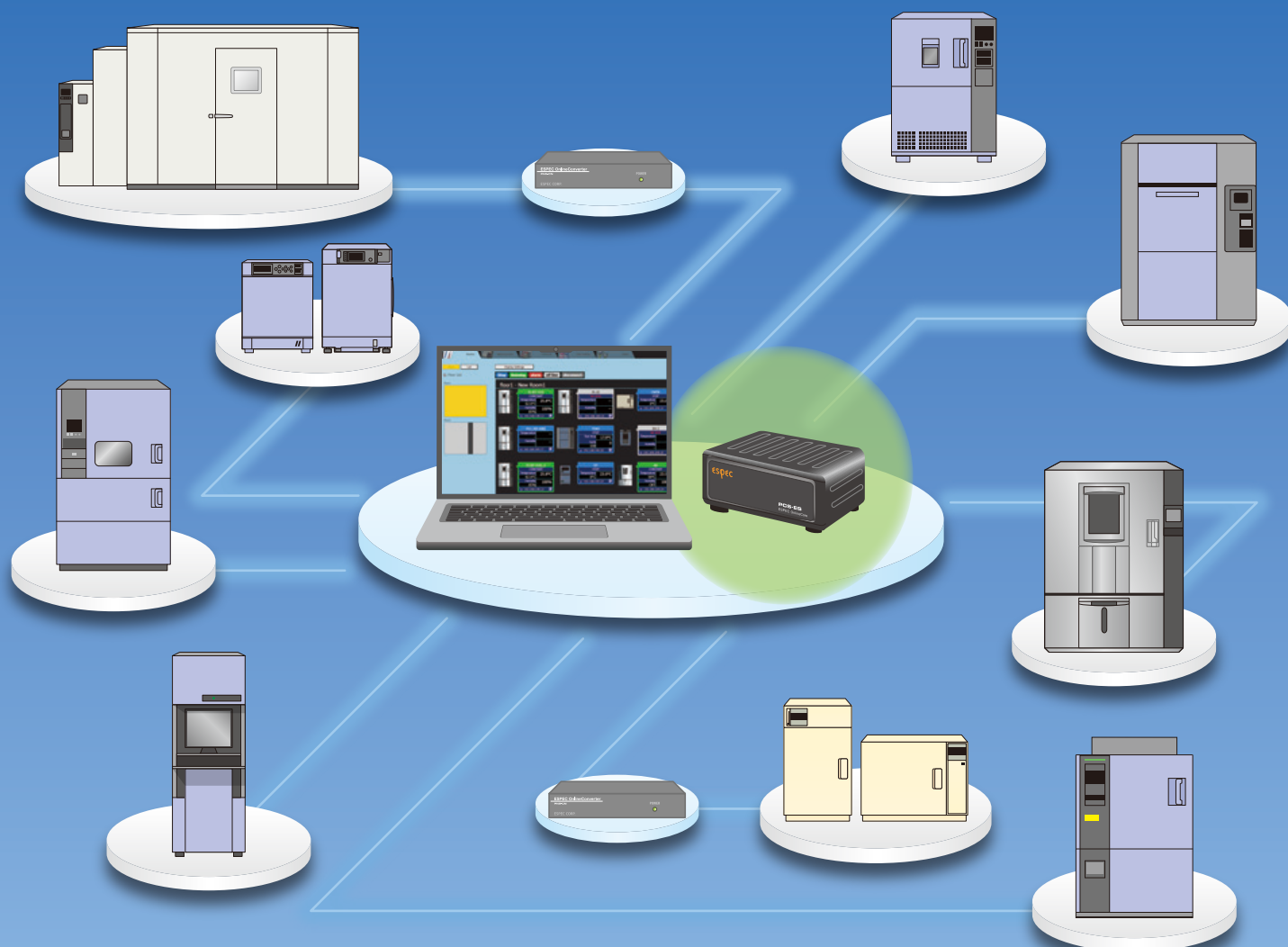


Quality is more than a word

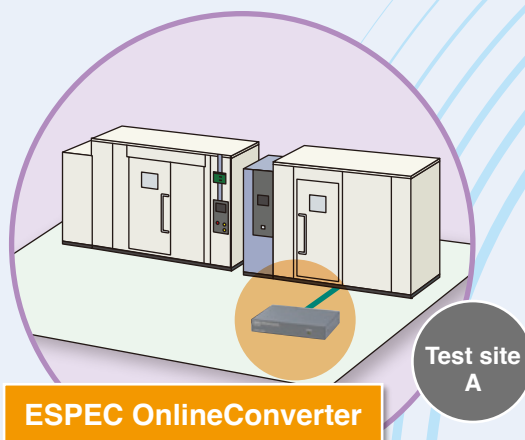
ESPEC

Web Integrated Network System ESPEC ONLINECORE



Online Operations Expanding the Possibilities for Environmental Testing

Along with environmental test chambers, ESPEC provides network-based remote management and Web Integrated Network System. Allows the user to also check the operating conditions from a remote office or home, assisting with test management during remote working.

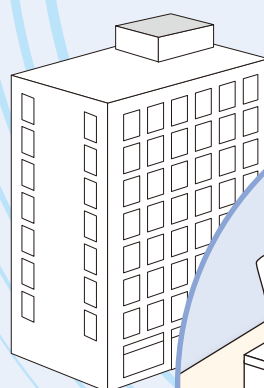


Chambers can be remotely operated using a web browser even when the chamber does not support network connections.



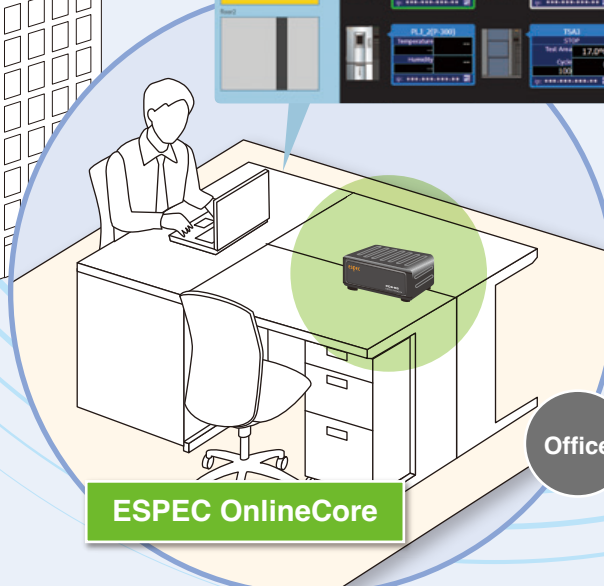
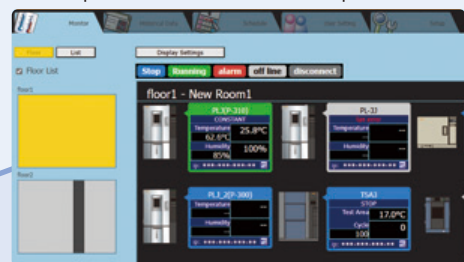
It is now possible to check the chamber operating conditions and edit programs even during business trip.

Travel destination



Check the operating conditions and the samples in the test areas* of multiple chambers from a remote location.

* A separate Chamber Camera is required.



Video explanation of the ESPEC OnlineCore Web Integrated Network System

Centralized management
of environmental
test chambers and
peripheral equipment

P.3 to 8

RS-485 LAN converter

ESPEC OnlineConverter

Adding network
functions on
network inapplicable
ESPEC chambers

P.9

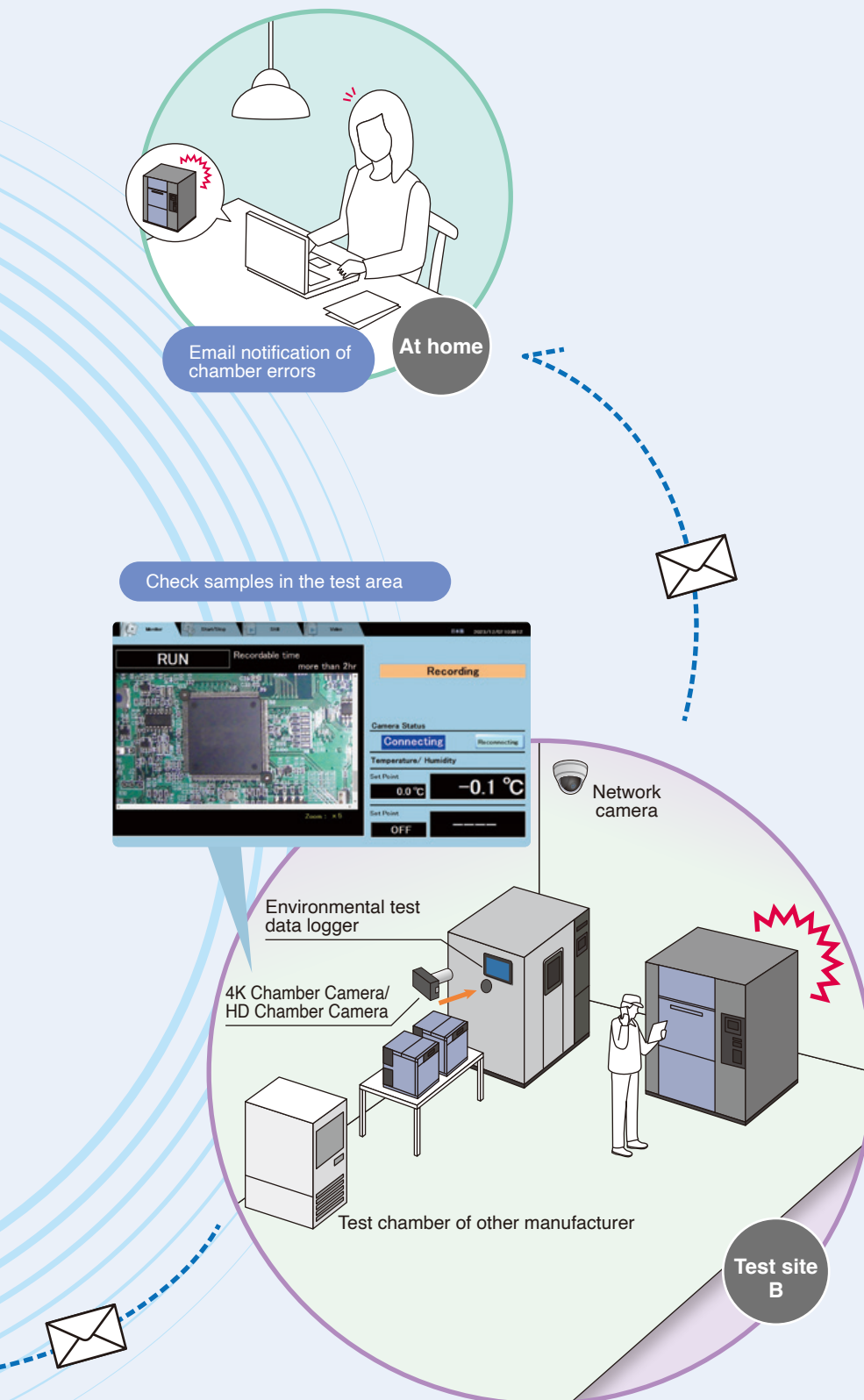
Custom specifications &
Related products

Add-ons
4K Chamber Camera/
HD Chamber Camera
Environmental test data logger

P.10 to 12

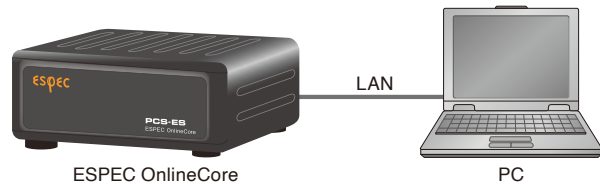
Environmental test chambers
Network experience

P.13



Centralized management of environmental test chamber peripheral equipment

The operating status of multiple chambers can be quickly ascertained via a web browser just by connecting to an Intranet environment.
Can also be used in a closed network.



ESPEC OnlineCore has standard and optional functions.

ESPEC OnlineCore

Standard
function



Maintenance Management Package

Maintenance management added to the test management package for full functionality

Optional

■ ESPEC OnlineCore function list

Function		Description	Standard function	Option
Central monitor	Floor display	Monitors the operation states, settings, and measured values of up to 100 chambers. The chamber layout can be changed.	✓	
	List display	Changes the monitor screen to a list.	✓	
	Floor switching	Switches the floor screen to 1 of 10 created floors.	✓	
Chamber history	Operation history	Saves the start/stop history of chamber operation.	✓	
	Sampling data	Displays graphs, creates reports, and outputs CSV files.	✓	
	Operating rate	Automatically calculates this rate for each chamber.	✓	
Schedule	Test planning	Receives entered schedules.	✓	
	Operation history display	Shows the operation results on the schedule.	✓	
	Display switching	Selects the display mode from day, week, and month.	✓	
	Custom period specification	Sets the custom schedule to display.	✓	
	Start/stop notification	Sends a notification email at the set date and time.	✓	
Maintenance management	Chamber information	Displays the chamber management information and specifications, saves the user's manual and similar documents as PDFs, displays the maintenance plans, and aggregates data to save.		✓
	Maintenance plans	Manages the schedules of maintenance work such as diagnosis, repair, inspection, and calibration.		✓
	Maintenance data aggregation	Aggregates the chamber's maintenance costs and maintenance operation count from its operating rate and registered maintenance plan.		✓
User settings		Sets the user rights and password.	✓	
System settings	Sampling data collection	Sets the chamber's sampling data collection.	✓	
	Sampling data transmission	Transmits (backs up) the chamber sampling data collected with ESPEC OnlineCore.	✓	
	Maintenance management data transmission	Saves the maintenance management file and transmits (backs up) the data.		✓
	Backup management	Backs up the information registered with ESPEC OnlineCore.	✓	
	Storage capacity management	Displays the ESPEC OnlineCore memory information.	✓	

Central management monitor

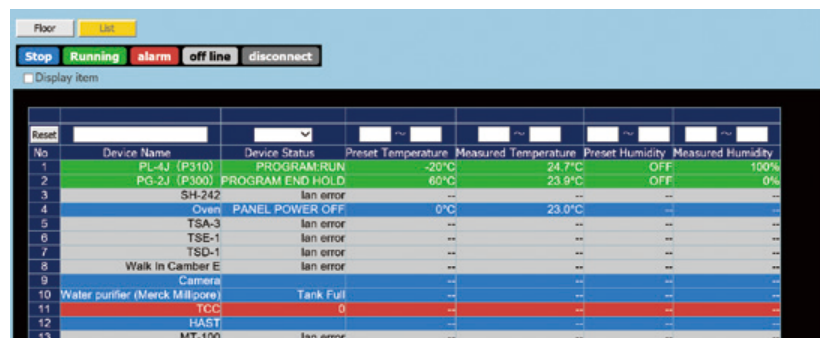
- Up to 100 environmental test chambers and peripheral equipment units can be connected.
- The operation state, measured values, and other data from the connected equipment can be checked.
- Access the details page of each chamber.



- The layout, display format, sizes, and other characteristics of the connected equipment on the monitor can be changed.
- Change between a floor display and list display.
- Arrange connected equipment by application or team to facilitate management.
- Up to 10 groups can be registered.



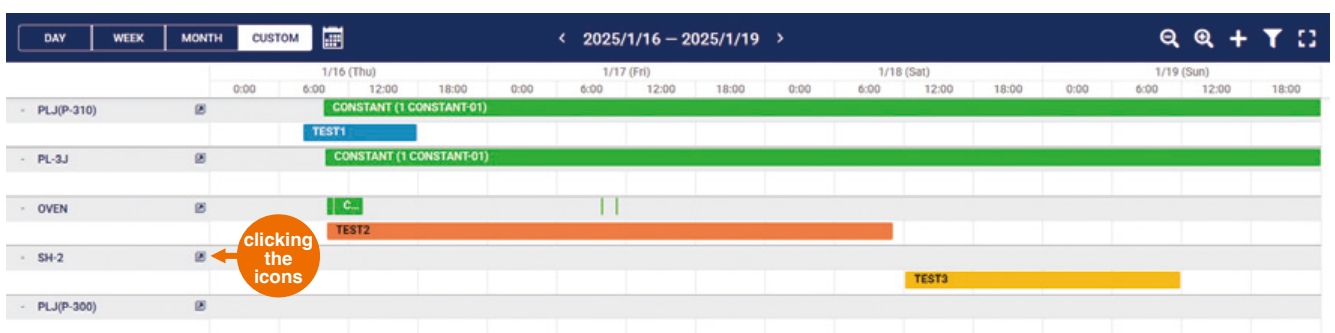
Floor display



List display

Visualize progress in real time

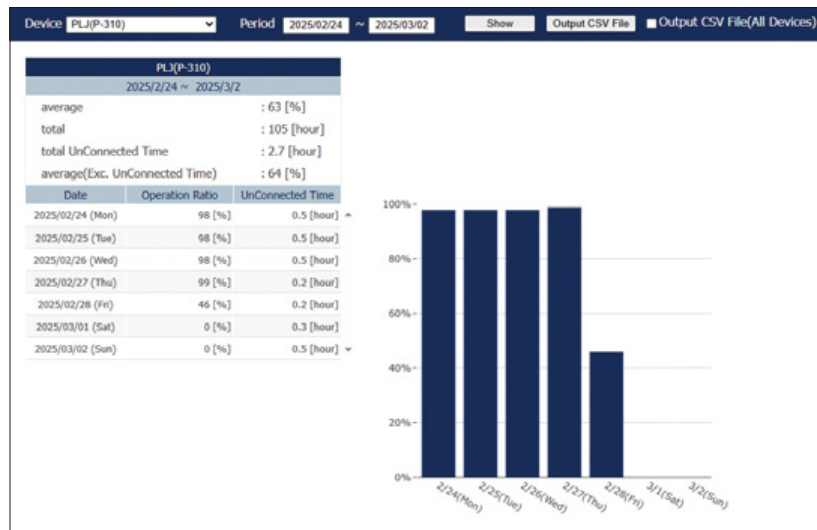
- Manage the schedules of registered chambers.
- Display the schedules of specified chambers.
- Send email notifications at the start/end of schedules.
- Open chamber webpages from the schedule screen (by clicking the  icons).
- Visualize operation states, start dates and times, estimated end dates and times, and progress graphs. (Operation history display)
- Check test progress linked with connected equipment. Test end times are calculated automatically and an email notification is sent before the scheduled end time is exceeded.



Schedule management screen

Automatic aggregation of chamber operating rate

- Understanding the operating status makes it easier to plan for chamber expansion or dismantling.
- The operating rate and operating time for the selected period are calculated automatically for each chamber, and CSV output allows data for all connected equipment to be exported.

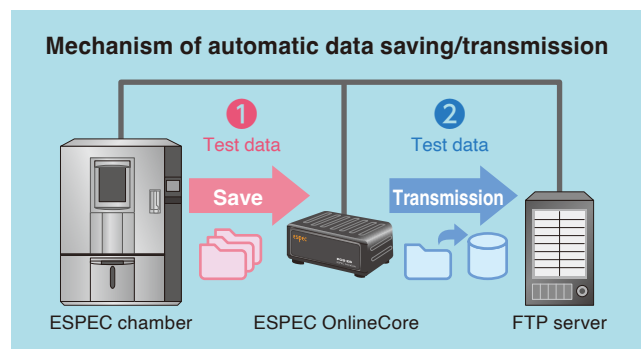


Save the long duration test data

- The test data files stored in ESPEC chambers are saved in ESPEC OnlineCore.
 - The storage capacity is enough for around 10 years of data from 100 chambers.
- * This may vary depending on the data collection cycle and other conditions.

Automatic transmission of test data

- Test data is automatically transmitted to the specified FTP server and saved as backup for redundant management.
- * The FTP server must be prepared by the customer.
- Conforms to data management (collection, storage) in the ISO/IEC17025 requirements.

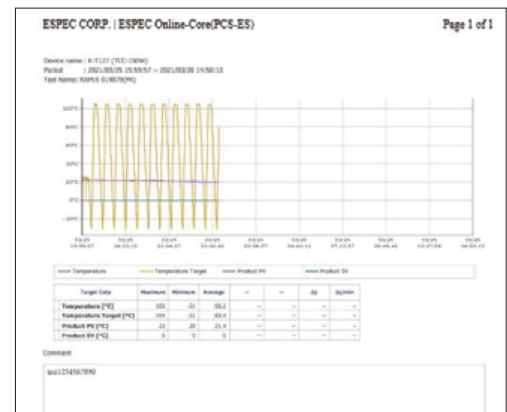


Automatic creation of graph display and test reports

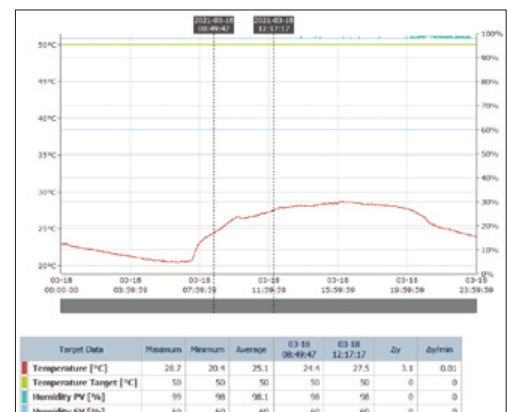
- Create test schedules, graph displays of any test period from the operation history, and test reports.
- Graph display, comment input, simplified analysis, and conversion to CSV output files are all possible.



Graph display



Report screen



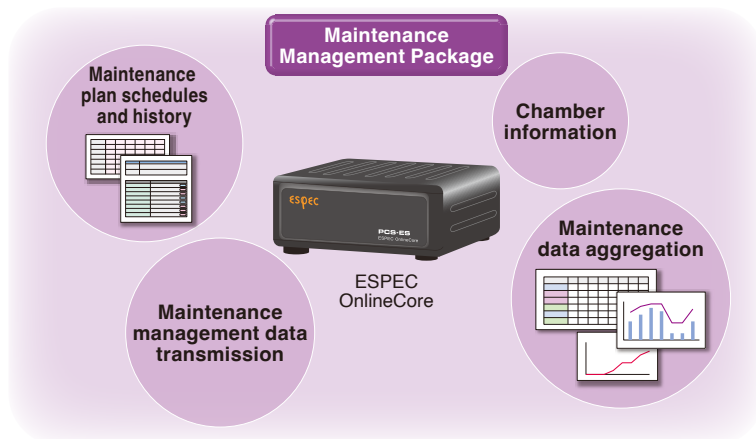
Analysis screen

OnlineCore applicable product lineup

Product name	Model	Product name	Model
Temperature (& Humidity) Chamber Platinous J Series	PR, PL, PU, PSL, PG, PHP, PDR, PDL, PCR, PL-ECO, PU-ECO	Low Temperature (& Humidity) Chamber	CRH-□□2
Walk-In Temperature (& Humidity) Chamber E Series	TBE, TBL, TBR, TBF, TBU, TBUU, EBE, EBL, EBR, EBF, EBU, EBUU	Thermal Shock Chamber TSA Series	TSA-□□3
High-Power Temperature (& Humidity) Chamber (N Instrumentation)	ARG, ARL, ARS, ARU, ARSF, ARGF	Thermal Shock Chamber	TSD-101-W
Bench-top Type Temperature (& Humidity) Chamber	SH/SU-□□2	Compact Thermal Shock Chamber	TSE-12-A
Constant Climate Cabinet	LH / LHL / LHU / LU-□□4	Liquid to Liquid Thermal Shock Chamber	TSB-22, 52
Compact Ultra Low Temperature Chamber	MC-712, 812	Vacuum Oven	LCV-234, 244
Faster Temperature (& Humidity) Chamber	SMG, SML, SMS, SMU-21	Electrochemical Migration Evaluation System	AMI
Rapid-Rate Thermal Cycle Chamber	TCC-151	Conductor Resistance Evaluation System	AMR
Highly Accelerated Stress Test System	EHS-□□2 (M) (MD)	Web Manager	WMA-STD, WMA-TS, WMA-Multi
Stability Test Chamber	CSH-□□2 (HG)	RS-485 LAN Converter	CONV-L4
Stability Test Chamber	CWH	Web Support	PN5-L4
		ESPEC OnlineConverter	PN5-CN

<Maintenance Management Package>

Reduce various parts of chamber management work and increases operation efficiency



Together with the test management functions, centrally managing chamber maintenance data with ESPEC OnlineCore makes it possible to efficiently check the required information when necessary. Conforms to data management (collection, storage) in the ISO/IEC17025 requirements.

Central management of repair history

Maintenance plans

- The list shows the registered schedules and records of diagnoses, repairs, inspections, calibrations, etc.
- Use the settings to filter the list of saved plans to view.

ID	Date	Start Date and Time	Device	Category	Status	Description
12	Planned	2021/02/16 15:00	PL-42 (P310)	Diagnosis	Work report	Reduction of electrical components • Temperature controller and sensor (K) • Temperature detection and (LIS-42) • Check of power supply board
30	Done	2021/02/16 14:00	SH-242	Diagnosis	Work report	Repair work for poor temperature control The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.
30	Planned	2021/02/11 00:30	PL-42 (P310)	Diagnosis	Work report	Repair work for poor temperature control The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.
29	Planned	2021/02/09 08:00	PG-23 (P300)	Diagnosis		
27	Planned	2021/11/27 00:00	SH-242	Diagnosis		
10	Planned	2021/11/22 13:00	SH-242	Inspection		
6	Planned	2021/11/20 15:00	PL-42 (P310)	Diagnosis		
24	Done	2021/06/23 13:00	PL-42 (P310)	Diagnosis	Repair work for poor temperature control The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.	Malfunction due to deterioration of temperature controller Replacement of electrical components • Temperature controller and sensor (K) • Temperature detection and (LIS-42) • Check of power supply board
15	Done	2021/01/10 15:00	OVN	Diagnosis	Repair work for poor temperature control The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.	Replacement of electrical components • Temperature controller and sensor (K) • Temperature detection and (LIS-42) • Check of power supply board
12	Done	2021/12/09 00:00	PG-23 (P300)	Inspection	Regular inspection by the manufacturer once a year	inspection • maintenance • Operation check

Maintenance plan list screen

- Save work reports and other such data in PDF format.

Maintenance plan: 15

Device: OVN, Category: Diagnosis, State: Done, Start Date and Time: 2021/01/10 15:00, End Date and Time: 2021/01/10 17:30, Assigned to: Smith, Maintenance cost (\$): 200, Integration Time: 10min

Summary: Malfunction due to deterioration of temperature controller. Repair work for poor temperature control. The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.

Description: Replacement of electrical components
• Temperature controller and sensor (K)
• Temperature detection and (LIS-42)
• Check of power supply board
• Overheat setting check
• Overheat extension cable

Note: The sensor is making abnormal noise (detected), we will submit a repair estimate at a later date.

Files: sample.pdf, PDF file sample

Screen for an individual maintenance plan

Click the icon to display the PDF.

- Enter a maintenance plan to display its linked schedule.

Maintenance plan: 29

Device: PG-23 (P300), Category: Diagnosis, State: Planned, Start Date and Time: 2021/02/09 08:00, End Date and Time: 2021/02/09 09:00, Assigned to: Maintenance cost (\$): 10, Integration Time: 10min

Summary: Malfunction due to deterioration of temperature controller. Repair work for poor temperature control. The temperature inside the tank becomes higher than the indicated temperature and AL-36 is displayed.

Description: Replacement of electrical components
• Temperature controller and sensor (K)
• Temperature detection and (LIS-42)
• Check of power supply board

Note: The sensor is making abnormal noise (detected), we will submit a repair estimate at a later date.

Files: sample.pdf, PDF file sample

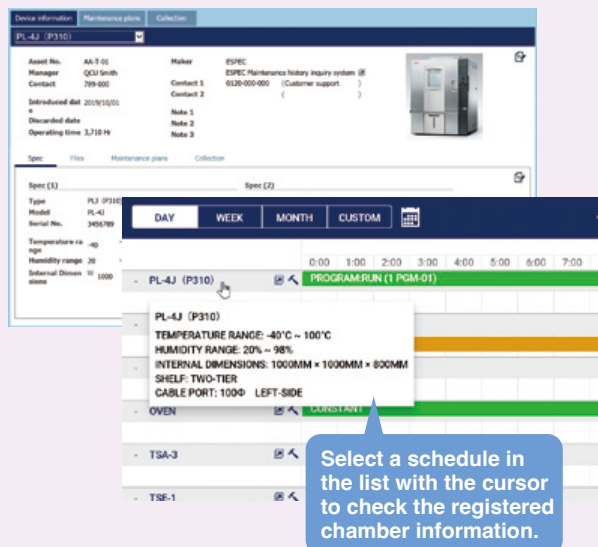
Linked schedule: DAY, WEEK, MONTH, CUSTOM. 2021/2/8 - 2. PL-42 (P310), PG-23 (P300), SH-242, OVN, TSA-3.

Linked schedule

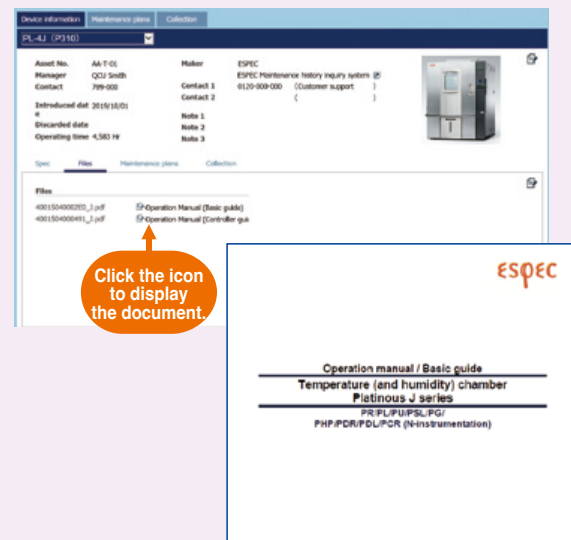
Streamlining test preparation with sharable test information

Chamber information

- Register management information and chamber specifications.
Check the temperature and humidity range as well as the test area size when selecting the chamber.



- Save the user's manual and other such related documents for prompt reference when an error occurs or when chamber operation is difficult.

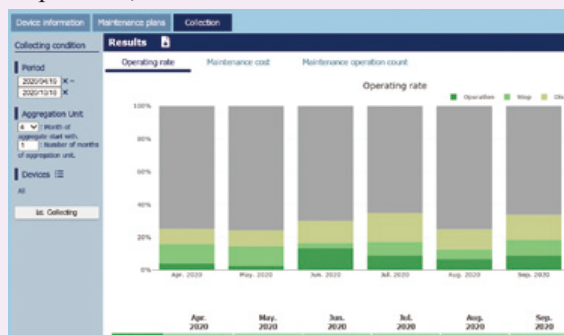


Automatic aggregation of everything from chamber maintenance costs to operating rate

Maintenance data aggregation

The operating rate, maintenance costs, and maintenance operation count can be aggregated yearly for all chambers or separately for each chamber, which is useful for managing budgets and planning facilities.

- Aggregate the operating rate for the following categories: operation, stoppage, communication impossible, and no data.



Operating rate aggregation for all chambers

Average per device

Devices	Oper. rate	Stop	Disco. rate	No. data
PL-4J (P310)	43.7	40.4	6.1	9.8
PG-2J (P300)	59.5	25.7	5.0	9.8
SH-242	16.2	49.1	24.6	9.8
Oven	42.8	43.0	3.5	9.8
TSA-3	0.0	1.9	0.3	97.8
TSE-1	0.0	0.0	53.6	46.4
TSD-1	0.0	0.0	90.2	9.8

Averages for each chamber

- Aggregate the costs registered to the maintenance plan.



Cost aggregation for all chambers

Average per device

Devices	Oper. rate	Stop	Disco. rate	No. data	Sum
PL-4J (P310)	30,000	50,000	0	80,000	150,000
PG-2J (P300)	0	75,000	65,000	0	140,000
SH-242	30,000	0	35,000	0	65,000
Oven	20,000	30,000	35,000	0	85,000
TSA-3	0	0	0	0	0
TSE-1	0	0	0	0	0
TSD-1	0	0	0	0	0
Walk In Chamber	45,000	0	85,000	80,000	210,000

Costs for each chamber

RS-485 LAN converter ESPEC OnlineConverter

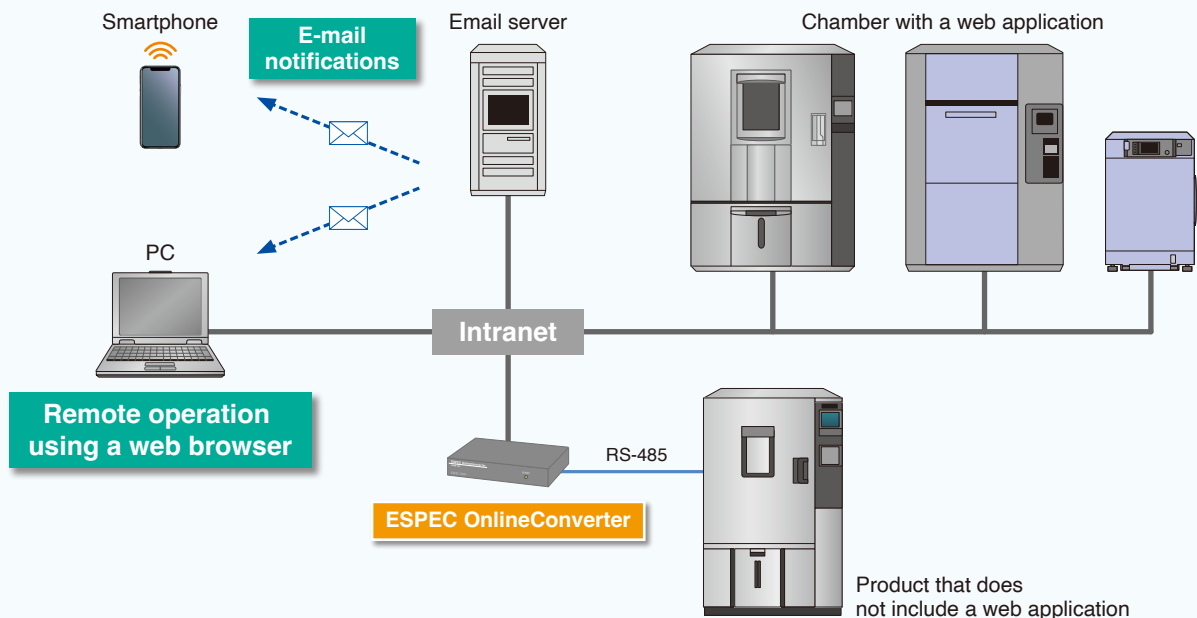
PN5-CN

Easily connect equipment without network functionality

By connecting an ESPEC OnlineConverter LAN converter to the RS-485 communication port of a chamber that does not include a web application, it becomes possible to monitor the operating conditions, edit the test conditions, operate the chamber, and save the data from a web browser.



Image of connections



Follwing products need OnlineConverter

Product name	Model	Product name	Model
Temperature (& Humidity) Chamber Platinous K Series	PR, PL, PSL, PDR, PDL, PCR, PWL, PU, PG, PWU	Highly Accelerated Stress Test System	EHS-□□ 1 (M) (MD)
Walk-In Temperature (& Humidity) Chamber H Series (P Instrumentation)	TBE, TBL, TBR, TBF, TBU, TBUU, EBE, EBL, EBR, EBF, EBU, EBUU	Thermal Shock Chamber TSA Series	TSA-□□ 1, □□ 2
Free Access Environmental Chamber	PFL, PFU	Thermal Shock Chamber	TSD-100
Environmental Stress Chamber ARseries (P Instrumentation)	ARG, ARL, ARS, ARU	Compact Thermal Shock Chamber	TSE-11-A
Platinous Vibro Series	PVL, PVS, PVU, PVG	Liquid to Liquid Thermal Shock Chamber	TSB-21, 51
Bench-top Type Temperature (& Humidity) Chamber	SH / SU-□□ 1	Temperature Chamber Series	PV(H)-212, 222, 232, 332 STPH-102, 202 SPH(H)-102, 202, 302, 402 IPH(H)-202 PH(H)-102, 202, 302, 402 SSPH-102, 202 GPH(H)-102, 202
Constant Climate Cabinet	LH / LHL / LHU / LU-□□ 3		
Compact Ultra Low Temperature Chamber (P Instrumentation)	MC-711P, 811P		
Faster Temperature (& Humidity) Chamber	SMG, SML, SMS, SMU-2		
Rapid-Rate Thermal Cycle Chamber	TCC-150W	Large Volume Temperature Chamber	(H)LKS-3C, 4C
Desk-top Type High-Temp. Chambers	ST-110, 120, STH-120	Clean Oven	PV(H)C-212, 232, 332 PVHC-232MS, 332MS

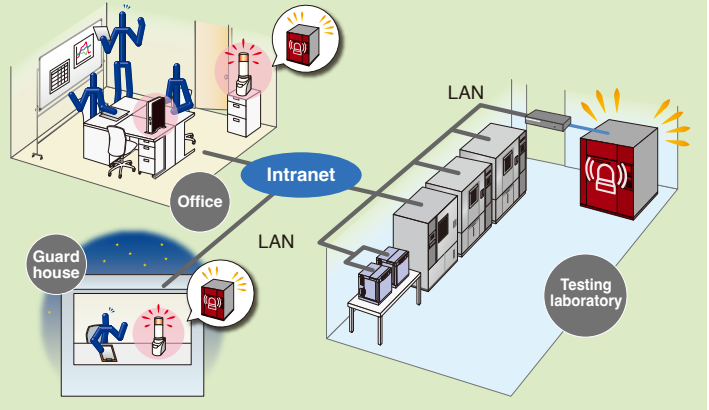
Depending on the year of manufacture and customer requests, chambers may be equipped with a terminal other than RS-485. Therefore be sure to check the actual chamber. A connection is not possible if the RS-485 terminal is already in use.

Examples of Customization

ESPEC OnlineConverter add-on

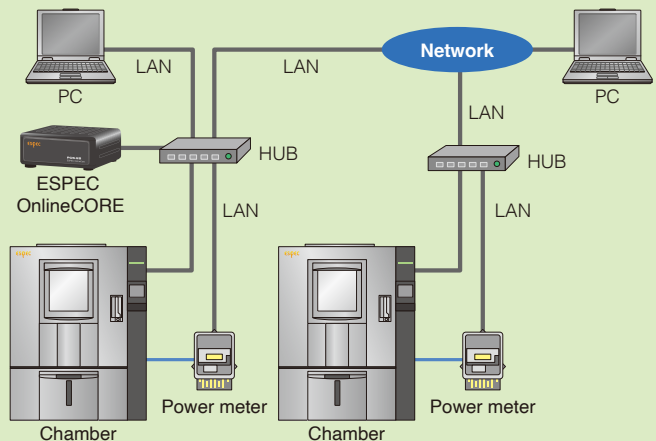
Office notification indicator light

Install an indicator light connected to a network in the office. The indicator light activates (illuminates, buzzer sound) for notification when ESPEC OnlineCore detects a chamber alarm. The activation times and days of the week can be set, for example to activate in the office during the day and in the guard house at night.



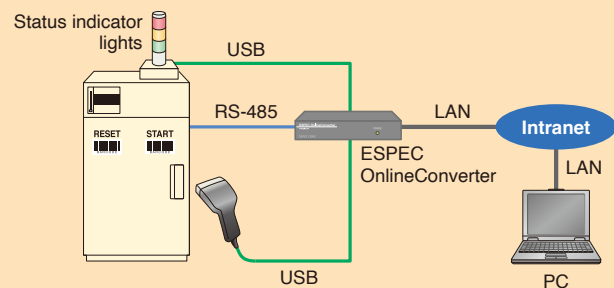
Power monitor

The power monitor displays the power consumption, instantaneous current, and other power-related information for the environmental test chamber. The monitor can also be linked to program operation periods to display the power consumption, CO₂ emissions, and graphs for visual confirmation of changes in power. The ability to visualize power consumption and CO₂ emissions helps reduce the amount of consumed electricity and manage carbon neutrality.



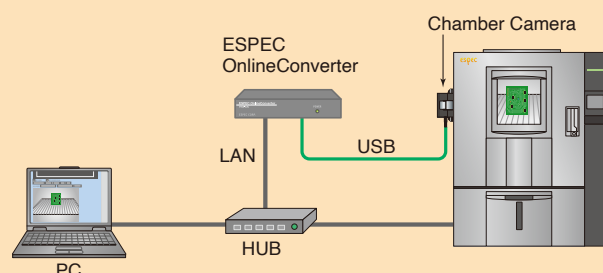
Barcode automatic operation system

Begin registration and testing simply by scanning a barcode, without changing the settings for each specimen. This also prevents errors in configuring the settings and other human errors. Specimen history data (operator, specimen, chamber name, operation start/end times, number of alarms) and test log data are saved automatically. This data can be used to ensure traceability of test results.



Support for Chamber Camera

Monitor images of the sample remotely from a travel destination or at home. Images and test data can be downloaded, and can be replayed synchronized by using the special Chamber Camera application.



4K Chamber Camera / HD Chamber Camera

Useful for remote monitoring of test samples during test

Especially useful for monitoring samples those that may physically change while under test.

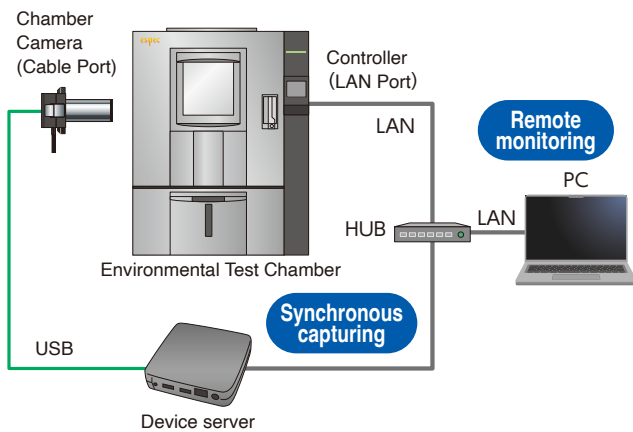
HD Chamber Camera can record and capture images of the entire sample in the chamber. Suitable for monitoring overall changes.

4K Chamber Camera can provide ultra high-definition images of the surface shape and color changes of sample in the chamber. Ideal for visual evaluation of detailed condition of the sample during the test.

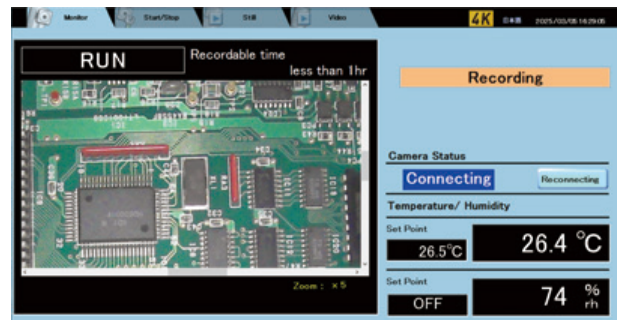


YouTube video
Quick look

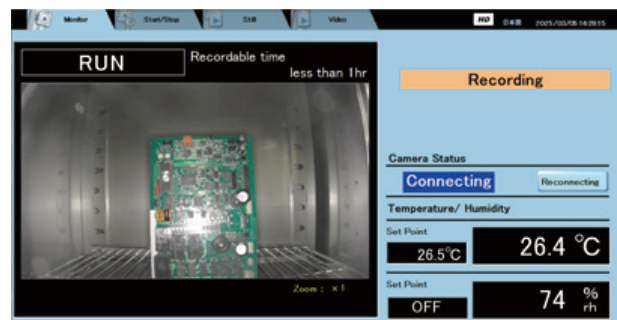
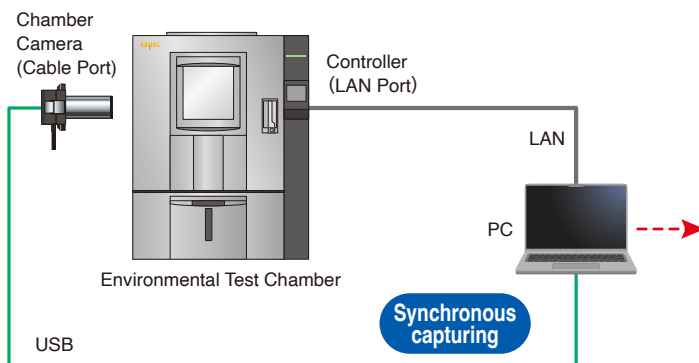
Application



Select the camera type to match your needs



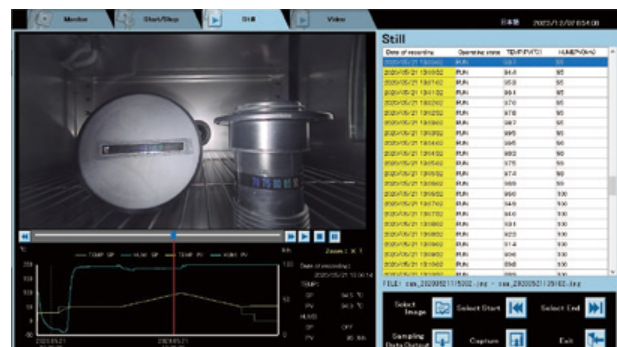
Sample view of upscaling image at 4K Chamber Camera



Sample view of entire test area at HD Chamber Camera

Features

- Can be used in harsh temperature and humidity conditions.
- Clear view inside test area
- Simple and easy installation
- Sync the chamber operation with the camera images



Camera

Product name	4K Chamber Camera	HD Chamber Camera
Model	SUC-1100-4K	SUC-0040-HD
Available chamber ※	Platinous J Series, Bench-Top Type Temp. & Humid. Chamber, etc.	
Allowable range of use	Temperature: -40°C to +150°C Humidity: 0 to 98%rh	
Resolution	4K (3840x2160)	HD (1280x720)
Interface	USB 2.0 ※Cable connection (USB Type A)	
Camera weight	Approx. 750g	
Dimensions (mm)	W124xH98xD164	

※Controller P310 and P200. Cable port ϕ 50mm or ϕ 100mm is required.

※AC adapter: AC100 to AC230V with 5 types of conversion plugs

※2 types of adapters included (ϕ 50-D70 for Bench-Top Type Temp. & Humid. Chamber, ϕ 100-D100 for ϕ 100 cable port)

※2 year warranty, CE standard, RoHS standard



4K Chamber Camera



HD Chamber Camera

Application (ES-ImageFit)

The dedicated application (ES-ImageFit) controls a Chamber Camera and performs synchronous capturing of sample images and chamber operation (test data/trend graphs).

Product name	4K Chamber Camera	HD Chamber Camera
Application	ES-Image Fit 4K	ES-Image Fit HD
Screen Specifications	Four screen settings: camera monitor, settings (video/still image), still image playback, and video playback	
PC Specs (OS/CPU)	Windows10/intel core i5 or higher	
Zoom function	x1/x1.5/x2/x4/x5/x10	x1/x1.5/x2
Video	Frame rate: 3 fps/5 fps	Frame rate: 5 fps/10 fps
Shooting time (reference) ※Free space: 250GB	File capacity: 57 MB/min (3 fps) Continuous shooting time: approx. 73 hours (3 fps)	File size: 2.5 MB/min (5 fps) Continuous shooting time: approx. 1,660 hours (5 fps)
Still image	Shooting interval: 1 sec to 60 sec *JPEG	
Shooting time (reference) ※Free space: 250 GB	File size: 2 MB/sheet Continuous shooting time: approx. 34 hours (1 sec/interval)	File size: 0.2 MB/sheet Continuous shooting time: approx. 340 hours (1 sec/interval)
Remote monitoring	1 unit (Standard accessories: Lan Connection converter)	—

Customized proposal: Remote monitoring and centralized management support

Images from Chamber Camera can be viewed remotely.

Please contact us for more details

Environmental Test Data Logger

This product is intended for the Japanese market only.

Record test chamber internal temperatures and test samples all at once!

Introducing a data loggers designed especially for environmental test chambers. Settings and measured values for temperature and humidity can be recorded by simply connecting to the LAN port of your environmental test chamber. Test sample temperature data and applied voltage data can also be simultaneously measured and compiled into a single assessment report in CSV format. In addition, connections with Chamber Cameras are possible, enabling the simultaneous recording of images.



- **Simultaneously record temperature data for environmental test chambers and test samples**

With five temperature sensor inputs and three applied voltage inputs, users can simultaneously view the settings and measured values for environmental test chamber temperature and humidity.

- **Featuring a 10.1" magnetic tablet that detaches easily**

Equipped with a large, highly visible tablet that attaches to the environmental test chamber using magnets. (* Magnets cannot be attached to the exterior of some products.)

- **Use in combination with Chamber Cameras**

Capture images inside the test area together with test sample data, and then use the dedicated app to display still images synchronized with the data.

Specifications

Product name		Environmental Test Data Logger	
Model		EDL-0010	
PC Specs (OS/CPU)		Windows 11 Pro/ Intel Core i3	
SD memory card (included)		32GB	
Compatible models		P310/P200 controllers that support general-purpose communication (LAN)	
Standard input/output		Temperature sensor inputs: 5, Voltage inputs: 3, Alarm outputs: 2 (relay contacts)	
Touch panel display		Size: 10.1", Resolution: HD (1280 × 720)	
Weight (unit/display)		Approx. 1,000 g (measurement unit)	Approx. 500 g (recorder unit)
Dimensions		W130×H84×D35 mm	W249×H177×D30 mm
Options	Chamber Camera	Resolution: HD, Interval shooting interval: 10 sec. to 60 sec. *JPEG (recorded on external SD card)	
	Recording time	File capacity: 0.2 MB/image, Continuous shooting time: Approx. 1,500 hours (60 sec./interval)	

Environmental Test Chamber Network Experience

For inquiries about the environmental test chamber network experience, please contact the Online Customer Support Desk (general contact for inquiries).

<https://www.espec.co.jp/english/inquiry/customer-oversea.php>

ESPEC online demo site

Web browser

ESPEC has set up a demo site where users can access the ESPEC OnlineCore central control system from their computers.

Here, users can remotely monitor multiple test chambers, display test data in graphs, input schedules, create reports, and more.

Apply for demo site
access via
ESPEC website

Receive account
notification email

Log into
ESPEC demo site

<https://www.espec.co.jp/products/env-test/pcs/>
(Japanese only)



Network Booth

Exhibit

ESPEC has set up a "Network Booth" for users to try out OnlineCore. Please stop by and give it a try.



■ Address:
23-1 Kiyohara Industrial Park, Utsunomiya-shi, Tochigi

■ Exhibit Details:
ESPEC OnlineCore
ESPEC OnlineConverter
(Bench-Top Type Temperature (& Humidity) Chamber)
Temperature (& Humidity) Chamber Platinous J Series
(Network Instrumentation)
Thermal Shock Chamber TSA 3 Series
(Network Instrumentation)

[Custom specifications]
Barcode automatic operation system

ESPEC CORP. <https://www.espec.co.jp/english>

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ISO 27001 (JIS Q 27001)
Quality Management System Assessed
and Registered

* The organization of these certificates is
ESPEC CORP. Japan.



ISO 14001 (JIS Q 14001)
Environmental Management System Assessed
and Registered

* The organization of these certificates is
ESPEC Group Japan.



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