



**TRANE®**

# *Water-Cooled Chillers and Heat Pumps with Leading Control Technology*

*High Efficiency Chillers for High Performance Buildings*



**RTWD**



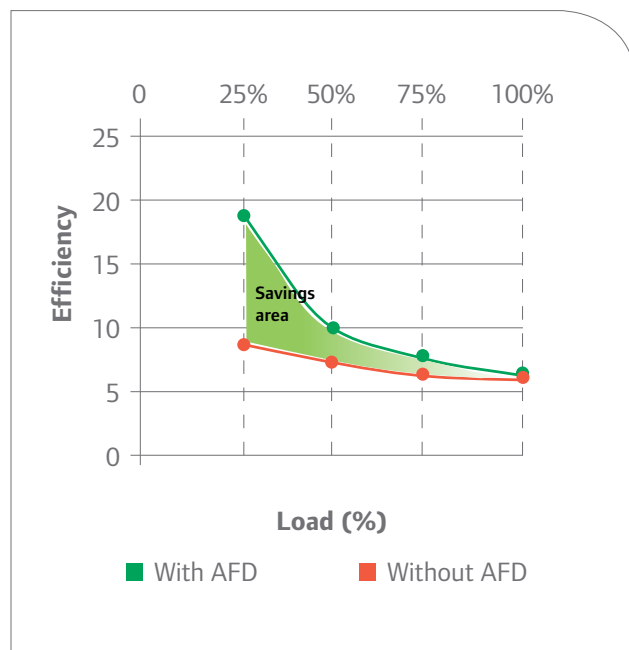
**IR** Ingersoll Rand®

# Raising Your HVAC Experience to Unmatched Levels of Performance, Comfort and Economy

High performance buildings need high performance HVAC systems. Your buildings need to be one of the best so it is very important that they are supremely energy efficient, today, tomorrow and long into the future. A Trane RTWD chiller provides reliable and dependable performance to ensure continuous delivery of precise temperature control across the full spectrum of demanding comfort and industrial applications.

## Industry leading efficiency

To reach the highest standards of efficiency, Trane has 100 years of engineering expertise, world leading research and the most rigorous testing. As a result, Trane chillers, including the RTWD, deliver superior full- and part-load performance, the key to exceptional energy efficiency. Performance achieves market-leading EER (Energy Efficiency Ratio) and ESEER (European Seasonal Energy Efficiency Ratio).



## A model for every application

Whether your building, for example a hospital or a hotel, requires comfort cooling or precision temperature control as part of a sensitive industrial process, Trane offers suitable RTWD models.

## Minimized total cost of ownership

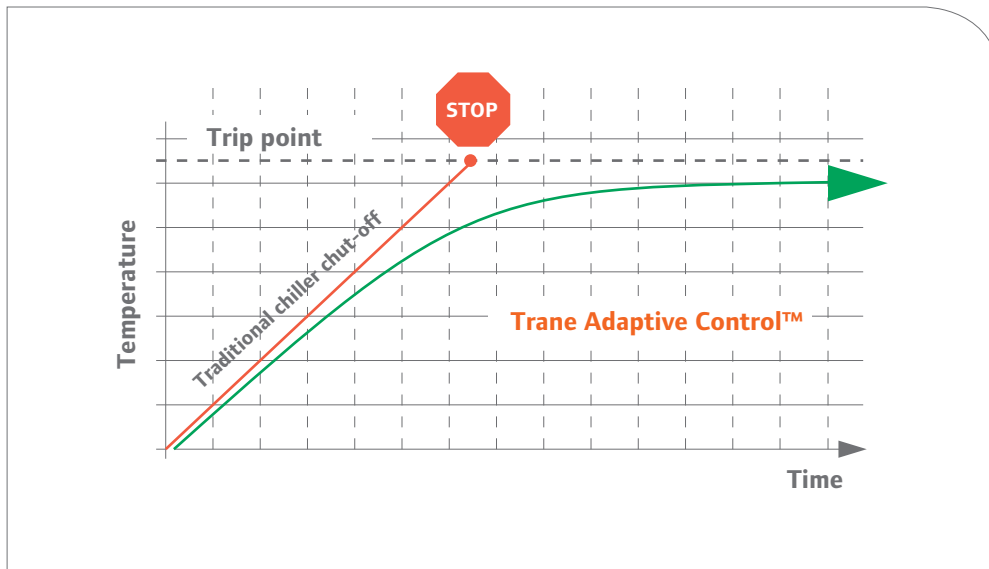
Energy costs are minimized by optimizing efficiency. Maintenance costs are reduced as a result of effective performance and alarm monitoring linked to equipment with proven dependability. Installation costs are lower thanks to design improvements which reduce the time required for new plants or upgrades. An Adaptive Frequency™ Drive, available with the top of the range RTWD High Seasonal Efficiency model, reduces energy consumption even further by improving your chiller's efficiency under reduced load conditions.

## Legendary Trane reliability

Your facility depends on an efficient, reliable HVAC system for employee comfort and well-being as well as for critical process applications. Trane reliability is legendary, based on over 100 years of designing, testing, installing and maintaining chillers around the world. Every Trane product guarantees that unique heritage and the pride we have in being the best at what we do.

# Leading Control Technology

## Trane Adaptive Control™: Tracer® CH530



### Driving Reduced Energy Consumption

Developing our own control algorithm and software is one of our unique strengths. Trane does not just use a controller from a vendor and adapt it to its units. We take the matter a step further and develop the unit from the beginning.

#### Patented control algorithms

- The Tracer™ CH530 provides the intelligence behind the RTWD chiller and features Adaptive Control algorithms: proprietary control strategies that respond to a variety of conditions to maintain efficient operation
- Total chiller control through continuous monitoring

#### Visibility

- Full system status at a glance
- Clear display of key operating parameters

#### Ease of use

- The display shows key operating parameters and allows quick access to critical data
- Intuitive navigation allows quick access to critical data
- Main processor in the control panel

#### Flexibility

- Thanks to open protocols such as BACnet®, LonTalk™ and Modbus

#### Operational effectiveness

- Data trending
- Clear alarm log enables fast response and rapid resolution
- Adaptive Control algorithms preempt chiller disruption



*A leading combination: the proven Tracer Adaptive Control™ Controller and the easy-to-use interface.*

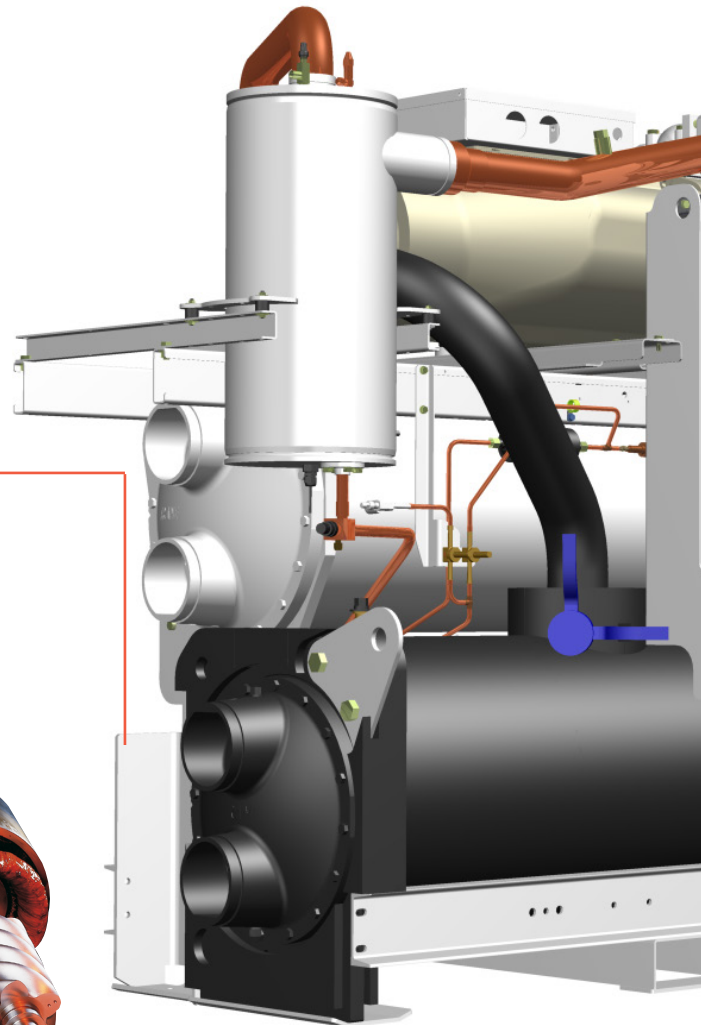
## Easier to use

Trane AdaptiView™ CH530 to optimize high performances while ensuring safe operation in all types of applications and operating conditions.

The control comprises a LCD display for user-friendly monitoring at the local level and various communication interfaces (LonTalk®, BACnet® and Modbus) for easy integration into a BMS.

## Proven Trane reliability

- Trane design simplicity
- Trane direct drive, low speed, semi-hermetic compressor with only 3 moving parts
- Infinite unloading for exact load matching
- RTWD uses system differential to move oil, not an oil pump, meaning no extra moving parts to wear out or break down



## Trane RTWD is also a water-to-water heat pump

- Perfectly addresses the market needs for most heat pump applications, including geothermal applications.
- Able to produce hot water up to 60°C
- High level of performances (COP up to 4.8 at 45°C)
- Units below 400 kW are compliant with Ecodesign regulation for heat pumps.

### Easier to install

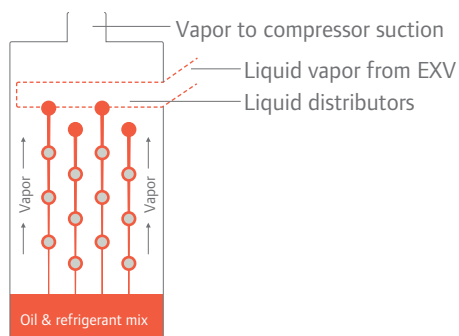
- All versions and sizes fit through standard 2 meter wide doors
- Only one water connection on the condenser (inlet/outlet)
- Only one electrical connection (single point) as standard
- Saves time, saves costs

### Increased savings with HSE (High Seasonal Efficiency) version

- AFD (Adaptive Frequency™ Drive) as standard
- Fewer start-stop cycles
- Increased compressor life
- Reduced start-up current draw
- Turning your current RTWD into a top performing chiller is possible thanks to Trane Field Retrofit solution

### Maximum efficiency

- Patented Trane Falling Film Evaporator
- Industry leading efficiency
- Reduces energy bills



### Prepared for the future

In reply to the rise of energy consumption concerns and the need to closely monitor installations, Trane has integrated a special "Power Meter" function that lets you see exactly how much power the compressor is consuming.





# General Data for cooling performances



Condenser leaving water temperature (min/max)	(°C)	20 / 60
Evaporator leaving water temperature (min/max)	(°C)	-8 / + 18
Power supply	(V/Ph/Hz)	400/3/50
Refrigerant		R134a

## Standard Efficiency (SE)

Unit size		160 SE	170 SE	190 SE	200 SE
Net cooling capacity (1) (2)	(kW)	582	642	700	769
EER (1) (2)		4.37	4.31	4.35	4.41
Eurovent energy efficiency class - cooling		C	C	C	C
ESEER (1) (2)		5.09	4.96	5.04	5.08
Number of refrigerant circuits		2			
Number of compressors		2			
Sound power level (3)	(dB(A))	101	101	101	101
<b>Weights and dimensions</b>					
Length	(mm)	3491	3491	3491	3491
Width	(mm)	1302	1302	1302	1302
Height	(mm)	1971	1971	1971	1971
Operating weight	(kg)	3874	4049	4086	4125

## High Efficiency (HE)

Unit size		060 HE	070 HE	080 HE	090 HE	100 HE	110 HE	120 HE
Net cooling capacity (1) (2)	(kW)	235	276	317	365	390	417	452
EER (1) (2)		4.93	4.88	4.85	4.90	4.95	4.99	4.97
Eurovent energy efficiency class - cooling		B	B	B	B	B	B	B
ESEER (1) (2)		5.73	5.61	5.76	5.67	5.75	5.67	5.75
Number of refrigerant circuits		2						
Number of compressors		2						
Sound power level (3)	(dB(A))	90	90	97	99	99	99	98
<b>Weights and dimensions</b>								
Length	(mm)	3210	3210	3210	3223	3318	3223	3235
Width	(mm)	1071	1071	1071	1058	1058	1058	1058
Height	(mm)	1938	1938	1938	1955	1955	1955	1955
Operating weight	(kg)	2650	2658	2673	2928	2970	3008	3198

Unit size		130 HE	140 HE	160 HE	180 HE	200 HE	220 HE	250 HE
Net cooling capacity (1) (2)	(kW)	488	531	579	638	700	765	836
EER (1) (2)		4.95	4.98	5.05	4.99	5.03	4.94	4.97
Eurovent energy efficiency class - cooling		B	B	A	B	B	B	B
ESEER (1) (2)		5.63	5.73	5.74	5.79	5.77	5.69	5.69
Number of refrigerant circuits		2						
Number of compressors		2						
Sound power level (3)	(dB(A))	95	95	95	101	101	101	101
<b>Weights and dimensions</b>								
Length	(mm)	3395	3395	3395	3489	3489	3489	3489
Width	(mm)	1272	1272	1272	1302	1311	1311	1311
Height	(mm)	1943	1943	1943	1971	2004	2004	2004
Operating weight	(kg)	3771	3802	3846	4042	4488	4504	4579

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

(2) Net performances calculated as per EN14511-2011

(3) At full load and in accordance with ISO9614

## Extra Efficiency (XE)

Unit size		160 XE	180 XE	200 XE
Net cooling capacity (1) (2)	(kW)	598	659	709
EER (1) (2)		5.26	5.24	5.22
Eurovent energy efficiency class - cooling		A	A	A
ESEER (1) (2)		5.95	6.10	6.12
Number of refrigerant circuits			2	
Number of compressors			2	
Sound power level (3)	(dB(A))	96	101	101
<b>Weights and dimensions</b>				
Length	(mm)	3752	3811	3489
Width	(mm)	1272	1302	1311
Height	(mm)	2004	2004	2004
Operating weight	(kg)	4172	4408	4625

## High Seasonal Efficiency (HSE)



Unit size		060 HSE	070 HSE	080 HSE	090 HSE	100 HSE	110 HSE	120 HSE	130 HSE
Net cooling capacity (1) (2)	(kW)	235	276	317	365	390	417	452	488
EER (1) (2)		4.75	4.70	4.68	4.74	4.79	4.82	4.84	4.84
Eurovent energy efficiency class - cooling		B	B	B	B	B	B	B	B
ESEER (1) (2)		6.08	5.90	5.99	6.08	5.91	5.79	6.16	6.47
Number of refrigerant circuits						2			
Number of compressors						2			
Sound power level (3)	(dB(A))	90	90	97	99	99	99	98	96
<b>Weights and dimensions</b>									
Length	(mm)	3210	3210	3210	3223	3318	3223	3235	3395
Width	(mm)	1131	1131	1131	1118	1118	1118	1118	1302
Height	(mm)	1938	1938	1938	1955	1955	1955	1955	1943
Operating weight	(kg)	2788	2796	2829	3102	3144	3182	3372	3945

Unit size		140 HSE	160 HSE	180 HSE	200 HSE	220 HSE	250 HSE	260 HSE	270 HSE
Net cooling capacity (1) (2)	(kW)	531	598	659	709	765	836	901	979
EER (1) (2)		4.88	5.18	5.11	5.05	4.80	4.85	4.44	4.49
Eurovent energy efficiency class - cooling		B	A	A	A	B	B	C	C
ESEER (1) (2)		6.43	6.58	6.51	6.77	6.39	6.48	5.92	5.95
Number of refrigerant circuits						2			
Number of compressors						2			
Sound power level (3)	(dB(A))	96	96	101	101	101	101	101	101
<b>Weights and dimensions</b>									
Length	(mm)	3395	3752	3811	3489	3489	3489	3489	3489
Width	(mm)	1302	1302	1332	1341	1341	1341	1341	1341
Height	(mm)	1943	2004	2004	2004	2004	2004	2004	2004
Operating weight	(kg)	3996	4386	4622	4839	4718	4793	4718	4793

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

(2) Net performances calculated as per EN14511-2011

(3) At full load and in accordance with ISO9614

# General Data for heating performances



Condenser leaving water temperature (min/max)	(°C)	20 / 60
Evaporator leaving water temperature (min/max)	(°C)	-8 / + 18
Power supply	(V/Ph/Hz)	400/3/50
Refrigerant		R134a

## Standard Efficiency (with heating option)

Unit size		160 SE	170 SE	190 SE	200 SE
Net Heating capacity (4)	(kW)	637	701	765	839
COP (4)		4.09	4.07	4.10	4.15
Eurovent energy efficiency class - heating		C	C	C	B
<b>P Rated (Heating) (5)</b>		-	-	-	-
η <sub>α</sub> /SCOP (5)		-	-	-	-
Net cooling capacity (1) (2)	(kW)	568	624	680	747
EER (1) (2)		4.11	4.05	4.07	4.11
Eurovent energy efficiency class - cooling		D	D	D	D
ESEER (1) (2)		4.72	4.68	4.66	4.71
Number of refrigerant circuits				2	
Number of compressors				2	
Sound power level (3)	(dB(A))	101	101	101	101
<b>Weights and dimensions</b>					
Length	(mm)	3491	3491	3491	3491
Width	(mm)	1302	1302	1302	1302
Height	(mm)	1971	1971	1971	1971
Operating weight	(kg)	3874	4049	4086	4125

## High Efficiency (with heating option)

Unit size		060 HE	070 HE	080 HE	090 HE	100 HE	110 HE	120 HE
Net Heating capacity (4)	(kW)	250	299	340	387	414	444	477
COP (4)		4.32	4.27	4.25	4.28	4.31	4.34	4.37
Eurovent energy efficiency class - heating		B	B	B	B	B	B	B
<b>P Rated (Heating) (5)</b>		245.09	292.79	331.95	376.13	-	-	-
η <sub>α</sub> /SCOP (5)		167% / 4.18	159% / 3.98	156% / 3.90	163% / 4.08	-	-	-
Net cooling capacity (1) (2)	(kW)	231	274	311	355	379	407	437
EER (1) (2)		4.46	4.35	4.32	4.33	4.38	4.42	4.46
Eurovent energy class - cooling		C	C	C	C	C	C	C
ESEER (1) (2)		5.25	5.05	5.02	5.02	5.00	4.98	5.18
Number of refrigerant circuits					2			
Number of compressors					2			
Sound power level (3)	(dB(A))	90	90	97	99	99	99	98
<b>Weights and dimensions</b>								
Length	(mm)	3210	3210	3210	3223	3318	3223	3235
Width	(mm)	1071	1071	1071	1058	1058	1058	1058
Height	(mm)	1938	1938	1938	1955	1955	1955	1955
Operating weight	(kg)	2650	2658	2673	2928	2970	3008	3198

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

(2) Net performances calculated as per EN14511-2011

(3) At full load and in accordance with ISO9614

(4) Evaporator 10°C entering at cooling condition water flow rate, condenser water temperature 40/45°C

(5) η<sub>α</sub> /SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters with P rated <400 kW - COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013: Med temp application 10/7°C Evaporator - 47/55°C Condenser- average climate





## High Efficiency (with heating option)

Unit size		130 HE	140 HE	160 HE	180 HE	200 HE	220 HE	250 HE
Net Heating capacity (4)	(kW)	512	562	616	677	740	813	888
COP (4)		4.40	4.41	4.44	4.40	4.41	4.40	4.45
Eurovent energy efficiency class - heating		B	B	B	B	B	B	A
<b>P Rated (Heating) (5)</b>		-	-	-	-	-	-	-
$\eta\alpha$ /SCOP (5)		-	-	-	-	-	-	-
Net cooling capacity (1) (2)	(kW)	468	514	565	619	677	740	809
EER (1) (2)		4.5	4.52	4.58	4.48	4.45	4.41	4.45
Eurovent energy efficiency class - cooling		C	C	C	C	C	C	C
ESEER (1) (2)		5.18	5.19	5.24	5.12	5.15	5.07	5.10
Number of refrigerant circuits					2			
Number of compressors					2			
Sound power level (3)	(dB(A))	95	95	95	101	101	101	101
Weights and dimensions								
Length	(mm)	3395	3395	3395	3489	3489	3489	3489
Width	(mm)	1272	1272	1272	1302	1311	1311	1311
Height	(mm)	1943	1943	1943	1971	2004	2004	2004
Operating weight	(kg)	3771	3802	3846	4042	4488	4504	4579

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

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(3) At full load and in accordance with ISO9614

(4) Evaporator 10°C entering at cooling condition water flow rate, condenser water temperature 40/45°C

(5)  $\eta\alpha$  /SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters with P rated <400 kW - COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013: Med temp application 10/7°C Evaporator - 47/55°C Condenser- average climate

# General Data for heating performances



## Extra Efficiency (XE) with heating option

Unit size		160 XE	180 XE	200 XE
Net Heating capacity (4)	(kW)	629	691	744
COP (4)		4.55	4.52	4.49
Eurovent energy efficiency class - heating		A	A	A
<b>P Rated (Heating) (5)</b>		-	-	-
$\eta\sigma$ /SCOP (5)		-	-	-
Net cooling capacity (1) (2)	(kW)	583	638	684
EER (1) (2)		4.71	4.63	4.57
Eurovent energy efficiency class - cooling		C	C	C
ESEER (1) (2)		5.36	5.31	5.38
Number of refrigerant circuits			2	
Number of compressors			2	
Sound power level (3)	(dB(A))	96	101	101
Weights and dimensions				
Length	(mm)	3752	3811	3489
Width	(mm)	1272	1302	1311
Height	(mm)	2004	2004	2004
Operating weight	(kg)	4172	4408	4625

## High Seasonal Efficiency (with heating option)



Unit size		060 HSE	070 HSE	080 HSE	090 HSE	100 HSE	110 HSE	120 HSE	130 HSE
Net Heating capacity (4)	(kW)	250	299	340	387	414	444	477	512
COP (4)		4.04	3.99	3.98	4.00	4.05	4.09	4.14	4.19
Eurovent energy efficiency class - heating		C	C	C	C	C	C	C	B
<b>P Rated (Heating) (5)</b>		246	291	324	361	389	-	-	-
$\eta\sigma$ /SCOP (5)		170% / 4.25	162% / 4.05	172% / 4.30	163% / 4.08	168% / 4.20	-	-	-
Net cooling capacity (1) (2)	(kW)	231	274	311	355	379	407	437	468
EER (1) (2)		4.17	4.07	4.04	4.05	4.12	4.17	4.22	4.28
Eurovent energy efficiency class - cooling		D	D	D	D	D	D	D	C
ESEER (1) (2)		5.3	5.1	5.07	5.07	5.05	5.18	5.33	5.54
Number of refrigerant circuits					2				
Number of compressors					2				
Sound power level (3)	(dB(A))	90	90	97	99	99	99	98	96
Weights and dimensions									
Length	(mm)	3210	3210	3210	3223	3318	3223	3235	3395
Width	(mm)	1131	1131	1131	1118	1118	1118	1118	1302
Height	(mm)	1938	1938	1938	1955	1955	1955	1955	1943
Operating weight	(kg)	2788	2796	2829	3102	3144	3182	3372	3945

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

(2) Net performances calculated as per EN14511-2011

(3) At full load and in accordance with ISO9614

(4) Evaporator 10°C entering at cooling condition water flow rate, condenser water temperature 40/45°C

(5)  $\eta\sigma$  /SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters with P rated <400 kW - COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013: Med temp application 10/7°C Evaporator - 47/55°C Condenser- average climate



## High Seasonal Efficiency (with heating option)

Unit size		140 HSE	160 HSE	180 HSE	200 HSE	220 HSE	250 HSE	260 HSE	270 HSE
Net Heating capacity (4)	(kW)	562	629	691	744	813	888	959	1033
COP (4)		4.26	4.45	4.45	4.44	4.34	4.39	4.17	4.15
Eurovent energy efficiency class - heating		B	A	A	B	B	B	B	B
P Rated (Heating) (5)		-	-	-	-	-	-	-	-
η <sub>α</sub> /SCOP (5)		-	-	-	-	-	-	-	-
Net cooling capacity (1) (2)	(kW)	512	583	638	684	740	809	865	933
EER (1) (2)		4.37	4.61	4.56	4.52	4.35	4.39	4.15	4.14
Eurovent energy efficiency class - cooling		C	C	C	C	C	C	D	D
ESEER (1) (2)		5.66	5.95	5.78	6.14	5.58	5.71	5.1	5.18
Number of refrigerant circuits					2				
Number of compressors					2				
Sound power level (3)	(dB(A))	96	96	101	101	101	101	101	101
Weights and dimensions									
Length	(mm)	3395	3752	3811	3489	3489	3489	3489	3489
Width	(mm)	1302	1302	1332	1341	1341	1341	1341	1341
Height	(mm)	1943	2004	2004	2004	2004	2004	2004	2004
Operating weight	(kg)	3996	4386	4622	4839	4718	4793	4718	4793

(1) Evaporator 12/7°C, condenser water temperature 30/35°C according to EN14511:2013. Rated in accordance with AHRI Standard 550/590, based on TOPSS version 177.

(2) Net performances calculated as per EN14511-2011

(3) At full load and in accordance with ISO9614

(4) Evaporator 10°C entering at cooling condition water flow rate, condenser water temperature 40/45°C

(5) η<sub>α</sub> /SCOP as defined in Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters with P rated <400 kW - COMMISSION REGULATION (EU) No 813/2013 of 2 August 2013: Med temp application 10/7°C Evaporator - 47/55°C Condenser- average climate





Trane® is a brand of Ingersoll Rand®. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Ingersoll Rand®, Trane®, Thermo King® and Club Car® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.

