Now, it's

"SMART is the right way to do something in the Lab as well."

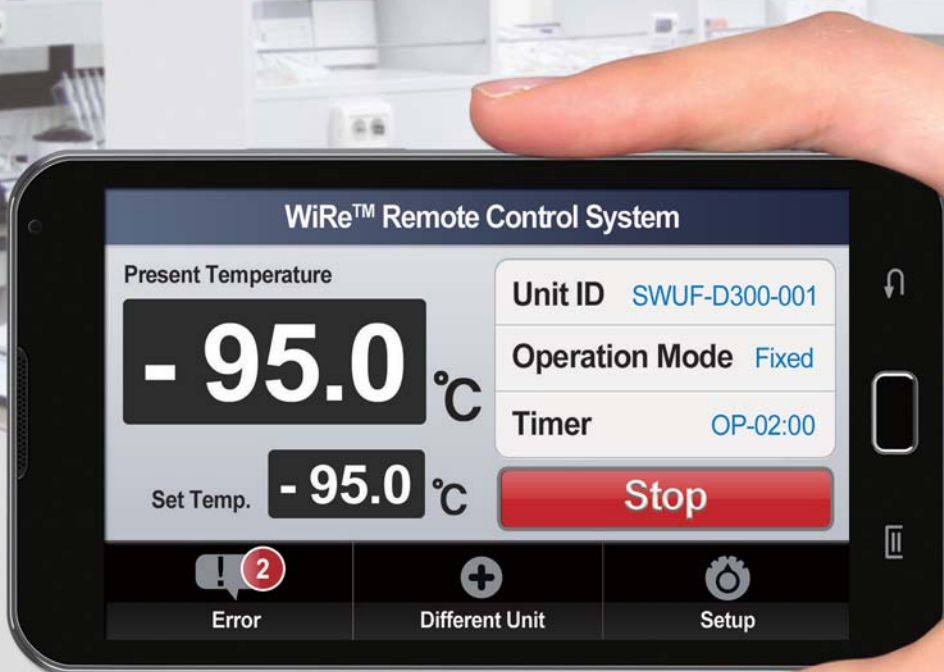Some tens of equipment are required in the lab for any kind of chemical or biological experiment.
A fact is that a scientist has to walk around in the lab periodically and monitor every equipment to watch if the experimental procedure is going well without any problem.
In spite of the limited manpower, time and space, scientists have a common mission to get the best result in their experiments, and it's not a simple issue to incorporate a certain innovative way to improve laboratory productivity.

Now, DAIHAN Scientific is going to take an initiative to change existing situation in the labs. So called, **Smart-Lab™ Equipment** is being introduced now here for the first time in the world, which will definitely *change the way to work in the labs.*

d, and smart TV at home

the time to innovate your lab with *Smart–Lab™ Equipments*

WiRe™ Remote Control System

Present Temperature

- 95.0 ℃

Set Temp. **- 95.0** ℃

Unit ID	SWUF-D300-001
Operation Mode	Fixed
Timer	OP-02:00

Stop

Error (2)   Different Unit   Setup

"Remote Laboratory" - No limitation on Time and Place

• It's possible to monitor and control **Wisd** Smart-Lab™ Equipments through App or Web at any time and anywhere you are.
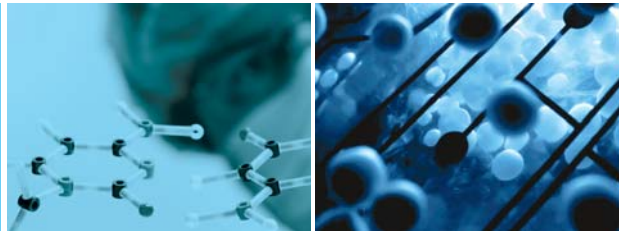
"Intuitive Use" - Easiest way to monitor and control

• You would have Innovative User Experience on the full touch-screen LCD controller
• All the equipments in a lab, or, even in multiple labs, can be controlled at your fingertips using Smart phone or Laptop.

"Secure Laboratory" - Self-diagnostics & Real-time notification

• Based on Self-Diagnostic System, any operational error of the equipment is noticed to the user and to the Service Center, automatically.

Wisd *£B*
LABORATORY INSTRUMENTS

Maximum Convenience by Advanced
Digital Technology

Smart-Lab™ Equipments

Like your Smart Phone in hand, and Smart TV at Home, Now, the Various Kinds of Equipment in Your Lab can be SMART!!

**Make your Works and Laboratories SMART
with DAIHAN Smart-Lab™ Equipments & WiRe™ App & Web Service.**

DAIHAN Smart-Lab™ Equipments

The Smart-Lab™ System is an innovation of laboratory equipments.
DAIHAN Smart-Lab™ equipments include two types controller, 4-inch or 7-inch, full-touch screen controller, integrating the most extensively applied Android System and Internet Connectivity. At anytime, anywhere you are, and anyhow, you can check and control all the equipments in your lab using your smart phone, tablet on the web.

No Button. No Knob. Simply Touch!!

DAIHAN SMART line of Lab Equipments with

Full Touch Screen Controller** and **Internet Connectivity!!

›› Features

- 4˝ or 7˝ Full Touch Screen TFT LCD
- Ergonomic Design for Intuitive User Interface
- Program Control : Multiple Pattern with Multiple Segments
- Data Recording : On-Screen Temperature Chart
- USB storage for Recorded Data
- Internet Connectivity with WiFi
- Remote Monitoring and Control by WiRe™ Service
- **Storage Management function :**
  Record the location of samples in the chamber and find easily afterwards, on screen (for ULT Freezers)
- **Self-Diagnostic Function :**
  Automatic Check & Alarm for the Failures in Key Parts
- Real-time Notification of any Failure in the Equipment to the User(s), to the Service Man and to Supplier, through WiRe™ Service

DAIHAN Smart-Lab™ Controller

The DAIHAN Smart-Lab™ Controller is embedded in all of Wisd Smart-Lab™ equipments, which has a lot of useful functions like data recording, Storage managment, and self-diagnostic function and so on.

These functions are unique and innovative in the laboratory equipments. And the controller is connected with researcher's Smart phone, tablet or laptop computer through internet, by WiFi, so scientists are able to check all the equipments in the laboratory at any time, and at any place.

>> Ergonomic Screen Design

• 4″ or 7″ Full Touch Screen TFT LCD
• Intuitive User Interface
• No-extra Button, Knob or Switch
• All the main Functions and Parameters are displayed on the Main Screen.
• Simple Touch to set the Temperature, Time, and other parameters

>> Automatic Data Recording

• High Resolution Graphic Display
• On-Screen Temperature Chart : Check the Temperature Record Graph on the Screen and could see the Details by Zoom-in & Zoom-out enabled at your finger tips.
• The Recorded Data could be transferred to PC by USB Memory.

>> Program Control

• Variable Program Setting for Multiple Patterns with Multiple Segments
• Preview window offered to check simply the input patterns
• Very easy to input and edit patterns

>> Self Diagnostic Function

• Automatic Check & Alarm for the Failures in Key Parts of the equipment
• Real-time Notification of any Failure in the Equipment to the User(s), to the Service Man and to Supplier, through WiRe™ Service.
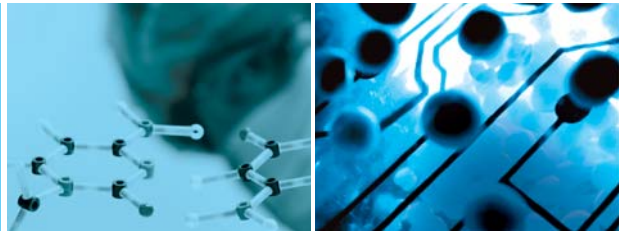• Implemented by LIN and empowered by WiRe™ Service

>> Internet Connectivity with WiFi

• Remote Control is available for all the Equipments in the laboratory using Smart Phone, tablet or on the Web.
• Available WiRe™ App & Web Service

Maximum Convenience by Advanced
Digital Technology
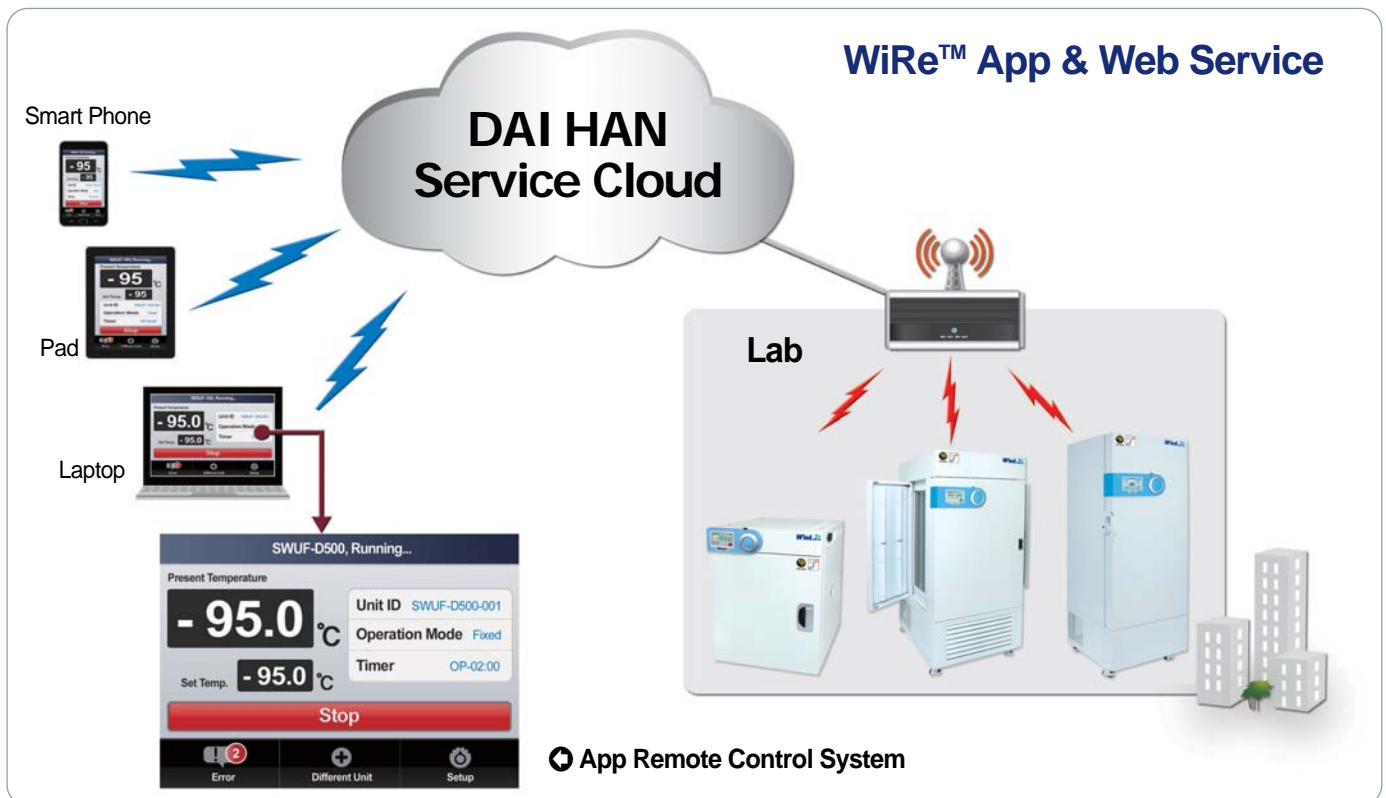
Smart-Lab™ Equipments

WiRe™ App & Web Service

WiRe™ App & Web service enables gathering, analyzing, and sharing of experimental data, and direct control of the unit is possible as well, anywhere and at any time.

When a defect of the unit occurs, it is processed by self-diagnostic system automatically. If you want to get safe and reliable data comfortably, it's a Smart choice to be Supported by WiRe™ service.

*At anytime, Anywhere you are, and Anyhow, you can check and Control All the Equipment in your Lab **Using Your Smart Phone or on the Web.***

≫ Features

- Developed by Advanced Web Technology
- Available in all the PCs, Laptops and MACs
- Almost same UI as the Touch Screen Controller on the Equipment is available
- Support all different kinds of Web browser based on HTML Standards
- Offering Android App and Apple iOS App

WiRe™ App & Web Service

DAI HAN
Service Cloud

Smart Phone

Pad

Laptop

Lab

SWUF-D500, Running...

Present Temperature

- 95.0 ℃

Unit ID SWUF-D500-001
Operation Mode Fixed
Timer OP-02:00

Set Temp. - 95.0 ℃

Stop

Error | Different Unit | Setup

↻ **App Remote Control System**

≫ WiRe™ Remote Control System

• Anytime, anywhere you are, and anyhow, you can check and control the Freezer in your Lab using your smart phone or web.

• It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.

≫ Device Settings and User Registration

• A single unit can be remote controlled by multiple users
• A single user can remote control multiple units in the Lab
• Smart-Lab™ equipments offer registration of multiple users with simple account information

≫ Self Diagnostic Function

The Self-Diagnosis System senses a certain defect within the unit, and reports it to the service center through the servers operated by DAIHAN. The Service Center verifies the defects of the unit received, and could offer prompt service.

Error Status Reporting

DAI HAN Service Cloud

Error Status Reporting

DAIHAN Service Center

Service for Advanced Prevention

Freezer

Display Error Status Reporting

≫ Smart-Lab™ Equipment lines

DAIHAN ThermoStable™ SIR SMART Low Temperature(B.O.D) Incubators, 150-/250-/420-/700- Lit. NEW
with Smart-Lab™ Controller, 4˝ Full Touch Screen, Fuzzy-PID Control, CFC-free(R-404A), 0~60℃, ±0.2℃, with Certi. & Traceability

SMART Low Temperature(B.O.D) Incubator "*ThermoStable SIR-150*"

Display of Smart-Lab™ Controller

※ See page 6 ~ 11 for the Feature of Smart-Lab™ System

■ **with Certificate & Traceability : Controlled by Serial Number, Certificate, Delivery-information, and Traceable Data Base System**
■ **Intelligent Control of Refrigerator for Preventing Overload of Compressor**
■ **CFC-free (R-404A) Refrigeration System**
■ **Digital Fuzzy Control System Implementing Superior Temperature Accuracy**
■ **Smart-Lab™ Controller**
■ **UL/CUL Certified**　　■ **CE Certified**
■ **PL (Product Liability) Insurance**

＊ Variable Application : Animal & Plant Cell Culture, Constant Temperature, Germination Test, BOD Test, and so on
＊ Ergonomic Design 4˝ Full Touch Screen TFT LCD(Smart-Lab™ Controller)
＊ WiRe™ App & Web Service.　　＊ Automatic Data Recording
＊ Self-Diagnostic Function　　＊ Compact New Body Design
＊ Variable Program Setting for Multiple Patterns with Multiple Segments
＊ The Recorded Data could be transferred to PC by USB memory
＊ Controller SW can be upgraded through USB port.
＊ Internet Connectivity with WiFi
＊ RS232C Interface for Monitoring and Controlling with PC
＊ Superior Temperature Uniformity by Forced Convection
＊ Stainless steel Chamber and Teflon-Coated Shelves - Corrosion Resistance
＊ Over Temperature & Over Current Protection, Sensor Error Detection and Leakage Breaking.
＊ CFC-free (R-404A) Refrigeration System.

Specification

Models	ThermoStable SIR-150	ThermoStable SIR-250	ThermoStable SIR-420	ThermoStable SIR-700
Capacity	150 Lit.	250 Lit.	420 Lit.	700 Lit.
Air Flow-type	Forced Convection-type			
Temp. Range & Accuracy	0 ℃ ~ 60 ℃, ± 0.2℃ at 37℃			
Temp. Uniformity & Sensor	±0.5℃ at 37℃, ±1.4℃ at 50℃, PT100 Sensor			
Heat-up Time	20 min. to 37 ℃ 20 min. to 50 ℃		35 min. to 37 ℃ 35 min. to 50 ℃	
Recovery Time (Door open 30sec)	10 min. to 37 ℃ 12 min. to 50 ℃		12 min. to 37 ℃ 15 min. to 50 ℃	
Heating Power/Consumption	700 W	1 kW	1.2 kW	2 kW
Compressor	1/4 HP	1/3HP	1/2 HP	1/2HP
Compressor Control	Intelligent Control of Refrigerator for preventing Overload of Compressor			
Refrigerant	CFC-Free(R-404A) Refrigeration System			
Timer & Alarm	99hr 59min (with delay / Continuous run.), Error status & Timer-end			
Display	4˝ Full Touch Screen TFT LCD			
Controller	Smart-Lab™ Controller			
Inner Door	with 1ea of Inner Tempered Glass Door			
Shelves	Included 3ea of Teflon-coated steel Shelves			
Permitted Total Load	Total Load : 48 kg (16kg×3 Shelves)			
Safety Circuit	Over Temp. and Over Current Protector, Sensor Error Detector			
Material	Internal : Stainless steel (#304), External : Powder Coated steel			
Dimension (w×d×h) Interior (mm)	505×505×610	505×505×1,000	705×605×1,000	800×700×1,250
Exterior (mm)	640×832×1,313	640×832×1,703	840×932×1,753	935×1,027×2,000
Net Weight	118 kg	157 kg	202 kg	234 kg
Packing Size (w×d×h) (mm) & Gross Weight	900×1,000×1,650 191 kg	900×1,000×2,040 217 kg	1,100×1,100×2,140 277 kg	1,220×1,220×2,260 313 kg
Power Consumption	1.6 kW	1.8 kW	2.3 kW	2.4 kW
Power Supply & Cord/Plug*	1 Phase, AC 120 V, 60 Hz or AC 230 V, 50 / 60 Hz			

＊ Other Specifications are available upon Customer's Request.

<Continued on next page>

<Continued from... DAIHAN ThermoStable™ SIR SMART Low Temperature(B.O.D) Incubators **>**

Ordering Information

DH.SWIR03150	Low Temperature(B.O.D) Incubator, **230V,** 150 Lit., **"ThermoStable SIR-150"**
DH.SWIR03250	**,** 250 Lit., **"ThermoStable SIR-250"**
DH.SWIR03420	**,** 420 Lit., **"ThermoStable SIR-420"**
DH.SWIR03700	**,** 700 Lit., **"ThermoStable SIR-700"**
DH.SWIR04150	Low Temperature(B.O.D) Incubator, **120V,** 150 Lit., **"ThermoStable SIR-150"**
DH.SWIR04250	**,** 250 Lit., **"ThermoStable SIR-250"**
DH.SWIR04420	**,** 420 Lit., **"ThermoStable SIR-420"**
DH.SWIR04700	**,** 700 Lit., **"ThermoStable SIR-700"**

Spare Wire Shelves, Teflon Coated steel
DH.WIR11150   Wire Shelf, Teflon Coated steel, **"IRS150",** w470×d480mm, for **"SIR-150", "SIR-250"**
DH.WIR11420   Wire Shelf, Teflon Coated steel, **"IRS420",** w675×d585mm, for **"SIR-420"**
DH.WIR11700   **,** **"IRS700",** w770×d680mm, for **"SIR-700"**

Optional Wire Shelves, Stainless steel
DH.WIR21150   (1) Wire Shelf, Stainless steel, **"IRU150",** w470×d480mm, for **"SIR-150", "SIR-250"**
DH.WIR21420   (1) Wire Shelf, Stainless steel, **"IRU420",** w675×d585mm, for **"SIR-420"**
DH.WIR21700   **,** **"IRU700",** w770×d680mm, for **"SIR-700"**

Validation (IQ, OQ) Service
DH.SWIR31150   Validation Service(IQ, OQ), **"SIRV150",** for **"ThermoStable SIR-150"**
DH.SWIR31250   **,** **"SIRV250",** for **"ThermoStable SIR-250"**
DH.SWIR31420   **,** **"SIRV420",** for **"ThermoStable SIR-420"**
DH.SWIR31700   **,** **"SIRV700",** for **"ThermoStable SIR-700"**

2-Year Warranty Wisd.⅔

SMART Low Temperature(B.O.D) Incubator
"ThermoStable SIR-150"

≫ **DAIHAN WiRe™ App & Web Service**

4″ Full Touch Screen TFT LCD
(Smart-Lab™ Controller)

It is possible to monitor and control the Smart-Lab™ equipment through all smart phone, tablet and web without restraint of time and place.
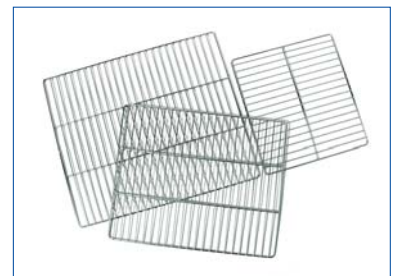
※ See page 6 ~ 11 for the Feature of Smart-Lab™ System

WiRe™ App & Web Service

**Wire Shelves, Teflon Coated steel
(Included)**

**(1) Wire Shelves, Stainless steel
(Optional)**