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## TEST REPORT

### Energy Labeling and Minimum Energy Performance Requirements

NAME OF SAMPLE:

Air Conditioner

APPLICANT:

TCL Air Conditioner (Zhongshan) Co., Ltd.

CLASSIFICATION OF TEST :

Commission Test

**Testing Center of TCL Air Conditioner (Zhongshan) Co., Ltd.**

59 Nantou Road West, Nantou, Zhongshan, Guangdong, China

# TEST REPORT

## The rating and performance tests for Air-conditioner

Applicant Name .....	TCL Air Conditioner (Zhongshan) Co., Ltd.		
Address .....	59 Nantou Road West, Nantou, Zhongshan, Guangdong, China		
Manufacturer .....	TCL Air Conditioner (Zhongshan) Co., Ltd.		
Address .....	59 Nantou Road West, Nantou, Zhongshan, Guangdong, China		
Factory .....	Same as manufacturer		
Product name .....	Air conditioner		
Trademark .....	TCL		
Model / type reference .....	Indoor unit: TAC-12CS/TPXI31; outdoor unit: : TAC-12CU/TPXI31		
Rating and characteristics. ....	230V~ 60Hz		
Date of receipt of test item	2024-09-08	Date(s) of test	2024-09-08
Test specification/Standard .....	SASO 2663:2021 SASO GSO ISO 5151: 2017 ISO 16358-1:2013/Cor 1 :2013/AMD1:2019		
To compile .....	李林海		
audit .....	林艺鸣		
The director of the approval	赖福远		
Date of issue.....	2024-09-08		

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### The rating and performance tests for Air conditioner

Test case verdicts	/
Test case does not apply to the test object	N.A.
Test item does meet the requirement	Pass
Test item does not meet the requirement	Fail
Procedure deviation	N.A.
Non-standard test method	N.A.

#### General remarks

The test results presented in this report relate only to the item tested.

The test report is invalid without the official stamp of TCL.

The test report is invalid without the signatures of Author and Reviewer.

#### Test Method

T1: Within the first 3 minutes after the indoor unit is powered on, start up and run the cooling mode, set the temperature of 30°C, medium speed wind, press the ECO or Sleep button 7 times continuously within 8 seconds, and the buzzer beeps 3 times, then set 25°C;

T1 Half capacity: Within the first 3 minutes after the indoor unit is powered on, start up and run the cooling mode, set the temperature of 30°C, medium speed wind, press the ECO or Sleep button 7 times continuously within 8 seconds, and the buzzer beeps 3 times, then set 26°C;

T3: Within the first 3 minutes after the indoor unit is powered on, start up and run the cooling mode, set the temperature of 30°C, medium speed wind, press the ECO or Sleep button 7 times continuously within 8 seconds, and the buzzer beeps 3 times, then set 28°C;

(Note: If you do not clearly hear the three short beeps of the buzzer, please power off and operate again)

Brief description of the tested sample(s)		
1	Ratings	
	Rated voltage/rated voltage range (V)	230
	Rated frequency (Hz)	60
	Rated input (W)	Cooling(T1 100%Load) : 1008; (T1 50%Load) : 351; Cooling (T3) :1261 Heating: /
	Rated capacity (Btu/h)	Cooling(T1 100%Load): 12000; (T1 50%Load) : 6000; Cooling (T3) : 11100 Heating : /
	Rated current (A)	4.4
2	Type of power supply	<input checked="" type="checkbox"/> Single phase <input type="checkbox"/> Three phase
3	Construction of the unit	<input checked="" type="checkbox"/> Split type <input type="checkbox"/> Single packaged type <input type="checkbox"/> Multi-split type
4	Type of the unit considering if it has the air ducts	<input type="checkbox"/> Spot <input type="checkbox"/> Single-duct <input type="checkbox"/> Double ducts
5	The number of the indoor units if multi-split type	
6	Type of the indoor unit if split type	<input checked="" type="checkbox"/> Wall-mounted
		<input type="checkbox"/> Free-standing
		<input type="checkbox"/> Ceiling-mounted
		<input type="checkbox"/> Other type
7	Type of outdoor unit if split type	<input checked="" type="checkbox"/> Free-standing
		<input type="checkbox"/> Other type
9	Supplementary heating element	<input type="checkbox"/> Yes
		<input checked="" type="checkbox"/> No
10	Operation function	<input type="checkbox"/> Cooling mode and heating mode
		<input checked="" type="checkbox"/> Cooling only
		<input type="checkbox"/> Heating only
11	Type of the refrigerant	As attach page
12	Mass of refrigerant (kg)	As attach page
13	Compressor information	As attach page
14	Compressor stages type	<input type="checkbox"/> Fixed capacity unit
		<input type="checkbox"/> Two-stage capacity unit
		<input type="checkbox"/> Multi-stage capacity unit
		<input checked="" type="checkbox"/> Variable capacity unit



## Photo of nameplate:

<div>TCL</div> <div>SPLIT TYPE AIR CONDITIONER</div> <div>جهاز تكييف هواء حائط</div> <div>INDOOR UNIT</div> <div>مكيف الهواء الداخلي</div>		
Model موديل	TAC-12CS/TPX131	
	Cooling(T1) تبريد(تي ١)	Cooling(T3) تبريد(تي ٣)
Capacity القدرة	12000Btu/h (3.51kW)	11100Btu/h (3.24kW)
Current التيار	4.6A	5.6A
Rated Current (IEC60335) تيار القدرة المقدر	9.0A	9.0A
Power Input مدخل الطاقة	1008W	1261W
Rated Power Input (IEC60335) مدخل القدرة المقدر	1500W	1500W
EER معدل كفاءة الطاقة للتبريد	11.90(Btu/h/W)	8.80(Btu/h/W)
Indoor Air Volume حجم تدفق الهواء	750m³/h	
Maximum allowable pressure الحد الأقصى للضغط		
4.5MPa		
Operating Pressure الضغط	Discharge ضغط الإطلاق	4.5MPa
Pressure الضغط	Suction ضغط الاستشراق	1.9MPa
Noise الضجيج	46dB(A)	
Weight الوزن	11kg	
Rated Voltage/Frequency التردد/الجهد الكهربائي		
230V~ / 60Hz		
Serial number: الرقم التسلسلي		
Made in China صنع في الصين		
شركة محدودة تكييف الهواء TCL(تشونغشان) رقم ٥٩ ، غرب شارع نانفو ، نانفو ، مدينة تشونغشان (الرقم البريدي: ٥٢٨٤٢٧) ، مقاطعة قوانغدونغ ، الصين		

<h1>TCL</h1> <h2>SPLIT TYPE AIR CONDITIONER</h2> <h3>جهاز تكييف هواء حائط</h3> <h3>OUTDOOR UNIT</h3> <h3>مكيف الهواء الخارجي</h3>				
Model موديل	TAC-12CU/TPXI31			
	Cooling(T1) تبريد (تي ١)	Cooling(T3) تبريد (تي ٣)		
Capacity القدرة	12000Btu/h (3.51 kW)	11100Btu/h (3.24kW)		
Current التيار	4.6A	5.6A		
Rated Current (IEC60335) تيار القدرة المقدرة	9.0A	9.0A		
Power Input مدخل الطاقة	1008W	1261W		
Rated Power input (IEC60335) مدخل القدرة المقدرة	1500W	1500W		
EER معدل كفاءة الطاقة للتبريد	11.90(Btu/h/W)	8.80(Btu/h/W)		
Maximum allowable pressure الحد الأقصى للضغط			4.5MPa	
Operating Pressure ضغط التشغيل			4.5MPa	
Suction ضغط الاستشفاف			1.9MPa	
Noise الضجيج	55dB(A)			
Weight الوزن	23kg			
Rated Voltage/Frequency التردد / الجهد الكهربائي				230V~ / 60Hz
Refrigerant/Charge غاز التبريد / الكمية				R410A/0.650kg
Outdoor Unit WaterProof Protection IPX4 درجة الحماية من الماء لمكيف الهواء الخارجي IPX4				
Serial number: الرقم التسلسلي Made in China صنع في الصين				شركة محدودة تكييف الهواء TCL (تشونغشان) رقم ٥٩ ، غرب شارع نانفو ، نانفو ، مدينة تشونغشان (الرقم البريدي: ٥٢٨٤٢٧) ، مقاطعة قوانغدونغ ، الصين



Photo of the tested sample:





Photo of compressor:



## Summary

Test method		Enthalpy test room
COOLING CAPACITY (T1 100% Load)	Total cooling capacity in (Btu/h)	12300
	Air conditioner power consumption in W	1018
	Energy Efficiency Ratio(EER)	12.083
COOLING CAPACITY (T1 50% Load)	Total cooling capacity in (Btu/h)	5990
	Air conditioner power consumption in W	355
	Energy Efficiency Ratio(EER)	16.873
COOLING CAPACITY(T3)	Total cooling capacity in (Btu/h)	11300
	Air conditioner power consumption in W	1275
	Energy Efficiency Ratio(EER)	8.863
HEATING CAPACITY	Total heating capacity in W	/
	Air conditioner power consumption in W	/
	Energy Efficiency Ratio(COP)	/

## Test Result:

☒ Pass

☐ Fail

Note: If failed, it shall be indicated which part it was fail in.





## 1- Sample Information

Brand	TCL			
Model No.	System (if application)		TAC-12CSU/TPXI31	
	Indoor (split system only)		TAC-12CS/ TPXI31	
	Outdoor (split system only)		TAC-12CU/ TPXI31	
Serial number	Indoor: G440N0200100G3400011		Outdoor: G440W0200100G3400012	
Air-Conditioner Type	Split air conditioner			
Air Distribution	Two way (Up-down)			
Type of system	R410A	Mass of Refrigerant (kg)	0.650	
Heat transfer	Cooling only			
Voltage(V)	230			
Phase	1ph			
Hz	60			
Compressor	Type	Variable capacity unit		
	Brand	GMCC		
	Model Name	KSN98D31UEZW31		
	Maker	GMCC ELECTROMECHANICAL (ZHEJIANG) CO. , LTD		
	Country of Origin	China		
Indoor Fan motor	Type	DC motor		
	Brand	Welling		
	Model	ZKFP-45-8-111		
	Maker	Guangdong Welling Motor Manufacturing Co., Ltd		
	Country of Origin	China		
Outdoor Fan motor	Type	DC motor		
	Brand	BROAD-OCEAN		
	Model	ZW511B500037		
	Maker	ZHONGSHAN BROAD-OCEAN MOTOR Co., LTD.		
	Country of Origin	China		
Evaporator	Volume(mm)	705mm x 315 mm x 25.4 mm		
	Type	Hydrophilic & Louver Fin; Innergroover tube type		
Condenser	Volume(mm)	765mm x 510 mm x 23. 2 mm		
	Type	Louver or Corrugated Fin; Innergroover tube type		
Refrigerant	Type: R410A	650g		
Dimensions	Indoor(mm)	Width:910	Width:910	Width:910
	Outdoor(mm)	Width :817	Width :817	Width :817



## 2- Test report

## 2.1 Cooling capacity test (T1 100% Load)

Data to be recorded for Enthalpy cooling capacity tests

Test Duration(min)	90
Power supplied	230V~60HZ
Applied voltage (V)	230.0
Frequency (Hz)	60
Current (A)	4.56
Power Consumption (W)	1018
Power factor	97.0%
Fan speed settings	High speed
Dry bulb temperature, indoor (°C)	27.01
Wet bulb temperature, indoor (°C)	19.00
Dry bulb temperature, outdoor (°C)	35.03
Wet bulb temperature, outdoor (°C)	24.01
Barometer (KPa)	100.75
Indoor cooling capacity (Btu/h)	12300
Sensible cooling capacity (Btu/h)	10750
Latent cooling capacity (dehumidifying capacity) (Btu/h)	1550
Air-static pressure difference across separating partition of calorimeter compartments (Pa)	251
Volume flow rate of air(m3/hr)	755
Cooling capacity (Btu/h)	12300
EER(Btu/h)/W	12.083



## 2.2 Cooling capacity test (T1 50% Load)

Data to be recorded for Enthalpy cooling capacity tests

Test Duration(min)	90
Power supplied	230V~60HZ
Applied voltage (V)	230.0
Frequency (Hz)	60
Current (A)	1.59
Power Consumption (W)	355
Power factor	97.0%
Fan speed settings	High speed
Dry bulb temperature, indoor (°C)	27.01
Wet bulb temperature, indoor (°C)	19.00
Dry bulb temperature, outdoor (°C)	35.03
Wet bulb temperature, outdoor (°C)	24.01
Barometer (KPa)	100.75
Indoor cooling capacity (Btu/h)	5990
Sensible cooling capacity (Btu/h)	5225
Latent cooling capacity (dehumidifying capacity) (Btu/h)	765
Air-static pressure difference across separating partition of calorimeter compartments (Pa)	251
Volume flow rate of air(m3/hr)	755
Cooling capacity (Btu/h)	5990
EER(Btu/h)/W	16.873



## 2.3 Test record of cooling capacity test (T3)

Test Duration(min)	90
Power supplied	230V~60HZ
Applied voltage (V)	230.0
Frequency (Hz)	60
Current (A)	5.71
Power Consumption (W)	1275
Power factor	97.0%
Fan speed settings	High speed
Dry bulb temperature, indoor (°C)	29.01
Wet bulb temperature, indoor (°C)	19.02
Dry bulb temperature, outdoor (°C)	46.00
Wet bulb temperature, outdoor (°C)	24.02
Barometer (KPa)	100.82
Indoor cooling capacity (Btu/h)	11300
Sensible cooling capacity (Btu/h)	9350
Latent cooling capacity (dehumidifying capacity)	1950
Air-static pressure difference across separating partition of calorimeter compartments (Pa)	264
Volume flow rate of air(m3/hr)	756
Cooling capacity (Btu/h)	11780
EER(Btu/h)/W	8.863



## 2.4 Test record of heating capacity test (H1)

Test Duration(min)	\
Power supplied	\
Applied voltage (V)	\
Frequency (Hz)	\
Current (A)	\
Power Consumption (W)	\
Power factor	\
Fan speed settings	\
Dry bulb temperature, indoor (°C)	\
Wet bulb temperature, indoor (°C)	\
Dry bulb temperature, outdoor (°C)	\
Wet bulb temperature, outdoor (°C)	\
Barometer (KPa)	\
Indoor heating capacity (W)	\
Sensible heating g capacity (W)	\
Latent heating capacity (dehumidifying capacity) (W)	\
Air-static pressure difference across separating partition of calorimeter compartments (Pa)	\
Volume flow rate of air(m3/hr)	\
heating capacity W	\
COP (Btu/h)/W	\



## 2.4 Functional Performance – Cooling

Operability at Maximum cooling conditions at T3 conditions	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	Result:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Minimum cooling at T3 conditions	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Freeze-up drip at T3 conditions (non-ducted AC)	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Condensate control and enclosure sweat performance	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Operability at 52 °C	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	
Operability at minimum cooling conditions	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	
Freeze up air blockage	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	
Freeze-up drip	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	
Condensate control	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	
Enclosure sweat performances	<input checked="" type="checkbox"/> Tested <input type="checkbox"/> Declared	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Non Relevant	

## 2.5 Capacity tests at below condition were considered in this report.

Mode	Indoor air temperature		Outdoor air temperature		Test voltage
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
Cooling mode (T1 Full load)	27	19	35	24	230V, 60Hz
Cooling mode (T1 Half load)	27	19	35	24	230V, 60Hz
Cooling mode (T3)	29	19	46	24	230V, 60Hz





## Conclusion

Cooling capacity test (for condition T1 100% Load)						
Mode	Rated	Tested	Verifying	Required value	Required EER/MEPS	Verdict
Cooling capacity, Btu/h	12000	12300	2.50%	$\geq 11400$	--	Pass
Cooling power input, W	1008	1018	0.99%	$\leq 1068$	--	Pass
EER, Btu/W ·h	11.9	12.083	1.54%	$\geq 11.40$	11.4	Pass
Cooling capacity test (for condition T1 50% Load)						
Cooling capacity, Btu/h	6000	5990	-0.17%	$\geq 5700$	--	Pass
Cooling power input, W	345	355	2.90%	$\leq 362$	--	Pass
EER, Btu/W ·h	17.2	16.873	-1.90%	$\geq 16.34$	16.30	Pass
Cooling capacity test (for condition T3)						
Cooling capacity, Btu/h	11100	11300	1.80%	$\geq 10545$	--	Pass
Cooling power input, W	1261	1275	1.11%	$\leq 1324$	--	Pass
EER, Btu/W ·h	8.803	8.863	0.68%	$\geq 8.36$	8.30	Pass
Heating capacity						
Heating capacity, W	\	\	\	\	--	Pass
Heating power input,	\	\	\	\	--	Pass
COP, WW	\	\	\	\	--	Pass
Annual Energy Consumption(AEC) (kWh)				2891		
SEER				15.20		
SEER class				B		

\* Verifying limit for test T1

Cooling capacity	$\geq 0.95 \times \text{rated capacity}$
Cooling power input	$\leq 1.05 \times \text{rated}$
Heating capacity	$\geq 0.95 \times \text{rated capacity}$
Heating power input	$\leq 1.05 \times \text{rated}$
EER	$\geq 0.95 \times \text{rated}$
COP	$\geq 0.95 \times \text{rated}$

