

# JIANGMEN POSI REFRIGERATION APPLIANCE CO., LTD.

## TEST REPORT

**SCOPE OF WORK**

ENERGY EFFICIENCY TESTING - PORTABLE AIR CONDITIONER

**REPORT NUMBER**

211014140GZU-001

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None

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Testing Laboratory: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch  
Address: Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of  
Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD,  
Guangzhou, Guangdong, China

Applicant/Manufacturer: JIANGMEN POSI REFRIGERATION APPLIANCE CO., LTD.  
Address: 6th, 7th, 8th Building, No. 101 DongNing road, Gaoxin area,  
529000 Jiangmen City, Guangdong, PEOPLE'S REPUBLIC OF  
CHINA

Manufacturing site: JIANGMEN POSI REFRIGERATION APPLIANCE CO., LTD.  
Address: 6th, 7th, 8th Building, No. 101 DongNing road, Gaoxin area,  
529000 Jiangmen City, Guangdong, PEOPLE'S REPUBLIC OF  
CHINA

Testing Location: Same as Testing Laboratory.  
Address: Same as Testing Laboratory Address.  
Product: Portable air conditioner  
Brand Name: **POSI** for model AC14MSW; A018C-14C; A018x-14C;  
**Airo Comfort** for model AC14MWS

The product covered by this report is a household, indoor use, cord connected portable air conditioner.  
Model(s): AC14MSW; A018C-14C; A018x-14C; AC14MWS  
Model Similarity: In model name A018x-14C, x=A, B, C, D, E, indicates the different appearance. These models are identical except for the model number and brand name.

Ratings: 115V, 60Hz  
Date of receipt of sample(s): 17-Mar-20  
Date Range of Test: 8-Apr-20  
Test standard(s) or criteria(s): ANSI/AHAM PAC-1-2015  
10 CFR Part 430 Subpart B, Appendix CC  
IEC 62301 Edition 2.0, 2011-01  
California Code of Regulations: Title 20, Division 2, Chapter 4, Article 4, § 1605.3. State Standards for Non-Federally-Regulated Appliances

Conclusion: The product tested complies with the CEC's efficiency requirement.

Prepared by: Taylor Cai  
Title: Sr. Project Engineer



Signature: \_\_\_\_\_

Approved by: Oscar Lin  
Title: Sr. Project Engineer



Signature: \_\_\_\_\_

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## Photos:

Photo 1 - Front view



Photo 2 - Rear view



Photo 3 - Left view



Photo 4 - Right view



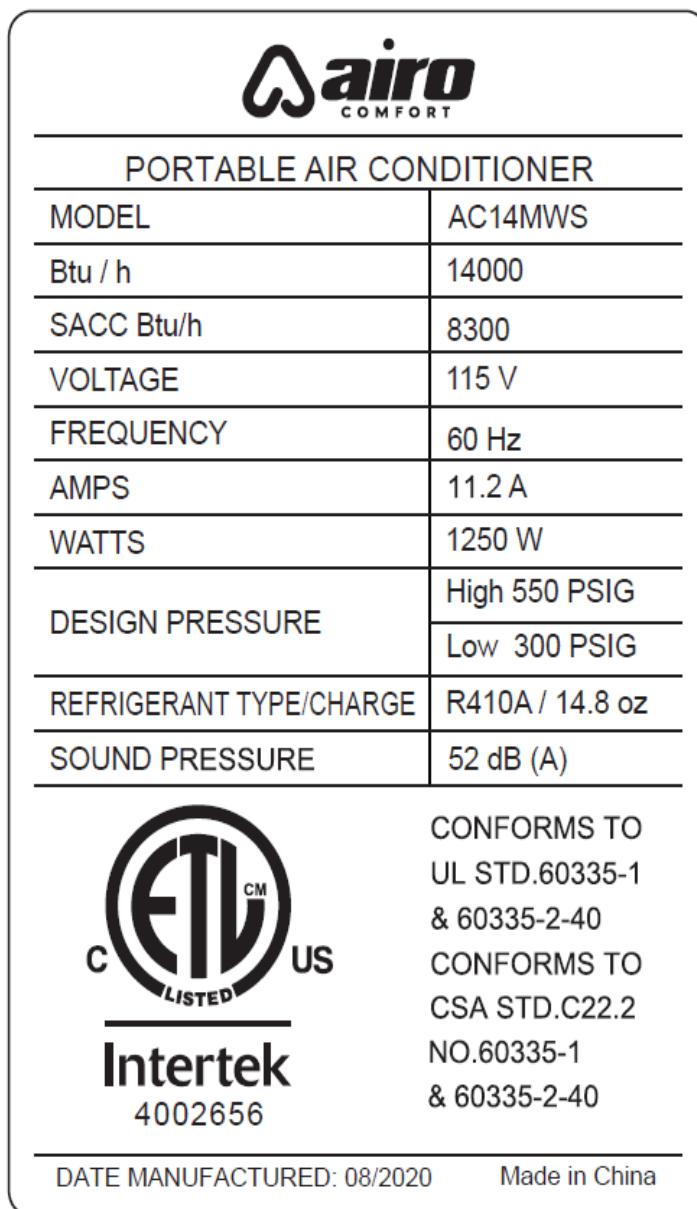
Photo 5 - Top view



Photo 6(a) - Nameplate

PORTABLE AIR CONDITIONER	
MODEL	AC14MSW
Btu/h	14000
SACC Btu/h	8000
REFRIGERANT	R410A/14.8 oz(420 g)
DESIGN PRESSURE	Hi 3.8 Mpa(550 PSIG) Lo 1.2 Mpa(174 PSIG)
MAX ALLOWABLE PRESSURE	Hi 5.0 Mpa(725 PSIG) Lo 1.5 Mpa(218 PSIG)
WEIGHT	58.0 lb
RATED VOLTAGE	115V^
RATED FREQUENCY	60Hz
INPUT	11.2A,1250W
MOTOR FLA(EVA./CON.)	0.5A/1.2A
MOTOR COMPRESSOR	RLA: 9.0A LRA: 52A
RESISTANCE CLASS	IPX0
 Intertek 4002656	CONFORMS TO UL STD.60335-1 & 60335-2-40 CONFORMS TO CSA STD.C22.2 NO.60335-1 & 60335-2-40
production date : (Year/Month/Day)	2020/01/15
JIANGMEN POSI REFRIGERATION APPLIANCE CO.,LTD	

Photo 6(b) - Nameplate



**Product Details**

Item	Data
Model Number of Unit Under Tested	AC14MSW
Serial Number	N/A
Condition of Sample(s)	Prototype
Product Type	Single-duct
Refrigerant	R410A
Standby and Off	Standby mode only

**Critical Components**

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	ZHUHAI LANDA COMPRESSOR CO LTD	QXA-B104xT130A	AC, 1PH,60 Hz,115 V; R410a,RLA:9.0 A, LRA:52 A.SA10212
Capacitor for Compressor	SHENG YE ELECTRIC CO., LTD	C65R	60 $\mu$ F, 250 VAC. E237947
Upper fan Motor	JIANGMEN POSI REFRIGERATION APPLIANCE CO LTD	YDK-15-4	115 VAC,60 Hz,Class A
Down fan Motor	JIANGMEN POSI REFRIGERATION APPLIANCE CO LTD	YDK-45-4	115 VAC,60 Hz,Class A
Upper fan Motor Capacitor	SHENG YE ELECTRIC CO., LTD	C61-P2	4 $\mu$ F, 250 VAC. E237947
Down fan Motor Capacitor	SHENG YE ELECTRIC CO., LTD	C61-P2	8 $\mu$ F, 250 VAC. E237947

## NOTE

"Various" means any type, from any manufacturer that complies with the "Technical data and securement means" can be used.

### Cooling Capacity Test

Item	Unit	Sample 1	Sample 2	Sample 3
Date of Test	-	8/Apr/2020	--	--
Barometric pressure	PSIA	14.633	--	--
Fan speed	-	High	--	--
Applied voltage	V	115.1	--	--
Frequency	Hz	60.0	--	--
Current input to test unit	A	9.80	--	--
Power input to test unit	W	1072.0	--	--
Dry-bulb temperature of indoor inlet air	°F	80.06	--	--
Wet-bulb temperature of indoor inlet air	°F	66.92	--	--
Dry-bulb temperature of indoor outlet air	°F	50.56	--	--
Wet-bulb temperature of indoor outlet air	°F	48.47	--	--
Dry-bulb temperature of outdoor inlet air	°F	80.04	--	--
Wet-bulb temperature of outdoor inlet air	°F	66.92	--	--
Dry-bulb temperature of outdoor outlet air	°F	123.10	--	--
Wet-bulb temperature of outdoor outlet air	°F	83.50	--	--
Volumetric flow rate of indoor outlet air	CFM	184.9	--	--
Volumetric flow rate of outdoor outlet air	CFM	216.2	--	--
Total Cooling Capacity	Btu/hr	10160.94	--	--
Sensible cooling capacity	Btu/hr	6185.96	--	--
Latent cooling capacity	Btu/hr	3974.98	--	--

### Duct Heat Transfer

Item	Unit	Sample 1	Sample 2	Sample 3
The outer diameter of duct, d	foot	0.492	--	--
The extended length of duct, L	foot	2.822	--	--
The surface area of duct, A <sub>duct</sub>	square foot	4.362	--	--
The surface temperature of duct, t <sub>1</sub>	°F	110.8	--	--
The surface temperature of duct, t <sub>2</sub>	°F	114.8	--	--
The surface temperature of duct, t <sub>3</sub>	°F	113.2	--	--
The surface temperature of duct, t <sub>4</sub>	°F	108.9	--	--
T <sub>duct_SD</sub>	°F	111.9	--	--
Convection coefficient, h ()	Btu/h per square foot per °F	3	--	--
Average evaporator inlet air dry-bulb temperature-T <sub>ei</sub>	°F	80	--	--
Q <sub>duct_SD</sub>	Btu/h	416.91	--	--

## Infiltration Air Heat Transfer

Item	Unit	Sample 1	Sample 2	Sample 3
Average volumetric flow rate, $V_{co\_SD}$	CFM	216.24	--	--
Dry bulb of the condenser outlet air	°F	123.098	--	--
Wet bulb of the condenser outlet air	°F	83.498	--	--
$p_{ws}(t^*)$	PSIA	0.5683670	--	--
Humidity ratio at saturation, $W_s^*$	-	0.0251337	--	--
Average humidity ratio of condenser outlet air, $w_{co\_SD}$	$lb_w/lb_{da}$	0.0157874	--	--
Average density of the condenser outlet air, $\rho_{co\_SD}$	$lb_m/ft^3$	0.0671395	--	--
Dry air mass flow rate of infiltration, $\dot{m}_{sd}$	$lb/m$	14.293	--	--
Specific heat of dry air, $c_{p_da}$	$Btu/lb_m - ^\circ F$	0.24	--	--
$T_{ia\_95}$	°F	95	--	--
$T_{ia\_83}$	°F	83	--	--
$T_{indoor}$	°F	80	--	--
$C_{p_wv}$	$Btu/lb_m - ^\circ F$	0.444	--	--
$W_{ia\_95}$	$lb_w/lb_{da}$	0.01410	--	--
$W_{ia\_83}$	$lb_w/lb_{da}$	0.01086	--	--
$W_{indoor}$	$lb_w/lb_{da}$	0.0112	--	--
$H_{fg}$	$Btu/lb_m$	1061	--	--
Sensible heat added to the room by infiltration air, $Q_{s\_95}$	$Btu/h$	3256.14	--	--
Sensible heat added to the room by infiltration air, $Q_{s\_83}$	$Btu/h$	619.50	--	--
Latent heat added to the room by infiltration air, $Q_{l\_95}$	$Btu/h$	2638.67	--	--
Latent heat added to the room by infiltration air, $Q_{l\_83}$	$Btu/h$	-309.36	--	--
Total infiltration air heat, $Q_{infiltration\_95}$	$Btu/h$	5894.8	--	--
Total infiltration air heat, $Q_{infiltration\_83}$	$Btu/h$	310.1	--	--

**SACC**

Item	Unit	Sample 1	Sample 2	Sample 3
Cooling capacity, Capacity <sub>SD</sub>	Btu/h	10160.94	--	--
Adjusted Cooling Capacity, ACC <sub>95</sub>	Btu/h	3849.22	--	--
Adjusted Cooling Capacity, ACC <sub>83</sub>	Btu/h	9433.89	--	--
Seasonally Adjusted Cooling Capacity, SACC	Btu/h	8316.95	--	--

**Operating mode**

Item	Unit	Sample 1	Sample 2	Sample 3
Temperature of indoor side	°F	80.06	--	--
Applied voltage	V	115.0	--	--
Frequency	Hz	60.0	--	--
Off-Cycle, P <sub>OC</sub>	W	48.50	--	--
Inactive or Off, P <sub>OM</sub>	W	0.73	--	--

**CEER**

Item	Unit	Sample 1	Sample 2	Sample 3
Cooling Mode (h)	h	750	--	--
Off-Cycle (h)	h	880	--	--
Inactive or Off (h)	h	1355	--	--
Total annual energy consumption in off-cycle-AECoc	kWh/year	42.68	--	--
Total annual energy consumption in inactive or off mode-AECim or AECom	kWh/year	0.99	--	--
Total annual energy consumption attributed to all modes except cooling-AECT	kWh/year	43.67	--	--
Annual energy consumption in cooling mode, AECSd	kWh/year	804.00	--	--
Combined energy efficiency ratio, CEER <sub>SD</sub>	Btu/hr · W	7.359	--	--

**Conclusion**

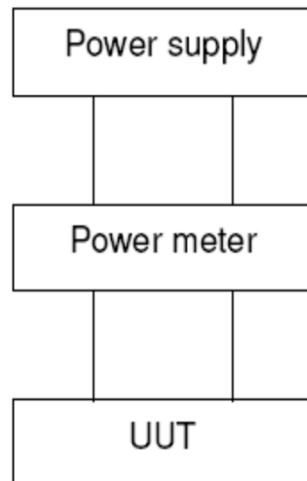
Item	Unit	Sample 1	Sample 2	Sample 3
Seasonally Adjusted Cooling Capacity, SACC	Btu/h	8300	--	--
Power input to test unit	W	1072.0	--	--
Combined energy efficiency ratio, CEER <sub>SD</sub>	Btu/hr · W	7.359	--	--
CEC Energy Efficiency Standards, manufactured on or after February 1, 2020	--	7.321		
Verdict	--	Pass		

**Test Instruments**

Instrument Type	Brand	Type	Number	Range used	Accuracy	Calibration Date	Due Date
Psychrometric Chamber	--	--	SA016-34	--	--	17-Dec-2019	16-Dec-2020
Portable Air Conditioner Air Flow Test Equipment	--	--	SA016-34-01	--	--	16-Sep-2019	15-Sep-2020

**Measurement conditions for standby and off mode test**

Operating condition	Stand-by	Off-mode
Method used	Accumulated energy approach	Accumulated energy approach
Comments	Following the cooling capacity test, the unit is stopped with the control of the device. After 10 minutes, the power consumption is measured.	NA

**Testing circuit for standby and off mode test**

## &lt;div[](https://img.shields.io/badge/Revision%20Summary-1.0.0-blue)

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--The End--