DRASCO
ENGINEERING SOLUTIONS

Blackbox 3D heat exchanger:

For counterflow heat exchange between two media (liquid or gas) with extreme temperatures (hot or cold). Suitable for cryogenic applications and liquid nitrogen (LN2).

Our disruptive heat exchangers are produced on the newest generation of metal 3D printing machines available. Compared to buy part solutions like fusion-bonded plate heat exchangers we have several advantages like:

- higher power density and smaller system size
- higher efficiency
- lower losses due to efficiency and minimized outer surface
- much higher temperature deltas possible
  Fusion-bonded plate heat exchangers are normally limited to 100K temperature delta since they are made out several materials with different thermal expansion coefficients what results in high mechanical stress. This leads to damages at solder connections over time and as a result to damaged units. With our one-piece design we got rid of this limitation completely

Our standard unit is shown as an example. Our design can be individually adapted to meet your requirements.

Contact us! Together we will create an effective solution!

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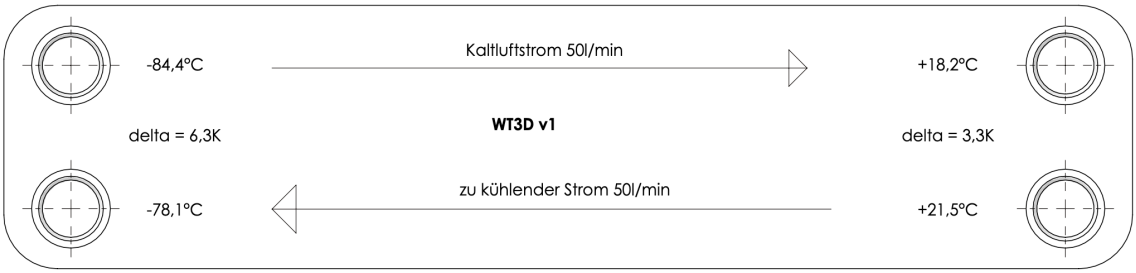
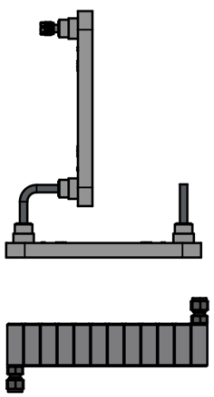
Here you can see a comparison between our unit and 2x Alfa Laval CB16-4A fusion-bonded plate heat exchangers connected in series. Both measurements were done with equal insulations and the same sensors inside the 4 connection tubes. For this comparison -90°C cold dry air was used on one channel and dry compressed air with ambient temperature on the other.

On the connectors of the symbolic images the resulting temperatures are shown.

You can see that our unit is colder at the cold air output and warmer on the exhaust output. **On both ends the remaining delta T is almost 3x lower!**



Size comparison: Upper image 2x Alfa Laval, lower Drasco 3D:
The resulting box incl. Insulation is more than twice the size!



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