# Bosal P4 thin walled exchangers for 400 – 1000°C / 750 – 1832°F

BOSAL Energy offers welded, compact plate heat exchangers for high temperature applications. The heat exchanger line is modular, and is available in high-end stainless steel or Inconel. They are highly effective and are suitable for high temperature (up to 1,000ºC/ 1,832ºF) with limited Cr evaporation and metal dusting.

### Application
Suitable for a wide range of applications, such as:

- Fuel cell systems (SOFC, PEMFC, MCFC)
- Chemical Processes
- Gas turbines
- Micro turbines
- Stirling engines
- Internal combustion engines

### Benefits
- Compact,
- Easy to install
- Designed for >40,000 field operating hours
- Inconel version for optimal chemical resistance
- Catalytic coating available for combined heat exchange and steam reforming

### Design
- Secured quality with robotized welding (Laser, TIG, SP-Mag)
- Validation tested using highly sophisticated infrastructure
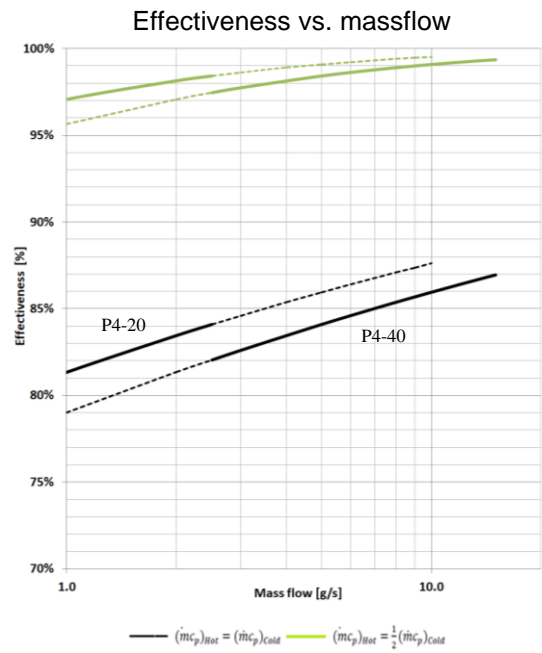- Manufacturing and process engineering expertise
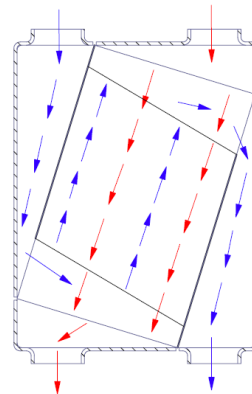




Schematics of the hot and cold flow direction



Pressure drop vs. mass flow
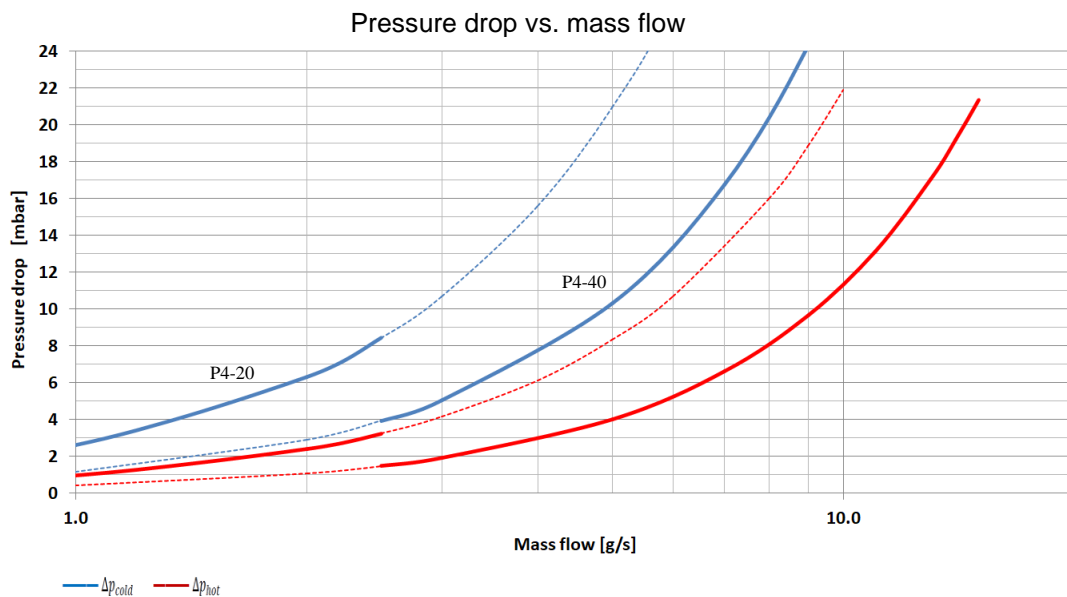
Boundary conditions: Air-air, $\dot{m}_{cold} = \dot{m}_{hot}$, $T_{cold_{in}} = 20\,°C$, $T_{hot_{in}} = 800\,°C$, $p_{cold} = p_{hot} = 1\,bar(a)$

## Technical data

| Housing material | Stainless steel Inconel |
|---|---|
| Foil material | Stainless steel Inconel (optional) |
| Max. flowrate m³/h (gpm) | 59 (260) |
| Max. design temperature °C (°F) | 900 (1652) 1000 (1832) (Inconel) |
| Flow directions | Counter flow or co flow |
| Oxidative coating (optional) | Heat exchanger with oxidizer function |
| Reductive coating (optional) | Heat exchanger with Steam reformer function |

## Dimensions and mass

| # plate pairs (= n) | A (height) mm (inches) | B (Port OD) mm (inches) |
|---|---|---|
| 20 | 52 (2.05) | 33.4 (1.23) |
| 40 | 98 (3.86) | 33.4 (1.23) |

| # plate pairs (= n) | Weight kg (lb) | Volume l (gal) |
|---|---|---|
| 20 | 3.82 (8.35) | 1.5 (0.41) |
| 40 | 6.30 (13.75) | 3.0 (0.82) |

### Effectiveness vs. massflow



Legend: $(\dot{m}c_p)_{Hot} = (\dot{m}c_p)_{Cold}$ , $(\dot{m}c_p)_{Hot} = \frac{1}{2}(\dot{m}c_p)_{Cold}$

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## Dimensional Drawing
## mm (inches)



DETAIL Y