



## Sintesis Balance™ CMAF Multi-Pipe Unit





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**Cooling capacity: 80-650 kW**

**Heating capacity: 85-680 kW**

- Simultaneous cooling and heating all year around with two completely independent water circuits – one for chilled water and one for hot water
- Proprietary Trane Adaptive Refrigerant System™: Optimized refrigerant charge in every operating mode to deliver maximum performance and highest efficiency levels
- Unique Operating maps including high hot water temperatures for CMAF applications in regions where ambient air temperatures can reach -15°C
- Scroll compressors with intermediate discharge valve (IDV) technology
- Trane Adaptive Control™: Tracer® Symbio™ 800 microprocessor system optimize performances per application with the latest control technology



## Innovation at its best

CMAF multi-pipe units can deliver chilled water, hot water or any combination of cooling and heating. The new Sintesis Balance CMAF models are substantially more efficient when compared to oil and gas boilers, up to 350% in heat pump mode. CMAF offers market-leading Total Efficiency Ratio (TER) of up to 8.3 and Coefficient of Performance (COP) of up to 3.5 – the highest levels of any air-sourced scroll multi-pipe units available on the European market.

The expanded operating maps allow CMAF to deliver hot water with temperatures of up to 60°C. The unit's heating capabilities also makes it an excellent choice for building applications in climates with ambient air temperatures as low as -15°C.



## Sustainable and reliable cooling or heating. All year round.

Simultaneous heating and cooling by one single unit eliminates the need for separate boiler and chiller systems to fulfil a building's variable heating and cooling needs. This provides better use of floor space, reduced investment costs and lower total operating expenses in multifunctional facilities such as offices, hospitals, theatres and hotels - while significantly improving operational sustainability.

The fully electric-driven CMAF uses renewable and recovered energy to produce hot water and can replace existing fossil-fuel boiler and chiller systems to deliver both chilled water and hot water for the entire building, with no direct greenhouse gas emissions. This contributes to decarbonization of buildings and create better air quality in and around the building.

Trane Heating. Naturally

## Range description

- CMAF multi-pipe units are available in 29 different heating capacities, and in two or three efficiency levels: Standard Efficiency (SE), High Efficiency (HE) or Special Standard Efficiency (SSE).
- Multiple hydraulic module packages offer Single or dual pump with or without inverter drives, Integrated chilled water buffer tank (optional), Low noise or extra low noise packages, Integrated energy meter, EC or AC fans

## Technical specifications

<b>Cooling capacity</b>	80-650 kW
<b>Heating capacity</b>	85-680 kW
<b>Eurovent certification</b>	●
<b>ErP Certification</b>	
<b>Refrigerants</b>	R454B   R410A
<b>Operating mode</b>	Cooling only   Heat pump   Multi pipes
<b>Energy saving</b>	Heat recovery   Adaptive Frequency™ Drive
<b>Compressor</b>	Scroll



## Product data

### CMAF Standard Efficiency

	Pc (1) kW	Pec (1) kW	EER (1)	Ph (2) kW	Peh (2) kW	COP (2)	Pc (3) kW	Ph (3) kW	Pe (3) kW	TER W45 (3)	LwO (4) dB(A)	L (5) mm	W (5) mm	H (5) mm	OW (5) kg
CMAF 080 SE SN R454B	279,8	82,5	3,39	290,3	81,3	3,57	276,8	340,6	75,9	8,13	88	4520	2200	2530	2831
CMAF 090 SE SN R454B	310,6	95,3	3,26	319,3	91,2	3,50	313,8	387,6	85,8	8,18	89	4520	2200	2530	2981
CMAF 100 SE SN R454B	334,4	108,6	3,08	351,7	101,6	3,46	341,5	425,8	96,9	7,92	90	4520	2200	2530	3082
CMAF 110 SE SN R454B	381,1	125,4	3,04	397,3	114,2	3,48	395,5	491,9	108,5	8,18	92	4520	2200	2530	3231
CMAF 130 SE SN R454B	423,4	142,1	2,98	437,7	124,7	3,51	449,7	558,1	120,0	8,40	92	4520	2200	2530	3354
CMAF 140 SE SN R454B	466,0	154,3	3,02	489,1	142,2	3,44	481,0	599,0	134,7	8,02	92	5645	2200	2530	3905
CMAF 150 SE SN R454B	493,8	168,5	2,93	516,2	151,4	3,41	516,8	644,9	144,5	8,04	92	5645	2200	2530	4124
CMAF 165 SE SN R454B	535,6	186,6	2,87	556,9	162,4	3,43	570,9	710,9	155,9	8,22	93	5645	2200	2530	4232
CMAF 180 SE SN R454B	590,4	195,5	3,02	616,6	177,2	3,48	615,4	764,4	169,1	8,16	94	6770	2200	2530	4634
CMAF 190 SE SN R454B	632,0	212,8	2,97	658,3	188,1	3,50	668,7	830,0	181,0	8,28	94	6770	2200	2530	4761

Pc: Cooling capacity  
Ph: Heating capacity  
Pe: Total power input  
L: Length  
OW : Operating Weight

Pec: Total power input in cooling  
Peh: Total power input in heating  
TER W45: Total Efficiency Ratio  
W: Width

EER: Energy Efficiency Ratio (cooling)  
COP: Coefficient Of Performance  
LwO: A-weighted sound power level outside  
H: Height

(1): According EN 14511:2022. Outdoor air temperature 35°C - Chilled water temperature 12/7°C

(2): According EN 14511:2022. Outdoor air temperature 7°C with 6°C wet (87% RH) - Hot water temperature 40/45 °C

(3): According Eurovent ECP - 3 LCP. Hot leaving water temperature 45 °C - Chilled leaving water temperature 7 °C according water flow rates related to (1) and (2)

(4): According ISO 9614:2009. Eurovent conditions, with 1pW reference sound power

(5): Basic unit without accessories

### CMAF High Efficiency

	Pc (1) kW	Pec (1) kW	EER (1)	Ph (2) kW	Peh (2) kW	COP (2)	Pc (3) kW	Ph (3) kW	Pe (3) kW	TER W45 (3)	LwO (4) dB(A)	L (5) mm	W (5) mm	H (5) mm	OW (5) kg
CMAF 080 HE SN R454B	278,0	81,1	3,43	288,7	79,3	3,64	277,0	340,7	75,9	8,14	86	4520	2200	2530	2831
CMAF 090 HE SN R454B	309,6	94,4	3,28	318,6	89,7	3,55	313,9	387,7	85,8	8,18	89	4520	2200	2530	2981
CMAF 100 HE SN R454B	334,9	107,7	3,11	352,5	101,3	3,48	341,4	425,7	96,9	7,92	90	4520	2200	2530	3082
CMAF 110 HE SN R454B	380,9	124,1	3,07	397,9	113,7	3,50	395,5	491,9	108,5	8,18	91	4520	2200	2530	3231
CMAF 130 HE SN R454B	426,0	141,1	3,02	440,6	125,9	3,50	449,5	557,9	120,1	8,39	92	4520	2200	2530	3354
CMAF 140 HE SN R454B	464,1	153,2	3,03	488,3	140,3	3,48	481,1	599,1	134,5	8,03	91	5645	2200	2530	3905
CMAF 150 HE SN R454B	494,2	167,5	2,95	517,5	151,3	3,42	516,8	644,8	144,5	8,04	92	5645	2200	2530	4124
CMAF 165 HE SN R454B	539,0	184,6	2,92	560,5	163,4	3,43	570,6	710,6	156,1	8,21	93	5645	2200	2530	4232

<b>CMAF 180 HE SN R454B</b>	590,9	194,4	3,04	618,1	177,1	3,49	615,3	764,3	169,1	8,16	93	6770	2200	2530	4634
<b>CMAF 190 HE SN R454B</b>	635,9	211,3	3,01	662,6	189,9	3,49	668,4	829,7	181,1	8,27	94	6770	2200	2530	4761

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 Ph: Heating capacity  
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 OW : Operating Weight

Pec: Total power input in cooling  
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 (3): According Eurovent ECP - 3 LCP. Hot leaving water temperature 45 °C – Chilled leaving water temperature 7 °C according water flow rates related to (1) and (2)  
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 (5): Basic unit without accessories

## Improve Operations

Technology is continuously evolving and Trane Engineering is ahead of the curve in bringing innovation into product development. Our sustainable solutions deliver enhancements to the Trane installed base to make your chillers and heat pumps even "better than before". That's Trane Building Advantage - TBA.

## Trane Rental Services

Cooling and heating are services, not products. A process or a building does not need a chiller or a boiler sitting on a roof, but a reliable and efficiency supply of cold or hot water, cold or warm air. This is the essence of what we do at Trane Rental Services. Let us take care of it for you.



**Read more <https://trane.eu/rental>**

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit [trane.eu](https://trane.eu) or [tranetechnologies.com](https://tranetechnologies.com).