



Operations Manual



Contents		Page
1	What is the Adande® System?	3
2	Adande® Explained	3
3	Ratings and Specifications	4
4	Safety symbols	5
5	General Warning and Safety Instructions	6
	5.1 Electrical	6
	5.2 Operational Use & Cleaning	6
	5.3 General	6
6	Installation Instructions	7
	6.1 Pre – Operation Checks	7
	6.2 Electrical Connection	7
	6.3 Location and Stability	8
7	Adande® Standard Controller	9
	7.1 The Display Temperature Controls	9
	7.2 Locking and Unlocking Display Panel	10
	7.3 Defrost	10
	7.4 Drawer Alarm	10
	7.5 Error Alarm	11
	7.6 Temperature Alarm	11
8	Adande® Blast Chiller	12
	8.1 Preparation	12
	8.2 Blast Chill Programmes	13
	8.3 Adande® Blast Chill Controller	14
	8.4 Blast Chill	14
	8.5 Normal Operation	15
	8.6 Defrost	15
	8.7 Lock/Unlock Keypad	15
	8.8 Drawer Alarm	16
	8.9 Error Alarm	16
	8.10 Temperature Alarm	16
8	Insulated Container	17
9	Drawer Access VCM	17
10	Drawer Maintenance	18
	10.1 Cleaning	18
11	Food Storage	19
12	Servicing & Warranty	19
13	EC Declaration of Conformity	20
14	Appendix 1: Contact Details	21

Welcome to Adande® Refrigeration

1 What is Adande®?

Adande® is a new method of cold storage developed as a series of refrigerated drawers that offer storage temperature flexibility in 1°C increments between –22°C and +15°C.

Each refrigerated drawer:-

- Provides stable temperature storage
- A removable container to act as temporary cool and safe product storage.
- Gives full plan area access providing space efficient storage.
- Is easily cleaned or replaced.
- Can be supplied configured as a blast chiller.

2 Adande® Explained

Adande® uses standard technology and refrigeration parts but in a completely new and patented way.

A dedicated fridge engine supplies refrigerant to an evaporator coil assembly. The evaporator coil assembly then supplies cooling to the insulated container and is sized to maintain up to 40kg of product at any set point temperature, in the range of –22°C to +15°C.



Figure 1: Adande® VCS, VCR & VCM1 HCW

Adande® uses a modular drawer where each module is an individual refrigeration system. This means that each drawer module can be stacked on top of another. See Fig.2 Below.









Figure 2: Adande® VCS2

3 Ratings and Specifications

ADANDE				
Model	VCS	VCR	VCM	Blast Chill
Electrical Specifications				
The Adande V range of products is configured for the appropriate electrical supply and supplied with a fixed cordset for the appropriate region.				
Rating R404a	230V 50Hz (1.3 amps max per module)			
Rating R600a	230V 50Hz (1 amps max per module)			
Supply Lead(s)	UK Moulded plug fitted with a 13A fuse C19 Socket 3 pole 250V 16A 1100mm in length in coiled condition Optional: Power cord to connect two modules C19 to C20 Length 1000mm			
Environmental				
Operating Temperature	15°C – 40°C (60°F – 100°F)			
Noise	70 dB Max			
Altitude	Maximum operating altitude 2000m (6560 ft.)			
Mechanical				
Dimensions – module only	Model	Height	Width	Depth
	VCS	390mm	1100mm	700mm
	VCR	390mm	880mm	885mm
	VCM	390mm	1120mm	710mm
Module weight without counterbalance weights	59kg (130lbs)			
Counterbalance weights in castor base	16.5kg (36lbs)			

4 Safety Symbols

The following safety symbols are used upon the product and throughout the product documentation.

<u>Meaning / Description</u>	<u>Symbol</u>
<p>Dangerous Voltage</p> <p>Electrical warning symbol To indicate hazards arising from High voltages.</p>	
<p>Protective Earth (Ground)</p> <p>To identify any terminal which is intended for connection to an external conductor for protection against electric shock in case of a fault, or the terminal of a protective earth (ground) electrode.</p>	
<p>Warning/Caution</p> <p>An appropriate safety instruction should be followed or caution to a potential hazard exists.</p>	
<p>Disposal of Hazardous Waste</p> <p>Disposal of Hazardous Waste The product contains hazardous waste which is harmful to the environment. Correct procedures in line with WEEE directive should be followed when disposing of the product, including removable/replaceable items like :-</p> <ul style="list-style-type: none"> a) Refrigerant Gas/oil b) Insulated container c) Controller 	
<p>Do Not Pressure Wash</p> <p>Do Not Pressure Wash the Modules.</p>	
<p>Heavy</p> <p>This product is heavy and reference should be made to the safety instructions for provisions of lifting and moving</p>	

5 General Warning and Safety Instructions

The following instructions provide information and guidance on the safe operation of the user and the equipment.

5.1 Electrical

- The operator/end user shall not remove ANY of the access panels.
- Disconnect the electrical supply before any maintenance or cleaning by removing the plug from the electrical socket.
- Only one mains supply should be inserted to the unit at any time. (See Fig. 3 below)
- Ensure safe routing of the electrical cabling.
- Check Inlet Cables for damage before use. If damaged, isolate from the electrical supply and replace the cabling.
- Only the electrical cables supplied with the machine at the point of purchase, or by a qualified service engineer is to be used with this product.
- This product is to be installed in accordance with regional and local electrical codes.

5.2 Operational Use and Cleaning

- All cleaning and servicing requires the equipment to be, switched off at the front/ isolated from the power source and disconnected.
- Ensure the drawers are kept shut between openings.
- Do not lean on the drawer when fully extended.
- If modules have been stacked, into a VCS2, avoid opening more than one drawer at a time.
- Ensure foodstuffs that give out acidic odours like vinegar, onions, etc. are sealed before placing in the insulated container.
- Do not place hot pans directly onto the plastic surface of the container, always use the metal cooling racks.
- Remove all foodstuffs from the drawer container before removing for cleaning.
- Do **NOT** drop the container into the container support cradle.

5.3 General

- The machine should be used as provided and in accordance with this manual.
- Adequate provision should be made for lifting and positioning the equipment in accordance with local policy codes.
- Do not overfill the drawer or exceed the maximum loading of 40kg per drawer.
- Do not sit, stand or apply additional downward pressure on an open drawer.
- Do not operate drawer with any panels removed.
- Do not clean drawer with any panels removed.
- When the machine is being transported it should be sat firmly on its castors/feet with the brakes applied. The machine should be strapped upright to a flat pallet during transport.
- Ensure drawer is installed and maintained on a flat, clean and level surface.
- If mounted on a castor base, ensure brakes are applied to the front two castors.
- The room in which the drawer is kept should be dry and sufficiently ventilated.
- No obstructions should be placed directly in front of the condenser air outlet (vent at the front of the unit, at the rear on VCR model).
- The machine should be regularly inspected and checked against the requirements of this Operations Manual.
- Should a fault occur with the product immediately isolate and disconnect the incoming power supply.
- Only Adande trained engineers are permitted to service or carry out repairs to this product.

6 Installation Instructions

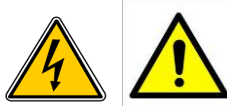
The Adande is delivered as a complete unit. This machine is designed for indoor use only.

6.1 Pre Operation Checks (unpacking)



- Check the Adande® unit for transport damage and report any immediately to Adande® refrigeration.
- Remove all packaging material dispose of responsibly recycling where applicable.
- Ensure the Adande® units corset is firmly secured in place by the supplied P clip.
- Ensure the Adande® unit is positioned on a clean, level and stable surface.

6.2 Electrical Connection



- The Adande® unit should be connected to a 230V, single phase, 50 Hz supply.
- The drawer is connected to the mains supply with a detachable supply lead.
- The supply lead is a standard UK moulded plug fitted with a 13A fuse.
- The supply lead is connected to the Adande® drawer as shown in *figure 3* below.
- Stacked modules are supplied with chain cables as shown in *figure 3b* below.



Figure 3: Mains connection point



Figure 3b

6.3 Location and Stability



It is important that the Adande® drawer is installed and maintained on a flat, clean and **level surface** to ensure correct operation.

The room should be dry and sufficiently ventilated to allow good airflow around the clearance stated above, and to minimize moisture intake.

Optimum performance is obtained at ambient temperatures between 16°C (60°F) and 40°C (100°F)

The air outlet grill MUST be kept clear at all times to maintain optimum performance.


The Adande® drawer can be mounted on rubber feet, rollers or castors. When mounted on a castor base, the front two castors should have their brakes ON during normal use as in *figure4*.



Figure 4: Lockable Castor



THE INSULATED CONTAINER SHOULD BE UNLOADED BEFORE MOVING

7 Adande® Standard Controller – Click [here](#) to see the video! 

The Adande® temperature control system allows you to set and control the drawer within a temperature range of -22°C (-8°F) and +15°C (59°F).




Temperature accuracy in the drawer will be maintained within ±2°C of the set point for R600a and ±1°C for R404a







Figure 5: Adande® Display Control Panel

7.1 The Display Temperature Controls








The set-point is factory set to 3°C, however should you need to adjust the temperature set point, please follow the procedure below:

- First press and hold the set temperature button  this will display the current set point.
- To adjust the set point simply keep the set temperature button held down and press the +  or –  button until the desired set point is displayed.
- Next release all buttons. The temperature is now set.


Display Control Keys	
Set Temperature/Scroll Menu	
Decrease Temperature/Manual Defrost	
Increase Temperature	
Manual Defrost	

7.2 Locking and Unlocking the Display Panel

The display panel's keypad can be locked to prevent accidental changing of the temperature set point. To lock or unlock the key pad please follow the following procedure.

- First press and release the set temperature button  six times until the LOC parameter is displayed 
- Next press and hold in the set temperature button  to display the parameter. YES  means the display is locked NO  means the keypad is unlocked
- To adjust this parameter simply keep the set temperature button held down and press the +  or –  button to change from YES to NO.
- Release all buttons to exit, the display will return to the main screen in 3-5 seconds.

7.3 Defrost

The refrigeration system automatically defrosts. If a manual defrost is required then press the manual defrost button on the control panel  for 3 seconds. During a defrost "DEF" will show up on the display panel. Once defrost has finished "REC" (recovery) will be displayed until the unit reaches its set point.

7.4 Drawer Alarm

If the drawer is open for more than 3 minutes, the Drawer Open alarm will be triggered, an audible alarm will sound and "DO" will flash on the display panel.

When the alarm has been activated, the Adande® drawer will alarm both visually and audibly.

To silence the audible alarm, press ANY button on the display, or close the drawer. The alarm light and flashing display will continue to show until the drawer has been fully closed.

NOTE: THERE IS NO COOLING TO THE INSULATED CONTAINER WHEN THE DRAWER IS OPEN.

7.5 Error Alarm

If display reads "E1" or "E2", a temperature probe has failed, and an engineer should be called.

The Adande® drawer will operate with a 5 minute on / 5 minute off cycle in the event of an "E1" failure. This will help to maintain the stored product at a safe temperature, but precise temperature control will be lost. "E2" will only affect defrosts, and these will be timed to maintain operation of the unit. An engineer should be called as soon as possible for either fault.

7.6 Temperature Alarm

If "HI" should appear on the display, the drawer temperature has exceeded its set point by 7°C and product core temperature should be checked. This alarm may also be triggered if the Adande® drawer has recently been turned on loaded with warm product or left open for a long period of time. If the temperature does not return to the set point temperature, an engineer should be called.

If "LO" should appear on the display, the drawer temperature has fallen below its set point by 7°C and product core temperature should be checked. This alarm may also be triggered if the Adande® drawer's temperature set point has recently been increased. If the temperature does not return to the set point temperature, an engineer should be called.

Contact the Adande service department:

Tel: 01502 537 135 option 1

Email: service@adande.com

8 Adande® Blast Chiller

Adande Blast Chiller Drawers - a refrigeration industry first, in that any Adande Drawer can be adapted to function as a Blast Chiller, while still retaining fridge and freezer functionality. This flexibility makes Adande Drawers ideal for the Cook / Chill system of food preparation, adding to the productivity of your foodservice operation.

Your Adande Blast Chiller duty is specified in accordance with EU standards as follows:
To cool 5kg of mash potato from +70°C to +3°C in 90 minutes when held in a metal 1/1 GN pan with product spread evenly to a depth of 25mm, covered with cling film.

8.1 Preparation

- Wherever possible use a single shallow (65mm) metal 1/1 GN pan as pictured in *figure 6* below.
- Always stand the pan on the metal mesh up-stand provided.
- Cover the product with food wrap to prevent dehydration and loss of blast chill performance.
- Spread the food evenly over the base of the Stainless Steel GN pan to a maximum depth of 25mm. Where necessary, split product to reduce the depth of food in the pan.
- Do not exceed 5kg of food per chill session unless you are closely monitoring the food safety cooling time and type of product. When satisfied that food safety criteria are being met, larger batch sizes may be possible.

It may take longer to cool the core of dense products, such as joints of meat. This may still be acceptable under the HACCP rules.



Figure 6

8.2 Blast Chill Programmes

In common with all commercial Blast Chillers, Adande offers a range of blast chill programmes to suit various food types:-

Cycle	Blast mode	1 st Phase - Hard Chill		2 nd Phase - Soft Chill		Total cycle duration (min)
		Duration (min)	Temperature (°C)	Duration (min)	Temperature (°C)	
1	Soft Chill			90	-1	90
2	Hard Chill	60	-15	30	-1	90
3	Soft Chill			120	-1	120
4	Hard Chill	80	-15	40	-1	120

- Use the Hard Chill cycles for food products that are not likely to freeze on the surface
- Use the Soft Chill cycles for delicate items that could freeze or be damaged by ice crystallisation, such as fish and pastries etc.
- Always use a hand held temperature probe to test the food at the end of a cycle. Continue the blast chill cycle if further cooling is required.

The speed at which chilling takes place will be affected by the shape, size and density of the food, it's moisture content, heat capacity and entry temperature. The size, shape and material of the food container will also have a bearing on cooling times. Adande recommends covered shallow metal 1/1GN pans where possible.

Always adhere to HACCP practice and general food safety. The table below is provided as a guide only.

Food Type	Includes	Blast Chill Cycle	Time (minutes)
Meat	Beef, Pork, Lamb, Poultry & Mince	Hard	90-120
Fish	Fried, poached or baked haddock, plaice, salmon, cod fillets & shellfish	Soft	60-90
Prepared Dishes	Stews, casseroles, lasagne, risotto and shepherd's pie	Hard	90-120
Vegetables & Pulses	Steamed or roasted vegetables, rice and potatoes etc	Soft	60-90
Fruit	Stewed and cooked fruits	Soft	60-120
Bakery	Cakes	Soft	90-120
Bakery	Pastries	Soft	60-90
Deserts	Fruit based desserts & egg based flans	Soft	60-90
Deserts	Sponge puddings and dense desserts such as cheesecake	Hard	60-90

8.3 Adande® Blast Chill Controller - [Click here to see the video!](#) 

The front display panel is explained in figure 7 the important points to note are the blast chill cycle numbers and hold mode "H" highlighted in the display of the controller. The lights in the top left corner of the chequered flag button and program button indicate that a cycle or the hold mode is active.

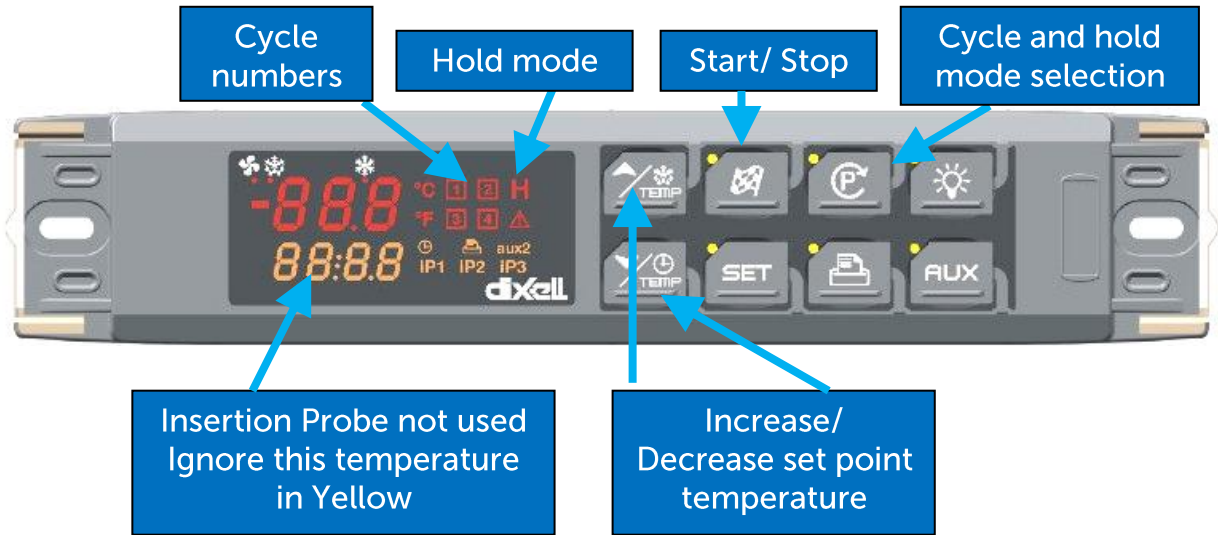
















Figure 7

8.4 Blast Chill

1. To stop the cycle push and hold the START/ STOP button  until the yellow light turns off.
2. Push and release the  button until the desired cycle is selected. The cycle number selected will be highlighted.
3. Push and release the START/ STOP button  the yellow light will be switched on indicating that the blast chill cycle has started.

8.5 Normal Operation

1. To stop the cycle push and hold the START/ STOP button  until the yellow light turns off.
2. For **normal refrigeration or frozen storage** push  button until the 'H' appears on the display and no cycle numbers are lit.
3. To change temperature push and release the  button this will show the current set point.
4. Then push and hold down the  button and the word "SetH" will flash 
5. Use the  and  buttons to either increase or decrease the set point temperature.
6. Push the  button again to store the new set point. If the set button is not pressed the temperature will revert back to previous setting.
7. Press  to activate the hold mode, the buttons  and  will be illuminated.

8.6 Defrost

The refrigeration system automatically defrosts. If a manual defrost is required then

press the manual defrost button/temperature up button  for 3 seconds.

8.7 Lock/Unlock Keypad

The keypad can be locked simply by pressing  and  buttons together. When the keypad is locked the display will read P-OFF when the keypad is unlocked the display will read P-ON

8.8 Drawer Alarm

If the drawer is open for more than 10 minutes, the display in the control panel changes to "DA".

When the alarm has been activated, the Adande® drawer will alarm both visually and audibly.

To silence the audible alarm, press ANY button on the display, or close the drawer. The alarm light and flashing display will continue to show until the drawer has been fully closed.

NOTE: THERE IS NO COOLING TO THE INSULATED CONTAINER WHEN THE DRAWER IS OPEN.

8.9 Error Alarm

If display reads "rPF" or "EPF", a temperature probe has failed, and an engineer should be called.

The Adande® drawer will operate with a 15 minute on / 15 minute off cycle in the event of an "rPF" failure. This will help to maintain the stored product at a safe temperature, but precise temperature control will be lost. "EPF" will only affect defrosts, and these will be timed to maintain operation of the drawer. An engineer should be called as soon as possible for either fault.

8.10 Temperature Alarm

Should "HA" appear on the display, the drawer temperature has exceeded its set point by 7°C. Product core temperature should be inspected. If the Adande® drawer has recently been turned on, loaded with warm product or left open for a long period, this alarm could be displayed. If the temperature does not return to the set point temperature, an engineer should be called.

Should "LA" appear on the display, the drawer temperature has fallen below its set point by 7°C. Product core temperature should be inspected. If the Adande® drawer's temperature set point has recently been increased, this alarm could be displayed. If the temperature does not return to the set point temperature, an engineer should be called.

Contact the Adande service department:

Tel: 01502 537 135 option 1

Email: service@adande.com

9 Insulated Container



The insulated container can be removed for cleaning. To remove the insulated container, first pull the drawer out fully so that the rear edge of the container clears the front and the runners are fully extended. Then lift the container vertically to remove. The container should be completely emptied before moving. When replacing the container do **NOT** drop into position as this can damage the container.



NOTE: The VCM insulated container has a magnet imbedded in the plastic which activates switch. It is important that the container supplied is kept with the unit to ensure correct operation. If a standard container is used the unit will not work. A sticker identifying the container as being specific to VCM Matchbox is also visible on the side of the container.

10 Drawer Access VCM

<p>Access to drawer</p>	<p>To prevent the drawer going full travel from one side to the other and possibly causing injury to the operators, the unit is fitted with a safety bar.</p> <p>With the bar in the open position as shown, the drawer can be pulled open towards the operator.</p>
<p>No access to drawer</p>	<p>The bar on the on the other side is then positioned to prevent drawer opening from that side.</p>

11 Drawer Maintenance

The Adande drawer is virtually maintenance free other than periodic checking of the seal and cleaning.



DO NOT PRESSURE WASH EQUIPMENT, THIS CAN DAMAGE THE ELECTRICAL COMPONENTS.

11.1 Cleaning - [Click here](#) to see the video!

It is recommended that cleaning should be performed at minimum weekly or in accordance with local codes.



The airflow through the Adande drawer is designed to deposit grease and dirt on the **outside** surface of the insulated container and **internal** surfaces of the drawer housing.

The insulated container must be removed from the drawer to clean these surfaces.

Always isolate the unit before doing any cleaning or maintenance. The dirt and grease deposits should be removed weekly using



or maintenance. The dirt and the following procedures:

- Clean the heated seal with a damp, soaped cloth as shown in *figure 8.1* below.
- Always remove any contents from the containers before lifting from the supports.
- Clean the insulated container with an anti-bacterial cleanser.
- Brush any loose dirt from the condenser situated inside at the back of the drawer cavity as shown in *figure 8.2* below
- Clean the steel surfaces with an anti-bacterial cleaner, with the active ingredient that confers its antiseptic property being **chloroxyleneol (C₈H₉ClO)**, comprising of 4.8% of the total admixture.
- Do not use steel pads, wire brushes, scrapers or chloride cleaners to clean the stainless steel, some parts have painted surfaces, these should be cleaned with a mild soap solution as previously instructed.



Figure 8.1



Figure 8.2

12 Food Storage

For the drawer to operate at full efficiency the heated seal should be maintained in good condition. It is essential that the container is not overfilled as this can damage the seal and affect the operation of the drawer.

The drawer is capable of storing any pre-packaged food product. However, foodstuffs that may give off acidic odours like vinegar, onions, etc. should be suitably sealed. Adande® also recommends storage containers with liquid food products be stored with lids.

13 Servicing & Warranty

Service personnel must be suitably trained in refrigeration and experienced in servicing Adande® products. Only use Adande® Approved and Registered Service Engineers which can be supplied on request.

Your Adande drawer should be regularly inspected and checked against the requirements of this Operations Manual.

The Location of the unique serial number for your Adande drawer is located at the rear of the unit near the supply inlet below pictured in figure 8 below.

Advice and help can be obtained to resolve any problems that may occur during operation or servicing, by contacting the Adande® technical support line, refer to Appendix 1 at the back of this manual.



Figure 9

Product Description: Professional Refrigerated Storage Counter Cabinets
Make: Adande®
Type: Adande® Refrigeration Units manufactured by Adande® Refrigeration



We declare that the following product models:

VCS R1 & R2; VCS-BC R1; VCS-S2 & S3 R1; VCS-T R2; VCS-Rm R1 & R7
VCR R1 & R2; VCR-BC R1; VCS-S4 & S5 R1;
VCM R1 & R2; VCM-BC R1; VCM-T R2;
VLS R1 & R2; VCC R1 & R2; HCS R2; HCR R2;



Comply with the requirements of the following European Directives:

- The Machinery Directive 2006/42/EC
- The Low Voltage Directive 2014/35/EU
- The Electromagnetic Compatibility Directive 2014/30/EU
- The Pressure Equipment Directive 2014/68/EU
- The Food Equipment Regulation (EC) 1935/2004
- The Ecodesign Directive 2009/125/EC
- The Energy Labelling Directive 2010/30/EU
- The Fluorinated Greenhouse gases Regulation (EU) 517/2014
- The Restriction of use of Hazardous Substances (RoHS2) Directive 2011/65/EU
- The Waste Electrical and Electronic Equipment Directive 2012/19/EU

In accordance with the following transposed harmonised European Standards:

- EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction
- EN ISO 13857:2008 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs
- EN 60204-1:2006+A1:2009 Safety of machinery – Electrical equipment of machines – Part 1: General requirements
- EN 378-1:2016 Refrigerating systems and heat pumps. Safety and environmental requirements. Basic requirements, definitions, classification and selection criteria
- EN 61000-6-1:2007 Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments
- EN 61000-6-3:2007+A1:2011 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments
- EN IEC 60335-1:2012 + A11:2014 Household and similar electrical appliances – Part 1: General requirements
- EN IEC 60335-2-89:2010 + A1:2016 Household and Similar Electrical Appliances – Safety – Part 2–89: Particular requirements for commercial refrigerating appliances with incorporated or remote refrigerant condensing unit or compressor
- EN 16825:2016 Refrigerated storage cabinets and counters for professional use – Classification, requirements and test conditions

The technical file for this machinery will be prepared on demand by :-

Name: Ian Wood
Position: Managing Director
Who signs on behalf of the manufacturer
ADANDE® REFRIGERATION
45 Pinbush Road
South Lowestoft Industrial Estate
Lowestoft
Suffolk
NR33 7NL

15 Appendix 1: Contact Details

Contact us

Adande® Refrigeration,
45 Pinbush Road,
South Lowestoft Industrial Estate,
Lowestoft,
Suffolk,
NR33 7NL
United Kingdom.

Service Enquiries

Telephone: +44 (0) 1502 537135
Mobile +44 (0) 7967 559652
Fax: +44 (0) 1502 533794
Email: service@adande.com

Parts Enquiries

Telephone: +44 (0) 1502 537135
Fax: +44 (0) 1502 533794
Email: spares@adande.com

Sales Enquiries

Telephone: +44 (0) 1502 576712
Fax: +44 (0) 1502 533794
Email: sales@adande.com