



**TRANE®**

# Air-Cooled Series R® Helical-rotary Chiller

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**Model RTAD 085-100-115-125-145-150-  
165-180  
270 to 630 kW (50 Hz)**

**Heat Recovery version  
Built For the Industrial  
and Commercial Markets**



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**RLC-PRC026-E4**



## Introduction

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**The Trane model RTAD Heat Recovery air-cooled helical-rotary compressor chiller:**

**A solution providing users energy savings by recovering heat from the HVAC installation to use elsewhere in the building.**

Like the standard model RTAD, the Partial Heat Recovery (PHR) and Total Heat Recovery (THR) versions of RTAD utilize the proven design of the Trane helical-rotary compressors. For further information about RTAD, the product catalogue **RLC-PRC015-E4** is available on request from your local Trane representative.

The RTAD with Heat Recovery option offers high reliability coupled with a competitive physical footprint and acoustical performance due to its advanced design, low speed/direct drive compressor and proven Series R® performance.

The advantages of the model RTAD with Heat Recovery option are:

- A single equipment control
- A wide range of capacity
- A wide range of applications

The Series R® Model RTAD with Heat Recovery option helical-rotary screw chiller is designed for applications where a limited or a significant amount of heat can be recovered from the HVAC installation to heat or preheat the sanitary hot water or in process applications with simultaneous cooling and heating needs.



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# Application Considerations

Certain application constraints should be considered when sizing, selecting and installing Trane air-cooled Series R<sup>®</sup> chillers. Unit and system reliability is often dependent upon properly and completely complying with these considerations. When the application varies from the guidelines presented, it should be reviewed with your local Trane sales representative.

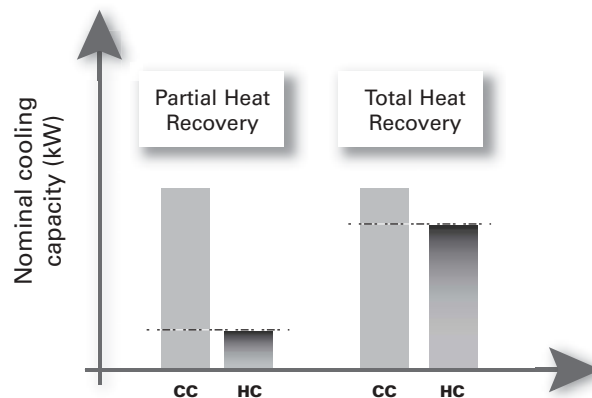
Heat recovery appears more and more as a sensible response to offset energy costs continually on the rise. The TRANE range RTAD with Heat Recovery option combines the energy savings of heat recovery operation with the installation and maintenance cost savings of completely factory run-tested packaged air cooled liquid chillers. The RTAD with Heat Recovery option operate as a standard chiller as long as heat is not required or it can simultaneously produce chilled and hot water which can be used for applications like:

- **Heating or preheating of boiler systems or domestic water:**  
Piped in series with a boiler, a heat recovery machine enables to reduce both purchase and installation cost (undersized boiler) and operating cost. Installed in addition with an auxiliary heater it can also replace the heater in low temperature heating systems (floor heating).
- **Air conditioning, ventilation air preheat:**  
In office blocks, in winter, computer rooms still need cooling while offices need heating. A heat recovery chiller can carry out both duties.
- **Industrial process:**  
A heat recovery chiller is suitable for all industrial process requiring both chilled and hot water.

### Performance of Heat Recovery units

Heat exchangers are sized to recover up to 80% of the nominal cooling capacity for THR units and 25% of the nominal cooling capacity for PHR units.

Figure 1 - Performance



CC = Cooling capacity  
HC = Heating capacity



# Selection Procedure

Trane provides assistance in running extensive load simulations taking into account the specificity of your building, which will determine whether it can benefit from the savings generated from the implementation of a RTAD Heat Recovery chiller. The following parameters must be known to select the type of option and to calculate the financial viability of this choice:

- Cooling load profile: daily typical cooling load demand for each month of the year
- Heating load profile: daily typical heating load demand for each month of the year

Energy costs: electricity to run the chiller and an alternative energy (gas or fuel) that can be used for heating

A more favorable payback will be obtained when cooling and heating demand are simultaneous and when the number of running hours of the HVAC system is high. However, in the case of high heating load, the amount of energy that can be recovered from the chiller can justify the installation of a hot water storage volume to balance time offset or load offset between cooling and heating demand.

The chiller capacity tables cover the most frequently encountered leaving liquid temperatures. The tables reflect a 5°C temperature drop through the evaporator. For other temperature drops, apply the appropriate Performance Data Adjustment Factors.

## Selection Procedure SI units

To select a Trane air-cooled RTAD chiller, the following information is required:

1. Design load in kW of refrigeration
  2. Design load in kW of heating
- For Partial Heat Recovery units approximately 20% of cooling capacity can be recovered (latent heat).
- For Total Heat Recovery units approximately 80% of cooling capacity can be recovered (latent heat).
3. Design chilled water temperature drop
  4. Design leaving chilled water temperature
  5. Design ambient temperature evaporator flow rates can be determined by using the following formula:

$$l/s = \text{kW (Capacity)} \times 0.239 / \text{Temperature Drop (Degrees C)}$$

To determine the evaporator pressure drop we use the flow rate (l/s) and the evaporator water pressure drop Figure 2.

For applications where the altitude is significantly greater than sea level or the temperature drop is different than 6°C, the performance adjustment factors from Table 113 should be applied at this point.

For selection of chilled brine units, contact your local Trane sales engineer.

6. The final selection in Heating mode is:

- QTY (1) RTAD 100 PHR
  - Cooling Capacity = 332.6 kW
  - Entering/Leaving Chilled Water Temperature = 12/7°C
  - Ambient 35°C
  - Heat Capacity = 84.6kW
  - Entering/Leaving Temperature Heat Recovery condenser = 40/50°C
  - Chilled Water Flow Rate = 15.6 l/s
  - Evaporator Water Pressure Drop = 46.3 kPa
  - Compressor Power Input = 108.8 kW
  - Unit COP = 2.8 kW/kW
- 
- QTY (1) RTAD 100 THR
  - Cooling Capacity = 312.4 kW
  - Entering/Leaving Chilled Water Temperature = 12/7°C
  - Ambient 35°C
  - Heat Capacity = 251.6 kW
  - Entering/Leaving Temperature Heat Recovery condenser = 40/50°C
  - Chilled Water Flow Rate = 15.4 l/s
  - Evaporator Water Pressure Drop = 44.8 kPa
  - Compressor Power Input = 111.2 kW
  - Unit COP = 2.79 kW/kW

Contact the local Trane sales engineer for a proper selection at the given operating conditions.

## Selection Procedure English units

$$1 \text{ ton} = 3.5168 \text{ kW}$$

$$\text{Evaporator flow rate in GPM} = 24 \times \text{tons} / \Delta T (F)$$

$$\Delta T (F) = \Delta T (°C) \times 1.8$$

$$1 \text{ GPM} = 0.06309 \text{ l/s}$$

$$1 \text{ ft WG} = 3 \text{ kPa}$$

$$\text{EER} = \text{COP} / 0.29$$



# General Data

**Table 1 - General Data RTAD Heat Recovery Standard**

Unit Size		085	100	115	125	145	150	165	180
Number of Compressors		2	2	2	2	2	2	2	2
Nominal Size (1)	(Tons)	40/40	50/50	60/60	70/70	85/70	85/85	100/85	100/100
<b>Evaporator</b>									
Evaporator Model		EG120	EG140	EG170	EG200	EG200	EG200	EG250	EG250
Water Storage	(l)	106	269	223	204	204	204	415	415
Minimum Flow	(l/s)	4.1	6	7.3	8.8	8.8	8.8	11.6	11.6
Maximum Flow	(l/s)	17.3	20.8	24.8	30.7	30.7	30.7	38.0	38.0
Water Connection Type									
Water Connection Diameter	(inch-mm)	5 1/2 O.D. - 139.7	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3
<b>Heat Recovery Heat-Exchanger</b>									
Type									
Water Connection Type									
<b>PHR</b>									
Connection diameter	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Water Storage capacity	(l)	8	8	9	9	11	11	12	12
<b>THR</b>									
Connection diameter	(inch - mm)	-	2" - 60.3	2" - 60.3	2" - 60.3	3" O.D. - 76.1	3" O.D. - 76.1	3" O.D. - 76.1	3" O.D. - 76.1
Water Storage capacity	(l)	-	10	14	14	16	16	19	19
<b>Condenser</b>									
Number of Coils		2	2	2	2	2	2	2	2
Fin series	(Fins/ft)	192	192	192	192	192	192	192	192
Number of Rows		3/3	2/2	3/3	3/3	3/3	3/3	3/3	3/3
<b>Condenser Fans</b>									
Quantity (1)		3/3	3/3	3/3	3/3	5/4	5/5	6/5	6/6
Diameter	(mm)	762	762	762	762	762	762	762	762
Total Air Flow	(m <sup>3</sup> /s)	23.4	28.5	27.0	27.0	37.0	39.0	44.9	46.8
Nominal Speed	(rpm)	930	930	930	930	930	930	930	930
Motor kW	(kW)	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72
<b>Min Starting/Oper Ambient (2)</b>									
<b>PHR</b>	(°C)	0	0	0	0	0	0	0	0
<b>THR</b>	(°C)	-18	-18	-18	-18	-18	-18	-18	-18
<b>General Unit</b>									
Refrigerant		HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a
No. Of independent Refrigerant Circuits		2	2	2	2	2	2	2	2
% Min. Load (3)		17	17	17	17	17	17	17	17
<b>Weight, Capacities &amp; Dimensions</b>									
<b>PHR</b>									
Refrigerant Charge (1)	(kg)	26/26	33/35	38/39	39/40	47/51	47/51	65/63	65/65
Oil Charge (1)	(l)	6/6	7/7	9/9	10/10	10/10	10/10	15/11	15/15
Operating Weight (4)	(kg)	2736	3176	3635	3650	4345	4605	5535	5622
Shipping Weight (4)	(kg)	2622	2899	3403	3437	4130	4390	5108	5195
<b>THR</b>									
Refrigerant Charge (1)	(kg)	-	55 / 52	67 / 64	68 / 64	86 / 84	86 / 84	100 / 95	100 / 98
Oil Charge (1)	(l)	-	5 / 4	8 / 7	8 / 7	8 / 7	8 / 7	13 / 7	13 / 12
Operating Weight (4)	(kg)	-	3347	3833	3848	4615	4875	5806	5891
Shipping Weight (4)	(kg)	-	3061	3589	3623	4382	4642	5359	5444
<b>Dimensions</b>									
Length	(mm)	3507	4426	4426	4426	5351	5351	6370	6370
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2095	2095	2095	2095	2115	2115	2215	2215

(1) Data containing information on two circuits shown as follows: ckt1/ckt2

(2) Minimum start-up/operation ambient based on a 2.22 m/s wind across the condenser.

(3) Percent minimum load is for total machine at 10°C ambient and 7°C leaving chilled water temp. Not each individual circuit.

(4) With aluminum fin



# General Data

**Table 2 - General Data RTAD Heat Recovery High Efficiency**

Unit Size		085	100	115	125	145	150
Number of Compressors		2	2	2	2	2	2
Nominal Size (1)	(Tons)	40/40	50/50	60/60	70/70	85/70	85/85
<b>Evaporator</b>							
Evaporator Model		EG140	EG170	EG200	EG200	EG250	EG250
Water Storage	(l)	269	223	204	204	415	415
Minimum Flow	(l/s)	6	7.3	8.8	8.8	11.6	11.6
Maximum Flow	(l/s)	20.8	24.8	30.7	30.7	38.0	38.0
Water Connection Type					Victaulic		
Water Connection Diameter	(inch-mm)	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3
<b>Heat Recovery Heat-Exchanger</b>							
Type					Brazed Plates		
Water Connection Type					Victaulic		
<b>PHR</b>							
Connection diameter	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Water Storage capacity	(l)	8	8	9	9	11	11
<b>THR</b>							
Connection diameter	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" O.D. - 76.1	3" O.D. - 76.1
Water Storage capacity	(l)	10	10	14	14	16	16
<b>Condenser</b>							
Number of Coils		2	2	2	2	2	2
Fin series	(Fins/ft)	192	192	192	192	192	192
Number of Rows		3/3	3/3	3/3	3/3	3/3	3/3
<b>Condenser Fans</b>							
Quantity (1)		3/3	4/4	4/4	5/5	6/5	6/6
Diameter	(mm)	762	762	762	762	762	762
Total Air Flow	(m <sup>3</sup> /s)	27.0	31.2	35.0	39.0	44.9	46.8
Nominal Speed	(rpm)	930	930	930	930	930	930
Motor kW	(kW)	1.72	1.72	1.72	1.72	1.72	1.72
<b>Min Starting/Oper Ambient (2)</b>							
<b>PHR</b>	(°C)	0	0	0	0	0	0
<b>THR</b>	(°C)	-18	-18	-18	-18	-18	-18
<b>General Unit</b>							
Refrigerant		HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a
No. Of independent Refrigerant Circuits		2	2	2	2	2	2
% Min. Load (3)		17	17	17	17	17	17
<b>Weight, Capacities &amp; Dimensions</b>							
<b>PHR</b>							
Refrigerant Charge (1)	(kg)	35/37	38/39	45/48	45/48	63/65	63/65
Oil Charge (1)	(l)	6/6	7/7	10/10	10/10	11/11	11/11
Operating Weight (4)	(kg)	3311	3441	3984	4079	5474	5529
Shipping Weight (4)	(kg)	2375	2504	3045	3140	4532	4587
<b>THR</b>							
Refrigerant Charge (1)	(kg)	63 / 60	65 / 62	86 / 84	86 / 84	97 / 95	97 / 95
Oil Charge (1)	(l)	5 / 4	5 / 4	8 / 7	8 / 7	8 / 7	8 / 7
Operating Weight (4)	(kg)	3494	3624	4238	4333	5731	5786
Shipping Weight (4)	(kg)	3208	3384	4013	4108	5287	5342
<b>Dimensions</b>							
Length	(mm)	4426	4426	5351	5351	6370	6370
Width	(mm)	2260	2260	2260	2260	2260	2260
Height	(mm)	2095	2095	2115	2115	2215	2215

(1) Data containing information on two circuits shown as follows: dkt1/ckt2

(2) Minimum start-up/operation ambient based on a 2.22 m/s wind across the condenser.

(3) Percent minimum load is for total machine at 10°C ambient and 7°C leaving chilled water temp. Not each individual circuit.

(4) With aluminum fins



# General Data

**Table 3 - General Data RTAD Heat Recovery Standard Low Noise**

Unit Size		085	100	115	125	145	150	165	180
Number of Compressors		2	2	2	2	2	2	2	2
Nominal Size (1)	(Tons)	40/40	50/50	60/60	70/70	85/70	85/85	100/85	100/100
<b>Evaporator</b>									
Evaporator Model		EG120	EG140	EG170	EG200	EG200	EG200	EG250	EG250
Water Storage	(l)	106	269	223	204	204	204	415	415
Minimum Flow	(l/s)	4.1	6	7.3	8.8	8.8	8.8	11.6	11.6
Maximum Flow	(l/s)	17.3	20.8	24.8	30.7	30.7	30.7	38.0	38.0
Water Connection Type					Victaulic				
Water Connection Diameter	(inch-mm)	5 1/2 O.D. - 139.7	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3
<b>Heat Recovery Heat-Exchanger</b>									
Type					Brazen Plates				
Water Connection Type					Victaulic				
<b>PHR</b>									
Connection diameter / Type	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Water Storage capacity	(l)	8	8	9	9	11	11	12	12
<b>THR</b>									
Connection diameter / Type	(inch - mm)		2" - 60.3	2" - 60.3	2" - 60.3	3" O.D. - 76.1	3" O.D. - 76.1	3" O.D. - 76.1	3" O.D. - 76.1
Water Storage capacity	(l)	-	10	14	14	16	16	19	19
<b>Condenser</b>									
Number of Coils		2	2	2	2	2	2	2	2
Fin series	(Fins/ft)	192	192	192	192	192	192	192	192
Number of Rows		3/3	2/2	3/3	3/3	3/3	3/3	3/3	3/3
<b>Condenser Fans</b>									
Quantity (1)		3/3	3/3	3/3	3/3	5/4	5/5	6/5	6/6
Diameter	(mm)	762	762	762	762	762	762	762	762
Total Air Flow	(m <sup>3</sup> /s)	18.1	22.4	21.0	21.0	28.7	30.1	34.7	36.2
Nominal Speed	(rpm)	750	750	750	750	750	750	750	750
Motor kW	(kW)	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
<b>Min Starting/Oper Ambient (2)</b>									
PHR	(°C)	0	0	0	0	0	0	0	0
THR	(°C)	-18	-18	-18	-18	-18	-18	-18	-18
<b>General Unit</b>									
Refrigerant		HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a
No. Of independent Refrigerant Circuits		2	2	2	2	2	2	2	2
% Min. Load (3)		17	17	17	17	17	17	17	17
<b>Weight, Capacities &amp; Dimensions</b>									
<b>PHR</b>									
Refrigerant Charge (1)	(kg)	26/26	33/35	38/39	39/40	47/51	47/51	65/63	65/65
Oil Charge (1)	(l)	6/6	7/7	9/9	10/10	10/10	10/10	15/11	15/15
Operating Weight (4)	(kg)	2836	3276	3735	3750	4445	4705	5635	5722
Shipping Weight (4)	(kg)	2082	2520	2978	2991	3686	3946	4873	4960
<b>THR</b>									
Refrigerant Charge (1)	(kg)	-	55 / 52	67 / 64	68 / 64	86 / 84	86 / 84	100 / 95	100 / 98
Oil Charge (1)	(l)	-	5 / 4	8 / 7	8 / 7	8 / 7	8 / 7	13 / 7	13 / 12
Operating Weight (4)	(kg)	-	3447	3933	3948	4715	4975	5906	5991
Shipping Weight (4)	(kg)	-	3161	3689	3723	4482	4742	5459	5544
<b>Dimensions</b>									
Length	(mm)	3507	4426	4426	4426	5351	5351	6370	6370
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2095	2095	2095	2095	2115	2115	2215	2215

(1) Data containing information on two circuits shown as follows: ckt1/ckt2

(2) Minimum start-up/operation ambient based on a 2.22 m/s wind across the condenser.

(3) Percent minimum load is for total machine at 10°C ambient and 7°C leaving chilled water temp. Not each individual circuit.

(4) With aluminum fins





# General Data

**Table 4 - General Data RTAD Heat Recovery High Efficiency Low Noise**

Unit Size		085	100	115	125	145	150
Number of Compressors		2	2	2	2	2	2
Nominal Size (1)	(Tons)	40/40	50/50	60/60	70/70	85/70	85/85
<b>Evaporator</b>							
Evaporator Model		EG140	EG170	EG200	EG200	EG250	EG250
Water Storage	(l)	269	223	204	204	415	415
Minimum Flow	(l/s)	6	7.3	8.8	8.8	11.6	11.6
Maximum Flow	(l/s)	20.8	24.8	30.7	30.7	38.0	38.0
Water Connection Type					Victaulic		
Water Connection Diameter	(inch-mm)	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3	6" - 168.3
<b>Heat Recovery Heat-Exchanger</b>							
Type					Brazed Plates		
Water Connection Type					Victaulic		
<b>PHR</b>							
Connection diameter	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3
Water Storage capacity	(l)	8	8	9	9	11	11
<b>THR</b>							
Connection diameter	(inch - mm)	2" - 60.3	2" - 60.3	2" - 60.3	2" - 60.3	3" O.D. - 76.1	3" O.D. - 76.1
Water Storage capacity	(l)	10	10	14	14	16	16
<b>Condenser</b>							
Number of Coils		2	2	2	2	2	2
Fin series	(Fins/ft)	192	192	192	192	192	192
Number of Rows		3/3	3/3	3/3	3/3	3/3	3/3
<b>Condenser Fans</b>							
Quantity (1)		3/3	4/4	4/4	5/5	6/5	6/6
Diameter	(mm)	762	762	762	762	762	762
Total Air Flow	(m <sup>3</sup> /s)	21.0	24.1	27.2	30.1	34.7	36.2
Nominal Speed	(rpm)	750	750	750	750	750	750
Motor kW	(kW)	1.23	1.23	1.23	1.23	1.23	1.23
<b>Min Starting/Oper Ambient (2)</b>							
<b>PHR</b>	(°C)	0	0	0	0	0	0
<b>THR</b>	(°C)	-18	-18	-18	-18	-18	-18
<b>General Unit</b>							
Refrigerant		HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a	HFC 134a
No. Of independent Refrigerant Circuits		2	2	2	2	2	2
% Min. Load (3)		17	17	17	17	17	17
<b>Weight, Capacities &amp; Dimensions</b>							
<b>PHR</b>							
Refrigerant Charge (1)	(kg)	35/37	38/39	45/48	45/48	63/65	63/65
Oil Charge (1)	(l)	6/6	7/7	10/10	10/10	11/11	11/11
Operating Weight (4)	(kg)	3411	3541	4084	4179	5574	5629
Shipping Weight (4)	(kg)	2655	2784	3325	3420	4812	4867
<b>THR</b>							
Refrigerant Charge (1)	(kg)	63 / 60	65 / 62	86 / 84	86 / 84	97 / 95	97 / 95
Oil Charge (1)	(l)	5 / 4	5 / 4	8 / 7	8 / 7	8 / 7	8 / 7
Operating Weight (4)	(kg)	3594	3724	4338	4433	5831	5886
Shipping Weight (4)	(kg)	3308	3484	4113	4208	5387	5442
<b>Dimensions</b>							
Length	(mm)	4426	4426	5351	5351	6370	6370
Width	(mm)	2260	2260	2260	2260	2260	2260
Height	(mm)	2095	2095	2115	2115	2215	2215

(1) Data containing information on two circuits shown as follows: ckt1/ckt2

(2) Minimum start-up/operation ambient based on a 2.22 m/s wind across the condenser.

(3) Percent minimum load is for total machine at 10°C ambient and 7°C leaving chilled water temp. Not each individual circuit.

(4) With aluminum fins



# Performance Data - Partial Heat Recovery

## Partial Heat Recovery

The amount of heat recovery depends on:

- the percentage of cooling load available
- the ambient temperature (see tables regarding heating below).

*Note: Cooling Capacities are not affected by Partial Heat Recovery operations.*

## Partial heat recovery - standard efficiency units

**Table 5 - RTAD 085 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	294.3	74.8	3.44	277.4	80.8	3.03	259.5	87.6	2.64	241.2	95.2	2.28
7	313.6	77.6	3.55	295.7	83.8	3.13	277.1	90.7	2.74	257.7	98.4	2.37
9	333.7	80.6	3.65	314.7	86.9	3.23	295.0	93.9	2.83	274.6	101.7	2.45
11	354.4	83.8	3.75	334.4	90.1	3.32	313.6	97.2	2.91	292.2	105.1	2.53
13	375.5	87.1	3.84	354.4	93.5	3.41	332.6	100.7	2.99	310.1	108.6	2.61

**Table 6 - RTAD 085 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	35.2	0.85	7.3	58.0	1.40	17.3	82.0	1.98	31.4	84.1	2.03	32.8
	7	41.5	1.00	9.7	65.2	1.58	21.2	89.4	2.16	36.5	89.0	2.15	36.2
	9	49.0	1.18	13.0	72.9	1.76	25.7	97.2	2.35	42.1	94.1	2.27	39.8
35 / 45	5	19.1	0.46	2.6	33.7	0.81	6.8	55.9	1.35	16.3	80.2	1.94	30.3
	7	22.8	0.55	3.5	38.6	0.93	8.6	62.9	1.52	19.9	87.4	2.11	35.1
	9	27.8	0.67	4.9	45.8	1.11	11.6	70.3	1.70	24.1	94.1	2.27	39.8
40 / 50	5	11.2	0.27	1.0	18.6	0.45	2.4	32.7	0.79	6.5	54.3	1.31	15.5
	7	13.3	0.32	1.4	21.1	0.51	3.0	37.3	0.90	8.1	61.0	1.47	18.9
	9	15.7	0.38	1.8	25.8	0.62	4.3	43.3	1.04	10.5	68.1	1.64	22.8
45 / 55	5	3.4	0.08	0.1	10.8	0.26	1.0	18.6	0.45	2.5	32.2	0.78	6.3
	7	5.0	0.12	0.3	12.7	0.31	1.3	20.8	0.50	3.0	36.5	0.88	7.8
	9	6.9	0.17	0.4	14.9	0.36	1.7	24.4	0.59	3.9	41.2	1.00	9.6
50 / 60	5	-	-	-	3.1	0.07	0.1	11.0	0.27	1.0	19.2	0.46	2.6
	7	-	-	-	4.5	0.11	0.2	12.7	0.31	1.3	21.3	0.51	3.1
	9	-	-	-	6.2	0.15	0.4	14.7	0.36	1.6	23.6	0.57	3.7

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 7 - RTAD 100 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	354.1	92.6	3.44	333.3	98.9	3.05	311.9	106.2	2.68	289.7	114.3	2.33
7	377.3	96.4	3.53	355.1	102.8	3.14	332.6	110.1	2.76	309.1	118.4	2.41
9	400.8	100.3	3.62	377.6	106.8	3.22	353.7	114.3	2.84	329.1	122.6	2.48
11	425.1	104.4	3.70	400.8	111.1	3.30	375.5	118.6	2.92	349.8	127.1	2.55
13	450.1	108.7	3.78	424.4	115.5	3.38	398.0	123.1	2.99	367.1	129.5	2.63

**Table 8 - RTAD 100 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	64.6	1.56	20.9	85.8	2.07	34.0	104.5	2.52	47.7	101.0	2.44	45.0
	7	74.4	1.80	26.6	95.6	2.31	40.9	110.7	2.67	52.6	106.9	2.58	49.6
	9	84.8	2.05	33.3	106.0	2.56	48.9	117.0	2.83	57.9	112.9	2.73	54.5
35 / 45	5	38.2	0.92	8.4	57.9	1.40	17.3	80.3	1.94	30.3	101.0	2.44	45.0
	7	45.9	1.11	11.6	67.1	1.62	22.3	89.5	2.16	36.5	106.9	2.58	49.6
	9	55.6	1.34	16.1	77.0	1.86	28.2	99.4	2.40	43.8	112.9	2.73	54.5
40 / 50	5	20.9	0.50	3.0	34.1	0.82	6.9	52.5	1.27	14.6	75.9	1.83	27.5
	7	25.4	0.61	4.2	40.2	0.97	9.2	61.2	1.48	19.0	84.6	2.04	33.2
	9	32.0	0.77	6.2	47.9	1.16	12.5	70.4	1.70	24.2	94.0	2.27	39.7
45 / 55	5	11.4	0.27	1.0	19.4	0.47	2.6	31.0	0.75	5.9	48.3	1.17	12.6
	7	14.2	0.34	1.5	22.5	0.54	3.4	36.7	0.89	7.9	56.4	1.36	16.5
	9	17.5	0.42	2.2	27.1	0.65	4.7	43.0	1.04	10.3	65.2	1.57	21.2
50 / 60	5	-	-	-	9.9	0.24	0.8	18.6	0.45	2.5	28.8	0.70	5.2
	7	4.0	0.10	0.2	12.4	0.30	1.2	21.4	0.52	3.1	34.2	0.83	7.0
	9	6.7	0.16	0.4	15.4	0.37	1.8	24.7	0.60	4.0	40.0	0.97	9.1

**Table 9 - RTAD 115 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	422.3	114.7	3.37	397.7	124.3	2.95	372.0	135.0	2.56	345.6	146.9	2.20
7	449.3	119.2	3.47	423.0	128.9	3.04	395.9	139.8	2.64	367.8	151.9	2.27
9	477.1	123.9	3.55	449.0	133.8	3.12	420.5	144.8	2.71	390.6	157.2	2.34
11	505.3	128.7	3.63	475.7	138.8	3.19	445.1	150.1	2.78	414.2	162.6	2.40
13	533.7	133.9	3.70	502.8	144.1	3.26	470.8	155.6	2.84	425.1	160.2	2.50

**Table 10 - RTAD 115 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	71.3	1.72	16.9	103.3	2.49	31.7	126.7	3.06	44.9	123.1	2.97	42.7
	7	82.7	2.00	21.7	114.9	2.77	38.0	133.9	3.23	49.3	129.9	3.14	46.8
	9	94.7	2.29	27.4	127.3	3.07	45.2	141.3	3.41	54.0	137.0	3.31	51.2
35 / 45	5	42.8	1.03	7.1	68.2	1.65	15.7	100.9	2.44	30.5	123.1	2.97	42.7
	7	50.4	1.22	9.4	79.1	1.91	20.2	112.1	2.71	36.4	129.9	3.14	46.8
	9	58.6	1.42	12.1	90.7	2.19	25.4	124.0	3.00	43.3	137.0	3.31	51.2
40 / 50	5	26.2	0.63	3.1	41.1	0.99	6.6	66.0	1.60	14.8	99.3	2.40	29.7
	7	30.0	0.72	3.9	48.3	1.17	8.7	76.5	1.85	19.0	110.1	2.66	35.3
	9	34.3	0.83	4.9	56.2	1.36	11.3	87.6	2.12	24.0	121.5	2.94	41.8
45 / 55	5	14.7	0.35	1.2	25.8	0.62	3.0	40.3	0.97	6.4	64.6	1.56	14.3
	7	17.7	0.43	1.6	29.4	0.71	3.7	47.2	1.14	8.4	74.6	1.80	18.3
	9	21.3	0.51	2.2	33.5	0.81	4.7	54.7	1.32	10.8	85.3	2.06	22.9
50 / 60	5	3.2	0.08	0.1	14.4	0.35	1.1	26.4	0.64	3.1	40.2	0.97	6.4
	7	5.5	0.13	0.2	17.2	0.42	1.5	29.7	0.72	3.8	46.8	1.13	8.3
	9	8.3	0.20	0.4	20.6	0.50	2.0	33.5	0.81	4.7	54.0	1.30	10.5

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 11 - RTAD 125 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	485.6	145.7	3.11	456.0	158.0	2.71	425.8	171.6	2.34	394.9	186.5	2.01
7	515.1	151.7	3.18	483.8	164.2	2.77	451.8	177.9	2.40	401.5	181.2	2.10
9	545.0	157.8	3.24	511.9	170.6	2.83	478.5	184.6	2.46	406.8	174.8	2.20
11	575.6	164.3	3.30	540.8	177.2	2.89	505.3	191.4	2.51	413.8	169.2	2.31
13	606.5	171.0	3.35	569.9	184.1	2.94	521.8	191.0	2.60	419.1	164.0	2.41

**Table 12 - RTAD 125 Standard Efficiency- Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	107.8	2.60	34.1	142.1	3.43	54.5	149.3	3.61	59.3	145.3	3.51	56.7
	7	121.8	2.94	42.0	156.4	3.78	64.2	157.4	3.80	64.9	145.7	3.52	56.9
	9	136.8	3.30	51.1	170.6	4.12	74.4	165.8	4.00	70.9	145.4	3.51	56.7
35 / 45	5	70.6	1.70	16.6	105.0	2.54	32.6	140.0	3.38	53.2	145.3	3.51	56.7
	7	83.7	2.02	22.2	118.5	2.86	40.0	153.8	3.72	62.4	145.7	3.52	56.9
	9	97.8	2.36	28.9	132.9	3.21	48.7	165.8	4.00	70.9	145.4	3.51	56.7
40 / 50	5	43.1	1.04	7.2	67.9	1.64	15.5	103.1	2.49	31.6	138.6	3.35	52.3
	7	52.0	1.26	9.9	80.5	1.94	20.8	116.0	2.80	38.6	145.7	3.52	56.9
	9	61.7	1.49	13.2	94.0	2.27	27.0	129.9	3.14	46.8	145.4	3.51	56.7
45 / 55	5	27.4	0.66	3.3	41.9	1.01	6.9	66.8	1.61	15.1	101.9	2.46	31.0
	7	32.1	0.77	4.3	50.4	1.22	9.4	78.2	1.89	19.8	114.4	2.76	37.7
	9	37.4	0.90	5.6	59.7	1.44	12.5	91.2	2.20	25.7	127.7	3.09	45.5
50 / 60	5	13.8	0.33	1.0	27.8	0.67	3.4	42.4	1.02	7.0	67.2	1.62	15.3
	7	17.6	0.42	1.6	32.1	0.78	4.4	49.8	1.20	9.2	76.8	1.86	19.2
	9	22.0	0.53	2.3	37.1	0.90	5.6	58.6	1.42	12.1	89.2	2.16	24.7

**Table 13 - RTAD 145 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	550.6	146.9	3.39	520.0	158.7	2.99	488.7	171.8	2.61	456.4	186.4	2.27
7	586.5	152.8	3.48	554.1	164.7	3.08	520.7	178.0	2.70	486.6	192.8	2.34
9	623.4	158.9	3.57	588.9	171.0	3.16	553.8	184.5	2.78	517.6	199.4	2.42
11	661.0	165.2	3.66	624.8	177.5	3.24	587.5	191.1	2.85	532.3	197.0	2.51
13	699.7	171.8	3.74	661.4	184.2	3.32	622.0	198.0	2.92	538.0	189.5	2.63

**Table 14 - RTAD 145 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	98.1	2.37	19.2	139.3	3.37	35.6	165.1	3.99	48.0	160.7	3.88	45.8
	7	113.2	2.73	24.7	154.6	3.74	42.8	174.7	4.22	53.0	169.9	4.10	50.5
	9	129.3	3.12	31.2	171.0	4.13	51.1	184.6	4.46	58.4	179.2	4.33	55.5
35 / 45	5	61.4	1.48	8.4	93.3	2.25	17.6	135.6	3.28	34.0	160.7	3.88	45.8
	7	71.6	1.73	11.0	107.7	2.60	22.6	150.3	3.63	40.7	169.9	4.10	50.5
	9	82.6	1.99	14.2	123.0	2.97	28.6	165.9	4.01	48.5	179.2	4.33	55.5
40 / 50	5	35.9	0.87	3.3	58.6	1.41	7.8	89.7	2.17	16.4	133.0	3.21	32.9
	7	41.1	0.99	4.2	68.2	1.65	10.1	103.5	2.50	21.1	147.2	3.55	39.2
	9	50.3	1.21	5.9	78.6	1.90	13.0	118.2	2.85	26.7	162.1	3.92	46.5
45 / 55	5	21.2	0.51	1.3	35.3	0.85	3.2	57.0	1.38	7.4	87.3	2.11	15.7
	7	25.5	0.62	1.8	40.1	0.97	4.0	66.1	1.60	9.6	100.5	2.43	20.1
	9	30.4	0.73	2.4	46.5	1.12	5.2	76.0	1.84	12.3	114.5	2.77	25.2
50 / 60	5	6.6	0.16	0.2	20.8	0.50	1.3	35.9	0.87	3.3	56.4	1.36	7.3
	7	9.9	0.24	0.3	24.6	0.60	1.7	40.3	0.97	4.0	65.1	1.57	9.4
	9	13.8	0.33	0.6	29.1	0.70	2.3	45.4	1.10	5.0	74.5	1.80	11.8

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 15 - RTAD 150 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	589.6	162.3	3.28	556.9	175.0	2.90	523.2	189.2	2.54	488.7	205.0	2.21
7	627.3	168.9	3.37	592.5	181.8	2.98	556.9	196.2	2.61	520.0	212.1	2.27
9	665.6	175.8	3.45	628.7	188.9	3.05	591.0	203.4	2.68	552.0	219.5	2.34
11	705.0	182.9	3.52	665.9	196.2	3.12	626.2	210.9	2.75	568.9	217.9	2.43
13	745.0	190.4	3.59	703.9	203.8	3.19	661.7	218.7	2.81	577.3	210.9	2.54

**Table 16 - RTAD 150 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	110.2	2.66	23.6	152.1	3.67	41.6	178.1	4.30	54.9	173.4	4.19	52.4
	7	126.2	3.05	29.9	168.3	4.07	49.7	188.3	4.55	60.5	183.0	4.42	57.6
	9	143.1	3.46	37.4	185.5	4.48	59.0	198.6	4.80	66.5	192.9	4.66	63.1
35 / 45	5	67.8	1.64	10.0	104.9	2.53	21.6	148.2	3.58	39.7	173.4	4.19	52.4
	7	78.7	1.90	13.0	120.2	2.90	27.5	163.7	3.95	47.3	183.0	4.42	57.6
	9	93.9	2.27	17.8	136.4	3.29	34.3	180.1	4.35	56.0	192.9	4.66	63.1
40 / 50	5	41.2	0.99	4.2	64.8	1.57	9.3	101.2	2.44	20.3	145.4	3.51	38.4
	7	47.0	1.13	5.3	75.1	1.81	12.0	115.7	2.79	25.7	160.3	3.87	45.6
	9	56.9	1.38	7.4	87.2	2.11	15.6	131.2	3.17	32.0	176.1	4.25	53.8
45 / 55	5	25.4	0.61	1.8	40.4	0.98	4.0	63.2	1.53	8.9	98.6	2.38	19.4
	7	30.2	0.73	2.4	45.9	1.11	5.0	73.0	1.76	11.4	112.5	2.72	24.5
	9	35.8	0.86	3.3	52.9	1.28	6.5	83.6	2.02	14.5	127.4	3.08	30.4
50 / 60	5	9.6	0.23	0.3	24.8	0.60	1.7	40.9	0.99	4.1	62.7	1.51	8.7
	7	13.5	0.33	0.6	29.2	0.71	2.3	46.0	1.11	5.1	72.0	1.74	11.2
	9	18.0	0.43	1.0	34.4	0.83	3.0	51.7	1.25	6.2	82.1	1.98	14.1

**Table 17 - RTAD 165 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	641.0	178.5	3.25	607.9	192.3	2.88	573.5	207.7	2.54	537.6	224.9	2.21
7	683.2	186.0	3.34	648.0	200.0	2.96	611.1	215.7	2.61	573.5	233.1	2.28
9	726.1	193.6	3.42	688.4	207.9	3.04	649.8	223.8	2.68	609.3	241.6	2.35
11	770.0	201.7	3.49	730.3	216.2	3.11	689.1	232.4	2.75	618.5	234.9	2.45
13	815.4	210.0	3.56	773.2	224.8	3.18	729.6	241.2	2.81	629.0	228.1	2.56

**Table 18 - RTAD 165 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	115.6	2.79	18.5	164.9	3.98	34.2	195.3	4.72	45.9	190.6	4.60	44.0
	7	134.0	3.24	23.9	183.6	4.43	41.2	206.7	4.99	50.6	201.6	4.87	48.5
	9	153.6	3.71	30.3	203.4	4.91	49.2	218.4	5.28	55.7	212.7	5.14	53.2
35 / 45	5	72.9	1.76	8.3	108.7	2.63	16.6	159.8	3.86	32.4	190.6	4.60	44.0
	7	85.3	2.06	10.9	126.3	3.05	21.6	177.6	4.29	38.9	201.6	4.87	48.5
	9	98.7	2.38	14.1	145.0	3.50	27.4	196.6	4.75	46.4	212.7	5.14	53.2
40 / 50	5	42.5	1.03	3.3	68.8	1.66	7.5	103.7	2.51	15.3	156.3	3.78	31.2
	7	48.6	1.17	4.1	80.6	1.95	9.9	120.5	2.91	19.9	173.4	4.19	37.3
	9	59.9	1.45	5.9	93.3	2.25	12.8	138.3	3.34	25.2	191.6	4.63	44.4
45 / 55	5	25.6	0.62	1.4	41.5	1.00	3.1	66.3	1.60	7.1	101.6	2.45	14.8
	7	30.6	0.74	1.9	47.1	1.14	3.9	77.5	1.87	9.3	116.3	2.81	18.7
	9	36.4	0.88	2.5	54.6	1.32	5.0	89.6	2.16	11.9	133.4	3.22	23.7
50 / 60	5	8.7	0.21	0.2	24.6	0.59	1.3	41.7	1.01	3.2	65.3	1.58	6.9
	7	12.7	0.31	0.4	29.2	0.71	1.7	47.0	1.14	3.9	75.9	1.83	8.9
	9	17.4	0.42	0.7	34.6	0.84	2.3	53.1	1.28	4.8	87.4	2.11	11.4

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 19 - RTAD 180 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	687.4	195.2	3.18	652.6	210.1	2.83	616.4	226.9	2.50	578.4	245.5	2.18
7	732.4	203.5	3.27	695.1	218.7	2.91	656.4	235.7	2.57	616.4	254.7	2.25
9	777.7	212.0	3.35	738.4	227.5	2.98	697.2	244.9	2.63	654.7	264.2	2.31
11	824.5	220.9	3.42	782.3	236.7	3.05	739.1	254.5	2.69	663.1	256.7	2.40
13	872.3	230.2	3.48	828.0	246.3	3.11	782.0	264.5	2.75	670.2	247.1	2.51

**Table 20 - RTAD 180 Standard Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	131.4	3.17	23.1	181.6	4.39	40.5	210.8	5.09	52.4	206.0	4.98	50.3
	7	150.9	3.65	29.4	201.5	4.87	48.4	223.0	5.39	57.7	217.8	5.26	55.4
	9	171.7	4.15	36.7	222.6	5.38	57.6	235.5	5.69	63.5	229.7	5.55	60.8
35 / 45	5	79.9	1.93	9.8	124.1	3.00	20.9	176.4	4.26	38.5	206.0	4.98	50.3
	7	93.1	2.25	12.7	142.9	3.45	26.7	195.4	4.72	45.9	217.8	5.26	55.4
	9	111.9	2.70	17.5	162.8	3.93	33.5	215.7	5.21	54.5	229.7	5.55	60.8
40 / 50	5	48.2	1.16	4.1	75.7	1.83	8.9	118.9	2.87	19.4	172.8	4.17	37.1
	7	55.0	1.33	5.1	88.3	2.13	11.6	136.8	3.30	24.8	191.1	4.61	44.2
	9	67.2	1.62	7.2	102.9	2.49	15.1	155.9	3.77	31.1	210.5	5.09	52.3
45 / 55	5	30.0	0.72	1.8	47.0	1.14	3.9	73.3	1.77	8.4	115.5	2.79	18.5
	7	35.7	0.86	2.4	53.4	1.29	4.9	85.2	2.06	10.9	132.6	3.20	23.5
	9	42.2	1.02	3.2	61.7	1.49	6.2	98.1	2.37	13.9	150.9	3.64	29.3
50 / 60	5	11.8	0.29	0.4	28.9	0.70	1.7	47.3	1.14	3.9	72.3	1.75	8.2
	7	16.3	0.39	0.6	34.1	0.82	2.2	53.3	1.29	4.8	83.7	2.02	10.6
	9	21.7	0.52	1.0	40.2	0.97	3.0	60.0	1.45	6.0	96.0	2.32	13.4

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

## Partial heat recovery - high efficiency units

Table 21 - RTAD 085 High Efficiency - Cooling

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	317.9	72.2	3.84	299.6	77.6	3.40	280.6	83.8	2.98	261.2	90.8	2.58
7	339.3	75.0	3.96	320.0	80.5	3.52	299.9	86.8	3.09	279.2	93.8	2.68
9	361.4	77.9	4.08	341.1	83.5	3.63	320.0	89.8	3.19	297.8	96.9	2.78
11	384.3	81.0	4.20	362.5	86.6	3.74	340.4	93.0	3.29	317.1	100.2	2.88
13	407.5	84.2	4.30	384.7	89.9	3.84	361.4	96.3	3.39	337.2	103.5	2.97

Table 22 - RTAD 085 High Efficiency - Heating

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	27.6	0.67	4.8	45.0	1.09	11.2	69.4	1.68	23.6	88.0	2.13	35.5
	7	32.5	0.79	6.4	51.9	1.25	14.3	76.5	1.85	27.9	93.2	2.25	39.2
	9	37.9	0.91	8.3	59.3	1.43	18.0	84.1	2.03	32.8	98.7	2.38	43.2
35 / 45	5	16.7	0.40	2.0	25.8	0.62	4.3	42.8	1.03	10.3	67.7	1.63	22.6
	7	19.2	0.46	2.6	30.4	0.73	5.7	49.4	1.19	13.1	74.4	1.80	26.6
	9	22.1	0.53	3.3	35.4	0.85	7.4	56.4	1.36	16.5	81.6	1.97	31.2
40 / 50	5	8.3	0.20	0.6	15.7	0.38	1.8	24.5	0.59	3.9	41.2	1.00	9.6
	7	10.3	0.25	0.9	18.0	0.43	2.3	28.8	0.70	5.2	47.4	1.14	12.2
	9	12.6	0.30	1.3	20.6	0.50	2.9	33.5	0.81	6.7	54.1	1.31	15.4
45 / 55	5	-	-	-	7.4	0.18	0.5	15.4	0.37	1.8	23.9	0.58	3.8
	7	-	-	-	9.1	0.22	0.7	17.4	0.42	2.2	27.9	0.67	4.9
	9	3.1	0.07	0.1	11.2	0.27	1.0	19.8	0.48	2.7	32.3	0.78	6.3
50 / 60	5	-	-	-	-	-	-	7.2	0.17	0.5	15.7	0.38	1.8
	7	-	-	-	-	-	-	8.7	0.21	0.7	17.5	0.42	2.2
	9	-	-	-	-	-	-	10.5	0.25	0.9	19.7	0.48	2.7

Table 23 - RTAD 100 High Efficiency - Cooling

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	374.8	84.7	3.79	353.4	91.1	3.36	331.6	98.4	2.95	308.7	106.5	2.57
7	399.8	87.8	3.92	377.3	94.3	3.48	354.1	101.7	3.07	330.2	110.0	2.67
9	425.8	91.1	4.05	401.9	97.6	3.60	377.6	105.1	3.18	352.3	113.5	2.77
11	452.5	94.5	4.17	427.6	101.1	3.71	401.9	108.7	3.28	375.5	117.2	2.87
13	479.9	98.0	4.28	453.6	104.7	3.82	426.5	112.4	3.38	399.1	121.0	2.96

Table 24 - RTAD 100 High Efficiency - Heating

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	34.8	0.84	7.2	54.8	1.32	15.7	80.5	1.94	30.4	103.8	2.51	47.1
	7	40.3	0.97	9.3	62.4	1.51	19.6	88.4	2.13	35.7	110.0	2.66	52.1
	9	46.3	1.12	11.8	70.6	1.70	24.3	96.8	2.34	41.8	116.5	2.81	57.5
35 / 45	5	20.8	0.50	3.0	32.6	0.79	6.4	52.4	1.27	14.5	78.6	1.90	29.2
	7	23.8	0.58	3.8	37.8	0.91	8.3	59.6	1.44	18.2	86.2	2.08	34.2
	9	27.3	0.66	4.7	43.4	1.05	10.5	67.4	1.63	22.4	94.2	2.28	39.9
40 / 50	5	10.9	0.26	1.0	19.7	0.48	2.7	31.2	0.75	6.0	50.7	1.22	13.7
	7	13.3	0.32	1.4	22.4	0.54	3.4	36.1	0.87	7.7	57.6	1.39	17.1
	9	16.0	0.39	1.9	25.5	0.62	4.2	41.4	1.00	9.7	65.0	1.57	21.1
45 / 55	5	-	-	-	9.8	0.24	0.8	19.3	0.47	2.6	30.5	0.74	5.7
	7	2.7	0.06	0.1	11.9	0.29	1.1	21.7	0.52	3.2	35.1	0.85	7.3
	9	4.8	0.12	0.2	14.3	0.35	1.6	24.5	0.59	3.9	40.1	0.97	9.2
50 / 60	5	-	-	-	-	-	-	9.5	0.23	0.8	19.5	0.47	2.7
	7	-	-	-	-	-	-	11.3	0.27	1.0	21.8	0.53	3.2
	9	-	-	-	3.2	0.08	0.1	13.5	0.33	1.4	24.4	0.59	3.9

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 25 - RTAD 115 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	443.4	109.2	3.60	419.1	118.0	3.18	393.8	127.9	2.79	367.8	139.0	2.41
7	474.0	113.3	3.73	448.3	122.2	3.30	421.6	132.2	2.89	393.8	143.5	2.51
9	505.6	117.5	3.85	478.2	126.5	3.41	450.1	136.8	3.00	420.9	148.2	2.61
11	538.3	121.9	3.97	509.5	131.1	3.52	479.2	141.5	3.09	448.6	153.1	2.70
13	572.1	126.6	4.08	541.1	135.9	3.62	509.5	146.4	3.19	477.1	158.2	2.78

**Table 26 - RTAD 115 High Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	54.4	1.31	10.7	84.3	2.04	22.4	116.6	2.82	39.0	126.7	3.06	44.9
	7	62.9	1.52	13.7	94.8	2.29	27.4	127.4	3.08	45.3	134.3	3.24	49.6
	9	73.9	1.78	17.9	105.9	2.56	33.1	138.9	3.35	52.4	142.3	3.44	54.6
35 / 45	5	32.5	0.79	4.5	52.0	1.26	9.9	81.6	1.97	21.2	114.7	2.77	37.9
	7	37.6	0.91	5.7	59.1	1.43	12.3	91.6	2.21	25.9	125.0	3.02	43.9
	9	45.0	1.09	7.7	69.2	1.67	16.1	102.3	2.47	31.2	136.0	3.29	50.6
40 / 50	5	20.9	0.51	2.1	31.6	0.76	4.2	50.7	1.22	9.5	79.8	1.93	20.5
	7	24.2	0.58	2.7	35.3	0.85	5.1	57.4	1.39	11.7	89.4	2.16	24.8
	9	27.9	0.67	3.4	42.0	1.01	6.9	65.7	1.59	14.7	99.6	2.41	29.8
45 / 55	5	9.3	0.22	0.5	20.1	0.49	2.0	31.6	0.76	4.2	50.3	1.21	9.3
	7	11.8	0.28	0.8	23.0	0.56	2.5	35.1	0.85	5.1	56.7	1.37	11.4
	9	14.8	0.36	1.2	26.5	0.64	3.1	40.0	0.97	6.3	63.6	1.54	13.9
50 / 60	5	-	-	-	8.5	0.21	0.5	20.2	0.49	2.0	32.5	0.79	4.4
	7	-	-	-	10.8	0.26	0.7	22.9	0.55	2.5	35.7	0.86	5.2
	9	-	-	-	13.4	0.32	1.0	26.1	0.63	3.1	39.4	0.95	6.2

**Table 27 - RTAD 125 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	519.3	133.2	3.45	490.8	144.1	3.04	461.7	156.3	2.66	431.4	169.8	2.31
7	554.1	138.2	3.56	524.2	149.2	3.15	493.3	161.6	2.76	461.3	175.3	2.40
9	590.3	143.4	3.67	558.7	154.6	3.25	526.0	167.1	2.86	492.6	181.0	2.49
11	627.6	148.8	3.78	594.2	160.2	3.35	559.8	172.9	2.95	524.2	186.8	2.58
13	666.3	154.5	3.88	630.8	166.0	3.45	594.6	178.8	3.04	557.3	192.9	2.66

**Table 28 - RTAD 125 High Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	71.9	1.74	17.1	105.5	2.55	32.9	140.0	3.38	53.2	150.3	3.63	60.0
	7	83.5	2.02	22.1	117.5	2.84	39.5	152.4	3.68	61.4	159.2	3.84	66.1
	9	96.1	2.32	28.0	130.3	3.15	47.1	165.5	4.00	70.7	168.4	4.07	72.8
35 / 45	5	44.4	1.07	7.6	68.3	1.65	15.7	102.9	2.49	31.5	138.4	3.34	52.1
	7	52.3	1.26	10.0	79.4	1.92	20.3	114.4	2.76	37.7	150.2	3.63	59.9
	9	61.0	1.47	13.0	91.3	2.20	25.7	126.6	3.06	44.8	162.8	3.93	68.7
40 / 50	5	28.7	0.69	3.6	42.3	1.02	7.0	66.7	1.61	15.1	101.5	2.45	30.8
	7	33.0	0.80	4.6	49.8	1.20	9.2	76.4	1.85	19.0	112.4	2.71	36.6
	9	37.8	0.91	5.7	58.0	1.40	11.9	87.7	2.12	24.0	124.1	3.00	43.3
45 / 55	5	15.0	0.36	1.2	28.2	0.68	3.5	42.2	1.02	6.9	66.6	1.61	15.0
	7	18.4	0.44	1.7	32.1	0.77	4.3	48.4	1.17	8.7	74.6	1.80	18.2
	9	22.3	0.54	2.3	36.5	0.88	5.4	56.1	1.36	11.2	85.4	2.06	22.9
50 / 60	5	-	-	-	14.6	0.35	1.1	28.7	0.69	3.6	43.5	1.05	7.3
	7	3.8	0.09	0.1	17.6	0.42	1.6	32.2	0.78	4.4	48.1	1.16	8.6
	9	6.8	0.16	0.3	21.1	0.51	2.1	36.3	0.88	5.4	55.4	1.34	11.0

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms





# Performance Data - Partial Heat Recovery

**Table 29 - RTAD 145 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	553.4	138.2	3.52	524.9	149.1	3.13	495.1	161.4	2.75	464.5	175.1	2.40
7	591.4	143.6	3.64	561.2	154.6	3.24	529.5	167.0	2.85	496.8	180.8	2.50
9	630.4	149.1	3.75	598.1	160.3	3.34	564.7	172.8	2.95	530.2	186.8	2.59
11	670.5	154.9	3.86	636.4	166.2	3.44	601.2	178.9	3.05	565.0	193.0	2.68
13	712.0	161.0	3.96	676.1	172.3	3.54	638.9	185.1	3.14	600.5	199.3	2.76

**Table 30 - RTAD 145 High Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	73.4	1.77	11.5	109.4	2.64	23.3	151.4	3.66	41.2	159.9	3.86	45.4
	7	83.3	2.01	14.4	123.1	2.97	28.6	165.3	3.99	48.1	169.4	4.09	50.2
	9	96.7	2.34	18.7	137.7	3.33	34.9	180.2	4.35	56.0	179.3	4.33	55.5
35 / 45	5	43.1	1.04	4.5	69.9	1.69	10.6	105.5	2.55	21.8	148.7	3.59	40.0
	7	52.0	1.26	6.3	79.3	1.91	13.2	118.5	2.86	26.8	162.1	3.91	46.5
	9	61.8	1.49	8.5	89.9	2.17	16.5	132.5	3.20	32.6	176.3	4.26	53.9
40 / 50	5	27.5	0.66	2.0	40.9	0.99	4.1	67.8	1.64	10.0	103.0	2.49	20.9
	7	31.8	0.77	2.6	48.1	1.16	5.5	76.7	1.85	12.5	115.4	2.79	25.6
	9	36.7	0.89	3.4	57.3	1.38	7.5	86.2	2.08	15.3	128.7	3.11	31.0
45 / 55	5	12.9	0.31	0.5	26.4	0.64	1.9	40.9	0.99	4.1	67.0	1.62	9.8
	7	16.3	0.39	0.8	30.3	0.73	2.4	45.6	1.10	5.0	75.3	1.82	12.1
	9	20.3	0.49	1.2	34.8	0.84	3.1	54.2	1.31	6.8	84.4	2.04	14.8
50 / 60	5	-	-	-	11.9	0.29	0.5	26.5	0.64	1.9	42.0	1.01	4.3
	7	-	-	-	14.9	0.36	0.7	30.1	0.73	2.4	46.1	1.11	5.1
	9	3.9	0.09	0.1	18.5	0.45	1.0	34.2	0.83	3.0	52.5	1.27	6.4

**Table 31 - RTAD 150 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	594.6	153.2	3.42	563.6	164.9	3.04	531.6	178.1	2.68	498.6	192.9	2.34
7	634.6	159.3	3.52	601.6	171.1	3.14	567.8	184.6	2.77	532.7	199.5	2.43
9	675.4	165.6	3.62	640.6	177.7	3.23	604.8	191.2	2.86	567.5	206.3	2.51
11	717.3	172.3	3.72	680.7	184.4	3.32	642.7	198.1	2.94	603.4	213.3	2.59
13	760.5	179.2	3.81	721.8	191.5	3.41	681.8	205.2	3.03	640.3	220.6	2.66

**Table 32 - RTAD 150 High Efficiency - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	81.7	1.97	13.9	122.9	2.97	28.6	165.6	4.00	48.3	172.9	4.18	52.1
	7	96.2	2.32	18.6	137.6	3.32	34.9	180.6	4.36	56.2	183.0	4.42	57.6
	9	111.7	2.70	24.1	153.3	3.70	42.1	196.5	4.75	65.2	193.4	4.67	63.5
35 / 45	5	49.2	1.19	5.7	77.0	1.86	12.5	118.6	2.87	26.8	162.7	3.93	46.8
	7	58.9	1.42	7.8	89.5	2.16	16.4	132.6	3.20	32.7	177.0	4.28	54.3
	9	69.5	1.68	10.5	104.2	2.52	21.4	147.5	3.56	39.4	192.3	4.64	62.8
40 / 50	5	32.4	0.78	2.7	46.8	1.13	5.2	74.8	1.81	11.9	115.9	2.80	25.8
	7	37.4	0.90	3.5	54.8	1.32	6.9	84.6	2.04	14.8	129.2	3.12	31.2
	9	43.1	1.04	4.5	64.7	1.56	9.2	98.6	2.38	19.4	143.4	3.46	37.5
45 / 55	5	16.8	0.41	0.9	31.2	0.75	2.6	46.7	1.13	5.2	73.9	1.79	11.7
	7	20.8	0.50	1.3	35.7	0.86	3.3	52.1	1.26	6.3	83.0	2.00	14.3
	9	25.4	0.61	1.8	41.0	0.99	4.1	61.5	1.49	8.4	94.6	2.28	18.0
50 / 60	5	-	-	-	15.6	0.38	0.8	31.2	0.75	2.6	47.8	1.15	5.4
	7	4.1	0.10	0.1	19.2	0.46	1.1	35.3	0.85	3.2	52.6	1.27	6.4
	9	7.7	0.19	0.2	23.4	0.56	1.5	40.2	0.97	4.0	59.7	1.44	8.0

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

## Partial heat recovery - standard efficiency low noise units

**Table 33 - RTAD 085 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	286.9	79.8	3.28	269.3	86.4	2.87	251.0	93.8	2.48	232.4	102.0	2.13
7	305.2	83.0	3.36	286.6	89.8	2.94	267.2	97.3	2.55	247.5	105.6	2.19
9	323.8	86.4	3.44	304.1	93.3	3.02	283.7	101.0	2.62	263.0	109.4	2.26
11	342.8	90.0	3.51	322.1	97.0	3.08	300.6	104.8	2.68	268.3	106.4	2.36
13	362.2	93.7	3.57	340.4	100.8	3.14	317.9	108.7	2.74	271.8	102.0	2.49

**Table 34 - RTAD 085 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	47.4	1.14	12.2	70.9	1.71	24.5	86.2	2.08	34.3	83.6	2.02	32.5
	7	55.3	1.33	15.9	79.0	1.91	29.5	91.1	2.20	37.7	88.3	2.13	35.7
	9	63.7	1.54	20.3	87.6	2.11	35.2	96.2	2.32	41.4	93.1	2.25	39.1
35 / 45	5	26.3	0.63	4.4	44.9	1.08	11.1	68.8	1.66	23.2	83.6	2.02	32.5
	7	31.4	0.76	6.0	52.5	1.27	14.6	76.6	1.85	27.9	88.3	2.13	35.7
	9	37.0	0.89	8.0	60.5	1.46	18.6	84.8	2.05	33.3	93.1	2.25	39.1
40 / 50	5	14.4	0.35	1.6	24.9	0.60	4.1	42.9	1.04	10.3	67.1	1.62	22.3
	7	16.8	0.41	2.1	29.8	0.72	5.5	50.2	1.21	13.5	74.5	1.80	26.7
	9	19.5	0.47	2.7	35.1	0.85	7.3	57.9	1.40	17.3	82.4	1.99	31.7
45 / 55	5	6.6	0.16	0.4	14.2	0.34	1.5	24.1	0.58	3.8	41.3	1.00	9.6
	7	8.5	0.21	0.6	16.4	0.40	2.0	28.8	0.69	5.2	48.3	1.17	12.6
	9	10.8	0.26	1.0	19.0	0.46	2.5	33.8	0.82	6.9	55.7	1.34	16.1
50 / 60	5	-	-	-	6.5	0.16	0.4	14.5	0.35	1.6	23.7	0.57	3.7
	7	-	-	-	8.2	0.20	0.6	16.6	0.40	2.0	28.1	0.68	5.0
	9	-	-	-	10.3	0.25	0.9	19.0	0.46	2.5	33.0	0.80	6.6

**Table 35 - RTAD 100 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	343.5	97.3	3.28	322.4	104.2	2.89	300.3	112.0	2.52	278.1	120.8	2.17
7	365.0	101.4	3.35	342.5	108.5	2.96	319.3	116.4	2.58	295.7	125.3	2.23
9	386.8	105.7	3.42	362.9	112.9	3.02	338.6	121.0	2.64	301.0	121.7	2.33
11	409.3	110.3	3.48	384.0	117.6	3.07	358.6	125.8	2.69	305.2	117.4	2.45
13	432.1	115.0	3.53	405.4	122.5	3.13	378.7	130.8	2.74	310.5	113.4	2.58

**Table 36 - RTAD 100 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	75.1	1.81	27.0	96.8	2.34	41.8	103.1	2.49	46.6	99.7	2.41	44.0
	7	85.5	2.07	33.8	107.2	2.59	49.8	108.9	2.63	51.2	105.3	2.54	48.3
	9	96.6	2.33	41.7	118.3	2.86	59.0	114.9	2.78	56.1	105.7	2.55	48.6
35 / 45	5	47.3	1.14	12.2	69.0	1.67	23.4	91.6	2.21	38.1	99.7	2.41	44.0
	7	57.1	1.38	16.9	78.8	1.90	29.4	101.6	2.45	45.4	105.3	2.54	48.3
	9	67.5	1.63	22.5	89.3	2.16	36.4	112.2	2.71	53.9	105.7	2.55	48.6
40 / 50	5	26.3	0.64	4.4	41.3	1.00	9.7	64.0	1.55	20.5	87.5	2.11	35.1
	7	32.8	0.79	6.5	50.5	1.22	13.6	73.4	1.77	25.9	96.9	2.34	41.9
	9	39.8	0.96	9.1	60.3	1.46	18.6	83.3	2.01	32.3	105.7	2.55	48.6
45 / 55	5	14.5	0.35	1.6	22.8	0.55	3.5	38.5	0.93	8.6	60.0	1.45	18.3
	7	17.7	0.43	2.3	28.8	0.70	5.2	45.1	1.09	11.3	68.8	1.66	23.3
	9	21.4	0.52	3.1	35.4	0.85	7.4	54.5	1.32	15.6	78.3	1.89	29.1
50 / 60	5	5.0	0.12	0.3	13.4	0.32	1.4	22.3	0.54	3.3	36.6	0.88	7.8
	7	7.6	0.18	0.5	16.3	0.39	1.9	25.8	0.62	4.3	42.5	1.03	10.2
	9	10.7	0.26	0.9	19.6	0.47	2.7	32.0	0.77	6.2	49.6	1.20	13.3

Notes :

- Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
- Consult Trane representative for performance at temperatures outside of the ranges shown
- CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
- PI (kW) = Power Input (Compressor + Fans + Control Power)
- COP = Coefficient of performance (CC/PI).
- Interpolation between points is permissible. Extrapolation is not permitted.
- Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 37- RTAD 115 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	405.0	124.0	3.08	379.4	134.5	2.68	353.4	146.3	2.30	318.9	154.0	1.98
7	429.3	129.2	3.14	402.2	140.0	2.73	374.5	152.0	2.35	323.1	149.3	2.07
9	453.9	134.7	3.19	425.1	145.7	2.78	395.6	158.0	2.40	328.4	144.8	2.16
11	478.5	140.4	3.24	448.3	151.7	2.82	414.5	162.1	2.45	331.9	140.6	2.24
13	503.5	146.4	3.28	471.5	157.9	2.86	420.2	166.5	2.57	336.1	136.4	2.34

**Table 38- RTAD 115 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	92.7	2.24	26.4	124.7	3.01	43.7	124.9	3.02	43.8	118.2	2.86	39.9
	7	105.4	2.55	32.8	135.6	3.27	50.3	131.6	3.18	47.9	118.1	2.85	39.8
	9	119.0	2.88	40.4	142.7	3.45	54.9	138.4	3.34	52.1	118.3	2.86	39.9
35 / 45	5	57.7	1.39	11.8	89.8	2.17	25.0	122.4	2.96	42.3	118.2	2.86	39.9
	7	69.6	1.68	16.2	102.1	2.47	31.1	131.6	3.18	47.9	118.1	2.85	39.8
	9	82.5	1.99	21.6	115.2	2.78	38.2	138.4	3.34	52.1	118.3	2.86	39.9
40 / 50	5	33.4	0.81	4.7	55.2	1.33	10.9	87.6	2.12	24.0	118.2	2.86	39.9
	7	41.3	1.00	6.7	66.4	1.60	15.0	99.5	2.40	29.7	118.1	2.85	39.8
	9	49.9	1.20	9.2	78.8	1.90	20.0	112.1	2.71	36.5	118.3	2.86	39.9
45 / 55	5	21.0	0.51	2.1	32.5	0.78	4.4	54.5	1.32	10.7	86.0	2.08	23.2
	7	24.7	0.60	2.8	39.7	0.96	6.2	64.0	1.54	14.0	97.5	2.36	28.8
	9	29.1	0.70	3.7	47.9	1.16	8.6	75.9	1.83	18.8	109.7	2.65	35.1
50 / 60	5	9.6	0.23	0.6	21.2	0.51	2.1	33.3	0.80	4.6	54.5	1.32	10.7
	7	12.6	0.30	0.9	24.7	0.60	2.8	38.8	0.94	6.0	62.2	1.50	13.4
	9	16.2	0.39	1.4	28.9	0.70	3.6	46.8	1.13	8.2	73.6	1.78	17.8

**Table 39 - RTAD 125 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	459.2	160.0	2.74	429.0	173.6	2.37	391.0	183.1	2.06	311.2	160.8	1.85
7	484.5	167.0	2.78	452.5	180.9	2.41	397.0	177.5	2.15	315.4	155.9	1.93
9	510.5	174.3	2.81	476.8	188.5	2.44	404.0	172.1	2.25	320.3	152.3	2.01
11	536.2	182.0	2.83	491.5	188.7	2.51	408.9	166.2	2.36	323.1	147.9	2.08
13	562.2	189.9	2.85	497.9	181.8	2.63	415.2	161.8	2.46	327.3	143.9	2.17

**Table 40 - RTAD 125 Standard Efficiency Low Noise - heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	134.6	3.25	49.7	150.6	3.64	60.2	143.5	3.47	55.5	118.0	2.85	39.8
	7	150.4	3.63	60.1	158.4	3.82	65.5	143.6	3.47	55.5	117.8	2.85	39.7
	9	167.4	4.04	72.0	166.3	4.02	71.2	144.0	3.48	55.8	118.2	2.85	39.9
35 / 45	5	97.5	2.36	28.8	132.0	3.19	48.1	143.5	3.47	55.5	118.0	2.85	39.8
	7	112.4	2.72	36.6	147.4	3.56	58.0	143.6	3.47	55.5	117.8	2.85	39.7
	9	128.5	3.10	46.0	163.7	3.95	69.3	144.0	3.48	55.8	118.2	2.85	39.9
40 / 50	5	61.3	1.48	13.1	95.1	2.30	27.5	130.1	3.14	46.9	118.0	2.85	39.8
	7	74.4	1.80	18.2	109.5	2.65	35.0	143.6	3.47	55.5	117.8	2.85	39.7
	9	89.7	2.17	24.9	125.0	3.02	43.8	144.0	3.48	55.8	118.2	2.85	39.9
45 / 55	5	36.9	0.89	5.5	60.5	1.46	12.8	93.3	2.25	26.7	118.0	2.85	39.8
	7	45.4	1.10	7.9	71.7	1.73	17.1	107.3	2.59	33.8	117.8	2.85	39.7
	9	55.9	1.35	11.2	86.3	2.08	23.3	122.1	2.95	42.1	118.2	2.85	39.9
50 / 60	5	23.4	0.57	2.6	37.8	0.91	5.7	60.4	1.46	12.8	92.3	2.23	26.2
	7	28.2	0.68	3.5	44.5	1.07	7.6	70.0	1.69	16.4	105.7	2.55	33.0
	9	33.9	0.82	4.8	54.4	1.31	10.7	83.6	2.02	22.1	118.2	2.85	39.9

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 41 - RTAD 145 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	534.1	158.5	3.15	502.4	171.6	2.76	470.1	186.0	2.39	404.3	182.2	2.10
7	566.8	165.3	3.22	533.4	178.5	2.82	499.3	193.1	2.45	408.6	175.7	2.20
9	600.2	172.3	3.28	565.0	185.8	2.88	526.7	199.3	2.51	412.8	169.8	2.29
11	634.3	179.6	3.33	597.0	193.3	2.93	530.9	191.4	2.63	419.1	165.0	2.39
13	669.1	187.1	3.38	629.4	201.0	2.97	535.8	183.5	2.76	425.8	161.3	2.48

**Table 42 - RTAD 145 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	125.9	3.04	29.8	167.4	4.04	49.2	164.0	3.96	47.5	146.6	3.54	39.0
	7	142.7	3.45	37.2	178.0	4.30	54.8	173.1	4.18	52.2	146.1	3.53	38.7
	9	160.6	3.88	45.8	187.7	4.53	60.2	181.5	4.38	56.7	145.6	3.52	38.5
35 / 45	5	79.8	1.93	13.4	121.4	2.93	28.0	163.9	3.96	47.4	146.6	3.54	39.0
	7	95.8	2.31	18.4	137.6	3.32	34.9	173.1	4.18	52.2	146.1	3.53	38.7
	9	112.7	2.72	24.5	154.8	3.74	42.9	181.5	4.38	56.7	145.6	3.52	38.5
40 / 50	5	49.1	1.19	5.7	77.1	1.86	12.6	118.2	2.85	26.7	146.6	3.54	39.0
	7	59.7	1.44	8.0	90.8	2.19	16.8	133.7	3.23	33.1	146.1	3.53	38.7
	9	71.1	1.72	10.9	107.0	2.58	22.4	150.2	3.63	40.7	145.6	3.52	38.5
45 / 55	5	29.5	0.71	2.3	46.9	1.13	5.2	75.8	1.83	12.2	115.9	2.80	25.8
	7	34.6	0.83	3.1	56.9	1.38	7.4	87.0	2.10	15.6	130.8	3.16	31.9
	9	40.4	0.98	4.0	67.8	1.64	10.0	102.6	2.48	20.8	145.6	3.52	38.5
50 / 60	5	14.9	0.36	0.7	29.5	0.71	2.3	45.8	1.11	5.0	75.6	1.83	12.2
	7	19.1	0.46	1.1	34.3	0.83	3.0	55.4	1.34	7.0	85.6	2.07	15.1
	9	23.9	0.58	1.6	39.7	0.96	3.9	65.7	1.59	9.5	99.4	2.40	19.7

**Table 43 - RTAD 150 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	570.7	175.2	3.05	537.2	189.3	2.67	502.4	205.0	2.32	436.0	202.4	2.04
7	605.1	182.8	3.11	569.2	197.1	2.72	532.3	213.0	2.37	442.3	196.4	2.13
9	639.6	190.7	3.16	601.9	205.3	2.77	560.8	220.0	2.42	446.5	190.0	2.21
11	674.7	198.9	3.20	634.6	213.7	2.81	567.8	212.9	2.53	453.6	184.6	2.31
13	710.2	207.4	3.24	667.7	222.4	2.85	575.2	205.6	2.65	456.7	178.9	2.40

**Table 44 - RTAD 150 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	138.9	3.35	35.4	181.2	4.38	56.6	176.9	4.27	54.2	159.6	3.85	45.2
	7	156.6	3.78	43.8	191.6	4.63	62.4	186.3	4.50	59.4	159.7	3.86	45.3
	9	175.4	4.24	53.4	201.8	4.87	68.4	195.2	4.71	64.5	159.1	3.84	45.0
35 / 45	5	91.7	2.21	17.1	134.2	3.24	33.3	176.9	4.27	54.2	159.6	3.85	45.2
	7	108.5	2.62	22.9	151.2	3.65	41.1	186.3	4.50	59.4	159.7	3.86	45.3
	9	126.3	3.05	30.0	169.3	4.09	50.2	195.2	4.71	64.5	159.1	3.84	45.0
40 / 50	5	55.1	1.33	7.0	87.1	2.10	15.6	130.7	3.16	31.8	159.6	3.85	45.2
	7	66.4	1.60	9.7	103.2	2.49	21.0	147.1	3.55	39.2	159.7	3.86	45.3
	9	78.6	1.90	13.0	120.3	2.91	27.5	164.6	3.98	47.8	159.1	3.84	45.0
45 / 55	5	34.3	0.83	3.0	52.8	1.28	6.5	83.8	2.02	14.6	128.5	3.10	30.9
	7	40.1	0.97	4.0	63.6	1.54	9.0	99.3	2.40	19.6	144.1	3.48	37.8
	9	46.7	1.13	5.2	75.2	1.82	12.0	115.8	2.80	25.7	159.1	3.84	45.0
50 / 60	5	18.6	0.45	1.0	34.3	0.83	3.0	51.8	1.25	6.2	82.8	2.00	14.3
	7	23.5	0.57	1.6	39.8	0.96	3.9	62.0	1.50	8.6	96.5	2.33	18.7
	9	29.0	0.70	2.3	45.9	1.11	5.1	73.3	1.77	11.5	112.3	2.71	24.4

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 45 - RTAD 165 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	624.4	191.5	3.05	589.6	206.9	2.68	554.1	224.0	2.34	477.1	219.1	2.06
7	663.5	200.0	3.11	626.6	215.7	2.74	588.6	233.1	2.39	485.6	213.7	2.15
9	702.9	208.8	3.17	663.5	224.8	2.79	615.7	237.9	2.46	489.4	206.6	2.23
11	742.6	218.1	3.21	701.1	234.3	2.84	621.3	229.3	2.57	492.6	199.4	2.32
13	783.4	227.6	3.26	739.4	244.2	2.88	633.6	223.8	2.68	496.8	194.0	2.40

**Table 46 - RTAD 165 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	147.5	3.56	28.2	197.7	4.78	46.9	194.5	4.70	45.6	174.1	4.20	37.6
	7	167.9	4.06	35.3	210.6	5.09	52.3	205.4	4.96	50.1	174.8	4.22	37.9
	9	189.5	4.58	43.6	222.1	5.36	57.3	213.4	5.15	53.5	174.0	4.20	37.6
35 / 45	5	93.5	2.26	12.8	141.6	3.42	26.3	193.3	4.67	45.1	174.1	4.20	37.6
	7	110.6	2.67	17.1	161.2	3.89	32.9	205.4	4.96	50.1	174.8	4.22	37.9
	9	131.2	3.17	23.0	182.0	4.40	40.6	213.4	5.15	53.5	174.0	4.20	37.6
40 / 50	5	56.9	1.38	5.4	90.3	2.18	12.1	137.2	3.31	24.9	174.1	4.20	37.6
	7	69.8	1.69	7.7	104.0	2.51	15.4	156.1	3.77	31.1	174.8	4.22	37.9
	9	83.7	2.02	10.6	123.7	2.99	20.8	176.1	4.25	38.4	174.0	4.20	37.6
45 / 55	5	34.5	0.83	2.3	53.8	1.30	4.9	88.5	2.14	11.7	134.4	3.25	24.0
	7	40.5	0.98	3.0	66.1	1.60	7.0	101.3	2.45	14.7	152.5	3.68	29.9
	9	47.4	1.14	3.9	79.3	1.92	9.6	118.0	2.85	19.2	171.9	4.15	36.8
50 / 60	5	17.6	0.43	0.7	34.3	0.83	2.3	52.2	1.26	4.7	88.1	2.13	11.6
	7	22.6	0.55	1.1	39.9	0.96	2.9	63.9	1.54	6.6	100.3	2.42	14.5
	9	28.4	0.69	1.6	46.3	1.12	3.8	76.6	1.85	9.1	113.8	2.75	18.0

**Table 47 - RTAD 180 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	668.7	209.9	2.98	632.5	226.6	2.63	594.6	245.2	2.29	511.6	239.0	2.02
7	710.2	219.4	3.04	671.2	236.5	2.68	630.8	255.4	2.34	517.9	231.9	2.11
9	751.7	229.2	3.09	710.2	246.7	2.72	656.1	259.1	2.40	525.6	226.5	2.19
11	793.9	239.5	3.13	750.0	257.4	2.76	663.8	251.2	2.51	530.6	220.0	2.27
13	836.8	250.3	3.16	790.1	268.6	2.80	673.3	242.9	2.62	537.6	215.0	2.35

**Table 48 - RTAD 180 Standard Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	164.8	3.98	34.2	214.8	5.19	54.1	209.9	5.07	52.0	187.6	4.53	42.8
	7	186.4	4.50	42.3	226.9	5.48	59.5	221.5	5.35	57.1	187.5	4.53	42.7
	9	209.5	5.06	51.8	239.2	5.78	65.2	228.8	5.53	60.4	188.0	4.54	43.0
35 / 45	5	107.3	2.59	16.3	158.7	3.83	32.0	209.9	5.07	52.0	187.6	4.53	42.8
	7	127.8	3.09	22.0	179.6	4.34	39.7	221.5	5.35	57.1	187.5	4.53	42.7
	9	149.7	3.62	28.9	201.8	4.87	48.5	228.8	5.53	60.4	188.0	4.54	43.0
40 / 50	5	63.7	1.54	6.6	101.2	2.45	14.7	154.4	3.73	30.5	187.6	4.53	42.8
	7	77.4	1.87	9.2	121.0	2.92	20.0	174.5	4.22	37.8	187.5	4.53	42.7
	9	92.2	2.23	12.5	142.0	3.43	26.4	195.9	4.73	46.1	188.0	4.54	43.0
45 / 55	5	39.9	0.96	2.9	60.6	1.46	6.0	97.0	2.34	13.7	151.7	3.66	29.6
	7	46.7	1.13	3.8	73.7	1.78	8.5	116.0	2.80	18.6	171.1	4.13	36.5
	9	54.3	1.31	5.0	87.8	2.12	11.5	136.3	3.29	24.6	188.0	4.54	43.0
50 / 60	5	21.8	0.53	1.0	39.7	0.96	2.9	59.0	1.43	5.8	96.5	2.33	13.5
	7	27.4	0.66	1.5	46.0	1.11	3.8	71.6	1.73	8.1	112.7	2.72	17.7
	9	33.9	0.82	2.2	53.3	1.29	4.8	85.1	2.06	10.9	132.3	3.19	23.4

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

## Partial heat recovery - high efficiency low noise units

**Table 49 - RTAD 085 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	305.9	75.3	3.69	288.0	81.2	3.24	269.0	87.9	2.82	249.3	95.3	2.43
7	330.5	79.0	3.82	310.8	85.0	3.36	290.4	91.8	2.93	269.3	99.3	2.53
9	351.3	82.3	3.91	330.2	88.3	3.45	308.7	95.2	3.01	286.6	102.8	2.60
11	372.3	85.6	4.00	350.2	91.8	3.53	327.3	98.7	3.09	304.1	106.4	2.68
13	393.8	89.1	4.07	370.6	95.4	3.60	346.7	102.4	3.16	322.4	110.2	2.75

**Table 50 - RTAD 085 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	34.8	0.84	7.2	56.6	1.37	16.6	80.9	1.95	30.7	86.1	2.08	34.2
	7	40.3	0.97	9.3	64.3	1.55	20.7	88.8	2.14	36.0	92.2	2.23	38.4
	9	48.2	1.17	12.6	72.5	1.75	25.4	97.1	2.35	42.1	97.3	2.35	42.2
35 / 45	5	19.5	0.47	2.7	33.1	0.80	6.6	54.4	1.31	15.5	79.0	1.91	29.5
	7	22.3	0.54	3.4	38.2	0.92	8.5	61.7	1.49	19.3	86.5	2.09	34.5
	9	27.6	0.67	4.8	44.8	1.08	11.1	69.5	1.68	23.7	94.5	2.28	40.1
40 / 50	5	11.1	0.27	1.0	18.7	0.45	2.5	31.9	0.77	6.2	52.6	1.27	14.6
	7	13.4	0.32	1.4	21.3	0.51	3.1	36.7	0.89	7.9	59.6	1.44	18.2
	9	16.1	0.39	1.9	25.3	0.61	4.1	42.0	1.01	10.0	67.1	1.62	22.2
45 / 55	5	2.8	0.07	0.1	10.4	0.25	0.9	18.5	0.45	2.4	31.1	0.75	5.9
	7	4.5	0.11	0.2	12.5	0.30	1.2	20.9	0.51	3.0	35.8	0.86	7.5
	9	6.6	0.16	0.4	14.9	0.36	1.7	23.7	0.57	3.7	40.8	0.98	9.4
50 / 60	5	-	-	-	2.2	0.05	0.1	10.4	0.25	0.9	18.9	0.46	2.5
	7	-	-	-	3.7	0.09	0.2	12.2	0.30	1.2	21.1	0.51	3.0
	9	-	-	-	5.6	0.13	0.3	14.4	0.35	1.6	23.6	0.57	3.7

**Table 51 - RTAD 100 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	365.3	89.3	3.68	343.5	96.3	3.24	321.0	104.1	2.82	298.2	112.9	2.43
7	388.9	92.8	3.78	366.0	99.9	3.33	342.1	107.9	2.91	317.9	116.8	2.52
9	413.1	96.4	3.88	388.9	103.7	3.43	363.9	111.8	3.00	338.2	120.8	2.60
11	437.7	100.2	3.97	412.1	107.6	3.51	386.1	115.9	3.08	359.3	125.0	2.67
13	463.1	104.2	4.06	436.3	111.7	3.59	408.6	120.1	3.15	380.4	129.4	2.74

**Table 52 - RTAD 100 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	42.7	1.03	10.2	67.2	1.62	22.3	92.9	2.24	38.9	102.8	2.48	46.3
	7	50.2	1.21	13.5	75.7	1.83	27.4	101.6	2.45	45.4	108.7	2.62	51.0
	9	59.1	1.43	17.9	84.8	2.05	33.3	110.9	2.68	52.9	114.8	2.77	56.0
35 / 45	5	24.3	0.59	3.9	40.7	0.98	9.4	64.8	1.57	21.0	90.9	2.20	37.5
	7	29.1	0.70	5.3	46.9	1.13	12.0	72.9	1.76	25.7	99.3	2.40	43.7
	9	35.1	0.85	7.3	55.3	1.34	16.0	81.6	1.97	31.2	108.2	2.61	50.7
40 / 50	5	14.4	0.35	1.6	23.4	0.56	3.6	39.4	0.95	8.9	63.0	1.52	20.0
	7	17.1	0.41	2.1	26.9	0.65	4.6	44.9	1.08	11.2	70.8	1.71	24.4
	9	20.3	0.49	2.9	32.5	0.79	6.4	52.3	1.26	14.5	79.1	1.91	29.5
45 / 55	5	4.5	0.11	0.2	13.6	0.33	1.4	23.1	0.56	3.6	38.7	0.93	8.6
	7	6.6	0.16	0.4	16.1	0.39	1.9	26.0	0.63	4.4	43.9	1.06	10.7
	9	9.1	0.22	0.7	19.0	0.46	2.5	30.7	0.74	5.8	49.9	1.21	13.4
50 / 60	5	-	-	-	3.8	0.09	0.2	13.5	0.33	1.4	23.6	0.57	3.7
	7	-	-	-	5.6	0.14	0.3	15.7	0.38	1.8	26.2	0.63	4.4
	9	-	-	-	7.9	0.19	0.6	18.4	0.44	2.4	29.6	0.72	5.5

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 53 - RTAD 115 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	434.2	116.3	3.44	408.9	126.0	3.01	383.2	136.8	2.62	356.5	148.8	2.25
7	463.1	120.9	3.54	436.3	130.8	3.11	408.9	141.8	2.70	380.8	154.0	2.33
9	492.6	125.8	3.63	464.5	135.8	3.19	435.3	147.0	2.78	405.4	159.4	2.40
11	522.8	130.9	3.72	492.9	141.1	3.27	462.0	152.5	2.85	421.9	160.2	2.49
13	553.8	136.2	3.80	522.1	146.6	3.34	489.8	158.2	2.92	427.6	154.4	2.61

**Table 54 - RTAD 115 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	70.6	1.70	16.6	102.3	2.47	31.2	130.0	3.14	46.9	126.3	3.05	44.7
	7	82.0	1.98	21.4	114.0	2.75	37.5	137.7	3.33	51.7	133.7	3.23	49.2
	9	94.2	2.28	27.1	126.5	3.06	44.8	145.6	3.52	56.8	141.2	3.41	53.9
35 / 45	5	42.4	1.02	7.0	67.2	1.62	15.3	99.8	2.41	29.9	126.3	3.05	44.7
	7	50.0	1.21	9.2	78.2	1.89	19.8	111.0	2.68	35.9	133.7	3.23	49.2
	9	58.3	1.41	12.0	89.9	2.17	25.1	123.0	2.97	42.7	141.2	3.41	53.9
40 / 50	5	26.0	0.63	3.0	40.5	0.98	6.5	64.8	1.57	14.4	98.0	2.37	29.0
	7	29.8	0.72	3.8	47.7	1.15	8.5	75.3	1.82	18.6	108.8	2.63	34.7
	9	34.2	0.83	4.9	55.7	1.34	11.1	86.6	2.09	23.5	120.4	2.91	41.1
45 / 55	5	14.4	0.35	1.1	25.5	0.62	2.9	39.5	0.95	6.2	63.3	1.53	13.8
	7	17.5	0.42	1.6	29.1	0.70	3.7	46.4	1.12	8.1	73.3	1.77	17.7
	9	21.1	0.51	2.1	33.2	0.80	4.6	54.0	1.30	10.5	84.1	2.03	22.4
50 / 60	5	2.8	0.07	0.1	14.1	0.34	1.1	26.0	0.63	3.0	39.3	0.95	6.1
	7	5.2	0.12	0.2	16.9	0.41	1.5	29.3	0.71	3.7	45.9	1.11	8.0
	9	8.0	0.19	0.4	20.3	0.49	2.0	33.2	0.80	4.6	53.1	1.28	10.2

**Table 55 - RTAD 125 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	506.7	142.8	3.27	477.5	154.8	2.86	447.2	168.0	2.49	416.7	182.6	2.14
7	539.4	148.5	3.36	508.4	160.7	2.94	476.8	174.2	2.56	444.1	189.0	2.21
9	572.8	154.5	3.44	540.1	166.9	3.02	506.7	180.6	2.63	448.6	182.0	2.32
11	607.2	160.8	3.51	572.8	173.4	3.09	537.2	187.2	2.70	456.7	176.6	2.43
13	642.4	167.3	3.58	606.2	180.0	3.16	568.5	194.1	2.76	462.0	169.8	2.55

**Table 56 - RTAD 125 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	91.9	2.22	26.0	125.9	3.04	44.4	153.8	3.72	62.4	149.8	3.62	59.7
	7	105.0	2.54	32.6	139.2	3.36	52.7	162.7	3.93	68.7	158.3	3.82	65.5
	9	118.9	2.87	40.3	153.5	3.71	62.2	171.8	4.15	75.3	157.7	3.81	65.1
35 / 45	5	57.8	1.40	11.8	88.7	2.14	24.5	123.5	2.98	43.0	149.8	3.62	59.7
	7	66.8	1.61	15.1	101.2	2.44	30.6	136.4	3.29	50.8	158.3	3.82	65.5
	9	79.9	1.93	20.5	114.6	2.77	37.8	150.2	3.63	59.9	157.7	3.81	65.1
40 / 50	5	35.5	0.86	5.2	56.2	1.36	11.3	86.5	2.09	23.5	122.2	2.95	42.2
	7	40.5	0.98	6.5	64.7	1.56	14.3	98.5	2.38	29.3	134.6	3.25	49.7
	9	49.4	1.19	9.0	75.7	1.83	18.7	111.5	2.69	36.1	147.8	3.57	58.3
45 / 55	5	21.9	0.53	2.3	35.4	0.86	5.2	55.5	1.34	11.0	85.3	2.06	22.9
	7	26.0	0.63	3.0	40.1	0.97	6.3	63.7	1.54	13.9	96.9	2.34	28.5
	9	30.7	0.74	4.0	47.0	1.13	8.3	72.7	1.76	17.5	109.2	2.64	34.9
50 / 60	5	8.2	0.20	0.4	21.9	0.53	2.3	36.3	0.88	5.4	55.8	1.35	11.1
	7	11.5	0.28	0.8	25.7	0.62	3.0	40.6	0.98	6.5	63.6	1.54	13.9
	9	15.3	0.37	1.2	30.1	0.73	3.9	45.7	1.10	7.9	72.1	1.74	17.2

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms



# Performance Data - Partial Heat Recovery

**Table 57 - RTAD 145 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	542.9	146.8	3.39	513.3	158.8	2.98	482.8	172.2	2.61	451.1	186.9	2.26
7	578.7	152.8	3.48	547.4	165.0	3.07	514.7	178.6	2.69	481.3	193.5	2.33
9	615.7	159.1	3.57	582.3	171.4	3.16	547.8	185.2	2.77	507.7	197.8	2.41
11	653.3	165.6	3.65	617.8	178.1	3.23	581.6	192.0	2.84	510.9	189.8	2.52
13	692.0	172.4	3.73	654.3	185.1	3.30	616.0	199.2	2.91	514.7	181.8	2.65

**Table 58 - RTAD 145 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	91.2	2.20	16.9	132.4	3.20	32.6	163.7	3.96	47.3	159.5	3.85	45.2
	7	106.2	2.56	22.1	147.6	3.57	39.4	173.3	4.19	52.3	168.7	4.08	49.9
	9	122.1	2.95	28.2	163.8	3.96	47.4	183.2	4.43	57.7	176.4	4.26	53.9
35 / 45	5	57.6	1.39	7.5	86.5	2.09	15.4	129.0	3.12	31.1	159.5	3.85	45.2
	7	67.7	1.63	10.0	100.8	2.44	20.2	143.6	3.47	37.6	168.7	4.08	49.9
	9	78.6	1.90	13.0	116.1	2.80	25.8	159.1	3.84	45.0	176.4	4.26	53.9
40 / 50	5	33.8	0.82	3.0	54.9	1.33	6.9	83.4	2.01	14.5	126.8	3.06	30.2
	7	38.8	0.94	3.8	64.4	1.56	9.2	96.9	2.34	18.8	140.8	3.40	36.3
	9	46.5	1.12	5.2	74.7	1.81	11.9	111.5	2.69	24.1	155.8	3.76	43.3
45 / 55	5	19.3	0.47	1.1	33.3	0.80	2.9	53.4	1.29	6.6	82.9	2.00	14.3
	7	23.4	0.57	1.5	37.9	0.92	3.6	62.4	1.51	8.7	94.2	2.28	17.9
	9	28.1	0.68	2.1	43.2	1.04	4.5	72.3	1.75	11.2	108.3	2.61	22.9
50 / 60	5	4.8	0.12	0.1	18.9	0.46	1.1	33.9	0.82	3.0	53.0	1.28	6.5
	7	8.0	0.19	0.2	22.6	0.55	1.5	38.2	0.92	3.7	61.6	1.49	8.5
	9	11.8	0.28	0.5	27.0	0.65	2.0	43.1	1.04	4.5	71.1	1.72	10.9

**Table 59 - RTAD 150 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	25			30			35			40		
	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW	CC kW	PI. kW	COP kW/kW
5	581.9	162.8	3.28	550.3	175.8	2.89	517.6	190.3	2.53	483.5	206.4	2.19
7	619.9	169.7	3.37	585.8	182.9	2.97	551.0	197.6	2.60	514.7	213.9	2.26
9	658.2	176.8	3.44	622.0	190.2	3.04	585.1	205.1	2.67	540.1	217.7	2.33
11	697.2	184.3	3.51	658.9	197.8	3.11	619.9	212.9	2.73	548.1	211.6	2.43
13	737.0	192.0	3.57	696.9	205.7	3.17	655.4	221.0	2.79	554.8	204.1	2.55

**Table 60 - RTAD 150 High Efficiency Low Noise - Heating**

PHR Temp °C	LWTE °C	Entering Condenser Air Temperature °C											
		20			25			30			35		
		HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa	HC kW	Water flow rate HX l/s	Water Pressure Drop kPa
30 / 40	5	105.1	2.54	21.7	147.0	3.55	39.1	177.0	4.27	54.3	172.5	4.17	51.9
	7	121.1	2.92	27.8	163.3	3.94	47.1	187.1	4.52	59.9	182.2	4.40	57.1
	9	138.1	3.34	35.1	180.6	4.36	56.2	197.5	4.77	65.8	189.4	4.58	61.2
35 / 45	5	64.4	1.56	9.2	100.0	2.41	19.9	143.3	3.46	37.4	172.5	4.17	51.9
	7	75.2	1.82	12.1	115.3	2.78	25.5	158.9	3.84	44.9	182.2	4.40	57.1
	9	89.0	2.15	16.2	131.6	3.18	32.2	175.5	4.24	53.5	189.4	4.58	61.2
40 / 50	5	39.4	0.95	3.9	61.5	1.49	8.5	96.4	2.33	18.7	140.9	3.40	36.4
	7	45.2	1.09	4.9	71.8	1.73	11.1	111.0	2.68	23.9	155.9	3.77	43.4
	9	53.7	1.30	6.7	83.0	2.01	14.3	126.6	3.06	30.1	171.9	4.15	51.5
45 / 55	5	23.8	0.58	1.6	38.8	0.94	3.8	60.0	1.45	8.1	94.2	2.28	17.9
	7	28.6	0.69	2.2	44.1	1.07	4.7	69.8	1.69	10.6	108.2	2.61	22.8
	9	34.1	0.82	3.0	50.2	1.21	5.9	80.4	1.94	13.6	123.2	2.97	28.7
50 / 60	5	8.2	0.20	0.2	23.3	0.56	1.5	39.3	0.95	3.9	59.7	1.44	8.0
	7	12.0	0.29	0.5	27.6	0.67	2.1	44.3	1.07	4.8	69.1	1.67	10.4
	9	16.5	0.40	0.8	32.7	0.79	2.8	50.0	1.21	5.9	79.2	1.91	13.2

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity, HC = Heating capacity, HX = Heat exchanger

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms





# Performance Data - Total Heat Recovery

## Total Heat Recovery

The amount of heat recovery depends on:

- the percentage of cooling load available
- the ambient temperature: below 15°C ambient temperature, heat loss in the condenser will affect the amount of heat recovered.

## Total heat recovery - standard efficiency units

**Table 61 - RTAD 100 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	303.4	14.5	39.8	116.8	278.5	13.3	33.8	124.5	236.6	11.3	24.8	128.6
7	323.5	15.4	44.8	120.8	297.1	14.1	38.0	128.7	239.8	11.4	25.4	124.0
9	343.9	16.4	49.9	124.9	316.4	15.1	42.7	132.9	245.8	11.7	26.6	120.6

**Table 62 - RTAD 100 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	315.0	14.5	65.0	101.8	247.1	6.0	34.7	29.7
	7	338.7	15.4	72.5	104.0	262.7	6.3	38.9	33.5
	9	363.5	16.4	80.5	106.3	279.0	6.7	43.5	37.8
40 / 50	5	289.2	14.5	65.0	109.6	236.3	5.7	31.9	27.1
	7	312.4	15.4	72.5	111.8	251.6	6.1	35.8	30.8
	9	336.7	16.4	80.5	114.1	267.5	6.5	40.2	34.8
45 / 55	5	261.4	14.5	65.0	118.5	225.0	5.4	29.1	24.6
	7	283.7	15.4	72.5	120.7	239.7	5.8	32.7	27.9
	9	307.1	16.4	80.5	122.9	255.1	6.2	36.8	31.6
50 / 60	5	232.2	14.5	65.0	128.4	213.4	5.2	26.3	22.1
	7	253.5	15.4	72.5	130.6	227.5	5.5	29.7	25.2
	9	275.9	16.4	80.5	132.9	242.3	5.9	33.4	28.5

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 63 - RTAD 115 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	364.6	17.4	66.4	146.7	334.4	15.9	56.5	157.3	272.8	13.0	38.3	156.6
7	388.2	18.5	74.4	151.8	356.5	17.0	63.4	162.6	278.1	13.2	39.5	152.6
9	412.4	19.7	83.1	157.1	379.4	18.1	70.8	168.0	281.6	13.4	40.3	148.8

**Table 64 - RTAD 115 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	381.1	17.4	73.0	126.6	301.7	7.3	29.5	44.2	
	7	410.6	18.5	81.7	129.2	321.0	7.8	33.2	50.0	
	9	441.2	19.7	91.1	131.9	340.9	8.2	37.2	56.5	
40 / 50	5	350.8	17.4	73.0	136.9	289.7	7.0	27.4	40.8	
	7	379.1	18.5	81.7	139.4	308.2	7.4	30.7	46.1	
	9	408.7	19.7	91.1	142.1	327.5	7.9	34.5	52.1	
45 / 55	5	318.7	17.4	73.0	148.5	277.4	6.7	25.2	37.4	
	7	345.8	18.5	81.7	151.0	295.1	7.1	28.3	42.3	
	9	374.1	19.7	91.1	153.6	313.7	7.6	31.8	47.8	
50 / 60	5	284.8	17.4	73.0	161.6	264.9	6.4	23.1	34.1	
	7	310.5	18.5	81.7	164.1	281.8	6.8	26.0	38.6	
	9	337.5	19.7	91.1	166.6	299.6	7.2	29.1	43.6	

**Table 65 - RTAD 125 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	414.9	19.8	38.3	183.0	376.6	17.9	32.0	193.7	267.9	12.8	16.7	166.2
7	440.6	21.0	42.7	189.6	384.0	18.3	32.9	188.5	272.5	13.0	17.3	161.8
9	466.9	22.3	47.2	196.6	389.6	18.6	33.5	182.2	275.7	13.1	17.6	157.9

**Table 66 - RTAD 125 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	452.3	19.8	53.1	150.6	358.9	8.7	41.0	62.6	
	7	486.9	21.0	59.3	153.7	381.4	9.2	46.0	70.7	
	9	522.8	22.3	66.0	157.0	405.0	9.8	51.4	79.7	
40 / 50	5	417.9	19.8	53.1	162.8	345.5	8.3	38.1	58.0	
	7	451.2	21.0	59.3	165.8	367.3	8.9	42.8	65.5	
	9	486.1	22.3	66.0	168.9	390.1	9.4	47.9	73.9	
45 / 55	5	381.7	19.8	53.1	176.4	332.0	8.0	35.4	53.5	
	7	413.7	21.0	59.3	179.3	352.9	8.5	39.7	60.5	
	9	447.2	22.3	66.0	182.4	374.8	9.1	44.5	68.3	
50 / 60	5	343.7	19.8	53.1	191.5	318.2	7.7	32.7	49.2	
	7	374.3	21.0	59.3	194.4	338.3	8.2	36.7	55.6	
	9	406.4	22.3	66.0	197.4	359.4	8.7	41.1	62.7	

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 67 - RTAD 145 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	476.4	22.7	49.6	188.9	440.2	21.0	42.7	202.0	335.8	16.0	25.7	186.1
7	507.7	24.2	55.6	195.3	469.7	22.4	48.1	208.6	339.7	16.2	26.0	180.6
9	540.1	25.7	62.5	202.0	489.1	23.3	51.7	209.2	346.0	16.5	26.9	176.1

**Table 68 - RTAD 145 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	486.0	22.7	68.3	161.6	384.3	9.3	38.4	28.3
	7	521.9	24.2	76.7	165.0	407.9	9.9	43.0	31.9
	9	559.3	25.7	85.9	168.6	432.5	10.4	48.1	35.9
40 / 50	5	449.4	22.7	68.3	174.3	370.0	8.9	35.7	26.3
	7	484.2	24.2	76.7	177.6	392.9	9.5	40.1	29.6
	9	520.6	25.7	85.9	181.1	416.8	10.1	44.8	33.3
45 / 55	5	410.9	22.7	68.3	188.6	355.5	8.6	33.1	24.2
	7	444.3	24.2	76.7	191.9	377.5	9.1	37.1	27.3
	9	479.1	25.7	85.9	195.3	400.4	9.7	41.5	30.7
50 / 60	5	370.4	22.7	68.3	204.6	340.8	8.2	30.6	22.3
	7	402.3	24.2	76.7	207.8	361.8	8.7	34.3	25.1
	9	435.6	25.7	85.9	211.1	383.8	9.3	38.3	28.2

**Table 69 - RTAD 150 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	510.2	24.3	56.5	208.7	471.5	22.5	48.7	222.8	365.7	17.4	30.2	207.5
7	542.5	25.9	63.4	216.0	502.1	23.9	54.7	230.3	369.5	17.6	30.5	201.4
9	575.9	27.5	70.5	223.6	522.8	24.9	58.6	231.7	375.5	17.9	31.4	196.4

**Table 70 - RTAD 150 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	523.2	24.3	77.3	177.1	415.5	10.0	44.5	33.1
	7	561.4	25.9	86.6	181.1	440.8	10.6	49.8	37.3
	9	601.0	27.5	96.6	185.3	467.1	11.3	55.6	41.8
40 / 50	5	484.4	24.3	77.3	190.6	400.3	9.7	41.5	30.7
	7	521.1	25.9	86.6	194.5	424.7	10.3	46.4	34.6
	9	559.3	27.5	96.6	198.6	450.0	10.9	51.8	38.8
45 / 55	5	443.6	24.3	77.3	205.9	385.0	9.3	38.5	28.4
	7	478.7	25.9	86.6	209.7	408.3	9.9	43.1	32.0
	9	515.1	27.5	96.6	213.6	432.6	10.4	48.1	35.9
50 / 60	5	400.7	24.3	77.3	222.9	369.5	8.9	35.7	26.2
	7	434.1	25.9	86.6	226.6	391.8	9.5	39.8	29.4
	9	469.0	27.5	96.6	230.5	415.0	10.0	44.5	33.0

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity
4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 71 - RTAD 165 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	-	-	-	-	521.4	24.8	47.2	236.3	412.8	19.7	30.5	224.1
7	596.7	28.4	60.7	229.0	555.9	26.5	52.9	244.3	417.0	19.9	30.8	217.8
9	634.3	30.2	67.8	237.2	586.1	27.9	58.3	249.9	421.2	20.1	31.1	211.4

**Table 72 - RTAD 165 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	-	-	-	-	-	-	-	-	
	7	605.3	28.4	32.6	195.1	475.2	11.5	44.1	43.3	
	9	648.1	30.2	36.2	199.7	503.6	12.2	49.3	48.6	
40 / 50	5	-	-	-	-	-	-	-	-	
	7	564.5	28.4	32.6	209.7	459.4	11.1	41.4	40.5	
	9	605.9	30.2	36.2	214.1	486.9	11.8	46.2	45.5	
45 / 55	5	-	-	-	-	-	-	-	-	
	7	521.1	28.4	32.6	226.1	443.3	10.7	38.7	37.7	
	9	560.8	30.2	36.2	230.5	469.7	11.3	43.2	42.3	
50 / 60	5	-	-	-	-	-	-	-	-	
	7	475.5	28.4	32.6	244.5	426.9	10.3	36.0	35.0	
	9	513.4	30.2	36.2	248.9	452.3	10.9	40.2	39.2	

**Table 73 - RTAD 180 Standard Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	-	-	-	-	562.9	26.8	54.4	257.5	444.8	21.2	35.0	243.2
7	642.7	30.6	69.6	249.8	599.5	28.6	61.3	266.4	451.1	21.5	35.9	237.4
9	682.8	32.5	78.0	258.8	631.5	30.1	67.2	272.7	457.1	21.8	36.5	231.5

**Table 74 - RTAD 180 Standard Efficiency - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	-	-	-	-	-	-	-	-	
	7	654.7	30.6	37.0	209.9	513.2	12.4	51.1	50.5	
	9	700.5	32.5	41.1	214.8	543.7	13.1	57.0	56.7	
40 / 50	5	-	-	-	-	-	-	-	-	
	7	612.2	30.6	37.0	225.5	497.1	12.0	48.1	47.4	
	9	656.6	32.5	41.1	230.4	526.6	12.7	53.7	53.2	
45 / 55	5	-	-	-	-	-	-	-	-	
	7	566.9	30.6	37.0	243.1	480.5	11.6	45.1	44.3	
	9	609.5	32.5	41.1	247.9	508.9	12.3	50.3	49.7	
50 / 60	5	-	-	-	-	-	-	-	-	
	7	519.2	30.6	37.0	262.8	463.6	11.2	42.1	41.2	
	9	559.8	32.5	41.1	267.6	491.0	11.9	47.0	46.2	

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

## Total heat recovery - high efficiency units

**Table 75 - RTAD 085 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	276.7	13.2	33.5	95.6	254.6	12.1	28.7	101.9	226.1	10.8	22.7	110.3
7	295.7	14.1	37.7	98.8	272.1	13.0	32.3	105.1	242.6	11.6	26.0	113.6
9	314.7	15.0	42.4	102.0	290.4	13.8	36.5	108.4	259.5	12.4	29.3	117.0

**Table 76 - RTAD 085 High Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	272.1	13.2	55.5	88.7	213.5	5.2	26.4	22.1
	7	292.8	14.1	62.2	90.7	227.1	5.5	29.6	25.1
	9	314.4	15.0	69.3	92.8	241.3	5.8	33.2	28.3
40 / 50	5	248.3	13.2	55.5	95.5	203.3	4.9	24.0	20.1
	7	268.5	14.1	62.2	97.5	216.6	5.2	27.1	22.8
	9	289.6	15.0	69.3	99.5	230.5	5.6	30.4	25.8
45 / 55	5	222.8	13.2	55.5	103.3	192.7	4.7	21.7	18.0
	7	242.1	14.1	62.2	105.2	205.4	5.0	24.5	20.5
	9	262.3	15.0	69.3	107.2	218.7	5.3	27.6	23.2
50 / 60	5	195.9	13.2	55.5	112.0	181.7	4.4	19.5	16.0
	7	214.2	14.1	62.2	113.9	193.9	4.7	22.0	18.3
	9	233.5	15.0	69.3	115.8	206.6	5.0	24.8	20.7

**Table 77 - RTAD 100 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	326.3	15.5	53.8	113.9	301.0	14.3	46.3	121.2	268.6	12.8	37.4	131.0
7	348.4	16.6	60.7	117.5	322.1	15.3	52.3	124.9	288.3	13.7	42.4	134.9
9	371.3	17.7	68.1	121.3	343.5	16.4	58.9	128.8	308.7	14.7	47.8	138.8

**Table 78 - RTAD 100 High Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	314.0	15.5	60.0	101.7	246.5	6.0	34.5	29.5
	7	337.6	16.6	67.5	103.9	261.9	6.3	38.7	33.3
	9	362.3	17.7	75.6	106.2	278.2	6.7	43.3	37.6
40 / 50	5	288.2	15.5	60.0	109.6	235.7	5.7	31.7	27.0
	7	311.4	16.6	67.5	111.7	250.9	6.1	35.7	30.6
	9	335.6	17.7	75.6	114.0	266.8	6.4	40.0	34.6
45 / 55	5	260.6	15.5	60.0	118.4	224.5	5.4	29.0	24.5
	7	282.9	16.6	67.5	120.6	239.1	5.8	32.6	27.8
	9	306.1	17.7	75.6	122.8	254.4	6.1	36.6	31.4
50 / 60	5	231.5	15.5	60.0	128.4	213.0	5.1	26.2	22.0
	7	252.7	16.6	67.5	130.6	227.0	5.5	29.6	25.0
	9	275.0	17.7	75.6	132.8	241.7	5.8	33.3	28.4

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 79 - RTAD 115 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	386.1	18.4	33.5	143.3	356.9	17.0	28.7	153.4	319.3	15.2	23.3	166.9
7	413.1	19.7	37.7	148.0	382.2	18.2	32.6	158.2	341.4	16.3	26.3	171.0
9	440.9	21.0	42.4	152.9	408.2	19.5	36.8	163.2	346.0	16.5	26.9	165.5

**Table 80 - RTAD 115 High Efficiency - Heating**

THR		Evaporator				Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	380.2	18.4	46.6	126.5	301.1	7.3	29.4	44.0
	7	409.5	19.7	52.7	129.1	320.2	7.7	33.1	49.8
	9	440.0	21.0	59.4	131.8	340.1	8.2	37.0	56.2
40 / 50	5	350.0	18.4	46.6	136.8	289.1	7.0	27.3	40.6
	7	378.1	19.7	52.7	139.3	307.5	7.4	30.6	46.0
	9	407.6	21.0	59.4	142.0	326.8	7.9	34.3	51.9
45 / 55	5	317.9	18.4	46.6	148.5	276.9	6.7	25.1	37.3
	7	344.9	19.7	52.7	151.0	294.6	7.1	28.2	42.2
	9	373.1	21.0	59.4	153.5	313.0	7.6	31.7	47.6
50 / 60	5	284.1	18.4	46.6	161.5	264.4	6.4	23.0	34.0
	7	309.8	19.7	52.7	164.0	281.3	6.8	25.9	38.5
	9	336.7	21.0	59.4	166.6	299.0	7.2	29.0	43.4

**Table 81 - RTAD 125 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	450.1	21.4	44.5	175.3	416.3	19.8	38.6	187.5	361.8	17.2	29.6	196.7
7	480.6	22.9	50.2	181.0	445.8	21.2	43.6	193.3	368.5	17.5	30.5	191.2
9	512.6	24.4	56.5	186.9	476.1	22.7	49.0	199.3	375.9	17.9	31.4	185.9

**Table 82 - RTAD 125 High Efficiency - Heating**

THR		Evaporator				Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	450.7	21.4	61.5	150.5	357.8	8.6	40.7	62.2
	7	485.0	22.9	69.5	153.6	380.2	9.2	45.7	70.2
	9	520.7	24.4	78.2	156.8	403.6	9.7	51.1	79.1
40 / 50	5	416.5	21.4	61.5	162.6	344.6	8.3	37.9	57.7
	7	449.5	22.9	69.5	165.6	366.2	8.8	42.5	65.1
	9	484.1	24.4	78.2	168.7	388.8	9.4	47.6	73.4
45 / 55	5	380.4	21.4	61.5	176.3	331.1	8.0	35.2	53.3
	7	412.2	22.9	69.5	179.2	351.9	8.5	39.5	60.2
	9	445.5	24.4	78.2	182.2	373.7	9.0	44.2	67.8
50 / 60	5	342.6	21.4	61.5	191.4	317.5	7.7	32.5	49.0
	7	373.0	22.9	69.5	194.3	337.5	8.2	36.5	55.3
	9	404.9	24.4	78.2	197.3	358.4	8.7	40.9	62.4

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 83 - RTAD 145 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	485.6	23.1	41.2	182.0	451.5	21.5	35.9	194.5	408.6	19.4	29.9	211.3
7	519.0	24.7	46.6	187.9	483.1	23.0	40.6	200.6	413.1	19.7	30.2	204.7
9	553.4	26.4	52.3	194.1	516.2	24.6	45.7	206.8	415.6	19.8	30.5	196.7

**Table 84 - RTAD 145 High Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	485.6	23.1	22.8	161.5	384.0	9.3	38.4	28.3
	7	521.4	24.7	25.6	164.9	407.5	9.8	42.9	31.9
	9	558.7	26.4	28.6	168.5	432.1	10.4	48.0	35.8
40 / 50	5	449.1	23.1	22.8	174.3	369.8	8.9	35.7	26.2
	7	483.8	24.7	25.6	177.6	392.6	9.5	40.0	29.6
	9	520.1	26.4	28.6	181.0	416.4	10.1	44.7	33.3
45 / 55	5	410.6	23.1	22.8	188.6	355.3	8.6	33.1	24.2
	7	443.9	24.7	25.6	191.9	377.2	9.1	37.1	27.3
	9	478.7	26.4	28.6	195.2	400.1	9.7	41.5	30.7
50 / 60	5	370.2	23.1	22.8	204.5	340.6	8.2	30.5	22.2
	7	402.0	24.7	25.6	207.8	361.6	8.7	34.2	25.1
	9	435.2	26.4	28.6	211.1	383.5	9.3	38.3	28.2

**Table 85 - RTAD 150 High Efficiency - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	521.4	24.8	47.2	201.3	484.9	23.1	41.2	214.8	438.8	20.9	34.1	232.9
7	556.2	26.5	52.9	208.0	517.9	24.7	46.3	221.7	445.8	21.2	35.0	226.9
9	592.1	28.2	59.5	215.1	552.0	26.3	52.0	228.9	450.8	21.5	35.6	219.5

**Table 86 - RTAD 150 High Efficiency - Heating**

THR	Evaporator					Heat recovery condenser			
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa
35 / 45	5	522.7	24.8	25.7	177.0	415.1	10.0	44.5	33.1
	7	560.8	26.5	28.8	181.0	440.4	10.6	49.7	37.2
	9	600.3	28.2	32.2	185.2	466.6	11.3	55.5	41.8
40 / 50	5	484.0	24.8	25.7	190.6	400.0	9.7	41.5	30.7
	7	520.5	26.5	28.8	194.4	424.3	10.2	46.3	34.5
	9	558.6	28.2	32.2	198.5	449.6	10.9	51.7	38.8
45 / 55	5	443.2	24.8	25.7	205.8	384.7	9.3	38.5	28.4
	7	478.2	26.5	28.8	209.6	408.0	9.9	43.0	31.9
	9	514.6	28.2	32.2	213.6	432.2	10.4	48.0	35.8
50 / 60	5	400.4	24.8	25.7	222.8	369.3	8.9	35.6	26.1
	7	433.7	26.5	28.8	226.6	391.5	9.5	39.8	29.4
	9	468.5	28.2	32.2	230.5	414.7	10.0	44.4	33.0

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

## Total heat recovery - standard efficiency low noise units

**Table 87 - RTAD 100 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	291.1	13.9	36.8	118.1	265.5	12.6	31.1	126.3	198.6	9.5	17.9	112.7
7	309.4	14.7	41.2	122.5	281.3	13.4	34.4	129.8	202.5	9.6	18.5	109.8
9	328.0	15.6	45.7	127.1	286.9	13.7	35.6	126.3	205.3	9.8	18.8	106.5

**Table 88 - RTAD 100 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	315.5	13.9	60.6	101.9	247.5	6.0	34.8	29.8
	7	339.3	14.7	67.2	104.1	263.1	6.4	39.0	33.6
	9	364.3	15.6	74.4	106.4	279.5	6.8	43.6	37.9
40 / 50	5	289.7	13.9	60.6	109.7	236.7	5.7	32.0	27.2
	7	313.0	14.7	67.2	111.9	252.0	6.1	36.0	30.8
	9	337.4	15.6	74.4	114.1	268.0	6.5	40.3	34.9
45 / 55	5	261.9	13.9	60.6	118.6	225.3	5.4	29.2	24.7
	7	284.3	14.7	67.2	120.7	240.1	5.8	32.8	28.0
	9	307.7	15.6	74.4	123.0	255.5	6.2	36.9	31.7
50 / 60	5	232.6	13.9	60.6	128.5	213.7	5.2	26.4	22.2
	7	254.0	14.7	67.2	130.7	227.9	5.5	29.8	25.2
	9	276.4	15.6	74.4	132.9	242.7	5.9	33.5	28.6

**Table 89 - RTAD 115 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	345.3	16.4	59.8	152.1	310.8	14.8	49.0	160.9	216.9	10.3	25.1	139.4
7	366.4	17.4	66.7	157.9	316.1	15.1	50.5	156.6	220.8	10.5	25.7	136.1
9	387.5	18.5	73.8	163.9	321.0	15.3	51.7	151.2	224.0	10.7	26.3	132.3

**Table 90 - RTAD 115 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	382.1	16.4	66.3	126.7	302.3	7.3	29.7	44.4
	7	411.7	17.4	73.7	129.3	321.7	7.8	33.3	50.3
	9	442.4	18.5	81.6	132.0	341.7	8.3	37.4	56.7
40 / 50	5	351.7	16.4	66.3	137.0	290.2	7.0	27.5	40.9
	7	380.1	17.4	73.7	139.5	308.8	7.5	30.9	46.3
	9	409.8	18.5	81.6	142.2	328.3	7.9	34.6	52.3
45 / 55	5	319.4	16.4	66.3	148.6	277.9	6.7	25.3	37.5
	7	346.6	17.4	73.7	151.1	295.7	7.1	28.4	42.5
	9	375.1	18.5	81.6	153.7	314.3	7.6	31.9	48.0
50 / 60	5	285.4	16.4	66.3	161.7	265.3	6.4	23.2	34.2
	7	311.3	17.4	73.7	164.2	282.3	6.8	26.1	38.7
	9	338.4	18.5	81.6	166.7	300.1	7.2	29.2	43.8

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.





# Performance Data - Total Heat Recovery

**Table 91 - RTAD 125 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	381.8	18.2	32.6	188.9	305.5	14.6	21.5	169.2	208.9	9.9	10.5	149.3
7	388.9	18.5	33.5	183.7	309.8	14.8	21.8	163.9	212.0	10.1	10.8	145.3
9	394.5	18.8	34.4	177.3	314.3	15.0	22.4	159.1	215.5	10.3	11.1	141.5

**Table 92 - RTAD 125 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	454.1	18.2	45.6	150.8	360.0	8.7	41.2	63.0	
	7	489.6	18.5	47.2	154.0	383.2	9.3	46.4	71.3	
	9	526.8	18.8	48.6	157.3	407.6	9.8	52.1	80.7	
40 / 50	5	419.5	18.2	45.6	162.9	346.5	8.4	38.4	58.3	
	7	453.6	18.5	47.2	166.0	368.9	8.9	43.1	66.1	
	9	489.7	18.8	48.6	169.2	392.4	9.5	48.5	74.8	
45 / 55	5	383.1	18.2	45.6	176.5	332.9	8.0	35.6	53.8	
	7	415.9	18.5	47.2	179.5	354.3	8.6	40.0	61.0	
	9	450.4	18.8	48.6	182.7	376.9	9.1	44.9	69.0	
50 / 60	5	345.0	18.2	45.6	191.6	319.0	7.7	32.8	49.4	
	7	376.4	18.5	47.2	194.6	339.7	8.2	36.9	56.1	
	9	409.2	18.8	48.6	197.7	361.2	8.7	41.5	63.4	

**Table 93 - RTAD 145 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	457.1	21.8	45.7	194.5	388.9	18.5	33.8	189.2	267.6	12.7	16.7	164.1
7	485.6	23.1	51.1	201.8	393.8	18.8	34.4	182.9	273.9	13.1	17.3	161.4
9	504.2	24.0	54.7	202.8	398.7	19.0	35.0	177.3	278.5	13.3	17.9	157.8

**Table 94 - RTAD 145 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	486.9	21.8	63.3	161.7	384.9	9.3	38.5	28.4	
	7	522.9	23.1	70.8	165.1	408.5	9.9	43.1	32.0	
	9	561.0	24.0	75.9	168.7	433.6	10.5	48.3	36.1	
40 / 50	5	450.2	21.8	63.3	174.4	370.5	9.0	35.8	26.3	
	7	485.2	23.1	70.8	177.7	393.5	9.5	40.2	29.7	
	9	522.1	24.0	75.9	181.2	417.8	10.1	45.0	33.5	
45 / 55	5	411.6	21.8	63.3	188.7	356.0	8.6	33.2	24.3	
	7	445.1	23.1	70.8	192.0	378.0	9.1	37.2	27.4	
	9	480.5	24.0	75.9	195.4	401.3	9.7	41.7	30.9	
50 / 60	5	371.1	21.8	63.3	204.6	341.2	8.2	30.6	22.3	
	7	403.0	23.1	70.8	207.9	362.3	8.8	34.3	25.2	
	9	436.8	24.0	75.9	211.2	384.6	9.3	38.5	28.4	

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 95 - RTAD 150 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	488.4	23.3	52.0	214.9	419.1	19.9	38.9	210.5	290.1	13.8	19.4	182.1
7	517.9	24.7	58.0	223.1	426.1	20.3	40.1	204.8	295.0	14.1	20.0	178.7
9	538.0	25.6	61.9	224.9	431.1	20.5	40.6	198.5	299.2	14.3	20.3	174.7

**Table 96 - RTAD 150 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	524.2	23.3	71.4	177.2	416.2	10.1	44.7	33.2
	7	562.6	24.7	79.5	181.2	441.6	10.7	50.0	37.4
	9	602.8	25.6	85.3	185.5	468.3	11.3	55.9	42.1
40 / 50	5	485.4	23.3	71.4	190.7	401.0	9.7	41.6	30.8
	7	522.1	24.7	79.5	194.6	425.4	10.3	46.6	34.7
	9	560.9	25.6	85.3	198.8	451.1	10.9	52.1	39.0
45 / 55	5	444.4	23.3	71.4	205.9	385.5	9.3	38.6	28.5
	7	479.5	24.7	79.5	209.8	408.9	9.9	43.2	32.1
	9	516.6	25.6	85.3	213.8	433.5	10.5	48.3	36.0
50 / 60	5	401.5	23.3	71.4	223.0	370.0	8.9	35.7	26.2
	7	435.0	24.7	79.5	226.7	392.3	9.5	39.9	29.5
	9	470.2	25.6	85.3	230.6	415.8	10.0	44.6	33.2

**Table 97 - RTAD 165 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	-	-	-	-	473.6	22.5	39.5	226.9	324.5	15.4	19.4	193.6
7	574.9	27.4	56.5	235.4	479.9	22.9	40.1	220.4	326.6	15.6	19.4	188.7
9	604.4	28.8	61.9	241.7	487.3	23.2	40.9	214.7	329.5	15.7	19.7	184.0

**Table 98 - RTAD 165 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser			
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	-	-	-	-	-	-	-	-
	7	606.5	27.4	30.5	195.2	475.9	11.5	44.3	43.4
	9	649.7	28.8	33.3	199.9	504.7	12.2	49.5	48.8
40 / 50	5	-	-	-	-	-	-	-	-
	7	565.5	27.4	30.5	209.8	460.1	11.1	41.5	40.6
	9	607.3	28.8	33.3	214.3	487.9	11.8	46.4	45.6
45 / 55	5	-	-	-	-	-	-	-	-
	7	522.1	27.4	30.5	226.2	443.9	10.7	38.8	37.8
	9	562.1	28.8	33.3	230.7	470.6	11.4	43.3	42.5
50 / 60	5	-	-	-	-	-	-	-	-
	7	476.3	27.4	30.5	244.6	427.5	10.3	36.1	35.0
	9	514.5	28.8	33.3	249.0	453.0	10.9	40.3	39.4

Notes :

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 99 - RTAD 180 Standard Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	-	-	-	-	509.5	24.3	45.1	247.3	355.8	16.9	23.0	213.0
7	618.5	29.5	64.9	257.3	515.5	24.5	46.0	239.9	360.4	17.2	23.3	208.4
9	649.4	30.9	70.8	264.3	523.9	25.0	47.2	234.3	366.0	17.5	23.9	204.4

**Table 100 - RTAD 180 Standard Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	-	-	-	-	-	-	-	-	-
	7	656.0	29.5	34.6	210.1	514.1	12.4	51.3	50.7	
	9	702.3	30.9	37.7	215.0	544.9	13.2	57.2	56.9	
40 / 50	5	-	-	-	-	-	-	-	-	-
	7	613.4	29.5	34.6	225.6	497.9	12.0	48.2	47.5	
	9	658.3	30.9	37.7	230.5	527.7	12.7	53.9	53.4	
45 / 55	5	-	-	-	-	-	-	-	-	-
	7	568.0	29.5	34.6	243.2	481.2	11.6	45.2	44.4	
	9	611.0	30.9	37.7	248.1	509.9	12.3	50.5	49.9	
50 / 60	5	-	-	-	-	-	-	-	-	-
	7	520.1	29.5	34.6	262.9	464.3	11.2	42.2	41.3	
	9	561.1	30.9	37.7	267.8	491.8	11.9	47.1	46.4	

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

## Total heat recovery - high efficiency low noise units

**Table 101 - RTAD 085 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	267.9	12.8	31.4	95.4	245.1	11.7	26.6	102.1	216.2	10.3	20.9	110.9
7	285.5	13.6	35.3	98.8	261.6	12.5	29.9	105.6	231.4	11.0	23.9	114.5
9	303.4	14.5	39.5	102.4	278.5	13.3	33.5	109.2	235.9	11.2	24.5	110.9

**Table 102 - RTAD 085 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	272.5	12.8	52.6	88.7	213.7	5.2	26.4	22.2	
	7	293.2	13.6	58.7	90.7	227.4	5.5	29.7	25.1	
	9	314.9	14.5	65.1	92.9	241.7	5.8	33.2	28.4	
40 / 50	5	248.6	12.8	52.6	95.5	203.5	4.9	24.1	20.1	
	7	268.9	13.6	58.7	97.5	216.9	5.2	27.1	22.8	
	9	290.0	14.5	65.1	99.6	230.8	5.6	30.5	25.9	
45 / 55	5	223.1	12.8	52.6	103.3	192.9	4.7	21.8	18.1	
	7	242.5	13.6	58.7	105.2	205.6	5.0	24.6	20.5	
	9	262.7	14.5	65.1	107.2	219.0	5.3	27.6	23.3	
50 / 60	5	196.1	12.8	52.6	112.0	181.9	4.4	19.5	16.1	
	7	214.5	13.6	58.7	113.9	194.1	4.7	22.0	18.3	
	9	233.9	14.5	65.1	115.9	206.9	5.0	24.8	20.8	

**Table 103 - RTAD 100 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	315.7	15.0	50.5	113.0	289.7	13.8	43.0	120.8	257.0	12.2	34.4	131.1
7	336.5	16.0	56.8	117.0	309.4	14.7	48.4	124.9	261.2	12.4	35.3	126.8
9	357.9	17.1	63.4	121.1	329.5	15.7	54.1	129.1	265.8	12.7	36.2	122.7

**Table 104 - RTAD 100 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	314.4	15.0	56.6	101.7	246.8	6.0	34.6	29.6	
	7	338.1	16.0	63.4	103.9	262.3	6.3	38.8	33.4	
	9	362.9	17.1	70.8	106.3	278.5	6.7	43.4	37.7	
40 / 50	5	288.7	15.0	56.6	109.6	236.0	5.7	31.8	27.1	
	7	311.9	16.0	63.4	111.8	251.2	6.1	35.8	30.7	
	9	336.1	17.1	70.8	114.0	267.1	6.5	40.1	34.7	
45 / 55	5	261.0	15.0	56.6	118.5	224.7	5.4	29.0	24.5	
	7	283.3	16.0	63.4	120.6	239.4	5.8	32.7	27.8	
	9	306.6	17.1	70.8	122.8	254.7	6.2	36.7	31.5	
50 / 60	5	231.8	15.0	56.6	128.4	213.2	5.1	26.3	22.1	
	7	253.1	16.0	63.4	130.6	227.3	5.5	29.6	25.1	
	9	275.4	17.1	70.8	132.8	242.0	5.8	33.3	28.5	

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 105 - RTAD 115 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	374.5	17.8	31.4	145.3	343.9	16.4	26.9	156.1	275.3	13.1	17.6	152.7
7	399.4	19.0	35.3	150.6	367.4	17.5	30.2	161.5	278.1	13.3	17.9	148.2
9	425.4	20.3	39.8	156.0	392.0	18.7	34.1	167.1	283.0	13.5	18.5	144.9

**Table 106 - RTAD 115 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	380.7	17.8	44.0	126.6	301.4	7.3	29.5	44.1	
	7	410.1	19.0	49.6	129.2	320.6	7.7	33.1	49.9	
	9	440.6	20.3	55.7	131.9	340.6	8.2	37.1	56.3	
40 / 50	5	350.4	17.8	44.0	136.9	289.4	7.0	27.3	40.7	
	7	378.7	19.0	49.6	139.4	307.9	7.4	30.7	46.1	
	9	408.2	20.3	55.7	142.0	327.2	7.9	34.4	52.0	
45 / 55	5	318.3	17.8	44.0	148.5	277.2	6.7	25.2	37.3	
	7	345.4	19.0	49.6	151.0	294.9	7.1	28.3	42.2	
	9	373.6	20.3	55.7	153.6	313.4	7.6	31.7	47.7	
50 / 60	5	284.5	17.8	44.0	161.6	264.7	6.4	23.1	34.0	
	7	310.2	19.0	49.6	164.0	281.6	6.8	25.9	38.5	
	9	337.1	20.3	55.7	166.6	299.3	7.2	29.1	43.5	

**Table 107 - RTAD 125 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	434.9	20.7	41.8	178.1	400.5	19.1	35.9	191.2	295.0	14.0	20.0	170.2
7	463.8	22.1	46.9	184.5	423.3	20.2	39.5	195.2	300.3	14.3	20.6	165.6
9	493.3	23.5	52.6	191.1	428.6	20.4	40.3	188.3	304.5	14.5	21.2	161.1

**Table 108 - RTAD 125 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
	Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa
35 / 45	5	451.4	20.7	57.8	150.5	358.2	8.7	40.8	62.3	
	7	485.7	22.1	65.1	153.6	380.7	9.2	45.8	70.4	
	9	521.6	23.5	72.9	156.9	404.1	9.8	51.2	79.4	
40 / 50	5	417.1	20.7	57.8	162.7	345.0	8.3	38.0	57.8	
	7	450.2	22.1	65.1	165.7	366.6	8.9	42.6	65.3	
	9	484.9	23.5	72.9	168.8	389.3	9.4	47.8	73.6	
45 / 55	5	381.0	20.7	57.8	176.3	331.5	8.0	35.3	53.4	
	7	412.8	22.1	65.1	179.2	352.3	8.5	39.6	60.3	
	9	446.2	23.5	72.9	182.3	374.2	9.0	44.3	68.0	
50 / 60	5	343.1	20.7	57.8	191.4	317.8	7.7	32.6	49.1	
	7	373.6	22.1	65.1	194.3	337.8	8.2	36.6	55.4	
	9	405.5	23.5	72.9	197.3	358.8	8.7	40.9	62.5	

**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI)
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.



# Performance Data - Total Heat Recovery

**Table 109 - RTAD 145 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	472.6	22.5	39.2	183.5	437.4	20.8	33.8	196.9	329.1	15.7	20.0	179.4
7	504.2	24.0	43.9	190.1	467.3	22.3	38.3	203.6	336.1	16.0	20.6	175.5
9	536.5	25.6	49.3	196.9	481.7	23.0	40.1	201.8	340.0	16.2	20.9	170.2

**Table 110 - RTAD 145 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	486.1	22.5	21.7	161.6	384.4	9.3	38.4	28.3	
	7	522.0	24.0	24.3	165.0	408.0	9.9	43.0	31.9	
	9	559.5	25.6	27.1	168.6	432.6	10.4	48.1	35.9	
40 / 50	5	449.6	22.5	21.7	174.3	370.1	8.9	35.8	26.3	
	7	484.4	24.0	24.3	177.7	393.0	9.5	40.1	29.6	
	9	520.7	25.6	27.1	181.1	416.9	10.1	44.8	33.3	
45 / 55	5	411.1	22.5	21.7	188.7	355.6	8.6	33.1	24.2	
	7	444.4	24.0	24.3	191.9	377.5	9.1	37.1	27.3	
	9	479.3	25.6	27.1	195.3	400.5	9.7	41.5	30.8	
50 / 60	5	370.6	22.5	21.7	204.6	340.8	8.2	30.6	22.3	
	7	402.4	24.0	24.3	207.8	361.9	8.7	34.3	25.1	
	9	435.8	25.6	27.1	211.1	383.9	9.3	38.3	28.3	

**Table 111 - RTAD 150 High Efficiency Low Noise - Cooling**

LWT °C	Entering Condenser Air Temperature °C											
	35				40				46			
	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW
5	506.7	24.1	44.8	203.1	469.0	22.3	38.6	217.7	358.6	17.1	23.3	200.3
7	539.4	25.7	49.9	210.6	499.6	23.8	43.3	225.4	363.9	17.3	23.9	195.0
9	572.8	27.3	55.9	218.4	515.8	24.6	45.7	224.3	368.8	17.6	24.2	189.9

**Table 112 - RTAD 150 High Efficiency Low Noise - Heating**

THR	Evaporator					Heat recovery condenser				
Temp °C	LWTE °C	Cooling kW	Water flow rate l/s	Water Pressure Drop kPa	Power Input kW	Heating kW	Water flow rate l/s	Water Pressure Drop kPa	3 way valve Pressure Drop kPa	
35 / 45	5	523.4	24.1	24.5	177.1	415.6	10.0	44.6	33.1	
	7	561.5	25.7	27.3	181.1	440.9	10.6	49.9	37.3	
	9	601.1	27.3	30.4	185.3	467.2	11.3	55.6	41.9	
40 / 50	5	484.6	24.1	24.5	190.6	400.4	9.7	41.5	30.8	
	7	521.2	25.7	27.3	194.5	424.8	10.3	46.4	34.6	
	9	559.4	27.3	30.4	198.6	450.1	10.9	51.8	38.9	
45 / 55	5	443.8	24.1	24.5	205.9	385.1	9.3	38.6	28.4	
	7	478.8	25.7	27.3	209.7	408.4	9.9	43.1	32.0	
	9	515.3	27.3	30.4	213.6	432.7	10.5	48.1	35.9	
50 / 60	5	400.9	24.1	24.5	222.9	369.6	8.9	35.7	26.2	
	7	434.3	25.7	27.3	226.7	391.9	9.5	39.9	29.4	
	9	469.1	27.3	30.4	230.5	415.1	10.0	44.5	33.0	

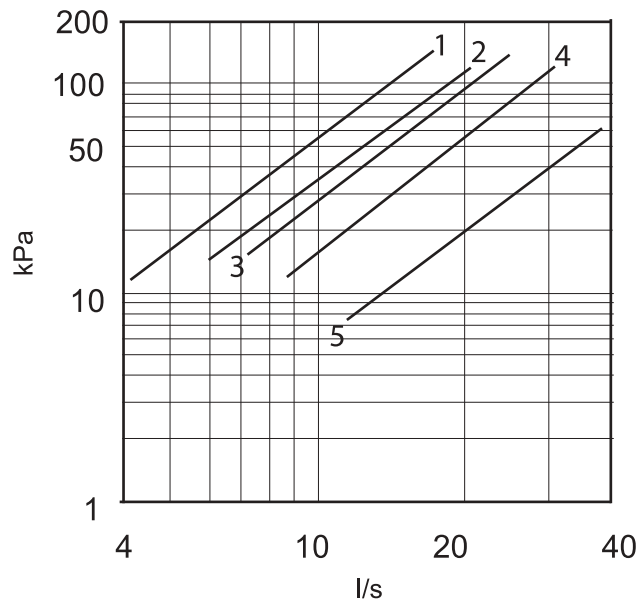
**Notes :**

1. Ratings based on sea level altitude and evaporator fouling factor of 0.044 m<sup>2</sup> K/kW
2. Consult Trane representative for performance at temperatures outside of the ranges shown
3. CC = Cooling capacity

4. PI (kW) = Power Input (Compressor + Fans + Control Power)
5. COP = Coefficient of performance (CC/PI).
6. Interpolation between points is permissible. Extrapolation is not permitted.
7. Shaded area reflects Adaptive Control™ Microprocessor control algorithms.

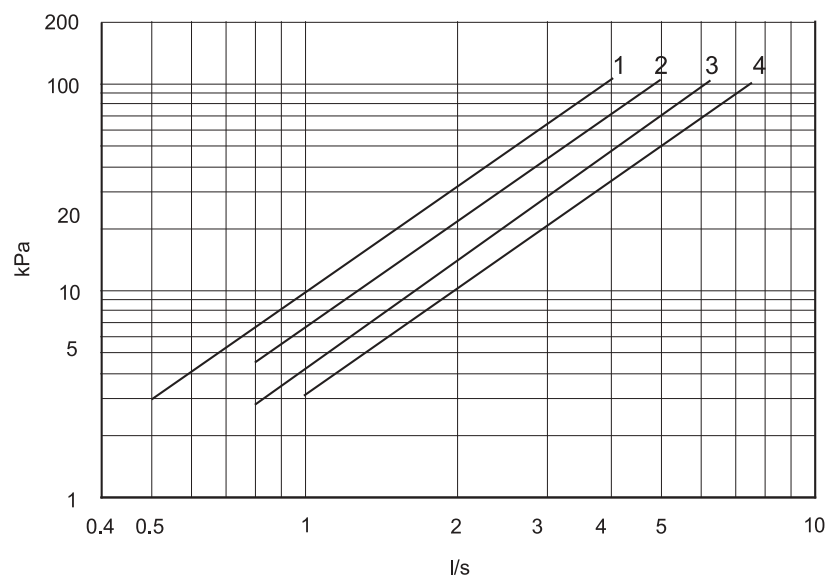
# Performance Data

**Figure 2 - Evaporator Water Pressure Drops - PHR/THR**



- 1 = 085 STD
- 2 = 100 STD, 085 HE
- 3 = 115 STD, 100 HE
- 4 = 125 STD, 145 STD, 150 STD, 115 HE, 125 HE
- 5 = 160 STD, 180 STD, 145 HE, 150 HE

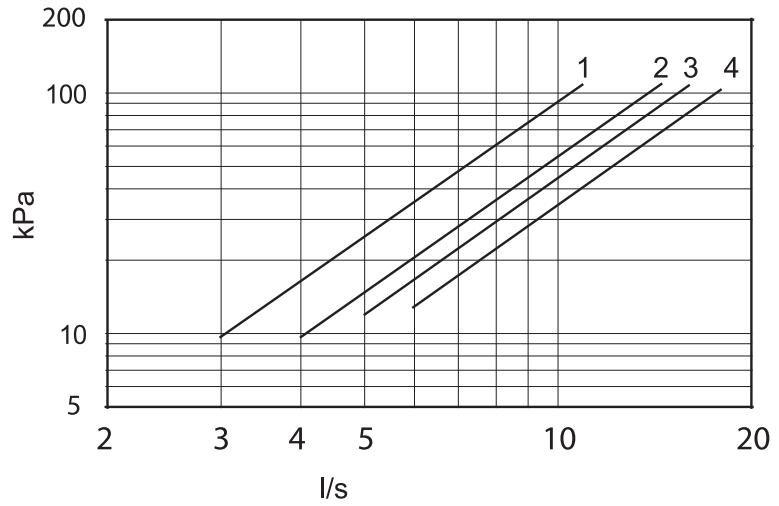
**Figure 3 - Condenser Water Pressure Drops - Heating mode - PHR**



- 1 = 085-100
- 2 = 115-125
- 3 = 145-150
- 4 = 165-180

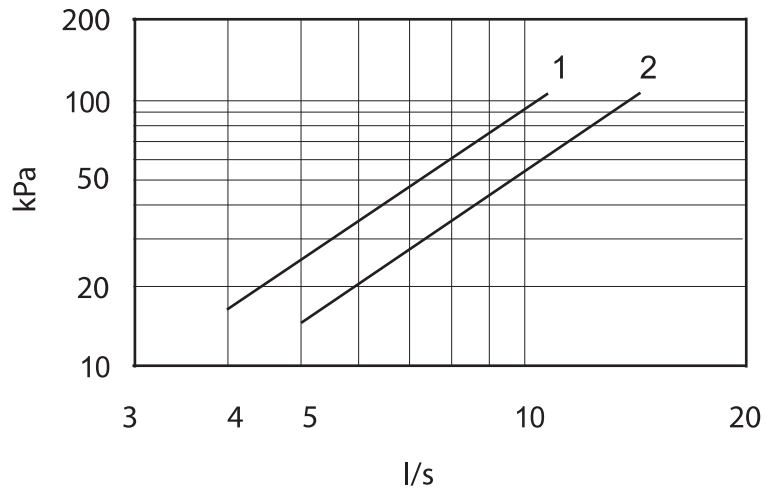
# Performance Data

**Figure 4 - Condenser Water Pressure Drops - Heating mode - THR**



- 1 = 085-100
- 2 = 115-125
- 3 = 145-150
- 4 = 165-180

**Figure 5 - 3-way Valve Water Pressure Drops - Heating mode THR**



- 1 = 085-100-115-125
- 2 = 145-150-165-180

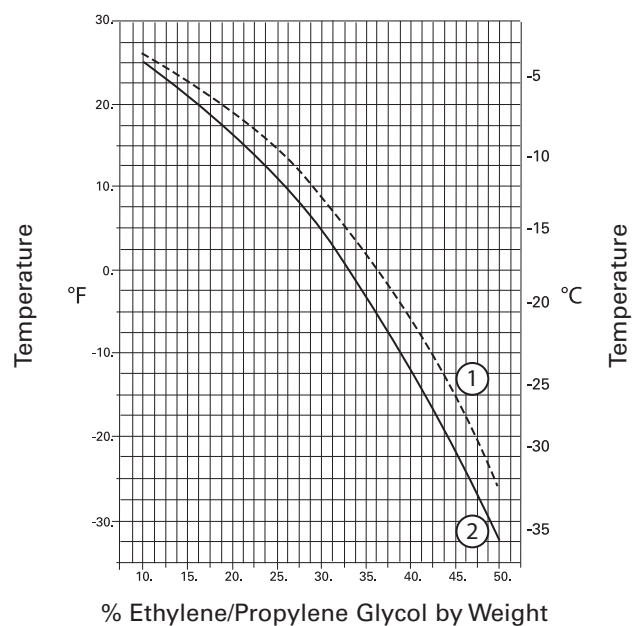


# Performance Data

Table 113 - Performance Data Adjustment Factors

		Altitude															
		Sea Level				600 m				1200 m				1800 m			
Fouling Factor	Chilled Water Temp. drop	Cooling Capacity	Evp. Flow Rate	Compr. kW Input	Cooling Capacity	Evp. Flow Rate	Compr. kW Input	Cooling Capacity	Evp. Flow Rate	Compr. kW Input	Cooling Capacity	Evp. Flow Rate	Compr. kW Input				
	°C																
0.0176 m <sup>2</sup> K/kW	4.4	1.000	1.249	1.000	0.996	1.245	1.004	0.991	1.240	1.007	0.987	1.234	1.014				
	5.6	1.000	1.000	1.000	0.997	0.996	1.004	0.993	0.992	1.007	0.988	0.988	1.015				
	6.7	1.001	0.835	1.001	0.997	0.832	1.004	0.993	0.828	1.009	0.988	0.824	1.015				
	7.8	1.003	0.716	1.001	0.999	0.714	1.004	0.994	0.711	1.009	0.990	0.708	1.015				
	8.9	1.004	0.628	1.001	1.000	0.626	1.005	0.997	0.623	1.009	0.991	0.620	1.016				
0.044 m <sup>2</sup> K/kW	4.4	0.988	1.235	0.996	0.984	1.230	1.000	0.980	1.225	1.004	0.975	1.220	1.010				
	5.6	0.988	0.989	0.998	0.986	0.985	1.000	0.981	0.981	1.004	0.977	0.976	1.011				
	6.7	0.990	0.825	0.998	0.987	0.822	1.000	0.983	0.819	1.005	0.978	0.815	1.011				
	7.8	0.991	0.708	0.998	0.988	0.706	1.001	0.984	0.703	1.005	0.980	0.700	1.011				
	8.9	0.993	0.621	0.999	0.990	0.619	1.001	0.986	0.617	1.006	0.981	0.614	1.012				

Figure 6 - Ethylene Glycol and Propylene Glycol Freeze Point



1 = Propylene Glycol  
2 = Ethylene Glycol



# Electrical Data

Table 114 - Unit wiring 400/3/50

Unit size	Nbr of Power Connections	Maximum Amps (1)	Starting Amps (2)	Power Factor (5)	Compressor Fuse Size (A)	Evaporator heater (kW)
<b>Standard</b>						
085	1	242	255	0.90	6 x 125	0.217
100	1	282	306	0.88	6 x 160	0.217
115	1	323	359	0.89	6 x 200	0.217
125	1	387	425	0.90	6 x 250	0.217
145	1	437	471	0.90	6 x 250	0.217
150	1	477	502	0.89	6 x 250	0.217
165	1	527	570	0.89	315 + 250	0.217
180	1	576	608	0.89	6 x 315	0.217
<b>High Efficiency</b>						
085	1	242	255	0.90	6 x 125	0.217
100	1	291	315	0.88	6 x 160	0.217
115	1	332	368	0.89	6 x 200	0.217
125	1	405	443	0.90	6 x 250	0.217
145	1	446	480	0.90	6 x 250	0.217
150	1	486	511	0.89	6 x 250	0.217
<b>High Ambient</b>						
085	1	242	255	0.90	6 x 160	0.217
100	1	291	315	0.88	6 x 200	0.217
115	1	332	368	0.89	6 x 250	0.217
125	1	405	443	0.90	6 x 250	0.217
145	1	446	480	0.90	6 x 250	0.217
150	1	486	511	0.89	6 x 315	0.217
165	1	527	570	0.89	400 + 315	0.217
180	1	576	608	0.89	6 x 400	0.217
<b>Standard Low Noise</b>						
085	1	230	243	0.90	6 x 125	0.217
100	1	270	294	0.88	6 x 160	0.217
115	1	311	347	0.89	6 x 200	0.217
125	1	375	413	0.90	6 x 250	0.217
145	1	419	453	0.90	6 x 250	0.217
150	1	457	482	0.89	6 x 250	0.217
165	1	505	548	0.89	315 + 250	0.217
180	1	552	584	0.89	6 x 315	0.217
<b>High Efficiency Low Noise</b>						
085	1	230	243	0.90	6 x 125	0.217
100	1	275	299	0.88	6 x 160	0.217
115	1	316	352	0.89	6 x 200	0.217
125	1	385	423	0.90	6 x 250	0.217
145	1	424	458	0.90	6 x 250	0.217
150	1	462	487	0.89	6 x 250	0.217
<b>Standard Low Noise with Night Noise Set Back</b>						
085	1	226	238	0.90	6 x 125	0.217
100	1	270	295	0.88	6 x 160	0.217
115	1	312	348	0.89	6 x 200	0.217
125	1	376	414	0.90	6 x 250	0.217
145	1	417	451	0.90	6 x 250	0.217
150	1	453	478	0.89	6 x 250	0.217
165	1	503	546	0.89	315 + 250	0.217
180	1	548	580	0.89	6 x 315	0.217



# Electrical Data

Table 114 - Unit wiring 400/3/50

Unit size	Nbr of Power Connections	Maximum Amps (1)	Starting Amps (2)	Power Factor (5)	Compressor Fuse Size (A)	Evaporator heater (kW)
<b>High Efficiency Low Noise with Night Noise Set Back</b>						
085	1	231	244	0.90	6 x 125	0.217
100	1	270	295	0.88	6 x 160	0.217
115	1	317	353	0.89	6 x 200	0.217
125	1	381	419	0.90	6 x 250	0.217
145	1	381	456	0.90	6 x 250	0.217
150	1	381	483	0.89	6 x 250	0.217
<b>Standard with High External Static Pressure</b>						
085	1	231	244	0.90	6 x 125	0.217
100	1	278	302	0.88	6 x 160	0.217
115	1	319	355	0.89	6 x 200	0.217
125	1	383	421	0.90	6 x 250	0.217
145	1	427	461	0.90	6 x 250	0.217
150	1	463	488	0.89	6 x 250	0.217
165	1	516	559	0.89	315 + 250	0.217
180	1	561	593	0.89	6 x 315	0.217
<b>High Efficiency with High External Static Pressure</b>						
085	1	239	251	0.90	6 x 125	0.217
100	1	278	302	0.88	6 x 160	0.217
115	1	327	363	0.89	6 x 200	0.217
125	1	391	429	0.90	6 x 250	0.217
145	1	435	469	0.90	6 x 250	0.217
150	1	471	496	0.89	6 x 250	0.217



# Electrical Data

Table 115 - Motor data 400/3/50

Unit Size	Qty	Compressor (Each)						Fans (Each)			Control		
		RLA Amps		Max Amps (3)		Starting Amps (4)		Qty	kW	FLA	Fans fuse size (A)	VA	(400V) A
		Ckt 1	Ckt 2	Ckt 1	Ckt 2	Ckt 1	Ckt 2						
<b>Standard</b>													
085	2	80	80	106	106	144	144	6	2.05	4.5	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	2.05	4.5	3 x 50	1600	4
115	2	111	111	146	146	217	217	6	2.05	4.5	3 x 50	1600	4
125	2	135	135	178	178	259	259	6	2.05	4.5	3 x 50	1600	4
145	2	162	135	214	178	291	259	9	2.05	4.5	3 x 63	1600	4
150	2	162	162	214	214	291	291	10	2.05	4.5	3 x 63	1600	4
165	2	196	162	259	214	354	291	11	2.05	4.5	3 x 63	1600	4
180	2	196	196	259	259	354	354	12	2.05	4.5	3 x 63	1600	4
<b>High Efficiency</b>													
085	2	80	80	106	106	144	144	6	2.05	4.5	3 x 50	1600	4
100	2	95	95	125	125	180	180	8	2.05	4.5	3 x 50	1600	4
115	2	111	111	146	146	217	217	8	2.05	4.5	3 x 50	1600	4
125	2	135	135	178	178	259	259	10	2.05	4.5	3 x 50	1600	4
145	2	162	135	214	178	291	259	11	2.05	4.5	3 x 63	1600	4
150	2	162	162	214	214	291	291	12	2.05	4.5	3 x 63	1600	4
<b>Standard Low Noise</b>													
085	2	80	80	106	106	144	144	6	1.3	2.5	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	1.3	2.5	3 x 50	1600	4
115	2	111	111	146	146	217	217	6	1.3	2.5	3 x 50	1600	4
125	2	135	135	178	178	259	259	6	1.3	2.5	3 x 50	1600	4
145	2	162	135	214	178	291	259	9	1.3	2.5	3 x 63	1600	4
150	2	162	162	214	214	291	291	10	1.3	2.5	3 x 63	1600	4
165	2	196	162	259	214	354	291	11	1.3	2.5	3 x 63	1600	4
180	2	196	196	259	259	354	354	12	1.3	2.5	3 x 63	1600	4
<b>High Efficiency Low Noise</b>													
085	2	80	80	106	106	144	144	6	1.3	2.5	3 x 50	1600	4
100	2	95	95	125	125	180	180	8	1.3	2.5	3 x 50	1600	4
115	2	111	111	146	146	217	217	8	1.3	2.5	3 x 50	1600	4
125	2	135	135	178	178	259	259	10	1.3	2.5	3 x 50	1600	4
145	2	162	135	214	178	291	259	11	1.3	2.5	3 x 63	1600	4
150	2	162	162	214	214	291	291	12	1.3	2.5	3 x 63	1600	4
<b>Standard Low Noise with Night Noise Set Back</b>													
085	2	80	80	106	106	144	144	4	1.05	2.6	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	1.05	2.6	3 x 50	1600	4
115	2	111	111	146	146	217	217	6	1.05	2.6	3 x 50	1600	4
125	2	135	135	178	178	259	259	6	1.05	2.6	3 x 50	1600	4
145	2	162	135	214	178	291	259	8	1.05	2.6	3 x 63	1600	4
150	2	162	162	214	214	291	291	8	1.05	2.6	3 x 63	1600	4
165	2	196	162	259	214	354	291	10	1.05	2.6	3 x 63	1600	4
180	2	196	196	259	259	354	354	10	1.05	2.6	3 x 63	1600	4

**Notes:**

1. Maximum Compressors FLA + all fans FLA + control Amps
2. Starting Amps of the circuit with the largest compressor circuit including fans plus RLA of the second circuit including fans + control Amps
3. Maximum FLA per compressor.
4. Compressors starting Amps, Star delta start.
5. Compressor Power Factor



# Electrical Data

**Table 115 - Motor data 400/3/50**

Unit Size	Qty	Compressor (Each)						Fans (Each)			Control		
		RLA Amps		Max Amps (3)		Starting Amps (4)		Qty	kW	FLA	Fans fuse size (A)	VA	(400V) A
		Ckt 1	Ckt 2	Ckt 1	Ckt 2	Ckt 1	Ckt 2						
<b>High Efficiency Low Noise with Night Noise Set Back</b>													
085	2	80	80	106	106	144	144	6	1.05	2.6	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	1.05	2.6	3 x 50	1600	4
115	2	111	111	146	146	217	217	8	1.05	2.6	3 x 50	1600	4
125	2	135	135	178	178	259	259	8	1.05	2.6	3 x 50	1600	4
145	2	162	135	214	178	291	259	10	1.05	2.6	3 x 63	1600	4
150	2	162	162	214	214	291	291	10	1.05	2.6	3 x 63	1600	4
<b>Standard with High External Static Pressure</b>													
085	2	80	80	106	106	144	144	4	2.21	3.9	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	2.21	3.9	3 x 50	1600	4
115	2	111	111	146	146	217	217	6	2.21	3.9	3 x 50	1600	4
125	2	135	135	178	178	259	259	6	2.21	3.9	3 x 50	1600	4
145	2	162	135	214	178	291	259	8	2.21	3.9	3 x 63	1600	4
150	2	162	162	214	214	291	291	8	2.21	3.9	3 x 63	1600	4
165	2	196	162	259	214	354	291	10	2.21	3.9	3 x 63	1600	4
180	2	196	196	259	259	354	354	10	2.21	3.9	3 x 63	1600	4
<b>High Efficiency with High External Static Pressure</b>													
085	2	80	80	106	106	144	144	6	2.21	3.9	3 x 50	1600	4
100	2	95	95	125	125	180	180	6	2.21	3.9	3 x 50	1600	4
115	2	111	111	146	146	217	217	8	2.21	3.9	3 x 50	1600	4
125	2	135	135	178	178	259	259	8	2.21	3.9	3 x 50	1600	4
145	2	162	135	214	178	291	259	10	2.21	3.9	3 x 63	1600	4
150	2	162	162	214	214	291	291	10	2.21	3.9	3 x 63	1600	4

**Notes:**

1. Maximum Compressors FLA + all fans FLA + control Amps
2. Starting Amps of the circuit with the largest compressor circuit including fans plus RLA of the second circuit including fans + control Amps
3. Maximum FLA per compressor.
4. Compressors starting Amps, Star delta start.
5. Compressor Power Factor



# Mechanical Specifications

## General

Units are leak and pressure tested at 35 bar high side, 19 bar low side, then evacuated and charged. Packaged units ship with a full operating charge of oil and refrigerant.

Unit panels, structural elements and control boxes are constructed of galvanized steel and mounted on a welded structural steel base. Unit panels and control boxes are finished with powder paint RAL 9002.

## Evaporator

The evaporator is a tube-in-shell heat exchanger design with internally finned copper tubes roller expanded into the tube sheet. The evaporator is designed, tested and stamped in accordance with the appropriate pressure vessel code approval for a refrigerant side working pressure of 32 bar. The evaporator is designed for a waterside working pressure of 16 bar. Water connections are Victaulic. The evaporator has one water pass with a series of internal baffles. Each shell includes a vent, a drain and fittings for temperature control sensors and is insulated with 3/4 -inch Armaflex II or equal insulation (K=0.26). Heat tape is provided to protect the evaporator from freezing at ambient temperatures down to -18°C.

## Condenser and Fans

Air-cooled condenser coils have aluminum fins mechanically bonded to internally finned seamless copper tubing. The condenser coil has an integral subcooling circuit. Condensers are factory leak tested at 35 bar. Direct-drive vertical discharge air foil ZephyrWing condenser fans are dynamically balanced. Three-phase condenser fans motors with permanently lubricated ball bearing are provided. Standard units will start and operate between of 4°C (39 F) to the maximum possible ambient of the selected unit.

## Heat Recovery Exchanger

The Heat Recovery Exchanger is a brazed plate exchanger (one for Total Heat Recovery (THR) units and two for Partial Heat Recovery (PHR) units), connected to the compressor discharge line, and sized to recover up to 80% of the nominal cooling capacity for THR units and 25% of the nominal cooling capacity for PHR units.

The Heat Recovery Exchanger is not approved for Food and Beverage applications. The use of a primary loop is mandatory.

### Note:

- THR and PHR exchangers are freeze protected through a resistance.

## Compressor and Lube Oil System

The rotary screw compressor is semi-hermetic, direct drive, 3000 rpm, with capacity control slide valve, a load/unload valve, rolling element bearings, differential refrigerant pressure oil pump, oil filter and oil heater. The motor is a suction gas-cooled, hermetically sealed, two-pole squirrel cage induction motor. Oil separator devices are provided separate from the compressor. Check valves in the compressor discharge and lube oil system are provided.

## Refrigeration Circuits

Each unit has two refrigerant circuits, with one rotary screw compressor per circuit. Each refrigerant circuit includes a liquid line shutoff valve, removable core filter drier, charging port and an electronic expansion valve. Fully modulating compressors and electronic expansion valves provide variable capacity modulation over the entire operating range.



# Mechanical Specifications

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## Unit Controls

All unit controls are housed in a weather-tight enclosure with hinged doors to allow for customer connection of power wiring and remote interlocks. All controls, including sensors, are factory mounted and tested prior to shipment. All cataloged units comply with EN 60204 and are EMC compatible.

Microcomputer controls provide all control functions including start-up and shut down, leaving chilled water temperature control, compressor and electronic expansion valve modulation, fan sequencing, anti-recycle logic, automatic lead/lag compressor starting and load limiting.

The unit control module, utilizing Adaptive Control™ microprocessor, automatically takes action to avoid unit shutdown due to abnormal operating conditions associated with low refrigerant temperature, high condensing temperature and motor current overload. Should the abnormal operating condition continue until a protective limit is violated, the unit will be shut down. Unit protective functions include loss of chilled water flow, evaporator freezing, loss of refrigerant, low refrigerant pressure, high refrigerant pressure, reverse rotation, compressor starting and running over current, phase loss, phase imbalance, phase reversal, and loss of oil flow.

A menu driven digital display indicates over 60 operating data points including chilled water setpoint, current limit setpoint, leaving chilled water temperature, evaporator and condenser refrigerant pressures and temperatures. Over 60 diagnostic checks are made and displayed when a problem is detected. The digital display can be read and advanced on the unit without opening any control panel doors.

Standard power connections include main three phase power.

## Specificity of Total Heat Recovery units

An additional control module is present on Heat Recovery units. Its role is to control the fans to maintain the saturated condensing temperature based on the hot water setpoint and also a 3-way valve that allows to partially bypass the condenser when inlet water temperature is low, thus ensuring the correct operation of the unit.

Note: the use of a 3-way valve can be avoided by using a variable speed pump. The additional control module can provide a 2-10V signal to control it. This solution allows better control of the outlet water temperature and limits power consumption of the pump.

## Starters

Starters are housed in a weathertight enclosure with removable cover plate to allow for customer connection of power wiring. Wye Delta closed transition starters are standard on all RTAD units.



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Quality Management  
System Approval



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Literature Order Number      RLC-PRC026-E4

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Date      1205

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