

# VIXELL

**Vacuum insulation provides excellent benefits.**

Cooling Box for constant temperature transportation of pharmaceuticals

Built-in wireless vacuum sensor



**World's first<sup>\*1</sup> wireless vacuum sensor to use contactless power supply technology**

\*1: Among vacuum insulation products equipped with a Near Field Communication device.  
(in-house investigation; current as of March 2, 2021)

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

# Why does Panasonic produce cooling box?

Panasonic has been developed thermal insulation technologies for 70 years



Refrigerator  
(NR-351 in 1953)

1950's~

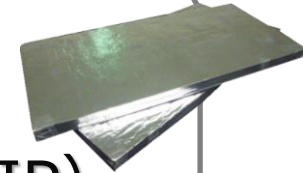
Glass fiber

1970's~

Polyurethane foam

2001~

Polyurethane foam  
with  
Vacuum insulated panel (VIP)



**Vacuum insulated Case (VIC)**



Evolution!!



Electric thermo pot



water heater tank



Refrigerator

**Panasonic**

## Cooling Box

Type-S



AE-V06GXR

Type-L



AE-V12UXR

## Thermal Storage Unit

20°C±5°C



AE-V06R5R



AE-V12R5R

5°C±3°C



AE-V06C5R



AE-V12C5R

~ -20°C



AE-V06F4R



AE-V12F4R

-20°C±5°C



AE-V06S4R



AE-V12S4R

-75°C±15°C



AE-V06DXR



AE-V12DXR

Temperature Zones [°C]	Phase change material	(Reference) Housing [ℓ]	Gross Weight (include cold insulator) [kg]	Model number		No. of days to maintain temp. ※1
				Cooling box (Outer box)	Thermal storage units (Inner box)	
20°C±5°C	Dedicated cold insulator included	Approx. 5ℓ	12 kg	AE-V06GXR	AE-V06R5R	5 days
	Dedicated cold insulator included	Approx. 19ℓ	18 kg	AE-V12UXR	AE-V12R5R	5 days
5°C±3°C	Dedicated cold insulator included	Approx. 8ℓ	13 kg	AE-V06GXR	AE-V06C5R	5 days
	Dedicated cold insulator included	Approx. 25ℓ	18 kg	AE-V12UXR	AE-V12C5R	5 days
~ -20°C/ -20°C±5°C	Dedicated cold insulator included	Approx. 5ℓ	16 kg	AE-V06GXR	AE-V06F(S)4R	4 days
	Dedicated cold insulator included	Approx. 18ℓ	23 kg	AE-V12UXR	AE-V12F(S)4R	4 days
-75°C±15°C	Dry ice※2 (6kg)	Approx.10ℓ	13 kg	AE-V06GXR	AE-V06DXR	3 days
	Dry ice※2 (11kg)	Approx. 26ℓ	23 kg	AE-V12UXR	AE-V12DXR	5 days
	Dry ice※2 (14kg)	Approx.1ℓ ※3	21 kg	AE-V06GXR	AE-V06DXR	9 days ※4
	Dry ice※2 (34kg)	Approx.2ℓ※3	45 kg	AE-V12UXR	AE-V12DXR	18 days ※4

※ 1 : In-house result when measuring the temperature inside the storage box. For the 15°C~25°C temperature zone, the outside temperature was set at 5°C, and for other temperature zones, the outside temperature was set at 30°C. Results will differ depending on the usage environment.

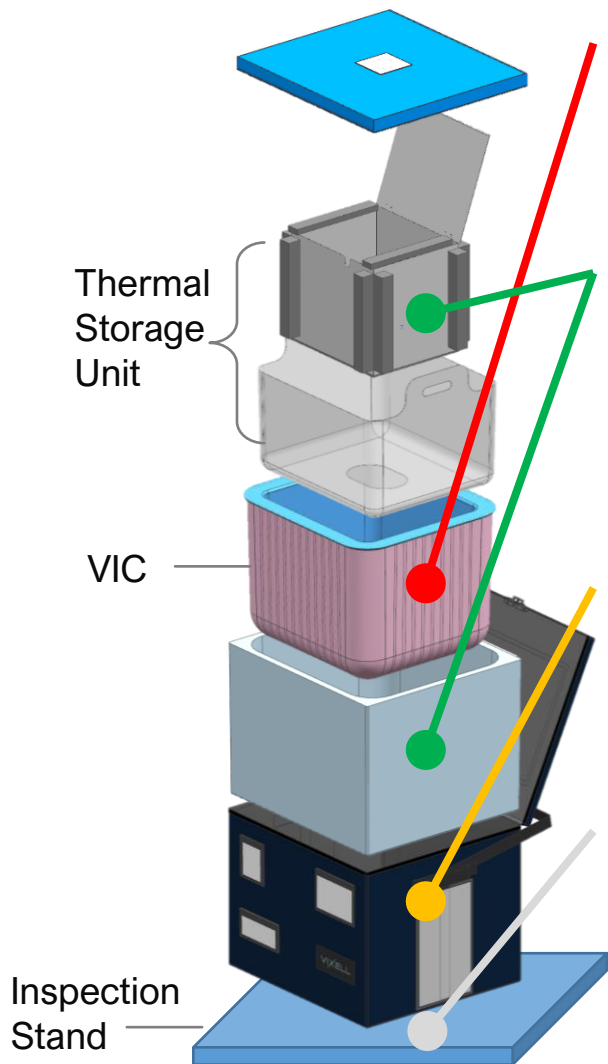
※ 2 : Thermal storage unit for use in the -75°C±15°C temperature zone does not come with dry ice.

※ 3

• Testing conditions: Dry-ice temperature zone thermal storage unit (AE-V12DXR) inside Type-L Vacuum Insulated cooling box (AE-V12UXR), with a total of 34 kg of dry ice in both. With a mock product inside (dimensions: 231 x 231 x 40 mm), test measured for how many days a temperature of -75°C±15°C was maintained with an outside temperature of 30°C.

• Testing conditions: Dry-ice temperature zone thermal storage unit (AE-V06DXR) inside Type-S Vacuum Insulated cooling box (AE-V06GXR), with a total of 14 kg of dry ice in both. With a mock product inside (dimensions: 213 x 115 x 40 mm), a temperature of -70°C±15°C was maintained for up to nine days with an outside temperature of 30°C.

**Multi-layers of structure for excellent insulation performance, easy monitoring, durability and sustainability.**



## Vacuum insulated case (VIC)

Seamless insulation body  
Keep-75°C±15°C for 18days※1

## Shock resistant

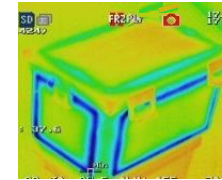
Shock resistant parts protect VIC against damage on dropping.※2

## Sustainability

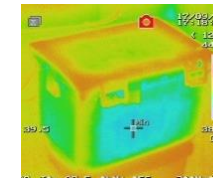
Want to use for other temperature range, just change “thermal storage unit”.※3

## Quality record

Can check quality of VIXELL in a few seconds, just put on the stage.※4



Thermal image (VIP box)  
(Developed Panasonic)



Thermal image (VIXELL)



**L-Type w/ Thermal Storage Unit for Dry Ice**

AE-V12UXR + AE-V12DXR + Place Dry Ice 34kg

Type-L Cooling Boz + Thermal Storage Unit + Dry Ice = Gross weight 43kg

**Vacuum Performance Test**

VIC vacuum performance test **PASSED** after the following drop tests.

OK 使用可

**Drop Test <Panasonic Internal Test>**

6 drop tests

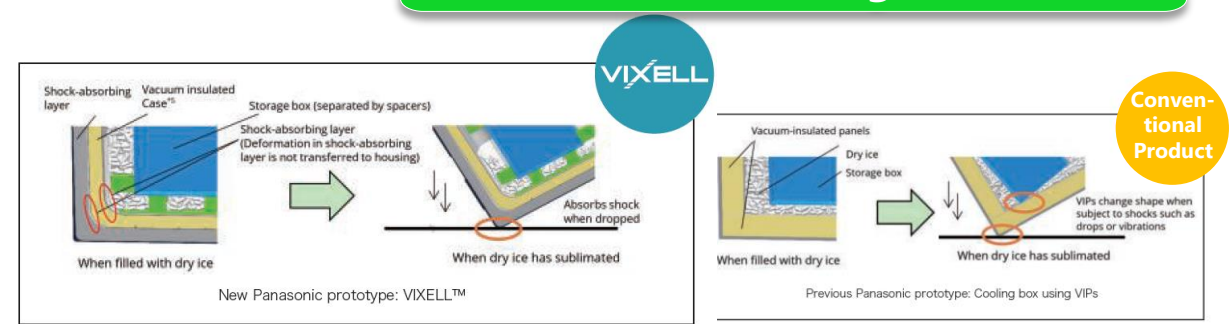
※1 Cooling Box: AE-V12UXR, Thermal Storage Unit: AE-V12DXR, 34kg dry ice pellet is necessary  
 ※2 Shock resistant parts cannot protect against all damage. Need inspection before use  
 ※3 Thermal storage unit is optional part  
 ※4 Quality record system will be launched form Apr-2021. The system can check only VIC.

## 1. High thermal insulation structure



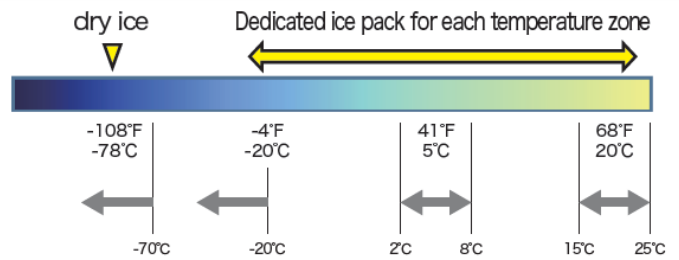
- The integral moulding of the box shape can eliminate leakage of cold air from the joint.
- By using urethane foam and glass wool in the insulation, the cooling performance has been improved.

## 2. Shock absorbing structure



- Shock resistant structure was specially designed in VIXELL to reduce damage when dropped.
- The spacer structure can prevent the inner box from moving even if dry ice sublimates and decreases.

## 4. Various controlled temperature zones



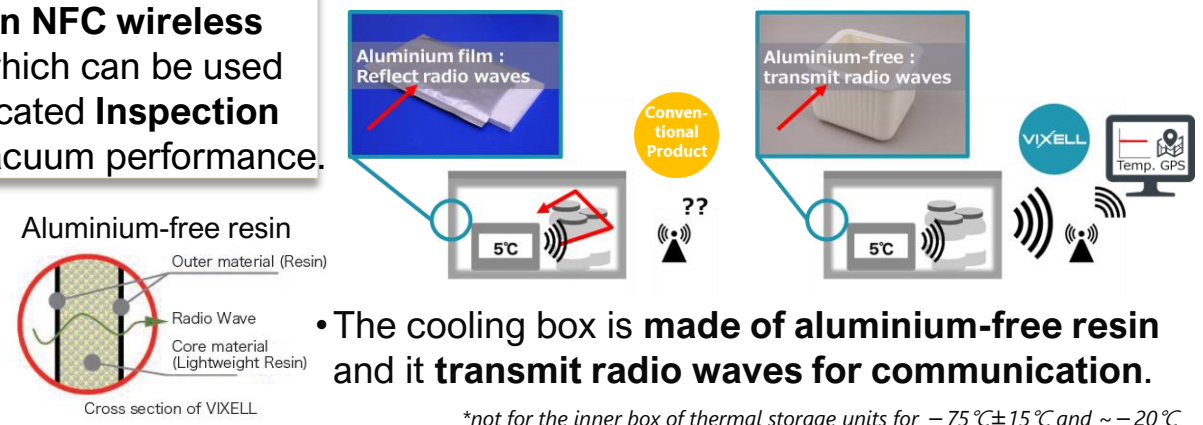
- Various cooling temperatures can be achieved by simply replacing the thermal storage unit into the same outer box.
- 5 temperature zones from extremely low temperatures -70°C to 25°C.
- 2 sizes are available for transportation (L-Type or S-Type)

## 3. Wireless Vacuum Sensor



- VIXELL has built-in NFC wireless vacuum sensor which can be used together with dedicated Inspection Board to check vacuum performance.

## 5. High affinity with IoT Devices



- The cooling box is made of aluminium-free resin and it transmit radio waves for communication.

\*not for the inner box of thermal storage units for -75°C±15°C and ~-20°C