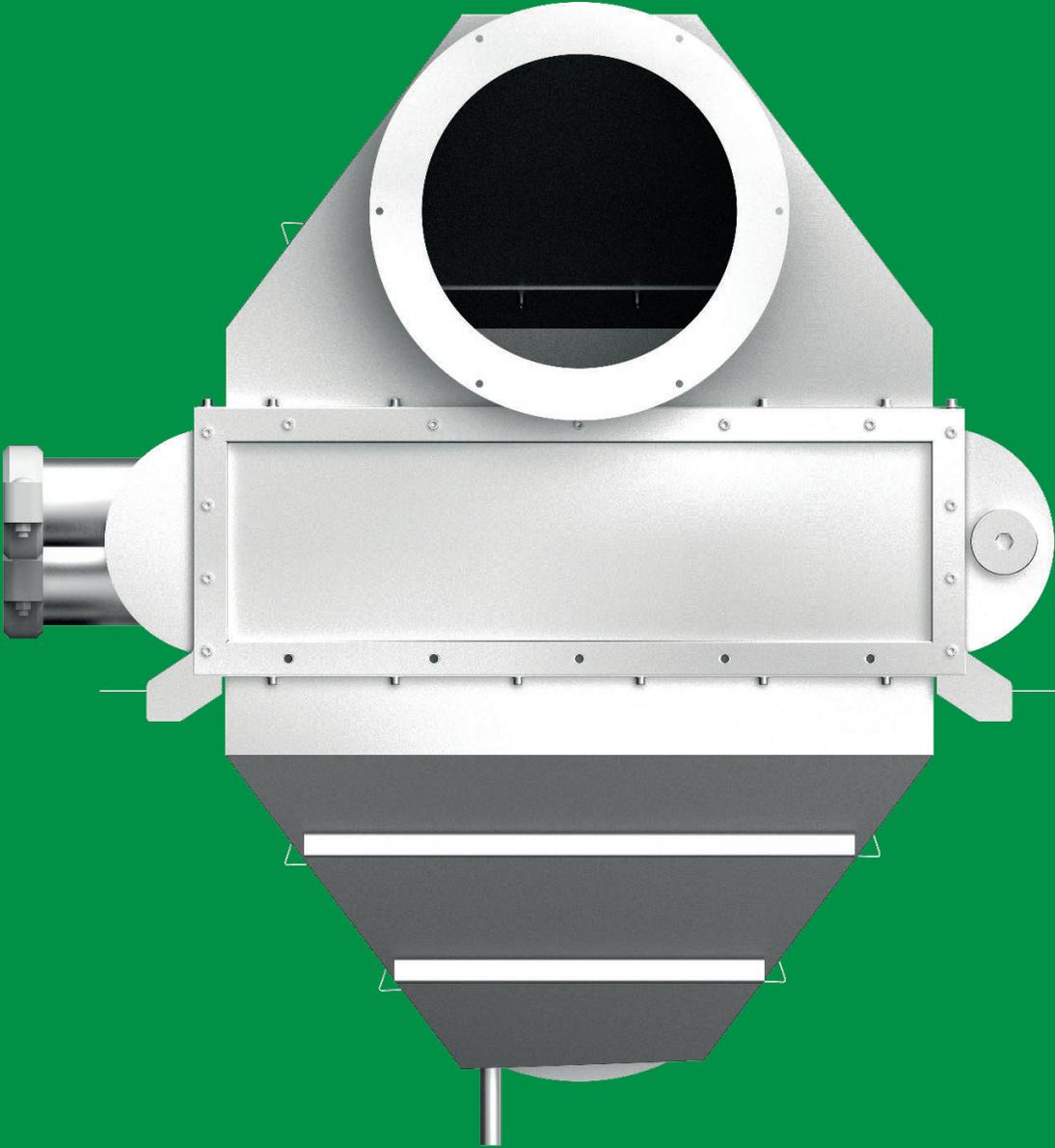
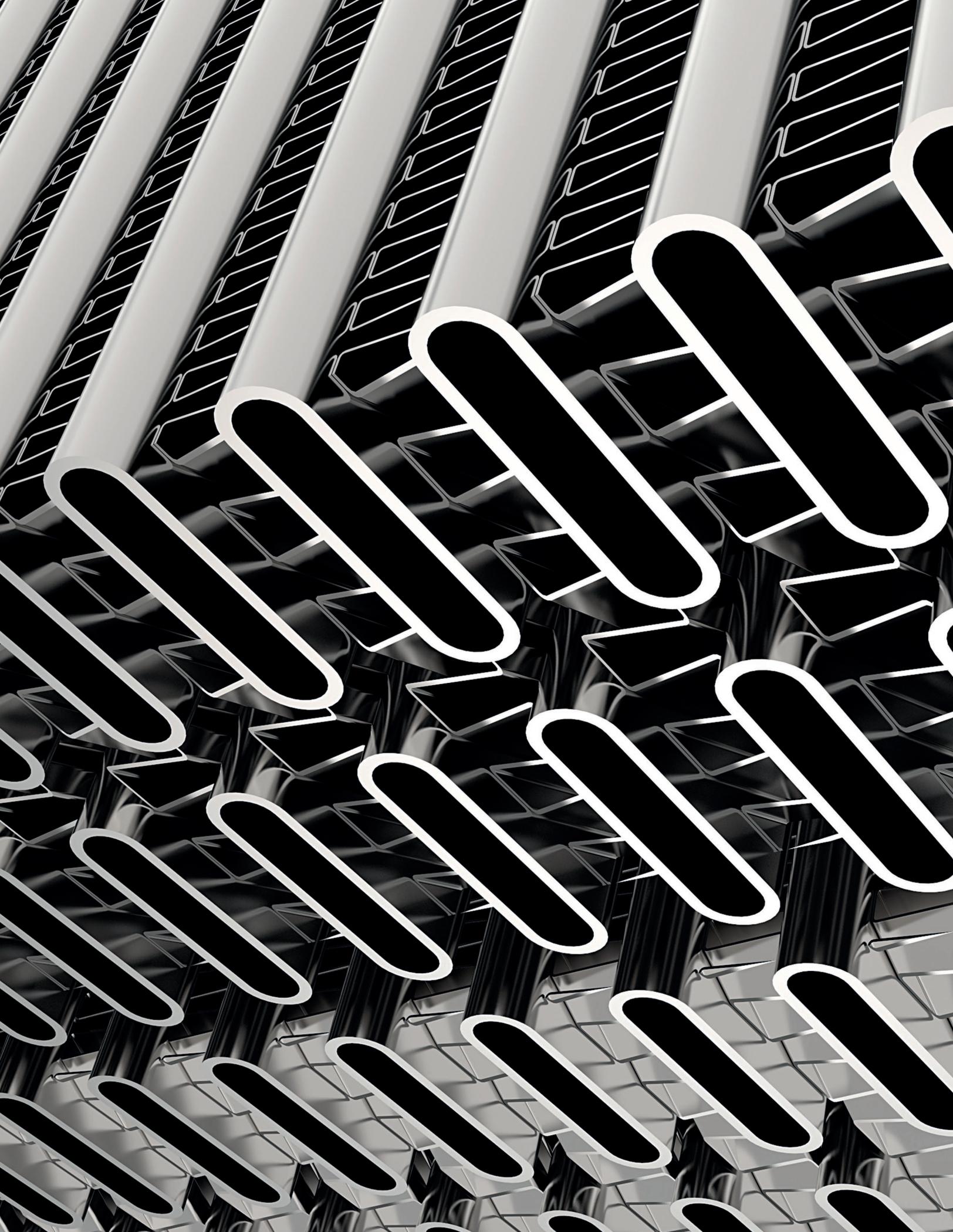


HEAT EXCHANGERS



**HIGH EFFICIENCY
CONDENSING ECONOMIZERS**

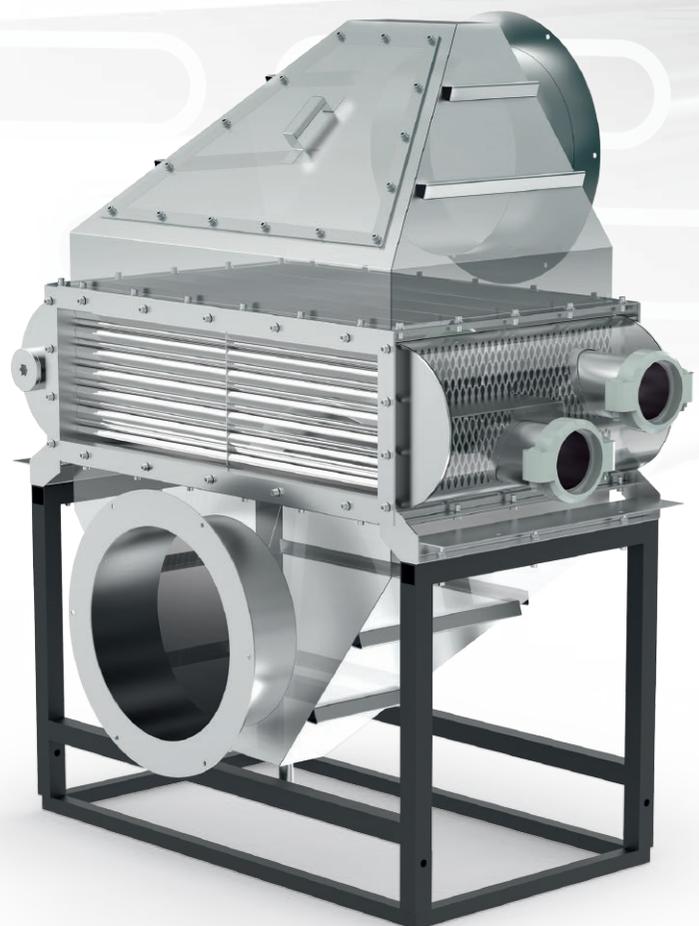


HIGH EFFICIENCY CONDENSING ECONOMIZERS

Stainless steel condensing secondary heat exchangers from AIC constitute an integral part of any efficiency improvement program.

Typically used with hot water boilers or configured with older type of heating boilers, condensing economizers improve the overall heat recovery system and boost boiler efficiencies.

AIC's wide selection of design patterns and technologies exceeds even the most demanding customer requirements.



E LINE

Secondary heat exchangers have been part of the AIC product portfolio for many years. Over this time, AIC has provided its customers with a great number of condensing products.

As your preferred OEM supplier of tailor-made products, AIC has engineered and built a range of free-standing economizers, for commercial and industrial applications.

Implementation of efficiencies in thermal processes is a vital element in streamlining rising energy costs. Installation of condensing economizers can help companies improve overall heat recovery and steam system efficiency by up to 20% (in standard applications).

eLINE

In the boiler room eLINE economizers transfer their waste heat to either the feed water or combustion air pre-heaters, essentially converting standard boilers into condensing boilers.

Covering a wide range of boiler sizes (from 250 kW to up to 6 MW), the eLINE delivers real energy and cost savings for commercial and industrial installations.

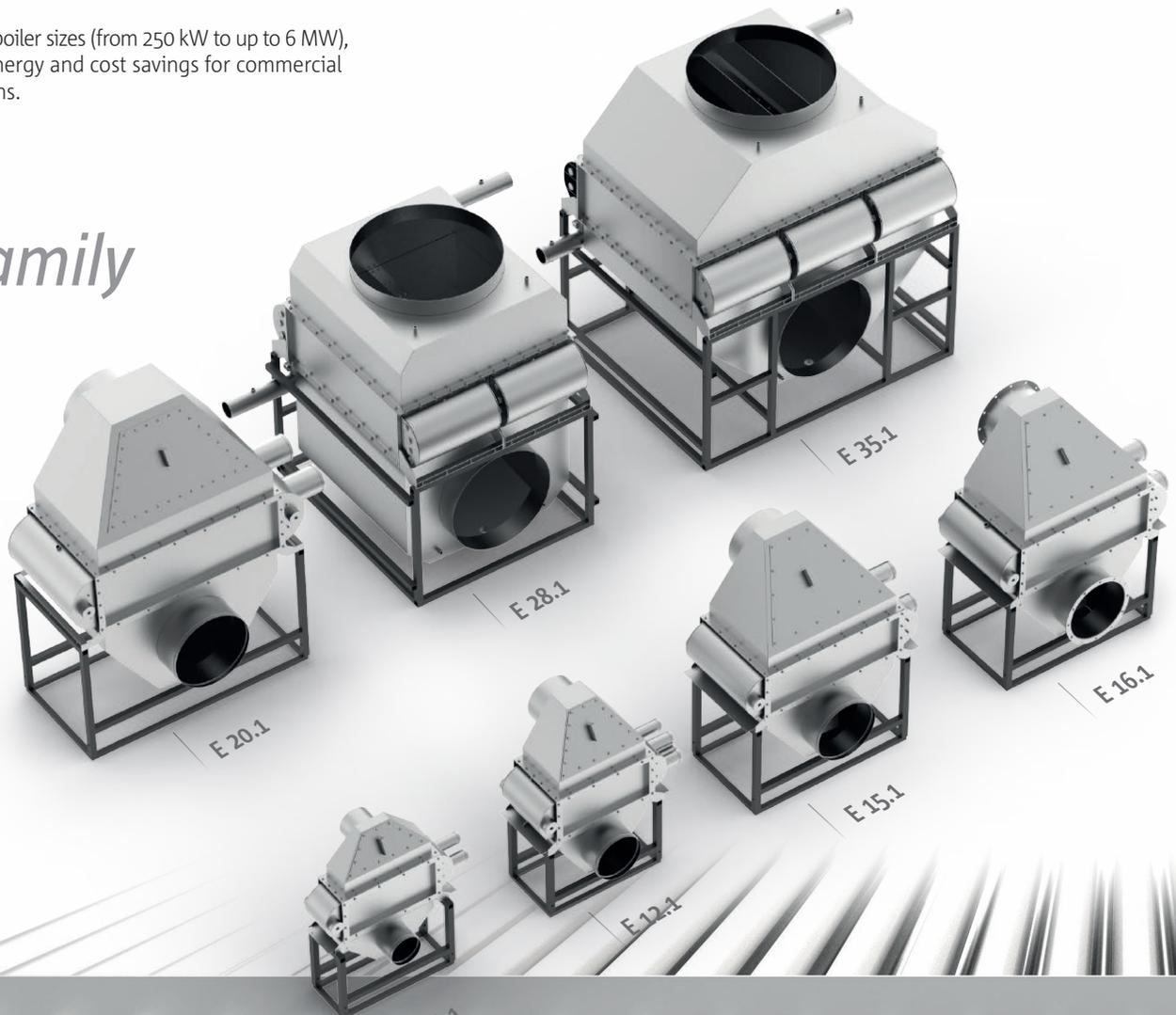
eLINE features and benefits:

- increased system efficiency by up to 20%
- real energy and cost savings
- converts standard boilers into condensing boilers
- unique tube design for optimal thermal performance
- easy installation, low maintenance

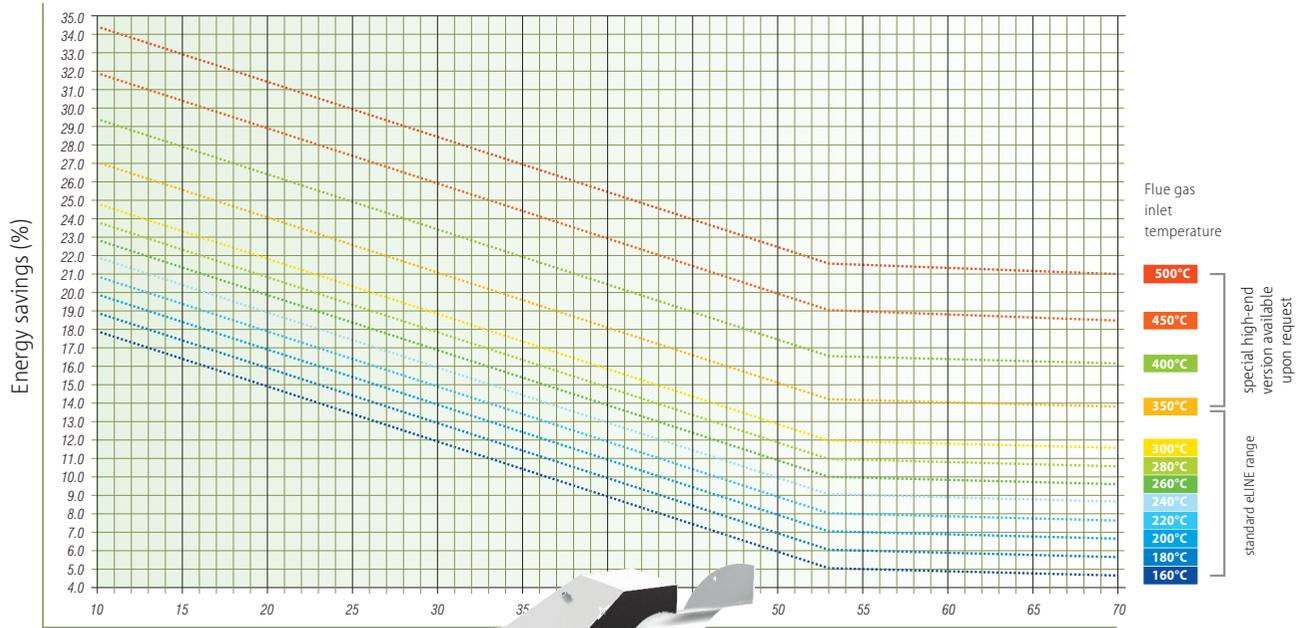
Typical economizer applications include:

- district heating systems
- greenhouses
- food processing plants
- pulp and paper mills
- textile plants
- dairy processing facilities
- hospitals

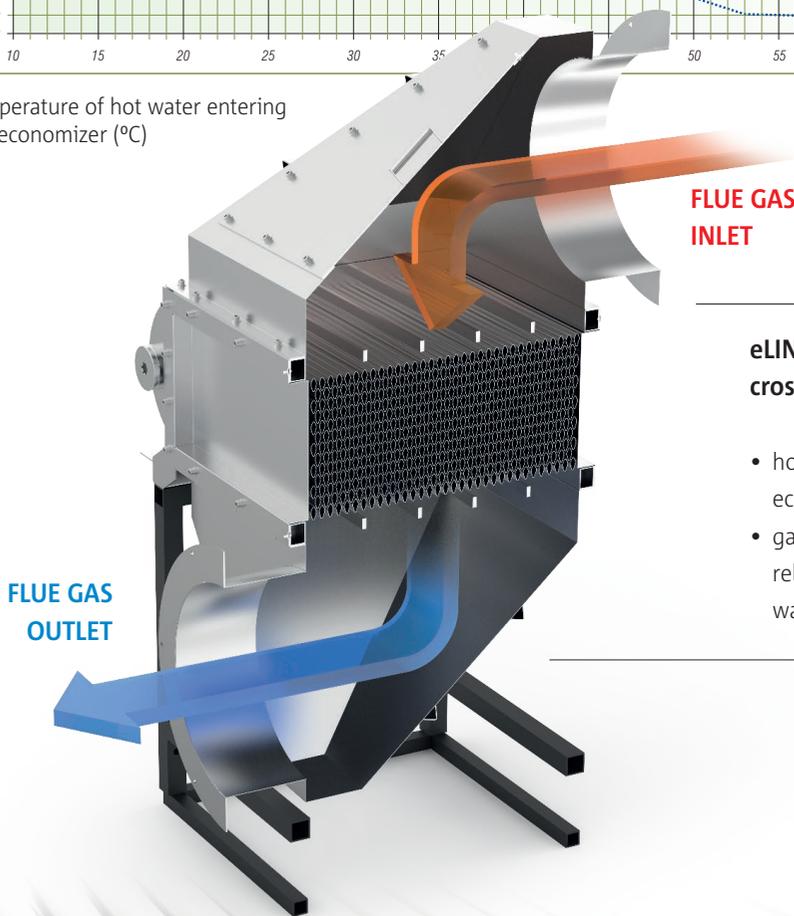
eLine family



ENERGY RECOVERY FROM COOLING FLUE GAS



Temperature of hot water entering the economizer (°C)



eLINE ECONOMIZER cross-section

- hot flue gases enter the economizer (between the tubes),
- gases cool down, condense and release latent heat captured by the water (inside the tubes)



OEM SOLUTIONS

AIC has always focused on new technologies and advanced designs when developing heat exchangers and heat recovery products for OEM applications.

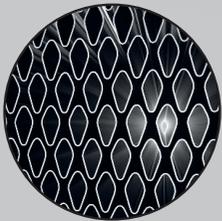
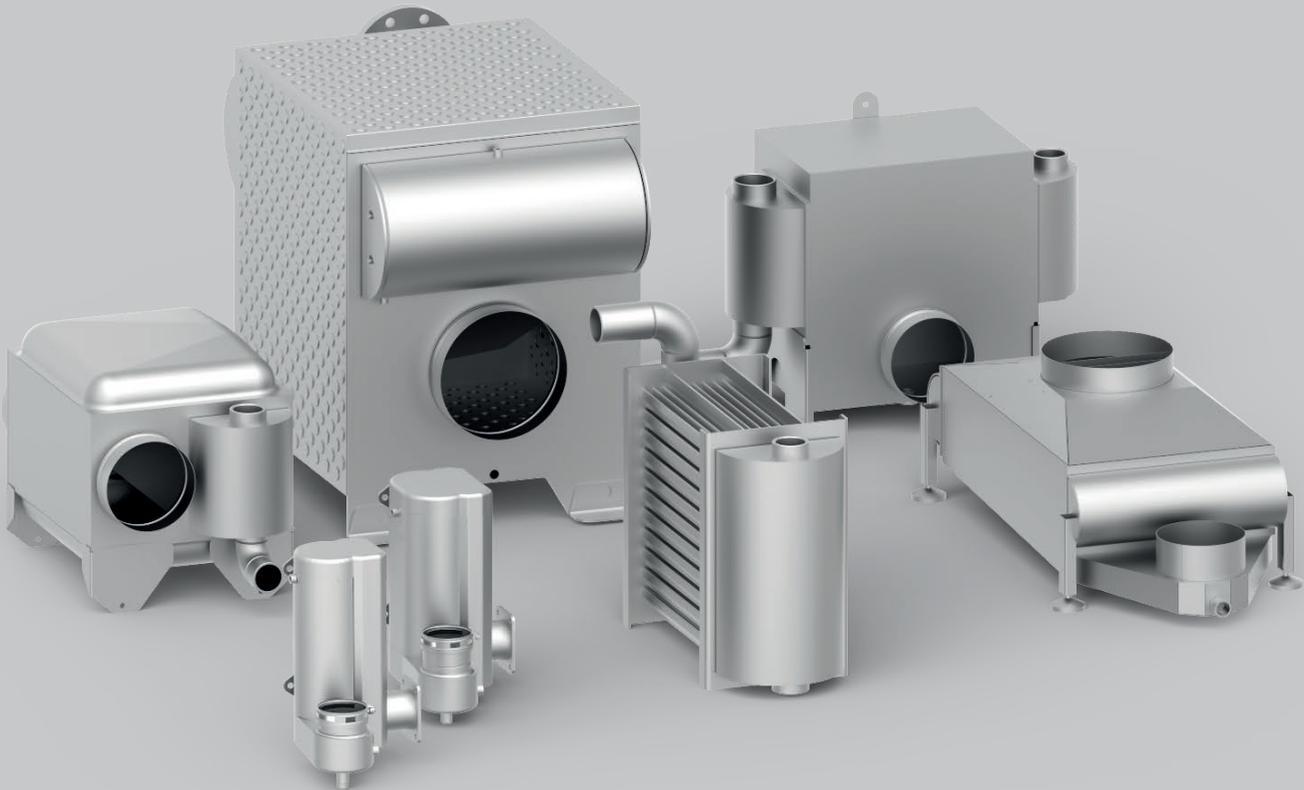
From the design stage, through engineering, product validation all the way to manufacturing, the AIC technical team has provided their clients with complete solutions that meet the most rigorous technical requirements.

Custom-built AIC products are a blend of ingenious heat transfer designs and high precision manufacturing technologies.

AIC economizers are able to increase efficiencies by recovering heat energy normally wasted when vented from buildings.

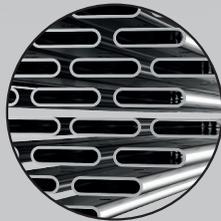
Built from most efficient and dependable heat transfer materials available, economizers are designed to maximise heat transfer boiler efficiency into the 96%+ range.

Current economizer range covers boiler systems from 32 kW to 1.5 MW (100 kBTU/h to 5 MMBTU/h).



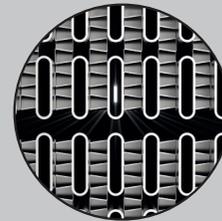
eLINE

AIC's is unique "tear-drop" tube design provides maximum heat transfer surface contact with the flue gas. Economizer tubes are strategically positioned to optimize the thermodynamics process and allow for improved recovery of wasted energy.



fire-tube

Design concept proven by thousands of heat exchangers in the field. Distinctive geometry of fire tubes enhances the heat transfer by creating a turbulent flow of flue gases. Built from high-grade stainless steel alloys.



F LINE

NEW

Brazed fin-and-tube construction with stainless steel ribbon channels provides increased heat transfer. Easily scalable modular concept with tightly packed fins result in reduced footprint and heightened thermal conductivity.

eLINE
DESIGN FEATURES

TEAR-DROP
SHAPE



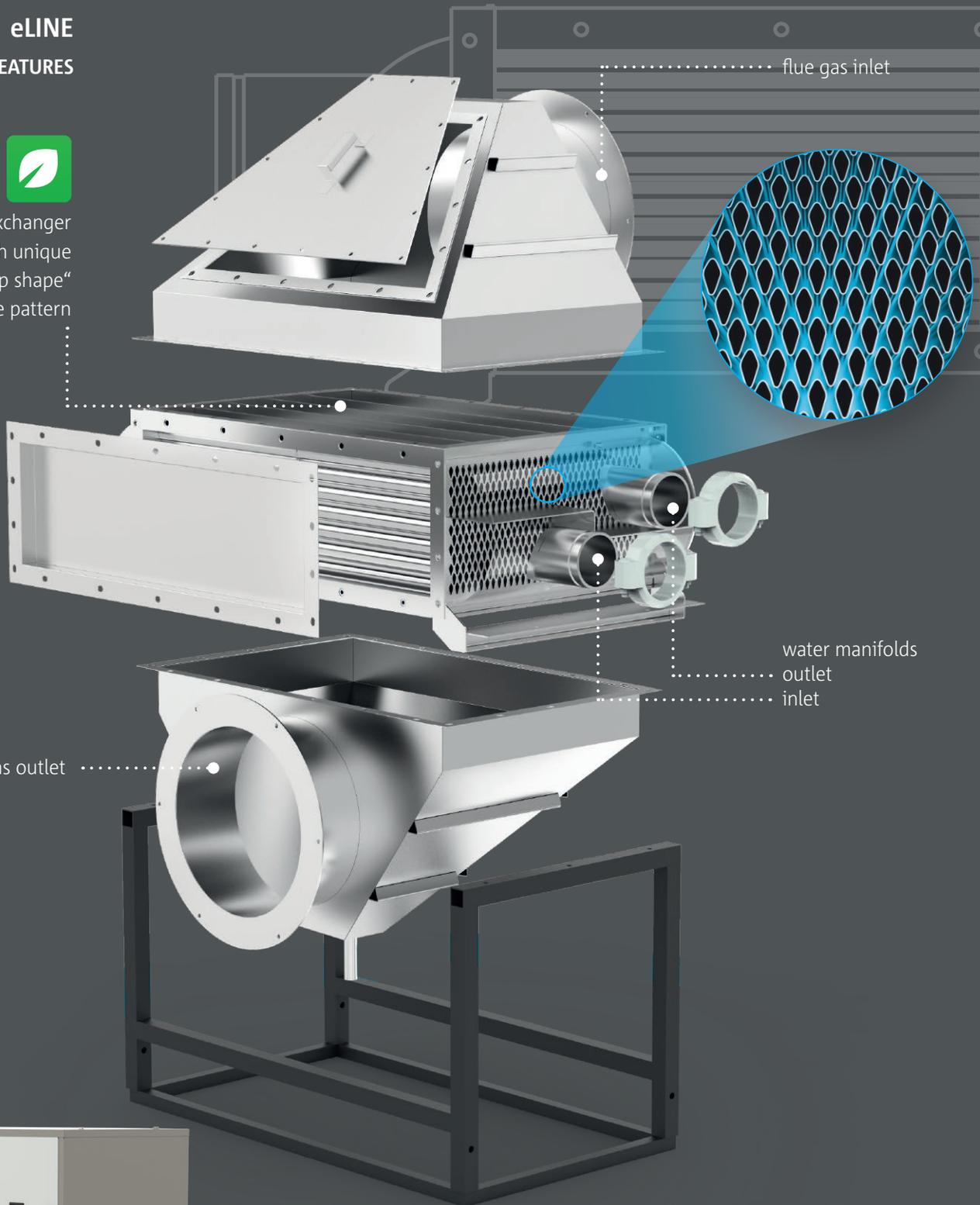
heat exchanger
with unique
“tear-drop shape”
tube pattern

flue gas outlet

flue gas inlet

water manifolds
outlet
inlet

removable
insulated panels



INSTALLATION DIAGRAMS – DIFFERENT ARRANGEMENTS

DIAGRAM 1

eLINE economizer and boiler connected in series.

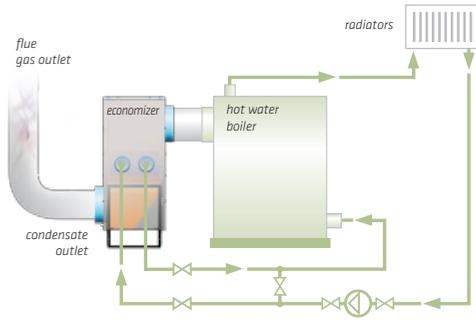


DIAGRAM 2

eLINE economizer and boiler connected in series with additional hydraulic clutch.

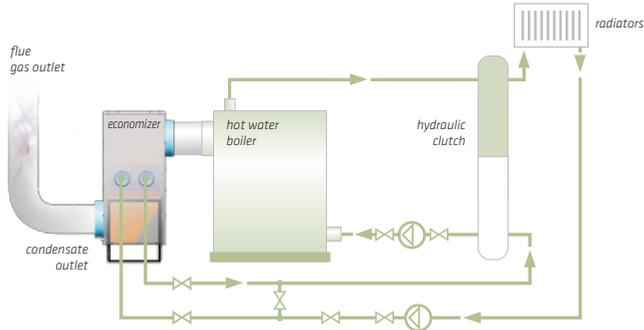


DIAGRAM 3

eLINE economizer and boiler with two additional hydraulic clutches and three-way valve.

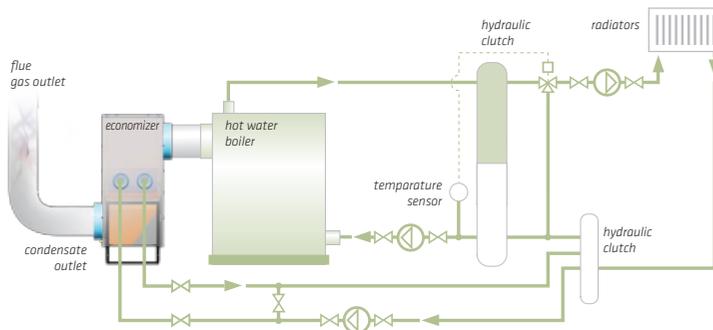


DIAGRAM 4

eLINE economizer and boiler with three additional hydraulic clutches and three-way valve.

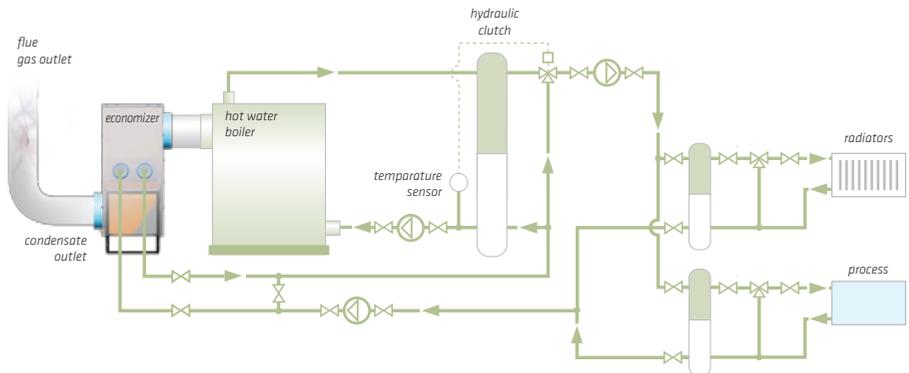
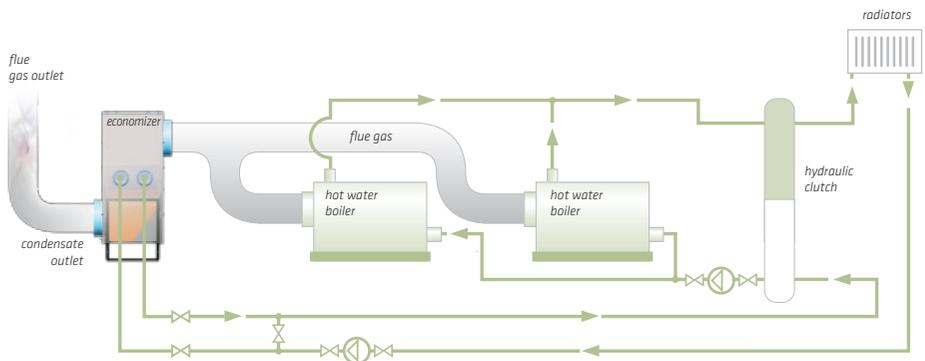


DIAGRAM 5

eLINE economizer and two boilers with hydraulic clutch.

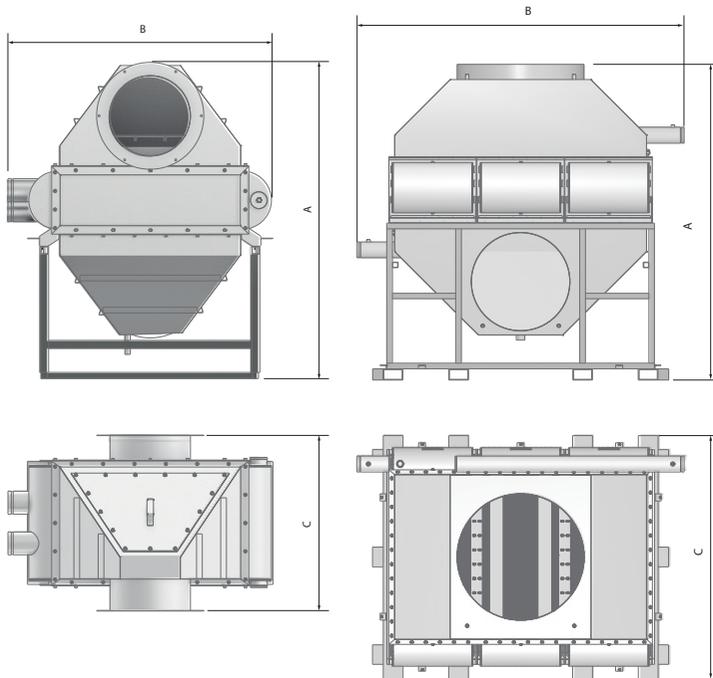


Technical Product Specifications

Connection dimensions

Model	Nominal Boiler Input		Exhaust Inlet		Exhaust Outlet		Water Inlet		Water Outlet		Drain Nozzle	
	kW	MBTUH	ømm	øin	ømm	øin	mm	in	mm	in	mm	in
E 8.1	150 - 250	500 - 850	200	8	200	8	DN65	2-1/2	DN65	2-1/2	DN20	3/4
E 12.1	200 - 500	650 - 1 700	300	12	300	12	DN65	2-1/2	DN65	2-1/2	DN20	3/4
E 15.1	450 - 1 200	1 500 - 4 100	400	16	400	16	DN100	4	DN100	4	DN20	3/4
E 16.1	1 100 - 1 500	3 750 - 5 100	400	16	400	16	DN125	5	DN125	5	DN20	3/4
E 20.1	1 400 - 2 000	4 800 - 6 850	500	20	500	20	DN150	6	DN150	6	DN20	3/4
E 28.1	3 000 - 4 000	10 240 - 13 650	700	28	700	28	DN150	6	DN150	6	DN50	2
E 35.1	4 500 - 6 000	13 650 - 20 475	900	35	700	28	DN150	6	DN150	6	DN50	2

Larger sizes (multiple-units) or custom-designed economizers available upon request.



Dimensions

Model	A		B		C	
	mm	in	mm	in	mm	in
E 8.1	1 212	47.72	1 010	39.76	506	19.92
E 12.1	1 312	51.65	1 017	40.04	677	26.65
E 15.1	1 562	61.50	1 304	51.34	875	34.45
E 16.1	1 591	62.64	1 339	52.72	897	35.31
E 20.1	2 040	80.31	1 765	69.49	1 082	42.60
E 28.1	2 070	81.50	2 041	80.35	1 734	68.27
E 35.1	2 249	88.54	2 321	91.38	1 730	68.11

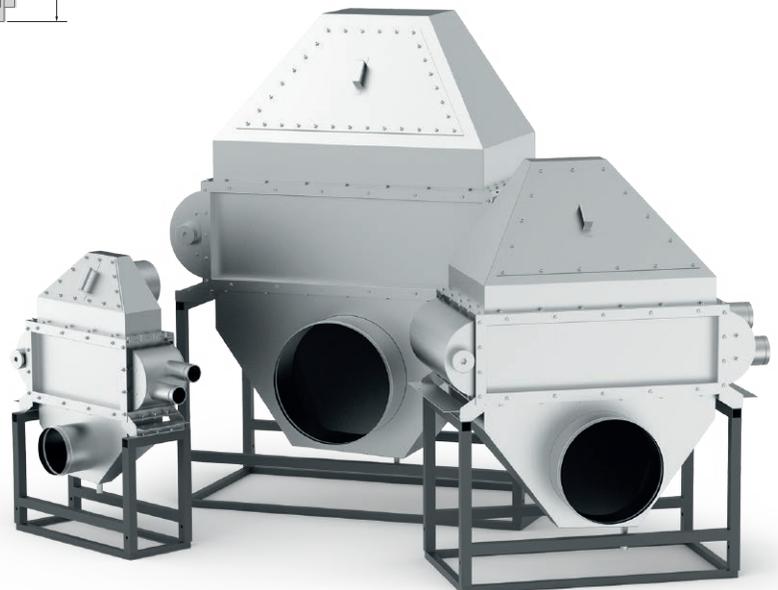
Models:

E 8.1, E 12.1, E 15.1

E 16.1, E 20.1

Models:

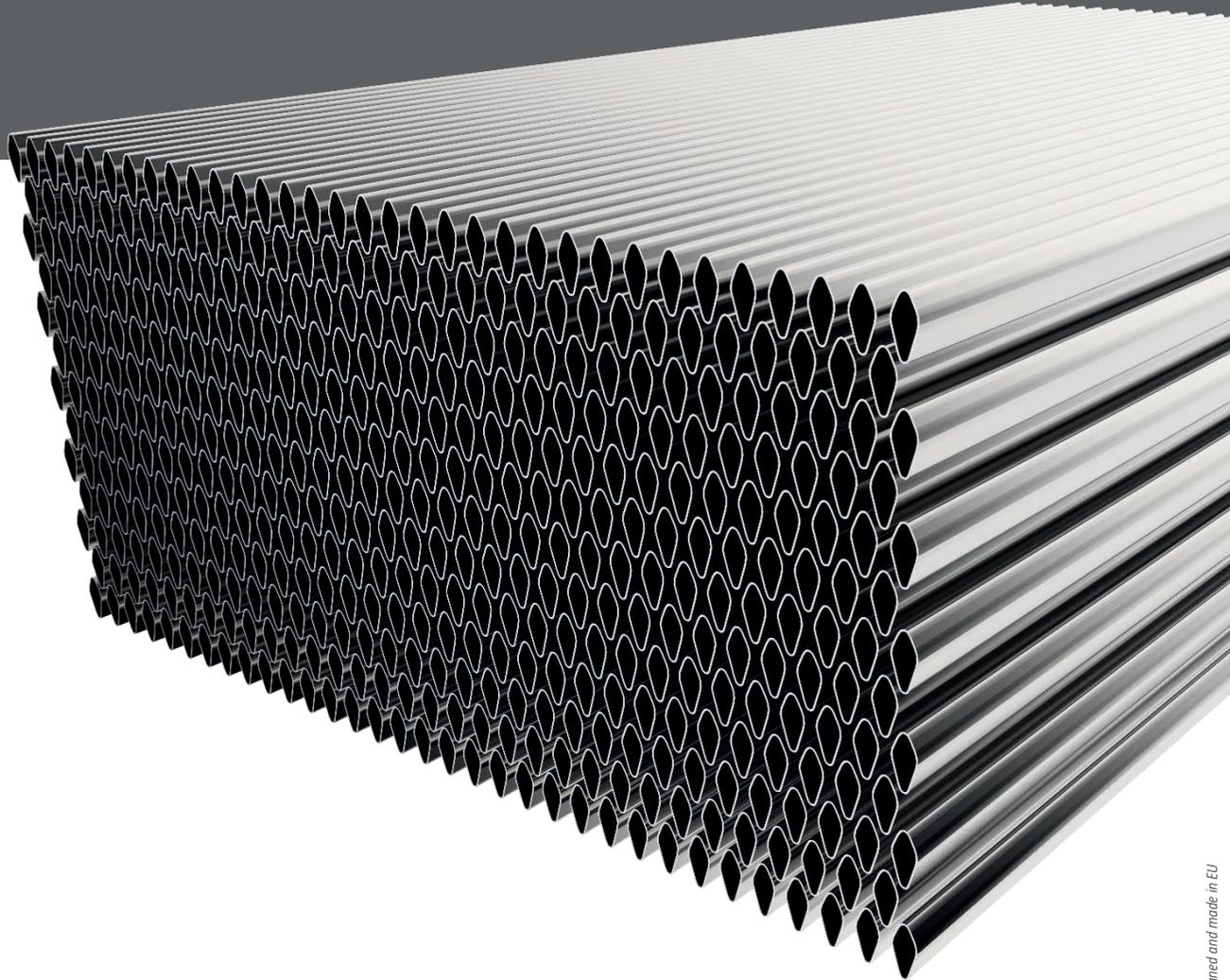
E 28.1, E 35.1



Performance

High efficiency condensing economizers, designed and engineered by AIC, have been known to provide increased efficiencies of boiler systems as well as high heat recovery rates.

These secondary heat exchangers were built to last and designed to withstand the corrosive effects of the condensing flue gases. Their robust construction combined with high quality materials ensure many years of product service and substantial benefits for the end user.



We are certified by renowned international inspection authorities. Our quality process and management systems fulfill the requirements of ISO 9001 Quality Management System. AIC heat exchangers are designed, tested and manufactured in accordance with ASME (Section IV and VIII) and PED (97/23/UE) regulations.



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