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To : Mrs Mounira Latrech

Contract officer

UNIDO headquarters

Final Report

For contract 98/134

Between UNIDO and Zhejiang Rongsheng Electric Co.Ltd.

From: Liang Rikui

Project Leader

Zhejiang Rongsheng Electric Co.Ltd.

RSLG 中国浙江荣盛电器有限公司
CHINA ZHEJIANG RONGSHENG ELEC EOUPMENT CO.,LTD.
公司地址：浙江省英干山经济技术开发区
电　话：(0572)8061000　8061476
传　真：8062818　8061000

TO:　　FAX:
ATTN:　　DATE: 21/12/1998
CC:　　PAGESL:

RE:

Mrs. M. Latrech
UNIDO, Vienna
Fax: 00 431 260 26 6815
Subject: Second Progress Report
Ref. Contract no. 97/134, Project no MP/CPR/97/195

Dear Mrs. Latrech

I am glad to submit to you RSLG second progress report regarding achievement of our various activities to execute contract no 97/134.

We would like to acknowledge the deep cooperation between UNIDO and our company for implementation of the CFC phase project.

1.2 Zhejiang Rongsheng Electronic Co. Ltd.

Zhejiang Rongsheng Electronic Co. Ltd(Rongsheng) is a collective ownership plastic cement, refrigerator and freezer manufacturing company. The company was established in 1988. The plants are located in Deqing County and produce five different products: Horizontal Freezer and Freezing Showcase, Vertical Refrigerating Showcase, Twin Temperature Freezing Showcase, and Plastic Cement.

The production of freezers in Rongsheng started in 1994 with 440 employees. Currently, there are 800 employees, of which, 75 are in the management department and 90 are technicians.

The daily production rate of the factory is about 800 units in two shifts. In 1996 the actual production was 146,186 freezers.

The Company produces 13 models in eight basic size ranges between 98 and 510 litres including Upright Cooler and Chest Cooler/Freezer.

The factory is operating with CFC-12 and CFC-11.

Table 7. Volume of refrigerator production at RONGSHENG

Year	Units
1994	60,058
1995	132,165
1996	146,186
1997 (expected)	230,000

Table 8. Product mix of RONGSHENG

Model	*Description*	*Share in total production, %*	*Charge, g/unit*	*Foam weight (cabinet + door) kg/unit*
BD-98	freezer, volume 98 l	6.7	150	3.8
BD-122	freezer, volume: 122 l	10.1	155	4.2
BD-158	freezer, volume: 158 l	21.3	155	4.84
BD-172	freezer, volume: 172 l	39.8	175	5.54
BD-268	freezer, volume: 268 l	10.3	205	7.1
BD-308	freezer, volume: 308 l	5.1	209	8.07
BD-408	freezer, volume 408 l	4	265	9.58
BD-510	freezer, volume 510 l	3	315	11.50
Total or average		100	179.66	5.77

Rongsheng is currently running two production lines for foaming and two for assembly of products. They are installed in two separate buildings. One assembly

line is placed in one building and two foaming machines (the cabinet and door foaming lines) and the second assembly line are in another building. The thermoforming machine is located in a separate building.

Rongsheng manufactures 40% of components for the use in their refrigerators. About 10% of the compressors are imported the rest are of domestic origin.

The freezer compartments are equipped with plate tube type evaporators produced locally.

The polyol, isocyanate and the CFCs are from ICI. There is 17% CFC-11 in the currently applied formulation on two lines as foam blowing agent. The technologies and some of the equipment are of Chinese origin, there is no technological agreement with any major international producer regarding refrigerator manufacturing. The foaming of cabinets are carried out in bath position. The arrangements for doors and cabinets are made in carousel. Preheating of cabinets and doors before foaming are with hot air. The preheating ovens are heated with steam. Curing time is eight minutes.
The major manufacturing equipments are as follows:

1 set High pressure cabinet foaming machine with one foaming head. Manufactured by Cannon A-100 system, Italy 1994

1 set Cabinet foaming carousel with up to 20 moulds. Manufactured by Jiangsu Kunshan Moulds Factory, China

1 set Low pressure door foaming machine with one foaming head. Manufactured by Cannon A-40 system, Italy 1989

1 set Door foaming carousel with 12 moulds (double) moulds. Manufactured by Jiangsu Kunshan Moulds Factory, China

2 sets Preheating oven heated with steam

2 sets CFC-12 refrigerant charging boards type 150 Manufactured by Shanghai Aeroplane Manufacturing Co. China

2 sets Evacuation carousel equipped with 40 vacuum pumps.
Shanghai Vacuum Pumps Factory. 2x2 - 4 Manufactured in China 1993

3 sets Leak detectors used on the production and testing lines
Manufactured in China 1993

1 set Testing conveyor for testing 120 units simultaneously. The refrigerator travel at 60 Sec./unit speed

1 set Fully automatic thermoforming lines, type: four position. Manufactured by Hungary in 1988. The lines produce inner liners from ABS sheet.

The quality control is extended to every piece (electrical safety, cooling performance), and random thorough tests are applied for a part of the production. Rongsheng has a test room equipped with basic instruments to measure the performance of refrigerators. The appliances designed for refrigerator 5° C and for freezer -18° C. According to the Chinese standard the performance is tested at ambient temperature 16-32°C, 60% humidity.

In 1996 Rongsheng used approximately 27.5 mt of CFC-12 and 150.3 mt of CFC-11

II. PROJECT OBJECTIVE

The objective of this project is to eliminate the use of CFC-11 and CFC-12 in the production of domestic refrigerators/freezers and in refrigeration servicing at Rongsheng through conversion to the use of HFC-134a as refrigerant for the cooling system and cyclopentane as blowing agent for the polyurethane insulation foam

The project will be finalised by end 1999 and thus will contribute to the freeze target of the country by phasing out 177.5 ODP tonnes in line with NEPA's ODS phase out programme.

III. PROJECT DESCRIPTION

Rongsheng has already recognized the need to comply with the Montreal Protocol and has agreed to participate in China's ODS phase out programme. It is prepared to phase out ODS as soon as the new technologies have been acquired, the necessary machinery installed and the technical staff have been trained. Rongsheng is committed to phase out CFCs by converting its foaming equipment to cyclopentane use and using HFC-134a as refrigerant.

This project document describes the activities needed to carry out the phase out process.

III.1. Justification for Selection of Alternative Technologies

III.1.1. Refrigerant

Among the technological options currently available on commercial basis (see Table 9) and in line with the established policy of NEPA and CNCLI to phase out the use of ODS. In the selection of the substitute refrigerant technology for this project the following factors were also taken into account:

Activities

We are delighted to explain some of our activities during execution of the project.

Achievement of Calculation of Models and Methods of Calculation

Calculation of models for redefinition of the prototypes for conversion into R134a refrigerant circuit system.

We chose ASHREA standard to calculate refrigeration load necessary to determine suitable components specially compressor that is the heart of refrigeration system. Other components such as Capillary tube, Evaporator, and condenser are relatively adjusted to achieve best results. In order to determine the correct amount of R134a refrigerant charge, and other data such as pressure at different point of refrigeration circuits, we have to know the performance characteristics of each component, such Suction and Discharge temperature of compressor, inlet and outlet temperature of condenser or saturated liquid and vapor temperature, therefore we should perform theoretical cycle calculations for both pure refrigerants and blends.

The theoretical performances can be compared to one of the following CFC/HCFC fluids: R12, R502 and R22. The calculations are best used as a means of finding trends in fluid performance. The cycle has not been designed to model experimental equipment in detail. Several factors, such as those from heat exchangers and compressor volumetric inefficiencies are not included in the theoretical cycle.

Definition of the Theoretical Cycle:

The calculations are based on a point cycle. The points are as follows
(1) Evaporator Inlet - Liquid/vapour flash
(2) Evaporator Outlet - Saturated Vapour
(3) Compressor Inlet - Superheated Vapour
(4) Compressor Outlet - Compressed Vapour
(5) Condenser Inlet - Saturated Vapour
(6) Condenser Outlet - Saturated Liquid
(7) Expansion Device Inlet - Subcooled Liquid

INPUT FIELDS

Evaporator Temperature: defined as the average of the liquid/vapour flash temperature at the evaporator inlet and that of the saturated vapour at the evaporator outlet. The latter is taken to be the dew point temperature at the calculated evaporator pressure. Unlike pure refrigerants, for the R32/R125/R134a blends the inlet and outlet temperature will be different.

Condenser Temperature: defined as the average of the temperature of the

saturated vapour at the condenser inlet and the temperature of the saturated liquid at the condenser outlet. They are taken to be the the dew and bubble point temperatures respectively at the condenser pressure.

Superheating: defined as the temperature difference between the superheated vapour at the compressor inlet and the saturated vapour at the evaporator outlet. It is assumed that the compression process begins under identical conditions to those at the compressor inlet i.e. the compressor inlet conditions are the same as the suction conditions.

Sub-cooling: defined as the temperature difference between the saturated liquid at the condenser outlet and that of the sub-cooled liquid at the expansion device inlet.

Efficiency: An isentropic compression process is used for the theoretical cycle calculations. The isentropic efficiency is the value. relative to a theoretical maximum of 100%, of the efficiency with which the compressor can isentropically compress the superheated vapour from the suction pressure up to a pressure equivalent to the condenser pressure. It scales directly with the required compressor power.

The Constraint: Cooling Duty or Volumetric Flowrate:
In order to compare the calculations of several refrigerants on the same basis there is an option to constrain either the cooling duty or the volumetric flowrate of the superheated vapour prior to compression (i.e. the compressor inlet).

Cooling Duty: the required cooling capacity of the system. In this program,
it is defined as the cooling that occurs from directly after the expansion device to the evaporator outlet i.e. the saturated vapour condition.

Volumetric Flowrate: defined for the superheated vapour immediately prior
to the compression process (i.e.at the compressor inlet point).

DEFINITION OF CALCULATED FIELDS

Pressure: the pressure for which the average of the caculated evaporator inlet and outlet temperatures give the input evaporator temperature.

Condenser Pressure: the pressure for which the average of the calculated condenser inlet (dew point) and outlet (bubble point) temperatures give the input condenser temperature.

Coefficient of Performance: the ratio of the refrigeration effect to the heat of compression. The refrigeration effect is defined in two ways, as the
difference between the evaporator inlet condition (expansion valve outlet) and either the evaporator outlet condition (exclusive of superheating), or the compressor inlet condition (inclusive of superheating). The heat of compression is defined as the enthalpy rise of the vapour as a result of the compression process.

EER - Energy Ratio: the ratio of the gross capacity (see below) in Btu/hr to the compressor power in watts. The EER has been defined in this
way for all cycle calculations, including those in SI and METRIC units.

Cooling Duty: same definition as given in input fields.

Gross Capacity: The calculated gross cooling capacity of the system. It is defined as the cooling that occurs from directly after the expansion device to the compressor inlet i.e.. superheated vapour.

Compressor Power: The heat (enthalpy) required from the compressor.

Mass Flow rate: The refrigerant mass flow rate required around the system
to meet the input constraint value at the input conditions.

Suction Line Temperature: The temperature of the superheated vapour at the
compressor inlet point.

Discharge Temperature: The temperature of the compressed vapour at the
compressor outlet, which in this cycle is also taken as the point at the end of the compression process.

Temperature Glide in the Evaporator: The difference between the evaporator
inlet and outlet temperatures.

Temperature Glide in the Condenser: The difference between the condenser
inlet and outlet temperatures.

Refrigeration Load Calculation for Upright Ref.- Freezer, Chest Freezer and Display cases

Refrigeration load consist of three individual components:

1- Transmission load;
Heat transfer through side walls by conduction
2 - Product load;
Heat Removed from and produced by the products which are stored.
3 - Internal load;
Heat produced by internal sources such as lights, fan or heaters;
4 - Infiltration load
Heat gains associated with air entering the refrigerated space and door opening and etc.;

In this section , the above mentioned components will be discussed separately to analyze and extract the most useful and practical equipment's.

1) Making Prototypes;
2) Testing Prototypes;
4) Calculating Heat Leaks;
5) Being familiar with Montreal Protocol and UNIDO□s Projects;
6) Being familiar with aim of the project in Iran;
7) Selecting Components for each models;
9) Preparing Technical Specifications and Characteristics;
10) and other services as mentioned in the subject contracts;

Activities

Following activities were accomplished during execution of the contract

1 - Collecting necessary data from each .

3 - Measuring Actual Dimension of each model;
4 - Reviewing and evaluating data
5 - Performing heat leak calculation for models
6 - Determining heat loads for models;
7 - Determining product load for models;
8 - Determining heat gain by infiltration;
9 - Preparing data acquisition form;
10 - Preparing product specificationmodels;
11 - Preparing prototype data summary sheet;
12 - Recommending suitable compressors for each prototypes;
13 - Reviewing more than 30 compressor technical specifications in

order to recommend an appropriate compressor as follows

a - Danfuss;

TL5G, TLS6F, TLS7F, FR7.5G, FR8.5G, and FR10G

b - Gold Star;

NR45L, NF45N, NR62L, NR52L, VF75N, V75L

c- Matsushita;

SA3C10AX0, QA66C15RAX5, QA77C18RAX5, D66C15RAX5, D77C18RAX5, QA,51C11RAX5, QA91C20RAX5, S43C10KAX0

d - Necchi;

ESC5, ESC7K, ESC7, ESC8.5, ESC8.5K, ESC9, ESC9K,ESC11, ESCHK,

e – Zanussi

GL45AA, GL50AA, GL60AA, GL70AA, GL80AA, GL90AA, GL99AA, GL80AH,

d- Aspera

BP104822, BP1116Z, BP1118Z

e- Techomseh

Different models of Techomseh compressor specifications were reviewed and we finally chose appropriate compressor models for each models and we decided to install Techomseh Compressor on our prototypes, because we believe that the technical specification of these compressor matches our refrigeration load requirments.

Method of Refrigeration Load Calculation

Refrigeration load consist of four individual components:

1- Transmission load;
Heat transfer through walls (sides, back panels, top and bottom) and door panel.

2 - Product load;
Heat Removed from and produced by the products which are brought and stored in the refrigerator;

3 - Internal load;
Heat produced by internal sources such as lights, fan or heaters;

4 - Infiltration load
Heat gains associated with air entering the refrigerated space;

In this section , the above mentioned components will be discussed separately to analyze and extract the most useful and practical equipment□s.

Transmission Load

Heat gain through walls of a refrigerated space depend on cabin Temperature, liner, insulation and cabin conductivity and also the surrounded ambient air. In other word, there are four different resistance opposing heat flow between cabin space and ambient air as given in resistance circuit.

Considering the above mentioned resistances, Rl, Rc and Ra are not compareable in magnitude with Ri (Insulation resistance) and so can

be neglected in our calculations. Therefore, the resultant circuit and relatdted equations is.

$R = \frac{x}{KA}$ Heat Resistance and $Q_{TL} = \frac{\Delta T}{R}$ Heat Transfer

Where:

x = Insulation Thickness, mm

K = Insulation Conductivity, $Wmm/m^2 \cdot C$

A = Outside Area, m^2

ΔT = Temperature difference (Ta - Tc), C

If the insulation thickness of side walls, back panels, top, bottom and door are different, heat transfer for each part can be calculated seperately and then summed for two door refrigerators, due to different cabin temperature of freezer and refrigerator compartments, heat transfer for each compartment should be calculated separately and then added together.

Product Load

Heat removed from products (meat, fruits, vegetables, water and etc.) to reduce temperature from recieving to storage temperature is known as product load. Following steps can be taken to calculated of product loads.

1 - Heat removed from initial temperature (Ti) to storing temperature (Trs) in refrigerator compartment is;

Qrs = $\dot{M}$C (Ti - Trs)

Where:

$\dot{M}$ = Mass of product, Kg / h

C = Specific heat of product, Kcal / Kg

2 - Heat removed from intial temperature (Ti) to freezing temperature (Tf) is ;

$$Qaf = \dot{M}\, C\ (Ti - Tf)$$

Where :

$\dot{M}$ = Mass of product, Kg / h

C = Specific heat of product above freezing point, Kcal / Kg

3 - Latent heat of fusion for products is equal to;

$$QL = \dot{M}\, h$$

Where h = Latent heat of product, Kcal / Kg

4 - Heat removed from freezing temperature (Tf) to final storage temperature (Tfs) is;

$$Q\,bf = \dot{M}\, Cbf\ (Tf - Tfs)$$

Where: Cbf = Specific heat of products below freezing temperature.

For upright freezers or freezer compartment of refrigerators, total product load is

$$Qpl = Qaf + Ql + Qbf$$

For storage products to some lower temperatures above freezing temperature in refrigerator compartment is;

$$Qpl = Qrs$$

Internal Load

Electrical energy dissipated in the refrigerated space such as lights, fan motors, heaters, ... are included in the internal heat load. Due to the

little amount of consumption of lightings, the effect of lighting can be negligible and only electrical heaters of two door refrigerators or fan motors (if exist) are considered in our load calculation.

Infiltration Load

Infiltration air load is the heat transfer due to exchanging of refrigerated air with ambient caused by opening of the door or leakage through the gasket area. Infiltration load is one of the most important load components and roughly it is about 20 % of total refrigeration load.

Total Refrigeration load

As it was mentioned before, transmission load (Qtl), product load (Qpl) and internal load (Q il) can be calculated separetely. For infiltration load (air exchange through doorways or gasket leakage), we take into account 25% of sum of the above mentioned components. (transmission load, product load and internal load). Therefore total refrigeration load can be expressed as:

$$QTL = 1.25 (QTL + QPL + QIL)$$

Making Prototypes

Several prototypes have been made so far and we decided to test two of them in our Hot Chamber.

Refrigerant charge

For making prototypes we decided to charge different amount of R134a refrigerant into the refrigeration system. We considered the same amount of refrigerant as the basis of R12 refrigeration system for prototypes number one and we reduced ten percent refrigerant weight from the basis of R12 for the second prototype.

Compressor

The compressor used are in accordance with the results of our calculation and we selected the nearest possible cooling capacity of the compressor to the cooling requirement as calculated.

Capillary tube

We decided to keep the length of capillary tube unchanged, due to our experience and information we received from the compressor manufacturers.

Evaporator

We believe that the evaporator does not need any adjustment due to the higher capacity of the evaporator than what we need.

Condenser

For the same reason that we did not adjust the evaporator we did not adjust the condenser.

Testing Prototypes

Two prototypes were tested under the following condition

Pull down test, Continuos run test and cyclic run test

Ambient temperature	32 C
Relative Humidity	73 %
Test Package	used
"M" Package	used
Number of Temp. Sensors	10

Following refrigeration system points temperature were measured and the results were satisfactory.

"M' packages, Compressor Discharge and suction, condenser outlet, ambient temperature, compressor shell, evaporator surface, energy consumption, starting current.

We enclose the completed test result sheet form for your information

With regards
Liang Rikui
Chief of technical department

"RSLG" Hot Chamber Test Sheet

Date 1998, 12, 19 Test Type Cyclic Run. Test Number 4 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-168	Prt. 01		168 Lit
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1350Y	138W	R134a	140 gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Defrost	WPF30	Min.	

Test Results		
Temp. °C	Therm. Cut in	Therm. Cut out
T1	-10.80	-10.70
T2	-11.70	-11.67
T3	-11.63	-11.61
T4	-11.76	-11.61
T5	-11.44	-11.21
T6	-11.68	-11.65
T7		
T8		
T9		
Comp. Suc.		
Comp. Disch.		
Comp. Shell		
Evap. Outlet		
Evap. inlet		
Cond. Outlet		
Bald Temp		
Comp. Running Time %	26.19%	
Energy Consump. Kw/24 Hrs	0.9214 kWh/24h	
Starting Current Amp.	1.01	
Running Current Amp.	0.85	

Remarks

these temp. inside is little high. may be adjust the setting point in "Min"

Comments

Lab. Specialist: Xiao Yingdi

Supervisor: Liang Zikui

"RSLG" Hot Chamber Test Sheet

Date 1998.12.19 Test Type Cyclic Run Test Number 3 Ambient Temp. 32

Model	Serial number	Overall Dim.	Internal Volume
BD-168	Prt. 01		168 Lit
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AZ1350Y	136W	R134a	140gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Defrost	WPF30	Mid.	

Test Results

Temp. °C	Therm. Cut in	Therm. Cut out
T1	-14.79	-14.91
T2	-15.91	-15.90
T3	-15.87	-15.70
T4	-15.86	-15.76
T5	-15.60	-15.34
T6	-15.90	-15.95
T7		
T8		
T9		
Comp. Suc.		
Comp. Disch.		
Comp. Shell		
Evap. Outlet		
Evap. inlet		
Cond. Outlet		
Bald Temp		
Comp. Running Time %	33%	
Energy Consump. Kw/24 Hrs	1.0481 kwh/24h	
Starting Current Amp.	0.968	
Running Current Amp.	0.85	

Remarks

Temp inside may be a little high. but the position of the thermostater can be adjust. So this result we think it's ok too.

Comments

Lab. Specialist: Xian Yingdi

Supervisor: LiangRikui

"RSLG" Hot Chamber Test Sheet

Date 1998.12.18 Test Type Cyclic Run Test Number 2 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-168	Prt. 01		168 Lit
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1350Y	138W	R134a	140 gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Defrost	WPF30	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1	-20.73	-22.49	The result is ok.
T2	-21.94	-23.49	
T3	-22.12	-22.74	
T4	-22.02	-22.72	
T5	-21.55	-22.58	
T6	-21.81	-23.46	
T7			
T8			
T9			
Comp. Suc.	15	31	
Comp. Disch.	32	56	
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet	-20	-27	
Cond. Outlet	+28	41	
Bald Temp	-19	-26	
Comp. Running Time %	57.16%		
Energy Consump. Kw/24 Hrs	1.5020 kwh/24h		
Starting Current Amp.	0.914		
Running Current Amp.	0.85		
Lab. Specialist:			Supervisor: Liong Kikui

"RSLG" Hot Chamber Test Sheet

Date 1998.12.18 Test Type PULL DOWN Test Number 1 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-168	Prt. 01		168 Lit
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1350Y	138 W	R134a	140 gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Defrost	WPF30	Max.	

Test Results

Temp. °C	Therm. Cut in	Therm. Cut out
T1	31.91	-21.92
T2	31.41	-23.11
T3	31.63	-22.38
T4	31.58	-22.37
T5	31.54	-22.10
T6	31.43	-23.14
T7		
T8		
T9		
Comp. Suc.	31	
Comp. Disch.	60	
Comp. Shell	55	
Evap. Outlet		
Evap. inlet		
Cond. Outlet	41	
Bald Temp	-26	
Comp. Running Time %		
Energy Consump. Kw/24 Hrs		
Starting Current Amp.	0.914	
Running Current Amp.	0.85	

Remarks

IN our standard, the pull down time from 32°C to -21.9 must be less than 90 minutes. BD-168 spent 68.63 min. So it's ok.

Comments

Lab. Specialist:

Supervisor: Liangpikui

"RSLG" Hot Chamber Test Sheet

Date 98. 12. 23 Test Type pull down Test Number 1 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-182	Prt.02	990x555x920	182 lit.
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1360Y	157W	R134a	150 gr.
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure Type.	WPF30	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 99. 1. 9	Test Type Pull down	Test Number 1	Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BCD-205	Prt. 10	1065×555×920	205 Lit.
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1350Y	138W	R134a	
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Pressure Type.	WPF30	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 99.1.7.	Test Type Pull down.	Test Number 1	Ambient Temp. 32°C
Model	Serial number	Overall Dim.	Internal Volume
BCD-188.	Prt. 09	990×555×920	188 Lit.
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1350Y	138W	R134a	
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure Type.	WPF30	Mak.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 99. 1. 7	Test Type Pull down.	Test Number 1	Ambient Temp. 32°C
Model	Serial number	Overall Dim.	Internal Volume
BCD-168	Prt. 08	900×555×920	168 Lit
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1340Y	108 W	R134a.	115 gr.
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure. Type.	WPF30	Mod.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 99. 2. 5	Test Type Pull down.	Test Number 1	Ambient Temp. 32°C
Model	Serial number	Overall Dim.	Internal Volume
BD-400	Prt. 07.	1385×700×920	400 Lit.
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1390Y.	224 W	R134a.	285 gr.
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure Type.	WPF30.	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 99. 元. 3.	Test Type pull down	Test Number 1	Ambient Temp. 32°C
Model	Serial number	Overall Dim.	Internal Volume
BD-30B	Prt. 06	1125×700×920	308 Lit.
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1390Y	224 W	R134a.	190 gr.
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure Type.	WPF30.	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 98.12.25	Test Type pull down	Test Number 1	Ambient Temp. 32°C
Model	Serial number	Overall Dim.	Internal Volume
BD-210	Prt. 05	1065×555×920	210 Lit
Comp. Model	Comp. Watt	Refrigerant Type	Refrigerant Charge
AE1370Y	172 W	R134a	160 gr.
Thermostat Type	Thermostat Model	Thermostat Setting	
Pressure Type.	WPF30.	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 98.12.25 Test Type pull down Test Number 1 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-195	Prt. 04	990×555×920	195 Lit.
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1360Y	157W	R134a	150 gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Pressure Type	WPF30	Max.	

Test Results

Temp. °C	Therm. Cut in	Therm. Cut out
T1		
T2		
T3		
T4		
T5		
T6		
T7		
T8		
T9		
Comp. Suc.		
Comp. Disch.		
Comp. Shell		
Evap. Outlet		
Evap. inlet		
Cond. Outlet		
Bald Temp		
Comp. Running Time %		
Energy Consump. Kw/24 Hrs		
Starting Current Amp.		
Running Current Amp.		

Remarks

Comments

Lab. Specialist:

Supervisor:

"RSLG" Hot Chamber Test Sheet

Date 98. 12. 23 Test Type pull down Test Number 1 Ambient Temp. 32°C

Model	Serial number	Overall Dim.	Internal Volume
BD-198	Prt. 03	1065×555×920	198 Lit.
Comp. Model	**Comp. Watt**	**Refrigerant Type**	**Refrigerant Charge**
AE1360Y	157W	R134a	160 gr.
Thermostat Type	**Thermostat Model**	**Thermostat Setting**	
Pressure Type	WPF30	Max.	

Test Results			Remarks
Temp. °C	Therm. Cut in	Therm. Cut out	
T1			
T2			
T3			
T4			
T5			
T6			
T7			
T8			
T9			
Comp. Suc.			
Comp. Disch.			
Comp. Shell			
Evap. Outlet			Comments
Evap. inlet			
Cond. Outlet			
Bald Temp			
Comp. Running Time %			
Energy Consump. Kw/24 Hrs			
Starting Current Amp.			
Running Current Amp.			
Lab. Specialist:			Supervisor:

Transmission load calculation
Chest Freezer Model BD168
Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	2x0.58x0.55	0.638	60
Back Panel	0.895x0.58	0.519	60
Door	0.895x0.55	0.49	40
Bottom Floor	0.895x0.55	0.49	65
Front Panel	0.895x0.58	0.519	60

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U\,A\,(T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + \ldots\ldots}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{\text{Side Walls}} = [U A (Ta - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/(0.060/0.0195) = 0.32$ W/ Sq. Mt. C
$A = 0.638$Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{\text{Side Walls}} = 0.32 \times 0.638 \times 50 = 10.2$ Watts

$Q_{\text{Side Walls}} = 10.2$Watts

2 - $Q_{\text{Back panel}} = [U A (Ta - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1 / (0.060 / 0.0195) = 0.32$ W/ Sq. Mt. C
$A = 0.519$ Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{\text{Back panel}} = 0.32 \times 0.519 \times 50 = 8.3$ Watts

$Q_{\text{Back panel}} = 8.3$ Watts3 - $Q_{\text{Front Panel}} = [U A (Ta - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature
$U = 1 / (0.060/0.0195) = 0.32$ W/ Sq. Mt C
$A = 0.519$ Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C
$Q_{\text{Front Panel}} = 0.32 \times 0.519 \times 50 =$ Watts

$Q_{\text{Top}} = 8.3$ Watts

4 - $Q_{Bottom} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/ (0.065/0.0195) = 0.30$ W/Sq. Mt C
A =0.49 Sq. Mt.
$T_a = 42C$
$T_f = -18$ C

$Q_{Bottom} = 0.3 \times 0.49 \times 60 = 8.9$ Watts

$Q_{Bottom} = 8.9$ Watts

5 - $Q_{Door} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1 / (0.040/ 0.0195) = 0.49$ W/ Sq. Mt. C
A =0.49Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{Door} = 0.49 \times 0.49 \times 50 = 12$ Watts

$Q_{Door} = 12$ Watts

Total Heat Leaks;

$Q_{TL} = 10.2 + 8.3 + 8.3 + 8.9 + 12 = 47.7$

$$Q_{\text{Total Heat Leaks}} = 47.7 \text{ Watts}$$

b) Product Loads;

$$Q_{product} = 65\% Q_{Heat\ Leaks}$$

$$Q_{Product\ Loads} = 47.7 \times 70\% = 33.4$$

$$Q_{Misc} = 30\% (Q_{Heat\ Leaks} + Q_{Product\ Loads})$$

$Q_{Misc} = 30\ \% = 24.3$

$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{Grand\ Total} = 47.7 + 33.4 + 24.3 = 105.4 \text{ Watts}$$

$Q_{Grand\ Total} = 105.4$ Watts

Type of Compressor suitable for this model is recommended Aspera Model BP 1111Z, or Compressor HUAYI Model AE1340Y, or Zanussi Model OF789CY.

Transmission load calculation

Chest Freezer Model BD182AF

Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	2x0.58x0.55	0.638	60
Back Panel	0.985x0.58	0.57	60
Door	0.985x0.55	0.54	40
Bottom Floor	0.985x0.55	0.54	65
Front Panel	0.985x0.58	0.57	60

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U\,A\,(T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + \ldots\ldots}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{\text{Side Walls}} = [U\,A\,(Ta - Tf)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1/ (0.060/0.0195) = 0.32 W/ Sq. Mt. C
A = 0.638Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{\text{Side Walls}} = 0.32 \times 0.638 \times 50 = 10.2$ Watts

$Q_{\text{Side Walls}} = 10.2$Watts

2 - $Q_{\text{Back panel}} = [U\,A\,(Ta - Tf)]$

T_a = Ambient Temperature

T_f = Freezer air Temperature

U = 1 / (0.060 /0.0195) = 0.32 W/ Sq. Mt. C
A =0.57 Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{Back\ panel}$ = 0.32 x 0.57 x 50 = 9.1 Watts

$Q_{Back\ panel}$ = 9.1 Watts

3 - $Q_{Front\ Panel}$ = [U A (T_a - T_f)]

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1 / (0.060/0.0195) = 0.32 W/ Sq. Mt C
A =0.57 Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{Front\ Panel}$ = 0.32 x 0.57x 50 = 9.1 Watts

Q_{Top} = 9.1 Watts

4 - Q_{Bottom} = [U A (T_a - T_f)]

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1/ (0.065/0.0195) = 0.30 W/Sq. Mt C
A =0.54 Sq. Mt.
T_a = 42C
T_f = - 18 C

Q_{Bottom} = 0.3 x 0.54 x 60 = 9.7 Watts

Q_{Bottom} = 9.7 Watts

5 - Q_{Door} = [U A (T_a - T_f)]

T_a = Ambient Temperature

T_f = Freezer air Temperature

U = 1 / (0.040/ 0.0195) = 0.49 W/ Sq. Mt. C
A =0.54Sq. Mt.
T_a = 32 C
T_f = - 18 C

Q_{Door} = 0.49 x 0.54 x 50 = 13.2 Watts

Q_{Door} = 13.2 Watts

Total Heat Leaks;

Q_{TL} = 10.2 + 9.1+ 9.7 + 9.1 + 13.2 = 51.33

$Q_{Total\ Heat\ Leaks}$ = 51.33 Watts

b) Product Loads;

We consider 13 Kg ice making capacity for this model per 24 hours. Therefore;

$Q_{product} = Q_1 + Q_2 + Q_3$,
where;

$Q_1 = mC_1 (T_i - T_f)$ = energy required to freeze water from initial temperature to freezing point of 0 °C

$Q_2 = mC_2 (T_f - T_n)$ = energy required to freeze ice from zero degree

temperature to -18 °C

Q_3 = m x h = heat gain from latent heat of fusion of water

Q1 = 13 x 1 x (24-0)= 312 Kcal per 24 hour

Q2 = 13 x 1 [0 – (-18)] = 234 Kcal per 24 hours

Q3 = 13 x 108 = 1404 Kcal per 24 hours

$Q_{product}$ = 312 + 234 + 1404 = 1950 Kcal per 24 hour = 81 Kcal / hour = 94 W

$$Q_{Misc} = 10\ \% \left(Q_{Heat\ Leaks} + Q_{Product\ Loads}\right)$$

$$Q_{Misc} = 10\ \%\ (51 + 94) = 14.5$$

$$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{Grand\ Total} = 51.1 + 94 + 14.5 = 159.6 \text{ Watts}$$

$$\boxed{Q_{Grand\ Total} = 160 \text{ Watts}}$$

Type of Compressor suitable for this model is recommended

Transmission load calculation

Chest Freezer Model BD198AF

Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	2x0.58x0.55	0.638	60
Back Panel	1.06x0.58	0.61	60
Door	1.06x0.55	0.58	40
Bottom Floor	1.06x0.55	0.58	65
Front Panel	1.06x0.58	0.61	60

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U A (T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + \ldots\ldots}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{\text{Side Walls}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature
Tf = Freezer air Temperature

$U = 1/(0.060/0.0195) = 0.32$ W/ Sq. Mt. C
$A = 0.638$ Sq. Mt.
$Ta = 32$ C
$Tf = -18$ C

$Q_{\text{Side Walls}} = 0.32 \times 0.638 \times 50 = 10.2$ Watts

$Q_{\text{Side Walls}} = 10.2$ Watts

2 - $Q_{\text{Back panel}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature
Tf = Freezer air Temperature

$U = 1/(0.060/0.0195) = 0.32$ W/ Sq. Mt. C
$A = 0.61$ Sq. Mt.
$Ta = 32$ C
$Tf = -18$ C

$Q_{\text{Back panel}} = 0.32 \times 0.61 \times 50 = 9.8$ Watts

$Q_{\text{Back panel}} = 9.8$ Watts

3 - $Q_{\text{Front Panel}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature
Tf = Freezer air Temperature

$U = 1/(0.060/0.0195) = 0.32$ W/ Sq. Mt C
$A = 0.61$ Sq. Mt.
$Ta = 32$ C

$T_f = -18$ C

$Q_{\text{Front Panel}} = 0.32 \times 0.61 \times 50 = 9.8$ Watts

$Q_{\text{Top}} = 9.8$ Watts

4 - $Q_{\text{Bottom}} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/(0.065/0.0195) = 0.30$ W/Sq. Mt C
A =0.58 Sq. Mt.
$T_a = 42$C
$T_f = -18$ C

$Q_{\text{Bottom}} = 0.3 \times 0.58 \times 60 = 10.4$ Watts

$Q_{\text{Bottom}} = 10.4$ Watts

5 - $Q_{\text{Door}} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/(0.040/0.0195) = 0.49$ W/ Sq. Mt. C
A =0.58Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{\text{Door}} = 0.49 \times 0.58 \times 50 = 14.2$ Watts

$Q_{\text{Door}} = 14.2$ Watts

Total Heat Leaks;

$Q_{TL} = 10.2 + 9.8 + 10.4 + 9.8 + 14.2 = 54.4$

$Q_{\text{Total Heat Leaks}} = 54.4$ Watts

b) Product Loads;

We consider 15 Kg ice making capacity for this model per 24 hours. Therefore;

$Q_{product} = Q_1 + Q_2 + Q_3$,

where;

$Q_1 = mC_1 (T_i - T_f)$ **= energy required to freeze water from initial temperature to freezing point of 0 °C**

$Q_2 = mC_2 (T_f - T_{ff})$ **= energy required to freeze ice from zero degree**

temperature to -18 °C

Q_3 = m x h = heat gain from latent heat of fusion of water

Q1 = 15 x 1 x (24-0)= 360 Kcal per 24 hour

Q2 = 15 x 1 [0 – (-18)] = 270 Kcal per 24 hours

Q3 = 15 x 108 = 1620 Kcal per 24 hours

$Q_{product}$ = 360 + 270 + 1620 = 2250 Kcal per 24 hour = 93 Kcal / hour = 108.7 W

$$Q_{Misc} = 10\ \% \left(Q_{Heat\ Leaks} + Q_{Product\ Loads}\right)$$

$$Q_{Misc} = 10\ \%\ (54.4 + 108.7) = 16.3$$

$$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{Grand\ Total} = 54.4 + 108.7 + 16.3 = 179.4 \text{ Watts}$$

$Q_{\text{Grand Total}}$ = 179 Watts

Type of Compressor suitable for this model is recommended

Transmission load calculation

Chest Freezer Model BD308

Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	(0.8x0.63)+(0.45x0.63)	0.79	70
Back Panel	(0.8x1.12)-(0.25x0.24)	0.89	70
Door	1.12x0.63	0.70	65
Bottom Floor	1.12x0.63	0.70	75
Front Panel	(0.8x1.12)-(0.25x0.24)	0.89	70

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U A (T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + \ldots\ldots}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{Side\ Walls} = [U A (Ta - T_0)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/(0.070/0.0195) = 0.28$ W/ Sq. Mt. C
A = 0.79 Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{Side\ Walls} = 0.28 \times 0.79 \times 50 = 11$ Watts

$Q_{Side\ Walls} = 11$ Watts

2 - $Q_{\text{Back panel}} = [U A (Ta - Tf)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1 / (0.070 / 0.0195) = 0.28$ W/ Sq. Mt. C
$A = 0.89$ Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{\text{Back panel}} = 0.28 \times 0.89 \times 50 = 12.5$ Watts

$Q_{\text{Back panel}} = 12.5$ Watts

3 - $Q_{\text{Front Panel}} = [U A (Ta - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1 / (0.070/0.0195) = 0.28$ W/ Sq. Mt C
$A = 0.89$ Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{\text{Front Panel}} = 0.28 \times 0.89 \times 50 = 12.5$ Watts

$Q_{\text{Top}} = 12.5$ Watts

4 - $Q_{\text{Bottom}} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/ (0.075/0.0195) = 0.26$ W/Sq. Mt C
$A = 0.70$ Sq. Mt.
$T_a = 42$C
$T_f = -18$ C

$Q_{\text{Bottom}} = 0.26 \times 0.70 \times 60 = 11$ Watts

$Q_{Bottom} = 11$ Watts

5 - $Q_{Door} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1 / (0.065 / 0.0195) = 0.3$ W/ Sq. Mt. C
A =0.70 Sq. Mt.
$T_a = 32$ C
$T_f = -18$ C

$Q_{Door} = 0.3 \times 0.70 \times 50 = 10.5$ Watts

$Q_{Door} = 10.5$ Watts

Total Heat Leaks;

$Q_{TL} = 11 + 12.5 + 10.5 + 11 + 12.5 = 57.7$

$Q_{Total\ Heat\ Leaks} = 57.5$ Watts

b) Product Loads;

We consider 20 Kg ice making capacity for this model per 24 hours. Therefore;

$Q_{product} = Q_1 + Q_2 + Q_3$,
where;

$Q_1 = mC_1 (T_i - T_f)$ = energy required to freeze water from initial temperature to freezing point of 0 °C

$Q_2 = mC_2 (T_f - T_{ff})$ = energy required to freeze ice from zero degree

temperature to -18 °C

Q_3 = m x h = heat gain from latent heat of fusion of water

Q1 = 20 x 1 x (24-0)= 480 Kcal per 24 hour

Q2 = 20 x 1 [0 – (-18)] = 360 Kcal per 24 hours

Q3 = 20 x 108 = 2160 Kcal per 24 hours

$Q_{product}$ = 480 + 360 + 2160 = 3000 Kcal per 24 hour = 125 Kcal / hour = 145 W

$$Q_{Misc} = 30\% \left(Q_{Heat\ Leaks} + Q_{Product\ Loads}\right) = 10\%(57.5 + 145) = 20\ w$$

Q_{Misc} = 20 Watts

$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{Grand\ Total} = 57.5 + 145 + 20 = 220\ Watts$$

$$\boxed{Q_{Grand\ Total} = 220\ Watts}$$

Type of Compressor suitable for this model is recommended Compressor HUAYI Model

Transmission load calculation

Chest Freezer Model BD400
Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	(0.8x0.63)+(0.45x0.63)	0.79	70
Back Panel	(0.8x1.38)-(0.25x0.24)	1.05	70
Door	1.38x0.63	0.87	65
Bottom Floor	1.38x0.63	0.87	75
Front Panel	(0.8x1.38)-(0.25x0.24)	1.05	70

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U A (T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + ...}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{\text{Side Walls}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature
Tf = Freezer air Temperature

$U = 1/(0.070/0.0195) = 0.28$ W/ Sq. Mt. C
$A = 0.79$ Sq. Mt.
$Ta = 32$ C
$Tf = -18$ C

$Q_{\text{Side Walls}} = 0.28 \times 0.79 \times 50 = 11$ Watts

$Q_{\text{Side Walls}} = 11$ Watts

2 - $Q_{\text{Back panel}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature
Tf = Freezer air Temperature

$U = 1 / (0.070 / 0.0195) = 0.28$ W/ Sq. Mt. C
$A = 1.05$ Sq. Mt.
$Ta = 42$ C
$Tf = -18$ C

$Q_{\text{Back panel}} = 0.28 \times 1.05 \times 60 = 17.64$ Watts

$Q_{\text{Back panel}} = 17.6$ Watts

3 - $Q_{\text{Front Panel}} = [U\ A\ (Ta - Tf)]$

Ta = Ambient Temperature

T_f = Freezer air Temperature

U = 1 / (0.070/0.0195) = 0.28 W/ Sq. Mt C
A =1.05 Sq. Mt.
T_a = 42 C
T_f = - 18 C

$Q_{\text{Front Panel}}$ = 0.28 x 1.05x 60 = 17.6 Watts

Q_{Top} = 17.6 Watts

4 - $Q_{\text{Bottom}} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1/ (0.075/0.0195) = 0.26 W/Sq. Mt C
A =0.87 Sq. Mt.
T_a = 42C
T_f = - 18 C

Q_{Bottom} = 0.26 x 0.87 x 60 = 11.3 Watts

Q_{Bottom} = 11.3 Watts

5 - $Q_{\text{Door}} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1 / (0.065/ 0.0195) = 0.3 W/ Sq. Mt. C
A =0.870 Sq. Mt.
T_a = 32 C
T_f = - 18 C

Q_{Door} = 0.3 x 0.870 x 50 = 13 Watts

Q_{Door} = 13 Watts

Total Heat Leaks;

Q_{TL} = 11 + 17.6+ 13 + 17.6 + 11.3 = 70.5

$$Q_{\text{Total Heat Leaks}} = 70.5 \text{ Watts}$$

b) Product Loads;

We consider 25 Kg ice making capacity for this model per 24 hours. Therefore;

$Q_{product} = Q_1 + Q_2 + Q_3$,

where;

$Q_1 = mC_1 (T_i - T_f)$ = energy required to freeze water from initial temperature to freezing point of 0 °C

$Q_2 = mC_2 (T_f - T_{fr})$ = energy required to freeze ice from zero degree

temperature to -18 °C

Q_3 = m x h = heat gain from latent heat of fusion of water

Q1 = 25 x 1 x (24-0)= 600 Kcal per 24 hour

Q2 = 25 x 1 [0 – (-18)] = 450 Kcal per 24 hours

Q3 = 25 x 108 = 2700 Kcal per 24 hours

$Q_{product}$ = 600 + 450 + 2700 = 3750 Kcal per 24 hour = 156 Kcal / hour = 182 W

$$Q_{Misc} = 30\% \left(Q_{Heat\ Leaks} + Q_{Product\ Loads}\right) = 10\%(70.5 + 182) = 25 \text{ w}$$

$$Q_{Misc} = 25 \text{ Watts}$$

$$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{\text{Grand Total}} = 70.5 + 182 + 25 = 277 \text{ Watts}$$

$$\boxed{Q_{\text{Grand Total}} = 277 \text{ Watts}}$$

Type of Compressor suitable for this model is recommended Compressor HUAYI Model

Transmission load calculation

Chest Freezer Model BD510

Dimensions

	Dimension Mt.	Area (sq. Mt.)	Insulation Thickness mm.
Side Walls	(0.8x0.63)+(0.45x0.63)	0.79	70
Back Panel	(0.8x1.7)-(0.25x0.24)	1.3	70
Door	1.7x0.63	1.07	65
Bottom Floor	1.7x0.63	1.07	75

Front Panel	(0.8x1.12)-(0.25x0.24)	1.3	70

Insulation Type: Pu Foam

CP5. Foam Thermal Conductivity: 0.0195 W /mt.C

Temperature Difference: $(\Delta T) = 32 - (-18) = 50$ C
Ambient Temperature = 32 C
Freezer Air Temperature = - 18 C

Calculation :

$$Q_{TL} = Q_{SW} + Q_{BP} + Q_{BOTTOM} + Q_{Front} + Q_{DOOR}$$

$$Q = U\,A\,(T_a - T_f)$$

$$U = \frac{1}{X_1 / K_1 + X_2 / K_2 + \ldots\ldots}$$

Where :

U = Heat Resistance Coefficient Factor

K_1 = Foam Thermal Conductivity

X_1 = Foam Thickness

Note : Due to the short thickness of cabinet out side panel (0.5 mm) and aluminum inner liner (0.5 mm) heat resistance of these materials have been considered negligible.

Therefore:

1- $Q_{Side\ Walls} = [U\,A\,(Ta - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

$U = 1/(0.070/0.0195) = 0.28$ W/ Sq. Mt. C

A = 0.79 Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{\text{Side Walls}}$ = 0.28 x 0.79 x 50 = 11 Watts

$Q_{\text{Side Walls}}$ = 11Watts

2 - $Q_{\text{Back panel}}$ = [U A (T_a - T_f)]

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1 / (0.070 /0.0195) = 0.28 W/ Sq. Mt. C
A =1.3 Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{\text{Back panel}}$ = 0.28 x 1.3 x 50 = 18.2 Watts

$Q_{\text{Back panel}}$ = 18.2 Watts

3 - $Q_{\text{Front Panel}}$ = [U A (T_a - T_f)]

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1 / (0.070/0.0195) = 0.28 W/ Sq. Mt C
A =1.3 Sq. Mt.
T_a = 32 C
T_f = - 18 C

$Q_{\text{Front Panel}}$ = 0.28 x1.3x 50 = 18.2 Watts

Q_{Top} = 18.2 Watts

4 - Q_{Bottom} = [U A (T_a - T_f)]

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1/ (0.075/0.0195) = 0.26 W/Sq. Mt C
A =1.07 Sq. Mt.
T_a = 42C
T_f = - 18 C

Q_{Bottom} = 0.26 x 1.070 x 60 = 16.7 Watts

Q_{Bottom} = 16.7 Watts

5 - $Q_{Door} = [U A (T_a - T_f)]$

T_a = Ambient Temperature
T_f = Freezer air Temperature

U = 1 / (0.065/ 0.0195) = 0.3 W/ Sq. Mt. C
A =1.070 Sq. Mt.
T_a = 32 C
T_f = - 18 C

Q_{Door} = 0.3 x 1.07 x 50 = 16 Watts

Q_{Door} = 16 Watts

Total Heat Leaks;

Q_{TL} = 11 + 18.2+ 16.7 + 18.2 + 16 = 80

$Q_{Total\ Heat\ Leaks}$ = 80 Watts

b) Product Loads;

We consider 30 Kg ice making capacity for this model per 24 hours. Therefore;

$Q_{product} = Q_1 + Q_2 + Q_3$,
where;

$Q_1 = mC_1 (T_i - T_f)$ = energy required to freeze water from initial temperature to freezing point of 0 °C

$Q_2 = mC_2 (T_f - T_{ff})$ = energy required to freeze ice from zero degree

temperature to -18 °C

Q_3 = m x h = heat gain from latent heat of fusion of water

Q1 = 30 x 1 x (24-0)= 720 Kcal per 24 hour

Q2 = 30 x 1 [0 – (-18)] = 540 Kcal per 24 hours

Q3 = 30 x 108 = 3240 Kcal per 24 hours

$Q_{product}$ = 720 + 540 + 3240 = 4500 Kcal per 24 hour = 187 Kcal / hour = 218 W

$$Q_{Misc} = 10\% \left(Q_{Heat\ Leaks} + Q_{Product\ Loads}\right) = 10\%(80 + 218) = 30\ w$$

Q_{Misc} = 30 Watts

$Q_{Misc} = Q_{Electicity} + Q_{Infiltration} + Q_{Door\ Opening} + Q_{Etc.}$

Total Cooling Capacity required is calculated as follows;

$$Q_{Grand\ Total} = Q_{Heat\ Leaks} + Q_{Product\ Loads} + Q_{Misc.}$$

$$Q_{Grand\ Total} = 80 + 218 + 30 = 328\ Watts$$

$$\boxed{Q_{Grand\ Total} = 328\ Watts}$$

Type of Compressor suitable for this model is recommended Compressor HUAYI Model

NO:1
试验内容:储藏温度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y,.66*2100 140
厂商:32'70%
温控器位置Cn值=5
测度条件:

冷冻室:-21.0 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流(A)	电能1(KWh)	功率(W)	系数(%)	电能2(KWh/24h)	Cn	ΔT秒
	1998-12-22																							
OFF	11:11:53	-19.87	-22.40	-22.29	-18.46	-18.77	-19.36											0.002	0.0279				5	
ON	11:25:47	-19.77	-22.35	-22.20	-18.40	-18.70	-19.24											0.907	0.0283				5	834
OFF	11:41:34	-19.77	-22.27	-22.22	-18.47	-18.83	-19.38											0.002	0.0567	107.8	53.17	1.3938	5	947
ON	11:55:31	-19.68	-22.27	-22.16	-18.36	-18.69	-19.26											0.915	0.0571				5	837
OFF	12:10:58	-19.78	-22.30	-22.21	-18.44	-18.72	-19.27											0.001	0.0849	107.7	52.86	1.3875	5	927
ON	12:24:38	-19.70	-22.30	-22.19	-18.39	-18.71	-19.28											0.919	0.0853				5	820
OFF	12:40:3	-19.75	-22.26	-22.18	-18.40	-18.71	-19.30											0.000	0.1130	107.6	52.91	1.3894	5	925
ON	12:53:2	-19.70	-22.28	-22.17	-18.38	-18.69	-19.24											0.912	0.1134				5	779
OFF	13:9:0	-19.76	-22.26	-22.20	-18.42	-18.73	-19.28											0.002	0.1420	107.3	53.47	1.4023	5	958
ON	13:22:43	-19.63	-22.23	-22.16	-18.38	-18.71	-19.27											0.909	0.1424				5	823
OFF	13:39:23	-19.75	-22.26	-22.18	-18.39	-18.72	-19.29											0.001	0.1721	106.9	53.75	1.4074	5	1000
ON	13:52:12	-19.72	-22.29	-22.15	-18.35	-18.63	-19.23											0.915	0.1726				5	769
OFF	14:7:45	-19.77	-22.28	-22.16	-18.38	-18.69	-19.27											0.000	0.2004	107.4	53.92	1.4123	5	933
ON	14:21:21	-19.72	-22.31	-22.16	-18.37	-18.68	-19.25											0.911	0.2008				5	816
OFF	14:36:46	-19.77	-22.28	-22.19	-18.43	-18.74	-19.30											0.001	0.2285	107.5	53.81	1.4093	5	925
ON	14:50:28	-19.69	-22.30	-22.18	-18.42	-18.72	-19.27											0.913	0.2290				5	822
OFF	15:6:26	-19.76	-22.28	-22.18	-18.41	-18.70	-19.28											0.000	0.2575	107.0	53.81	1.4097	5	958
ON	15:19:3	-19.68	-22.27	-22.14	-18.38	-18.70	-19.27											0.914	0.2579				5	757

ON	17:13:15	-19.04	-22.26	-22.15	-18.39	-18.68	-19.22	0.914	0.3761				5	871
OFF	17:34:32	-19.71	-22.23	-22.14	-18.39	-18.69	-19.25	0.000	0.4040	107.9	54.66	1.4150	5	917
ON	17:40:57	-19.08	-22.28	-22.16	-18.41	-18.71	-19.27	0.914	0.4044				5	745
OFF	18:1:27	-19.71	-22.24	-22.14	-18.39	-18.69	-19.25	0.002	0.4305	107.9	54.65	1.4154	5	870
ON	18:15:36	-19.06	-22.28	-22.16	-18.41	-18.71	-19.27	0.918	0.4309				5	851
OFF	18:31:9	-19.65	-22.20	-22.13	-18.39	-18.71	-19.26	0.000	0.4587	107.4	53.93	1.4122	5	931
ON	18:44:14	-19.69	-22.30	-22.21	-18.46	-18.76	-19.30	0.910	0.4591				5	785
OFF	18:53:28	-19.71	-22.24	-22.16	-18.40	-18.70	-19.27	0.000	0.4864	107.4	53.92	1.4120	5	914
ON	19:13:20	-19.04	-22.24	-22.11	-18.34	-18.62	-19.17	0.915	0.4868				5	852
OFF	19:28:30	-19.09	-22.22	-22.13	-18.39	-18.68	-19.24	0.000	0.5141	107.6	53.82	1.4036	5	910
ON	19:41:35	-19.03	-22.27	-22.17	-18.40	-18.69	-19.22	0.917	0.5144				5	785
OFF	19:56:16	-19.71	-22.24	-22.16	-18.40	-18.69	-19.24	0.000	0.5409	108.1	53.77	1.4087	5	881
ON	20:10:5	-19.05	-22.26	-22.17	-18.40	-18.72	-19.28	0.920	0.5413				5	829
OFF	20:25:9	-19.69	-22.23	-22.15	-18.35	-18.64	-19.19	0.000	0.5684	107.9	53.69	1.4067	5	904
ON	20:38:46	-19.04	-22.25	-22.15	-18.38	-18.69	-19.24	0.917	0.5688				5	817
OFF	20:54:11	-19.73	-22.29	-22.23	-18.49	-18.78	-19.36	0.000	0.5967	108.1	53.66	1.4064	5	925
ON	21:8:50	-19.01	-22.21	-22.09	-18.31	-18.66	-19.17	0.918	0.5970				5	759
OFF	21:24:24	-19.66	-22.20	-22.12	-18.32	-18.59	-19.14	0.000	0.6233	108.2	53.65	1.4066	5	874
ON	21:35:18	-19.47	-22.09	-22.01	-18.27	-18.59	-19.18	0.918	0.6237				5	834
OFF	21:51:10	-19.72	-22.27	-22.19	-18.43	-18.76	-19.32	0.003	0.6523	107.8	53.64	1.4064	5	952
ON	22:3:59	-19.61	-22.20	-22.09	-18.33	-18.63	-19.18	0.910	0.6527				5	709
OFF	22:18:35	-19.74	-22.27	-22.18	-18.41	-18.72	-19.28	0.000	0.6788	107.4	53.62	1.4069	5	876
ON	22:32:21	-19.60	-22.27	-22.16	-18.38	-18.69	-19.25	0.918	0.6792				5	820
OFF	22:47:53	-19.07	-22.11	-22.10	-18.30	-18.63	-19.15	0.001	0.7072	108.1	53.59	1.4054	5	932
ON	23:1:3	-19.63	-22.24	-22.14	-18.35	-18.65	-19.21	0.912	0.7076				5	790
OFF	23:16:12	-19.65	-22.21	-22.14	-18.36	-18.71	-19.26	0.002	0.7349	107.7	53.59	1.4055	5	906
ON	23:28:58	-19.58	-22.22	-22.13	-18.34	-18.62	-19.17	0.914	0.7353				5	827
OFF	23:45:23	-19.68	-22.24	-22.17	-18.41	-18.71	-19.26	0.002	0.7630	107.7	53.56	1.4047	5	924
ON	23:57:50	-19.67	-22.27	-22.17	-18.37	-18.62	-19.15	0.911	0.7633				5	753
	1998-12-26													
OFF	0:12:59	-19.64	-22.18	-22.09	-18.32	-18.61	-19.20	0.001	0.7903	107.4	53.59	1.4055	5	903
ON	0:26:41	-19.60	-22.21	-22.09	-18.33	-18.62	-19.20	0.916	0.7909				5	822
OFF	0:42:6	-19.68	-22.22	-22.15	-18.41	-18.71	-19.30	0.002	0.8186	107.7	53.57	1.4053	5	925
ON	0:54:27	-19.63	-22.24	-22.14	-18.37	-18.65	-19.21	0.911	0.8190				5	741
OFF	1:8:54	-19.65	-22.20	-22.09	-18.33	-18.62	-19.17	0.000	0.8450	108.0	53.58	1.4057	5	807
ON	1:22:52	-19.59	-22.24	-22.12	-18.34	-18.67	-19.25	0.911	0.8453				5	836
OFF	1:38:5	-19.65	-22.19	-22.08	-18.30	-18.65	-19.23	0.000	0.8727	107.6	53.53	1.4044	5	913
ON	1:50:54	-19.61	-22.20	-22.07	-18.32	-18.61	-19.19	0.913	0.8732				5	769
OFF	2:6:0	-19.66	-22.20	-22.11	-18.37	-18.66	-19.25	0.000	0.9003	107.5	53.55	1.4049	5	906
ON	2:19:38	-19.59	-22.22	-22.10	-18.30	-18.64	-19.20	0.912	0.9008				5	818
OFF	2:34:26	-19.56	-22.08	-21.98	-18.26	-18.53	-19.12	0.000	0.9274	107.6	53.50	1.4040	5	886
ON	2:46:58	-19.59	-22.20	-22.09	-18.33	-18.62	-19.19	0.917	0.9279				5	752
OFF	3:1:8	-19.63	-22.17	-22.08	-18.34	-18.61	-19.18	0.000	0.9534	108.1	53.49	1.4040	5	850
ON	3:14:54	-19.58	-22.21	-22.11	-18.36	-18.65	-19.20	0.916	0.9539				5	820
OFF	3:30:3	-19.64	-22.16	-22.08	-18.34	-18.61	-19.18	0.000	0.9812	107.9	53.46	1.4033	5	909
ON	3:42:30	-19.59	-22.20	-22.08	-18.35	-18.63	-19.17	0.913	0.9816				5	747
OFF	3:58:55	-19.62	-22.15	-22.09	-18.33	-18.63	-19.20	0.000	1.0076	107.8	53.46	1.4036	5	865
ON	4:10:44	-19.59	-22.22	-22.11	-18.36	-18.66	-19.23	0.918	1.0080				5	829
OFF	4:25:40	-19.59	-22.13	-22.05	-18.30	-18.60	-19.19	0.000	1.0349	107.9	53.42	1.4027	5	886
ON	4:38:0	-19.55	-22.20	-22.06	-18.32	-18.68	-19.23	0.916	1.0354				5	740
OFF	4:53:20	-19.63	-22.18	-22.09	-18.33	-18.64	-19.21	0.002	1.0630	107.7	53.47	1.4042	5	920
ON	5:7:5	-19.54	-22.16	-22.04	-18.24	-18.57	-19.13	0.915	1.0635				5	825
OFF	5:21:36	-19.62	-22.17	-22.08	-18.31	-18.64	-19.21	0.001	1.0897	108.1	53.42	1.4031	5	871
ON	5:34:45	-19.58	-22.18	-22.08	-18.30	-18.63	-19.19	0.921	1.0902				5	789
OFF	5:49:16	-19.62	-22.14	-22.05	-18.27	-18.60	-19.15	0.000	1.1163	107.6	53.40	1.4026	5	871
ON	6:2:48	-19.49	-22.11	-22.04	-18.26	-18.56	-19.11	0.913	1.1167				5	812
OFF	6:17:45	-19.57	-22.12	-22.05	-18.29	-18.64	-19.22	0.002	1.1430	107.7	53.37	1.4020	5	887
ON	6:29:57	-19.57	-22.18	-22.09	-18.32	-18.64	-19.21	0.912	1.1439				5	732
OFF	6:44:6	-19.56	-22.10	-22.01	-18.26	-18.58	-19.17	0.000	1.1695	108.1	53.38	1.4024	5	849
ON	6:57:52	-19.52	-22.14	-22.03	-18.26	-18.58	-19.15	0.914	1.1699				5	826

OFF	7:12:9	-19.58	-22.11	-22.02	-18.22	-18.54	-19.14										0.000	1.1956	107.9	53.32	1.4009	5	857
ON	7:24:31	-19.54	-22.15	-22.08	-18.29	-18.63	-19.20										0.913	1.1960				5	742
OFF	7:36:45	-19.48	-22.00	-21.92	-18.19	-18.54	-19.12										0.001	1.2218	108.4	53.33	1.4013	5	854
ON	7:52:5	-19.61	-22.22	-22.13	-18.34	-18.68	-19.23										0.918	1.2222				5	800
OFF	8:8:0	-19.62	-22.15	-22.08	-18.31	-18.63	-19.17										0.001	1.2508	107.9	53.35	1.4019	5	955
ON	8:20:19	-19.55	-22.12	-21.99	-18.21	-18.56	-19.14										0.914	1.2514				5	739
OFF	8:34:1	-19.61	-22.14	-22.04	-18.26	-18.62	-19.15										0.001	1.2761	108.0	53.34	1.4018	5	822
ON	8:47:49	-19.53	-22.12	-22.01	-18.25	-18.55	-19.11										0.916	1.2765				5	828
OFF	9:1:20	-19.60	-22.13	-22.05	-18.30	-18.63	-19.20										0.000	1.3010	108.6	53.26	1.4000	5	811
ON	9:14:8	-19.43	-22.04	-21.91	-18.15	-18.48	-19.07										0.916	1.3014				5	768

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1998-12-23 9:14:8 (Fmax)=-18.15 ℃

雳 33沉甭甭甭甭甭甭甭甭(Fmin)=-22.40 ℃

甭甭甭甭甭 (ton)=88.80 ℃

(toff)=88.80 ℃

电流=0.916 (A)

耗电量=1.4000 (KWh/24h)

(ON=压缩机通电,OFF=压缩机断电,*on=化霜加热器通电,*off=化霜加热器断电)
(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)
(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)
(tm)=88.80 ℃ (ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)
(tn)=88.80 ℃ (toff=贮藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)
(*max=化霜开始冷冻室最热点时刻)

制表时间:1998-12-23 9:25:46

NO:2
试验内容:储藏温度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y .60*2100 150
厂商:32'70%
温控器位置Cn值=5
温度条件:

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	△T 秒
	1998-12-22																							
OFF	11:19:9	-20.29	-20.22	-17.11	-23.94	-22.63	-22.57	-21.80	-22.05									0.000	0.0392				5	
ON	11:39:24	-20.11	-20.22	-17.13	-23.63	-22.64	-22.60	-21.84	-22.07									0.944	0.0397				5	1215
OFF	12:6:17	-20.33	-20.27	-17.16	-23.98	-22.65	-22.59	-21.82	-22.06									0.002	0.0872	106.3	57.04	1.4074	5	1013
ON	12:26:23	-20.12	-20.21	-17.09	-23.59	-22.60	-22.53	-21.78	-22.00									0.952	0.0876				5	1200
OFF	12:57:21	-20.36	-20.29	-17.15	-23.98	-22.61	-22.55	-21.81	-22.05									0.003	0.1419	105.3	58.91	1.5004	5	1858
ON	13:18:36	-20.03	-20.15	-17.00	-23.48	-22.47	-22.41	-21.66	-21.88									0.934	0.1424				5	1275
OFF	13:40:6	-20.43	-20.33	-17.28	-24.04	-22.63	-22.58	-21.84	-22.02									0.002	0.1909	105.8	58.08	1.4804	5	1650
ON	14:0:38	-20.11	-20.22	-17.11	-23.60	-22.58	-22.53	-21.81	-22.00									0.938	0.1913				5	1232
OFF	14:34:23	-20.37	-20.31	-17.18	-23.96	-22.60	-22.54	-21.78	-22.03									0.000	0.2402	105.9	57.93	1.4829	5	1665
ON	14:55:9	-20.18	-20.28	-17.19	-23.67	-22.66	-22.63	-21.89	-22.11									0.932	0.2408				5	1246
OFF	15:24:15	-20.38	-20.31	-17.18	-23.98	-22.61	-22.57	-21.82	-22.07									0.003	0.2920	105.7	58.02	1.4854	5	1746
ON	15:45:16	-20.06	-20.25	-17.13	-23.63	-22.55	-22.59	-21.77	-22.05									0.946	0.2925				5	1261
OFF	16:11:27	-20.45	-20.36	-17.25	-24.04	-22.69	-22.65	-21.89	-22.15									0.004	0.3388	106.2	57.61	1.4759	5	1571
ON	16:31:53	-20.24	-20.32	-17.20	-23.68	-22.66	-22.61	-21.86	-22.09									0.940	0.3392				5	1226
OFF	16:58:45	-20.38	-20.28	-17.20	-23.95	-22.60	-22.57	-21.81	-22.06									0.003	0.3867	106.2	57.49	1.4734	5	1612
ON	17:19:0	-20.12	-20.22	-17.14	-23.62	-22.60	-22.56	-21.81	-22.03									0.947	0.3871				5	1215
OFF	17:44:37	-20.33	-20.23	-17.17	-23.91	-22.58	-22.55	-21.79	-22.05									0.003	0.4325	106.4	57.30	1.4693	5	1537
ON	18:4:58	-20.07	-20.17	-17.12	-23.57	-22.57	-22.51	-21.75	-21.99									0.950	0.4329				5	1221
OFF	18:30:53	-20.36	-20.26	-17.21	-23.97	-22.62	-22.56	-21.77	-22.01									0.000	0.4789	106.7	57.16	1.4668	5	1555
ON	18:51:5	-20.13	-20.22	-17.14	-23.59	-22.58	-22.54	-21.76	-21.99									0.946	0.4794				5	1212
OFF	19:16:53	-20.31	-20.20	-17.14	-23.88	-22.55	-22.52	-21.74	-21.99									0.003	0.5252	106.8	57.06	1.4650	5	1548
ON	19:37:6	-20.09	-20.17	-17.09	-23.53	-22.53	-22.48	-21.70	-21.94									0.948	0.5258				5	1213
OFF	20:3:10	-20.28	-20.16	-17.12	-23.87	-22.61	-22.61	-21.83	-22.06									0.002	0.5719	106.4	56.99	1.4640	5	1564
ON	20:23:21	-20.01	-20.12	-17.08	-23.50	-22.47	-22.39	-21.59	-21.81									0.934	0.5723				5	1211

OFF	21:33:58	-20.26	-20.14	-17.09	-23.79	-22.48	-22.44	-21.64	-21.89								
ON	21:53:36	-20.13	-20.20	-17.12	-23.53	-22.53	-22.50	-21.76	-22.03								
OFF	22:19:8	-20.32	-20.22	-17.17	-23.90	-22.59	-22.55	-21.77	-22.03								
ON	22:38:50	-20.12	-20.21	-17.14	-23.57	-22.58	-22.53	-21.75	-21.97								
OFF	23:5:11	-20.20	-20.12	-17.13	-23.86	-22.48	-22.44	-21.68	-21.92								
ON	23:24:59	-20.09	-20.16	-17.09	-23.49	-22.49	-22.44	-21.65	-21.90								
OFF	23:51:13	-20.31	-20.21	-17.14	-23.81	-22.47	-22.47	-21.72	-22.01								
	1998-12-23																
ON	0:11:6	-20.11	-20.20	-17.13	-23.54	-22.52	-22.48	-21.69	-21.91								
OFF	0:38:31	-20.28	-20.21	-17.15	-23.87	-22.53	-22.49	-21.72	-21.95								
ON	0:58:32	-20.10	-20.19	-17.13	-23.56	-22.55	-22.48	-21.69	-21.91								
OFF	1:24:50	-20.36	-20.25	-17.16	-23.89	-22.55	-22.47	-21.73	-21.98								
ON	1:45:0	-20.14	-20.22	-17.17	-23.56	-22.55	-22.50	-21.73	-21.93								
OFF	2:12:12	-20.28	-20.19	-17.15	-23.85	-22.51	-22.47	-21.67	-21.92								
ON	2:32:43	-20.11	-20.22	-17.15	-23.53	-22.53	-22.50	-21.73	-21.96								
OFF	2:57:43	-20.33	-20.27	-17.25	-23.90	-22.55	-22.54	-21.75	-22.00								
ON	3:17:31	-20.08	-20.18	-17.12	-23.50	-22.49	-22.46	-21.67	-21.90								
OFF	3:44:3	-20.29	-20.20	-17.19	-23.86	-22.52	-22.50	-21.73	-21.99								
ON	4:4:11	-20.10	-20.20	-17.17	-23.55	-22.56	-22.48	-21.71	-21.94								
OFF	4:30:18	-20.32	-20.21	-17.21	-23.87	-22.55	-22.50	-21.73	-22.02								
ON	4:50:12	-20.14	-20.23	-17.19	-23.56	-22.56	-22.52	-21.70	-21.90								
OFF	5:15:20	-20.23	-20.17	-17.14	-23.86	-22.56	-22.55	-21.75	-21.99								
ON	5:35:19	-20.10	-20.18	-17.11	-23.53	-22.52	-22.47	-21.68	-21.92								
OFF	6:2:5	-20.32	-20.23	-17.12	-23.87	-22.54	-22.47	-21.69	-21.94								
ON	6:21:59	-20.23	-20.32	-17.16	-23.66	-22.67	-22.64	-21.87	-22.09								
OFF	6:49:23	-20.40	-20.31	-17.16	-23.99	-22.64	-22.57	-21.78	-22.02								
ON	7:9:44	-20.16	-20.26	-17.13	-23.66	-22.66	-22.59	-21.81	-22.03								
OFF	7:34:54	-20.30	-20.16	-17.03	-23.83	-22.49	-22.47	-21.72	-21.97								
ON	7:54:54	-20.12	-20.22	-17.15	-23.61	-22.59	-22.54	-21.75	-21.98								
OFF	8:20:35	-20.30	-20.22	-17.17	-23.91	-22.62	-22.54	-21.74	-22.02								
ON	8:40:23	-20.10	-20.18	-17.11	-23.57	-22.55	-22.48	-21.71	-21.91								
OFF	9:3:32	-20.35	-20.22	-17.19	-23.93	-22.65	-22.61	-21.82	-22.07								
ON	9:23:22	-20.06	-20.15	-17.09	-23.52	-22.55	-22.50	-21.70	-21.93								

0.001	0.6024	106.7	56.79	1.4598	5	1500	
0.934	0.6630				5	1178	
0.003	0.7081	106.3	56.78	1.4596	5	1532	
0.947	0.7086				5	1182	
0.001	0.7552	106.2	56.81	1.4604	5	1581	
0.949	0.7556				5	1188	
0.000	0.8020	106.2	56.82	1.4606	5	1574	
0.929	0.8025				5	1193	
0.000	0.8509	106.0	56.88	1.4622	5	1645	
0.929	0.8513				5	1201	
0.001	0.8979	106.3	56.88	1.4621	5	1578	
0.928	0.8984				5	1210	
0.001	0.9464	106.1	56.91	1.4628	5	1632	
0.942	0.9469				5	1231	
0.003	0.9912	106.5	56.81	1.4607	5	1500	
0.933	0.9916				5	1138	
0.001	1.0385	106.1	56.83	1.4611	5	1592	
0.950	1.0389				5	1208	
0.004	1.0851	106.3	56.82	1.4607	5	1567	
0.940	1.0856				5	1194	
0.003	1.1302	106.6	56.77	1.4599	5	1508	
0.949	1.1307				5	1199	
0.000	1.1781	106.4	56.79	1.4605	5	1606	
0.941	1.1785				5	1194	
0.002	1.2270	106.2	56.84	1.4610	5	1644	
0.942	1.2274				5	1221	
0.002	1.2721	106.7	56.78	1.4604	5	1510	
0.930	1.2726				5	1200	
0.004	1.3182	106.6	56.76	1.4601	5	1541	
0.939	1.3187				5	1186	
0.003	1.3599	107.0	56.67	1.4581	5	1389	
0.933	1.3604				5	1130	

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1998-12-22 13:18:361998-12-22 13:46:6(Fmax)=-17.00 ℃

1998-12-22 13:46:6 (Fmin)=-24.04 ℃

雨雨雨雨雨 (ton)=88.80 ℃ (tm)=88.80 ℃

(toff)=88.80 ℃ (tn)=88.80 ℃

电流=0.933 (A)

耗电量=1.4581 (KWh/24h)

制表时间:1998-12-23 9:25:46

(ON=压缩机通电,OFF=压缩机断电,*on=化霜加热器通电,*off=化霜加热器断电)

(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(toff=贮藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

(*max=化霜开始冷冻室最热点时刻)

NO:1
试验内容:箱载温度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y,.00*2100 140
厂商:32'70%
温控器位置Cn值=5
温度条件:

冷冻室:-21.9 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	ΔT 秒
	1998-12-18																							
ON	16:30:27	-21.12	-22.18	-22.57	-22.30	-22.01	-22.29											0.907	0.0004				5	
OFF	17:5:14	-23.01	-24.00	-23.27	-23.23	-23.06	-24.01											0.003	0.0263	107.4			5	887
ON	17:15:18	-21.14	-22.17	-22.57	-22.32	-22.04	-22.32											0.906	0.0272		58.48	1.5365	5	604
OFF	17:25:10	-22.80	-23.90	-23.14	-23.12	-22.95	-23.79											0.000	0.0522	107.0			5	838
ON	17:35:18	-21.05	-22.08	-22.45	-22.36	-21.92	-22.17											0.903	0.0526		58.85	1.5338	5	002
OFF	17:53:7	-22.84	-23.81	-23.08	-23.06	-22.80	-23.79											0.003	0.0775	107.9			5	829
ON	18:3:15	-21.05	-22.08	-22.46	-22.37	-21.91	-22.15											0.913	0.0779		58.47	1.5338	5	008
OFF	18:17:8	-22.85	-23.85	-23.09	-23.09	-22.90	-23.84											0.000	0.1027	107.2			5	833
ON	18:27:4	-21.13	-22.12	-22.51	-22.43	-21.98	-22.20											0.908	0.1031		58.43	1.5308	5	596
OFF	18:40:55	-22.84	-23.85	-23.08	-23.05	-22.89	-23.80											0.001	0.1280	107.5			5	837
ON	18:50:56	-21.04	-22.07	-22.45	-22.40	-21.95	-22.21											0.911	0.1284		58.33	1.5288	5	603
OFF	19:4:40	-22.79	-23.81	-23.02	-22.98	-22.72	-23.80											0.001	0.1530	107.0			5	822
ON	19:14:43	-20.85	-21.88	-22.25	-22.18	-21.73	-22.01											0.905	0.1534		58.23	1.5272	5	003
OFF	19:26:31	-22.77	-23.83	-23.07	-23.08	-22.95	-23.86											0.003	0.1781	107.3			5	826
ON	19:38:28	-20.92	-22.00	-22.36	-22.28	-21.85	-22.11											0.905	0.1785		58.21	1.5263	5	357
OFF	19:52:3	-22.72	-23.74	-22.97	-22.94	-22.77	-23.68											0.000	0.2029	107.5			5	813
ON	20:2:5	-20.81	-21.85	-22.13	-22.14	-21.68	-21.95											0.908	0.2034		58.12	1.5238	5	002
OFF	20:15:34	-22.72	-23.73	-22.97	-22.90	-22.77	-23.68											0.000	0.2277	107.0			5	809
ON	20:25:31	-21.02	-22.03	-22.40	-22.33	-21.90	-22.17											0.915	0.2281		58.06	1.5248	5	597
OFF	20:36:57	-22.74	-23.73	-22.99	-22.95	-22.75	-23.63											0.002	0.2528	107.8			5	806
ON	20:48:53	-21.02	-22.02	-22.40	-22.34	-21.90	-22.17											0.912	0.2528		58.00	1.5236	5	596
OFF	21:2:27	-22.83	-23.86	-23.06	-22.98	-22.78	-23.72											0.001	0.2770	107.6			5	814
ON	21:12:32	-21.02	-22.03	-22.38	-22.30	-21.86	-22.10											0.904	0.2774		57.95	1.5229	5	005
OFF	21:26:2	-22.74	-23.73	-22.98	-22.97	-22.81	-23.72											0.001	0.3013	107.1			5	816
ON	21:38:13	-20.91	-21.96	-22.34	-22.29	-21.83	-22.08											0.903	0.3015		57.87	1.5193	5	011
OFF	21:48:58	-22.76	-23.77	-23.00	-22.96	-22.83	-23.74											0.001	0.3265	107.2			5	825
ON	22:0:17	-20.88	-21.90	-22.26	-22.19	-21.72	-21.99											0.909	0.3268		57.81	1.5170	5	019
OFF	22:13:56	-22.70	-23.72	-22.95	-22.92	-22.76	-23.65											0.001	0.3514	107.0			5	821
ON	22:24:17	-20.88	-21.93	-22.31	-22.23	-21.78	-22.00											0.913	0.3518		57.73	1.5100	5	019
OFF	22:38:11	-22.78	-23.82	-23.04	-23.02	-22.86	-23.76											0.001	0.3768	107.3			5	834
ON	22:48:36	-20.86	-21.93	-22.31	-22.26	-21.78	-22.03											0.908	0.3772		57.71	1.5149	5	625
OFF	23:2:25	-22.72	-23.77	-22.95	-22.94	-22.76	-23.67											0.000	0.4018	107.1			5	828
ON	23:12:43	-20.85	-21.84	-22.25	-22.19	-21.74	-22.00											0.907	0.4022		57.68	1.5137	5	018
OFF	23:26:26	-22.67	-23.64	-22.88	-22.88	-22.76	-23.57											0.000	0.4267	107.2			5	823
ON	23:36:39	-20.87	-21.86	-22.24	-22.13	-21.71	-21.97											0.912	0.4272		57.66	1.5130	5	013
OFF	23:50:19	-22.67	-23.69	-22.92	-22.89	-22.72	-23.57											0.001	0.4517	107.5			5	820
	1998-12-19																							
ON	0:0:40	-20.83	-21.88	-22.27	-22.22	-21.72	-21.98											0.913	0.4522		57.61	1.5119	5	027
OFF	0:14:08	-22.71	-23.71	-22.92	-22.87	-22.77	-23.67											0.000	0.4770	107.0			5	883

5 – 10 min

OFF	0:36:54	-22.00	-23.78	-22.94	-22.92	-22.16	-23.00												
ON	0:49:2	-20.79	-21.81	-22.20	-22.14	-21.68	-21.92												
OFF	1:2:47	-22.64	-23.63	-22.84	-22.81	-22.70	-23.57												
ON	1:13:16	-20.76	-21.78	-22.15	-22.10	-21.64	-21.91												
OFF	1:26:59	-22.68	-23.66	-22.89	-22.83	-22.75	-23.59												
ON	1:37:17	-20.87	-21.91	-22.27	-22.18	-21.73	-21.98												
OFF	1:50:49	-22.66	-23.64	-22.89	-22.91	-22.77	-23.63												
ON	2:1:4	-20.80	-21.85	-22.25	-22.21	-21.74	-21.96												
OFF	2:14:35	-22.61	-23.68	-22.86	-22.85	-22.67	-23.58												
ON	2:24:56	-20.84	-21.86	-22.25	-22.18	-21.72	-21.96												
OFF	2:36:33	-22.69	-23.71	-22.94	-22.93	-22.74	-23.64												
ON	2:48:51	-20.86	-21.91	-22.28	-22.24	-21.76	-22.01												
OFF	3:2:22	-22.62	-23.60	-22.88	-22.86	-22.70	-23.57												
ON	3:12:40	-20.82	-21.84	-22.23	-22.17	-21.70	-21.94												
OFF	3:26:4	-22.64	-23.67	-22.88	-22.88	-22.72	-23.63												
ON	3:36:21	-20.78	-21.81	-22.16	-22.10	-21.64	-21.89												
OFF	3:49:53	-22.61	-23.60	-22.84	-22.82	-22.67	-23.56												
ON	4:0:9	-20.82	-21.83	-22.19	-22.16	-21.71	-21.97												
OFF	4:13:41	-22.58	-23.60	-22.80	-22.78	-22.66	-23.51												
ON	4:23:53	-20.80	-21.84	-22.19	-22.11	-21.69	-21.95												
OFF	4:37:15	-22.60	-23.61	-22.85	-22.80	-22.72	-23.56												
ON	4:47:34	-20.85	-21.81	-22.18	-22.12	-21.69	-21.94												
OFF	5:1:5	-22.61	-23.62	-22.84	-22.82	-22.65	-23.56												
ON	5:11:20	-20.76	-21.76	-22.14	-22.08	-21.64	-21.91												
OFF	5:25:7	-22.57	-23.56	-22.79	-22.78	-22.63	-23.53												
ON	5:35:24	-20.79	-21.79	-22.15	-22.05	-21.61	-21.85												
OFF	5:48:54	-22.64	-23.60	-22.82	-22.86	-22.73	-23.56												
ON	5:59:16	-20.71	-21.72	-22.07	-22.10	-21.66	-21.87												
OFF	6:12:47	-22.61	-23.62	-22.86	-22.83	-22.66	-23.53												
ON	6:23:10	-20.70	-21.73	-22.12	-22.05	-21.58	-21.82												
OFF	6:36:48	-22.61	-23.61	-22.82	-22.79	-22.61	-23.53												
ON	6:47:13	-20.71	-21.70	-22.10	-22.01	-21.57	-21.85												
OFF	7:0:10	-22.54	-23.56	-22.76	-22.78	-22.64	-23.53												
ON	7:11:4	-20.66	-21.66	-22.04	-22.00	-21.57	-21.84												
OFF	7:24:33	-22.49	-23.45	-22.74	-22.72	-22.56	-23.46												
ON	7:35:1	-20.73	-21.74	-22.12	-22.02	-21.55	-21.81												

****

1998-12-19 7:11:4 (Fmax)=-20.66 ℃

最大值出现在第(Fmin)=-24.06 ℃

第第第第第 (ton)=88.80 ℃

(toff)=88.80 ℃

电流=0.914 (A)

耗电量=1.5020 (KWh/24h)

制表时间:1998-12-19 7:35:23

																	0.906	0.5023	
																	0.001	0.5270	107.7
																	0.908	0.5275	
																	0.001	0.5521	107.6
																	0.910	0.5526	
																	0.000	0.5769	107.2
																	0.911	0.5773	
																	0.001	0.6018	107.6
																	0.911	0.6021	
																	0.001	0.6265	107.5
																	0.909	0.6270	
																	0.001	0.6512	107.6
																	0.910	0.6517	
																	0.001	0.6757	107.5
																	0.908	0.6761	
																	0.000	0.7004	107.5
																	0.911	0.7008	
																	0.000	0.7256	107.1
																	0.905	0.7253	
																	0.000	0.7454	107.2
																	0.910	0.7498	
																	0.001	0.7741	107.7
																	0.914	0.7746	
																	0.001	0.7990	107.1
																	0.910	0.7994	
																	0.001	0.8235	107.2
																	0.910	0.8241	
																	0.001	0.8484	107.1
																	0.913	0.8488	
																	0.001	0.8732	107.6
																	0.910	0.8737	
																	0.001	0.8979	107.7
																	0.908	0.9382	
																	0.001	0.9225	108.1
																	0.914	0.9230	

																	37.36	1.5101	5
																			5
																	37.52	1.5095	5
																			5
																	37.50	1.5094	5
																			5
																	37.47	1.5088	5
																			5
																	37.44	1.5082	5
																			5
																	37.42	1.5079	5
																			5
																	37.38	1.5074	5
																			5
																	37.36	1.5065	5
																			5
																	37.35	1.5061	5
																			5
																	37.34	1.5055	5
																			5
																	37.32	1.5048	5
																			5
																	37.29	1.5045	5
																			5
																	37.28	1.5041	5
																			5
																	37.26	1.5038	5
																			5
																	37.23	1.5033	5
																			5
																	37.21	1.5029	5
																			5
																	37.19	1.5023	5
																			5
																	37.16	1.5020	5

																			628
																			825
																			629
																			823
																			618
																			812
																			615
																			811
																			621
																			817
																			618
																			811
																			618
																			804
																			617
																			812
																			616
																			812
																			612
																			808
																			615
																			811
																			624
																			818
																			617
																			810
																			622
																			811
																			629
																			812
																			625
																			807
																			624
																			809
																			628

(ON=压缩机通电,OFF=压缩机断电,Xon=化霜加热器通电,Xoff=化霜加热器断电)

(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(tm)=88.80 ℃ (ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(tn)=88.80 ℃ (toff=贮藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

(Xmax=化霜开始冷冻室最热点时刻)

NO:2

试验内容:储藏温度

直冷型冰箱

机型:BD-168(R134a)

型号:AE1350T .66×2100 150

厂商:32'70%

温控器位置Cn值=3

温度条件:

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

倍式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流	电能1	功率	系数	电能2	Cn	T

30:1
试验内容:储藏温度
直冷型冰箱
机型:BD-108(R134a)
型号:AE1350Y,.66*2100 140
厂商:32'70%
温控器位置Cn值=3
温度条件:

冷冻室:-21.9 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

WPF30

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	ΔT 秒
	1998-12-19																							
OFF	7:46:26	-21.93	-22.50	-22.24	-22.24	-22.02	-22.85											0.000	0.0029				3	
ON	8:8:8	-16.35	-17.44	-18.10	-17.97	-17.22	-17.35											0.963	0.0033				3	1302
OFF	8:12:36	-15.99	-16.55	-17.21	-17.24	-16.53	-16.89											0.001	0.0127	125.0	17.07	0.6855	3	268
ON	8:22:9	-15.59	-16.46	-16.75	-16.72	-16.35	-16.53											0.957	0.0130				3	573
OFF	8:20:42	-15.58	-16.43	-16.46	-16.47	-16.02	-16.47											0.000	0.0226	125.9	22.59	0.7031	3	273
ON	8:36:1	-15.35	-16.25	-16.45	-16.40	-16.09	-16.31											0.966	0.0230				3	559
OFF	8:40:54	-15.33	-16.22	-16.09	-16.12	-15.70	-16.20											0.000	0.0331	124.1	25.52	0.7971	3	293
ON	8:49:57	-15.18	-16.05	-16.22	-16.16	-15.85	-16.12											0.964	0.0336				3	543
OFF	8:54:48	-15.20	-16.23	-16.00	-16.01	-15.62	-16.17											0.000	0.0457	124.9	27.43	0.8587	3	291
ON	9:3:47	-15.11	-16.03	-16.20	-16.14	-15.87	-16.11											0.972	0.0442				3	539
OFF	9:8:41	-15.17	-16.15	-15.91	-15.93	-15.52	-16.11											0.000	0.0545	127.0	28.75	0.9034	3	294
ON	9:17:37	-15.02	-15.93	-16.07	-16.00	-15.65	-15.96											0.967	0.0550				3	536
OFF	9:22:32	-15.12	-16.14	-15.90	-15.94	-15.55	-16.09											0.000	0.0655	126.7	29.73	0.9371	3	295
ON	9:31:31	-14.91	-15.81	-15.96	-15.84	-15.64	-15.92											0.970	0.0659				3	539
OFF	9:30:32	-15.03	-15.96	-15.75	-15.77	-15.50	-15.93											0.000	0.0765	126.2	30.50	0.9618	3	301
ON	9:45:26	-14.96	-15.90	-16.05	-15.97	-15.70	-15.96											0.971	0.0769				3	534
OFF	9:50:27	-15.06	-16.01	-15.78	-15.79	-15.39	-15.98											0.000	0.0875	126.2	31.12	0.9817	3	301
ON	9:59:25	-14.87	-15.81	-15.95	-15.80	-15.60	-15.88											0.975	0.0880				3	538
OFF	10:4:23	-14.98	-15.94	-15.72	-15.73	-15.33	-15.90											0.000	0.0985	126.6	31.38	0.9978	3	258
ON	10:13:21	-14.86	-15.80	-15.93	-15.88	-15.57	-15.84											0.975	0.0991				3	538
OFF	10:18:16	-14.98	-15.95	-15.76	-15.78	-15.36	-15.92											0.002	0.1095	126.5	31.93	1.0108	3	255
ON	10:27:10	-14.86	-15.77	-15.93	-15.85	-15.57	-15.83											0.962	0.1100				3	540
OFF	10:32:11	-15.00	-15.97	-15.73	-15.73	-15.33	-15.90											0.001	0.1203	125.8	32.22	1.0193	3	255
ON	10:41:14	-14.84	-15.74	-15.91	-15.84	-15.54	-15.81											0.970	0.1207				3	543
OFF	10:46:12	-14.83	-15.85	-15.64	-15.67	-15.27	-15.85											0.000	0.1312	127.3	32.47	1.0275	3	266
ON	10:54:49	-14.96	-15.86	-15.97	-15.85	-15.66	-15.83											0.967	0.1315				3	[illegible]
OFF	10:59:46	-14.98	-15.68	-15.72	-15.73	-15.31	-15.84											0.000	0.1420	126.6	32.75	1.0355	3	257
ON	11:8:49	-14.71	-15.68	-15.83	-15.77	-15.48	-15.76											0.973	0.1423				3	543
OFF	11:13:44	-14.91	-15.83	-15.87	-15.66	-15.26	-15.85											0.003	0.1529	127.3	32.92	1.0420	3	255
ON	11:22:28	-14.79	-15.71	-15.87	-15.86	-15.60	-15.80											0.968	0.1534				3	524
OFF	11:27:19	-14.91	-15.90	-15.70	-15.76	-15.34	-15.85											0.000	0.1637	127.3	33.05	1.0481	3	261

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1998-12-19 11:8:49 (Fmax)=-14.71 ℃

&m&3妨甭甭甭甭甭甭甭甭(Fmin)=-22.30 ℃

甭甭甭甭甭 (ton)=88.80 ℃ (tm)=88.80 ℃

(toff)=88.80 ℃ (tn)=88.80 ℃

电流=0.910 (A)

耗电量=1.0481 (kWh/24h)

(ON=压缩机通电,OFF=压缩机断电,Non=化霜加热器通电,Noff=化霜加热器断电)

(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(toff=贮藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

(Xmax=化霜开始冷冻室最热点时刻)

直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y,.60*2100 140
门向:32'70%
温控器位置Cn值=1
温度条件:

冷冻室:-21.9 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流(A)	电能1(KWh)	功率(W)	系数(%)	电能2(KWh/24h)	Cn	ΔT秒
	1998-12-19																	1.010	0.0004				1	
ON	11:45:25	-12.15	-13.12	-13.07	-13.61	-13.01	-13.21											0.000	0.0079	138.4			1	194
OFF	11:48:39	-11.85	-12.84	-13.16	-13.19	-12.52	-12.81											1.013	0.0083		23.40	0.8213	1	635
ON	11:59:14	-11.45	-12.34	-12.65	-12.63	-12.27	-12.47											0.000	0.0160	138.4			1	199
OFF	12:2:33	-11.23	-12.16	-12.25	-12.27	-11.80	-12.11											1.012	0.0166		24.24	0.8587	1	593
ON	12:12:26	-11.21	-12.09	-12.30	-12.26	-11.96	-12.16											0.002	0.0242	138.6			1	199
OFF	12:15:45	-11.00	-11.94	-11.99	-12.00	-11.59	-11.98											1.014	0.0247		24.65	0.8730	1	582
ON	12:25:27	-11.10	-11.98	-12.16	-12.11	-11.84	-12.08											0.000	0.0325	135.9			1	204
OFF	12:28:51	-10.89	-11.86	-11.83	-11.87	-11.48	-11.90											1.013	0.0329		25.08	0.8831	1	568
ON	12:38:19	-11.02	-11.90	-12.03	-11.97	-11.69	-11.94											0.001	0.0408	136.0			1	208
OFF	12:41:47	-10.93	-11.91	-11.85	-11.87	-11.49	-11.93											1.013	0.0414		25.42	0.8951	1	567
ON	12:51:14	-10.99	-11.90	-12.06	-12.00	-11.72	-11.95											0.002	0.0492	138.7			1	204
OFF	12:54:38	-10.91	-11.84	-11.77	-11.76	-11.35	-11.79											1.017	0.0496		25.60	0.9004	1	566
ON	13:4:4	-10.92	-11.84	-12.00	-11.94	-11.66	-11.89											0.000	0.0576	137.1			1	209
OFF	13:7:33	-10.80	-11.78	-11.74	-11.77	-11.36	-11.81											1.015	0.0580		25.83	0.9073	1	557
ON	13:16:50	-10.86	-11.77	-11.92	-11.86	-11.59	-11.84											0.002	0.0660	136.4			1	208
OFF	13:20:18	-10.80	-11.75	-11.69	-11.69	-11.29	-11.72											1.016	0.0665		25.98	0.9132	1	561
ON	13:29:38	-10.82	-11.70	-11.86	-11.80	-11.52	-11.78											0.002	0.0744	138.9			1	203
OFF	13:33:2	-10.82	-11.74	-11.70	-11.71	-11.32	-11.74											1.015	0.0749		26.04	0.9167	1	562
ON	13:42:24	-10.81	-11.67	-11.81	-11.75	-11.46	-11.72											0.003	0.0827	137.3			1	205
OFF	13:45:49	-10.72	-11.67	-11.62	-11.62	-11.20	-11.66											1.018	0.0833		26.14	0.9202	1	553
ON	13:55:2	-10.77	-11.67	-11.83	-11.80	-11.50	-11.75											0.002	0.0911	138.5			1	201
OFF	13:58:26	-10.71	-11.68	-11.60	-11.58	-11.17	-11.62											1.010	0.0915		26.19	0.9214	1	560
ON	14:7:46	-10.80	-11.70	-11.83	-11.76	-11.44	-11.68											0.001	0.0995	137.1			1	210
OFF	14:11:16	-10.70	-11.67	-11.61	-11.61	-11.21	-11.65																	

(ON=压缩机通电,OFF=压缩机断电,*on=化霜加热器通电,*off=化霜加热器断电)
(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)
(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)
(ton=记录点t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)
(toff=记录点t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)
(*max=化霜开始冷冻室最热点时刻)

****
1998-12-19 14:11:1633+烈岗 B甭甭甭甭甭甭甭(Fmax)=-10.70 ℃
33+烈岗 B甭甭甭甭甭甭甭(Fmin)=-13.67 ℃
甭甭甭甭甭 (ton)=88.80 ℃ (tm)=88.80 ℃
(toff)=88.80 ℃ (tn)=88.80 ℃
电流=0.950 (A)
耗电量=0.9214 (KWh/24h)

制表时间:1998-12-19 14:13:37

NO:2
试验内容:储藏温度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y ,60*2100 150
门向:32'70%
温控器位置Cn值=1
温度条件:

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

NO:1
试验内容:箱或温度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350T,.66×2100 140
厂商:32'70%
温控器位置Cn值=5
温度条件:

冷冻室:-21.9 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流(A)	电能1(KWh)	功率(W)	系数(%)	电能2(KWh/24h)	Cn	△T 秒
	1998-12-18																							
ON	16:50:27	-21.12	-22.18	-22.57	-22.50	-22.01	-22.29											0.907	0.0004				5	
OFF	17:5:14	-23.01	-24.06	-23.27	-23.23	-23.06	-24.01											0.003	0.0269	107.4			5	887
ON	17:15:18	-21.14	-22.17	-22.57	-22.52	-22.04	-22.32											0.906	0.0272		59.49	1.5565	5	604
OFF	17:25:16	-22.89	-23.90	-23.14	-23.12	-22.95	-23.79											0.000	0.0522	107.0			5	838
ON	17:35:15	-21.05	-22.08	-22.45	-22.36	-21.92	-22.17											0.909	0.0526		58.85	1.5388	5	602
OFF	17:53:7	-22.84	-23.84	-23.08	-23.06	-22.90	-23.79											0.003	0.0775	107.9			5	825
ON	18:3:15	-21.05	-22.08	-22.46	-22.37	-21.91	-22.15											0.913	0.0779		58.47	1.5338	5	608
OFF	18:17:8	-22.85	-23.85	-23.09	-23.09	-22.96	-23.84											0.000	0.1027	107.2			5	833
ON	18:27:4	-21.13	-22.12	-22.51	-22.43	-21.98	-22.20											0.908	0.1031		58.43	1.5308	5	590
OFF	18:40:55	-22.84	-23.85	-23.08	-23.05	-22.89	-23.80											0.001	0.1280	107.9			5	851
ON	18:50:58	-21.04	-22.07	-22.45	-22.40	-21.95	-22.21											0.911	0.1284		58.33	1.5293	5	603
OFF	19:4:40	-22.79	-23.81	-23.02	-22.93	-22.72	-23.66											0.001	0.1530	107.9			5	822
ON	19:14:43	-20.85	-21.89	-22.25	-22.18	-21.73	-22.01											0.906	0.1534		58.23	1.5272	5	603
OFF	19:28:31	-22.77	-23.83	-23.07	-23.06	-22.95	-23.86											0.003	0.1781	107.3			5	828
ON	19:38:28	-20.92	-22.00	-22.36	-22.28	-21.85	-22.11											0.909	0.1785		58.21	1.5263	5	597
OFF	19:52:3	-22.72	-23.74	-22.97	-22.94	-22.77	-23.68											0.000	0.2026	107.9			5	815
ON	20:2:5	-20.81	-21.85	-22.19	-22.14	-21.68	-21.95											0.908	0.2034		58.12	1.5238	5	602
OFF	20:15:34	-22.72	-23.73	-22.97	-22.96	-22.77	-23.63											0.000	0.2277	107.9			5	809
ON	20:25:31	-21.02	-22.03	-22.40	-22.33	-21.90	-22.17											0.915	0.2281		58.06	1.5248	5	597
OFF	20:38:57	-22.74	-23.73	-22.99	-22.98	-22.75	-23.63											0.002	0.2523	107.8			5	806
ON	20:48:53	-21.02	-22.02	-22.40	-22.34	-21.90	-22.17											0.912	0.2526		58.00	1.5236	5	596
OFF	21:2:27	-22.83	-23.86	-23.06	-22.96	-22.78	-23.72											0.001	0.2770	107.6			5	814
ON	21:12:32	-21.02	-22.03	-22.38	-22.30	-21.86	-22.10											0.904	0.2774		57.95	1.5220	5	603
OFF	21:26:2	-22.74	-23.75	-22.98	-22.97	-22.81	-23.72											0.001	0.3015	107.1			5	810
ON	21:36:13	-20.91	-21.96	-22.34	-22.29	-21.83	-22.08											0.903	0.3019		57.87	1.5193	5	611
OFF	21:49:38	-22.70	-23.77	-23.00	-22.98	-22.83	-23.74											0.001	0.3265	107.2			5	823
ON	22:0:17	-20.88	-21.90	-22.26	-22.15	-21.72	-21.99											0.903	0.3269		57.81	1.5176	5	619
OFF	22:13:58	-22.70	-23.72	-22.95	-22.92	-22.76	-23.68											0.001	0.3514	107.0			5	821
ON	22:24:17	-20.88	-21.89	-22.31	-22.25	-21.78	-22.00											0.913	0.3518		57.75	1.5160	5	613
OFF	22:38:11	-22.78	-23.82	-23.04	-23.02	-22.86	-23.76											0.001	0.3768	107.3			5	834
ON	22:48:36	-20.86	-21.93	-22.31	-22.26	-21.78	-22.03											0.908	0.3772		57.71	1.5149	5	625
OFF	23:2:25	-22.72	-23.77	-22.95	-22.94	-22.76	-23.67											0.000	0.4018	107.1			5	829
ON	23:12:43	-20.85	-21.84	-22.25	-22.19	-21.74	-22.00											0.907	0.4022		57.68	1.5137	5	618
OFF	23:26:26	-22.07	-23.04	-22.88	-22.88	-22.76	-23.57											0.000	0.4267	107.2			5	823
ON	23:36:39	-20.87	-21.86	-22.24	-22.15	-21.71	-21.97											0.912	0.4272		57.66	1.5130	5	613
OFF	23:50:19	-22.67	-23.69	-22.92	-22.89	-22.72	-23.57											0.001	0.4517	107.5			5	826
	1998-12-19																							
ON	0:0:46	-20.83	-21.88	-22.27	-22.22	-21.72	-21.98											0.913	0.4522		57.61	1.5119	5	627
OFF																		0.000	0.4770	107.0			5	835

5 – 10 min

OFF	0:38:34	-22.00	-23.73	-22.94	-22.92	-22.78	-23.63	0.900	0.5023		57.56	1.5101	5	628
ON	0:49:2	-20.79	-21.81	-22.20	-22.14	-21.68	-21.92	0.001	0.5270	107.7			5	825
OFF	1:2:47	-22.64	-23.63	-22.84	-22.81	-22.70	-23.57	0.908	0.5275		57.52	1.5095	5	629
ON	1:13:10	-20.70	-21.78	-22.15	-22.10	-21.64	-21.91	0.001	0.5521	107.6			5	823
OFF	1:20:53	-22.68	-23.60	-22.89	-22.88	-22.75	-23.59	0.910	0.5526		57.50	1.5094	5	618
ON	1:37:17	-20.87	-21.91	-22.27	-22.18	-21.73	-21.98	0.000	0.5769	107.2			5	812
OFF	1:50:49	-22.00	-23.04	-22.89	-22.91	-22.77	-23.63	0.911	0.5773		57.47	1.5088	5	615
ON	2:1:4	-20.66	-21.88	-22.29	-22.21	-21.74	-21.96	0.001	0.6016	107.6			5	811
OFF	2:14:35	-22.01	-23.08	-22.86	-22.85	-22.67	-23.58	0.911	0.6021		57.44	1.5082	5	621
ON	2:24:56	-20.84	-21.86	-22.25	-22.18	-21.72	-21.56	0.001	0.6265	107.5			5	817
OFF	2:38:33	-22.09	-23.71	-22.94	-22.93	-22.74	-23.64	0.909	0.6270		57.42	1.5079	5	618
ON	2:48:51	-20.80	-21.91	-22.28	-22.24	-21.76	-22.01	0.001	0.6512	107.6			5	811
OFF	3:2:22	-22.02	-23.00	-22.88	-22.86	-22.70	-23.57	0.910	0.6517		57.39	1.5074	5	618
ON	3:12:40	-20.82	-21.84	-22.23	-22.17	-21.70	-21.54	0.001	0.6757	107.5			5	804
OFF	3:26:4	-22.04	-23.07	-22.89	-22.88	-22.72	-23.63	0.906	0.6761		57.36	1.5065	5	617
ON	3:36:21	-20.76	-21.81	-22.16	-22.10	-21.64	-21.85	0.000	0.7004	107.5			5	812
OFF	3:49:33	-22.01	-23.00	-22.84	-22.82	-22.67	-23.56	0.911	0.7008		57.35	1.5061	5	616
ON	4:0:9	-20.82	-21.83	-22.19	-22.16	-21.71	-21.97	0.000	0.7250	107.1			5	812
OFF	4:13:41	-22.58	-23.60	-22.80	-22.78	-22.66	-23.51	0.905	0.7253		57.34	1.5055	5	612
ON	4:23:53	-20.80	-21.84	-22.19	-22.11	-21.69	-21.95	0.000	0.7494	107.2			5	806
OFF	4:37:19	-22.00	-23.01	-22.85	-22.80	-22.72	-23.56	0.910	0.7498		57.32	1.5048	5	615
ON	4:47:34	-20.85	-21.81	-22.18	-22.12	-21.69	-21.94	0.001	0.7741	107.7			5	811
OFF	5:1:5	-22.01	-23.02	-22.84	-22.82	-22.65	-23.56	0.914	0.7746		57.29	1.5045	5	624
ON	5:11:29	-20.76	-21.76	-22.14	-22.03	-21.64	-21.91	0.001	0.7990	107.1			5	818
OFF	5:25:7	-22.57	-23.56	-22.79	-22.78	-22.63	-23.53	0.910	0.7994		57.28	1.5041	5	617
ON	5:35:24	-20.79	-21.79	-22.15	-22.05	-21.61	-21.85	0.001	0.8235	107.2			5	810
OFF	5:46:54	-22.64	-23.60	-22.82	-22.80	-22.73	-23.56	0.910	0.8241		57.26	1.5038	5	622
ON	5:58:10	-20.71	-21.72	-22.07	-22.10	-21.60	-21.87	0.001	0.8484	107.1			5	811
OFF	6:12:47	-22.01	-23.02	-22.86	-22.83	-22.66	-23.53	0.913	0.8488		57.23	1.5033	5	625
ON	6:23:10	-20.70	-21.73	-22.12	-22.05	-21.58	-21.82	0.001	0.8732	107.6			5	812
OFF	6:36:48	-22.01	-23.01	-22.82	-22.78	-22.61	-23.53	0.910	0.8737		57.21	1.5029	5	625
ON	6:47:13	-20.71	-21.70	-22.10	-22.01	-21.57	-21.85	0.001	0.8979	107.7			5	807
OFF	7:0:40	-22.54	-23.50	-22.76	-22.73	-22.54	-23.53	0.908	0.8982		57.19	1.5023	5	624
ON	7:11:4	-20.66	-21.66	-22.04	-22.00	-21.57	-21.84	0.001	0.9225	108.1			5	809
OFF	7:24:33	-22.45	-23.49	-22.74	-22.72	-22.56	-23.46	0.914	0.9230		57.16	1.5020	5	623
ON	7:35:1	-20.73	-21.74	-22.12	-22.02	-21.55	-21.81							

(ON=压缩机通电,OFF=压缩机断电,xon=化霜加热器通电,xoff=化霜加热器断电)

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1998-12-19 7:11:4 (Fmax)=-20.66 ℃ (max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

平均最高温度(Fmin)=-24.03 ℃ (Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

平均温度 (ton)=38.80 ℃ (tm)=38.80 ℃ (ton=化霜室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(toff)=86.80 ℃ (tn)=88.80 ℃ (toff=化霜室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

电流=0.914 (A) (xmax=化霜开始冷冻室最热点时刻)

耗电量=1.5020 (KWH/24h)

制表时间:1998-12-19 7:35:25

NO:2

试验内容:储藏温度

直冷型冰箱

机型:BD-168(R134a)

型号:AE13307 .66x2100.150

气 向:32'70%

温控器位置(n值=5

温度条件:

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

格式 1 记录统计表

序号	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流	电能1	功率	系数	电能2	C n	二下

	1998-12-18															
OFF	16:56:12	-25.28	-25.31	-25.33	-25.78	-25.44	-25.40	-25.82	-25.38	0.003	0.0204					
ON	17:6:25	-23.20	-23.09	-23.18	-23.04	-23.49	-22.95	-23.25	-23.04	0.925	0.0208				5	617
OFF	17:24:0	-24.99	-25.06	-25.05	-25.53	-25.11	-25.05	-25.51	-25.04	0.000	0.0522	107.8	63.01	1.6487	5	1051
ON	17:34:2	-23.24	-23.12	-23.19	-23.10	-23.54	-23.01	-23.32	-23.13	0.923	0.0526				5	602
OFF	17:51:6	-25.08	-25.12	-25.10	-25.59	-25.15	-25.08	-25.52	-25.01	0.001	0.0834	108.0	63.02	1.6509	5	1026
ON	18:1:25	-23.15	-22.90	-23.06	-22.97	-23.36	-22.78	-23.09	-22.79	0.924	0.0838				5	617
OFF	18:18:34	-24.90	-24.97	-25.01	-25.47	-25.05	-25.00	-25.51	-25.02	0.003	0.1146	108.1	62.85	1.6476	5	1029
ON	18:28:52	-23.16	-23.00	-23.05	-22.92	-23.28	-22.70	-23.08	-22.84	0.927	0.1151				5	618
OFF	18:45:34	-24.89	-24.99	-24.96	-25.47	-25.06	-24.99	-25.48	-24.96	0.003	0.1453	108.6	62.60	1.6447	5	1002
ON	18:55:36	-23.39	-23.24	-23.30	-23.20	-23.57	-23.03	-23.33	-23.10	0.928	0.1457				5	602
OFF	19:11:45	-24.80	-24.82	-24.85	-25.35	-24.90	-24.86	-25.31	-24.83	0.003	0.1750	108.9	62.42	1.6421	5	969
ON	19:21:55	-22.95	-22.84	-22.92	-22.86	-23.22	-22.75	-23.09	-22.89	0.926	0.1753				5	614
OFF	19:38:12	-24.71	-24.80	-24.77	-25.26	-24.82	-24.72	-25.24	-24.66	0.002	0.2047	108.8	62.24	1.6384	5	973
ON	19:48:13	-23.23	-23.10	-23.16	-23.05	-23.41	-22.87	-23.18	-22.94	0.925	0.2051				5	601
OFF	20:4:26	-24.73	-24.88	-24.89	-25.35	-24.92	-24.83	-25.23	-24.76	0.000	0.2344	108.3	62.18	1.6369	5	973
ON	20:14:23	-23.12	-22.90	-23.05	-22.96	-23.30	-22.83	-23.08	-22.90	0.929	0.2348				5	597
OFF	20:30:11	-24.60	-24.64	-24.60	-25.14	-24.73	-24.68	-25.18	-24.64	0.000	0.2635	108.9	62.08	1.6359	5	948
ON	20:40:24	-23.01	-22.87	-22.95	-22.88	-23.24	-22.71	-23.07	-22.82	0.934	0.2639				5	613
OFF	20:56:28	-24.67	-24.73	-24.63	-25.19	-24.75	-24.64	-25.13	-24.61	0.001	0.2930	108.9	61.98	1.6337	5	964
ON	21:6:36	-23.00	-22.89	-22.95	-22.87	-23.25	-22.75	-23.10	-22.86	0.928	0.2933				5	608
OFF	21:22:27	-24.59	-24.66	-24.68	-25.19	-24.72	-24.67	-25.13	-24.60	0.002	0.3219	108.3	61.88	1.6309	5	951
ON	21:32:33	-22.92	-22.85	-22.92	-22.83	-23.19	-22.68	-23.00	-22.74	0.924	0.3223				5	606
OFF	21:48:22	-24.55	-24.57	-24.57	-25.15	-24.58	-24.63	-25.11	-24.56	0.001	0.3510	108.8	61.81	1.6294	5	949
ON	21:58:34	-22.92	-22.77	-22.84	-22.75	-23.11	-22.61	-22.90	-22.65	0.930	0.3515				5	612
OFF	22:14:25	-24.60	-24.68	-24.66	-25.16	-24.70	-24.65	-25.12	-24.63	0.002	0.3801	108.6	61.73	1.6279	5	951
ON	22:24:34	-22.94	-22.79	-22.84	-22.75	-23.14	-22.64	-22.94	-22.70	0.926	0.3805				5	609
OFF	22:40:21	-24.57	-24.64	-24.64	-25.12	-24.70	-24.60	-25.10	-24.62	0.002	0.4091	108.6	61.66	1.6263	5	947
ON	22:50:19	-23.01	-22.90	-22.97	-22.87	-23.27	-22.75	-23.04	-22.83	0.928	0.4095				5	598
OFF	23:5:49	-24.60	-24.64	-24.65	-25.13	-24.67	-24.63	-25.10	-24.61	0.001	0.4375	108.7	61.61	1.6252	5	930
ON	23:16:2	-22.91	-22.78	-22.86	-22.76	-23.15	-22.61	-22.94	-22.71	0.929	0.4380				5	613
OFF	23:31:43	-24.56	-24.63	-24.63	-25.13	-24.63	-24.62	-25.09	-24.59	0.002	0.4664	108.7	61.54	1.6237	5	941
ON	23:41:57	-22.87	-22.72	-22.75	-22.71	-23.10	-22.59	-22.86	-22.65	0.923	0.4669				5	614
OFF	23:57:38	-24.53	-24.61	-24.64	-25.11	-24.63	-24.59	-25.06	-24.53	0.002	0.4953	108.7	61.48	1.6227	5	941
	1998-12-19															
ON	0:7:35	-22.93	-22.80	-22.97	-22.88	-23.20	-22.74	-23.01	-22.77	0.927	0.4957				5	597
OFF	0:23:10	-24.54	-24.60	-24.60	-25.10	-24.63	-24.58	-25.07	-24.56	0.002	0.5238	108.1	61.45	1.6218	5	935
ON	0:33:2	-23.02	-22.92	-22.98	-22.80	-23.25	-22.76	-23.07	-22.82	0.920	0.5242				5	592
OFF	0:48:27	-24.50	-24.57	-24.61	-25.09	-24.67	-24.59	-25.06	-24.53	0.002	0.5526	108.5	61.43	1.6211	5	925
ON	0:58:24	-23.00	-22.85	-22.93	-22.87	-23.23	-22.74	-23.05	-22.80	0.919	0.5526				5	597
OFF	1:13:55	-24.54	-24.62	-24.59	-25.12	-24.68	-24.55	-25.09	-24.57	0.002	0.5804	108.0	61.40	1.6204	5	931
ON	1:23:40	-23.01	-22.86	-22.93	-22.85	-23.19	-22.68	-23.01	-22.73	0.920	0.5808				5	591
OFF	1:39:30	-24.61	-24.67	-24.66	-25.17	-24.72	-24.63	-25.12	-24.66	0.002	0.6093	108.7	61.41	1.6200	5	944
ON	1:49:28	-23.02	-22.90	-23.01	-22.89	-23.25	-22.76	-23.05	-22.84	0.918	0.6097				5	598
OFF	2:4:52	-24.52	-24.59	-24.56	-25.05	-24.66	-24.59	-25.06	-24.56	0.002	0.6375	108.5	61.37	1.6197	5	924
ON	2:15:0	-22.93	-22.79	-22.83	-22.79	-23.14	-22.62	-22.98	-22.72	0.929	0.6379				5	608
OFF	2:30:40	-24.49	-24.57	-24.58	-25.07	-24.63	-24.56	-25.03	-24.56	0.002	0.6662	108.3	61.34	1.6188	5	940
ON	2:40:54	-22.82	-22.72	-22.80	-22.72	-23.11	-22.56	-22.86	-22.63	0.930	0.6667				5	614
OFF	2:56:31	-24.52	-24.59	-24.56	-25.06	-24.64	-24.55	-25.03	-24.57	0.002	0.6950	108.6	61.30	1.6182	5	937
ON	3:6:29	-22.88	-22.83	-22.90	-22.82	-23.17	-22.68	-22.97	-22.73	0.925	0.6955				5	598
OFF	3:21:43	-24.45	-24.53	-24.52	-25.02	-24.56	-24.55	-24.99	-24.51	0.002	0.7230	108.5	61.27	1.6175	5	914
ON	3:31:52	-22.84	-22.72	-22.75	-22.69	-23.07	-22.55	-22.85	-22.62	0.928	0.7234				5	608
OFF	3:47:23	-24.45	-24.53	-24.51	-25.03	-24.58	-24.51	-25.00	-24.46	0.002	0.7514	108.5	61.24	1.6166	5	931
ON	3:57:17	-22.93	-22.75	-22.85	-22.73	-23.13	-22.66	-22.90	-22.72	0.922	0.7519				5	594
OFF	4:12:41	-24.47	-24.32	-24.33	-25.05	-24.61	-24.54	-25.02	-24.54	0.001	0.7797	108.4	61.22	1.6164	5	924
ON	4:22:38	-22.93	-22.80	-22.86	-22.78	-23.12	-22.61	-22.94	-22.70	0.918	0.7802				5	597
OFF	4:37:53	-24.45	-24.53	-24.51	-25.02	-24.55	-24.52	-24.98	-24.45	0.003	0.8080	108.8	61.20	1.6160	5	921
ON	4:47:56	-22.30	-22.79	-22.84	-22.78	-23.12	-22.65	-22.93	-22.73	0.921	0.8084				5	597
OFF	5:3:15	-24.48	-24.54	-24.53	-25.02	-24.61	-24.54	-25.04	-24.53	0.002	0.8361	108.4	61.18	1.6156	5	919
ON	5:13:11	-22.91	-22.79	-22.90	-22.80	-23.10	-22.64	-23.01	-22.78	0.925	0.8366				5	596
OFF	5:28:48	-24.52	-24.60	-24.58	-25.07	-24.66	-24.57	-25.07	-24.53	0.002	0.8646	108.0	61.18	1.6154	5	937
ON	5:38:44	-22.95	-22.85	-22.92	-22.76	-23.10	-22.65	-22.94	-22.76	0.923	0.8651				5	596
OFF	5:53:31	-24.35	-24.47	-24.43	-24.96	-24.53	-24.40	-24.95	-24.45	0.003	0.8924	108.3	61.15	1.6147	5	907
ON	6:3:51	-22.32	-22.83	-22.32	-22.82	-23.10	-22.69	-22.97	-22.80	0.920	0.8929				5	600
OFF	6:12:50	-24.12	-24.32	-24.49	-24.91	-24.17	-24.18	-25.00	-24.15	0.002	0.9202	108.4	61.12	1.6141	5	908

试验内容:储藏温度

[redacted]

[redacted]-168(R134a)

[redacted]号:AE1350Y .66×2100 150

[redacted]高:82/70%

电控箱位置Cn值=3

[redacted]

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8, -)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	△T 秒
	1998-12-18																	0.001	0.0037				3	
OFF	7:46:36	-21.96	-21.82	-21.93	-21.81	-22.25	-21.71	-21.93	-21.78									0.974	0.0042				3	748
ON	7:58:4	-17.97	-17.84	-17.68	-17.82	-18.29	-17.68	-18.01	-17.91									0.001	0.0142	124.3	28.01	0.8758	3	291
OFF	8:3:55	-17.49	-17.40	-17.48	-17.80	-17.66	-17.35	-17.72	-17.50									0.984	0.0147				3	566
ON	8:13:21	-17.23	-17.16	-17.25	-17.24	-17.42	-17.03	-17.31	-17.12									0.001	0.0258	126.6	31.63	0.9933	3	317
OFF	8:18:38	-17.01	-17.02	-17.02	-17.40	-17.04	-16.85	-17.32	-17.02									0.982	0.0263				3	544
ON	8:27:42	-17.04	-16.94	-16.97	-16.99	-17.13	-16.82	-17.06	-16.88									0.003	0.0376	125.8	38.41	1.0304	3	324
OFF	8:33:6	-16.90	-16.87	-16.89	-17.32	-17.01	-16.85	-17.24	-16.92									0.982	0.0381				3	333
ON	8:41:59	-16.89	-16.82	-16.87	-16.94	-17.06	-16.75	-17.02	-16.82									0.002	0.0457	127.5	34.51	1.0883	3	328
OFF	8:47:27	-16.84	-16.82	-16.81	-17.29	-16.88	-16.74	-17.16	-16.80									0.982	0.0501				3	329
ON	8:56:16	-16.93	-16.84	-16.90	-16.91	-17.03	-16.72	-16.99	-16.76									0.002	0.0619	127.7	35.28	1.1149	3	332
OFF	9:1:48	-16.80	-16.83	-16.84	-17.29	-16.94	-16.78	-17.16	-16.86									0.983	0.0623				3	525
ON	9:10:33	-16.97	-16.89	-16.93	-16.97	-17.12	-16.81	-17.08	-16.89									0.003	0.0742	126.6	35.91	1.1334	3	338
OFF	9:16:11	-16.80	-16.84	-16.85	-17.32	-16.86	-16.82	-17.22	-16.80									0.980	0.0746				3	322
ON	9:24:53	-16.79	-16.75	-16.79	-16.86	-16.98	-16.71	-16.98	-16.80									0.003	0.0865	126.8	38.89	1.1480	3	339
OFF	9:30:32	-16.74	-16.72	-16.72	-17.21	-16.84	-16.74	-17.16	-16.80									0.984	0.0870				3	527
ON	9:39:19	-16.79	-16.70	-16.75	-16.80	-16.90	-16.63	-16.88	-16.88									0.001	0.0950	126.7	36.72	1.1594	3	330
OFF	9:44:58	-16.77	-16.73	-16.79	-17.24	-16.88	-16.78	-17.16	-16.78									0.985	0.0954				3	572
ON	9:53:41	-16.85	-16.76	-16.79	-16.83	-16.92	-16.64	-16.90	-16.71									0.003	0.1114	127.6	37.00	1.1602	3	339
OFF	9:59:20	-16.88	-17.01	-16.79	-17.26	-17.07	-16.73	-17.19	-16.81									0.987	0.1119				3	523
ON	10:8:3	-16.83	-16.74	-16.80	-16.84	-16.88	-16.69	-16.98	-16.73									0.002	0.1239	127.6	37.24	1.1703	3	340
OFF	10:13:43	-16.76	-16.78	-16.80	-17.23	-16.81	-16.73	-17.18	-16.84									0.985	0.1244				3	527
ON	10:22:30	-16.81	-16.76	-16.81	-16.87	-17.04	-16.76	-17.00	-16.81									0.002	0.1358	126.9	37.31	1.1709	3	324
OFF	10:27:54	-16.83	-16.87	-16.70	-17.11	-16.75	-16.83	-17.01	-16.85									0.985	0.1363				3	552
ON	10:36:46	-16.82	-16.73	-16.81	-16.86	-16.96	-16.69	-16.91	-16.75									0.003	0.1482	127.8	37.41	1.1841	3	364
OFF	10:42:20	-16.83	-16.82	-16.84	-17.25	-16.90	-16.76	-17.12	-16.73									0.989	0.1486				3	322
ON	10:51:2	-16.81	-16.75	-16.81	-16.85	-16.98	-16.71	-16.96	-16.78									0.003	0.1606	127.9	37.56	1.1881	3	330
OFF	10:56:41	-16.75	-16.77	-16.78	-17.24	-16.88	-16.75	-17.16	-16.82									0.984	0.1611				3	322
ON	11:5:23	-16.83	-16.74	-16.81	-16.85	-16.95	-16.68	-16.92	-16.76									0.000	0.1731	127.3	37.70	1.1903	3	341
OFF	11:11:4	-16.83	-16.83	-16.83	-17.30	-16.88	-16.75	-17.15	-16.77									0.978	0.1736				3	317
ON	11:19:41	-16.83	-16.76	-16.81	-16.84	-16.94	-16.65	-16.87	-16.66									0.000	0.1852	127.6	37.78	1.1963	3	336
OFF	11:25:19	-16.78	-16.69	-16.67	-17.10	-16.81	-16.63	-17.03	-16.64															

(ON=压缩机通电,OFF=压缩机断电,Hon=化霜加热器通电,Hoff=化霜加热器断电)

(tmax=状态变化之前冷冻室最热点时刻,tmin=状态变化之前冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点与-8℃时刻)

(ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(toff=贮藏室t10,t11,t12最冷点的平均值,tm=toff值与上一状态平均值的再平均值)

(*max=化霜开始冷冻室最热点时刻)

****

1998-12-19 9:30:19 (Fmax)=-16.63 ℃

1998-12-19 7:46:36 (Fmin)=-22.25 ℃

1998-12-19 7:46:36 (ton)=88.80 ℃ (tm)=88.80 ℃

1998-12-19 7:46:36 (toff)=88.80 ℃ (tm)=88.80 ℃

电流=0.932 (A)

耗电量=1.1963 (KWh/24h)

制表时间:1998-12-19 11:30:59

格式 1 化总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流(A)	电能1(KWh)	功率(W)	系数(%)	电能2(KWh/24h)	CNT	工作
	1998-12-19																							
ON	11:42:39	-14.02	-13.93	-13.89	-13.73	-14.17	-13.65	-13.93	-13.79									1.028	0.0005				1	
OFF	11:46:41	-13.63	-13.62	-13.63	-13.88	-13.60	-13.44	-13.82	-13.62									0.003	0.0096	135.7			1	242
ON	11:55:33	-13.54	-13.56	-13.54	-13.61	-13.74	-13.46	-13.70	-13.53									1.015	0.0101		31.27	1.0761	1	532
OFF	11:59:21	-13.42	-13.44	-13.47	-13.75	-13.64	-13.42	-13.78	-13.51									0.001	0.0188	137.8			1	228
ON	12:8:6	-13.62	-13.55	-13.57	-13.65	-13.72	-13.47	-13.67	-13.50									1.018	0.0193		30.76	1.0632	1	525
OFF	12:11:39	-13.42	-13.41	-13.43	-13.75	-13.52	-13.33	-13.71	-13.40									0.002	0.0281	136.8			1	238
ON	12:20:34	-13.60	-13.53	-13.58	-13.67	-13.75	-13.48	-13.74	-13.56									1.013	0.0285		30.30	1.0660	1	515
OFF	12:24:33	-13.35	-13.36	-13.35	-13.67	-13.47	-13.20	-13.63	-13.35									0.000	0.0375	135.6			1	239
ON	12:33:5	-13.59	-13.56	-13.63	-13.68	-13.75	-13.52	-13.75	-13.58									1.017	0.0380		31.13	1.0707	1	512
OFF	12:37:1	-13.32	-13.36	-13.38	-13.70	-13.47	-13.27	-13.62	-13.34									0.000	0.0469	135.8			1	236
ON	12:45:29	-13.52	-13.48	-13.52	-13.60	-13.68	-13.42	-13.68	-13.46									1.021	0.0474		31.23	1.0753	1	508
OFF	12:49:21	-13.27	-13.28	-13.29	-13.62	-13.46	-13.23	-13.63	-13.35									0.001	0.0563	136.0			1	232
ON	12:57:52	-13.49	-13.41	-13.47	-13.55	-13.62	-13.38	-13.62	-13.46									1.021	0.0567		31.24	1.0775	1	511
OFF	13:1:49	-13.35	-13.35	-13.37	-13.68	-13.50	-13.28	-13.63	-13.37									0.004	0.0658	137.8			1	237
ON	13:10:21	-13.61	-13.55	-13.58	-13.65	-13.75	-13.49	-13.71	-13.53									1.018	0.0662		31.30	1.0801	1	512
OFF	13:14:24	-13.26	-13.32	-13.32	-13.65	-13.49	-13.26	-13.65	-13.40									0.003	0.0754	136.1			1	243
ON	13:23:0	-13.49	-13.42	-13.48	-13.56	-13.61	-13.39	-13.56	-13.41									1.018	0.0760		31.39	1.0843	1	516
OFF	13:26:58	-13.30	-13.30	-13.32	-13.64	-13.44	-13.20	-13.55	-13.26									0.000	0.0850	136.3			1	238
ON	13:35:34	-13.50	-13.43	-13.49	-13.55	-13.63	-13.40	-13.60	-13.42									1.021	0.0856		31.41	1.0858	1	516
OFF	13:39:29	-13.27	-13.26	-13.27	-13.60	-13.38	-13.15	-13.47	-13.18									0.000	0.0940	137.5			1	235
ON	13:48:4	-13.50	-13.46	-13.51	-13.60	-13.63	-13.40	-13.64	-13.47									1.022	0.0952		31.40	1.0878	1	515
OFF	13:51:59	-13.26	-13.25	-13.26	-13.60	-13.35	-13.14	-13.49	-13.20									0.000	0.1041	137.2			1	235
ON	14:0:30	-13.45	-13.32	-13.36	-13.45	-13.31	-13.30	-13.54	-13.38									1.028	0.1047		31.41	1.0888	1	511
OFF	14:4:28	-13.27	-13.27	-13.28	-13.60	-13.40	-13.19	-13.55	-13.26									0.003	0.1137	136.8			1	238
ON	14:12:39	-13.47	-13.39	-13.45	-13.51	-13.58	-13.35	-13.57	-13.41									1.020	0.1148		31.44	1.0903	1	511

(ON=压缩机通电,OFF=压缩机断电,xon=化霜加热器通电,xoff=化霜加热器断电)

(mxt=状态变化之时(冷冻室最热点时刻,mit=状态变化之时冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(tm=t10,t11,t12最热点的平均值,tn=ton值与上一状态平均值的再平均值)

(tn=t10,t11,t12最冷点的平均值,tm=toff值与上一状态平均值的再平均值)

(xmax=化霜开始冷冻室最热点时刻)

****

1998-12-19 13:51:39q=R烈强 B雨雨雨雨雨雨雨(Fmax)=-13.14 ℃

q=R烈强 B雨雨雨雨雨雨雨(Fmin)=-14.17 ℃

雨雨雨雨雨 (ton)=88.80 ℃ (tm)=88.80 ℃

(toff)=88.80 ℃ (tn)=88.80 ℃

电流=1.020 (A)

耗电量=1.0903 (KWh/24h)

制表时间:1998-12-19 14:13:37

1998-12-18

开始 1998.12.18 13:41:38

结束 1998.12.18 14:47:33

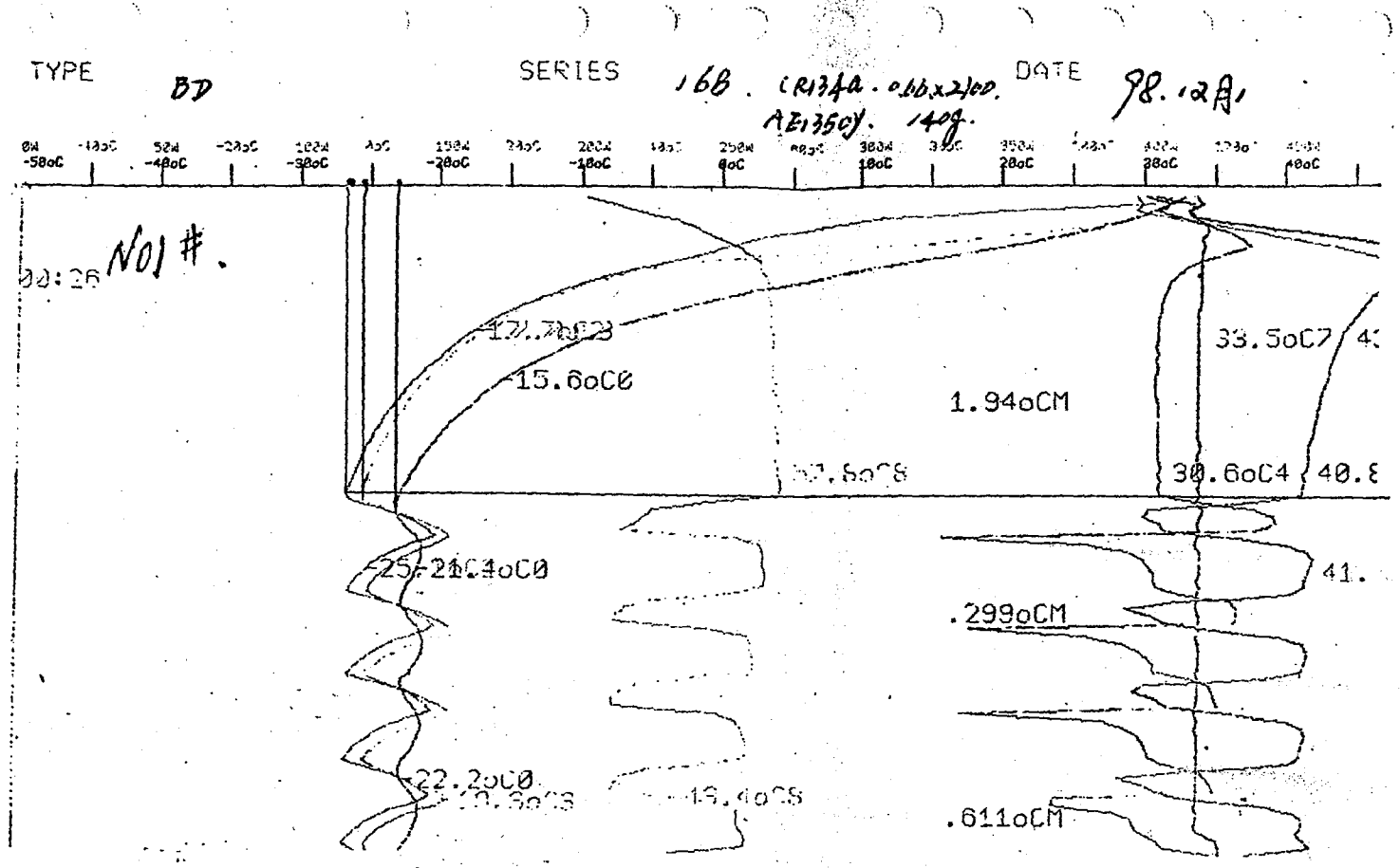
31.42 31.33 31.37 31.08 31.38 31.17 31.46 31.38

-22.24 -22.18 -22.20 -22.39 -22.07 -22.28 -22.61 -22.66

时间=65.92 分钟

测试时间:符合要求

结果=合格



T_0 —箱内温度. Temp inside the cabinet.

T_1 —冷凝出口温度: Temp outlet the Cond.

T_2 —蒸发口入口: Temp inlet the evap. } get date on the panel.

T_3 —感温球测定: Temp of the bulb }

T_4 —回气管温度: Temp. of the Suction tube.

T_7 —环温. Temp of the Ambient.

T_6 —机壳温: Temp of the Comp. shell.

T_8 —排气温度: Temp of Discharge tube

NO:1
试验内容:冷却速度 pull down.
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y,.65X2100 140
厂商:32'70%
温控器位置Cn值=3
测试时间:30分钟

温度条件:

冷冻室:-21.3 ℃, 测温点数:6(t1, t2, t3, t4, t5, t6,)

	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16
开始	1998.12.18 13:35:15															
	31.01	31.11	31.03	31.38	31.34	31.48										
结束	1998.12.18 14:43:53															
	-21.92	-23.11	-22.38	-22.37	-22.10	-23.14										

时间=68.63 分钟
测试时间:符合要求

结果=合格

NO:2
试验内容:冷却速度
直冷型冰箱
机型:BD-168(R134a)
型号:AE1350Y .65-2100 150
厂商:32'70%
温控器位置Cn值=5
测试时间:30分钟

GRAPH

温度条件:

冷冻室:-21.3 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16
开始	1998.12.18 13:41:38															
	31.42	31.33	31.37	31.08	31.36	31.17	31.40	31.38								
结束	1998.12.18 14:47:33															
	-22.21	-22.19	-22.26	-22.38	-22.07	-22.28	-22.01	-22.00								

时间=65.92 分钟
测试时间:符合要求

NO:1
试验内容:储藏温度
直冷型冰箱
规型:BD-168(R134a)
型号:AE1350T,.66*2100(140)
门向:32"70%
温控器位置Cn值=5
温度条件:

With package and
"n" package of 6.

冷冻室:-21.9 ℃ 测温点数:6(t1, t2, t3, t4, t5, t6,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	△T 秒
	1988-12-21																							
ON	16:42:47	-18.71	-22.31	-22.18	-18.41	-18.62	-19.22											0.917	0.0005				5	
OFF	17:2:51	-19.80	-22.30	-22.20	-18.45	-18.65	-19.26											0.001	0.0361	106.2			5	1204
ON	17:15:18	-19.74	-22.32	-22.19	-18.41	-18.62	-19.21											0.907	0.0365		61.71	1.5929	5	747
OFF	17:31:46	-19.80	-22.31	-22.20	-18.45	-18.66	-19.28											0.001	0.0658	106.5			5	988
ON	17:51:12	-19.72	-22.30	-22.20	-18.41	-18.62	-19.20											0.927	0.0663		53.40	1.3841	5	1100
OFF	18:9:18	-19.78	-22.27	-22.21	-18.44	-18.65	-19.28											0.002	0.0988	107.5			5	1086
ON	18:21:29	-19.81	-22.38	-22.28	-18.48	-18.70	-19.29											0.908	0.0991		55.35	1.4385	5	731
OFF	18:35:9	-19.80	-22.29	-22.20	-18.41	-18.61	-19.22											0.000	0.1289	107.1			5	1000
ON	18:52:54	-19.73	-22.30	-22.22	-18.44	-18.65	-19.25											0.920	0.1293		54.94	1.4293	5	865
OFF	19:9:26	-19.77	-22.25	-22.15	-18.37	-18.59	-19.21											0.000	0.1596	107.5			5	1012
ON	19:21:58	-19.73	-22.31	-22.20	-18.42	-18.64	-19.22											0.914	0.1600		55.39	1.4424	5	752
OFF	19:38:37	-19.71	-22.24	-22.17	-18.43	-18.62	-19.19											0.000	0.1898	107.3			5	999
ON	19:54:56	-19.74	-22.37	-22.27	-18.51	-18.76	-19.36											0.922	0.1903		54.55	1.4221	5	979
OFF	20:11:46	-19.80	-22.30	-22.23	-18.45	-18.69	-19.28											0.002	0.2205	107.5			5	1010
ON	20:24:14	-19.75	-22.33	-22.23	-18.46	-18.70	-19.29											0.914	0.2210		54.93	1.4338	5	748
OFF	20:41:52	-19.79	-22.28	-22.18	-18.42	-18.85	-19.43											0.000	0.2525	106.9			5	1058
ON	20:56:35	-19.75	-22.35	-22.23	-18.48	-18.72	-19.31											0.920	0.2530		54.88	1.4324	5	883
OFF	21:13:28	-19.79	-22.30	-22.20	-18.46	-18.69	-19.29											0.000	0.2833	107.7			5	1013
ON	21:26:7	-19.67	-22.23	-22.13	-18.40	-18.69	-19.33											0.922	0.2837		55.12	1.4390	5	759
OFF	21:41:54	-19.82	-22.34	-22.25	-18.51	-18.76	-19.36											0.002	0.3119	107.1			5	947
ON	21:59:55	-19.73	-22.32	-22.21	-18.46	-18.69	-19.27											0.920	0.3122		54.22	1.4154	5	1081
OFF	22:17:34	-19.79	-22.28	-22.23	-18.46	-18.70	-19.29											0.000	0.3439	107.5			5	1059
ON	22:29:53	-19.72	-22.30	-22.19	-18.43	-18.67	-19.24											0.907	0.3443		54.62	1.4261	5	739
OFF	22:45:46	-19.74	-22.29	-22.22	-18.45	-18.70	-19.32											0.000	0.3727	107.1			5	953
ON	22:59:56	-19.75	-22.33	-22.22	-18.46	-18.69	-19.26											0.913	0.3731		54.48	1.4227	5	850
OFF	23:16:19	-19.80	-22.30	-22.23	-18.51	-18.71	-19.33											0.001	0.4024	107.2			5	983
ON	23:28:56	-19.69	-22.33	-22.15	-18.38	-18.62	-19.24											0.912	0.4029		54.62	1.4266	5	759
OFF	23:44:57	-19.79	-22.31	-22.21	-18.48	-18.71	-19.32											0.000	0.4315	106.9			5	959
ON	23:59:23	-19.75	-22.35	-22.24	-18.50	-18.73	-19.30											0.911	0.4319		54.48	1.4226	5	866
	1988-12-22																							
OFF	0:10:41	-19.78	-22.27	-22.18	-18.45	-18.70	-19.29											0.002	0.4628	107.0			5	1038
ON	0:28:48	-19.77	-22.38	-22.24	-18.48	-18.69	-19.28											0.910	0.4631		54.75	1.4294	5	728
OFF	0:44:23	-19.81	-22.33	-22.24	-18.50	-18.74	-19.32											0.001	0.4909	106.9			5	934
ON	0:58:38	-19.75	-22.36	-22.24	-18.51	-18.75	-19.33											0.914	0.4913		54.59	1.4253	5	850
OFF	1:15:12	-19.72	-22.26	-22.19	-18.48	-18.76	-19.34											0.002	0.5209	106.9			5	993
ON	1:27:41	-19.82	-22.35	-22.22	-18.47	-18.77	-19.32											0.908	0.5212		54.73	1.4285	5	749

OFF	2:18:27	-19.77	-22.28	-22.20	-18.41	-18.69	-19.28					0.000	0.5818	107.0		5	1048
ON	2:30:32	-19.75	-22.34	-22.23	-18.45	-18.74	-19.32					0.908	0.5824		54.61	1.4255 5	725
OFF	2:47:50	-19.82	-22.29	-22.16	-18.39	-18.68	-19.26					0.000	0.6131	106.6		5	1038
ON	3:2:28	-19.77	-22.36	-22.22	-18.42	-18.70	-19.27					0.915	0.6137		54.59	1.4248 5	878
OFF	3:19:22	-19.79	-22.31	-22.21	-18.41	-18.71	-19.29					0.001	0.6438	106.8		5	1014
ON	3:31:56	-19.74	-22.35	-22.22	-18.42	-18.72	-19.28					0.907	0.6442		54.72	1.4278 5	754
OFF	3:48:3	-19.80	-22.34	-22.24	-18.45	-18.74	-19.31					0.001	0.6730	107.1		5	967
ON	4:2:28	-19.77	-22.38	-22.24	-18.44	-18.74	-19.30					0.913	0.6734		54.63	1.4257 5	865
OFF	4:18:53	-19.74	-22.23	-22.19	-18.39	-18.71	-19.28					0.002	0.7028	107.0		5	985
ON	4:32:4	-19.77	-22.35	-22.21	-18.43	-18.72	-19.30					0.911	0.7031		54.66	1.4264 5	791
OFF	4:48:17	-19.78	-22.29	-22.17	-18.36	-18.69	-19.28					0.000	0.7321	107.0		5	973
ON	5:2:37	-19.75	-22.38	-22.26	-18.46	-18.73	-19.31					0.910	0.7324		54.60	1.4240 5	800
OFF	5:18:52	-19.75	-22.28	-22.19	-18.39	-18.72	-19.32					0.002	0.7616	107.4		5	975
ON	5:32:5	-19.73	-22.30	-22.17	-18.36	-18.66	-19.21					0.907	0.7619		54.62	1.4253 5	793
OFF	5:48:7	-19.81	-22.33	-22.22	-18.44	-18.74	-19.31					0.000	0.7905	106.8		5	962
ON	6:2:11	-19.75	-22.37	-22.27	-18.44	-18.72	-19.33					0.910	0.7910		54.57	1.4240 5	844
OFF	6:18:24	-19.83	-22.35	-22.25	-18.47	-18.76	-19.35					0.000	0.8200	107.0		5	973
ON	6:32:30	-19.73	-22.33	-22.22	-18.44	-18.73	-19.31					0.909	0.8204		54.53	1.4230 5	846
OFF	6:48:35	-19.75	-22.29	-22.20	-18.42	-18.73	-19.33					0.000	0.8491	106.8		5	965
ON	7:1:51	-19.75	-22.32	-22.20	-18.42	-18.69	-19.24					0.908	0.8496		54.54	1.4234 5	790
OFF	7:17:57	-19.82	-22.35	-22.21	-18.41	-18.75	-19.29					0.002	0.8784	107.1		5	966
ON	7:32:11	-19.68	-22.27	-22.14	-18.38	-18.70	-19.31					0.917	0.8788		54.49	1.4220 5	854
OFF	7:47:38	-19.80	-22.31	-22.22	-18.43	-18.73	-19.30					0.002	0.9066	107.6		5	927

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1998-12-22 5:32:5 (Fmax)=-18.36 ℃

1998-12-22 5:2:37 (Fmin)=-22.39 ℃

(ton)=88.80 ℃ (tm)=88.80 ℃

1998-12-21 10:42:47 1998-12-22 7:47:38 (toff)=88.80 ℃

电流=0.842 (A)

耗电量=1.4220 (KWh/24h)

(ON=压缩机通电,OFF=压缩机断电,*on=化霜加热器通电,*off=化霜加热器断电)

(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(ton=贮藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(tn)=88.80 ℃ (toff=贮藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

(*max=化霜开始冷冻室最热点时刻)

制表时间:1998-12-22 7:48:28

NO:2

试验内容:储藏温度

直冷型冰箱

机型:BD-168(R134a)

型号:AE1350Y .60*2100 150

厂商:32'70%

温控器位置Cn值=5

温度条件:

冷冻室:-21.9 ℃ 测温点数:8(t1, t2, t3, t4, t5, t6, t7, t8,)

格式 1 汇总统计表

状态	时间	t1	t2	t3	t4	t5	t6	t7	t8	t9	t10	t11	t12	t13	t14	t15	t16	电流 (A)	电能1 (KWh)	功率 (W)	系数 (%)	电能2 (KWh/24h)	Cn	△T 秒
	1998-12-21																							
OFF	7:48:40	-20.48	-20.32	-16.99	-24.26	-22.52	-22.53	-21.98	-22.14									0.001	0.0086				5	
ON	8:11:52	-20.10	-20.17	-16.85	-23.77	-22.45	-22.48	-21.93	-22.11									0.933	0.0092				5	1380
OFF	8:33:50	-20.42	-20.27	-16.96	-24.22	-22.58	-22.61	-22.04	-22.25									0.003	0.0584	105.8	54.77	1.4029	5	1678
ON	9:1:42	-20.19	-20.23	-16.92	-23.84	-22.56	-22.58	-21.98	-22.16									0.956	0.0588				5	1312
OFF	9:33:35	-20.40	-20.26	-16.94	-24.14	-22.52	-22.55	-21.96	-22.18									0.002	0.1147	105.3	57.10	1.4574	5	1913
ON	9:55:28	-20.23	-20.29	-16.98	-23.84	-22.58	-22.57	-21.96	-22.13									0.952	0.1151				5	1313
OFF	10:25:56	-20.41	-20.28	-17.00	-24.16	-22.54	-22.55	-21.94	-22.15									0.003	0.1687	105.5	57.47	1.4661	5	1828
ON	10:47:42	-20.17	-20.23	-16.93	-23.81	-22.56	-22.53	-21.90	-22.07									0.936	0.1691				5	1306
OFF	11:17:10	-20.40	-20.28	-16.94	-24.10	-22.53	-22.50	-21.87	-22.10									0.001	0.2208	105.4	57.48	1.4661	5	1768
ON	11:38:30	-20.18	-20.23	-16.92	-23.86	-22.65	-22.63	-21.99	-22.17									0.932	0.2213				5	1280

ON	12:31:36	-20.20	-20.27	-16.97	-23.77	-22.59	-22.57	-21.94	-22.14			0.929	0.2769				5	1301
OFF	13:1:42	-20.43	-20.32	-17.03	-24.12	-22.58	-22.56	-21.92	-22.16			0.003	0.3297	105.5	57.94	1.4773	5	1804
ON	13:23:15	-20.25	-20.32	-17.05	-23.82	-22.64	-22.60	-21.94	-22.10			0.924	0.3302				5	1293
OFF	13:53:42	-20.43	-20.35	-17.10	-24.18	-22.69	-22.69	-22.04	-22.27			0.003	0.3835	105.1	58.02	1.4731	5	1827
ON	14:15:11	-20.19	-20.26	-17.01	-23.71	-22.56	-22.54	-21.89	-22.09			0.929	0.3838				5	1289
OFF	14:47:9	-20.44	-20.39	-17.15	-24.17	-22.64	-22.59	-21.93	-22.12			0.000	0.4399	105.3	58.25	1.4844	5	1918
ON	15:8:30	-20.21	-20.29	-17.03	-23.73	-22.57	-22.55	-21.90	-22.09			0.925	0.4405				5	1301
OFF	15:38:53	-20.45	-20.37	-17.11	-24.12	-22.62	-22.59	-21.91	-22.14			0.001	0.4932	105.4	58.23	1.4843	5	1803
ON	16:0:37	-20.28	-20.35	-17.10	-23.80	-22.67	-22.63	-21.94	-22.13			0.936	0.4937				5	1304
OFF	16:11:1	-20.52	-20.36	-17.15	-24.22	-22.61	-22.64	-22.00	-22.23			0.002	0.5651	104.4	58.26	1.5077	5	2604
ON	17:7:21	-20.23	-20.31	-17.10	-23.82	-22.61	-22.61	-21.94	-22.13			0.925	0.5656				5	1400
OFF	17:37:30	-20.49	-20.40	-17.15	-24.16	-22.66	-22.65	-21.98	-22.21			0.003	0.6179	105.5	58.81	1.4969	5	1649
ON	17:57:12	-20.20	-20.32	-17.11	-23.78	-22.67	-22.64	-21.90	-22.10			0.938	0.6183				5	1342
OFF	18:24:3	-20.46	-20.34	-17.15	-24.12	-22.67	-22.65	-21.95	-22.15			0.002	0.6688	105.2	58.16	1.4856	5	1614
ON	18:43:46	-20.20	-20.28	-17.03	-23.69	-22.63	-22.59	-21.89	-22.12			0.932	0.6693				5	1300
OFF	19:13:43	-20.43	-20.33	-17.23	-24.27	-22.78	-22.76	-22.02	-22.25			0.001	0.7138	106.4	58.33	1.4867	5	1677
ON	19:35:17	-20.20	-20.24	-17.03	-23.77	-22.74	-22.69	-21.89	-22.06			0.945	0.7142				5	1254
OFF	20:1:55	-20.43	-20.29	-17.14	-24.06	-22.66	-22.62	-21.87	-22.10			0.002	0.7637	106.9	58.12	1.4829	5	1598
ON	20:22:53	-20.33	-20.26	-17.10	-23.71	-22.67	-22.63	-21.90	-22.11			0.949	0.7641				5	1258
OFF	20:50:43	-20.43	-20.37	-17.24	-24.16	-22.79	-22.76	-22.02	-22.28			0.005	0.8134	106.4	58.06	1.4820	5	1670
ON	21:11:36	-20.18	-20.27	-17.13	-23.74	-22.78	-22.70	-21.97	-22.20			0.947	0.8138				5	1253
OFF	21:38:44	-20.40	-20.29	-17.14	-24.07	-22.70	-22.66	-21.91	-22.10			0.005	0.8620	106.8	57.97	1.4807	5	1628
ON	21:59:28	-20.21	-20.27	-17.07	-23.71	-22.69	-22.64	-21.89	-22.10			0.940	0.8625				5	1244
OFF	22:29:7	-20.44	-20.34	-17.11	-24.09	-22.69	-22.65	-21.90	-22.15			0.002	0.9147	105.6	58.02	1.4820	5	1779
ON	22:49:54	-20.32	-20.40	-17.18	-23.83	-22.78	-22.74	-21.98	-22.21			0.943	0.9151				5	1247
OFF	23:17:58	-20.45	-20.32	-17.11	-24.05	-22.63	-22.62	-21.88	-22.11			0.002	0.9646	105.9	57.99	1.4815	5	1682
ON	23:38:48	-20.24	-20.32	-17.10	-23.74	-22.69	-22.63	-21.85	-22.03			0.932	0.9650				5	1253
	1998-12-22																	
OFF	0:8:1	-20.43	-20.36	-17.17	-24.11	-22.73	-22.70	-21.95	-22.19			0.004	1.0105	105.8	58.00	1.4820	5	1752
ON	0:28:58	-20.22	-20.33	-17.10	-23.79	-22.78	-22.71	-21.99	-22.20			0.937	1.0109				5	1257
OFF	0:58:8	-20.45	-20.37	-17.18	-24.09	-22.71	-22.63	-21.85	-22.11			0.004	1.0647	105.7	57.93	1.4802	5	1630
ON	1:17:0	-20.23	-20.32	-17.09	-23.67	-22.62	-22.59	-21.83	-22.02			0.926	1.0653				5	1258
OFF	1:45:7	-20.41	-20.34	-17.17	-24.06	-22.72	-22.72	-21.93	-22.15			0.003	1.1147	105.9	57.90	1.4798	5	1681
ON	2:6:16	-20.20	-20.30	-17.12	-23.70	-22.70	-22.66	-21.89	-22.11			0.937	1.1153				5	1269
OFF	2:33:41	-20.38	-20.29	-17.13	-24.02	-22.66	-22.63	-21.88	-22.12			0.000	1.1636	105.9	57.83	1.4785	5	1645
ON	2:54:23	-20.20	-20.31	-17.16	-23.77	-22.70	-22.70	-21.94	-22.17			0.942	1.1640				5	1248
OFF	3:22:55	-20.40	-20.31	-17.09	-24.04	-22.68	-22.64	-21.88	-22.14			0.004	1.2142	105.9	57.83	1.4785	5	1706
ON	3:44:2	-20.21	-20.26	-16.83	-23.62	-22.59	-22.56	-21.84	-22.07			0.939	1.2147				5	1267
OFF	4:13:46	-20.40	-20.30	-16.77	-24.02	-22.63	-22.59	-21.84	-22.05			0.000	1.2670	105.5	57.86	1.4792	5	1784
ON	4:34:26	-20.17	-20.26	-16.68	-23.66	-22.63	-22.59	-21.80	-22.07			0.924	1.2674				5	1240
OFF	5:1:27	-20.35	-20.28	-16.79	-24.06	-22.71	-22.64	-21.90	-22.17			0.002	1.3150	105.8	57.81	1.4781	5	1621
ON	5:22:12	-20.14	-20.22	-16.75	-23.64	-22.61	-22.58	-21.83	-22.05			0.946	1.3155				5	1245
OFF	5:50:22	-20.40	-20.36	-16.95	-24.11	-22.74	-22.69	-21.94	-22.21			0.004	1.3651	105.9	57.80	1.4780	5	1690
ON	6:11:4	-20.19	-20.30	-16.89	-23.68	-22.66	-22.64	-21.93	-22.15			0.943	1.3656				5	1242
OFF	6:38:25	-20.38	-20.26	-16.92	-23.96	-22.60	-22.59	-21.87	-22.13			0.001	1.4139	106.0	57.77	1.4774	5	1641
ON	6:59:20	-20.09	-20.17	-16.89	-23.62	-22.61	-22.56	-21.83	-22.04			0.949	1.4143				5	1255
OFF	7:27:10	-20.37	-20.27	-17.01	-24.02	-22.65	-22.67	-21.92	-22.17			0.002	1.4633	105.8	57.75	1.4768	5	1670
ON	7:48:1	-20.21	-20.29	-17.00	-23.70	-22.70	-22.64	-21.88	-22.09			0.936	1.4638				5	1251

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1998-12-22 4:34:26 (Fmax)=-16.68 ℃

1998-12-21 7:48:46 (Fmin)=-24.26 ℃

1998-12-21 7:46:46 (ton)=88.80 ℃ (tm)=88.80 ℃

1998-12-21 7:18:46 (toff)=88.80 ℃ (tn)=88.80 ℃

电流=0.936 (A)

耗电量=1.4768 (KWh/24h)

(ON=压缩机通电,OFF=压缩机断电,*on=化霜加热器通电,*off=化霜加热器断电)

(max=状态变化之间冷冻室最热点时刻,min=状态变化之间冷冻室最冷点时刻)

(Fmax=冷冻室最热点,Fmin=冷冻室最冷点,d=化霜开始冷冻室最热点等于-18℃时刻)

(ton=冷藏室t10,t11,t12最热点的平均值,tm=ton值与上一状态平均值的再平均值)

(toff=冷藏室t10,t11,t12最冷点的平均值,tn=toff值与上一状态平均值的再平均值)

(*max=化霜开始冷冻室最热点时刻)

制表时间:1998-12-22 7:48:28