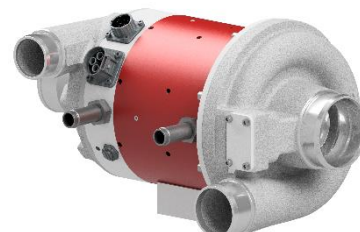


## CTE-4000 datasheet

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

Maximum pressure ratio	3.1
Maximum mass flow	210 g/s
Maximum speed	120,000 rpm
Acceleration time <sup>1</sup>	<1.2 s
Maximum compressor input power	25 kW
Expander power <sup>2</sup>	8 kW
Weight	19 kg (excl. cable)
Dimensions (L x W x H)	352 x 192 x 215 mm (13.9 x 7.6 x 8.5 inch)

### Cooling

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	Amphenol/PowerLok 4.0
Sensor connector	Amphenol/Eco-Mate RM

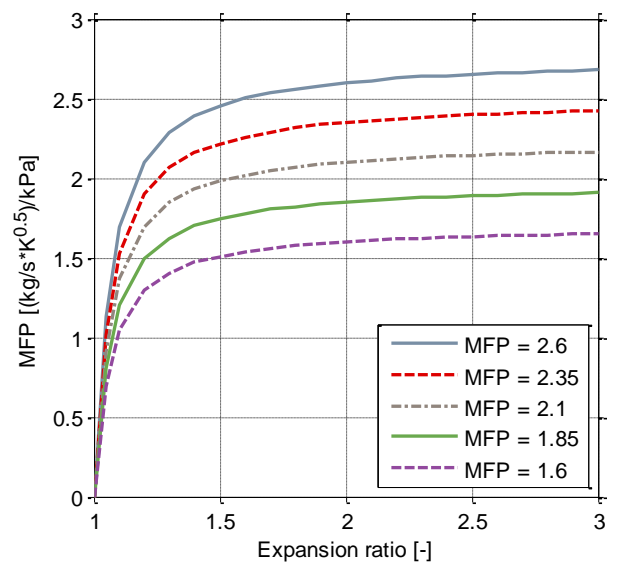
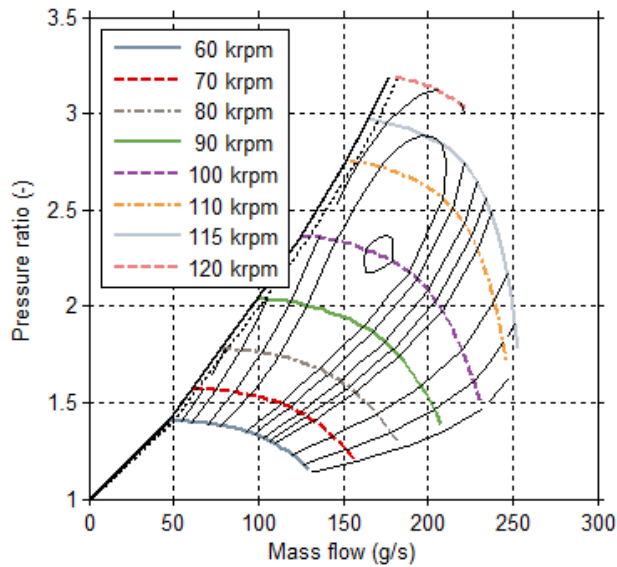
<sup>1</sup>Acceleration from idle to 90% of maximum speed

<sup>2</sup>At expansion ratio of 1.9

All rights reserved. All information in this document is based on Celeroton TurboCell's best knowledge and is not to be considered as a warranty or quality specification. The information given is designed as a guidance and customers are requested to check the suitability and usability of the product in their specific application with consulting Celeroton TurboCell. The information herein is subject to change without notification.

## Compressor map with expander CTE-4000

Pressure ratio versus mass flow      Expander options with different mass flow parameters (MFP)



All rights reserved. All information in this document is based on Celeroton TurboCell's best knowledge and is not to be considered as a warranty or quality specification. The information given is designed as a guidance and customers are requested to check the suitability and usability of the product in their specific application with consulting Celeroton TurboCell. The information herein is subject to change without notification.

The CTE-4000 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.