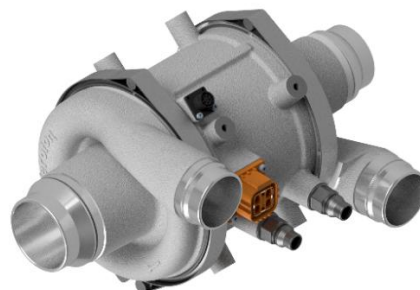


CTE-400x turbo compressor

Highly compact, high-speed, electrically driven radial turbo compressor with expander and gas bearing for the compression of air for fuel cell systems.

- High-speed gas bearings for oil-free operation
- Expander for energy recovery of wet air
- No air-cooling requirement for gas bearings enabling significant system efficiency advantage
- Aerodynamic and electromagnetic optimization for highest total efficiency
- Integrated temperature measurement for overload protection
- Compatible to inverter CC-4000



Specifications turbo compressor

Model CTE-4000

Maximum pressure ratio	3.1
Maximum mass flow	210 g/s

Model CTE-4001

Maximum pressure ratio	3.1
Maximum mass flow	165 g/s

Maximum speed	120,000 rpm
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Acceleration time ¹	<1.2 s
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Maximum compressor input power	25 kW
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Expander power ²	6-8 kW
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Ambient temperature range	-40 – 85 °C
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Protection class	IP67
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Mechanical fixation

Dimensions (L x W x H)	320 x 215 x 205 mm
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Weight	15 kg (excl. cable)
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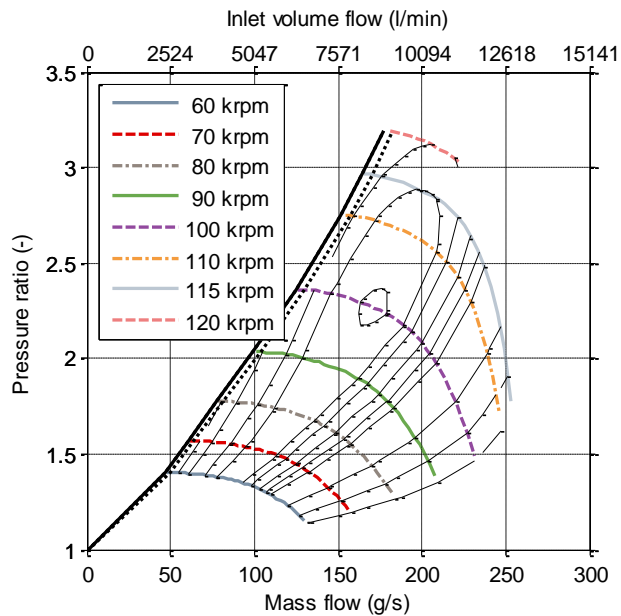
¹Acceleration from idle to 90% of maximum speed

²At expansion ratio of 1.9

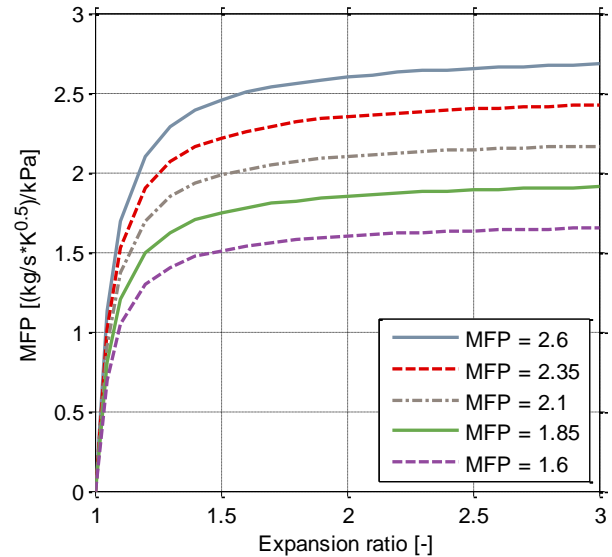
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Compressor map with expander CTE-4000

Pressure ratio versus mass flow

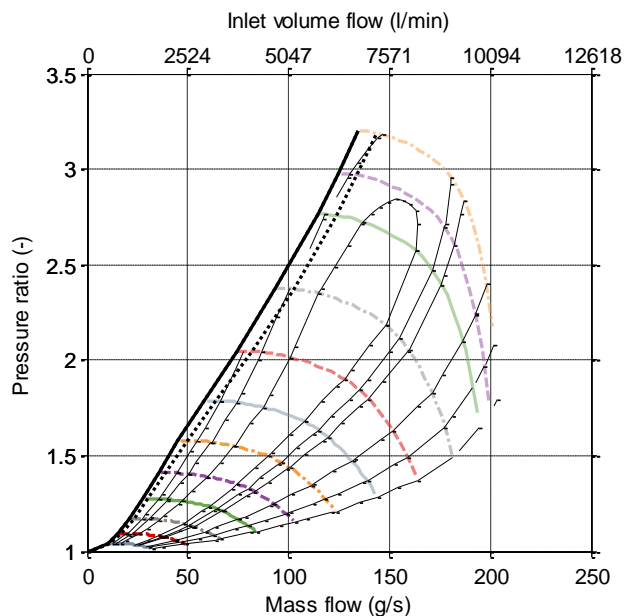


Expander options with different mass flow parameters (MFP)

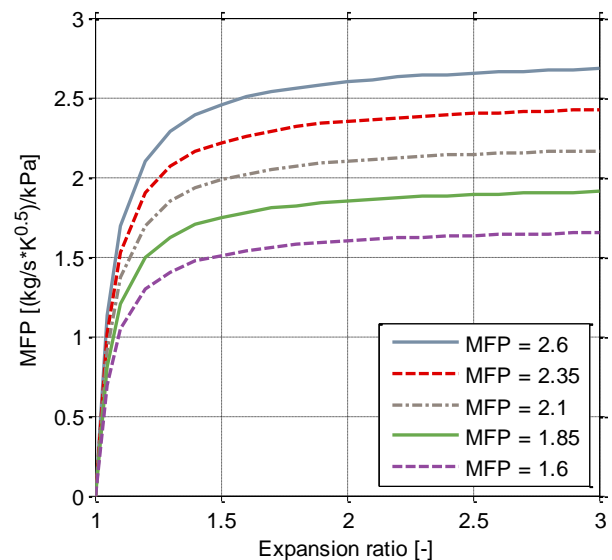


Compressor map with expander CTE-4001

Pressure ratio versus mass flow



Expander options with different mass flow parameters (MFP)



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Cooling interface	
Coolant	Inhibited 50%/50% water glycol mixture
Coolant temperature	-20 – 65 °C
In-/Outlet connector type	According to SAE J1231 430192
Tube ID	16 mm

Electrical interface	
Connection type	Motor and sensor connector
Motor connector	JonHon EVH2-N4ZJ-A
Sensor connector	Amphenol/Eco-Mate RTS010N6S03

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The CTE-400x is currently in development, all specifications are subject to change over the course of the project.



The specifications and compressor maps in this document refer to air (ISO 8778) at the inlet of the compressor: temperature: $T = 20^{\circ}\text{C}$, absolute pressure: $p_{in} = 1 \text{ bar}$.



The specifications and compressor maps in this document for

- an overpressure operation refers to air (ISO 8778) at the inlet of the compressor with: temperature: $T = 20^{\circ}\text{C}$, absolute pressure: $p_{in} = 1 \text{ bar}$.
- a vacuum operation refers to air (ISO 8778) at the inlet of the compressor with: temperature: $T = 20^{\circ}\text{C}$, and a compressor absolute outlet pressure: $p_{in} = 1 \text{ bar}$.



Depending on custom specific operation conditions such as e.g. gas inlet pressure and temperature, humidity, cooling conditions, the operation in environmental conditions with vibrations and/or depending on the combination of the compressor and the corresponding Celeroton TurboCell converter, the compressor maps shown in this document may be different or may have additional limitations. For technical details and further information, please refer to the user manual or contact Celeroton TurboCell directly.