



**TRANE**<sup>®</sup>



CMAB Standard Efficiency

**BALANCE**<sup>™</sup>



You can be sure **Trane Balance™ multi-pipe units** with high performing scroll compressors 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 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 low noise or 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

- Simultaneous cooling and heating with two completely independent water circuits, one for chilled water and one for hot water
- Intelligent controller with “state-of-the-art” software developed specifically for multi-pipe units
- High performing scroll compressors, precise electronic expansion valves and low speed energy saving axial fans
- 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 and including pressure differential switch. Evaporator includes antifreeze 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 or 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 5000m<sup>3</sup> 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 SE Standard Noise\*

Unit size		50	55	65	85	110	140	155	175
<b>Cooling (1)</b>									
Total cooling capacity	kW	45.2	51.2	59.9	77.7	103	126	139	159
Total power input	kW	17.1	19.3	23.3	29.8	41.0	49.7	56.9	62.6
Total EER	kW/kW	2.64	2.65	2.57	2.60	2.51	2.55	2.44	2.53
ESEER	kW/kW	3.16	3.30	3.42	3.15	3.22	3.27	2.89	3.04
<b>Heating (2)</b>									
Total heating capacity	kW	49.1	55.8	65.7	86.2	110	138	152	174
Total power input	kW	17.1	19.2	22.5	30.0	38.3	47.9	53.0	61.9
Total COP	kW/kW	2.88	2.91	2.92	2.87	2.86	2.89	2.86	2.82
<b>Seasonal efficiency (4)</b>									
P rated	kW	41.8	46.9	54.8	75.4	94.6	118.9	139.9	155.8
$\eta_s$	%	115	115	115	115	115	115	115	115
SCOP	kW/kW	2.95	2.95	2.96	2.95	2.95	2.96	2.95	2.95
Energy efficiency class		A	A	A	A	A	A	A	A
<b>Heating + Cooling (3)</b>									
Total cooling capacity	kW	43.8	50.2	59.9	75.0	106	127	143	157
Total heating capacity	kW	58.5	67.0	80.0	102	141	170	191	211
Total power input	kW	14.7	16.8	20.2	26.5	35.1	43.2	48.7	54.2
Total Efficiency Ratio	kW/kW	6.95	6.99	6.94	6.66	7.02	6.89	6.85	6.78
<b>Compressors</b>									
Number of scroll compressors		2	2	2	2	2	2	2	2
Number of refrigerant circuits		1	1	1	1	1	1	1	1
Number of part load steps		3	3	2	2	2	2	3	2
Minimum capacity step	%	45	39	50	50	50	50	45	50
<b>Fans</b>									
Number of fans		2	2	2	3	3	4	4	6
Air flow	m <sup>3</sup> /h	39388	39388	39388	58988	58988	79031	79031	118168
Power input for each fan	kW	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
<b>Sound level</b>									
Sound power level (ISO 3744)	db(A)	81	81	81	83	87	87	87	88
Sound pressure level at 10 m (ISO 3744)	db(A)	50	50	51	53	56	56	57	58
<b>Dimensions and weight</b>									
Length	mm	2560	2560	2560	3559	3559	2617	2617	3565
Width	mm	1100	1100	1100	1100	1100	2200	2200	2260
Height	mm	2131	2131	2131	2179	2179	2175	2175	2400
Operating Weight	kg	909	913	922	1117	1199	1470	1563	2038

(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°C/35°C

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



## CMAB SE Standard Noise\*

Unit size		210	260	305	350	370	435	495	525
<b>Cooling (1)</b>									
Total cooling capacity	kW	187	227	268	313	331	382	431	454
Total power input	kW	78.1	91.4	114.7	120.9	130.3	159.7	167.7	180.6
Total EER	kW/kW	2.39	2.48	2.34	2.59	2.54	2.39	2.57	2.52
ESEER	kW/kW	3.17	3.40	3.46	3.47	3.48	3.58	3.34	3.31
<b>Heating (2)</b>									
Total heating capacity	kW	212	259	306	351	371	434	493	524
Total power input	kW	71.3	84.3	99.2	112	119	140	168	179
Total COP	kW/kW	2.97	3.07	3.08	3.12	3.11	3.09	2.94	2.92
<b>Seasonal efficiency (4)</b>									
P rated	kW	177.4	213.8	254.3	292.8	309.0	360.0	-	-
n <sub>s</sub>	%	116	118	119	120	120	119	-	-
SCOP	kW/kW	2.97	3.04	3.06	3.08	3.07	3.06	-	-
Energy efficiency class		A	A	A	A	A	A	-	-
<b>Heating + Cooling (3)</b>									
Total cooling capacity	kW	195	234	290	319	341	403	428	453
Total heating capacity	kW	259	313	384	424	453	537	579	615
Total power input	kW	64.8	78.3	94.0	104.7	112	134	150	162
Total Efficiency Ratio	kW/kW	7.01	6.99	7.16	7.10	7.09	7.03	6.70	6.57
<b>Compressors</b>									
Number of scroll compressors		4	4	4	4	4	4	6	6
Number of refrigerant circuits		2	2	2	2	2	2	3	3
Number of part load steps		7	7	8	4	7	4	14	6
Minimum capacity step	%	14	14	23	25	13	25	21	17
<b>Fans</b>									
Number of fans		6	6	6	8	8	8	12	12
Air flow	m <sup>3</sup> /h	118168	113416	113416	152488	152488	152488	229108	229108
Power input for each fan	kW	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
<b>Sound level</b>									
Sound power level (ISO 3744)	db(A)	89	90	90	91	93	96	92	93
Sound pressure level at 10 m (ISO 3744)	db(A)	59	59	59	60	62	65	62	62
<b>Dimensions and weight</b>									
Length	mm	3565	3565	3565	4535	4535	4535	7038	7038
Width	mm	2260	2260	2260	2260	2260	2260	2170	2170
Height	mm	2400	2400	2400	2400	2400	2400	2400	2400
Operating Weight	kg	2241	2415	2556	3136	3153	3227	4357	4379

(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

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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](http://trane.com)

