

Problem?

**VIXELL** can provide the solutions

1 Is there any better way to eliminate the troubles from active cooling containers or trucks?

2 Need a cold chain shipping, but I don't know where to start..



3 Want to save time for the preparation of a cold shipper, as it's only for one-time transport.

4 Worry about temperature deviation risks during an international transport.

5 Want to know a timing to replace new shipper.

1 VIXELL enables you to use regular consolidate delivery truck at ambient temperature.

Need neither refrigerated nor frozen vehicle for land transportation thanks to its high cooling performance.

2 Panasonic provides professional consultation for your cold chain transport.

Cold chain expert advice you of planning, procurement of box, forwarding & data logging service as one stop.

3 Panasonic provides "One time usage" service.

Simply use necessary number of boxes only when needed. It enables you to reduce both initial & running cost of refrigerated transportation.

4 VIXELL can keep preset temperature for 120 hours by box and 240 hours by pallet.

The high cooling performance minimizes the risks in case of delays.

5 Embedded RFID inspection function tells you the condition of VIXELL

It enables you to avoid the risk of transportation by broken box without noticing it.

## Contact

From Europe



From Singapore and ASEAN



From Japan and Other regions



**Panasonic Connect Europe GmbH**

Address:  
Hagenauer Strasse 43, 65203 Wiesbaden, Germany.

E-mail:  
IntegratedSolutions@eu.panasonic.com

WEB:  
<https://eu.connect.panasonic.com/gb/en/vixell/>

**Panasonic Singapore**

Address:  
202 Bedok South Avenue 1 #02-02, Singapore 469332

E-mail:  
service@sg.panasonic.com

WEB:  
<https://www.panasonic.com/sg/business/vixell/>

**Panasonic Corporation**  
Business Development Center

E-mail:  
vixell\_inq@gg.jp.panasonic.com

WEB:  
<https://www.panasonic.com/global/business/vixell/>

# Panasonic

# VIXELL

Vacuum insulated shipper with sustainable transportation service





# Re-define the reusable shipper



VIXELL Pallet



VIXELL Box

VIXELL is the next generation of thermal insulated shipper, that solves the issues with pharmaceutical transportation. It features Panasonic's Vacuum Insulated Panel (VIP) technology, the product of 20 years' experience in the refrigeration business.



## Robust

- ✓ The envelope is 3-10 times thicker than those in conventional VIPs.
- ✓ Joint-free insulation.
- ✓ Rugged design mitigates the risk of internal temperature change which sometimes occurs by the damage of the box during the transportation.
- ✓ Can be continuously reused without deterioration of insulation; recent testing revealed no loss of performance after using VIXELL Box in over 300 shipments.
- ✓ Robustness is verified by ISTA-6-FedEx-A test or ASTM D4169.



## Reliability

- ✓ Inspection board enables users to instantly check condition of the VIXELL Pallet and VIXELL Box before transportation.
- ✓ Metal-free design enables tracking devices to be fitted, with location and temperature data available during transportation.



## Environmentally friendly

- ✓ 95% of the materials can be recycled
- ✓ Re-usability of VIXELL Pallet and VIXELL Box dramatically reduces amount of wasted materials.

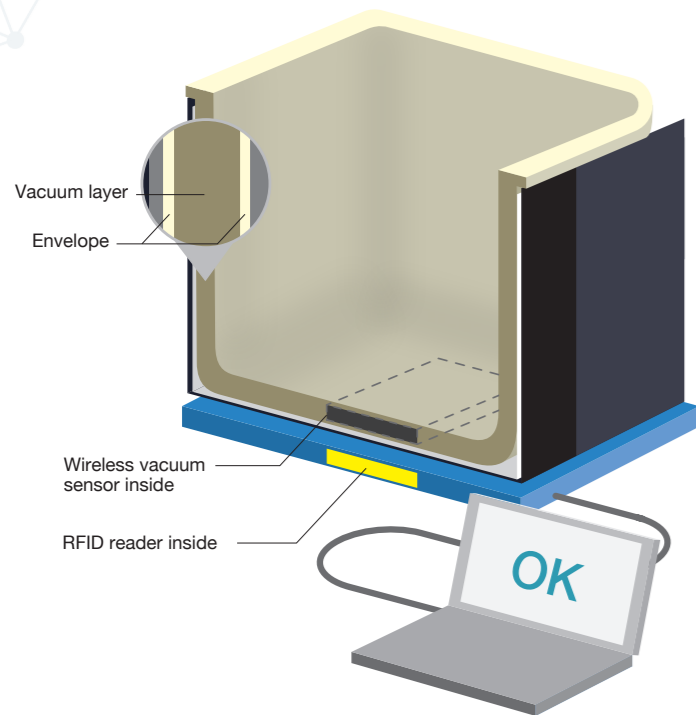


## Affordable & Easy to use service

- ✓ Panasonic's 'Circular Transportation System' is an end-to-end international pharma transportation service, available at an affordable price.
- ✓ VIXELL Pallet and VIXELL Box are always fully inspected and sanitized before delivery.
- ✓ Optional pre-cooling and tracking services available.

# Unique technologies

## VIC Vacuum Insulated Case



### Joint-free design

Joint-free design of the VIC prevents cold air from escaping, resulting in excellent thermal performance.

### Robust structure

Rugged VIC design mitigates the risk of internal temperature change which sometimes occurs by the damage of falling & crush during the transportation.

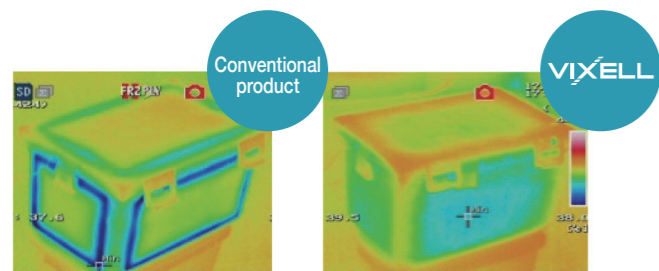
### Seamless tracking

Metal-free design enables tracking devices to be fitted, with location and temperature data available in realtime during transportation.\*

\* Real-time monitoring is dependent on available cellular signal.

### Wireless vacuum sensor

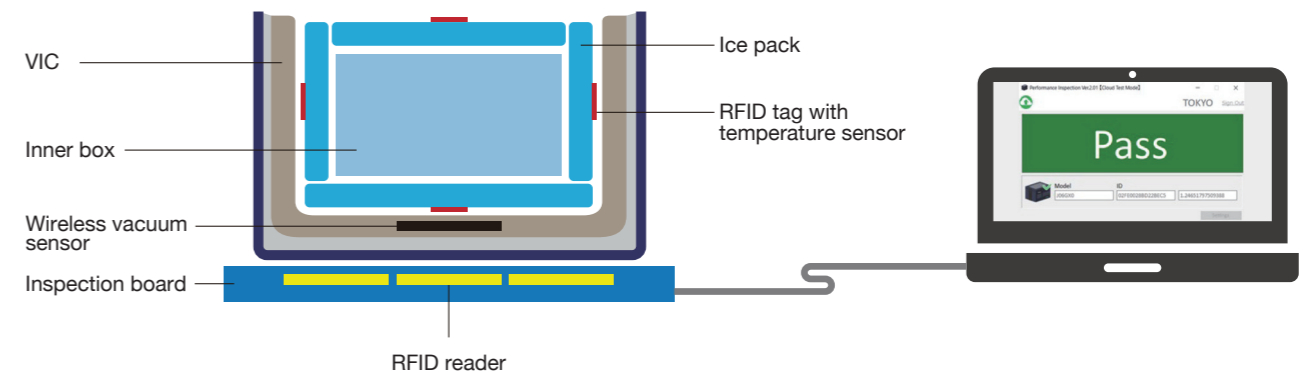
The VIC is fitted with a wireless vacuum sensor. When placed on the the inspection board, the performance of the VIC can be monitored instantly.



## On-site performance inspection

### The vacuum level of the VIC is read on an inspection board

The on-site performance inspection mechanism involves reading the information from the Vacuum Insulated Case (VIC) built-in vacuum sensor and the information from the RFID tag with temperature sensor attached to the ice pack on a dedicated inspection board with a built-in RFID reader. The information read is determined by an application on a PC, and the inspection results are stored on the PC.



## Freeze-prevention system

### RFID tags prevent risk of frozen shipments

It can prevent temperature deviations caused by overcooling of ice pack that occur during pre-cooling operations. The ice pack in this product is equipped with an RFID tag with a temperature sensor, and simply by placing it on the dedicated inspection board, the insulation performance of the VIC and the surface temperature of the ice pack can be inspected. This is a suitable solution when ice pack is frozen in a freezer.

## Ice pack that freezes at 5°C

### Freezes in the pharmaceutical storage area and can be used as-is without temperature tuning

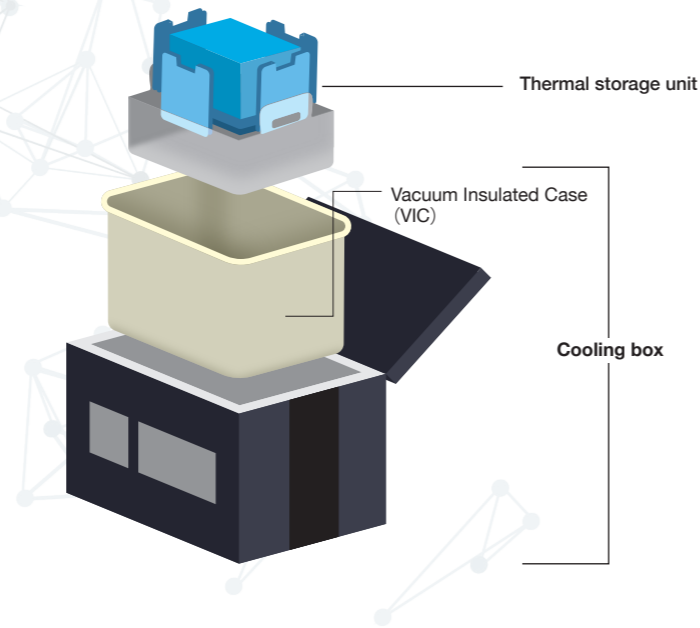
In many cases, pharmaceuticals that require temperature control of 2°C to 8°C are stored in a 5°C environment, but the 2°C to 8°C ice pack used during transportation generally do not freeze at 5°C. Therefore, it is necessary to freeze the product in a 2°C to 8°C cold storage or refrigerator, or to freeze the product in a freezer and then adjust the temperature in a 2°C to 8°C environment. This product is an ice pack that freezes at 5°C. Since the ice pack freezes naturally in the storage area of pharmaceutical products (5°C), there is no need to purchase special equipment for freezing. (AE-V06B1R, AE-V12B3R, AE-V12B1R)



# VIXELL Box

## Composition of VIXELL Box

VIXELL is constructed of a cooling box and thermal storage unit. The box, termed 'Vacuum Insulated Case' (VIC), is designed by integral moulding, providing excellent durability. Up to four temperature ranges are available with VIXELL, thanks to exchangeable thermal storage units.



### Cooling box



Type-S  
(AE-V06GXR)



Type-L  
(AE-V12UXR)

### Thermal storage unit



Dry ice	-25°C~-15°C	2°C~8°C	15°C~25°C
AE-V06DXR	AE-V06F4R AE-V06S4R	AE-V06C5R AE-V06C2R AE-V06B1R	AE-V06R5R



Dry ice	-25°C~-15°C	2°C~8°C	15°C~25°C
AE-V12DXR	AE-V12F4R AE-V12S4R	AE-V12C5R AE-V12B3R AE-V12B1R	AE-V12R5R

## Features



### Cooling performance

Our proprietary Vacuum Insulated Case (VIC) technology minimizes internal cold air leakage, thus maintaining cold-keeping performance for extended periods of time.



### Robustness & Worry free

The outer skin of the VIC is 3 to 10 times thicker than a typical Vacuum Insulated Panel (VIP). This is safe because it reduces the risk of damage to the cooling box during transportation. In the event of damage, on-site performance inspection allows for early detection.



### Easy to use

The exterior is made of durable cloth with anti-fouling treatment, making it easy to use, and it has 6 pockets of different sizes, allowing to store items necessary for transportation such as slips and temperature loggers. In addition, the thermal storage unit is easy to operate because it can pre-cool the entire basket.



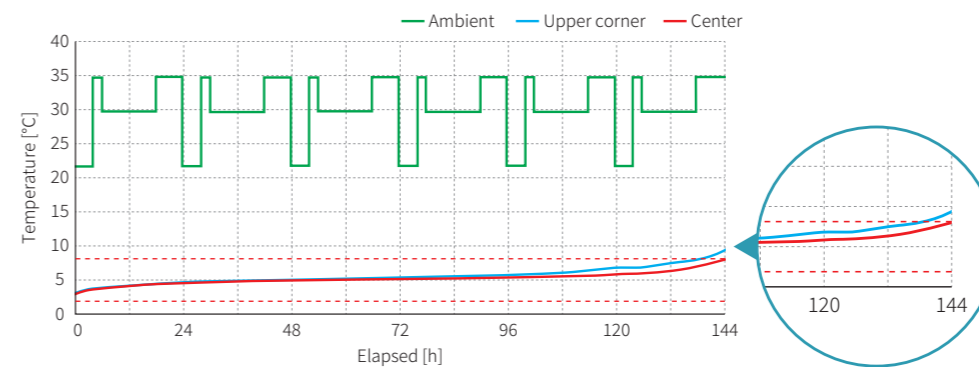
### Easy handling ice pack

Pre-cooling is possible with the same number ice packs and operation regardless of the season. In particular, models\* that use ice packs that freeze at 5°C do not require special equipment and can be controlled in a typical 5°C storage area for pharmaceuticals. (\*AE-V06B1R, AE-V12B3R, AE-V12B1R)

## Performance

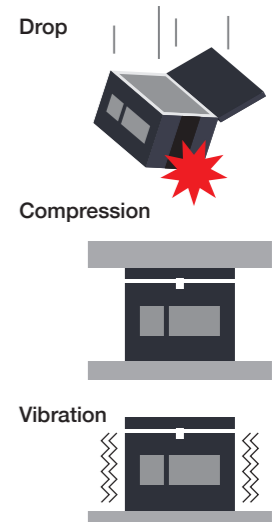
### Cooling Performance

ISTA-designated temperature cycling test conducted by a third-party evaluation agency



### Robustness

Various tests based on ISTA-6-FedEx-A have been conducted



Scan QR code to download reports on cooling performance tests, load handling tests, etc. (Please let us know the test conditions you want.)

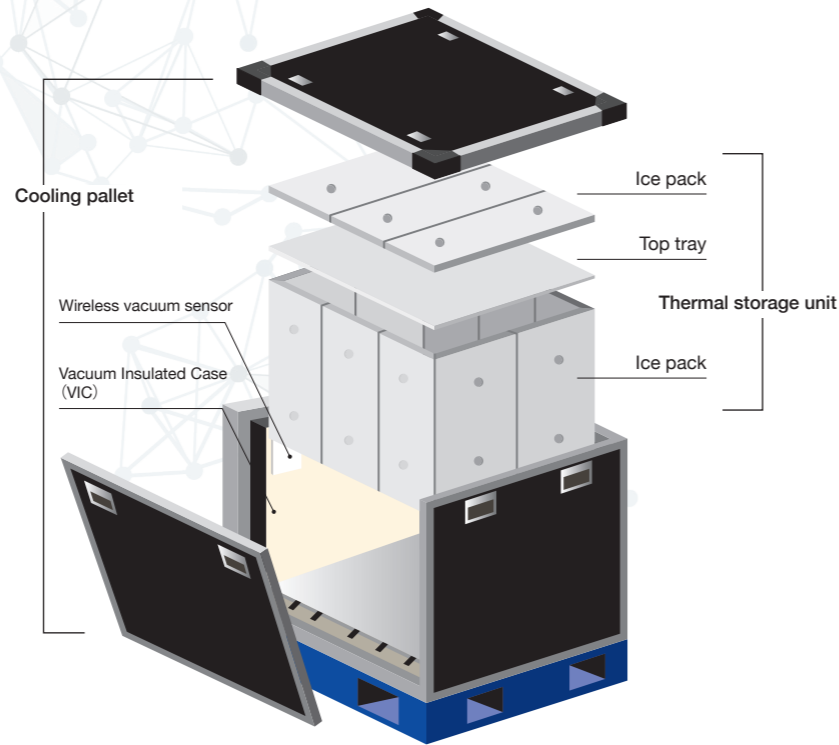


# VIXELL Pallet

## Composition of VIXELL Pallet

The VIXELL Pallet is ideal for larger volumes of refrigerated transport.

It consists of a six-sided Vacuum Insulated Case (VIC) and a thermal storage unit containing ice packs. The VIC on the bottom is fixed to the pallet. As with the VIXELL Box, it is possible to change the temperature zone required for transport by replacing the thermal storage unit.

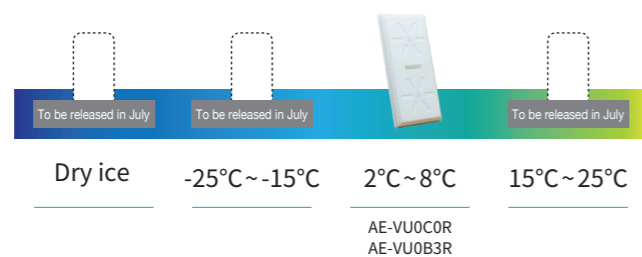


### Cooling pallet



(AE-VU0GPR)

### Thermal storage unit



## Features



### Cooling performance

Vacuum Insulated Case (VIC) with an aluminium-free structure provides up to 10 days of cooling time. It can be used for a wide range of purposes, including unexpected delays in transportation and temporary storage.



### Robustness & Worry free

Like the VIXELL Box, the thick envelope protects the VIC's vacuum insulation against vibration and shock during transport. Equipped with a wireless vacuum sensor on the entire surface, the thermal insulation performance can be judged immediately before shipment.



### Easy to use

Removable sides and flat bottom for easy loading and unloading. The sealing cushion closes the gap for easy assembly.



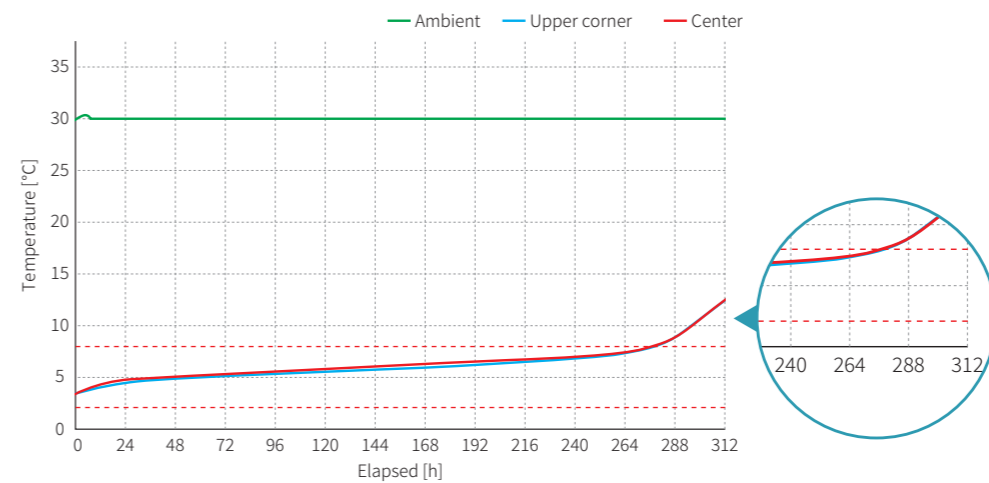
### Easy handling ice pack

Pre-cooling is possible with the same number ice packs and operation regardless of the season. In particular, models\* that use ice packs that freeze at 5°C do not require special equipment and can be controlled in a typical 5°C storage area for pharmaceuticals. (\*AE-VU0B3R)

## Performance

### Cooling Performance

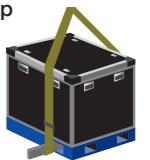
Test was conducted under a constant 30°C environment



### Robustness

Various tests based on ASTM D4169 have been conducted

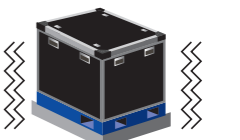
#### Rotational drop



#### Forklift handling



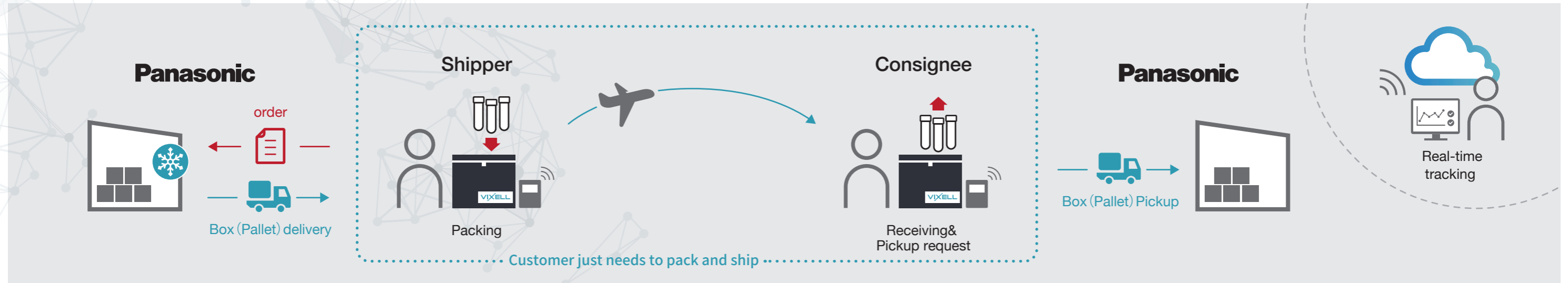
#### Vibration



Scan QR code to download reports on cooling performance tests, load handling tests, etc. (Please let us know the test conditions you want.)



# Circular Transportation System



**Circular Transportation System is a VIXELL reusable transportation service that connects continents.**

Panasonic covers the cost of returning the box (pallet), and will sanitize the returned box (pallet) to ensure it's in optimal condition before being re-used.

## Benefits



### 1. Safe & Secure

Rugged VIC design mitigates the risk of internal temperature change which sometimes occurs by the damage of the box (pallet) during the transportation.



### 2. Affordable price

The robust design of VIXELL enables the box (pallet) to be re-used over and over again, enabling Panasonic to offer its Circular Transportation System at an affordable price.



### 3. Traceability

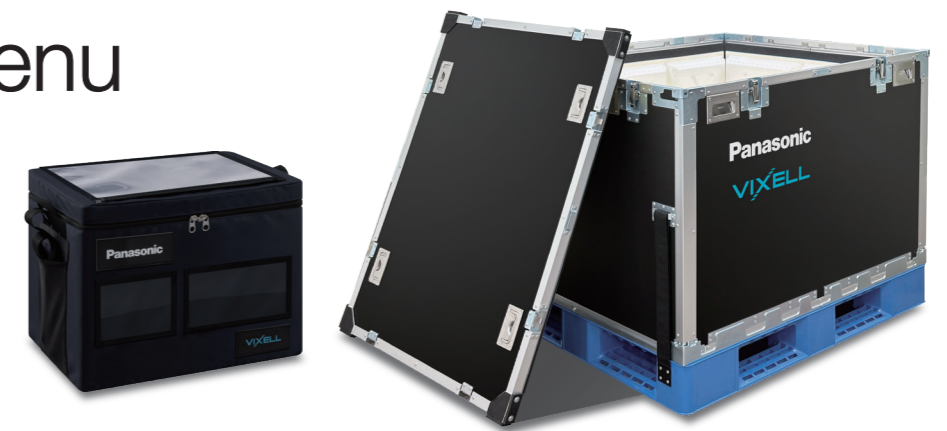
Metal-free design enables tracking devices to be fitted, with location and temperature data available in real-time during transportation.



### 4. Hustle-free shipment & worry-free return

Panasonic provides a one-stop service for its VIXELL range, from shipment to collection. The shipper has 30 days to return the box (pallet) after having received it.

## Service menu



### Optional services

#### Pre-cooling

Dry ice and pre-cooled ice pack can be prepared by Panasonic.

#### Logger

Data logger is ready for service. Real-time monitoring data is obtainable on the website.

#### Forwarding

Simply call Panasonic for the forwarding service which will be coordinated with Nissin.\*

\*Nissin Corporation has over 30 years of experience in international pharmaceutical transportation. They have GDP license & 162 offices in 24 countries.

## Service conditions

- Box (pallet) delivery to Japan / EU countries / Singapore
- Box (pallet) return : within 30 days after delivery to shipper

Please ask us other conditions if you want.

# Case Study

## Pharmaceutical company Pharmaceuticals overseas transportation

2°C~8°C 15°C~25°C

• Service : Circular Transportation System + pre-cooling • Route : Switzerland⇒Japan

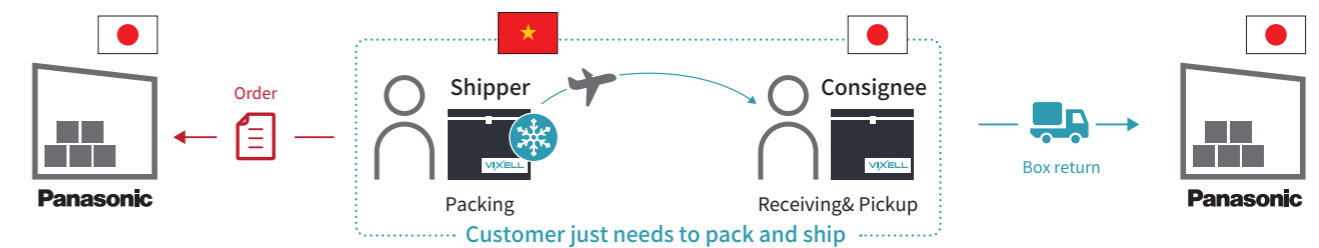


This is the case which VIXELL provided the solutions for the clients who had been suffering from high cost of transportation & temperature excursion incidents derived from the wrong selection of spec & size of the cooling box by local 3rd party. Panasonic established a warehouse in Switzerland from where we can supply perfect spec & size of VIXELL with appropriate pre-cooling conditions for the client. With this set up, the client now enjoys less expensive transportation cost without temperature deviations.

## Pharmaceutical company Vaccine transportation

2°C~8°C

• Service : Circular transportation system + Forwarding • Route : Vietnam⇒Japan



This is the case used for transporting animal vaccines from one of the client's overseas factories. They were looking for higher performance cooling box as they once had an experience of temperature excursion due to cold storage boxes not suitable for long-term transportation. Panasonic supported the pre-cooling operation for the client in advance, which proved successful transportation keeping stable temperature till the arrival. Since then, VIXELL is being utilized repeatedly.

## Machine manufacturer Module parts transportation

2°C~8°C

• Service : Circular Transportation System • Route : Japan⇒USA, Netherlands & Singapore

This is the case used for transporting sensor module with enzymes for cell analysis device to their overseas subsidiaries. They were looking for high performance cold storage boxes as it required severe temperature control due to the nature of enzymes. Single-use service with high cooling performance was the decisive point for the client to adopt VIXELL.

## Metal chemical manufacturer Raw material sample parts transportation

Dry ice

• Service : Circular Transportation System + pre-cooling • Route : Japan⇒USA

This is the case used for transporting pasty metal as sample to their client in USA. They used to transport the raw materials by the containers made of styrofoam. They decided to adopt VIXELL, however, in order to improve the transportation quality and to avoid any troubles caused by delay in arrival. Nissin Corporation, our forwarding partner, thanks to their support for various administration work related to overseas transportation & customs clearance, the first shipment arrived at client smoothly without re-icing.

# VIXELL Box Specification

Cooling box				Thermal storage unit					
Type	Model number	External dimensions (mm)	Weight	Temperature range	Model number	Internal dimensions (W×D×H mm)	Payload	Duration *1	Weight
Type-S	AE-V06GXR	(W)480 (D)350 (H)355	5kg	15°C~25°C	AE-V06R5R	328×191×192	12ℓ	120h	6kg
				2°C~8°C	AE-V06C5R	300×163×164	8ℓ	120h	8kg
					AE-V06B1R <sup>2)</sup>	333×199×198	13ℓ	24h	4kg
				-25°C~-15°C	AE-V06S4R	265×130×135	5ℓ	96h	11kg
					AE-V06F4R <sup>3)</sup>	265×130×135	5ℓ	96h	11kg
-90°C~-60°C (Dry ice)	AE-V06DXR	299×157×211	10ℓ	72h	8kg <sup>4)</sup>				
Type-L	AE-V12UXR	(W)545 (D)495 (H)450	7kg	15°C~25°C	AE-V12R5R	345×300×262	27ℓ	120h	8kg
				2°C~8°C	AE-V12C5R	336×292×255	25ℓ	120h	11kg
					AE-V12B3R <sup>2)</sup>	336×292×255	25ℓ	72h	11kg
					AE-V12B1R <sup>2)</sup>	345×300×262	27ℓ	24h	8kg
				-25°C~-15°C	AE-V12S4R	316×269×209	18ℓ	96h	16kg
					AE-V12F4R <sup>3)</sup>	316×269×209	18ℓ	96h	16kg
				-90°C~-60°C (Dry ice)	AE-V12DXR	320×270×296	26ℓ	120h	16kg <sup>4)</sup>
							2ℓ (231×231×40)	432h <sup>5)</sup>	38kg <sup>4)</sup>

# VIXELL Pallet Specification

Cooling pallet			Thermal storage unit					
Model number	External dimensions (mm)	Weight	Temperature range	Model number	Internal dimensions (W×D×H mm)	Payload	Duration *1	Weight
AE-VU0GPR	(W) 1,210 (D) 1,005 (H) 1,019	122kg	2°C~8°C	AE-VU0C0R	930×735×608	416ℓ	240h	76 kg
				AE-VU0B3R	930×735×608	416ℓ	72h	61 kg

\*1 For the duration of the temperature range of 15 to 25 °C, the temperature of the inner box was measured in our company at an outside temperature of 5 °C. For the duration of the other temperature ranges, the temperature of the inner box was measured in our company at an outside temperature of 30 °C. The duration varies depending on usage environment.  
 \*2 Ice packs that freeze at 5°C.  
 \*3 Maintaining temperature below -20°C for 72 hours.  
 \*4 Including the weight of dry ice.  
 \*5 The Type-S ( AE-V06GXR ) inserts a Thermal storage unit (AE-V06DXR) and fills the inside and outside of the inner box with 14 kg of dry ice. Put a 231 x 115 x 40 mm size sample in the inner box and measure the duration of -75 °C +/- 15 °C at an outside temperature of 30 °C.  
 \*6 The Type-L ( AE-V12UXR ) inserts a Thermal storage unit (AE-V12DXR) and fills the inside and outside of the inner box with 34kg of dry ice. Put a 231 x 231 x 40 mm size sample in the inner box and measure the duration of -75 °C +/- 15 °C at an outside temperature of 30 °C.

# WEB Site Introduction

Manual movies and technical reports can be downloaded from the footer of our website.

**Manual Movie**  
<https://www.panasonic.com/global/business/vixell/movie/>

**Technical Report**  
<https://www.panasonic.com/global/business/vixell/download/>

**Video Manual**

VIXELL Video Manuals

- A1 VIXELL Manual (Cooling Box, Inspection Unit)
- A2 Inspection Unit Manual
- B1 How to precondition PCMs (2°C~8°C)
- B2 How to set PCMs (2°C~8°C) Into VIXELL
- C1 How to precondition PCMs (<-15°C, <-20°C)
- C2 How to set PCMs (<-15°C, <-20°C) Into VIXELL
- C3 How to set PCMs (<-15°C, <-20°C) Into VIXELL

**Download**

Technical data Sheet

Pamphlet

Technical data Sheet

Damage test

Test scenario: ISTA 6-FeEx-A

Overview: Evaluation capability of product & packaging to withstand type of vibration and shock level (accordance with ISTA 6 FeEx-A)

Issued: Apr\_2022

Equipment used: Cooling Box Type-S (AE-V06GXR), Cooling Box Type-L (AE-V12UXR)

Performance test ( 2°C~8°C )

Test scenario: ISTA 7D (summer profile)

Overview: Evaluation assuming air shipping environment (Temperature profile is based on International Safe Transit Association)

Issued: Apr\_2022

Equipment used: Cooling Box (AE-V06GXR) + Thermal storage unit (AE-V06C5R), Cooling Box (AE-V12UXR) + Thermal storage unit (AE-V12C5R)

Performance test ( ~-15°C )

Test scenario: ISTA 7D (summer profile)

Overview: Evaluation assuming air shipping environment (Temperature profile is based on International Safe Transit Association)

Issued: Apr\_2022

Equipment used: Cooling Box (AE-V06GXR) + Thermal storage unit (AE-V06S4R), Cooling Box (AE-V12UXR) + Thermal storage unit (AE-V12S4R)

Performance test ( Dry ice )

Test scenario: ISTA 7D (summer profile)

Overview: Evaluation assuming air shipping environment (Temperature profile is based on International Safe Transit Association)

Issued: Apr\_2021

Equipment used: Cooling Box (AE-V06GXR) + Thermal storage unit (AE-V06DXR), Cooling Box (AE-V12UXR) + Thermal storage unit (AE-V12DXR)