

NOVUM

Redefining refrigeration

Panama Technical Manual

Green | Slim



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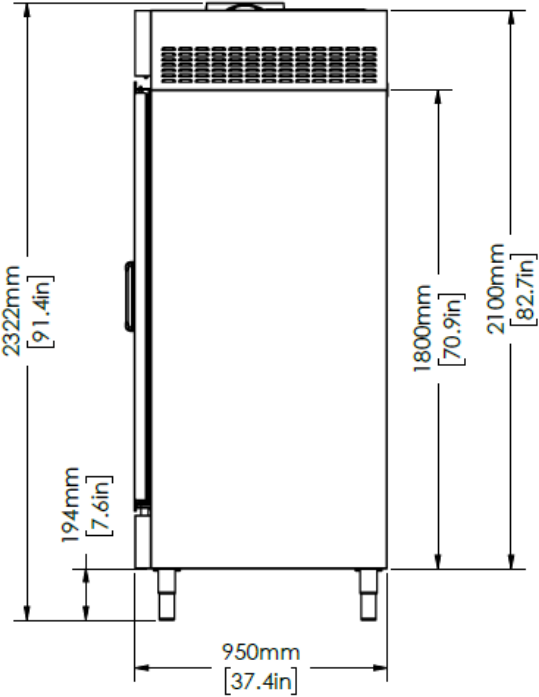
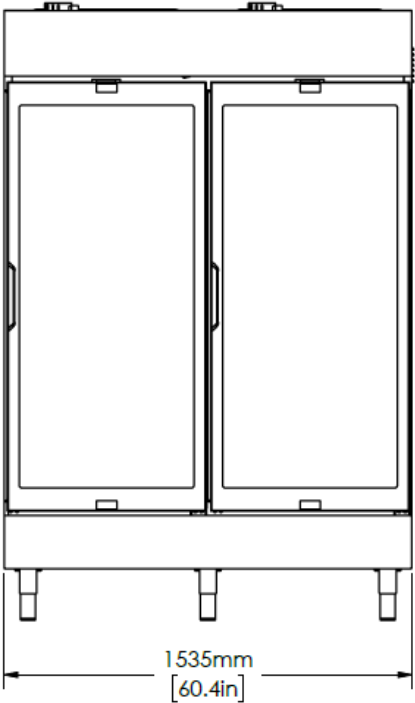
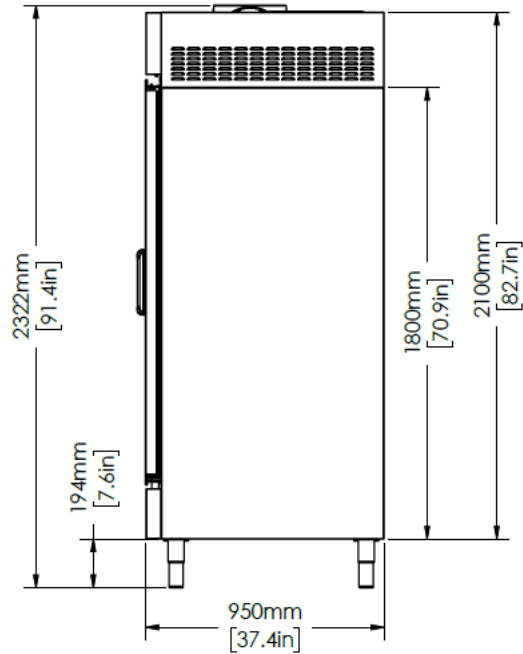
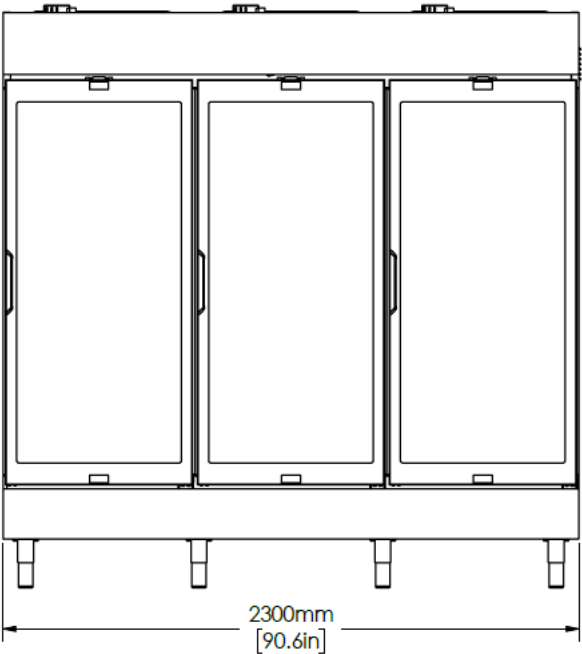
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1. Technical Data

1.1. Panama Green specifications

		2 Doors	3 Doors
Technical Data			
Gross content	cu ft	58.9	88.3
Net content according to AHAM	cu ft	51.8	77.7
Glass display area	sq ft	19.5	29.3
Ambient temperature range	°F	+61 to +77	+61 to +77
Inner temperature range	°F	0 to -13	0 to -13
Sound pressure at 3.3 feet distance	dB(A)	46	48
Electrical Data			
Nominal voltage / frequency	V / Hz	110-120 / 60	110-120 / 60
Nominal power cabinet	W	967	1450
Nominal power LED light	W	4 x 14	6 x 14
Nominal current	A	11	16
Fuse protection	A	16	20
Energy consumption at 77°F	kWh/24h	12.52	18.78
Length of power supply cord	inches	96	96
Refrigeration Data			
Refrigerant	Type	R290	R290
Gas charge	oz	2 x 2.3	3 x 2.3
Maximum operating pressure	PSI	435	435
Maximum heat output	W/h (Btu/h)	1200 (4095)	1800 (6142)
Dimensions			
Length outside / inside	inches	61 / 54.8	90.6 / 84.6
Depth outside / inside	inches	37.4 / 28.5	37.4 / 28.5
Depth of shelves	inches	26	26
Number of shelves		4	4
Weight			
Net weight (excl. packaging, incl. internal accessories)	lb	694	926
Gross Weight (incl. packaging & internal accessories)	lb	745	992

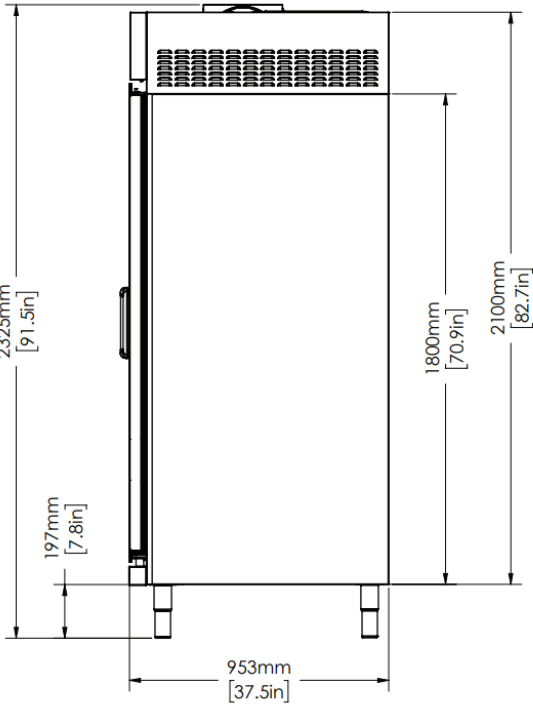
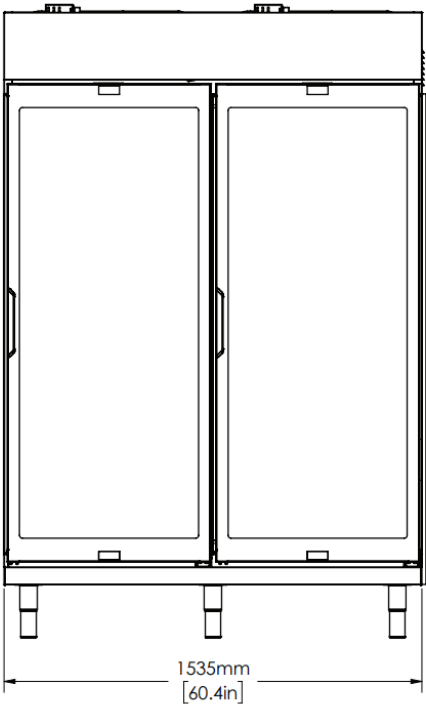
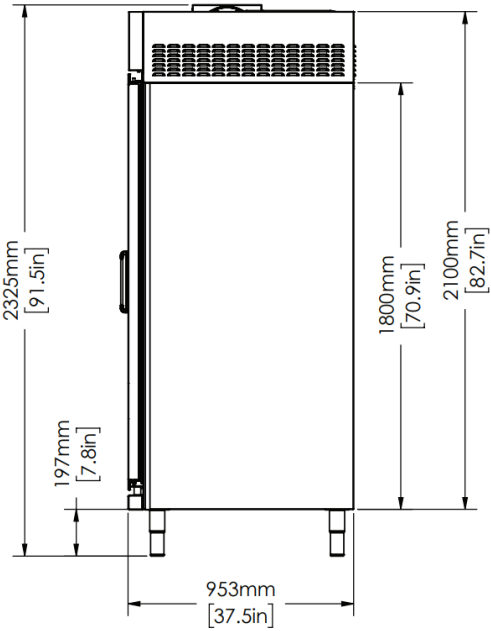
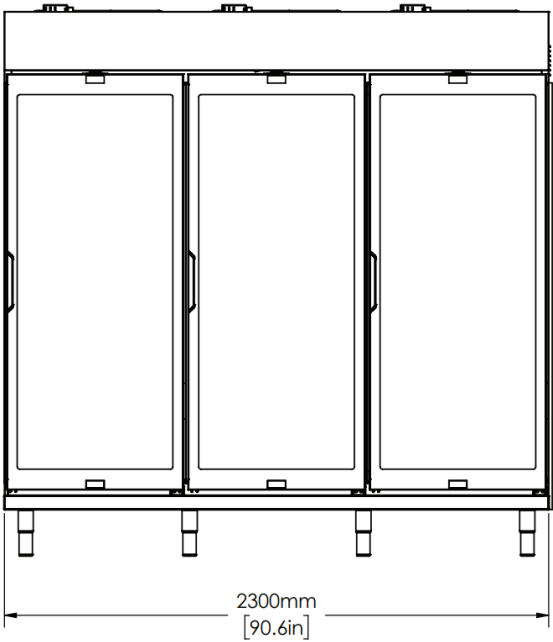
1.2. Panama Green dimensions



1.3. Panama Green Tall Doors specifications

		2 Doors		3 Doors	
Technical Data		Frozen Mode	Chiller Mode	Frozen Mode	Chiller Mode
Gross content	cu ft	58.9	58.9	88.3	88.3
Net content according to AHAM	cu ft	51.8	51.8	77.7	77.7
Glass display area	sq ft	21.3	21.3	32	32
Ambient temperature range	°F	+61 to +77	+61 to +77	+61 to +77	+61 to +77
Inner temperature range	°F	0 to -13	+32 to +46	0 to -13	+32 to +46
Sound pressure at 1m distance	dB(A)	46	46	48	48
Electrical Data					
Nominal voltage / frequency	V / Hz	110-120 / 60	110-120 / 60	110-120 / 60	110-120 / 60
Nominal power cabinet	W	967	967	1450	1450
Nominal power LED light	W	4 x 14	4 x 14	6 x 14	6 x 14
Nominal current	A	11	11	16	16
Fuse protection	A	16	16	20	20
Energy consumption at 77°F	kWh/24h	12.66	4.93	19	7.39
Length of power supply cord	inches	96	96	96	96
Refrigeration Data					
Refrigerant	Type	R290	R290	R290	R290
Gas charge	oz	2 x 2.3	2 x 2.3	3 x 2.3	3 x 2.3
Maximum operating pressure	PSI	435	435	435	435
Maximum heat output	W/h (Btu/h)	1200 (4095)	1200 (4095)	1800 (6142)	1800 (6142)
Dimensions					
Length outside / inside	inches	61 / 54.8	61 / 54.8	90.6 / 84.6	90.6 / 84.6
Depth outside / inside	inches	37.4 / 28.5	37.4 / 28.5	37.4 / 28.5	37.4 / 28.5
Depth of shelves	inches	26	26	26	26
Number of shelves		6	6	6	6
Weight					
Net weight (excl. packaging, incl. internal accessories)	lb	694	694	926	926
Gross Weight (incl. packaging & internal accessories)	lb	745	745	992	992

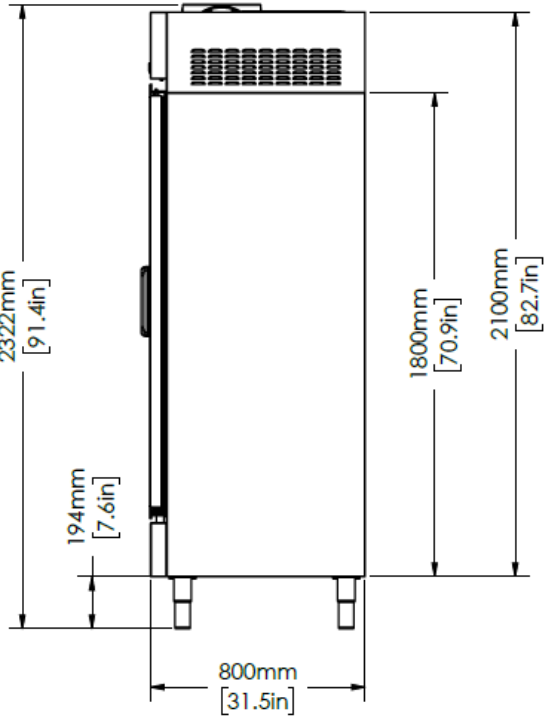
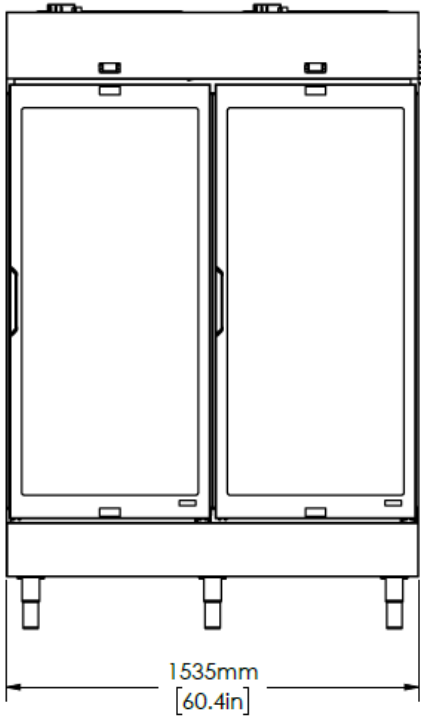
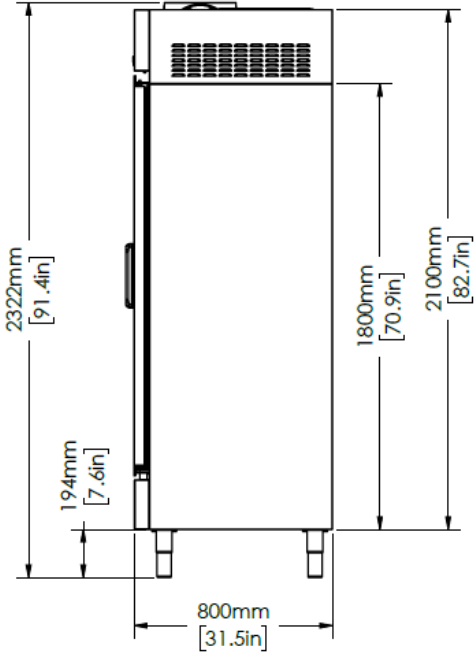
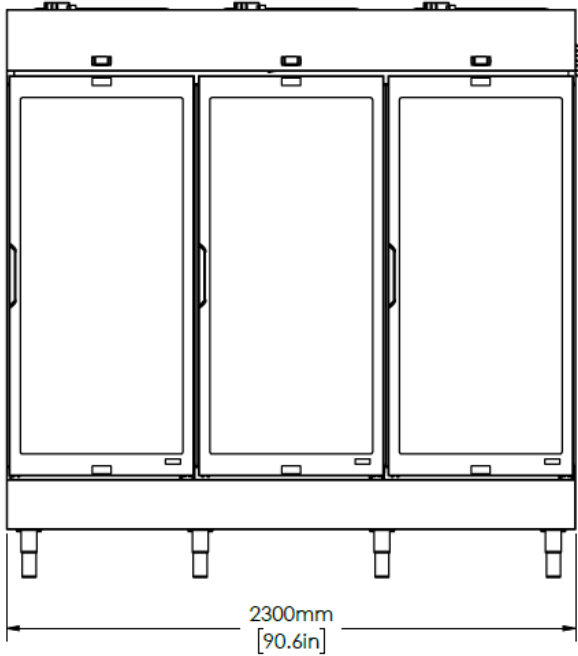
1.4. Panama Green Tall Doors dimensions



1.5. Panama Slim specifications

		2 Doors	3 Doors
Technical Data			
Gross content	cu ft	47.3	68.2
Net content according to AHAM	cu ft	37.8	58.3
Glass display area	sq ft	21.5	28.1
Ambient temperature range	°F	+61 to +77	+61 to +77
Inner temperature range	°F	0 to -13	0 to -13
Sound pressure at 1m distance	dB(A)	46	48
Electrical Data			
Nominal voltage / frequency	V / Hz	110-120 / 60	110-120 / 60
Nominal power cabinet	W	967	1450
Nominal power LED light	W	4 x 14	6 x 14
Nominal current	A	11	16
Fuse protection	A	16	20
Energy consumption at 77°F	kWh/24h	10.6	15.6
Length of power supply cord	inches	96	96
Refrigeration Data			
Refrigerant	Type	R290	R290
Gas charge	oz	2 x 2.3	3 x 2.3
Maximum operating pressure	PSI	435	435
Maximum heat output	W/h (Btu/h)	1200 (4095)	1800 (6142)
Dimensions			
Length outside / inside	inches	61 / 54.8	90.6 / 84.6
Depth outside / inside	inches	31.5 / 22.6	31.5 / 22.6
Depth of shelves	inches	20	20
Number of shelves		4	4
Weight			
Net weight (excl. packaging, incl. internal accessories)	lb	626	871
Gross Weight (incl. packaging & internal accessories)	lb	648	904

1.6. Panama Slim dimensions



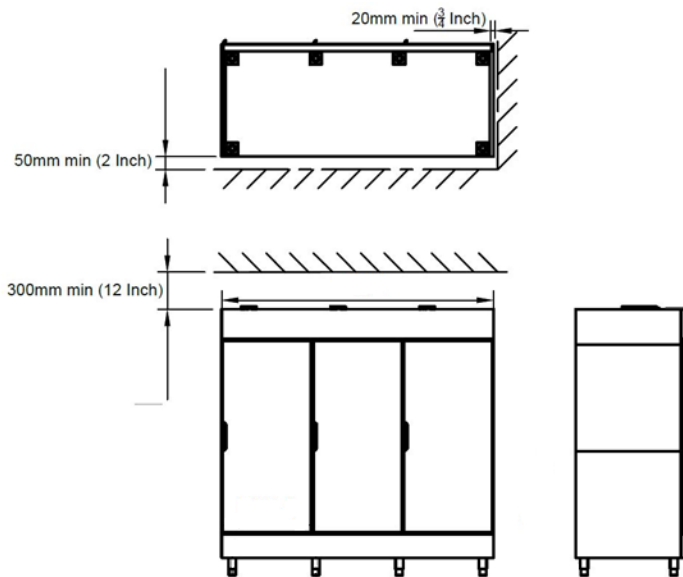
2. Transport & Handling

- Cabinets must be transported and stored in and upright position.
- During transport, cabinets must be protected from water and direct sunlight.
- Cabinets should only be lifted onto their pallet.
- Novum cabinets are heavy, so take appropriate care when lifting or moving.
- Cabinets should only be lifted or moved when empty.
- Due care and attention must be observed when handling or moving so as to avoid damaging the refrigerant tubing or risk of a leak.
- If cabinet is powered off, the door must be left open.

3. Commissioning

3.1. Installation

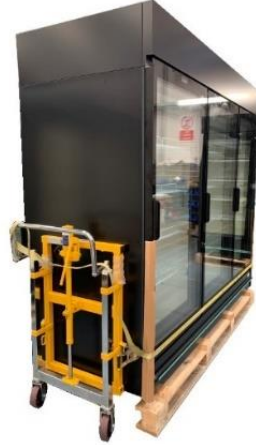
- Air flow: a minimum gap as per drawing below must be maintained around the cabinet to allow air flow to ensure proper operation.



- Never install a cabinet beside a heating device nor on direct sunlight.
- Ensure air flow of air conditioning unit is not directed towards cabinets.
- Avoid positioning cabinets near external doorways or opened chiller cabinets.
- Mains lead must be connected to mains power supply and LED power cable must be connected to specific power plug if any.

3.2. Standalone installation

- **Step 1:** Remove all packaging with the exception of the wooden base pallet. Raise cabinet using furniture removing equipment.



- **Step 2:** Pull out wooden base and locate cabinet in position.



- **Step 3:** Adjust feet to a height of 6.3". Fit the feet provided to the base of the cabinet to pre-drilled holes in base. No.13 spanner required. After all feet are fitted, remove furniture removers.



- **Step 4:** Ensure cabinet is levelled. Adjust feet accordingly. This is very important to ensure doors will close by themselves. Check all doors closing correctly after levelling. Plug in cabinet. Turn on LED's with the switch on top frame behind middle door or check motion sensor is working (depending of configuration). Allow 2-3 hours for cabinet to fully pull down in temperature.



- **Step 5:** For inline installation, the spacer bars must be installed to prevent condensation between cabinets.



Black spacer pre-fitted with double sided sponge tape



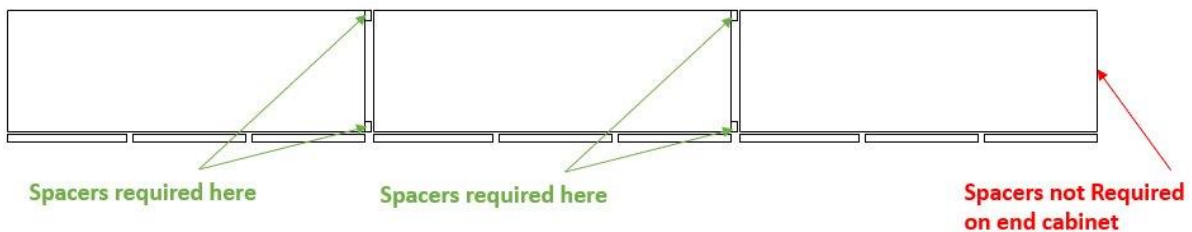
Remove backing from double sided sponge tape



Align front spacer with plastic door frame and bottom of vented pelmet



Align back spacer with back edge of cabinet and vented pelmet

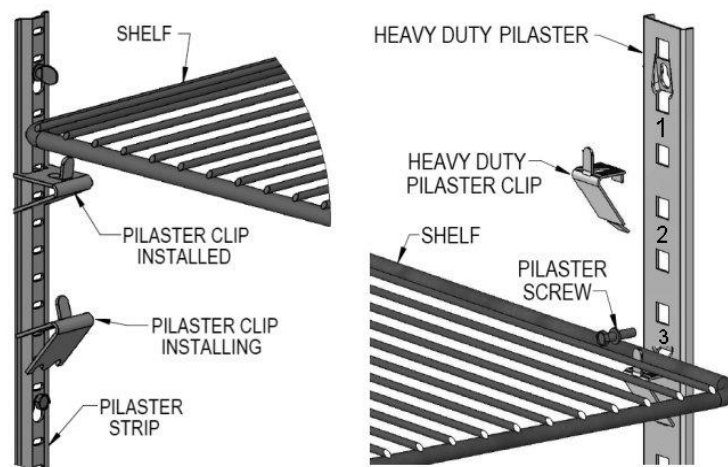


3.3. Product loading

- Novum cabinets are conservators in nature and can be used to store and display previously frozen food.
- Do not load the cabinet with non-frozen foods or try to freeze products in the cabinet.
- As soon as the cabinet has reached a storage temperature of below 0°F (as indicated by the controller display), it can be loaded with frozen foods up to the maximum of the load limit line. Novum recommend loading the cabinet in 3 stages allowing cabinet to recover 0°F between each.
- **Never** merchandise product beyond the red load limit sticker.



- **Do not leave door open** for extended periods of more than 15 minutes during merchandising.
- Exercise due care when loading heavy product, do not damage internal liner.
- Please ensure cabinets are 'OFF' while the shelving is arranged and positioned.
- Pilaster rails are numbered to facilitate level fitting of clips and shelves.



- Standard shelf rated for max of 154 lb.

- Use lock on cabinet when filling with stock to keep door open.



4. Care and maintenance

- All below recommendations are standard requirements and may need to be done more frequently depending on store conditions.
- The below are manufacturer recommendations and do not override local regulations.

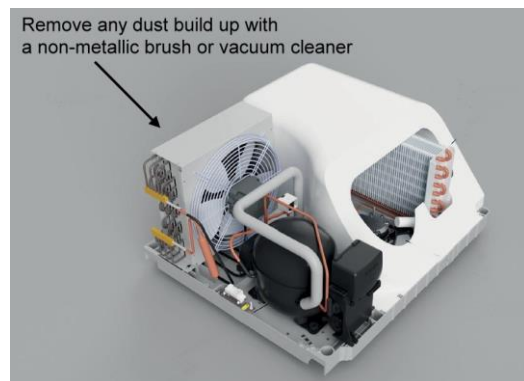
4.1. Monthly checks

- Inspect the area behind the pelmet and remove any debris.
- Clean the interior and exterior plastic components of your cabinet with a mild detergent. Never use bleach or abrasive material.
- Using a damp cloth, clean the interior plastic components with a mild detergent, water/vinegar or 'Vim' liquid is also suitable. After cleaning wipe away excess residue.
- Use proprietary glass cleaner with soft cloth to clean glass door. Never use abrasive material to clean glass.

4.2. Quarterly checks

- Condenser should be checked every quarter and cleaned as required. This is a very important cleaning requirement to ensure the condenser gets a proper cooling air flow. Dust build up on the condenser will lead into higher energy usage for the cabinet and reduce components life time and may void warranty.

- To inspect the condenser for dust build up.
 - Disconnect freezer from mains supply.
 - Remove front pelmet if monoblock not accessible.
 - Remove any dust build up with a non-metallic brush or vacuum cleaner.
 - Refit pelmet if required.

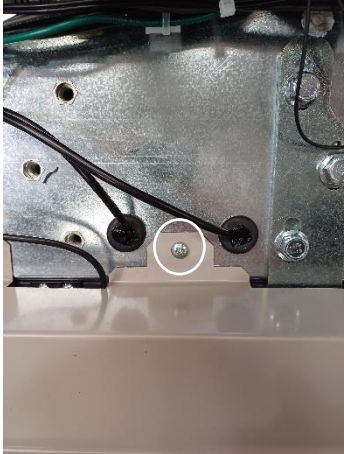


- Lubricate the doors

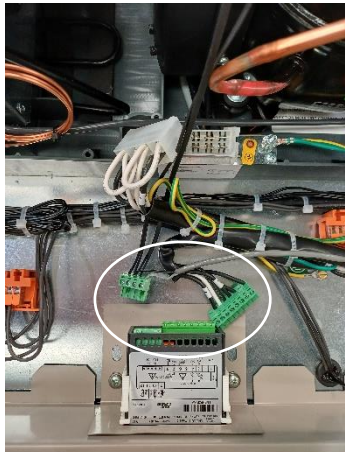
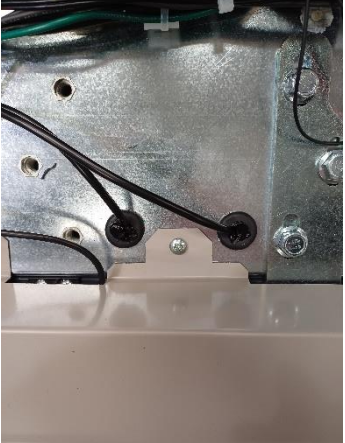
4.3. Yearly checks

- Best practice demands that cabinet should be thoroughly cleaned a minimum of once per year.

4.4. Monoblock removal procedure

1. ⚠️ Disconnect cabinet from mains supply to ensure safety of operations.	2. If necessary, dismount the top pelmet by removing the 4 screws.	3. Disconnect the earth cable.
		
4. Disconnect the white connector.	5. Disconnect the 2 green connectors and remove the temperature probes.	6. Remove the 6 screws of the monoblock.
		
7. Lift up the monoblock.		
		

4.5. Monoblock installation procedure

1. ⚠️ Disconnect cabinet from mains supply to ensure safety of operations.	2. Install the monoblock and make sure there is nothing preventing good sealing with the cabinet	3. Install the 6 screws of the monoblock.
		
4. Connect the 2 green connectors and install the temperature probes.	5. Connect the white connector.	6. Connect the earth cable.
		
7. Remount the top pelmet if it was removed and install the 4 screws.	8. Reconnect mains supply and check cabinet is cooling properly.	
		

5. Controller information

XRB type



Display the set point:

- Press the **SET** button, then SET will appear on the screen.
- Press **SET** again to see the set point temperature.
- Press **SET** to exit.

Change the set point:

- Press the **SET** button for more than 3 seconds, then SET will appear on the display and the °C or °F LED will start blinking.
- Press **SET** again.
- To change the set point value, press the **UP** or **DOWN** arrows.
- To memorise the new set point value, press **SET** or wait for about 60 seconds.

Start manual defrost:

- Press the defrost button  for more than 2 seconds and a manual defrost will start.

Adjust Real Time Clock (RTC):

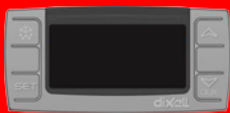
- To enter in the setting menu, press at the same time both **SET** + **DOWN** arrow during 3 seconds.
- Press the **DOWN** arrow until finding the RTC parameters, then press **SET**.
- HUR will appear, then press **SET**, adjust the hour with the arrows and press **SET** again, the value flashes, press **SET** a last time to validate. Repeat this for all other parameters:
 - MIN – minute
 - DAY – day of the week:
 - SUN – Sunday
 - MON – Monday
 - TUE – Tuesday
 - UED – Wednesday
 - THU – Thursday
 - FRI – Friday

- SAT – Saturday
 - DYM – Day of the date
 - MON – Month of the date
 - YAR – Year of the date
- Once all the parameters have been entered correctly, the date and the time are set.
- Press **SET** + **UP** arrow to exit.

Change from freezer to chiller (mapping)

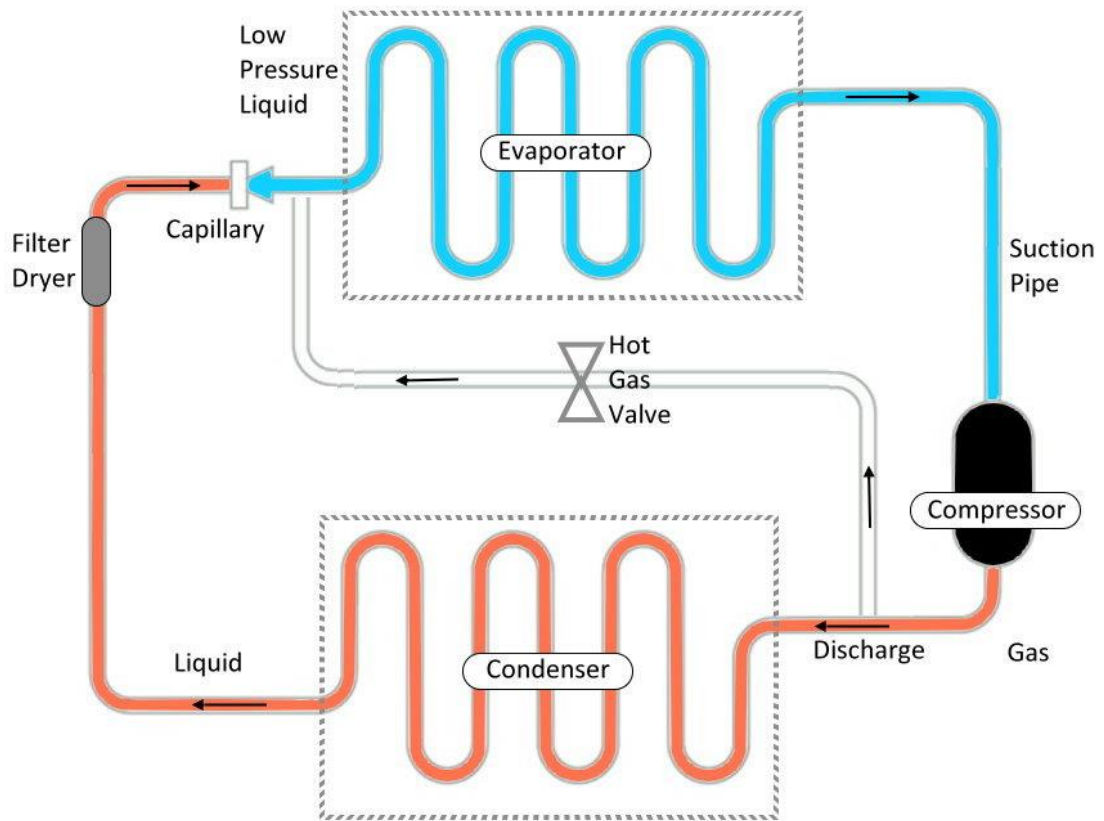
- Press the **DOWN** arrow for more than 3 seconds.
 - If NT appears: The cabinet is now into Normal Temperature mode = CHILLER.
 - If LT appears: The cabinet is now into Low Temperature mode = FREEZER.

6. Troubleshooting

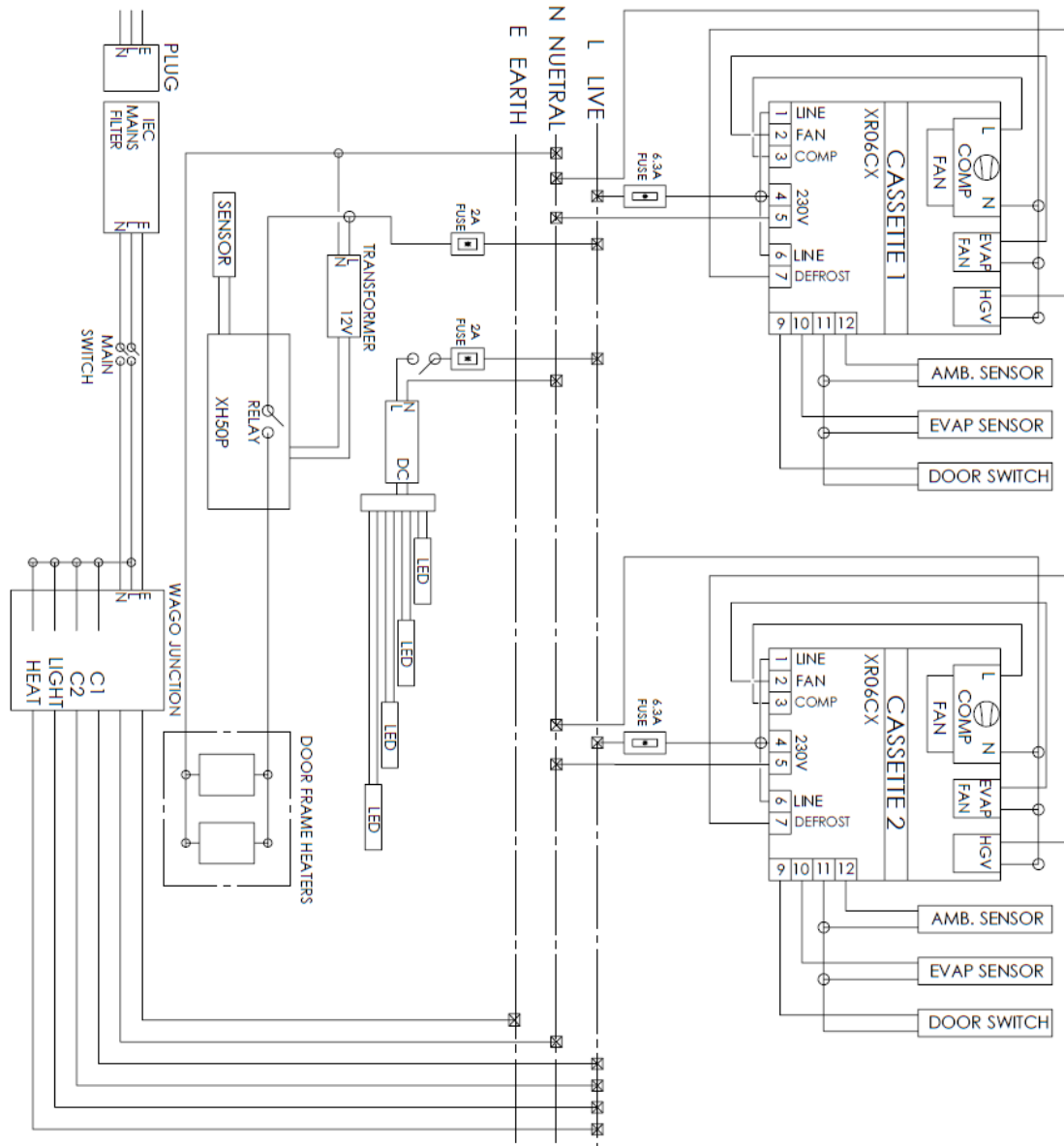
Symptom	Status	Cause	Action
 No display	Critical	No power	1. Check product temp, if above 10°F, move product. 2. Check plug connected to socket. 3. Check plug is connected to back of cabinet. 4. Check breaker is not tripped on distribution panel. 5. Check plug fuse. 6. Call service agent.
 HA alarm	Critical	High cabinet temperature	1. Check product temp, if above 10°F, move product. 2. Call service agent.
 P1 alarm	Not critical	Loose temperature probe	1. Call service agent.
 P2 alarm	Not critical	Loose temperature probe	1. Initiate defrost on controller. 2. If unsuccessful, call service agent.
 Temp variation	Not critical	Normal operation. Temp varies between 3°F to -11°F	1. No action required.
Condensation on glass	Not critical	Excess humidity	1. Check air conditioning is not directed toward the door. 2. Check door is closing correctly and seal has no gap. 3. Call service agent.

7. Diagrams

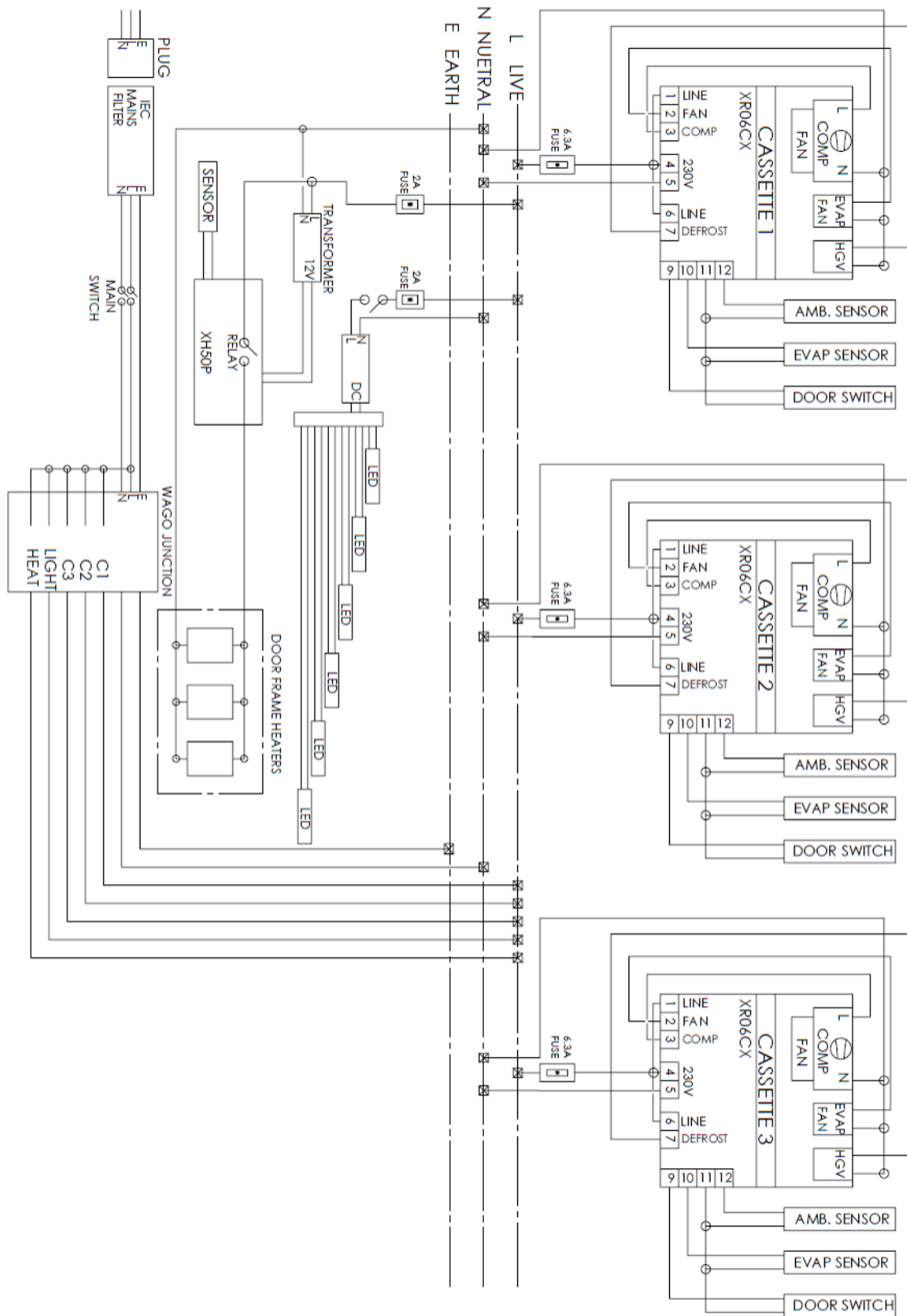
7.1. Refrigeration Circuit

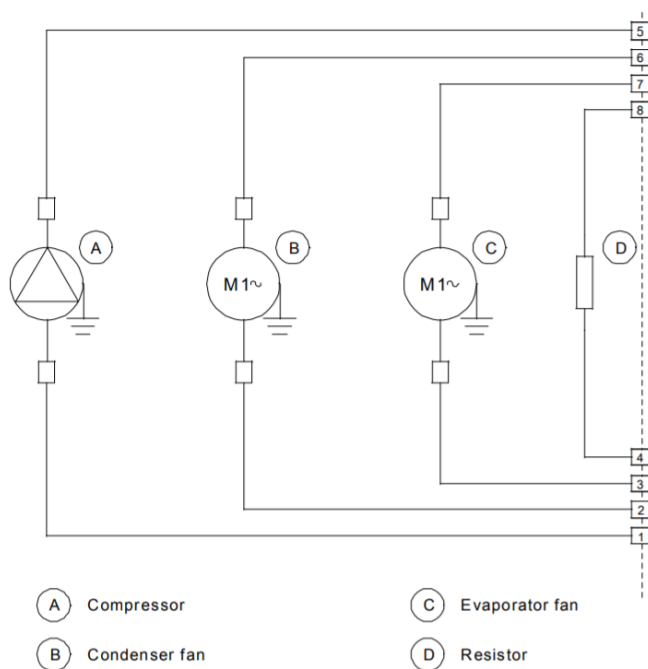


7.2. Panama 2 Doors Wiring Schematic

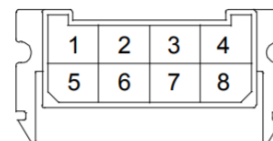


7.3. Panama 3 Doors Wiring Schematic



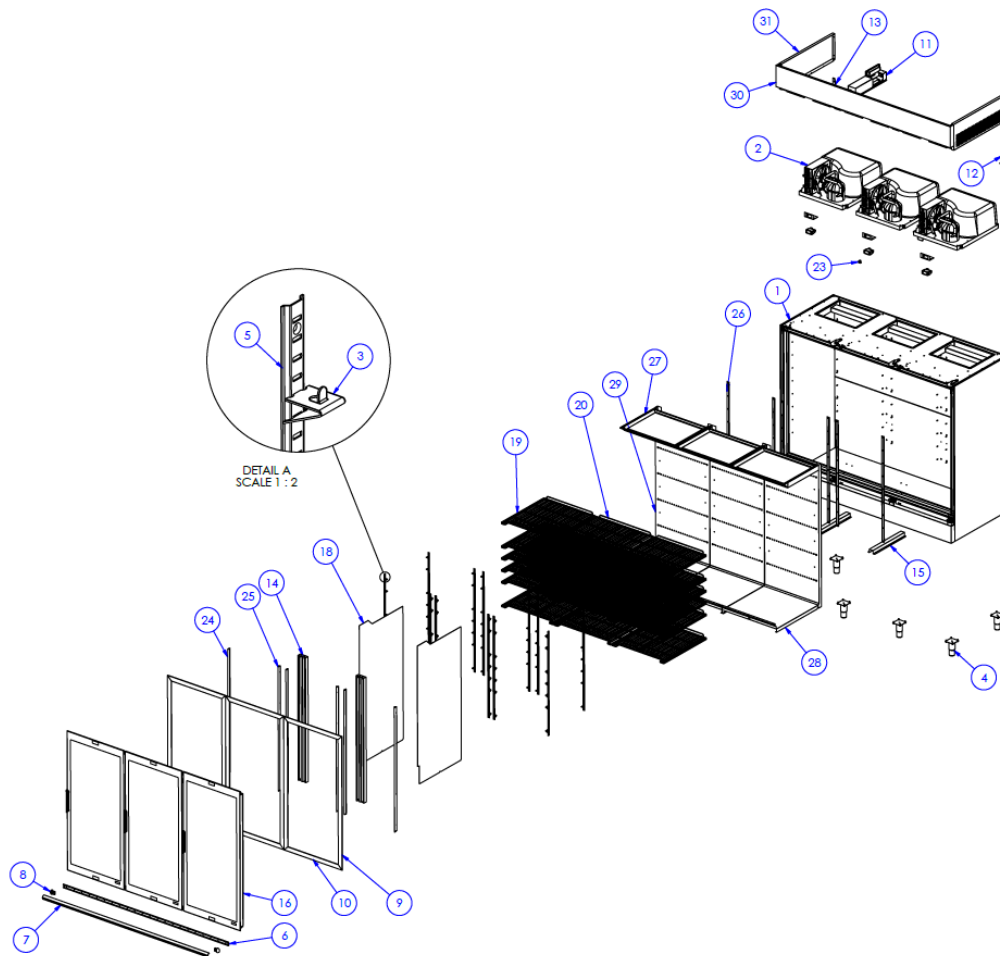


- 1 - Compressor neutral
- 2 - Condenser fan neutral
- 3 - Evaporator fan neutral
- 4 - Defrost neutral
- 5 - Compressor phase
- 6 - Condenser fan phase
- 7 - Evaporator fan phase
- 8 - Defrost phase



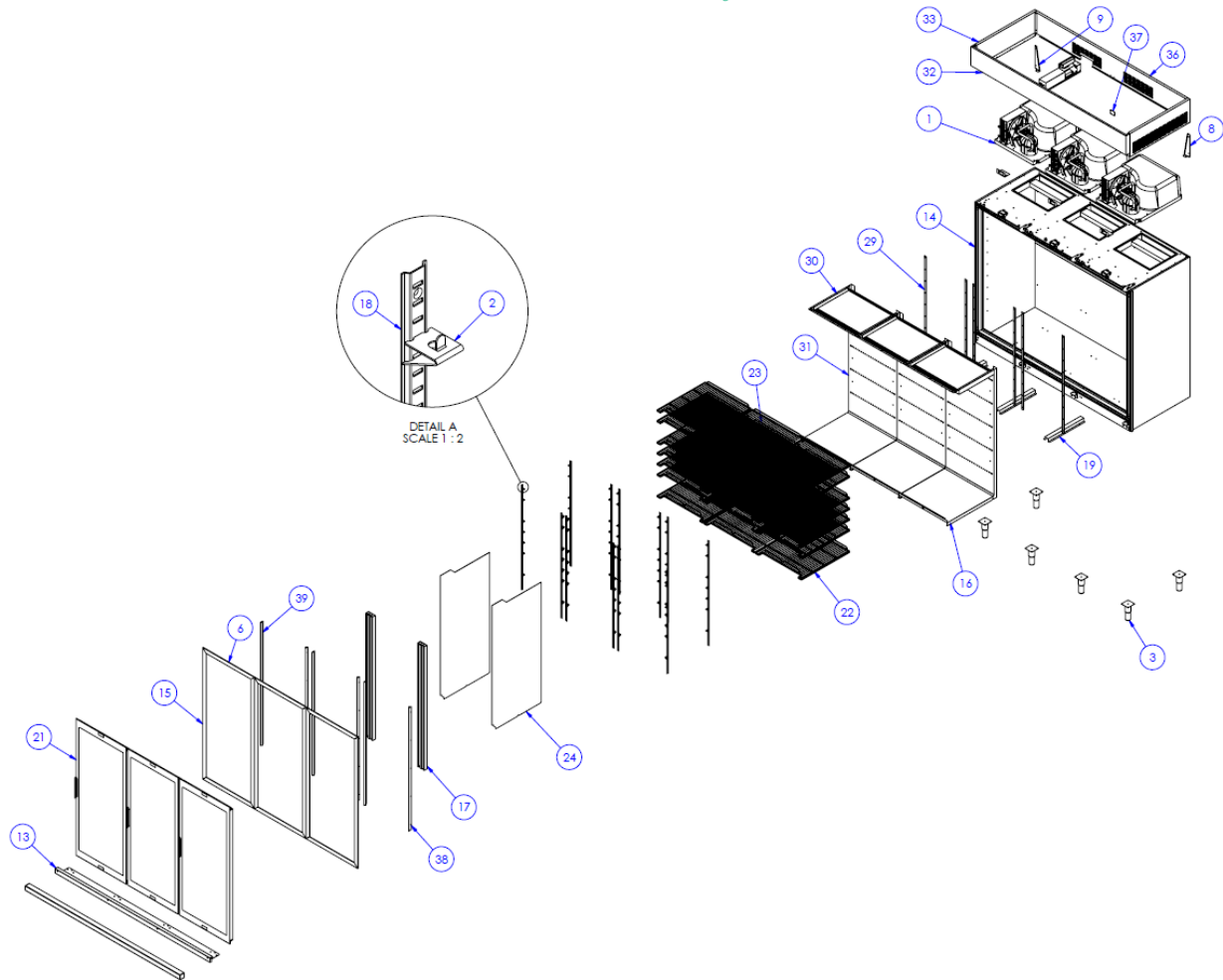
8. Spare Parts

8.1. Panama Green assembly



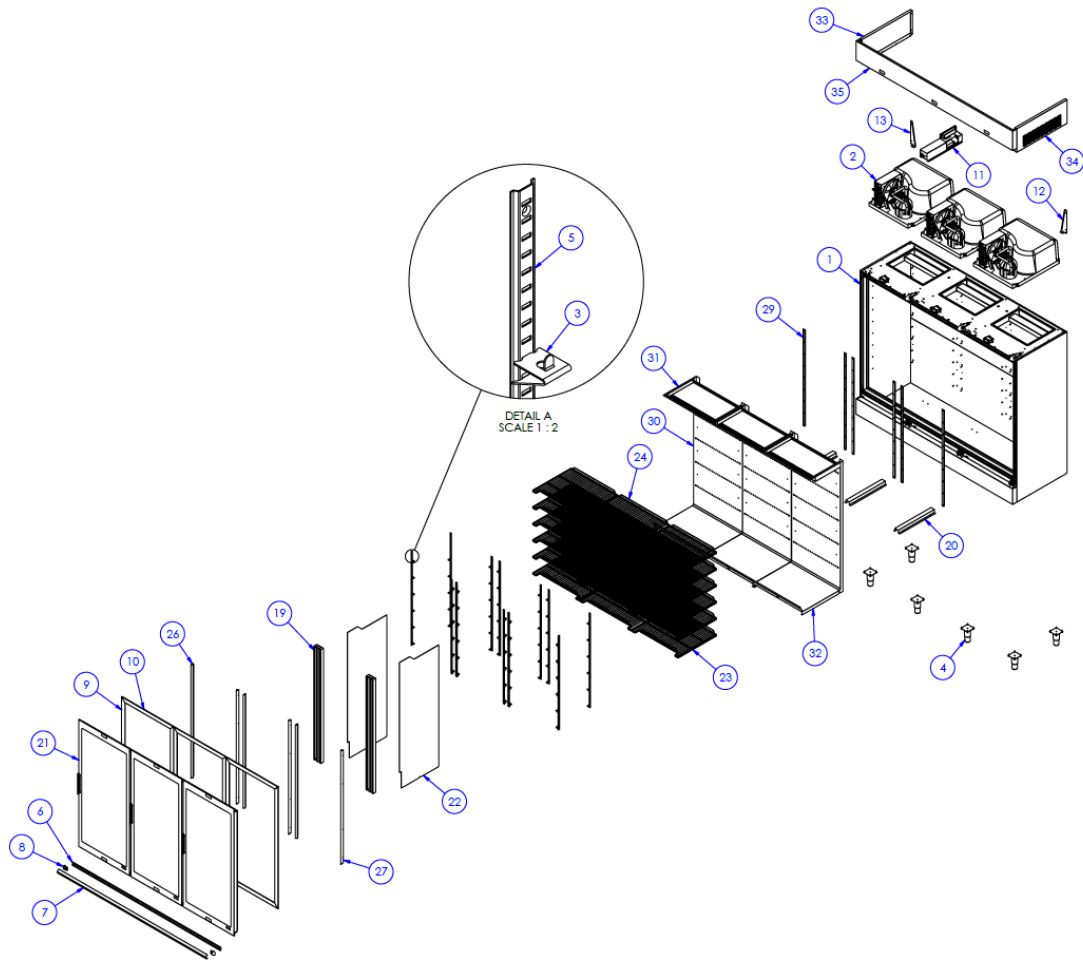
Item number	Description	Part number
2	Monoblock assembly 110V	003.2500.101
3	Pilaster clips	006.2500.105
4	Adjustable foot	006.2500.107
16a	Black door	009.2500.001
16b	White door	009.PAN.101
19	Panama small shelf	015.2500.101
20	Panama large shelf	015.2500.102
21	Door sensor switch	018.2500.007
22	Door sensor magnet	018.2500.008
23a	Light switch	018.2500.113
23b	Light motion sensor	018.PAN.301
24a	Left LED (black frame)	018.PAN.003
24b	Left LED (white frame)	018.PAN.203
25a	Right LED (black frame)	018.PAN.103
25b	Right LED (white frame)	018.PAN.303
32a	Controller Dixell XRB60CH 110V	018.PAN.146
32b	Controller Dixell XRB77CH 110V	018.PAN.046

8.2. Panama Green Tall Doors assembly



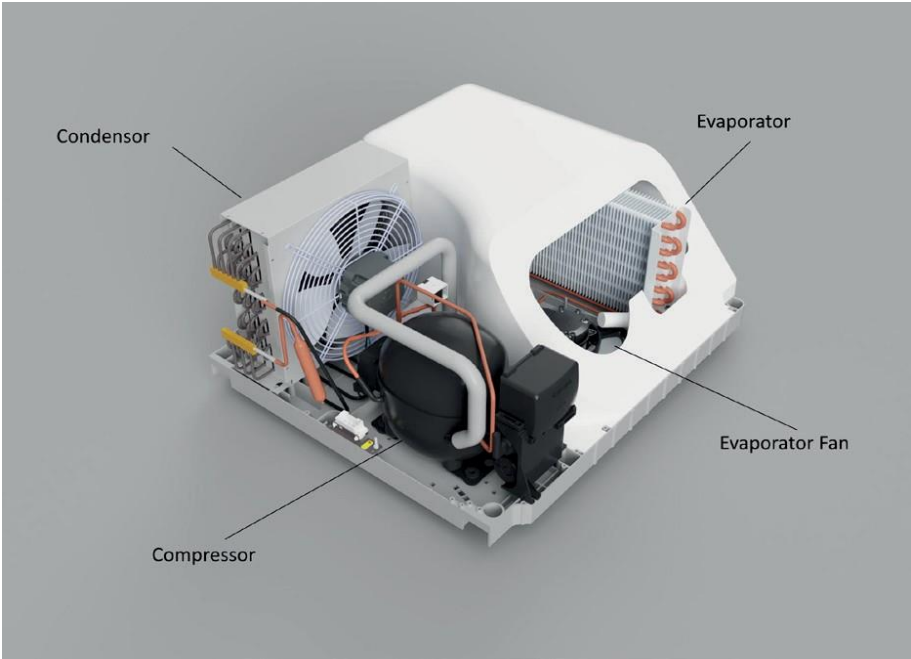
Item number	Description	Part number
1	Monoblock assembly 110V	003.2500.101
2	Pilaster clips	006.2500.105
3	Adjustable foot	006.2500.107
21a	Black door RHS	009.PANLD.001
21b	Black door LHS	009.PANLD.201
21c	Silver door	009.PANLD.101
22	Panama small shelf	015.2500.101
23	Panama large shelf	015.2500.102
25	Door sensor switch	018.2500.007
26	Door sensor magnet	018.2500.008
27a	Light switch	018.2500.113
27b	Light motion sensor	018.PAN.301
38	Left LED (black frame)	018.PANLD.101
39	Right LED (black frame)	018.PANLD.001
40a	Controller Dixell XRB60CH 110V	018.PAN.146
40b	Controller Dixell XRB77CH 110V	018.PAN.046

8.3. Panama Slim assembly



Item number	Description	Part number
2	Monoblock assembly 110V	003.2500.101
3	Pilaster clips	006.2500.105
4	Adjustable foot	006.2500.107
21a	Black door	009.2500.001
21b	White door	009.PAN.101
23	Panama Slim small shelf	015.SLM.001
24	Panama Slim large shelf	015.SLM.002
25a	Light switch	018.2500.113
25b	Light motion sensor	018.PAN.301
26a	Left LED (black frame)	018.PAN.003
26b	Left LED (white frame)	018.PAN.203
27a	Right LED (black frame)	018.PAN.103
27b	Right LED (white frame)	018.PAN.303
36	Door sensor switch	018.2500.007
37	Door sensor magnet	018.2500.008
38a	Controller Dixell XRB60CH 110V	018.PAN.146
38b	Controller Dixell XRB77CH 110V	018.PAN.046

8.4. Monoblock assembly



Item number	Description	Part number
1	Condenser / Evaporator fan 110V	003.111.934
2	Compressor Danfoss NLE10CN 110V	003.601.115
3	Solenoid coil and valve 110V	003.8BM.501

9. Safety instructions R290 refrigerant

9.1. R290 specification

Composition: Propane CH₃CH₂CH₃ (R290)

Molecular mass: 97.2 lb/kmol

Colour: colorless

Odour: faint

Decomposition temperature: unknown

Vapour density:

- approx. 0.12 lb/ft³ at 77°F
- heavier than air
- collects at floor level

Handling

Ensure good room ventilation at floor level as well. Use only grounded apparatus. Take measures against electrostatic charge. Keep vessels away from electric devices, sparks, heat sources, and open light. Area of explosive danger.

Dangerous reactions

Explosion risk!

Explosion limit (in air): 1,7 – 10,9%

Do not smoke and avoid contact with heated surfaces!

Classification group

L3 (The refrigerants lower explosion limit in air is less than 3.5%.)

Safety group

A3 (no or only insignificant poisonous or caustic effect, high flammability)

Toxicological details

Significant poisonous is unknown.

Fast evaporation of the product may cause displacement of breathing air and therefore unconsciousness and asphyxiation. Skin contact may cause frostbite at skin and eyes. The product leads to narcotisation at high concentration. The effect disappears at fresh air.

General rules of protection

Ensure good room ventilation at floor level. Do not breath refrigerant. Avoid contact with liquid phase.

9.2. Personal protective equipment

Safety shoes, antistatic and non-combustible clothes, protective gloves and eye protection are to be provided for every person concerned with maintenance, repair and recovery and to be used by them. A self-contained breathing apparatus should always be used under unclear circumstances.

9.3. First aid when using R290, immediate measures

If the injured person is unconscious:

- Evacuate person at risk from hazard area. Pay attention to wind direction.
- Call a doctor and an ambulance equipped with a respirator immediately.
- The injured person should be brought into a well-ventilated room or outdoors until the arrival of the ambulance, as long as this is safe. The injured person should be placed on his or her side.
- Inform the doctor that the injured person was exposed to the refrigerant R290 (propane). Preferably, the injured person should be given an appropriate label.
- Loosen the clothing around the chest in order to facilitate breathing.
- Mouth-to-mouth resuscitation is to be applied if required.
- Persons who have breathed in a large amount of fumes are to be treated as quickly as possible with oxygen by a knowledgeable person. In addition, they should be kept as quiet as possible.
- Water or other fluids should never be administered except as ordered by the doctor.

9.4. Eye injuries

- At burns use cold water immediately.
- At frostbite use warm water. Lift the eyelid careful and rinse for at least 20 min. with copious amounts of water.
- Do not rub the eyes.
- Remove contact lenses if present.
- Loose fitting, amicrobic dressing.
- Then take the injured person immediately to an eye specialist or accident hospital.
- Do not open blisters from burns. Cover wounds aseptic.
- Take the injured person to a doctor or accident hospital as quickly as possible.

9.5. Injuries from swallowing liquid refrigerant

Give the injured person, as long as he or she is conscious, as much water or other warm drink as possible.

 **Warning! Further information see EN 378-1 and EN 378-3.**

10. Novum Warranty Terms and Conditions

Your appliance has the benefit of our manufacturer's warranty, which covers the cost of breakdown repairs. This gives you the reassurance that if, within the warranty period, your appliance is proven to be defective because of either workmanship or materials; we will, at our discretion, either repair or replace the appliance at no cost to you.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS

- The appliance has been installed and operated correctly and in accordance with our installation, operating and maintenance instructions.
- The appliance is used only on the electricity supply printed on the rating plate.
- The appliance is used only within climate conditions as printed on the rating plate.
- The appliance has been used for normal commercial refrigeration display purposes only and not loaded above loading level.
- The appliance has not been altered, serviced, maintained, dismantled, or otherwise interfered with by any person not authorised by us.
- Any repair work must be undertaken by Novum or our appointed agents.
- Any parts removed during repair work or any appliance that is replaced becomes our property.

THE WARRANTY DOES NOT COVER (as deemed by Novum)

- Wilful damage resulting from transportation, improper use, neglect or interference or as a result of improper installation.
- Inaccurate or improper use and / or initial operation of the goods by the customer and / or third party.
- Improper work on our goods by the customer and / or by non-approved third parties.
- Non-compliance with normal operating conditions within Climate Class 3L1 (+61°F to +77°F ambient, max. 60% relative humidity).
- Non-compliance with the operating instructions or prescribed operating data or failure by the customer and / or by third parties to carry out maintenance as provided in the operating instructions.
- Use of unfit tools and equipment (as deemed by Novum) by the customer and / or by non-approved third parties.
- Replacement of any consumable item or accessory. These included but not limited to: plugs, cables, batteries, light bulbs, starters, covers, filters, dividers, baskets, shelves.
- Replacement of any removable parts made of glass, wire or plastic.
- Modifications of factory controller setting without written approval from Novum.
- Power failure, acts of God (flooding, earthquake etc.).

In addition, our disclaimer of liability includes, but is not limited to any loss of refrigerated / frozen goods.

COMMERCIAL USAGE POLICY

We will provide a full manufacturers' warranty, provided the appliance has not been:

- **Accidental damage:** damage that occurs suddenly as a result of an unexpected and non-deliberate external action.
- **Malicious damage:** the deliberate and intentional damage to the product.
- **Subjected to misuse:** incorrect or careless or improper use.
- **Subjected to overuse:** excessive usage versus that expected of a food retail application.

Contact

Novum USA
616 Hwy 74 S
Peachtree City
GA. 30269
Phone : (770) 708 3687
www.novumusa.com