

# Cascade system control

Maximum 8 units can be combined to reach maximum 128kw



# Mono product parameters



Model name	THMLd-4D/3FBp-A			THMLd-6D/3FBp-A			THMLd-8D/3FBp-A			THMLd-10D/3FBp-A			THMLd-12D/3FBp-A			THMLd-14D/3FBp-A			THMLd-16D/3FBp-A			THMLd-12S/9(6)FBp-A			THMLd-14S/9(6)FBp-A			THMLd-16S/9(6)FBp-A			
	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	Capacity	Rated input	COP	
Power supply	220-240/1/50									220-240/1/50									380-415/3/50												
Heating A7W35	Capacity	kW	4.20	6.20	8.00	9.50	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	
	Rated input	kW	0.83	1.27	1.60	2.07	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	2.50	3.05	3.40	
	COP		5.09	4.90	5.00	4.60	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	4.80	4.59	4.41	
Heating A7W45	Capacity	kW	4.30	6.20	8.00	9.50	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	
	Rated input	kW	1.10	1.63	2.13	2.59	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	3.00	3.60	4.30	
	COP		3.90	3.80	3.76	3.68	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	4.00	3.89	3.49	
Heating A7W55	Capacity	kW	4.40	6.00	8.00	9.50	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	12.00	14.00	15.00	
	Rated input	kW	1.40	1.94	2.50	3.06	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	3.76	4.52	5.20	
	COP		3.15	3.10	3.20	3.10	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	3.19	3.10	2.88	
Cooling A35W18	Capacity	kW	4.50	6.00	8.30	10.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	12.00	14.00	16.00	
	Rated input	kW	0.90	1.34	1.66	2.17	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	2.65	3.30	4.20	
	EER		5.00	4.49	5.00	4.60	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	4.53	4.24	3.81	
Cooling A35W7	Capacity	kW	4.50	6.00	7.20	8.80	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	11.60	12.95	14.00	
	Rated input	kW	1.32	2.00	2.18	2.84	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	3.85	4.55	5.20	
	EER		3.40	3.00	3.30	3.10	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	3.01	2.85	2.69	
SCOP <sup>2</sup>	LWT at 35°C		5.03	4.85	5.33	4.83	4.75	4.63	4.53	4.74	4.65	4.52	4.74	4.65	4.52	4.74	4.65	4.52	4.74	4.65	4.52	4.74	4.65	4.52	4.74	4.65	4.52	4.74	4.65	4.52	
	LWT at 55°C		3.81	3.77	3.88	3.85	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	3.78	3.73	3.68	
Seasonal space heating energy efficiency class <sup>3</sup>	LWT at 35°C	A+++											A+++					A+++													
	LWT at 55°C	A++			A++			A+++			A+++			A++			A++			A++			A++			A++			A++		
Electric heater power input	kW	3									9(6)																				
Compressor	Type	Twin rotary DC inverter																													
	Motor type	Brushless DC motor																													
Outdoor fan	Number of fans	1																													
	Throttle type	Electronic expansion valve																													
Air side heat exchanger	Type	Finned tube																													
Water side heat exchanger	Type	Plate type																													
Refrigerant	Type	R290																													
	Factory charge	kg	0.74	0.74	1.10	1.10	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25		
Sound power Level <sup>4</sup>	dB	56	59	60	61	64	66	68	64	66	68	64	66	68	64	66	68	64	66	68	64	66	68	64	66	68	64	66	68		
Sound pressure level <sup>4</sup>	dB	44	46	48	49	51	53	55	51	53	55	51	53	55	51	53	55	51	53	55	51	53	55	51	53	55	51	53	55		
Net dimensions (W × H × D)	mm	1220 × 709 × 390																													
Packing dimension (W × H × D)	mm	1315 × 840 × 430																													
Net/Gross weight	kg	76/87	76/87	104/125	104/125	117/138	117/138	117/138	117/138	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150	129/150		
Piping connections	R5/4"																														
Operation range	Cooling	°C	-5 ~ 46																												
	Heating	°C	-25 ~ 35																												
	DHW	°C	-25 ~ 43																												
Water outlet	Cooling	°C	5 ~ 20																												
	Heating	°C	25 ~ 80																												
	DHW	°C	20 ~ 70																												

Abbreviations:

DHW: Domestic hot water  
LWT: Leaving water temperature

Notes:

1. Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02.
2. Seasonal space heating energy efficiency class tests in average climate conditions.
3. Sound power test condition : EN12102- 1
4. Sound pressure level is the maximum value tested under the two conditions of A7W35 and A35W18.

# TCL

## R290 Tri-thermal ATW Heat Pump

- Environmental Protection
- Energy Saving
- 3-zone Control
- Update Online
- Strong Heating
- Cascade Control
- Remote monitoring
- Easy to Maintenance



Seasonal space heating energy efficiency ηs average up to A+++ at 35°C  
ηs average up to A++ at 55°C

80°C  
The maximum of leaving water temperature is 80°C

# TCL

GD TCL INTELLIGENT HEATING & VENTILATING EQUIPMENT CO.,LTD.  
Address: No.7 Yuanlin Road, Nantou, Zhongshan, Guangdong, PR China  
Web : cac.tcl.com E-mail : hvac@tcl.com

in TCL CAC f TCL CAC Global X TCL CAC H VAC-TCL T V L-CAC





## Versatility

### Heating, cooling, hot water with complet solutions, to the creative life

Tri-thermal is an integrated system that provides space heating and cooling as well as domestic hot water, offering a complete, all-year-round solution which can remove the need for traditional gas or oil boilers, or work together with them.



#### Diversified Heating

- Heating by floor heating, radiator and fan coil unit
- Safe and comfort



#### Domestic hot water

- Provid DHW in time ,heating quickly
- The maximum of leaving water temperature is 70°C



#### Compact fan coil unit cooling

- Ultra-thin body, comfortable and beautiful
- Multi-angle and all-directional wind supply



#### Solar Kit

- Work only & work with heat pump for DHW



#### Auxiliary Heat Source

- Link with traditional gas boilers, industrial hot water and electric auxiliary heating



## High Efficient and Energy Saving DC inverter system



GMCC compressor  
High efficiency,the highest SCOP is 5.33



Brushless DC Motor  
Realize stepless speed regulation



Precise flow feedback  
Energy saving and comfort temperatures

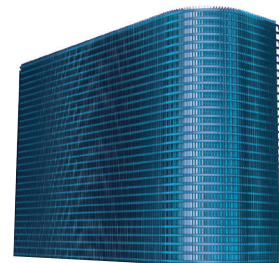
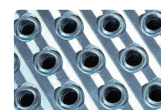
## High efficient L-type heat exchanger (Self made)

Adopting advanced 3-D dynamic analysis and cross-flow path design, air volume increased 8%, heat exchange more efficient.

- Internal thread heat transfer pipe
- Using hydrophilic anti-corrosive fins, heat transfer efficiency increased 6%.

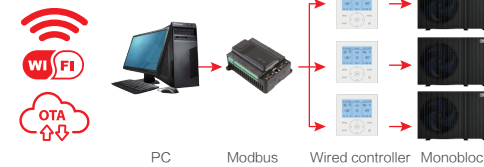
#### Corrugated fin

- Applying inner thread tube with 10% higher heat exchange efficiency.



## Intelligent control Update Online

- Easy to update the software
- Convenient to define the system connections
- Remotely monitor the heat pump



## Wired Controller

- Dual wire controller control
- 12 multiple languages
- Build in room temperature sensor, could be installed on wall
- Two colors optional (Black and White)



## APP Controller

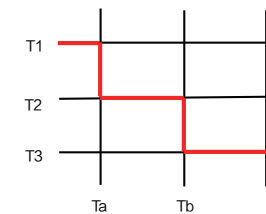
- Modes adjustment
- Power consumption record
- Sanitary hot water priority mode
- Unit status & fault information display
- Temp, Pump flow rate, timer setting, etc
- Capacity, power consumption and COP



Set Ts(°C)

Heating mode  
Cooling mode

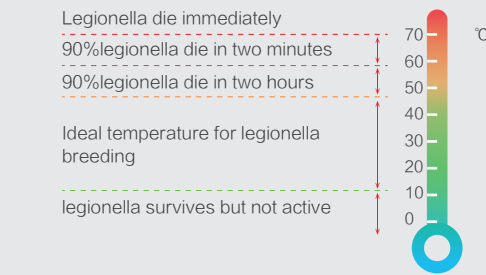
Ambient Ta (°C)



## Safe and Comfort

### Anti-bacteria mode

- Designed to gurrantee our safe and health.
- It works by heating the water to about 70 degrees.



### Provide DHW in time

- Water pump  
Running smoothly



- Electrical heater  
Heat DHW quickly  
As a back-up facility for inclement weather

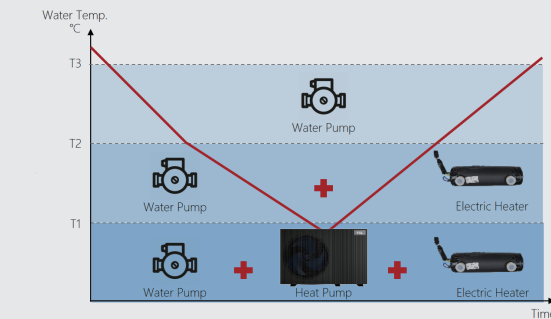


- Solar kit heater  
Energy saving



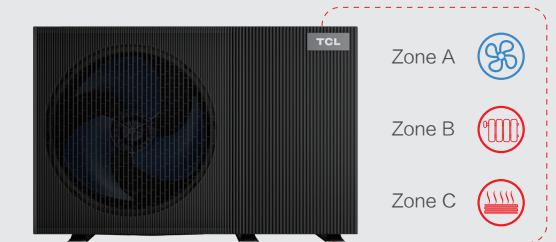
### 3 level freeze protection

- When the temp is lower than T3, water pump on.
- When the temp is lower than T2, electric auxiliary heat on.
- When the temp is lower than T1, compressor on.
- T3 > T2 > T1



### 3-zone control

- Connect max 3 zones at the same time and achieve different temperatures control in different zones.



## Natural environmental friendly refrigerant.

The GWP of R290 is 3.  
Good performance in cold environment  
Maintain higher temperature in the water system, reaching 80°C

R290

## Multiple certifications



## Hermetic design

The electric control part of the unit has explosion-proof treatment. Let users feel more at ease.



## Holiday mode

Running in heating mode with low setting temperature(20-25°C) during the holiday period avoid freezing breakage