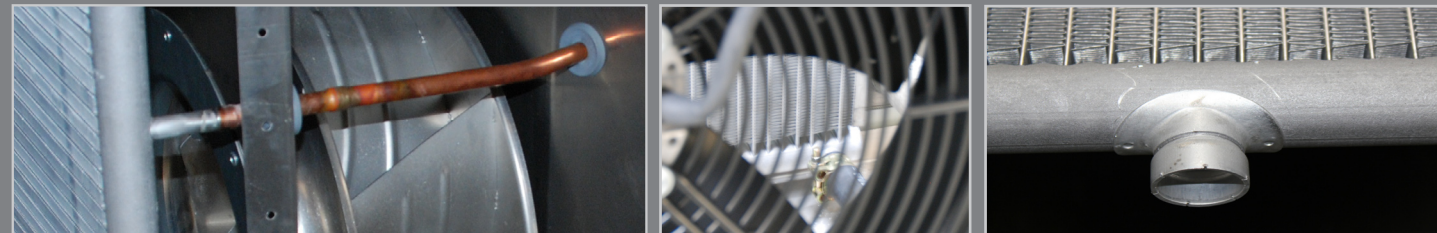


ALL ALUMINIUM CONDENSERS



The all-aluminium
condensers are 100%
recyclable

- Reduces fan power - low air pressure drop
- Reduces noise – low air pressure drop
- Reduces refrigerant charge up to 85%
- Reduces coil depth and space up to 75%
- Reduces coil weight by up to 70%
- Provides maximum protection for the environment.



The technology

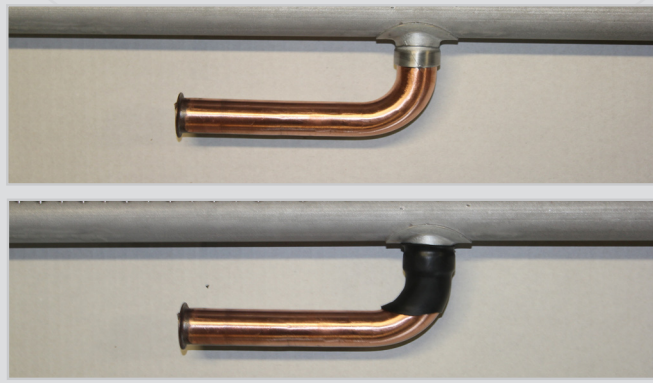
The Aluventa high performance condenser is developed with 4 significant drivers in mind:

- A thermodynamic design giving a high heat transfer on both the refrigerant and the air side.
- A product which can be made on a fully automated production line.
- A product with a high and uniform quality.
- A product and production set-up meeting the drivers on the HVAC/R market.

Our condensers will improve your product and minimize your cost.

Aluminium/copper joints

All-aluminium condensers are integrated with copper tubing by soldering for easy integration with Cu plumbing. The Cu/Al joint is protected by heat shrinkable tubing

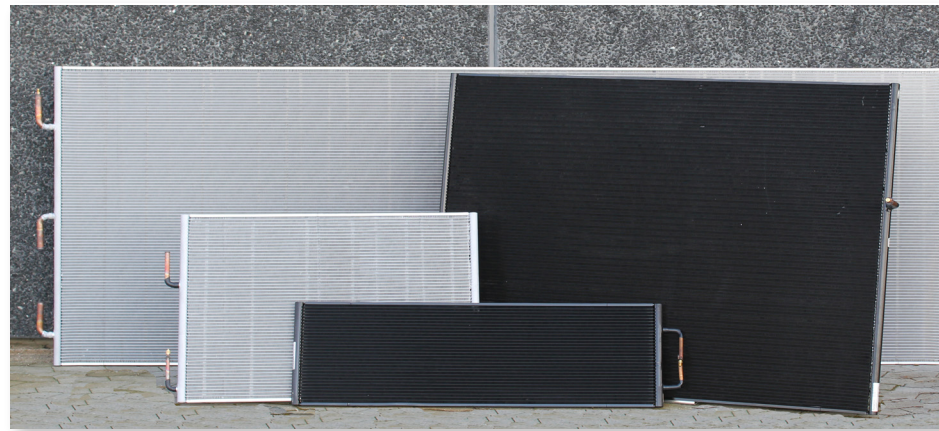


Coating

Coils can be supplied with coating (Electro coating) for improved protection in harsh environments



ALUVENTA



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Aluventa is a leading manufacturer of all-aluminium heat exchangers for the Heating, Ventilation, Air Condition and Refrigeration market.

We provide complete, highly effective and competitive solutions that significantly improve other products in today's marketplace by increasing effectiveness while reducing the restrictions of weight and space as well as minimizing refrigerant charge.

Our modern and flexible production facilities enable cost effective solutions to Batch and Series production ranging from small to very large condensers. Our production methods apply the world's most modern technology with a dedication to protect the environment.

We work in close co-operation with our customers from development and design to production. We therefore offer extensive support and ongoing assistance for present and future projects.

In 2005 the company was awarded with "The Golden Rivet" for having a great impact on development in Denmark and being a source of inspiration.



QUALITY SYSTEM
DS/EN
ISO 9001



ALUVENTA



ALUVENTA

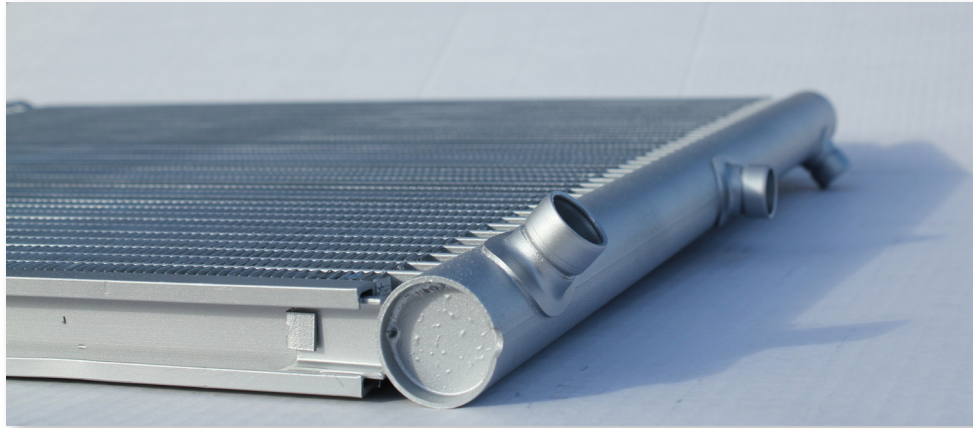
ALUVENTA

High performance

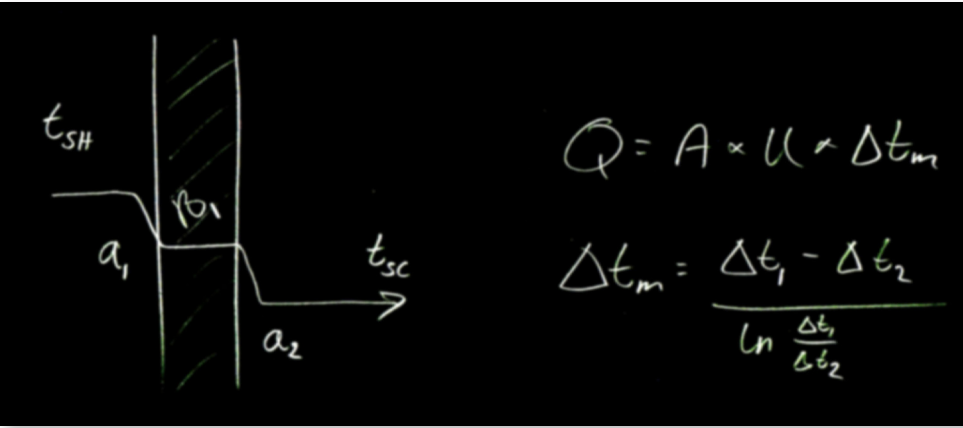
ALUMINIUM CONDENSERS

for the HVAC/R market

- Improve your product
- Save cost



ALUVENTA
TRADEMARKS



SUPERIOR
HEAT
TRANSFER

Improve your product
Save cost

THE FACTS
ARE
HARD TO BEAT

Dedicated HVAC/R

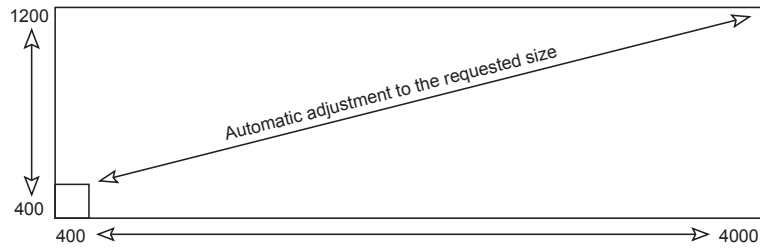
Aluventra has done an intensive R&D in alloys, tooling and machinery, leading to the most efficient production methods and the only real dedicated solution for the HVAC/R market.

Large size condensers

Aluventra produces condensers from 400x400mm to 1200x4000mm. The large size condensers will avoid the problem of having to connect several smaller condensers in parallel. All condensers can be tailored to fit the application.

Fully automated production

The production facilities at Aluventra include the first fully automated assembly cell for small to very large condensers as well as one of the largest CAB-furnaces in the world.



Dimensioning software, *AluHex*

Aluventra has developed an accurate software for dimensioning of our all aluminium condensers. The software is tested by Danish Technological Institute in Denmark.

Quality

All Aluventra products are PED 97/23/EC Compliant and UL 207 approved. The Quality Control System is adopted from the automotive industry and ISO 9001 certified. All coils are leakage and pressure tested using state of the art Helium detection technology. (~100 Times more accurate than bubble detection in water)

Design freedom

The parallel flow design offers great flexibility when it comes to circuiting and the condenser can even be designed with a subcooling section for improved COP. Our condensers can be customized to meet specific working conditions and can be shaped to match the application.

Well known and proven design

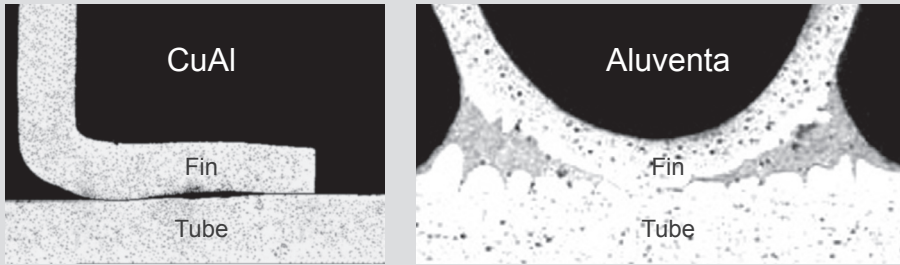
Our products have all the best features from the automotive market, and have been further developed to meet all the demands from the HVAC/R market.

- Small to large size • Available as one-off / batch / series • Improved efficiency
- Balanced to work with standard fans of the business.



Brazed joints

Poor contact between fins and tubes accounts for 5-10% of heat transfer resistance in a conventional mechanical manufactured Fin and tube heat exchanger. The resistance increases during service period due to fouling in the gap. The all aluminium condenser is brazed. The metallurgical bond between fins and tubes gives a joint with optimum conduct of heat.



Small gaps between fins and tubes reduce heat transfer performance in conventional mechanically or hydraulically manufactured heat exchangers. Aluventra condensers are brazed, ensuring excellent heat transfer performance because there are no gaps in the joint. Also the big primary to secondary heat transfer area gives a very efficient energy flow from tube to fin.

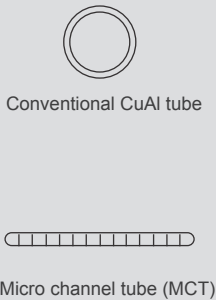
Tube design

The micro channel tube has several advantages to a round copper tube:

- The internal heat transfer area to flow area ratio is bigger/larger.
- The flow regimes occurring during condensation is more efficient.
- The primary to secondary surface area is bigger/larger.
- The air shadow of the tube is less/smaller.

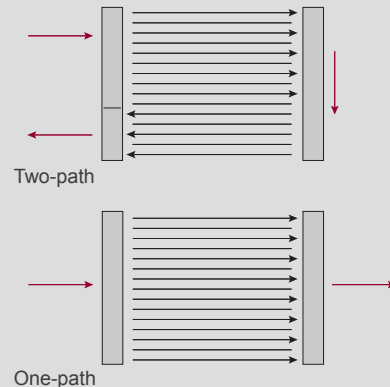
Internal heat transfer area

The micro channel tube has a large internal heat transfer area, whereas the CuAl tube has a large passive center area, transferring no heat.



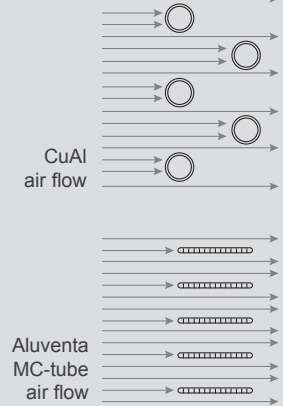
Parallel flow design

Baffles can be inserted in the header to optimize pressure drop.



Air flow

Due to the straight through air flow, the air pressure drop is low and the lower fan power results in reduced noise level and smaller or less fans.



The All-aluminium condensers (MCT) offers large improvements compared to ordinary CuAl condensers.

PRECONDITIONS		CuAl	25 mm MCT
Face area (L x H)	m	2 x 1	
Capacity	kW	98	
Face velocity	m/s	3	
Air temperature	°C	35	
Condensing temperature	°C	55	
Refrigerant		134 a	

RESULTS		CuAl	25 mm MCT	IMPROVEMENT	BENEFITS
Depth	mm	89	25	72,0%	Smaller cabinet
Weight	kg	76	29	61,8%	Reduced transport cost • easy handling
Air side pressure drop	Pa	98	70	20,4%	Smaller or less fans • reduced fan speed (less noise) • reduced energy consumption
Refrigerant pressure drop	kPa	55	27	51,9%	Increased performance • improved efficiency
Internal volume	Liters	23,0	4,3	81,3%	Reduced refrigerant charge - strong environmental profile

COMPARISON A

PRECONDITIONS		CuAl	18 mm MCT
Face area (L x H)	m	1,0 x 0,6	
Face velocity	m/s	2	
Air temperature	°C	30	
Condensing temperature	°C	50	
Refrigerant		404a	

RESULTS		CuAl	18 mm MCT	IMPROVEMENT	BENEFITS
Capacity	kW	17,8	20,0	12,1%	Increased capacity
Depth	mm	67	18	73,2%	Smaller cabinet
Weight	kg	21,0	6,5	69,0%	Reduced transport cost • easy handling
Air side pressure drop	Pa	31	20	22,6%	Smaller or less fans • reduced fan speed (less noise) • reduced energy consumption
Refrigerant pressure drop	kPa	14	11	21,4%	Increased performance • improved efficiency
Internal volume	Liters	5,0	0,8	84,0%	Reduced refrigerant charge - strong environmental profile

COMPARISON B

