



**New Cling New Future**  
**Cling AC, made for mobile comfort**



Zhengzhou Kelin Motor Vehicle Air Conditioning Co., Ltd.

LIMITED SPACE INFINITE CARE

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Zhengzhou Kelin Motor Vehicle Air Conditioning Co.,Ltd. (hereinafter referred to as CLING A/C) was established in September 2003. It mainly develops, produces and sells high-end bus air conditioning systems and related parts. It covers an area of more than 50,000 square meters, has four automatic assembly production lines and four core production lines, and has the production capacity of 100,000 sets of vehicle air conditioning systems per year. It is an integrated air conditioning product and service provider in high-end bus air conditioning industry.



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CLING A/C has a variety of high-end bus air conditioning products such as rooftop type, built-in type, back-mounted type, all-electric type and independent type, which fully cover 6~25m passenger transport, bus, tourism, school bus, new energy and other market segments to meet the demands of different customers for products. CLING A/C is one of the first excellent enterprises that obtain the national industrial product production license. Since its establishment, CLING A/C has developed rapidly by an annual growth rate of more than 10%. At present, it has a market share of more than 500,000 sets .

CLING A/C has successively passed TS 16949 quality system and EU E-MARK product certification. The durability and reliability oriented design concept is a powerful guarantee for excellent performance in the market, thus winning the wide trust of customers. The products are best-selling in more than 130 countries and regions around the world, and more than 2 million passengers enjoy the cooling and comfort brought by CLING A/C every day.

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**ENERGY-SAVING**

Fine control of electronic expansion valve

Taking into consideration of the temperature difference inside and outside the vehicle, the best energy-saving effect achieved by accurately adjusting the refrigerant flow rate



**COMFORT**

Fan noise reduction

With Evaporator and Condenser fan motor and blade optimization technology, the fans with low noise developed, to reduce noise and improve comfort



**ENVIRONMENTAL PROTECTION**

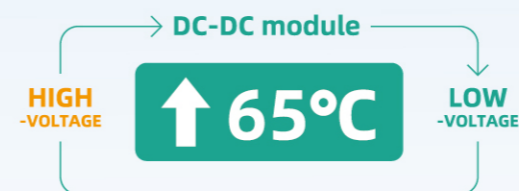
Strict environmental protection requirements

All types of parts selected according to strict environmental protection standards, and tested as per the environmental standard well above the industrial standards



**SAFETY**

Low voltage power supply protection technology



The DC-DC module converts the high-voltage power supply on the vehicle into low-voltage power supply for protection against over-voltage, over-current and short-circuit to ensure reliable operation at the ambient temperature 65°C



**LIGHTWEIGHT**

All-DC variable-frequency technology



The weight decreases from 44 kg of compressor and 15 kg of frequency converter to 7.5 kg, and the weight of the complete air conditioning system decreases by more than 30% compared with AC product

With reference to international advanced standards, CLING A/C has, focusing on “high precision” innovation, with the help of full platform, multi-channel and powerful resources, established a super modern vehicle A/C test and trial production center in China.

The center is mainly engaged in tests and trial production, and performed design and development, quality control and supplier cooperation. It has nearly 200 sets of various high-end test and detection equipment, and it is capable of carrying out key parts test and the complete set test for vehicle air conditioner, as well as capable of analyzing and evaluating vehicle air conditioner, structure measurement, performance, safety, durability, noise, vibration, EMC and other sub-items.



**Test and Trial Production**



NVH Noise Test Room



Enthalpy Difference Laboratory



Enthalpy Difference Laboratory



Core & Interior Material Test Room



Physicochemical Test Room



Environmental Test Room



Vibration Test Room



Mechanical Performance Test Room

CLING A/C has four automatic assembly production lines, three heat exchanger production lines and an Italian imported fan automatic production line, with an annual production capacity of 100,000 sets of air conditioners.



NOCOLOK brazing technology



Non-shrinkage pipe expansion



Ultrasonic cleaning technology



High-efficiency aluminum evaporator core



**Production Capacity**

**New Process**

## CO<sub>2</sub> Heat Pump -CEZDD Series



Low temperature CO<sub>2</sub> HP is suitable for 8~13m buses and passenger vehicles.

### Technical Breakthrough

The CEZDD series of low-temperature heat pumps and high-efficiency cooling and heating air conditioners use carbon dioxide refrigerant.

CEZDD Heat Pump CO<sub>2</sub> is an ultra-low temperature, zero carbon emission pure electric heat pump air conditioning unit that uses carbon dioxide refrigerant. The use of pure natural refrigerant CO<sub>2</sub> makes it one of the most environmentally friendly air conditioner for electric buses. It not only meets the internal cooling needs of electric buses, but also serves as an efficient heat source in cold winter to meet the low-temperature heating needs of extreme weather. Especially in extremely cold weather, it can meet the heating needs of buses and has extremely high heat pump heating efficiency. CEZDD series ultra-low temperature heat pump air conditioning, integrated with CO<sub>2</sub> compressor, optional with driver's defroster, heating module, cooling module, and plate exchange to meet different personalized needs. Its excellent heating performance significantly improves driving distance in winter.

### Technical Parameters

Model	CEZDD-04	CEZDD-06
Cooling Capacity (kcal/h)	24000	30000
Heating Capacity (kcal/h)	33000	35000
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	8000(4pcs)	10000(5pcs)
Compressor Displacement(m <sup>3</sup> /H)	7.3	10.9
Refrigerant	R744(CO <sub>2</sub> )	R744(CO <sub>2</sub> )
Max Power Consumption (A)	85	95
Size (mm) LxWxH	3000*2000*345	3500*2000*345
Application	8-10m	11-13m

### Product Advantages

#### 1. Environmentally friendly

Using natural and environmentally friendly CO<sub>2</sub> refrigerant, (ODP=0, GWP=1) has good safety, non-toxic, and nonflammable.

#### 2. Stronger environmental adaptability

The fully enclosed special frequency conversion compressor is used to adapt to lower ambient temperature, and can operate in the ambient temperature range of -30°C~ 40°C .

#### 3. High energy efficiency

At an ambient temperature of -10°C, the COP of the heating efficiency is about 30% .

#### 4. More Reliable

Using safe and reliable pressure relief valve, combined with pressure control, to achieve multi-level protection for system product safety.

#### 5. More intelligent

Independently developed heat pump air conditioning control system, combined with product characteristics to achieve high efficiency and safety dual control, system defrost control, with monitoring and predictive operation and maintenance capabilities.

#### 6. High performance

High pressure resistant specialized heat exchanger, matched with reliable imported evaporative condensing fan, improves system energy efficiency and makes system operation more stable .

## LEZDS-J Low Temperature Heat Pump Electric Air Conditioner Series



Electric low temperature heat pump air conditioning system is applicable to battery electric bus, hybrid bus and fuel cell bus to realize reliable operation in the environment at ultra-low temperature and improve heating efficiency at low temperature.

### Product Advantages

1. It is capable of normal and stable operation at ambient temperature of -25°C~50°C.
2. The low temperature heat pump increases the heating capacity of the system under operating condition at low temperature and reduces power consumption by more than 50% compared with PTC.
3. Pressure sensor coupled electronic expansion valve realizes the precise control of system refrigerant, natural temperature transition, energy saving and comfort.
4. Remote and real-time monitoring of product operating status reduces the management cost.

### Technical Parameters

Model	LEZDS-04-J	LEZDS-06-J
Cooling Capacity (kcal/h)	24000	32000
Heating Capacity (kcal/h)	22000	30000
Battery cooling capacity - driving/charging (kW)	5/8	5/8
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	6000(6pcs)
Condenser Airflow (m <sup>3</sup> /h)	8000(4pcs)	10000(5pcs)
Refrigerant	R410A	R410A
Weight (kg)	260	315
Size (mm) LxWxH	2750*2000*260	3250*2000*260
Application	8-9m	10-12m

## EZDD-J/EZDS-J Heat Pump Electric Air Conditioner Series



Integrated rooftop air conditioner and battery thermal management system is suitable for battery electric bus, hybrid bus and fuel cell bus with liquid-cooled battery configuration, while meeting the requirements of air conditioner and battery for cooling/heating.

### Product Advantages

1. The battery air conditioner and the vehicle air conditioner is integrated, resulting into the cost reduction of 30% and the weight reduction of 20%.
2. The requirements of air conditioning heating and battery cooling in low temperature environment are met.
3. Two-way electronic expansion valve is precisely regulated, coupled with PID intelligent control, and evenly distributes the cooling capacity inside the vehicle and at battery side.

### Technical Parameters

Model	EZDD-04-J	EZDS-04-J	EZDS-05-J	EZDS-06-J	EZDS-07-J
Cooling Capacity (kcal/h)	13000	24000	28000	32000	38000
Heating Capacity (kcal/h)	11000	22000	26000	30000	36000
Battery cooling capacity - driving/charging(kW)	5/8	5/8	5/8	5/8	5/8
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	4000(4pcs)	6000(6pcs)	6000(6pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	8000(4pcs)	8000(4pcs)	10000(5pcs)	10000(5pcs)
Refrigerant	R407C	R407C	R407C	R407C	R407C
Weight (kg)	180	245	285	315	335
Size (mm) LxWxH	2700*1630*240	2750*2000*260	3000*2000*260	3250*2000*260	3250*2000*260
Application	6-7m	8-9m	9-10m	10-12m	13m

## EZDD/EZDS Heat Pump Electric Air Conditioner Series



Full DC inverter electric air conditioner, applicable to 6~13m battery electric bus, hybrid bus and fuel cell bus.

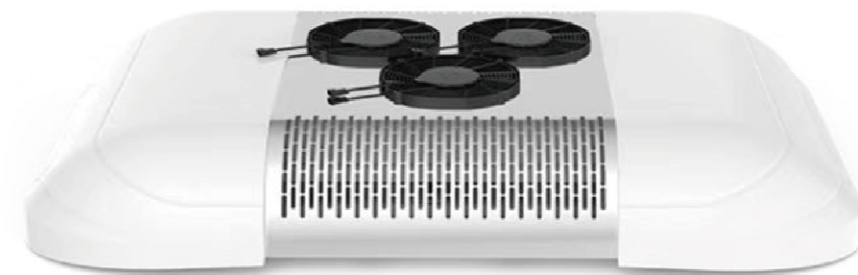
### Product Advantages

1. The parts have a protection grade of IP67, and are dust-proof, waterproof, and free of damage due to soaking in water.
2. V-shaped vibration damping and noise reduction result in low noise and comfortable environment.
3. PWM stepless speed regulation coupled electronic expansion valve is precisely regulated, to cause natural temperature transition, energy saving and comfort.

### Technical Parameters

Model	EZDD-04	EZDS-04	EZDS-05	EZDS-06	EZDS-07
Cooling Capacity (kcal/h)	13000	24000	28000	32000	38000
Heating Capacity (kcal/h)	11000	22000	26000	30000	36000
HV platform (V)	400-750	400-750	400-750	400-750	400-750
LV platform (V)	24	24	24	24	24
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	4000(4pcs)	6000(6pcs)	6000(6pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	8000(4pcs)	8000(4pcs)	10000(5pcs)	10000(5pcs)
Refrigerant	R407c	R407c	R407c	R407c	R407c
Weight (kg)	180	245	285	315	335
Size (mm) LxWxH	2700*1630*240	2500*1920*285	2750*1920*285	3000*1920*285	3250*2000*265
Application	6-7m	8-9m	9-10m	10-12m	13m

## EDDR Independent Battery Thermal Management Series



Battery thermal management system is applicable to battery cooling/heating of battery electric bus, passenger vehicle and special vehicle, to maintain high performance and long life of battery.

### Product Advantages

1. All DC inverter compressor features high efficiency and energy saving.
2. PID variable frequency control and condenser fan PWM stepless speed regulation provide constant temperature environment for battery.
3. EMC performance meets the level III of the national standard to avoid harm to personnel and equipment caused by electromagnetic radiation.

### Technical Parameters

Model	EDDR-02	EDDR-03	EDDR-04
Cooling capacity	5kw	8kw	13kw
HP power supply	DC400V-DC750V	DC400V-DC750 V	DC400V-DC750 V
LP power supply	DC24V(18V-30V)	DC24V (18V-30V)	DC24V (18V-30V)
Weight	80kg	85kg	90kg
Size (mm) LxWxH	1300*1920*256	1300*1920*256	1300*1920*256
Control power	DC24V on/off signal	DC24V on/off signal	DC24V on/off signal
LP power source	DC-DC(standard configuration)	DC-DC(standard configuration)	DC-DC(standard configuration)
Pump	As per customer requirement	As per customer requirement	As per customer requirement
Refrigerant	R134a	R407c	R407c
Coolant	50%VW Ethylene glycol aqueous solution	50%VW Ethylene glycol aqueous solution	50%VW Ethylene glycol aqueous solution
Pipe	As per customer requirement	As per customer requirement	As per customer requirement
Protection level	IP54	IP54	IP54



## PZD Engine Bus Air Conditioner Series



Front windward air conditioner is applicable to 6~12m buses and passenger vehicles.

### Product Advantages

1. High microchannel heat exchange efficiency.
2. EMC performance meets the level II of the national standard to avoid harm to personnel and equipment caused by electromagnetic radiation.
3. Compressor capable of energy saving regulation.
4. Environment adaptive energy-saving speed regulating fan.
5. Compact size.
6. Lightweight.
7. Ultra-high performance-cost ratio.

### Technical Parameters

Model	PZD-I	PZD-III	PZD-IV	PZD-V	PZD-VI	PZD-VII
Cooling Capacity (kcal/h)	14000	18000	22000	24000	28000	32000
MAX Max Power Consumption (A)	45	60	60	60	85	95
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	4000(4pcs)	4000(4pcs)	4000(4pcs)	6000(6pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	4000(2pcs)	6000(3pcs)	6000(3pcs)	6000(3pcs)	8000(4pcs)	10000(5pcs)
Compressor Displacement(CC)	310	310	400	550	550	650
Refrigerant	R134a	R134a	R134a	R134a	R134a	R134a
Weight (kg)	140	140	140	140	200	235
Size (mm) LxWxH	2388*1710*205	2590*1715*205	2590*1715*205	2590*1715*205	3010*1902*225	3285*1902*225
Application	6-7m	7-8m	8-9m	9-10m	10-11m	11-13m

## DD Engine Bus Air Conditioner Series



There are six products, DD-01~DD-07, which are suitable for the models such as 6-14m passenger transport, tourism and group vehicles.

### Product Advantages

1. With NVH simulation analysis, the wind field and the flow field are greatly optimized. The unit has powerful cooling capability for the complete vehicle, and its NVH performance and cooling capacity surpass the international first-class competitive products.
2. The unprecedented structural reconstruction and mechanical analysis strives to be extremely flexible, without any to spare, and with more than 30% lighter than similar products.
3. The "customer-centered" cultural concept is integrated into product design, so that reduces installation, repair and maintenance working hours by more than 50%, and successfully realizes quick assembly, disassembly and repair by one person.
4. The filter material adopts the composite double-layer structure (frame and meltblown layer) and the electrostatic electret treatment process, to effectively filter PM2.5 particulate matter, and add strong barrier for the safety of public travel environment.

### Technical Parameters

Model	DD-01	DD-02	DD-04	DD-05	DD-06	DD-07
Cooling Capacity (kcal/h)	14000	16000	24000	28000	32000	38000
Max Power Consumption (A)	45	50	63	65	85	103
Evaporator Airflow (m <sup>3</sup> /h)	3200(4pcs)	3200(4pcs)	4000(4pcs)	5000(6pcs)	6000(6pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	6000(3pcs)	6000(3pcs)	8000(4pcs)	10000(5pcs)	12000(6pcs)
Compressor Displacement(cc)	313/330	380	558	558	647	744
Refrigerant	R134a	R134a	R134a	R134a	R134a	R134a
Weight (kg)	104	113	140	170	180	200
Size (mm) LxWxH	2200*1840*210	2200*1840*210	2750*1840*210	3360*1840*210	3360*1840*210	3560*1840*210
Application	6-7m	7-7.7m	8-9m	9-10m	10-12m	12-14m

## CM160 Rooftop Narrow Engine Bus Air Conditioner



Specially designed for 6m narrow-body minibuses such as JEEPNEY and PUV, it features refined appearance, reliable performance, easy maintenance, light weight and environmental protection, mainly for the Southeast Asian market.

### Product Advantages

**Precise** - It is suitable for 6m minibus and redefines CLING's idea on small air conditioner.

**Appealing** - 1360:2200 width-to-length ratio, 0.618 golden section ratio, and ultra-streamlined body, create a new styling language revolution

**Light** - It paves the way for subsequent versatility, greatly reduce the weight of the air conditioner to 90 kg, and reduce the package size by 30% compared with the previous generation PZD-1 products.

**Simple** - The cooling capacity and strength of the air conditioner are kept at high level, and 90 kg weight provides the cooling capacity of previous generation 139 kg products; to optimize the wind field and the flow field of the air conditioner and reduce the heat loss in the process.

### Technical Parameters

Model	CM160
Cooling Capacity (kcal/h)	12000
Max Power Consumption (A)	50
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)
Condenser Airflow (m <sup>3</sup> /h)	4000(2pcs)
Compressor Displacement(CC)	340
Refrigerant	R134a
Weight (kg)	90
Size (mm) LxWxH	2200*1360*210
Application	Jeepney

## CM350 Engine Bus Air Conditioner



It is suitable for 11-13m engine buses, and features light weight and convenient maintenance.

### Product Advantages

- 1.Ultra-lightweight design.
- 2.Quick replacement design of evaporator blower,condenser fan, dryer tank and other components.
- 3.Overall design effectively improves the fan efficiency and reduces the airflow interference between fans.

### Technical Parameters

Model	CM350
Cooling Capacity (kcal/h)	32000
Max Power Consumption (A)	95
Evaporator Airflow (m <sup>3</sup> /h)	6000(6pcs)
Condenser Airflow (m <sup>3</sup> /h)	10000(5pcs)
Compressor Displacement(CC)	647
Refrigerant	R134a
Weight (kg)	170
Size (mm) LxWxH	3350*1720*250
Application	11-13m

### BFFD Engine Bus Air Conditioner Series



Copper tube aluminum fin is suitable for 6~14m buses and passenger vehicles.

#### Product Advantages

1. LFT lightweight realizes 30% lighter than aluminum alloy with the same strength.
2. EMC performance meets the level II of the national standard to avoid harm to personnel and equipment caused by electromagnetic radiation.
3. Compressor capable of energy saving regulation.
4. Environment adaptive energy-saving speed regulating fan.
5. Simple and reliable structure.
6. Convenient operation and maintenance.

#### Technical Parameters

Model	BFFD-04	BFFD-05	BFFD-06
Cooling Capacity (kcal/h)	24000	28000	32000
Max Power Consumption (A)	75	85	95
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	6000(6pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	8000(4pcs)	10000(5pcs)
Compressor Displacement(CC)	470	550	650
Refrigerant	R134a	R134a	R134a
Weight (kg)	170	215	255
Size (mm) LxWxH	3335*1820*195	3804*1902*195	4435*1902*195
Application	8-9m	10-11m	12-13m

### SDD Engine Bus Air Conditioner Series



Double return air conditioner is suitable for 6~14m buses and passenger vehicles.

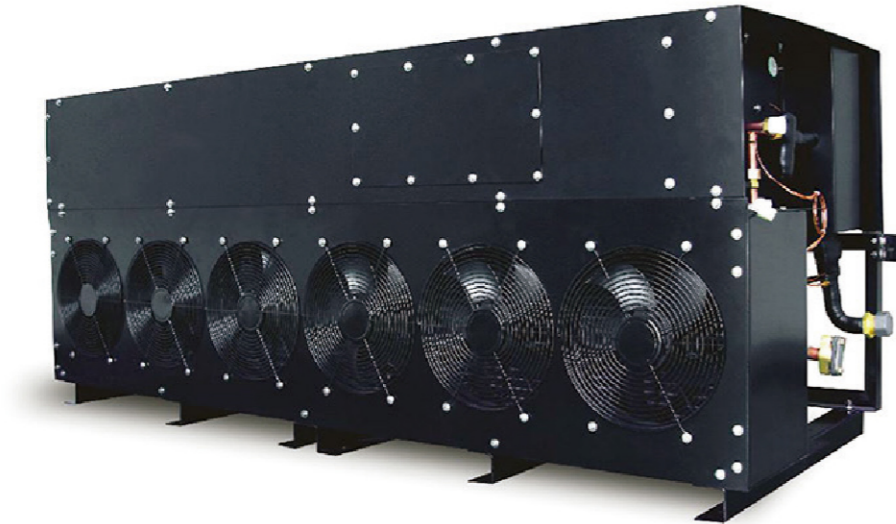
#### Product Advantages

1. Integration of cooling and heating.
2. EMC performance meets the level II of the national standard to avoid harm to personnel and equipment caused by electromagnetic radiation.
3. Compressor capable of energy saving regulation.
4. Environment adaptive energy-saving speed regulating fan.
5. Compact size and light weight.
6. Streamlined and beautiful appearance.
7. Convenient maintenance.

#### Technical Parameters

Model	SDD-03	SDD-04	SDD-05	SDD-06	SDD-07
Cooling Capacity (kcal/h)	22000	24000	28000	32000	34000
Max Power Consumption (A)	75	75	80	100	110
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	4000(4pcs)	6000(6pcs)	8000(8pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	6000(3pcs)	8000(4pcs)	10000(5pcs)	12000(6pcs)
Compressor Displacement(CC)	400	550	550	650	755
Refrigerant	R134a	R134a	R134a	R134a	R134a
Weight (kg)	156	156	206	230	233
Size (mm) LxWxH	2500*2000*220	2500*2000*220	2750*2000*220	3000*2000*220	3000*2000*220
Application	6-7m	8-9m	10-11m	12-13m	13-14m

## GZHD/EZHS Back-mounted Air Conditioner Series



Back-mounted air conditioner is applicable for double decker or large fuel vehicles or battery electric vehicles.

### Product Advantages

1. Upper and lower air supply, uniformly distributed.
2. Large cooling capacity.
3. Small volume.
4. Convenient maintenance.

### Technical Parameters

Model	GZHD-04	GZHD-06	GZHD-08	EZHS-08
Cooling Capacity (kcal/h)	24000	32000	48000	52000
Heating Capacity (kcal/h)	/	/	/	50000
Max Power Consumption (A)	63	65	85	103
Evaporator Airflow (m <sup>3</sup> /h)	4000(4pcs)	7000(6pcs)	12000(8pcs)	10000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	6000(3pcs)	8000(4pcs)	10000(5pcs)	12000(6pcs)
Compressor Displacement(CC)	420	650	830	/
Refrigerant	R134a	R134a	R134a	R407c
Size (mm) LxWxH	2000*580*340	2240*670*480	2000*750*1230	2000*765*1187
Application	8-9m	10-12m	12-14m	10-12m

## FFND Built-in Air Conditioner Series



High-end business vehicle built-in air conditioner is suitable for passenger transportation, business models and school buses below 7 meters.

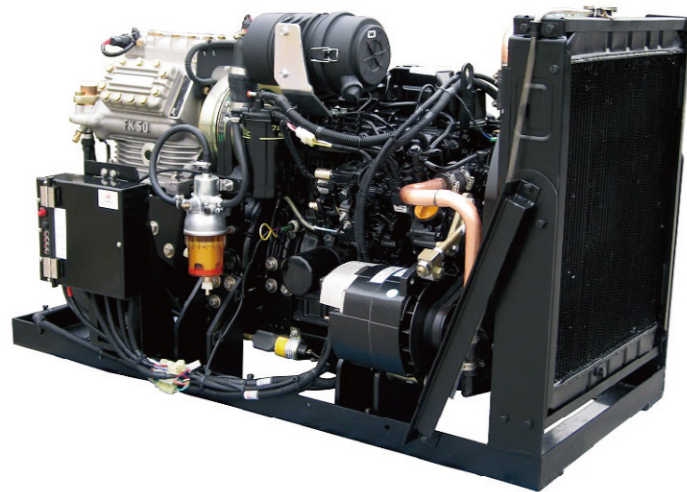
### Product Advantages

1. Energy saving and high efficiency of double-layer microchannel.
2. Zone temperature comfort control.
3. ABS injection molding lightweight.

### Technical Parameters

Model	FFND-01	FFND-06	FFND-08
Cooling Capacity (kcal/h)	14000	32000	48000
Evaporator Airflow (m <sup>3</sup> /h)	3000(3pcs)	8000(8pcs)	Upper floor 6000(6pcs) Lower floor 3000(3pcs)
Condenser Airflow (m <sup>3</sup> /h)	4500(3pcs)	10000(5pcs)	10000(5pcs)
Compressor Displacement(CC)	310	650	750
Refrigerant	R134a	R134a	R134a
Condensor Size (mm) LxWxH	1096*361*357	Side 855*476*1085 Rear 1951*372*443	1951*443*352
Evaporator Size (mm) LxWxH	1667*629*175	1815*320*200(2pcs)	Up 1468*387*202(2pcs) Bottom 1510*586*261
Application	Coaster/T7	High Decker	High Decker and Double Decker Bus

## DFDD Sub Engine Series



Independent unit air conditioner is applicable to special vehicles that the air conditioner still needs to work during parking, such as airport ferry bus, physical examination bus, etc.

### Product Advantages

1. Independent operation.
2. Zone temperature control.
3. Low noise, low fuel consumption, low emission and high torque engine.
4. Voltage, oil pressure and water temperature alarm safety protection.
5. Active safety protection.
6. Convenient maintenance.

### Technical Parameters

Model	DFDD-05	DFDD-06	DFDD-07
Cooling Capacity (kcal/h)	28000	32000	38000
Evaporator Airflow (m <sup>3</sup> /h)	6000(6pcs)	8000(8pcs)	8000(8pcs)
Condenser Airflow (m <sup>3</sup> /h)	8000(4pcs)	10000(5pcs)	12000(6pcs)
Compressor Displacement(CC)	550	650	750
Size (mm) LxWxH	Rooftop Option	Rooftop Option	Rooftop Option
	DD-05	DD-06	
	SDD-05	SDD-06	DD-07
	BFFD-05	BFFD-06	
Application	9-11m	10-12m	12-14m

## KLDS Radiator Series



The Electric heating radiator is applicable for all types of traditional fuel vehicles in the market or battery electric models with fuel heaters.

### Product Advantages

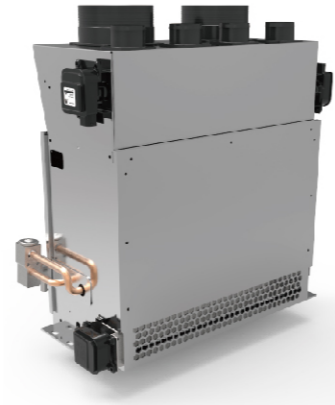
1. Quite & comfy: Noise < 59 dB, an enjoyable environment for passengers.
2. Pleasing appearance: Stream line & round corner design, nice looking, easy installation.
3. Safe & reliable: 20000h long life span fans, IP68 high voltage protection, EMC grade 3, ground wire connection to guarantee safety. E-mark certified.
4. Various options: Various heating capacities available; various configurations for harness direction, fan speed, dimensions.
5. Bespoke design: Air flow simulation analysis, specific designs for users habits.

### Technical Parameters

Model	KLDS-01	KLDS-02	KLDS-03	KLDS-07
Heating (kW)	1.5	2.5	3	7
Air flow (m <sup>3</sup> /h)	170	270	325	750
Blower power consumption(W)	30	36	49	85
Blower (lifespan)	Brushless axil flow fan 20000h			
Speed mode	One shift	Two shifts		
Dimension (mm)	653*165*95	666*178*103	666*178*103	1818*178*103
Weight (kg)	4.3	6.2	6.2	13.6
Protection grade	IP54 as a whole part (IP68 for high-voltage components), EMC-3			
Applicable models	6-12m			

## ECSQ/CSQL Defroster Series

The safety and comfort solutions in the driver zone, equipped with the defroster product with defrosting, face blowing, foot blowing, defrosting and foot blowing, face and foot blowing, inside and outside air intake functions, is suitable for traditional buses and new energy buses.



### Product Advantages

1. Heating power can be adjusted in multi positions, to meet the requirements of heating scenes at different temperature.
2. Integrated temperature and system pressure detection, and exclusive patent compressor protection against liquid impact, bring you a full protection experience.
3. The electromagnetic expansion valve is integrated into the system control. The three-way water valve and the defroster body are integrated and installed to reduce the assembly space.
4. The 20,000h ultra-long service life of the fan, the 60,000 times of actuation of the imported motor actuator, the 200,000 times of cold and hot shocks of the core, and the 100,000 times of opening of the thermal valve, meet the operating demand in the whole life cycle.
5. It has full-function air supply mode such as defrosting, head blowing, foot blowing, defrosting and foot blowing, head and foot blowing, and fresh air, to meet different usage habits of customers.

### Technical Parameters

Model	ECSQ-02	ECSQR-01	CSQL-02
Cooling capacity (kW)	5	/	5
Heating capacity (kW)	3/5/8(adjustable)	5 (10%-100% adjustable)	10(water)
HP power supply (VDC)	400~750	400~750	/
LP power supply (VDC)	24	24	24
Refrigerant	R407C	R407C	R134a
Dimension (mm)	585*270*540	489*188*388	549*267*511
Evaporator air flow (m <sup>3</sup> /h)	700 (adjustable)	700 (adjustable)	700 (adjustable)
Function modes	Defrost Blow head Blow feet Defrost & blow feet Blow head & feet Fresh air	Defrost Internal circulation Mix wind	Defrost Blow head Blow feet Defrost & blow feet Blow head & feet Fresh air

### Key Component



### Key Component - Compressor



### Key Component - Expansion Valve



### Strategic Partners



The company is committed to becoming an integrated air conditioning product and service provider in the high-end passenger vehicle air conditioning industry, and has entered into long-term strategic cooperation partnership with many internationally renowned bus enterprises.

LIMITED SPACE INFINITE CARE.