

MACROTEC

WASTE • ENERGY • FILTRATION

MacroBurn V220 Quote & Technical Document

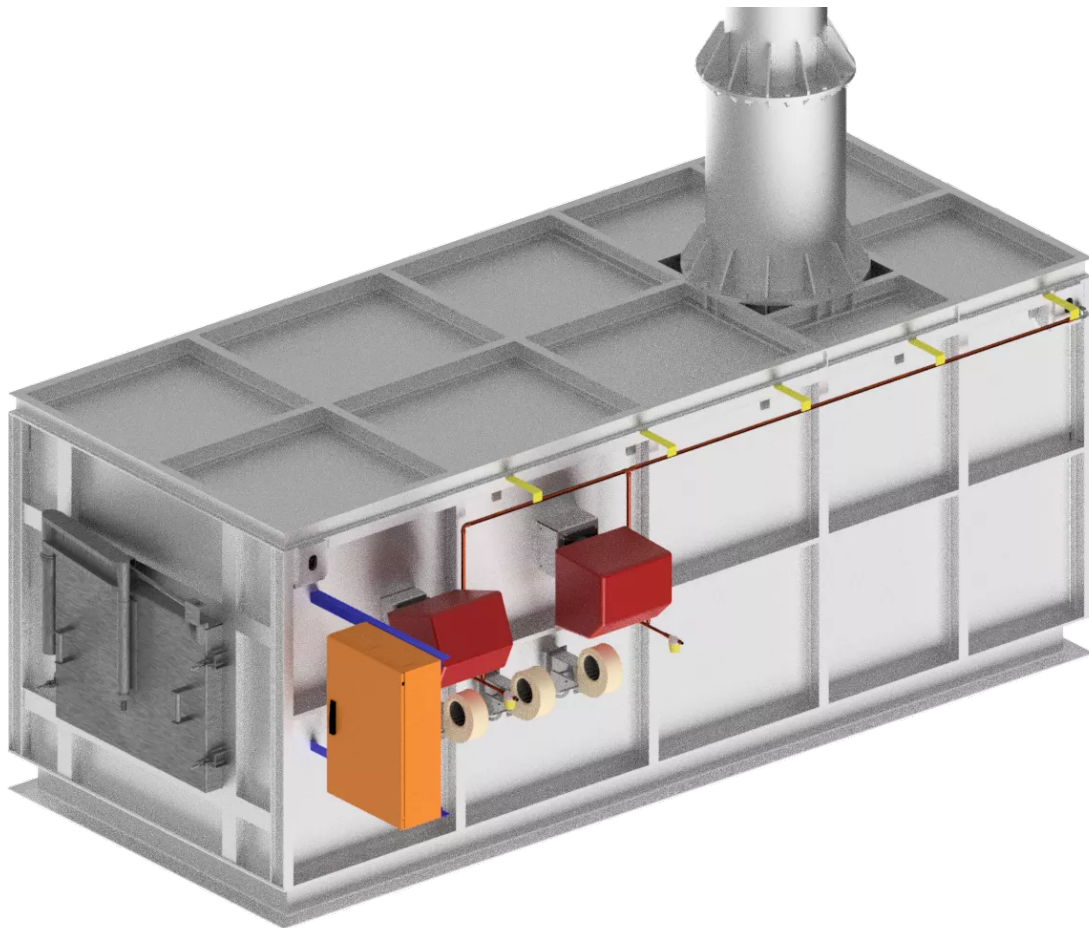


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Certification

Macrotec is certified to the following standards

- **ISO 9001:2015 - Quality Management Systems**
 - ISO 9001 is defined as the international standard that specifies requirements for a quality management system (QMS). Organizations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements. It is the most popular standard in the ISO 9000 series and the only standard in the series to which organizations can certify.
- **ISO 14001:2015 - Environmental Management Systems**
 - ISO 14001 is the international standard that specifies requirements for an effective environmental management system (EMS). It provides a framework that an organization can follow, rather than establishing environmental performance requirements.
- **ISO 45001:2018 - Health & Safety Management Systems**
 - ISO 45001 specifies requirements for an occupational health and safety (OH&S) management system, and gives guidance for its use, to enable organizations to provide safe and healthy workplaces by preventing work-related injury and ill health, as well as by proactively improving its OH&S performance.

Accreditation



ISO ACCREDITED. The International Organization for Standardization (ISO) is an international nongovernmental organization made up of national standards bodies.



TCL ACCREDITED. Transpacific Certifications Limited is a internationally accredited certification of International Standards.



IAF ACCREDITED. The International Accreditation Forum is a worldwide in the fields of management systems, products, processes, services and verification.



JAS-ANZ ACCREDITED. JAS-ANZ is an independent, third party accreditation body that provides internationally recognised accreditation services.

Capacity Data

Capacity figures are estimates based on past experience and general composition, density and calorific values of the selected wastes. Actual capacities will differ from site to site and is dependent on the actual composition, density and calorific value of the waste.

General Waste	Plastic Waste	Animal Carcass	Medical Waste	Food and Hotel Waste
110 - 183 Kg/h	47 - 79 Kg/h	83 - 138 Kg/h	79 - 132 Kg/h	75 - 126 Kg/h

Standard & Optional Items

Standard Items Included

- MacroBurn V220 Incinerator
- Diesel fired burners
- Fuel filter
- Fuel line
- Connection of burners to the fuel filter
- Mild steel stack
- Thermocouples
- PLC control panel with HMI touchscreen
- Fire rake and poker

Optional Items

Manual feeder - A manual feeder which aids the incinerator loading function, increasing safety and operational efficiency.

Liquid feeder - Various liquid feeders are available and are designed according to the waste specifications.

Gas burners - Replaces the diesel burners with gas fired burners.

Pre-heated combustion air - Pre-heating the combustion air using waste heat reduces fuel use and increases the combustion efficiency which decreases emissions.

3CR12 chimney - Provides better corrosion protection than normal mild steel chimneys and is recommended for coastal areas.

Flashing cone - Provides insulation between the chimney and water proofing between the chimney and roof. -

Containerization - Pre-installed the incinerator in two 20ft containers to reduce site work and the need for a specialised shelter.

Spare parts - All critical spares required for repair and maintenance.

Specifications

Incinerator	
Hearth type	Fixed hearth
Number of chambers	2
Combustion Volume (m ³)	5.88
Retention/Residence time (seconds)	2
Normal operating temperature (°C)	750 - 850
Max operating temperature (°C)	1,100
Steel Thickness	4.5
Refractory	Alumina Silicate Castable
Insulation R-value (m ² K/W)	1.54
Loading door opening size - No feeder (WxH)	1000x686
Loading door opening size - Feeder (WxH)	500x310
Stack	
Stack ID (mm)	676
Height from ground (m)	11.0
Control System and Instrumentation	
Control panel type	PLC
Combustion fan VSD control	Yes
Remote monitoring and dashboard	Optional
Number of thermocouples	2
Oxygen sensor	Optional
Burners	
Number of burners	2
Burner temperature controlled	Yes

Fuel Specifications (Diesel)	
Max Power	710 kW
Max flow rate	64 Kg/H
Fuel tank height - bottom of tank from ground	2 m
Minimum recommended fuel tank volume	1,000 L
Min fuel pressure	45 kPa
Max fuel pressure	200 kPa
Normal fuel use	19 - 58 L
Fuel required for bake-out	2900 L
Site Requirements	
Minimum plantroom size (WxHxL)	See drawing
Stack hole (roof)	880
Fire hazard (NFPA 13-2017)	Extra Hazard Group 1 (fuel and waste storage will effect this)
Recommended PPE	See PPE list
Power Requirements	
Standard unit (A)	20
Add containerization (additional amperage)	N/A
Voltage Requirements	
Standard Unit	400 VAC
Battery Limits	
Power	At incinerator control panel
Fuel	At incinerator fuel train (see drawing) Except where fuel tank and fuel line is included

Emissions

All MacroBurn incinerators are optimized to minimise emissions, with large combustion and settling chambers, high velocity combustion air, and high output burners.

- Limits given as mg/Nm³ (Dioxins and as Furans ng/m³) under normal conditions of 11% O₂, 273 Kelvin, and 101.3 kPa

Common Name	Chemical Symbol	Typical Emissions
Particulate Matter	N/A	Less than 130
Carbon Monoxide	CO	Less than 150
Oxides of Nitrogen	NOx	Less than 350

Emissions listed below are omitted since scrubbers and filtration is not included and these emissions will depend on exact waste composition:

- Sulphur Dioxide (SO₂)
- Hydrogen Chloride (HCl)
- Hydrogen Fluoride (HF)
- Sum of heavy Metals (Pb+ As+ Sb+ Co+ Cu+ Mn)
- Mercury (Hg), Total organic compounds (TOC)
- Dioxins and furans (PCCD/PCDF)

Warranties

Warranties Include

- **Incinerator structure:** 12 months
- **Incinerator refractory:** 36 months
- **Other accessories:** OEM warranty

Warranties Exclude

- Damage by power surges or power failure.
- Damage caused by malicious action.
- Damage caused by operator error.

Macrotec offers a warranty against component failure as a result of faulty equipment or construction, and Macrotec will repair or replace components at Macrotec's cost and responsibility. For warranties to be valid equipment must be commissioned by Macrotec, operated and maintained as per operating instructions and maintenance instructions, and within the provided site specifications.

Warranties exclude all wear items. Complete warranty documentation available on request.