

Air Conditioner ERP Test Report

Report Number.....: 4931815.55

Tested by (name + signature) : Linda Li

Linda Li

Approved by (name + signature).....: Jacky Zhang

Jacky Zhang

Date of issue.....: 2025-01-16

Total number of pages..... 22 pages

Testing Laboratory: DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou branch
Address.....: Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Applicant's name: HANTECH İKLİMLENDİRME SAN. TİC.A.Ş.

Address.....: Ziya Gökalp Mah. Süleyman Demirel Blv. No:7E / 138, Beşiktaş - İstanbul, Türkiye

Test specification:

Standard: EN 14511-1:2022, EN 14511-2:2022, EN 14511-3:2022, EN 14511-4:2022, EN 14825:2022, EN 12102-1:2022

Test procedure.....: (EU) No 206/2012, (EU) No 626/2011, EU 2017/254, EU 2016/2282, (EU) 2023/2048

Non-standard test method.....: N/A

Test Report Form No.....: EN 14825-2022 V1.0

Test Report Form(s) Originator DEKRA
.....:

Test item description.....: Air conditioner

Trade Mark.....:



Manufacturer.....: TCL Air conditioner (Zhong Shan) Co.,Ltd.

Address.....: No.59.Nantou Road West, Nantou Town Zhongshan City, Guangdong P.R. China

Factory: Same as the manufacturer

Model/Type reference.....: Indoor:HNT-BN18VMCL/I;Outdoor: HNT-BN18VMCL/O

Ratings.....: 220-240 V~, 50 Hz, see rating label

Summary of testing:**Tests performed (Test items):**

Cooling capacity

Heating capacity

Standby/off, thermostat off mode power consumption





Testing location:





TCL Air conditioner (Zhong Shan) Co.,Ltd.

No.59.Nantou Road West, Nantou Town Zhongshan City, Guangdong P.R. China

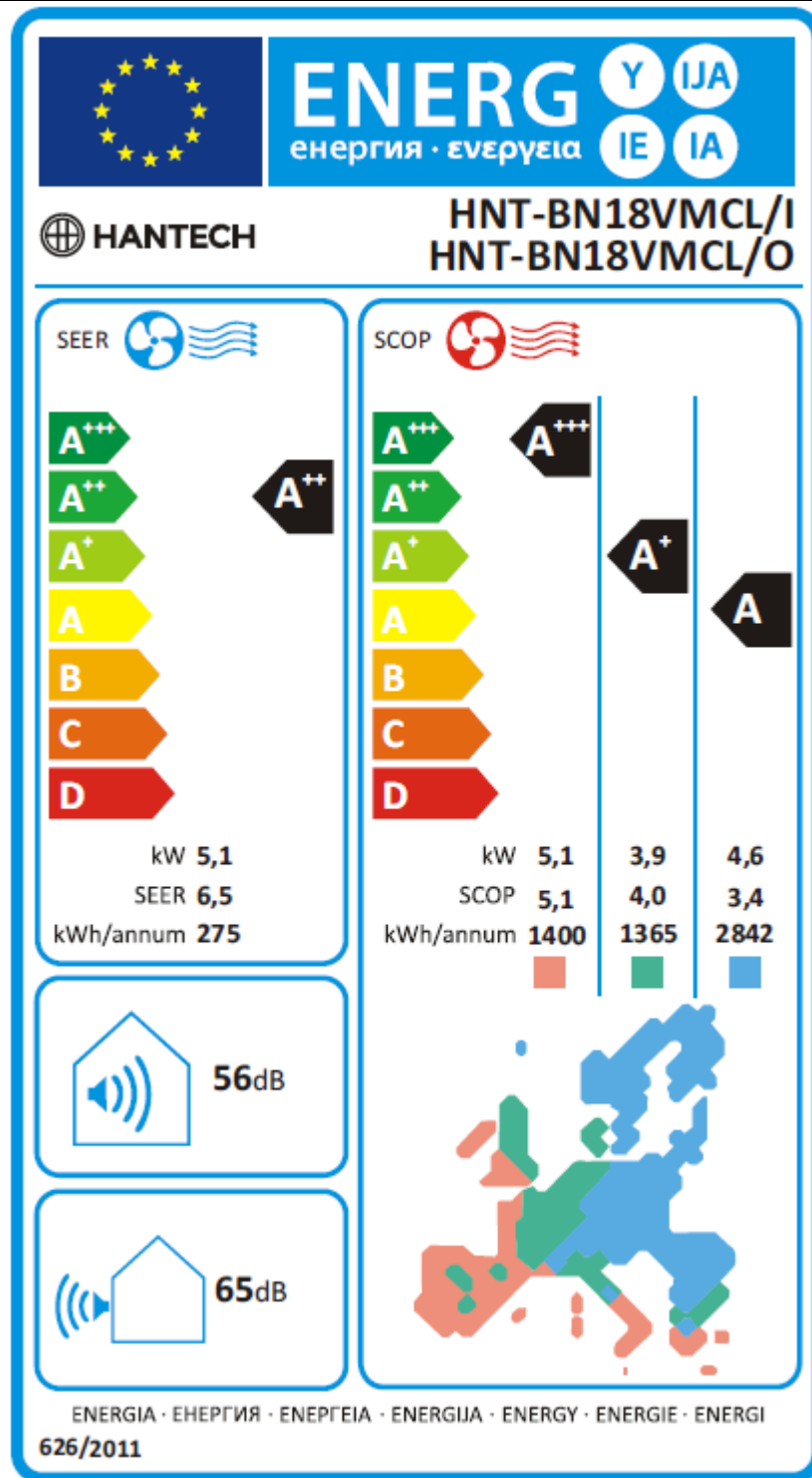
Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBS that own these marks.

  		
SPLIT TYPE AIR CONDITIONER/ INDOOR SPLİT TİP KLİMA/ İÇ ÜNİTE		
INDOOR MODEL CODE İÇ ÜNİTE MODEL KODU	HNT-BN18VMCL/I	
	COOLING/ SOĞUTMA	HEATING/ ISITMA
CAPACITY/ KAPASİTE	514.0(1250~5910)W	52.10(12.50~6070)W
CURRENT / ÇALIŞMA AKIMI	6.9(1.5~12.0)A	6.2(1.6~13.0)A
RATED CURRENT / MAKS. AKIM (IEC/EN60335)	12,0A	13,0A
POWER INPUT /ENERJİ TÜKETİMİ	156.7(330~2350)W	1376(340~2550)W
RATED POWER INPUT / MAKS.ENERJİ TÜKETİMİ (IEC/EN60335)	2350W	2550W
INDOOR AIR VOLUME / İÇ ÜNİTE HAVA DEBİSİ	800m ³ /h	800m ³ /h
MAX.ALLOWABLE PRESSURE MAKSİMUM İZİN VERİLEN BASINÇ	DISCHARGE / BASMA	3,7Mpa
	SUCTION /EMİŞ	1,2Mpa
SOUND POWER / SES GÜCÜ SEVİYESİ	56dB(A)	
WEIGHT/ AĞIRLIK	9.5kg	
RATED VOLTAGE/ANMA GERİLİMİ	220-240V~	
RATED FREQUENCY/ ANMA FREKANSI GERİLİMİ	50Hz	
CONTAINS FLUORINATED GREENHOUSE GASES / FLORLU SERA GAZLARI İÇERİR		
INDOOR UNIT WATER PROOF PROTECTION/ İÇ ÜNİTE KORUMA SINIFI IPX0		
MANUFACTURE/ADRES/ DATE ÜRETİCİ FIRMA/ TARİH	TCL AIR CONDITIONER(ZHONGSHAN)CO.,LTD 59, Nantou Road West, Nantou Town, Zhongshan, Guangdong, 528427 China	
IMPORTER / İTHALATÇI	HANTECH İKLİMLENDİRME SAN. TİC.A.Ş. Ziya Gökalp Mah. Süleyman Demirel Blv. No:7E / 138 Başakşehir – İstanbul / Türkiye	
X		
MADE IN CHINA	4 260414 718199	

  		
SPLIT TYPE AIR CONDITIONER/ OUTDOOR SPLİT TİP KLİMA/ DIŞ ÜNİTE		
OUTDOOR MODEL CODE DIŞ ÜNİTE MODEL KODU	HNT-BN18VMCL/O	
	COOLING/ SOĞUTMA	HEATING/ ISITMA
CAPACITY/ KAPASİTE	5140(1250~5910)W	5210(1250~6070)W
CURRENT / ÇALIŞMA AKIMI	6.9(1.5~12.0)A	6.2(1.6~13.0)A
RATED CURRENT / MAKS. AKIM (IEC/EN60335)	12,0A	13,0A
POWER INPUT /ENERJİ TÜKETİMİ	1567(330~2350)W	1376(340~2550)W
RATED POWER INPUT / MAKS.ENERJİ TÜKETİMİ (IEC/EN60335)	2350W	2550W
MAX.ALLOWABLE PRESSURE MAKSİMUM İZİN VERİLEN BASINÇ	DISCHARGE / BASMA	3,7Mpa
	SUCTION /EMİŞ	1,2Mpa
SOUND POWER / SES GÜCÜ SEVİYESİ	65dB(A)	
WEIGHT/ AĞIRLIK	30kg	
RATED VOLTAGE/ANMA GERİLİMİ	220-240V~	
RATED FREQUENCY/ ANMA FREKANSI GERİLİMİ	50Hz	
REFRIGERANT /CHARGE/GWP SOĞUTKAN TİPİ/ŞARJ MİKTARI/GWP	R32/0,96kg/675	
CO ₂ EQUIVALENT / CO ₂ SALINIMI	0,648 TONNES	
CONTAINS FLUORINATED GREENHOUSE GASES / FLORLU SERA GAZLARI İÇERİR		
OUTDOOR UNIT WATER PROOF PROTECTION/ DIŞ ÜNİTE KORUMA SINIFI IPX4		
MANUFACTURE/ADRES/ DATE ÜRETİCİ FIRMA/ TARİH	TCL AIR CONDITIONER(ZHONGSHAN)CO.,LTD 59, Nantou Road West, Nantou Town, Zhongshan, Guangdong, 528427 China	
IMPORTER / İTHALATÇI	HANTECH İKLİMLENDİRME SAN. TİC.A.Ş. Ziya Gökalp Mah. Süleyman Demirel Blv. No:7E / 138 Başakşehir – İstanbul / Türkiye	
X		
MADE IN CHINA	4 260414 718205	

Rating label (draft version only for indicating the ratings)



Energy label (draft version only for indicating the ratings)

Test item particulars :	
Classification of installation and use	Fixed appliance
Supply Connection.....	Non-detachable power supply cord with plug

Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing :	
Date of receipt of test item.....	2024-03-10
Date (s) of performance of tests.....	2024-03-10 to 2024-03-25

General remarks:

The test results presented in this report relate only to the object tested.
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 "(see Enclosure #)" refers to additional information appended to the report.
 "(see appended table)" refers to a table appended to the report.

Throughout this report, a dot is used as the decimal separator.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to calculate the uncertainty associated with the measurement result.
 The test results presented in this report relate only to the object tested.
 The information provided by the customer in this report may affect the validity of the results, the test lab is not responsible for it.
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 This report is not used for social proof function in China market.
 This report is based on the original report No.4913313.50,they are same except brand and model number, after reviewed, there's no need to add any test.

General product information:	
Model number of Unit Under Test	Indoor:HNT-BN18VMCL/I;Outdoor: HNT-BN18VMCL/O
Type of System	Split type air conditioner
Air-conditioner Type	Cooling and heating
Power Supply	Single Phase
Refrigerant	R32
Unit Mounting (applicable to non ducted indoor units only)	Wall mounted
Heat Source (Heating Mode)	Air
Heat Sink (Cooling Mode)	Air-cooled
Does this air conditioner have a variable output compressor?	Yes
Type of compressor	inverter
Maximum continuous frequency for cooling (applicable to inverter driven compressor only) (Hz)	84
Maximum continuous frequency for heating (applicable to inverter driven compressor only) (Hz)	110

Test and verification results			
Clause	Ecodesign requirements - GENERIC ECODESIGN REQUIREMENTS	Result - Remark	Verdict
2a)	From 1 January 2013: Single duct and double duct air conditioners shall correspond to requirements as indicated in Tables 1, 2 and 3		N/A
Table 1	Requirements for minimum energy efficiency		N/A
Table 2	Off mode: Power consumption of equipment in any off-mode condition shall not exceed 1,00 W		N/A
	Standby mode: The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 1,00 W.		N/A
	Standby mode: The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, shall not exceed 2,00 W.		N/A
	Availability of standby and/or off mode Equipment shall, except where this is inappropriate for the intended use, provide off mode and/or standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source.		N/A
Table 3	Indoor sound power level no more than 65 dB(A)		N/A
2b)	From 1 January 2013, air conditioners, except single and double duct air conditioners, shall correspond to minimum energy efficiency and maximum sound power level requirements as indicated in Tables 4 and 5		N/A
Table 4	Requirements for minimum energy efficiency		P
Table 5	Requirements for maximum sound power level		P
2c)	From 1 January 2014, air conditioners shall correspond to requirements as indicated in the table 6		P
2d)	From 1 January 2014, single duct and double duct air conditioners and comfort fans shall correspond to requirements as indicated in Table 7		N/A
Table 7	Off mode: Power consumption of equipment in any off-mode condition shall not exceed 0,50 W.		N/A

Clause	Ecodesign requirements - GENERIC ECODESIGN REQUIREMENTS	Result - Remark	Verdict
	Standby mode: The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and a mere indication of enabled reactivation function, shall not exceed 0,50 W.		N/A
	Standby mode: The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display shall not exceed 1,00 W.		N/A
	Availability of standby and/or off mode Equipment shall, except where this is inappropriate for the intended use, provide off mode and/or standby mode, and/or another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source.		N/A
	Power management When equipment is not providing the main function, or when other energy- using product(s) are not dependent on its functions, equipment shall, unless inappropriate for the intended use, offer a power management function, or a similar function, that switches equipment after the shortest possible period of time appropriate for the intended use of the equipment, automatically into: — standby mode, or — off mode, or — another condition which does not exceed the applicable power consumption requirements for off mode and/or standby mode when the equipment is connected to the mains power source. The power management function shall be activated before delivery.		N/A

Information requirements for air conditioners, except double duct and single duct air conditioners							
Function (indicate if present)				If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.			
cooling	Y			Average (mandatory)	Y		
heating	Y			Warmer (if designated)	Y		
				Colder (if designated)	Y		
Item	symbol	value	unit	Item	symbol	value	unit
Design load				Seasonal efficiency			
cooling	P _{designc}	5.1	kW	cooling	SEER	6.5	—
heating/Average	P _{designh}	3.9	kW	heating/Average	SCOP/A	4.0	—
heating/Warmer	P _{designh}	5.1	kW	heating/Warmer	SCOP/W	5.1	—
heating/Colder	P _{designh}	4.6	kW	heating/Colder	SCOP/C	3.4	—
Declared capacity (*) for cooling, at indoor temperature 27(19) °C and outdoor temperature T _j				Declared energy efficiency ratio (*), at indoor temperature 27(19) °C and outdoor temperature T _j			
T _j = 35 °C	P _{dc}	5.135	kW	T _j = 35 °C	EER _d	3.37	—
T _j = 30 °C	P _{dc}	3.660	kW	T _j = 30 °C	EER _d	4.99	—
T _j = 25 °C	P _{dc}	2.331	kW	T _j = 25 °C	EER _d	7.40	—
T _j = 20 °C	P _{dc}	1.355	kW	T _j = 20 °C	EER _d	14.26	—
Declared capacity (*) for heating/Average season, at indoor temperature 20°C and outdoor temperature T _j				Declared coefficient of performance (*)/Average season, at indoor temperature 20°C and outdoor temperature T _j			
T _j = - 7 °C	P _{dh}	3.452	kW	T _j = - 7 °C	COP _d	2.66	—
T _j = 2 °C	P _{dh}	2.073	kW	T _j = 2 °C	COP _d	4.15	—
T _j = 7 °C	P _{dh}	1.349	kW	T _j = 7 °C	COP _d	5.13	—
T _j = 12 °C	P _{dh}	0.991	kW	T _j = 12 °C	COP _d	5.90	—
T _j = bivalent temperature	P _{dh}	3.452	kW	T _j = bivalent temperature	COP _d	2.66	—
T _j = operating limit	P _{dh}	4.323	kW	T _j = operating limit	COP _d	2.24	—
Declared capacity (*) for heating/Warmer season, at indoor temperature 20°C and outdoor temperature T _j				Declared coefficient of performance (*)/Warmer season, at indoor temperature 20°C and outdoor temperature T _j			
T _j = 2 °C	P _{dh}	5.102	kW	T _j = 2 °C	COP _d	2.48	—
T _j = 7 °C	P _{dh}	3.524	kW	T _j = 7 °C	COP _d	4.66	—
T _j = 12 °C	P _{dh}	1.584	kW	T _j = 12 °C	COP _d	6.47	—
T _j = bivalent temperature	P _{dh}	5.102	kW	T _j = bivalent temperature	COP _d	2.48	—
T _j = operating limit	P _{dh}	5.102	kW	T _j = operating limit	COP _d	2.48	—

Declared capacity (*) for heating/Colder season, at indoor temperature 20°C and outdoor temperature Tj				Declared coefficient of performance (*) /Colder season, at indoor temperature 20°C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	2.762	kW	Tj = - 7 °C	COPd	2.89	—
Tj = 2 °C	Pdh	1.639	kW	Tj = 2 °C	COPd	4.09	—
Tj = 7 °C	Pdh	1.103	kW	Tj = 7 °C	COPd	4.99	—
Tj = 12 °C	Pdh	1.375	kW	Tj = 12 °C	COPd	6.49	—
Tj = bivalent temperature	Pdh	3.754	kW	Tj = bivalent temperature	COPd	2.06	—
Tj = operating limit	Pdh	3.312	kW	Tj = operating limit	COPd	1.91	—
Tj = - 15 °C	Pdh	3.754	kW	Tj = - 15 °C	COPd	2.06	—
Bivalent temperature				Operating limit temperature			
heating/Average	Tbiv	-7	°C	heating/Average	Tol	-15	°C
heating/Warmer	Tbiv	2	°C	heating/Warmer	Tol	2	°C
heating/Colder	Tbiv	-15	°C	heating/Colder	Tol	-22	°C
Cycling interval capacity				Cycling interval efficiency			
for cooling	Pcycc	N/A	kW	for cooling	EERcyc	N/A	—
for heating	Pcych	N/A	kW	for heating	COPcyc	N/A	—
Degradation co-efficient cooling (**)	Cdc	0.25	—	Degradation co-efficient heating (**)	Cdh	0.25	—
Electric power input in power modes other than 'active mode'				Annual electricity consumption			
off mode	POFF	—	kW	cooling	QCE	275	kWh/a
standby mode	PSB	0.005	kW	heating/Average	QHE	1365	kWh/a
thermostat-off mode	PTO	0.035	kW	heating/Warmer	QHE	1400	kWh/a
crankcase heater mode	PCK	—	kW	heating/Colder	QHE	2842	kWh/a
Capacity control (indicate one of three options)				Other items			
fixed	N			Sound power level (indoor/outdoor)	LWA	56/65	dB(A)
staged	N			Global warming potential	GWP	675 (R32)	kgCO ₂ eq.
variable	Y			Rated air flow (indoor/outdoor)	—	800/2600	m ³ /h

Information requirements for single duct and double duct air conditioners.			
Information to identify the model(s) to which the information relates to [fill in as necessary]			
Description	Symbol	Value	Unit
Rated output power for cooling	P_{rated} for cooling	N/A	kW
Rated output power for heating	P_{rated} for heating	N/A	kW
Rated power input for cooling	P_{EER}	N/A	kW
Rated power input for heating	P_{COP}	N/A	kW
Rated Energy efficiency ratio	EER_{rated}	N/A	—
Rated Coefficient of performance	COP_{rated}	N/A	—
Thermostat-off mode power consumption	P_{TO}	N/A	W
Standby mode power consumption	P_{SB}	N/A	W
Off mode power consumption	P_{OFF}	N/A	W
Seasonal electricity consumption for double ducts (DD): hourly electricity consumption for single ducts (SD): hourly electricity consumption	Q	N/A	kWh/60min.
Sound power level (indoor only)	L_{WA}	N/A	dB(A)
Global warming potential of refrigerant	GWP	N/A	kgCO ₂ eq.
Contact details for obtaining more information	N/A		

Table for cooling test data

General test conditions/part load	unit	A35/A27(100%)	A30/A27(74%)	A25/A27(47%)	A20/A27(21%)
-	-	A	B	C	D
Barometric	KPa	99.89	99.94	99.91	99.92
Voltage	V	229.65	229.73	229.96	230.11
Current input	A	6.88	5.14	2.21	0.90
Power input	kW	1.522	0.733	0.315	0.095
Test conditions indoor unit					
Air inlet temperature, DB/WB	°C	27.06/18.98	27.00/18.99	26.94/18.97	26.98/19.03
Air outlet temperature, DB/WB	°C	N/A	N/A	N/A	N/A
Test conditions outdoor unit					
Air inlet temperature, DB/WB	°C	35.04/24.03	30.03/25.03	25.03/15.04	19.99/14.05
Total cooling capacity-indoor	kW	5.135	3.660	2.331	1.355
Total cooling capacity-outdoor	kW	5.106	3.646	2.340	1.362
Balance Ratio	%	0.6	0.4	-0.4	-0.5
Power input	kW	1.522	0.733	0.315	0.095

Energy efficiency ratio	-	3.37	4.99	7.40	14.27
Compressor frequency	Hz	74	46	27	12

Table for heating test data (Average)

General test conditions/part load	unit	A-10/A20 (100%)	A-7/A20 (88%)	A-7/A20 (88%)	A2/A20 (54%)	A7/A20 (35%)	A12/A20 (15%)
-	-	E	F	A	B	C	D
Barometric	KPa	99.50	100.01	100.01	100.02	99.96	100.04
Voltage	V	230.34	230.24	230.24	230.08	230.30	230.76
Current input	A	8.75	5.90	5.90	3.60	2.04	1.49
Power input	kW	1.932	1.296	1.296	0.500	0.263	0.168
Test conditions indoor unit							
Air inlet temperature, DB/WB	°C	20.01/15.00	20.00/15.01	20.00/15.01	20.02/14.99	19.99/14.97	20.00/15.00
Air outlet temperature, DB/WB	°C	34.76/19.85	31.50/31.52	31.50/31.52	27.67/17.79	N/A	N/A
Test conditions outdoor unit							
Air inlet temperature, DB/WB	°C	-10.00/-11.00	-7.01/-7.99	-7.01/-7.99	2.00/1.00	7.01/6.00	12.02/10.98
Summary of the test results							
Total heating capacity-indoor	kW	4.323	3.452	3.452	2.073	1.349	0.991
Total heating capacity-outdoor	kW	N/A	N/A	N/A	N/A	1.349	0.991
Balance Ratio	%	N/A	N/A	N/A	N/A	0.0	0.0
Power input	kW	1.932	1.296	1.296	0.500	0.263	0.168
Co-efficiency of performance	-	2.24	2.66	2.66	4.15	5.13	5.90
Compressor frequency	Hz	106	80	80	38	21	14

Table for heating test data (Warmer)

General test conditions/part load	unit	A2/A20 (100%)	A2/A20 (100%)	--	A2/A20 (100%)	A7/A20 (64%)	A12/A20 (29%)
-	-	E	F	A	B	C	D
Barometric	KPa	100.00	100.00	--	100.00	99.96	99.94
Voltage	V	230.31	230.31	--	230.31	229.73	229.66
Current input	A	9.26	9.26	--	9.26	5.24	1.88
Power input	kW	2.055	2.055	--	2.055	0.757	0.245
Test conditions indoor unit							
Air inlet temperature, DB/WB	°C	20.01/15.00	20.01/15.00	--	20.01/15.00	20.06/14.99	20.03/14.97
Air outlet temperature, DB/WB	°C	36.68/20.79	36.68/20.79	--	36.68/20.79	N/A	N/A
Test conditions outdoor unit							
Air inlet temperature, DB/WB	°C	2.00/1.00	2.00/1.00	--	2.00/1.00	7.01/6.02	12.00/11.02
Summary of the test results							
	-	A2/A20 (100%)	A2/A20 (100%)	--	A2/A20 (100%)	A7/A20 (64%)	A12/A20 (29%)
Total heating capacity-indoor	kW	5.102	5.102	--	5.102	3.524	1.584
Total heating capacity-outdoor	kW	N/A	N/A	--	N/A	3.524	1.584
Balance Ratio	%	N/A	N/A	--	N/A	0.0	0.0
Power input	kW	2.055	2.055	--	2.055	0.757	0.245
Co-efficiency of performance	-	2.48	2.48	--	2.48	4.66	6.47
Compressor frequency	Hz	98	98	--	98	51	20

Table for heating test data (Colder)

General test conditions/part load	unit	A-22/A20 (100%)	A-15/A20 (82%)	A-15/A20 (82%)	A-7/A20 (61%)	A2/A20 (37%)	A7/A20 (24%)	A12/A20 (11%)
-	-	E	F	G	A	B	C	D
Barometric	KPa	100.03	100.11	100.11	99.71	100.09	99.99	99.53
Voltage	V	230.33	230.13	230.13	230.24	230.25	230.24	230.62
Current input	A	7.92	8.31	8.31	4.46	1.95	1.85	1.77
Power input	kW	1.737	1.824	1.824	0.957	0.401	0.221	0.212
Test conditions indoor unit								
Air inlet temperature, DB/WB	°C	20.01/ 15.00	20.00/ 15.00	20.00/ 15.00	20.00/ 15.00	19.99/ 15.00	19.99/ 15.02	20.04/ 15.03
Air outlet temperature, DB/WB	°C	30.45/ 18.89	32.08/ 19.51	32.08/ 19.51	29.91/ 18.45	26.55/ 17.38	N/A	N/A
Test conditions outdoor unit								
Air inlet temperature, DB/WB	°C	-22.02/ -21.08	-15.00/ -15.96	-15.00/ -15.96	-7.01/ -8.00	2.00/ 1.00	7.00/ 6.02	12.03/ 11.04
Summary of the test results								
Total heating capacity-indoor	kW	3.312	3.754	3.754	2.762	1.639	1.103	1.375
Total heating capacity-outdoor	kW	N/A	N/A	N/A	N/A	N/A	1.103	1.375
Balance Ratio	%	N/A	N/A	N/A	N/A	N/A	0.0	0.0
Power input	kW	1.737	1.824	1.824	0.957	0.401	0.221	0.212
Co-efficiency of performance	-	1.91	2.06	2.06	2.89	4.09	4.99	6.49
Compressor frequency	Hz	110	114	114	67	31	18	18

SEER calculation:

	Outdoor air °C	measured Cooling Capacity kW	Input Power kW	EER _{DC/meas}	Cd	EER _{PL}
A	35	5.135	1.522	3.37	0.25	3.37
B	30	3.660	0.733	4.99	0.25	4.99
C	25	2.331	0.315	7.40	0.25	7.40
D	20	1.355	0.095	14.26	0.25	13.54

	Tj	Part load ratio	Cooling demand Pc(Tj)	Bin hours hj	Measured Cooling capacity	Capacity ratio	Measured EER	Corrected EER _{PL}	EER(Tj) Cd=0,25	hj x Pc(Tj)	hj x
											Pc(Tj) / EERbin(Tj)
	17	5.3%	0.270	205					13.54	55	4
	18	10.5%	0.541	227					13.54	123	9
	19	15.8%	0.811	225					13.54	182	13
D	20	21.1%	1.081	225	1.355	0.798	14.26	13.54	13.54	243	18
	21	26.3%	1.351	216					12.31	292	24
	22	31.6%	1.622	215					11.09	349	31
	23	36.8%	1.892	218					9.86	412	42
	24	42.1%	2.162	197					8.63	426	49
C	25	47.4%	2.432	178	2.331	1.043	7.40	7.40	7.40	433	59
	26	52.6%	2.703	158					6.92	427	62
	27	57.9%	2.973	137					6.44	407	63
	28	63.2%	3.243	109					5.96	354	59
	29	68.4%	3.513	88					5.47	309	56
B	30	73.7%	3.784	63	3.660	1.034	4.99	4.99	4.99	238	48
	31	78.9%	4.054	39					4.67	158	34
	32	84.2%	4.324	31					4.35	134	31
	33	89.5%	4.594	24					4.02	110	27
	34	94.7%	4.865	17					3.70	83	22
A	35	100.0%	5.135	13	5.135	1.000	3.37	3.37	3.37	67	20
	36	105.3%	5.405	9					3.37	49	14
	37	110.5%	5.676	4					3.37	23	7
	38	115.8%	5.946	3					3.37	18	5
	39	121.1%	6.216	1					3.37	6	2
	40	126.3%	6.486	0					3.37	0	0
										4898	701
										SEER_{on}	6.99
										SEER	6.52

Equiv. Hce	350	h				Q _c /SEER _{on}	257.04966	
H _{TO}	221	h	P _{TO}	0.035	kW	HTO*PTO	7.735	kwh
H _{SB}	2142	h	P _{SB}	0.005	kW	HSB*PSB	10.71	kwh
H _{CK}	2672	h	P _{CK}	0	kW	HCK*PCK	0	kwh
H _{OFF}	0	h	P _{OFF}	0	kW	HOFF*POFF	0	kwh
							Q _{ce}	275.4947
P _{designc}	5.135	kW						
Q _c	1797.25	kWh						

SCOP calculation (Average):

	Outdoor air °C	measured Heating Capacity kW	Input Power kW	COP _{DC/meas}	Cd	COP _{PL} (COP bin (T _j))
A	-7	3.452	1.296	2.66	0.25	2.66
B	2	2.073	0.500	4.15	0.25	4.15
C	7	1.349	0.263	5.13	0.25	5.13
D	12	0.991	0.168	5.90	0.25	5.32
E	-10	4.323	1.932	2.24	0.25	2.18
F	-7	3.452	1.296	2.66	0.25	2.66

Tj	Part load ratio	Heating demand Ph(Tj)	Bin hours hj	Heat load covered by the heat pump			COP _{PL}	COP _{bin(Tj)}	hj x Ph(Tj)	hj * [(Ph(Tj) - elbu(Tj)) / COPbin(Tj) + elbu(Tj)]		COP (including backup heater)	hj * [Ph(Tj) - elbu(Tj)] / COPbin(Tj)	
				elbu(Tj)	ratio	Capacity				Ph(Tj)	elbu(Tj)		n(Tj)	
-10	100.0%	3.902	1	4.323	0.000	0.90	2.18	2.18	4	2	2.18	4	1.79	
-9	96.2%	3.752	25	4.033	0.000	0.93		2.34	94	40	2.34	94	40.03	
-8	92.3%	3.602	23	3.742	0.000	0.96		2.50	83	33	2.50	83	33.09	
A) -7	88.5%	3.452	24	3.452	0.000	1.00	2.66	2.66	83	31	2.66	83	31.10	
-6	84.6%	3.302	27	3.302	0.000	1.00		2.83	89	32	2.83	89	31.52	
-5	80.8%	3.152	68	3.152	0.000	1.00		2.99	214	72	2.99	214	71.61	
-4	76.9%	3.002	91	3.002	0.000	1.00		3.16	273	87	3.16	273	86.50	
-3	73.1%	2.852	89	2.852	0.000	1.00		3.32	254	76	3.32	254	76.39	
-2	69.2%	2.702	165	2.702	0.000	1.00		3.49	446	128	3.49	446	127.83	
-1	65.4%	2.551	173	2.551	0.000	1.00		3.65	441	121	3.65	441	120.87	
0	61.5%	2.401	240	2.401	0.000	1.00		3.82	576	151	3.82	576	151.01	
B) 1	57.7%	2.251	280	2.251	0.000	1.00		3.98	630	158	3.98	630	158.33	
2	53.8%	2.101	320	2.101	0.000	1.00	4.15	4.15	672	162	4.15	672	162.18	
3	50.0%	1.951	357	1.951	0.000	1.00		4.34	697	160	4.34	697	160.40	
4	46.2%	1.801	356	1.801	0.000	1.00		4.54	641	141	4.54	641	141.25	
5	42.3%	1.651	303	1.651	0.000	1.00		4.74	500	106	4.74	500	105.63	
6	38.5%	1.501	330	1.501	0.000	1.00		4.93	495	100	4.93	495	100.41	
C) 7	34.6%	1.351	326	1.351	0.000	1.00	5.13	5.13	440	86	5.13	440	85.85	
8	30.8%	1.201	348	1.201	0.000	1.00		5.17	418	81	5.17	418	80.87	
9	26.9%	1.051	335	1.051	0.000	1.00		5.20	352	68	5.20	352	67.62	
10	23.1%	0.901	315	0.901	0.000	1.00		5.24	284	54	5.24	284	54.11	
11	19.2%	0.750	215	0.750	0.000	1.00		5.28	161	31	5.28	161	30.56	
D) 12	15.4%	0.600	169	0.600	0.000	1.00	5.32	5.32	101	19	5.32	101	19.08	
13	11.5%	0.450	151	0.450	0.000	1.00		5.3551	68	13	5.36	68	12.70	
14	7.7%	0.300	105	0.300	0.000	1.00		5.3928	32	6	5.39	32	5.84	
15	3.8%	0.150	74	0.150	0.000	1.00		5.4304	11	2	5.43	11	2.05	
16	0.0%		4910		0.000				summation	8061	1959	8061	1959	
										SCOPon	4.12	SCOPnet	4.12	
										SCOP	4.10			

H _{he}	1400	h				Q _h /SCOP _{on}	1327.484	
H _{TO}	179	h	P _{TO}	0.035	kW	HTO*PTO	6.265	
H _{SB}	0	h	P _{SB}	0.005	kW	HSB*PSB	0	
H _{CK}	179	h	P _{CK}	0	kW	HCK*PCK	0	
H _{OFF}	0	h	P _{OFF}	0	kW	HOFF*POFF	0	
							Q _{no}	1333.749
P _{designh}	3.902	kW						
Q _h	5463.165	kWh						

SCOP calculation (Warmer):

	Outdoor air °C	measured Heating Capacity kW	Input Power kW	COP _{DC/meas}	Cd	COP _{PL} (COP bin (T _j))
B	2	5.102	2.055	2.48	0.25	2.48
C	7	3.524	0.757	4.66	0.25	4.66
D	12	1.584	0.245	6.47	0.25	6.47
E	2	5.102	2.055	2.48	0.25	2.48
F	2	5.102	2.055	2.48	0.25	2.48

Bin	T _j	Part load ratio	Heating demand Ph(T _j)	Bin hours h _j	Heat load covered by the heat pump			COP _d	COP _{bin} (T _j)	h _j x Ph(T _j)	h _j * [(Ph(T _j)-elbu(T _j))/COPbin(T _j)+elbu(T _j)]	COP (including backup heater)	h _j *[Ph(T _j)-elbu(T _j)]	h _j *[Ph(T _j)-COPbin(T _j)]	
					elbu(T _j)	Capacity ratio	etbu(T _j)								
B	2	100.0%	5.102	3	5.102	0.000	1.00	2.48	2.48	15	6	2.48	15.3	6.2	
	3	92.9%	4.738	22	4.786	0.000	0.99	2.92	2.92	104	36	2.92	104.2	35.7	
	4	85.7%	4.373	63	4.471	0.000	0.98	3.35	3.35	276	82	3.35	275.5	82.2	
	5	78.6%	4.009	63	4.155	0.000	0.96	3.79	3.79	253	67	3.79	252.5	66.7	
	6	71.4%	3.644	175	3.840	0.000	0.95	4.22	4.22	638	151	4.22	637.8	151.1	
	7	64.3%	3.280	162	3.524	0.000	0.93	4.66	4.66	531	114	4.66	531.3	114.1	
C	8	57.1%	2.915	259	3.136	0.000	0.93	5.02	5.02	755	151	5.02	755.1	150.5	
	9	50.0%	2.551	360	2.748	0.000	0.93	5.38	5.38	918	171	5.38	918.4	170.7	
	10	42.9%	2.187	428	2.360	0.000	0.93	5.74	5.74	936	163	5.74	935.9	163.0	
	11	35.7%	1.822	430	1.972	0.000	0.92	6.10	6.10	784	128	6.10	783.5	128.4	
	12	28.6%	1.458	503	1.584	0.000	0.92	6.47	6.47	733	113	6.47	733.2	113.4	
D	13	21.4%	1.093	444	1.196	0.000	0.91	6.83	6.83	485	71	6.83	485.4	71.1	
	14	14.3%	0.729	384	0.808	0.000	0.90	7.19	7.19	280	39	7.19	279.9	38.9	
	15	7.1%	0.364	294	0.420	0.000	0.87	7.55	7.55	107	14	7.55	107.1	14.2	
	16	0.0%	0.000	0	0.032	0.000	0.00	7.91	7.91	0	0				
SCOP_{on}											5.22	SCOP_{net}		5.22	
SCOP											5.12				

Equiv. H	1400	h					Q _H /SCOP _{on}	1369.0591
H _{TO}	755	h	P _{TO}	0.035	kW	HTO*PTO	26.425	kwh
H _{SB}	0	h	P _{SB}	0.005	kW	HSB*PSB	0	kwh
H _{CK}	755	h	P _{CK}	0	kW	HCK*PCK	0	kwh
H _{OFF}	0	h	P _{OFF}	0	kW	HOFF*POFF	0	kwh
							Q _{he}	1395.484
P _{designh}	5.102	kW						
Q _H	7142.8	kWh						

SCOP calculation (Colder):

	Outdoor air °C	measured Heating Capacity kW	Input Power kW	COP _{DC/meas}	Cd	COP _{PL} (COP bin (T _j))
A	-7	2.762	0.957	2.89	0.25	2.89
B	2	1.639	0.401	4.09	0.25	4.09
C	7	1.103	0.221	4.99	0.25	4.99
D	12	1.375	0.212	6.49	0.25	5.44
E	-22	3.312	1.737	1.91	0.25	1.91
F	-15	3.754	1.824	2.06	0.25	2.06
G	-15	3.754	1.824	2.06	0.25	2.06

Tj	Part load ratio	Heating demand Ph(Tj)	Bin hours hj	Heat load covered by the heat pump elbu(Tj)	Capacity ratio	declared COP _{PL}	COP _{PL} (Tj)	hj x Ph(Tj)	hj * [(Ph(Tj) - elbu(Tj)) / COPbin(Tj)] - elbu(Tj)	COP (including backup heater)	hj * [Ph(Tj) - elbu(Tj)] / COPbin(Tj)					
-22	100.0%	4.602	1	3.312	1.290	1.9067358	1.91	5	3	1.52	3	1.74				
-21	97.4%	4.481	6	3.375	1.105		1.93	27	17	1.57	20	10.50				
-20	94.7%	4.359	13	3.438	0.921		1.95	57	35	1.62	45	22.92				
-19	92.1%	4.238	17	3.501	0.737		1.97	72	43	1.69	60	30.19				
-18	89.5%	4.117	19	3.565	0.553		1.99	78	44	1.76	68	33.98				
-17	86.8%	3.996	26	3.628	0.368		2.01	104	56	1.84	94	46.81				
-16	84.2%	3.875	39	3.691	0.184		2.04	151	78	1.94	144	70.68				
G	-15	81.6%	41	3.754	0.000	2.058114	2.06	154	75	2.06	154	74.78				
-14	78.9%	3.633	35	3.630	0.000		2.16	127	59	2.16	127	58.82				
-13	76.3%	3.512	52	3.506	0.000		2.27	183	81	2.27	183	80.62				
-12	73.7%	3.391	37	3.382	0.000		2.37	125	53	2.37	125	52.97				
-11	71.1%	3.270	41	3.258	0.000		2.47	134	54	2.47	134	54.23				
-10	68.4%	3.149	43	3.134	0.000	1.00	2.58	135	53	2.58	135	52.56				
-9	65.8%	3.027	54	3.010	0.000	1.01	2.68	163	61	2.68	163	61.02				
-8	63.2%	2.906	90	2.886	0.000	1.01	2.78	262	94	2.78	262	94.00				
A	-7	60.5%	125	2.762	0.000	1.01	2.89	348	121	2.89	348	120.63				
-6	57.9%	2.664	169	2.637	0.000	1.01	3.02	450	149	3.02	450	149.11				
-5	55.3%	2.543	195	2.512	0.000	1.01	3.15	496	157	3.15	496	157.27				
-4	52.6%	2.422	278	2.388	0.000	1.01	3.29	673	205	3.29	673	204.87				
-3	50.0%	2.301	306	2.263	0.000	1.02	3.42	704	206	3.42	704	205.87				
-2	47.4%	2.180	454	2.138	0.000	1.02	3.55	990	278	3.55	990	278.49				
-1	44.7%	2.059	385	2.013	0.000	1.02	3.69	793	215	3.69	793	214.97				
0	42.1%	1.938	490	1.889	0.000	1.03	3.82	949	249	3.82	949	248.51				
1	39.5%	1.816	533	1.764	0.000	1.03	3.95	968	245	3.95	968	244.87				
B	2	36.8%	380	1.639	0.000	1.03	4.09	644	158	4.09	644	157.62				
3	34.2%	1.574	228	1.532	0.000	1.03	4.27	359	84	4.27	359	84.10				
4	31.6%	1.453	261	1.425	0.000	1.02	4.45	379	85	4.45	379	85.25				
5	28.9%	1.332	279	1.317	0.000	1.01	4.63	372	80	4.63	372	80.28				
6	26.3%	1.211	229	1.210	0.000	1.00	4.81	277	58	4.81	277	57.65				
C	7	23.7%	269	1.103	0.000	0.99	4.99	293	59	4.99	293	58.74				
8	21.1%	0.969	233	1.157	0.000	0.84	5.08	226	44	5.08	226	44.43				
9	18.4%	0.848	230	1.212	0.000	0.70	5.17	195	38	5.17	195	37.72				
10	15.8%	0.727	243	1.266	0.000	0.57	5.26	177	34	5.26	177	33.58				
11	13.2%	0.605	191	1.321	0.000	0.46	5.35	116	22	5.35	116	21.63				
D	12	10.5%	146	1.375	0.000	0.35	5.44	71	13	5.44	71	13.01				
13	7.9%	0.363	150	1.429	0.000	0.25	5.52	54	10	5.52	54	9.86				
14	5.3%	0.242	97	1.484	0.000	0.16	5.61	23	4	5.61	23	4.19				
15	2.6%	0.121	61	1.538	0.000	0.08	5.70	7	1	5.70	7	1.30				
16	0.0%	0.000	0	1.593	0.000	0.00		0								
								11342	3319		11282	3260				
								SCOPon	3.42		SCOPnet	3.46				
								SCOP	3.41							
								Q _h /SCOP _{PL} 1935.1013								
								H _{to}	131	h	P _{to}	0.035	kW	HTO*PTO	4.585	kWh
								H _{za}	0	h	P _{za}	0.005	kW	HSB*PSB	0	kWh
								H _{cx}	131	h	P _{cx}	0	kW	HCK*PCK	0	kWh
								H _{orr}	0	h	P _{orr}	0	kW	HOFF*POFF	0	kWh
								Q _{he} 1939.6863								
								P _{design}	3.149	kW						
								Q _h	6611.883871	kWh						

Item	Measured value	Rated value	Deviation	Verdict
SEER	6.52	6.5	0.3%	P
SCOP(average)	4.10	4.0	2.5%	P
SCOP (warmer)	5.12	5.1	0.4%	P
SCOP (colder)	3.41	3.4	0.3%	P
Power consumption in thermostat off mode	35.0 W	35.0 W	0%	P
Power consumption in standby mode	5.0 W	5.0 W	0%	P
Remark: For the original qualification test, the rating values should be equal to or more unfavorable than the tested values.				

Table 1

Energy efficiency classes for air conditioners, except double ducts and single ducts

Energy Efficiency Class	SEER	SCOP
A+++	$SEER \geq 8,50$	$SCOP \geq 5,10$
A++	$6,10 \leq SEER < 8,50$	$4,60 \leq SCOP < 5,10$
A+	$5,60 \leq SEER < 6,10$	$4,00 \leq SCOP < 4,60$
A	$5,10 \leq SEER < 5,60$	$3,40 \leq SCOP < 4,00$
B	$4,60 \leq SEER < 5,10$	$3,10 \leq SCOP < 3,40$
C	$4,10 \leq SEER < 4,60$	$2,80 \leq SCOP < 3,10$
D	$3,60 \leq SEER < 4,10$	$2,50 \leq SCOP < 2,80$
E	$3,10 \leq SEER < 3,60$	$2,20 \leq SCOP < 2,50$
F	$2,60 \leq SEER < 3,10$	$1,90 \leq SCOP < 2,20$
G	$SEER < 2,60$	$SCOP < 1,90$

Table for sound power

indoor										
Test voltage / frequency	230V/50Hz									
Air inlet temperature, DB/WB	27.0°C/19.0°C									
Measured surface	9.05m ²									
Background Noise Level [dB]	18.0									
Microphone Position	1	2	3	4	5	6	7	8	9	10
L _{pi} [dB]	44.0	45.5	46.0	46.0	45.8	44.8	45.5	44.2	45.5	46.6
L _{pmc} / Averaged Sound Pressure Level [dB (A)]	45.46									
LW / Sound Power Level [dB (A)]	55.02									
Rated sound Power Level [dB (A)]	56									
Verdict	P									

outdoor					
Test voltage / frequency	230V/50Hz				
Air inlet temperature, DB/WB	35.0°C/24.0°C				
Measured surface	25.13m ²				
Background Noise Level [dB]	18.0				
Microphone Position	1	2	3	4	5
L _{pi} [dB]	50.2	50.5	51.3	51.0	48.7
L _{pmc} / Averaged Sound Pressure Level [dB (A)]	50.43				
LW / Sound Power Level [dB (A)]	64.43				
Rated sound Power Level [dB (A)]	65				
Verdict	P				

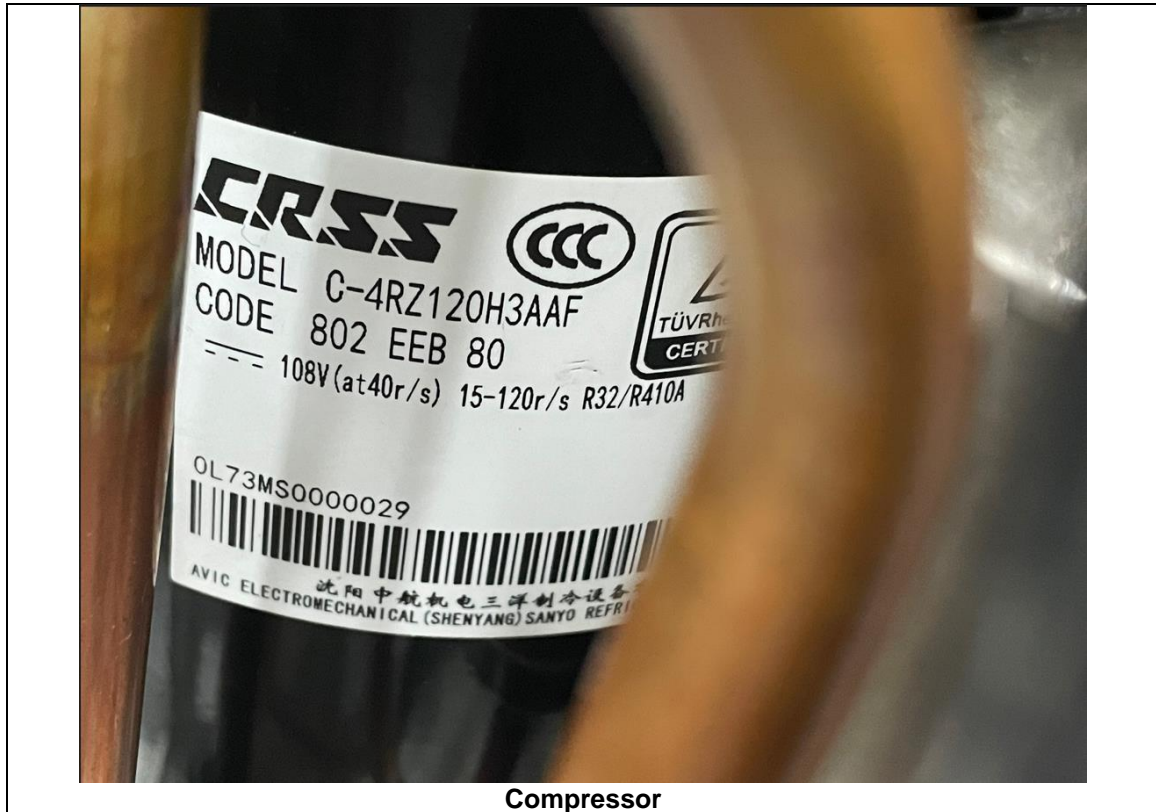
Photos:



Indoor



Outdoor unit



Compressor

End of report