

HeatMatrix[®] LUVO

FOR DRYERS

The HeatMatrix[®] LUVO is a new generation 'gas/gas' heat exchanger that enables heat recovery from corrosive and fouling gas streams. This heat exchanger consists of lightweight corrosion resistant plastic modules instead of heavy and costly metal components. The counter current flow configuration recovers over 20% more energy compared to existing cross flow exchangers and the lightweight construction enables easy installation in existing plants.

HeatMatrix[®] LUVO Dryer applications

Dryer applications are heavy energy consumers in the industry. Typical outlet temperatures of exhaust streams are between 65 and 120 °C, which represents a valuable opportunity for saving energy. Up to 20% of the total energy consumed can be recovered when heat from the hot exhaust stream is transferred to the cold air inlet stream.

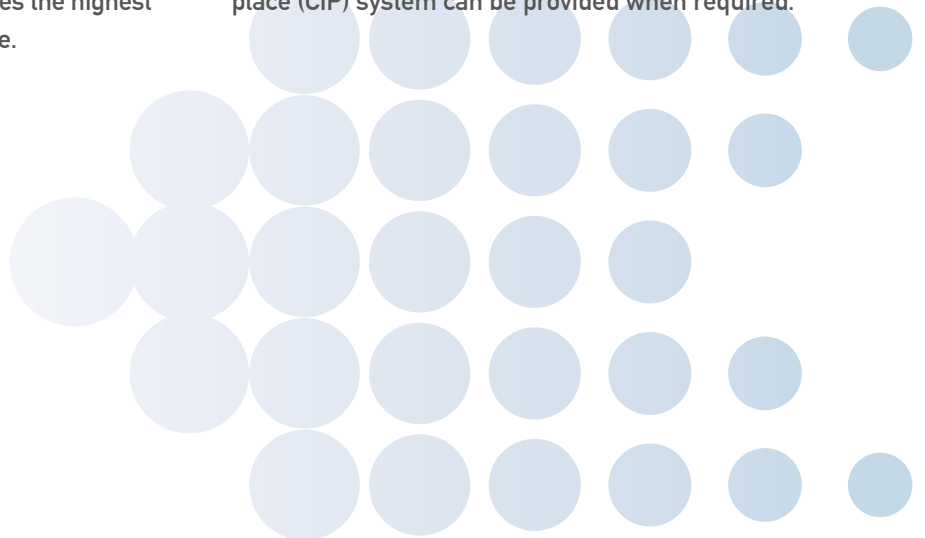
Common complaints about standard metal heat exchangers are their high weight, large size, significant maintenance cost and limited efficiency. HeatMatrix offers a simple compact heat exchanger for direct heat integration hot exhaust gas with cold drying air. Its counter current flow characteristic provides the highest efficiency at a minimum of occupied space.

Low installation cost

The lightweight plastic internals require only a minimum of supporting structure and allow installation at elevated locations. The HeatMatrix[®] LUVO is a pre-assembled unit in a 20 ft or 40 ft container frame. The unit is pre-insulated and ready to install.

Easy cleaning and maintenance

The (fouling and/or corrosive) exhaust gas stream flows 'straight-through' the inside of the plastic tubes. This design and the plastic material minimizes the deposition of fouling particles. Retractable tube bundles are accessible via the top of the heat exchanger for easy maintenance and a cleaning in place (CIP) system can be provided when required.



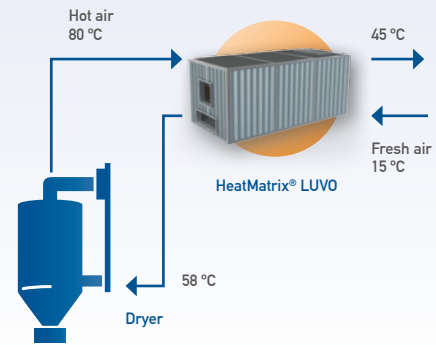
HeatMatrix® LUVO

Case: 100,000 kg/hr dryer

The case below shows the potential savings for a (spray) dryer equipped with a HeatMatrix® LUVO heat recovery unit.



- Hot exhaust air 100,000 kg/hr
- Exhaust outlet temperature 80 °C
- Cold drying air 90,000 kg/hr
- Drying air inlet temperature 15 °C
- Heated air temperature 58 °C
- Duty HeatMatrix® LUVO 1,070 kw
- HeatMatrix® LUVO dimensions 7 x 4 x 3 m

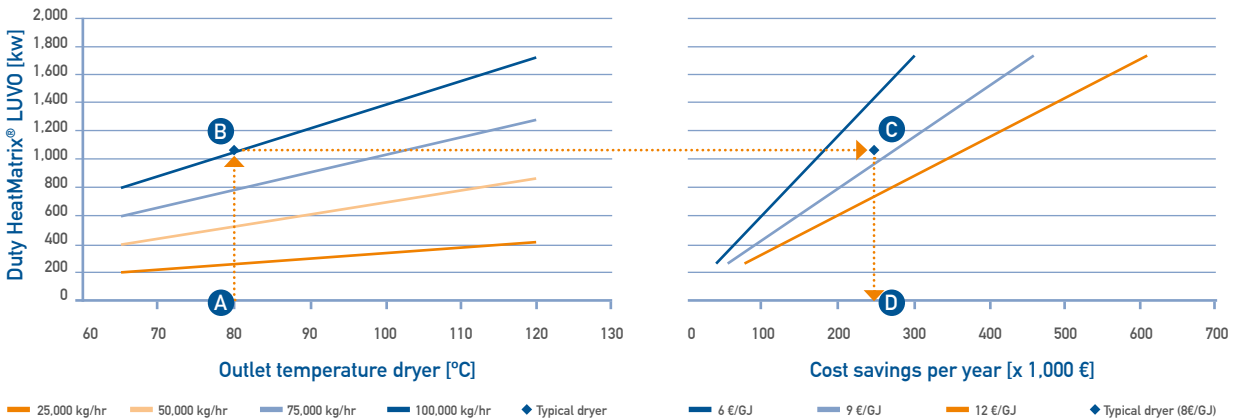


Using the graphs below the potential savings can be calculated for any dryer capacity operating 8,000 hr per year and fuel cost (0.25 €/m³ natural gas is 8 €/GJ and 0.45 €/litre heating oil is 12 €/GJ).

The savings for a dryer exhaust stream of 80 °C (A) and 80,000 kg/hr (B) at 8 €/GJ (C) are 248,000 €/yr (D). The carbon dioxide emission is reduced by 1,875 mt/yr based on natural gas.

Graphs for calculating potential energy savings

(follow steps from A to D)



Contact information

Please visit our website for more information and the online business case calculator or contact a HeatMatrix engineer for professional advice on your energy saving opportunity.

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