

KEYSTONE

PACKAGE  **TESTING**

A subsidiary of  **KEYSTONE**
COMPLIANCE

Keystone Package Testing
203 Commerce Ave
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Panasonic Corporation
2106-243SB-2

Lab Information

Laboratory Name: Keystone Package Testing
Address: 203 Commerce Ave
New Castle, PA 16101
ISTA Member ID: ST-10019
A2LA Accreditation: 3293.02

Customer Information

Customer Name: Panasonic Corporation
Job Number: 2106-243SB-2
Test Requested by: Shinya Kojima, Jennifer Archibald
Address: 2-3-1-2 Noji-higashi, Kusatsu
Shiga, 525-8520, Japan

Test Information

Procedure: ISTA 7E 144 Hour Winter
Date Tested: 10/11/2021 to 10/17/2021
Number of Samples Tested: 4
Test Technician: Marc Delio
Email: marcd@keystonecompliance.com

Prepared by:  Date: 10/27/2021

Antonietta Hallowich, Program Manager

Approved by:  Date: 10/27/2021

Scott Bischoff, Package Testing Lab Manager

UUT Information

Product Name:	VIXELL™
Product Description:	Re-Usable Passive Constant Temperature Shipping Box System
Manufacturer:	Panasonic
Package Description:	<p>Packaging consisted of a removable tray which held a frame that held thermal components in place. Tray is placed in vacuum insulated and zipper is closed to seal shipper. Product box was placed in center of packout, and used kraft paper to center vial and keep it in an upright position.</p> <p>-20°C Configuration used a hard brick filled with PCM and vial filled with 20 mL Propylene Glycol.</p> <p>2-8°C Configuration used a Soft Gel PCM and Vial filled with 20 mL Sterile Water.</p>
Dimensions:	<p>Small Shipper: L: 18.5" W: 13.5" H: 13.5"</p> <p>Large Shipper: L: 21.5" W: 19" H: 17.5"</p>
Weight:	<p>Small -20°C Configuration Shipper: 34.15 lbs.</p> <p>Large -20°C Configuration Shipper: 49.35 lbs.</p> <p>Small 2-8°C Configuration Shipper: 28 lbs.</p> <p>Large 2-8°C Configuration Shipper: 39.75 lbs.</p>
Temperature Deviation	<p>Refrigerated = 2 to 8C</p> <p>Frozen = -25 to -15C</p>

Test Equipment List

Test Equipment					
Asset No.	Description	Manufacturer	Model	Serial No.	Cal. Due
NC040	Temperature/Humidity Chamber	Thermotron	SM-32C	16972	12/23/2021
NC046	Walk-in Chamber	ESPEC	epwx1289-15nw	3542313	10/19/2021
NC010	Chamber, Temp & Humidity	Thermotron	SE-1200-3-3	26246	2/16/2022
NG141	Scale	Ohaus	ES50L	0600028jfv	5/17/2022
NM053	Temperature/Humidity Meter	Control Company	4096, 98766-84	200403372	7/9/2022
NA013	Data Logger	Yokogawa	GM90PS	S5V509969	12/8/2021
NS009	Data Logging Software License	Yokogawa	GA10-01/MT	License: 400-0040-239	UWCE
NS010	Client License for GA10 Software	Yokogawa	GA10/CL-01	License: 402-02193-47	UWCE
NG181	Tape Measure	Starret	TX1-26ME	20295802	11/17/2022

UWCE: Used With Calibrated Equipment

REF: Reference Only

IPU: Inspect Prior to Use

Test Log		
Date	Time	Description
10/5/2021	14:40	Begin Conditioning Product and Coolant
10/11/2021	17:05	Begin ISTA 7E Winter Profile
10/17/2021	17:05	Profile End
10/18/2021	9:00	Perform Post Test Thermocouple Validation
	9:30	End Post Test Thermocouple Validation

Small Packout Photos



Small -20°C Configuration



Small Frozen Payload



Small Frozen Packout in Shipper



Small 2-8°C Configuration



Small Refrigerated Payload



Small Refrigerated Packout in Shipper

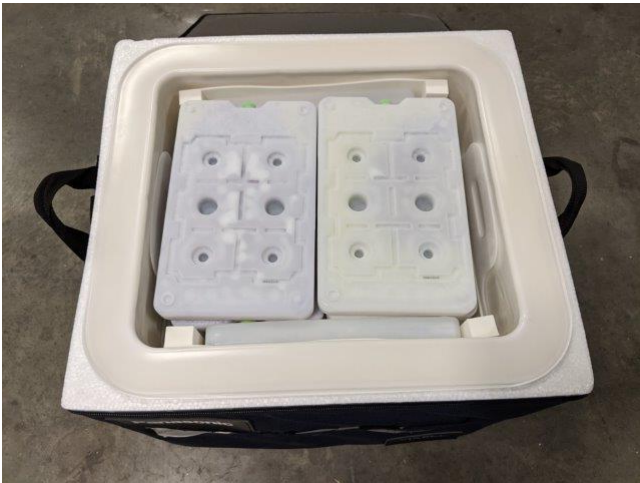
Large Packout Photos



Large -20°C Configuration



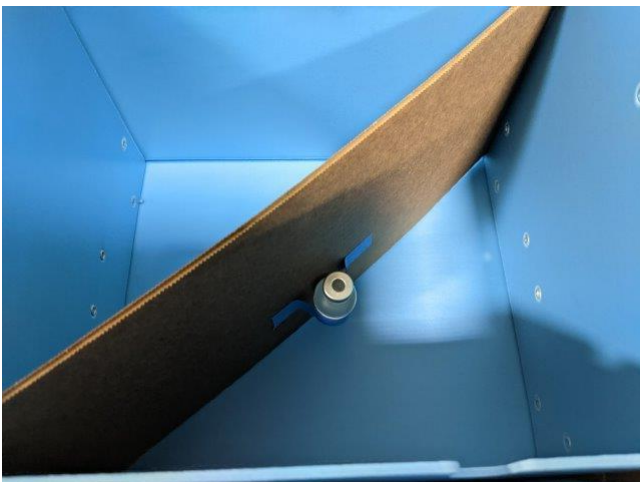
Large Frozen Payload



Large Frozen Packout in Shipper



Large 2-8°C Configuration

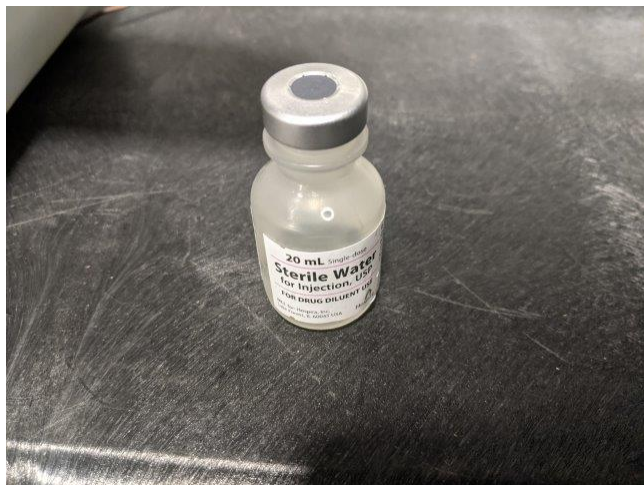


Large Refrigerated Payload



Large Refrigerated Packout in Shipper

Packout Photos



20 mL Sterile Water



2-8°C Configurations in Conditioning



20 mL Propylene Glycol



-20°C Configurations in Conditioning



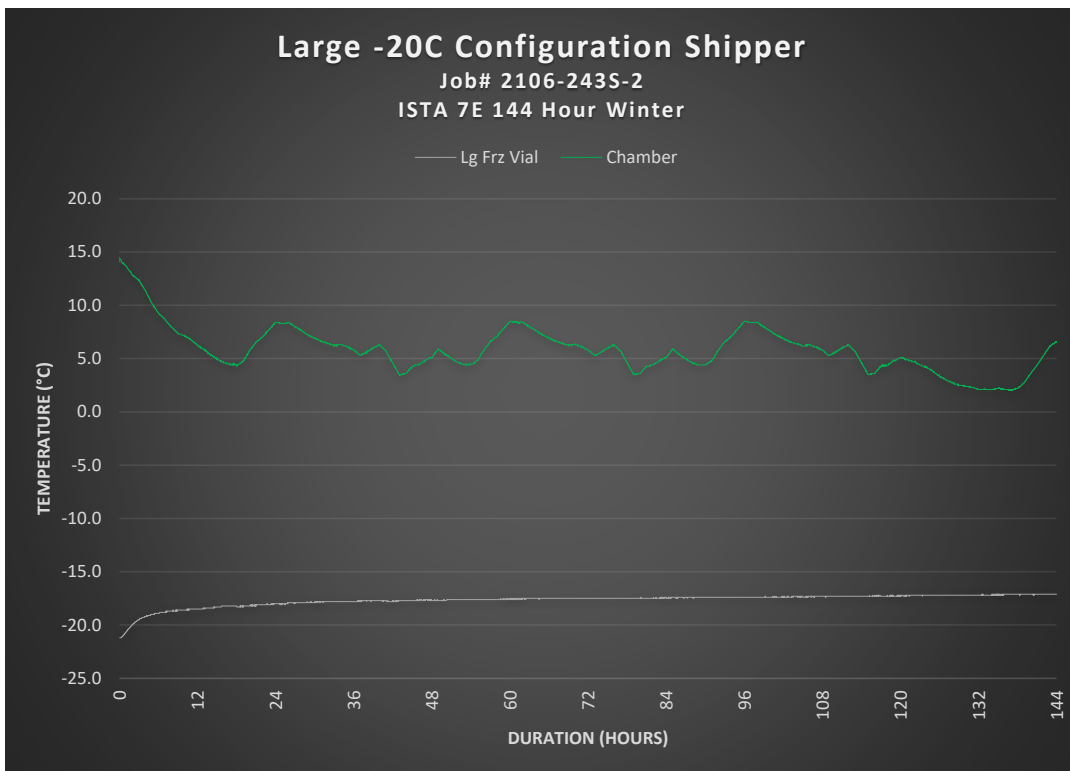
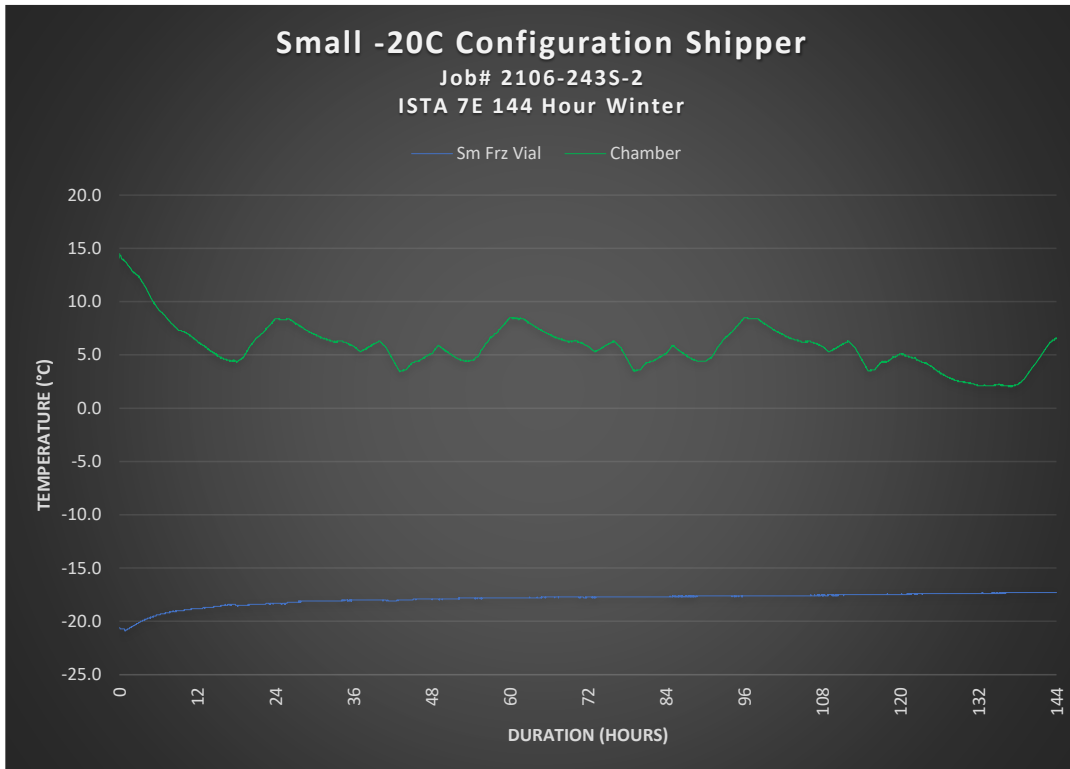
Chamber Setup

Conditioning Details			
Component ID	Packout Configuration	Temperature	Duration
-20°C PCM Packs	Frozen	-23°C	Min 120 Hours
2-8°C PCM Packs	Refrigerated	3°C	Min 120 Hours
-20°C Vials	Frozen	-23°C	Min 120 Hours
2-8°C Vials	Refrigerated	3°C	Min 120 Hours
Insulated Shipper	Lab Ambient	22°C	Min 120 Hours

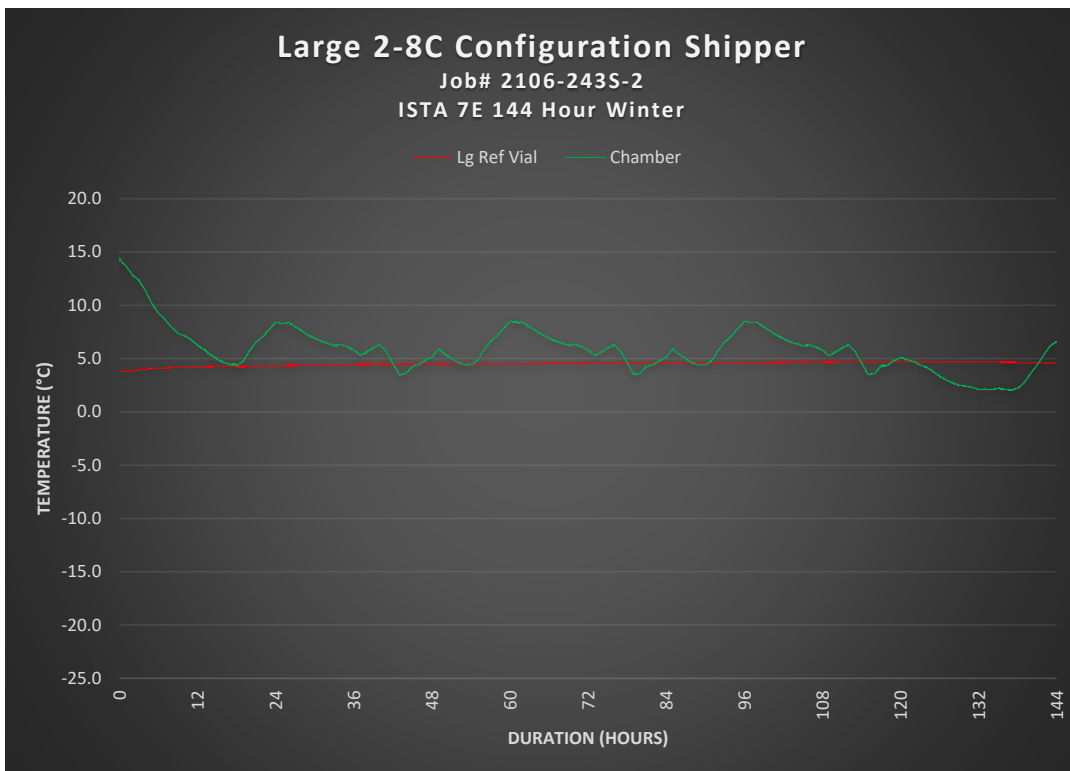
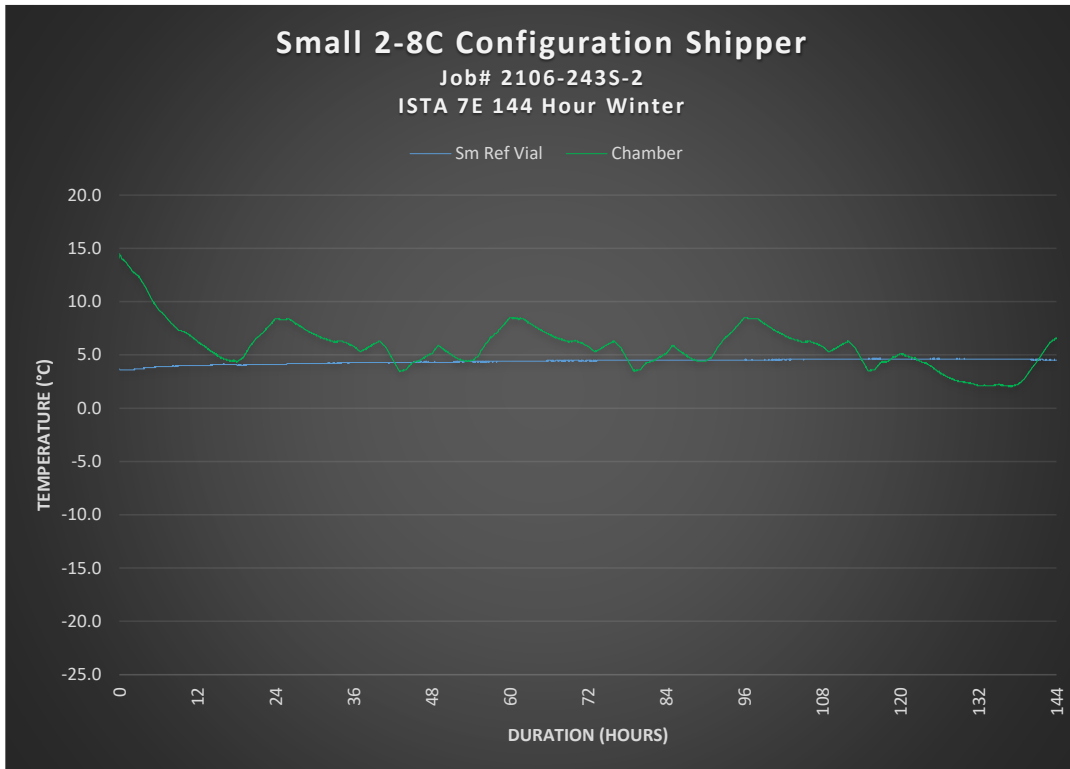
Thermocouple Locations	
Thermocouple #	Location
1	Chamber
2	Small Shipper -20°C Configuration Vial - 20 mL Propylene Glycol
3	Large Shipper -20°C Configuration Vial - 20 mL Propylene Glycol
4	Small Shipper 2-8°C Configuration Vial - 20 mL Sterile Water
5	Large Shipper 2-8°C Configuration Vial - 20 mL Sterile Water

Test Procedure
<ol style="list-style-type: none"> 1. Setup data logger and verify that all thermocouples read within 1°C of calibrated thermocouple at 3 points within temperature range of test. 2. Insert thermocouples into appropriate locations inside packages as defined in protocol and install an additional two thermocouples into opposite corners of environmental chamber. 3. Condition all products and package components to proper temperatures for a minimum of 24 hours prior to testing. 4. Verify that product and gel packs are at proper temperature before beginning test. 5. Pack out samples according to manufacturer's instructions as quickly as possible and begin test. 6. Once testing has been completed verify all thermocouples a second time to 1°C

ISTA 7E 144 Hour Winter Profile



ISTA 7E 144 Hour Winter Profile



Test Results

Pass Fail Final Disposition Determined by customer

Final Comments: N/A