



TRANE®



CMAB High Efficiency

BALANCE™



You can be sure **Trane Balance™ multi-pipe units** in High Efficiency version will deliver what you need: **simultaneous cooling and heating**, precise temperature control, safe and sustainable system with low operating costs.

Trane multi-pipe units deliver real value for you – and real comfort for your customer.



Innovative and versatile solution

- Simultaneous cooling and heating with one compact unit
- Unique controller software to balance cooling and heating capacities
- Suits new construction and building renovation – from office buildings and hospitals to places of entertainment and hotels
- W-shape condenser coils to reduce unit footprint and optimize unit performance and efficiency
- High performing scroll compressors and energy saving fans



High efficiency and lowest cost of ownership

- Optimal use of renewable and recovered energy
- Full energy recovery for the best return on every kilowatt-hour of electricity
- Exceeds energy efficiency benchmarks based on Total Efficiency Ratio
- Quality and reliability to count on. Professional support by 24/7 Trane Service



Optimized comfort, simple and safe

- Designed for superior performance, serviceability and durability
- Safe water-based system with no refrigerant inside the building
- Industry leading acoustic comfort levels with optional super low noise version



Sustainability

The continuous drive to improve energy efficiency of building systems requires an optimal balancing in the demand and supply of both heating and cooling. Trane’s multi-pipe units can simultaneously deliver heating and cooling. A sustainable solution for many applications.

Unit description

- High Efficiency units up to 880 kW heating capacity in heat pump mode and even 1080 kW in full heat recovery mode
- Simultaneous cooling and heating with two completely independent water circuits, one for chilled water and one for hot water
- High performing scroll compressors and low speed fans
- Intelligent controller with “state-of-the-art” software developed specifically for multi-pipe units
- One to four refrigerant circuits with precise electronic expansion valves
- W-shape coils for improved air flow and easy access
- Self-adaptive defrosting system able to intervene only in case of consistent thickness formation of ice on the coil fins, reducing number of defrost cycles by 50%
- Stainless steel (AISI 316) brazed plate evaporator and recovery heat exchanger, externally insulated, including a water pressure differential switch and anti-freeze protection electric heater
- Phase failure protection relay
- Serial card RS485 for Modbus

Factory-mounted options

- Different built-in hydraulic kits available with cooling and heating circuit pumps of 150/250/450 kPa
- Super low noise version
- Serial card with BACnet™ Protocol MS/TP or TCP/IP
- Gateway Modbus LonTalk™
- Soft starter
- Automatic circuit breakers
- Power factor correction to cos phi 0.91
- Control panel electric heater with thermostat
- EC fans for external static pressure up to 100 Pa
- Condensing control with variable fan speed modulation



Trane: designed to be the best - tested to prove it

Proof of performance

This symbol means that Trane Multi-pipe Units have undergone extensive testing in Trane’s state-of-the-art HVAC test facility in France to guarantee that testing of your Multi-pipe unit conforms to EN 14511-2013 and EN 14825-2016 standards.



Experience performance validation of your unit – before shipment

Schedule an optional witness test in our testing facility in France before the unit ships to the jobsite. Trane’s test facility is capable of evaluating the performance of your Multi-pipe unit - based on customer-defined parameters. Contact your local sales office for more information.



Trane European Large HVAC Test Facility

A 5000m³ climate chamber with advanced ambient air temperature and humidity control. Regardless of outdoor air conditions, a wide range of operating conditions can be simulated within this range:

- Air temperature: -25°C/+55°C
- Leaving water temperature: -12°C/+65°C (Below 4°C with glycol)
- Humidity: 10 – 90% max @ 7°C dry bulb.



CMAB HE Standard Noise*

Unit size		50	60	70	90	120	130	145	165	180	220	260	320	355
Cooling (1)														
Total cooling capacity	kW	48.2	55.1	65.2	84.9	111	122	131	151	165	200	239	291	321
Total power input	kW	16.3	18.3	21.7	28.2	37.7	43.0	47.6	54.3	60.2	74.3	89.2	108	118
Total EER	kW/kW	2.95	3.01	3.00	3.01	2.93	2.84	2.76	2.78	2.74	2.69	2.68	2.70	2.73
ESEER	kW/kW	3.39	3.58	3.71	3.49	3.56	3.41	3.41	3.35	3.40	3.45	3.57	3.82	3.56
Heating (2)														
Total heating capacity	kW	50.6	57.9	69.2	90.6	119	132	144	162	178	217	260	320	355
Total power input	kW	16.7	18.7	21.9	29.4	38.1	43.4	46.0	53.5	58.8	70.8	83.5	102	112
Total COP	kW/kW	3.03	3.10	3.16	3.08	3.11	3.03	3.14	3.03	3.04	3.07	3.12	3.15	3.16
Seasonal efficiency in heating mode (4)														
P rated	kW	41.0	46.8	55.8	75.3	98	111	122	133	147	179	215	258	298
η_s	%	125	127	130	125	129	125	130	125	125	127	129	130	130
SCOP	kW/kW	3.19	3.24	3.32	3.20	3.29	3.20	3.32	3.19	3.19	3.24	3.31	3.33	3.33
Energy efficiency class		A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
Cooling + Heating (3)														
Total cooling capacity	kW	46.0	52.8	62.9	79.9	108	118	131	150	165	200	242	298	322
Total heating capacity	kW	60.3	69.1	82.6	106	142	157	172	196	216	264	319	345	426
Total power input	kW	14.3	16.3	19.7	25.8	34.6	38.8	41.1	46.0	51.4	63.4	76.7	86.4	104
Total Efficiency Ratio	kW/kW	7.45	7.48	7.38	7.19	7.21	7.09	7.37	7.54	7.42	7.32	7.32	13.85	7.19
Compressors														
Number of scroll compressors		2	2	2	2	2	2	2	2	4	4	4	4	4
Number of refrigerant circuits		1	1	1	1	1	1	1	2	2	2	2	2	2
Number of part load steps		3	3	2	2	2	3	2	3	2	7	7	8	4
Minimum capacity step	%	45	39	50	50	50	45	50	45	50	8	14	23	25
Fans														
Number of fans		2	2	2	3	3	4	4	6	6	6	6	8	8
Air flow	m ³ /h	35588	35588	35588	53380	53380	71808	71808	118168	118168	113416	107712	144628	144628
Sound level														
Sound power level (ISO 3744)	dB(A)	82	82	82	84	88	88	88	89	89	90	91	91	92
Sound pressure level at 10 m (ISO 3744)	dB(A)	50	50	50	52	56	56	56	57	57	58	59	59	59
Dimensions and weight														
Length	mm	2560	2560	2560	3559	3559	2617	2617	3565	3565	3565	3565	4535	4535
Width	mm	1100	1100	1100	1100	1100	2201	2201	2260	2260	2260	2260	2260	2260
Height	mm	2131	2131	2131	2179	2179	2175	2175	2400	2400	2400	2400	2400	2400
Operating weight	kg	1030	1034	1043	1289	1381	1466	1608	2202	2255	2401	2709	3144	3382

(1) According EN 14511-2013. Outdoor air temperature 35°C – Chilled water temperature 12/7°C

(2) According EN 14511-2013. Outdoor air temperature 7°C with 90% RH - Hot water temperature 40/45 °C

(3) Heat recovery mode: Hot water temperature 40/45 °C – Chilled water temperature 12/7 °C

(4) According EN14825. Ecodesign rating at low temperature conditions. Outdoor air temperature 7°C dry bulb/6°C wet bulb - Hot water temperature 30/35°C

* CMAB HE units are also available in Super Low Noise. For a detailed selection please contact your Trane sales office.



CMAB HE Standard Noise*

Unit size		375	455	500	535	575	600	660	710	755	800	840	880
Cooling (1)													
Total cooling capacity	kW	341	406	451	474	513	533	582	643	678	713	746	779
Total power input	kW	126	148	165	177	194	203	231	235	253	271	289	308
Total EER	kW/kW	2.70	2.74	2.74	2.67	2.64	2.63	2.52	2.73	2.68	2.63	2.58	2.53
ESEER	kW/kW	3.58	3.98	3.47	3.42	3.51	3.48	3.67	3.56	3.54	3.48	3.40	3.66
Heating (2)													
Total heating capacity	kW	377	455	501	534	576	598	662	710	754	797	839	881
Total power input	kW	120	145	161	173	187	193	215	224	239	253	268	282
Total COP	kW/kW	3.15	3.14	3.10	3.09	3.08	3.09	3.07	3.17	3.16	3.15	3.14	3.13
Seasonal efficiency in heating mode (4)													
P rated	kW	316	371	-	-	-	-	-	-	-	-	-	-
η_p	%	130	130	-	-	-	-	-	-	-	-	-	-
SCOP	kW/kW	3.33	3.32	-	-	-	-	-	-	-	-	-	-
Energy efficiency class		A+	A+	-	-	-	-	-	-	-	-	-	-
Cooling + Heating (3)													
Total cooling capacity	kW	342	406	449	473	521	543	600	652	692	733	772	812
Total heating capacity	kW	454	540	596	631	694	723	804	860	916	971	1026	1080
Total power input	kW	112	134	146	158	173	181	204	208	223	238	253	268
Total Efficiency Ratio	kW/kW	7.14	7.05	7.13	6.97	7.02	7.01	6.89	7.26	7.21	7.16	7.10	7.05
Compressors													
Number of scroll compressors		4	4	6	6	6	6	6	8	8	8	8	8
Number of refrigerant circuits		2	2	3	3	3	3	3	4	4	4	4	4
Number of part load steps		7	4	14	6	14	15	6	8	20	30	20	8
Minimum capacity step	%	13	25	21	17	19	19	17	13	15	14	15	13
Fans													
Number of fans		8	10	12	12	12	12	12	16	16	16	16	16
Air flow	m ³ /h	144628	181104	219608	219608	219608	219608	219608	289256	289256	289256	289256	289256
Sound level													
Sound power level (ISO 3744)	dB(A)	94	97	93	94	96	97	98	95	97	98	99	100
Sound pressure level at 10 m (ISO 3744)	dB(A)	61	64	61	61	63	64	66	62	64	65	66	67
Dimensions and weight													
Length	mm	4535	5505	7038	7038	7038	7038	7038	8155	8155	8155	8155	8155
Width	mm	2260	2260	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Operating weight	kg	3401	3836	4572	4678	4845	4882	4935	6157	6193	6228	6263	6298

(1) According EN 14511-2013. Outdoor air temperature 35°C – Chilled water temperature 12/7°C

(2) According EN 14511-2013. Outdoor air temperature 7°C with 90% RH – Hot water temperature 40/45 °C

(3) Heat recovery mode: Hot water temperature 40/45 °C – Chilled water temperature 12/7 °C

(4) According EN14825. Ecodesign rating at low temperature conditions. Outdoor air temperature 7°C dry bulb/6°C wet bulb – Hot water temperature 30/35°C

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Discover Trane's full range of innovative multi-pipe units

With scroll compressors

- CMAB Standard Efficiency (SE)
- CMAB High Efficiency (HE)
- CMAB High Seasonal Efficiency (HSE), Adaptive Frequency Drive, inverter technology
- CMAB Extra Efficiency (XE)

With screw compressors

- RTMA Standard Efficiency (SE)
- RTMA High Seasonal Efficiency (HSE) Adaptive Frequency Drive, inverter technology



For more information visit trane.com

