot gas emissions are produced by a wide range of processes, containing impurities or products which may be dangerous, toxic and polluting. They must not be allowed to escape into the atmosphere without being properly filtered. Industrial waste gases often reach temperatures of over 400°C and particulate matter is often sub-micron and will pass through conventional filters for this type of waste to be filtered properly a different filtration principle is needed for this type of application, that of ceramic filtration.



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- The Element (1) hangs vertically from header plate (2) within the filter vessel. The header plate separates the filter's clean and dirty compartments.
- Hot Gas is drawn through the filter medium (3) from outside to inside.
- Particulates and dry scrubbing sorbents are collected on the outer surface (4) of each filter element. These consist of the PM10, PM 2.5 size ranges; these agglomerate.
- The particles are removed from the element by reverse jet cleaning (5). This reversal causes the accumulated solids to be detached from the outer surface of the ceramic filter elements.
- The particulates and spent dry-scrubbing sorbents are discharged through the hopper outlet (6) for collection and disposal.
- The filter body can be protected with insulation (7) and trace heated (8) to prevent the formation of the condensation when the equipment is not in use.
- Incoming gas stream (9) and sorbent (if required).
- Outgoing cleansed gas stream (10) Injection point for activated carbon and/or sodium bicarbonate.



WHAT WASTE REQUIRES AN I8-PCS

Not all waste types require pollution control units as they might be of organic matter or waste that does not give off any harmful gases or metals. You should always check your waste type and only incinerate it in the correct type of unit depending on its contents. Here is a list of waste that would need a pollution control unit for the incineration to be safe and compliant.

- High Plastic waste
- Waste To Energy Plants
- Paints
- Inorganic chemicals manufacturing
- Vials & syringes
- Pesticides
- Bandages and gauzes
- Laboratory Chemicals
- PPE waste
- Silicate Production
- Animal Carcass Manufacture
- Gold Recovery
- Mining Waste
- Municipal Waste Incineration



TECHNICAL BREAKDOWN

model: **i8-PCS & HEAT EXCHANGER**

The i8-Heat Air to Air Exchanger has been specially designed to rapidly decrease the temperature of the post burn gases to reduce the formation of dioxins and to precondition the gasses prior to the pollution control system. This design is used to transfer (exchange) thermal energy through a carefully designed array of tubes that contain the hot gas and on the shell side the cool clean air. The system is air to air and thus no water is required for the cooling. Our heat exchanger has been designed using stainless steel for durability and comes with a supporting frame constructed from carbon steel, it is available in two sizes (Small & Large) and compatible with models from the i8-200 upwards.

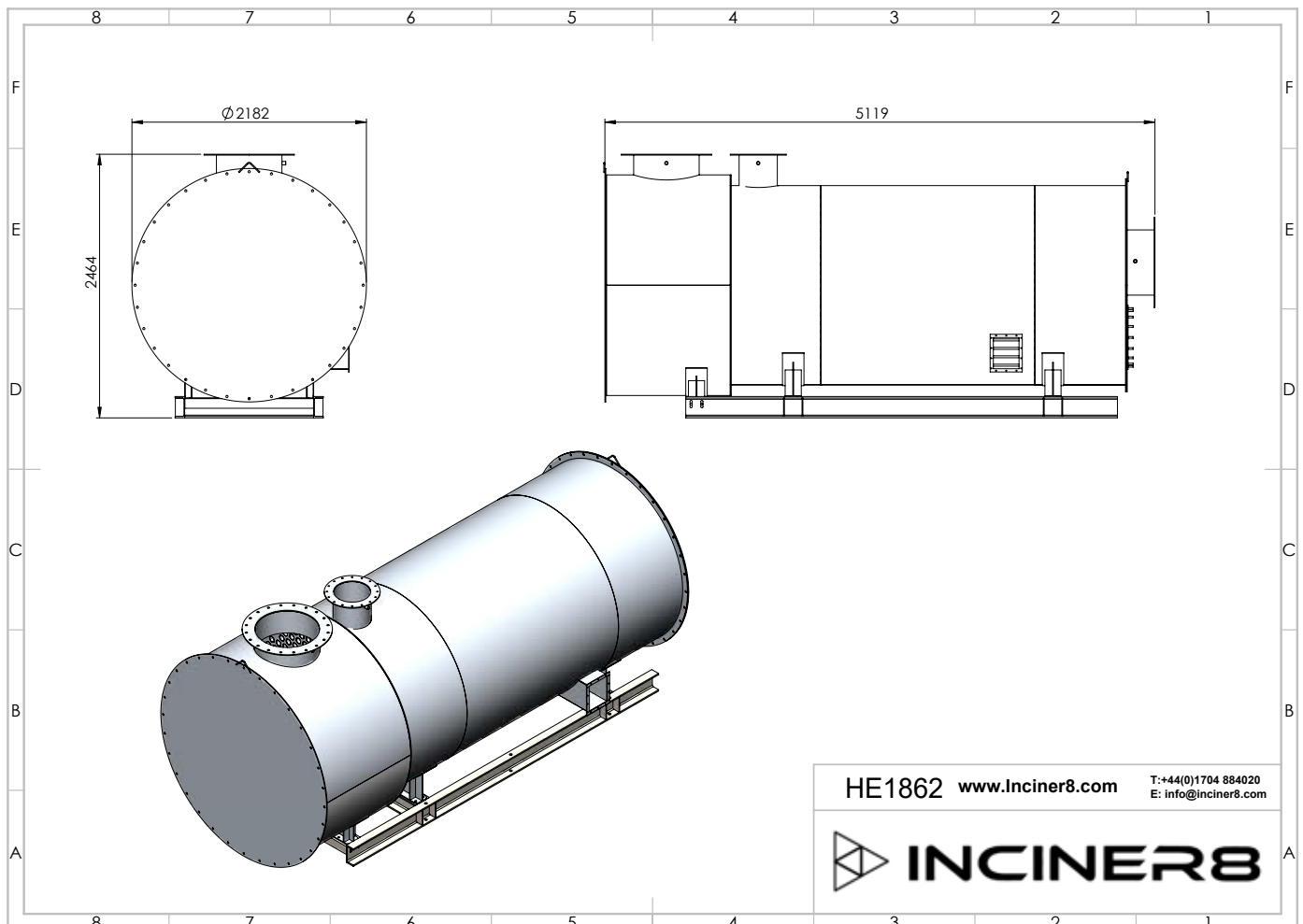


TECHNICAL SPEC

Length (mm)	5119 mm
Width (mm)	2182 mm
Height (mm)	2464 mm
Material (Chamber)	Stainless Steel
Frame Material	Carbon Steel
Weight (Kg)	7280kg
Inlet/Outlet Pipe Size (mm)	609mm/355mm

COMPATIBLE WITH:

i8-200G, i8-200A, i8-M200, i8-250G, i8-250A, i8-M250, i8-500, i8-700 & i8-1000



For additional information, or to speak to one of our expert team:

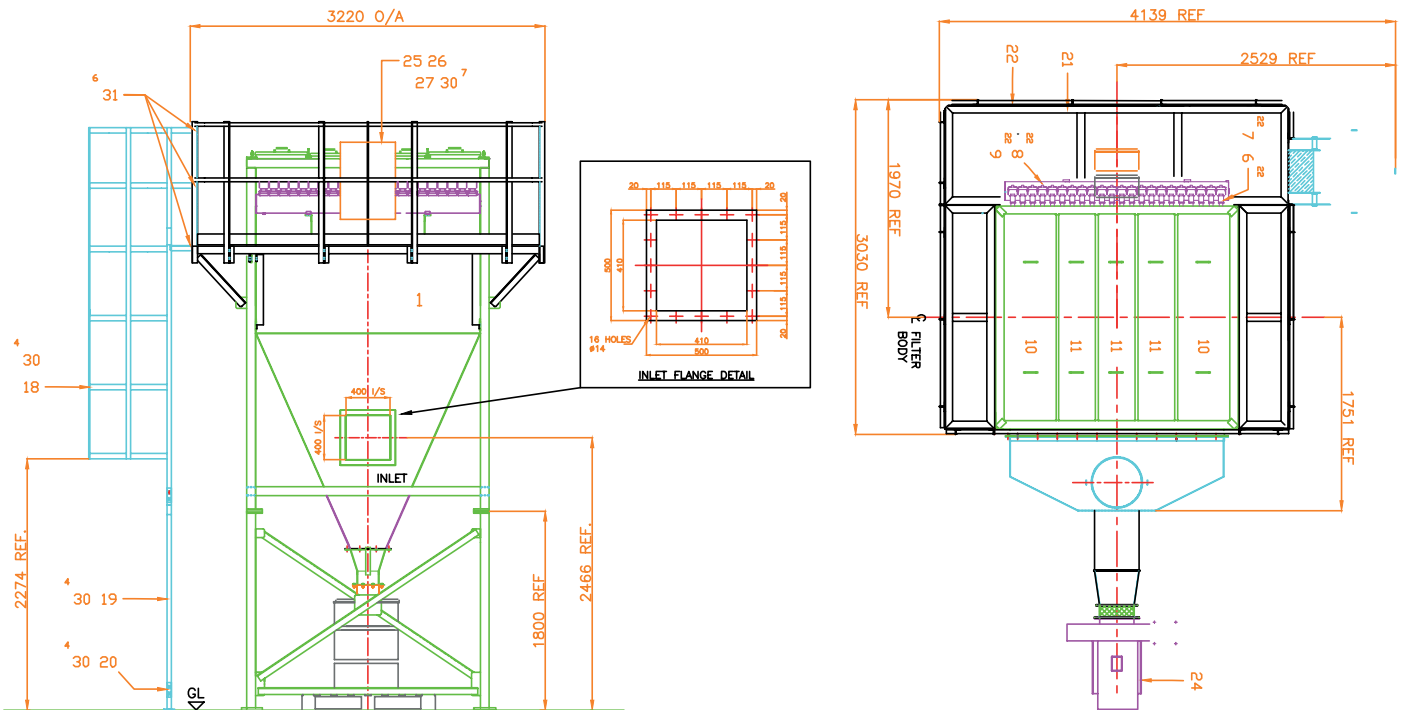
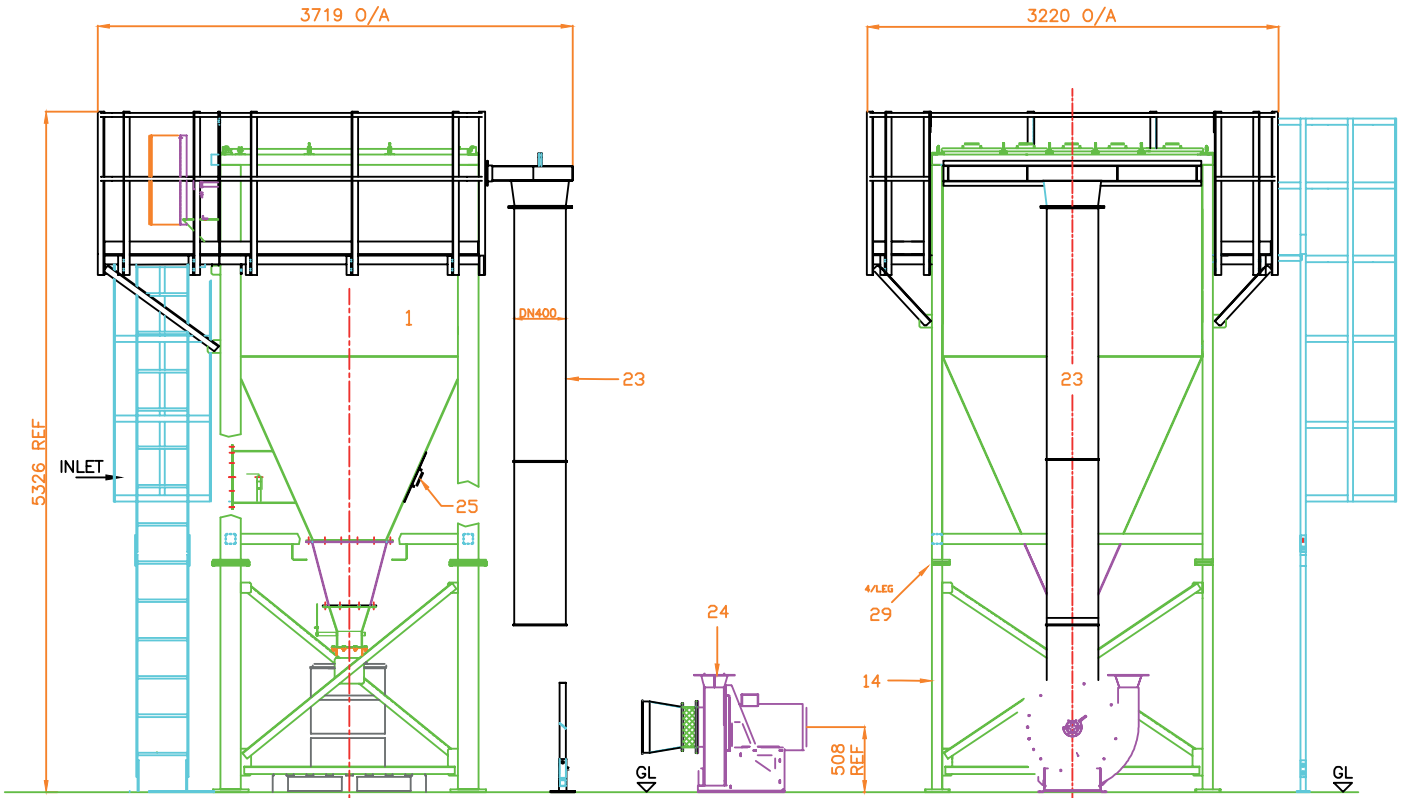
Call
+44 (0) 1704 884020

Email
sales@inciner8.com

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www.inciner8.com

TECHNICAL BREAKDOWN

model: i8-PCS & HEAT EXCHANGER



TECHNICAL SPECIFICATION

model: i8-PCS & HEAT EXCHANGER

FILTER SPEC		PHYSICAL SPEC	
Filtration Area (m ²)	100.32m ²	Assembled L/W/H (mm)	4136 x 3569 x 6639
Filtration Rate (m ³ /hr)	Up to 6500m ³ /hr	Assembled Weight (Kg)	5000kg
Pressure Drop (mmWG)	100-200 (300 MAX)	Door Size (mm)	560 x 560mm
Particulate Emissions Level (mg/Nm ³)	Below 5 (typically 1)	Number of elements (Qty)	440
Temp At Filter Inlet (°C)	250°C MAX	Element Type	Ceramic Fibre
Material Of Construction	Mild Steel	Material Of Construction	Mild/Galvanised Steel
Gasket Types	Non Asbestos	Paint Finish (2 Coats)	High Temp Black
		Hand Railing Manufactured To	BS535

Due to innovation and technical changes, Dimensions and filter elements are subject to change depending on incinerator model size.

ADDITIONAL INFORMATION

The expected element life is dependent on the process application and maintenance regime. Typically for combustion and incineration processes element lifetimes of 3 years can be expected, element lifetime of 5 or more years is not uncommon. Build up of un-burnt carbon and any subsequent fire can lead to the build up of sinter on the element causing increased pressure drop and possible premature failure. Premature blinding of elements can be caused by operating below the dew point which causes condensing salts to dissolve from the sodium bicarbonate. The element supplied by Glosfume is sized to an industry wide standard. Elements are available from other manufactures and are available worldwide.

Fires within the filter must not be allowed to occur as temperatures above the filter service temperature may be reached. Operation must not occur above the recommended service temperature. Temperatures above 450oC will distort the Mild Steel construction whilst temperatures above 900oC will also cause the elements to distort. Fires may also cause 'clinker' to be sintered on to the elements, causing damage and reducing filtration efficiency. Operation must not occur above the fusion temperature of the Sodium Bicarbonate and incoming dust. Failed elements need to be replaced as soon as practical and in accordance with the installation manual ensuring that the filter head is thoroughly vacuumed clean. Reintroduction of dust into the elements will cause abrasion.

**CALL INCINER8 AND START BUILDING SOLUTIONS
TO YOUR WASTE CHALLENGES TODAY!
+44 (0) 1704 884020 OR
EMAIL WWW.INCINER8.COM**

For additional information, or to speak
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