

# Nantong Ningpu Electrical Appliance Co.,Ltd

## TEST REPORT

### SCOPE OF WORK

ENERGY EFFICIENCY TESTING - PORTABLE AIR CONDITIONER -[MODEL(S) LIST IN PAGE 2]

### REPORT NUMBER

221107089GZU-007

ISSUE DATE

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[REVISED DATE]

NONE

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### DOCUMENT CONTROL NUMBER

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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: Nantong Ningpu Electrical Appliance Co.,Ltd  
Address: No.139, Huanghe Road, Rudong Economic Development  
Zone, Nantong, Jiangsu Province, China

Manufacturing site: Nantong Ningpu Electrical Appliance Co.,Ltd  
Address: No.139, Huanghe Road, Rudong Economic Development  
Zone, Nantong, Jiangsu Province, China

Testing Location: Same as Testing Laboratory  
Address: Same as Testing Laboratory Addresss

Product: Portable air conditioner  
Brand Name: See Brand Name on page 6.  
Description: The product covered by this report is a household, indoor  
use, cord connected portable air conditioner.

Model(s): NPL\*\*\*-05C/X1E; NPL\*\*\*-05C/X1E-W; FP10233US-WH;  
FP10233CA-WH; 823-041V80BK; 823-041V80CW; A5405-8K;  
A5407-8K; A5406-8K-CH; A5406-8K-JP

Model Similarity: These models are identical except for the model name and  
brand name. First\*=A to Z or blank, second\*=1 to 10 or  
blank, third\*=A to Z or blank.

Ratings: 115V, 60Hz  
Rated SACC (BTU/h) 5000  
Date of receipt of sample(s): 12-Nov-2022  
Date Range of Test: 14-Nov-2022  
Test standard(s) or criteria(s): 20 CCR § 1605.3  
ANSI/AHAM PAC-1-2015  
10 CFR Part 430 Subpart B, Appendix CC  
IEC 62301 Edition 2.0, 2011-01

Conclusion: The products tested comply with the Energy Efficiency  
Standards of CEC.

Prepared by: Taylor Cai  
Title: Sr. Project Engineer

*Taylor Cai*

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

Approved by: Felix Li  
Title: Technical Team Leader

*Felix Li*

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 - Nameplate(s)

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">   <small>4010450</small> </div> <div> <small>CONFORMS TO</small>  <small>UL 60335-1&amp;60335-2-40</small>  <small>CERTIFICAT TO</small>  <small>CSA C22.2 No.60335-1</small>  <small>&amp; No.60335-2-40</small> </div> <div style="text-align: center;">   <small>EP5019847</small> </div> <div> <small>ENERGY</small>  <small>PERFORMANCE</small>  <small>VERIFIED</small>  <small>RENDEMENT</small>  <small>ENERGETIQUE</small>  <small>VERIFIE</small> </div> </div>	
<b>PORTABLE AIR CONDITIONER</b>	
MODEL	NPL-05C/X1E
POWER SUPPLY	115V~/60Hz
COOLING INPUT/CURRENT	770W/6.8A
TOTAL CURRENT	6.8A
SACC	5000BTU/hr
CEER <sub>90</sub>	6.2BTU/hr·W
LOW/HIGH SIDE PRESSURE	360psig/620psig
MOTOR FLA	1.5A
COMPRESSOR RLA	5.5A
COMPRESSOR LRA	27.0A
REFRIGERANT/CHARGE	R32/6.4Oz  A2L
<p style="text-align: center;">Nantong Ningpu Electrical Appliance Co.,Ltd.  Huanghe Road, Rudong Economic Development Zone,  Nantong, Jiangsu Province 226400 R. R. China</p> <p style="text-align: right;">DATE:</p>	

## Product Details

Item	Data
Model Number of Unit Under Tested	NPL-05C/X1E
Serial Number	N/A
Condition of Sample(s)	Prototype
Product Type	Single-duct
Refrigerant	R32
Standby and Off	Standby mode only

## Brand Name

<b>NINGPU</b> for model NPL***-05C/X1E; NPL***-05C/X1E-W <b>COSTWAY</b> for model FP10233US-WH; FP10233CA-WH <b>HOMCOM</b> for model 823-041V80BK; 823-041V80CW <b>ZAFRO</b> for model A5405-8K; A5407-8K; A5406-8K-CH; A5406-8K-JP <b>R.W.FLAME</b> for model A5405-8K; A5407-8K; A5406-8K-CH; A5406-8K-JP <b>COWSAR</b> for model A5405-8K; A5407-8K; A5406-8K-CH; A5406-8K-JP <b>Joy Pepple</b> for model A5405-8K; A5407-8K; A5406-8K-CH; A5406-8K-JP
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## Critical Components

Name	Manufacturer / trademark	Type / model	Technical data
Compressor	GMCC	KSN66E01VZDX3	115V~,60Hz R32/R410A
Fan motor	JIANGSU CHANGJIA ELECTRIC CO.,LTD/ NANTONG NINGPU ELECTRICAL APPLIANCE CO.,LTD.	YSK95-70-4BL	110-120V 60Hz
Capacitor of Compressor	HUNING ELECTRIC APPARATUS CO.,LTD.	CBB65A	55uF±5%, 250VAC 50/60Hz
Capacitor of fan motor	Sheng Ye Electric Co.,Ltd.	C61	20uF±5%, 250VAC 50/60Hz

### 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
Barometric pressure	PSIA	14.682	14.689	-
Fan speed	-	High	High	-
Applied voltage	V	114.6	114.4	-
Frequency	Hz	60.06	60.06	-
Current input to test unit	A	6.73	6.84	-
Power input to test unit	W	768.0	779.0	-
Dry-bulb temperature of indoor inlet air	°F	80.06	80.06	-
Wet-bulb temperature of indoor inlet air	°F	66.92	66.92	-
Dry-bulb temperature of indoor outlet air	°F	55.36	55.53	-
Wet-bulb temperature of indoor outlet air	°F	52.54	52.77	-
Dry-bulb temperature of outdoor inlet air	°F	80.06	80.06	-
Wet-bulb temperature of outdoor inlet air	°F	66.92	66.92	-
Dry-bulb temperature of outdoor outlet air	°F	108.21	108.46	-
Wet-bulb temperature of outdoor outlet air	°F	78.01	78.03	-
Volumetric flow rate of indoor outlet air	CFM	164.6	165.8	-
Volumetric flow rate of outdoor outlet air	CFM	228.1	227.3	-
Total Cooling Capacity	Btu/hr	7284.6	7223.2	-
Sensible cooling capacity	Btu/hr	4582.3	4585.7	-
Latent cooling capacity	Btu/hr	2702.3	2637.5	-

### Duct Heat Transfer

Item	Unit	Sample 1	Sample 2	Sample 3
The outer diameter of duct, d	foot	0.492	0.492	-
The extended length of duct, L	foot	3.117	3.117	-
The surface area of duct, $A_{duct}$	square foot	4.818	4.818	-
The surface temperature of duct, $t_1$	°F	105.4	105.8	-
The surface temperature of duct, $t_2$	°F	102.7	103.6	-
The surface temperature of duct, $t_3$	°F	103.6	103.1	-
The surface temperature of duct, $t_4$	°F	99.3	99.0	-
$T_{duct\_SD}$	°F	102.8	102.9	-
Convection coefficient, h ( )	Btu/h per square foot per °F	3	3	-
Average evaporator inlet air dry-bulb temperature- $T_{ei}$	°F	80	80	-
$Q_{duct\_SD}$	Btu/h	328.5	329.8	-

## Infiltration Air Heat Transfer

Item	Unit	Sample 1	Sample 2	Sample 3
Average volumetric flow rate, $V_{co\_SD}$	CFM	228.1	227.3	-
Dry bulb of the condenser outlet air	°F	108.21	108.46	-
Wet bulb of the condenser outlet air	°F	78.01	78.03	-
$p_{ws}(t^*)$	PSIA	0.4752576	0.4755712	-
Humidity ratio at saturation, $W_s^*$	-	0.0208057	0.0208092	-
Average humidity ratio of condenser outlet air, $w_{co\_SD}$	lb <sub>w</sub> /lb <sub>da</sub>	0.0137250	0.0136752	-
Average density of the condenser outlet air, $\rho_{co\_SD}$	lb <sub>m</sub> /ft <sup>3</sup>	0.0692153	0.0692211	-
Dry air mass flow rate of infiltration, $\dot{m}_{sd}$	lb/m	15.574	15.522	-
Specific heat of dry air, $c_{p\_da}$	Btu/lb <sub>m</sub> -°F	0.24	0.24	-
$T_{ia\_95}$	°F	95	95	-
$T_{ia\_83}$	°F	83	83	-
$T_{indoor}$	°F	80	80	-
$C_{p\_wv}$	Btu/lb <sub>m</sub> -°F	0.444	0.444	-
$w_{ia\_95}$	lb <sub>w</sub> /lb <sub>da</sub>	0.01410	0.01410	-
$w_{ia\_83}$	lb <sub>w</sub> /lb <sub>da</sub>	0.01086	0.01086	-
$w_{indoor}$	lb <sub>w</sub> /lb <sub>da</sub>	0.0112	0.0112	-
$H_{fg}$	Btu/lb <sub>m</sub>	1061	1061	-
Sensible heat added to the room by infiltration air, $Q_{s\_95}$	Btu/h	3548.0	3536.1	-
Sensible heat added to the room by infiltration air, $Q_{s\_83}$	Btu/h	675.0	672.8	-
Latent heat added to the room by infiltration air, $Q_{l\_95}$	Btu/h	2875.2	2865.5	-
Latent heat added to the room by infiltration air, $Q_{l\_83}$	Btu/h	-337.1	-336.0	-
Total infiltration air heat, $Q_{infiltration\_95}$	Btu/h	6423.3	6401.6	-
Total infiltration air heat, $Q_{infiltration\_83}$	Btu/h	337.9	336.8	-



### Seasonally Adjusted Cooling Capacity

Item	Unit	Sample 1	Sample 2	Sample 3
Cooling capacity, Capacity <sub>SD</sub>	Btu/h	7284.6	7223.2	-
Adjusted Cooling Capacity, ACC <sub>95</sub>	Btu/h	532.9	491.9	-
Adjusted Cooling Capacity, ACC <sub>83</sub>	Btu/h	6618.2	6556.6	-
Seasonally Adjusted Cooling Capacity, SACC	Btu/h	5401.1	5343.7	-

### Off-cycle Mode and Inactive Mode

Item	Unit	Sample 1	Sample 2	Sample 3
Temperature of indoor side	°F	80.06	80.06	-
Applied voltage	V	115.0	115.0	-
Frequency	Hz	60.0	60.0	-
Off-Cycle, P <sub>OC</sub>	W	0.50	0.50	-
Inactive or Off, P <sub>OM</sub>	W	0.48	0.38	-

### Combined Energy Efficiency Ratio

Item	Unit	Sample 1	Sample 2	Sample 3
Cooling Mode (h)	h	750	750	-
Off-Cycle (h)	h	880	880	-
Inactive or Off (h)	h	1355	1355	-
Total annual energy consumption in off-cycle-AEC <sub>oc</sub>	kWh/year	0.44	0.44	-
Total annual energy consumption in inactive or off mode-AEC <sub>im</sub> or AEC <sub>om</sub>	kWh/year	0.65	0.51	-
Total annual energy consumption attributed to all modes except cooling-AEC <sub>T</sub>	kWh/year	1.09	0.95	-
Annual energy consumption in cooling mode, AEC <sub>SD</sub>	kWh/year	576.00	584.25	-
Combined energy efficiency ratio, CEER <sub>SD</sub>	Btu/hr·W	7.02	6.85	-

## Conclusion

Item	Unit	Sample 1	Sample 2	Sample 3
Seasonally Adjusted Cooling Capacity, SACC	Btu/h	5401	5344	-
Power input to test unit	W	768.0	779.0	-
Combined energy efficiency ratio, CEER <sub>SD</sub>	Btu/hr·W	7.02	6.85	-

Item	Unit	Value
Sampling size	-	2
Mean of SACC	Btu/h	5372
Mean of AEC <sub>SD</sub>	kWh/year	580.1
Mean of AEC <sub>T</sub>	kWh/year	1.02
Mean of CEER <sub>SD</sub>	Btu/hr·W	6.93
UCL/1.1 regard to AEC <sub>SD</sub>	-	551.1
UCL/1.1 regard to AEC <sub>T</sub>	-	1.32
LCL/0.9 regard to CEER <sub>SD</sub>	-	7.10
Represented Value of SACC	Btu/h	5350
Represented Value of AEC <sub>SD</sub>	kWh/year	580
Represented Value of AEC <sub>T</sub>	kWh/year	1
Represented Value of CEER <sub>SD</sub>	Btu/hr·W	6.9
CEC Energy Efficiency Standards, manufactured on or after February 1, 2020	Btu/hr·W	6.2
Verdict	-	Pass

## Revision Summary

[illegible]

--The End--