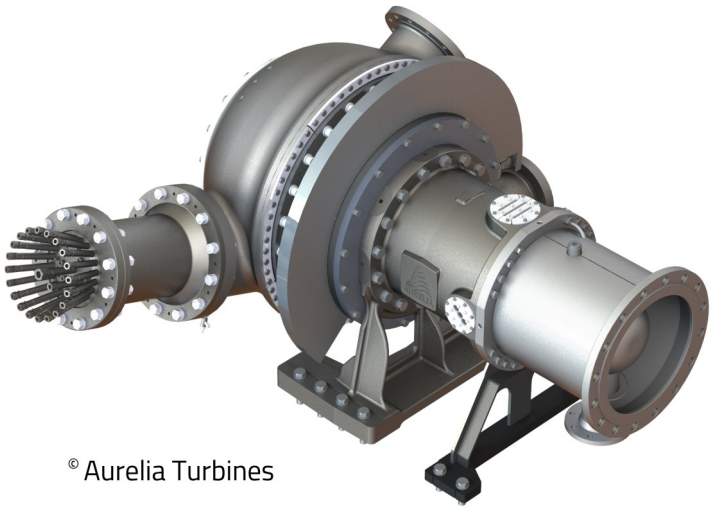
Aurelia® iA400

The most efficient small gas turbine in the world. The Aurelia® iA400 provides 400 kW_e with an electrical efficiency greater than 40 % through Aurelia's integrator model.
The integrator has freedom to package the turbine units according local demands and requirements. The turbine is a twin-spool, intercooled and recuperated (IRG2) gas turbine. The combustor is designed to utilise a wide range of fuels, from standard gaseous fuels to biogas, flare gasses and even synthetic and recovered gases.

LP Turbine Unit



HP Turbine Unit

Illustrated image

Integrator model features and benefits:

- Local packaging & requirements
- Local manufacturing
- Use of local components
- Access to Aurelia's supplier network
- Aurelia patented IRG2 technology
- Active Magnetic Bearings (AMB)
- Single-can combustion chamber
- High speed power generation
- Highest electrical efficiency in class
- Fuel flexibility
- Worldwide service network
- No lubricants, no friction, no wear
- Low emissions
- Zero vibration
- Minimal maintenance and down-time

The most efficient small gas turbines in the world

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Electrical specification of generators[1]

Rated power output	250 kW
Phase voltage	350 VAC
Frequency	553 Hz
Line current	440 A
Power factor	0.94

Exhaust characteristic[1]

NO_x emissions at 15 % O_2	With natural gas < 20 ppm-v With biogas, flare gas & syngas < 30 ppm-v
CO emissions at 15 % O_2	< 65 ppm-v
Intercooler power/heat recovery, max	340 kW
Exhaust heat recovery after recuperator	Depends of recuperator type & recuperation efficiency
Exhaust gas O_2 level	17.5 %

Environment to operate turbine units

Storage & operating Temperature	-20 °C to +60 °C
Storage & operating atmosphere	0 to 95 % RH, non-condensing, non-corrosive
Used process fluid	Ambient air
Process air filter Requirements	G4 and F7 filters
Installation environment	Installed inside enclosure/ container

Fuels

Due to the modular design the combustion chamber is easily adjustable to meet the requirements of different fuels. Turbine is designed to use all standard gaseous fuels and gives options for non-standard fuels.

Natural gas, biogas, flare gas & syngas

Range of LHV	5...48 MJ/kg
Fuel mass flow	21...256 g/s
Hydrogen volume content, initial max	30 %

Scope of Supply

- Low Pressure Turbine Unit
- High Pressure Turbine Unit
- AMB system with Magnetic Bearing Controllers
- PLC with Aurelia IRG2 software
- Documentations and guidelines to complete IRG2 technology based gas turbine design

Directives & Certifications

The turbine units and integrator model has been designed according to following European directives:

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2014/35/EC
- Pressure Equipment Directive 2014/68/EC

The integrator must comply with integrator guidelines and local regulations in design, safety and manufacturing of the final product.

1) Operation at full power in ISO standard reference conditions: 15 °C, 101.325 kPa, RH 60 % and with intercooler return Temperature of 15 °C.

For details see Integrator manual.

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