



Sintesis Balance™ CMAF Multi-Pipe Unit

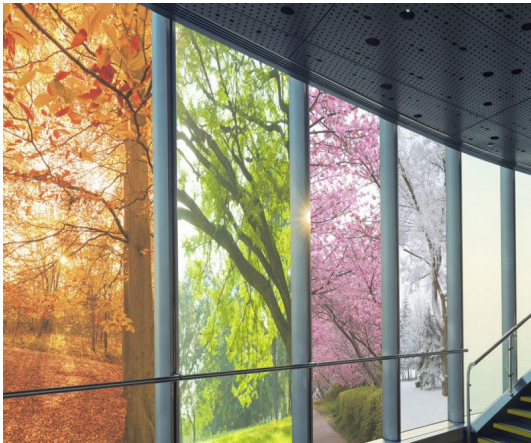
Cooling capacity: 80-650 kW

Heating capacity: 85-680 kW



At a Glance:

- 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

Unit type	Air-to-water
Operating mode	Cooling only Heat pump Multi pipes
Cooling capacity	80-650 kW
Heating capacity	85-680 kW
Eurovent certification	●

ErP Certification**Refrigerants** R454B | R410A**Energy saving** Heat recovery | Adaptive Frequency™ Drive**Compressor** Scroll**Data protocols** Bacnet | Modbus

CMAF Standard Efficiency

	Pc (1) kW	EER (1)	Ph (2) kW	COP (2)	Pc (3) kW	Ph (3) kW	TER W45 (3)	LwO (4) dB(A)	L (5) mm	W (5) mm	H (5) mm	OW (5) kg
CMAF 080 SE LN AC R454B	279,7	3,40	289,6	3,55	276,8	340,5	8,13	88	4520	2200	2530	2831
CMAF 090 SE LN AC R454B	310,5	3,26	320,3	3,51	313,7	387,4	8,17	89	4520	2200	2530	2981
CMAF 100 SE LN AC R454B	334,5	3,08	351,7	3,45	341,4	425,7	7,92	90	4520	2200	2530	3082
CMAF 110 SE LN AC R454B	381,1	3,05	397,3	3,48	395,3	491,7	8,18	92	4520	2200	2530	3231
CMAF 130 SE LN AC R454B	423,0	2,97	437,7	3,51	449,5	557,8	8,40	92	4520	2200	2530	3354
CMAF 140 SE LN AC R454B	461,3	2,99	489,1	3,44	481,0	599,0	8,02	92	5645	2200	2530	3905
CMAF 150 SE LN AC R454B	488,8	2,90	516,2	3,40	516,8	644,8	8,05	92	5645	2200	2530	4124
CMAF 165 SE LN AC R454B	519,8	2,80	556,8	3,43	564,4	704,3	8,13	93	5645	2200	2530	4232
CMAF 180 SE LN AC R454B	572,8	2,94	616,6	3,48	607,8	756,6	8,06	94	6770	2200	2530	4634
CMAF 190 SE LN AC R454B	625,7	2,94	658,3	3,50	668,6	829,9	8,28	94	6770	2200	2530	4761

Pc: Cooling capacity

COP: Coefficient Of Performance

L: Length

OW : Operating Weight

EER: Energy Efficiency Ratio (cooling)

TER W45: Total Efficiency Ratio

W: Width

Ph: Heating capacity

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	EER (1)	Ph (2) kW	COP (2)	Pc (3) kW	Ph (3) kW	TER W45 (3)	LwO (4) dB(A)	L (5) mm	W (5) mm	H (5) mm	OW (5) kg
CMAF 024 HE EC LN R454B	80,6	2,85	86,1	3,30	81,6	109,0	7,59	84	2768	1616	2400	1102
CMAF 026 HE EC LN R454B	88,6	2,93	94,5	3,29	88,2	117,8	7,60	84	2768	1616	2400	1110
CMAF 031 HE EC LN R454B	101,4	2,82	107,4	3,28	101,0	135,2	7,48	85	2768	1616	2400	1120
CMAF 033 HE EC LN R454B	110,0	3,19	117,1	3,53	107,0	146,1	7,80	85	3558	1616	2400	1325
CMAF 037 HE EC LN R454B	124,9	3,12	134,5	3,50	126,0	166,4	7,94	86	3558	1616	2400	1329
CMAF 039 HE EC LN R454B	137,4	2,98	149,1	3,48	141,0	186,5	7,85	86	3558	1616	2400	1334
CMAF 040 HE EC LN R454B	141,6	3,27	147,1	3,30	139,2	177,5	8,19	89	2500	1993	2410	1519
CMAF 045 HE EC LN R454B	152,2	3,19	159,3	3,31	150,6	192,7	8,07	89	2500	1993	2410	1526
CMAF 050 HE EC LN R454B	162,5	3,11	171,6	3,32	161,8	207,6	7,96	89	2500	1993	2410	1533
CMAF 055 HE EC LN R454B	191,1	3,03	198,2	3,35	197,1	250,6	8,29	90	2500	1993	2410	1631
CMAF 065 HE EC LN R454B	213,7	2,87	223,8	3,33	225,9	287,8	8,19	90	2500	1993	2410	1707
CMAF 070 HE EC LN R454B	240,6	3,27	246,2	3,41	241,3	305,9	8,37	91	3289	2230	2537	2115
CMAF 075 HE EC LN R454B	250,2	3,23	262,1	3,48	251,9	319,7	8,31	91	3289	2230	2537	2122

CMAF 085 HE EC LN R454B	269,5	3,15	285,2	3,49	274,1	348,3	8,25	91	3289	2230	2537	2132
CMAF 080 HE LN EC R454B	277,9	3,43	288,0	3,63	277,0	340,7	8,14	86	4520	2200	2530	2831
CMAF 095 HE EC LN R454B	299,1	3,02	316,3	3,46	311,0	395,1	8,29	93	3289	2230	2537	2275
CMAF 090 HE LN EC R454B	309,5	3,29	319,7	3,56	313,7	387,5	8,18	89	4520	2200	2530	2981
CMAF 105 HE EC LN R454B	321,3	2,83	344,8	3,38	338,0	432,8	8,02	93	3289	2230	2537	2376
CMAF 100 HE LN EC R454B	334,9	3,11	352,5	3,47	341,3	425,6	7,92	90	4520	2200	2530	3082
CMAF 110 HE LN EC R454B	380,9	3,07	397,9	3,50	395,3	491,7	8,18	91	4520	2200	2530	3231
CMAF 130 HE LN EC R454B	425,7	3,02	440,6	3,50	449,2	557,6	8,39	92	4520	2200	2530	3354
CMAF 140 HE LN EC R454B	459,4	3,00	488,3	3,48	481,1	599,1	8,03	91	5645	2200	2530	3905
CMAF 150 HE LN EC R454B	489,3	2,92	517,5	3,42	516,7	644,8	8,04	92	5645	2200	2530	4124
CMAF 165 HE LN EC R454B	523,2	2,84	560,5	3,42	564,1	704,1	8,12	93	5645	2200	2530	4232
CMAF 180 HE LN EC R454B	573,4	2,96	618,1	3,49	607,7	756,6	8,06	93	6770	2200	2530	4634
CMAF 190 HE LN EC R454B	629,6	2,98	662,6	3,49	668,3	829,6	8,27	94	6770	2200	2530	4761

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TRANE

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