

SINCE 1889



**Yamato**

# GENERAL CATALOG

 **Scientific Instruments / Laboratory Equipment**

[www.yamato-scientific.com](http://www.yamato-scientific.com)

# Yamato

SINCE 1889



*Future of Science*  
Innovations in Science & Technology  
that create happiness for all humankind

## ➤ Message from President

Yamato Scientific Co., Ltd. was founded in 1889 as “Sousuke Morikawa & Company”, which mainly focused on sales and production of medical glass in Nihonbashi, Tokyo, where the high commercial business district was originated in Japan during the Edo period.

Ever since, the company has grown from a provider solely of scientific glass to a distributor of newest and also advanced scientific instruments and laboratory equipment.

The factories perform totally from R&D to manufacturing are located in Japan and China which form Yamato's production line including metal plate processing, coating, assembling and packing to provide authentic quality to all over the world.

With the cooperation of Yamato Group, we have successfully widened our new field of business to distribute food containers, electronic materials, medical equipment and its consumables.

As the rapid increase of globalization and the complexity of today's competitive business environment, we have come to set up an infrastructure to adopt global standards and expand worldwide procurement. In addition, we have established 20 sales and service offices in Japan (as of March 2018) as well as subsidiaries over the world. With the support of

approximately 300 distributors worldwide, we are well equipped to assist a diverse and global mix of customers.

Our Company's Motto is to contribute to the development of scientific technologies by making the best use of our know-how and experience accumulated throughout the history of nearly 130 years.

Yamato Scientific always appreciates and welcomes your comments, opinions, and requests to help us provide the best for you.

Yamato Scientific Co., Ltd.  
President and CEO  
**Satoshi Morikawa**



## ● Company's Motto

The company's established principles are firmly rooted in the philosophy and heritage of the founder since 1889.



Since 1889, we have embraced the philosophy and heritage of the founder Sosuke Morikawa to represent the spirit of “Challenge and Innovation” to build a relationship of “Faith and Trust” with our partners, which has helped us to create a company with “Sincerity and Consideration” to practice product development and business operation.

## ● Management Principles

Yamato Scientific supports innovations in R&D and Production Technologies that contribute to the happiness of humankind.

## ● Environmental Principles

Yamato Scientific stands by the company's environmental principles to be actively engaged in environmental conservation activities.

1. Compliance with environmental regulations
2. Improvement of business processes to reduce the burdens of environment
3. Promotion of business activities to reduce environmental burdens.
4. Development of environmentally conscious products and systems
5. Enhancement of the environmental management system
6. Publication of our environmental policy

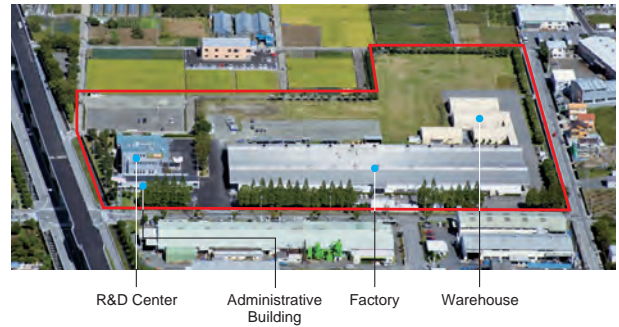
## ● ISO

We have always been trying to improve operational quality by acquiring ISO certification.



## “An efficient R&D setup with fully integrated structures”

The Minami Alps Factory located in southern part of Yamanashi Prefecture develops and produces scientific instruments, laboratory equipment, analytical and measurement instruments, industrial inspection devices and medical equipment. The products from our facilities are offered to universities and public agencies, including domestic and foreign private companies, and thus contribute to further innovation of research, development and manufacturing technologies.



## “Future Ideals”- R&D Center

R&D center enhances our manufacturing strength. Our avid researchers facilitate the development of new products in a highly effective environment. The center has a testing room equipped with the most advanced evaluation devices, which the researchers can obtain various test data to make a quantitative assessment of the product capabilities.

We can provide various technical training programs and product seminars for effective engineering skills and sales enhancement.



Lobby and Design Floor



Prototype Lab  
Environmental testing, measurement experiment, evaluation testing, etc.



Plasma Laboratory



Spray Dry Laboratory



Fume Hood and Air Conditioner System

## Yamato Scientific Chongqing Co., Ltd: Manufacturing Factory in China

We have started to manufacture scientific instruments and industrial equipment such as ovens, autoclaves and aging chambers in Chongqing, China since March 2006. There, we have developed an original, high-tech manufacturing system to provide the best quality to the world and build a strong brand image of Yamato Scientific in China.



## ■ Corporate Summary

|                   |   |                  |
|-------------------|---|------------------|
| Company Name      | Yamato Scientific Co., Ltd.   |                  |
| President         | Satoshi Morikawa  |                  |
| Headquarters      | 17F Muromachi Higashi Mitsui Bldg.<br>(COREDO MUROMACHI I),<br>2-2-1 Nihonbashi Muromachi, Chuo-ku,<br>Tokyo 103-0022   |                  |
| Foundation        | March 4, 1889   |                  |
| Incorporated      | November 27, 1946   |                  |
| Capital           | 100 million yen   |                  |
| Accounting Period | September   |                  |
| Gross Sales*      | Non-consolidated Basis  | 27.7 billion yen |
|                   | Consolidated Basis  | 73.9 billion yen |
|                   | Yamato Group Total  | 86.8 billion yen |
|                   | *As of September 2017   |                  |
| Employee**        | Non-consolidated Basis  | 705              |
|                   | Consolidated  | 1215             |
|                   | Yamato Group Total  | 1314             |
|                   | **As of October 2017  |                  |
| Factories         | Minami Alps Factory,<br>R&D Center (Minami Alps・Atsugi),<br>Advanced Technology Research Center   |                  |
| Sales Bases       | Sapporo, Sendai, Maebashi, Tsukuba, Kita-Kanto,<br>Chiba, Tokyo, Tokyo-Kita, Tokyo-Nishi, Kawasaki,<br>Yokohama, Atsugi, Nagano, Shizuoka, Nagoya,<br>Hokuriku, Keiji, Kansai, Hiroshima, Fukuoka,<br>Cologne (Germany) |                  |
| Overseas Branches | Yamato Scientific America Inc. (California, USA),<br>Yamato Scientific Shanghai Corp. (Shanghai, China),<br>Yamato Scientific Chongqing Co., Ltd.<br>(Chongqing, China)   |                  |

## Business Contents

1. Development, manufacture and domestic/overseas sales for scientific instruments, test & research facilities, analysis & measurement device, examinations & inspection device, and medical equipment.
2. Inspections & calibrations and preventive maintenance services for the above contents.
3. Design, construction, total relocation, reform and consultant services for research facilities in universities, institutes, etc.

## ISO Certification

ISO14001 : Minami Alps Factory

ISO9001 : Field Engineering Department and Minami Alps Factory

ISO13485 : Minami Alps Factory

## ■ History

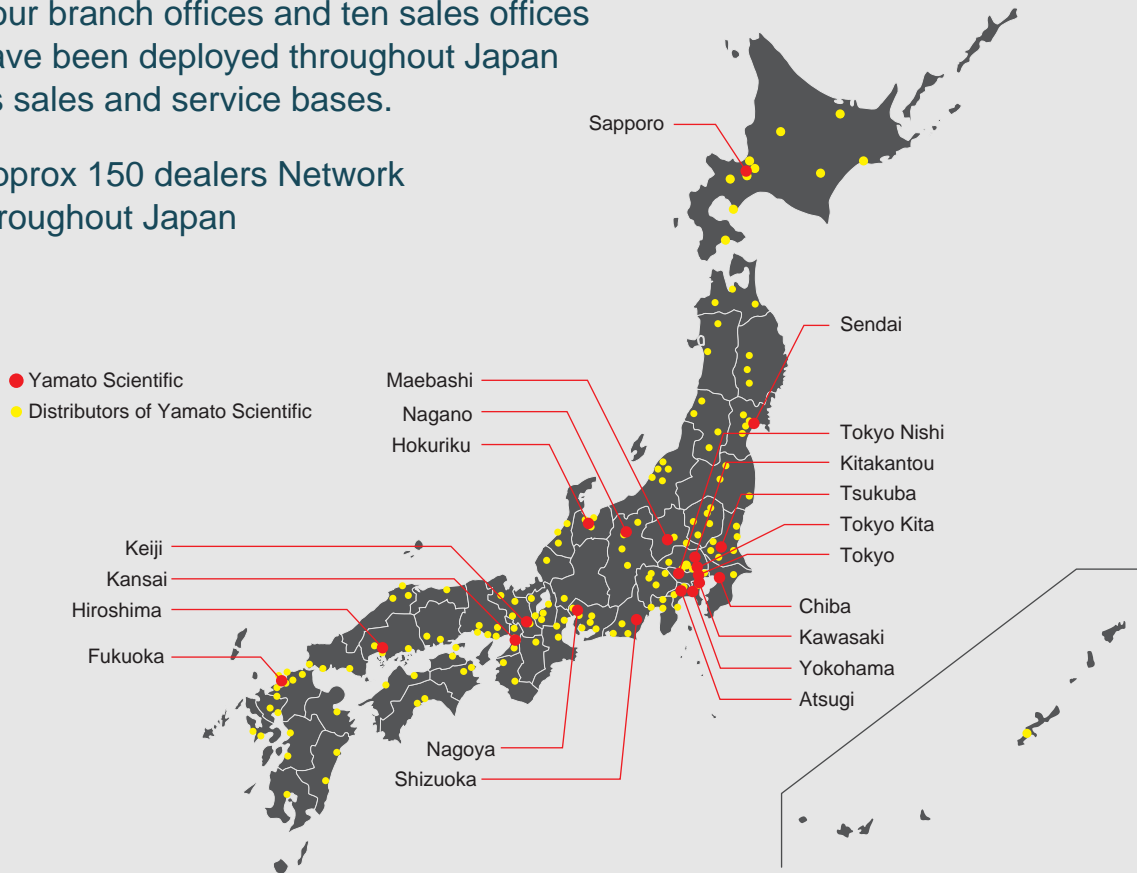
- 1889 Founded as "Yamato Sosuke Morikawa Company" by Sosuke Morikawa, First President
- 1913 Issued first Comprehensive Catalog
- 1915 First development and manufacture for X-ray tube in Japan
- 1941 Established "Yamato Scientific Instruments Ltd.". Sosuke Morikawa Jr. became 2nd President.
- 1946 Yamato Scientific Instruments, Ltd. reorganized to Yamato Scientific Instruments Co, Ltd.
- 1948 Created distributor networks in Hokkaido, Tohoku, Kanto, Shinetsu, Hokuriku, Chubu, Kinki and Kyushu regions.
- 1966 Held the 1st domestic distributors meeting
- 1968 Completion of Atsugi Factory in Kanagawa Inland Industrial Park
- 1972 Yamato Scientific Instruments Co., Ltd. renamed to Yamato Scientific Co., Ltd.  
Tatsumi Morikawa became the 3rd president  
Established Yamato Express Co., Ltd.
- 1976 Opened Atsugi Distribution Center within Atsugi Factory area
- 1977 Established Yamato Lab-Tech Co., Ltd. after incorporation of Atsugi Factory and Research Facility Department.
- 1981 Completion of Yamanashi Factory in Kosai Industrial Park (current Minami Alps Factory)
- 1982 Established Yamato USA, Inc. in Illinois  
Established a medical device sales company, Yamato Medical Co. Ltd.
- 1989 Celebrated 100th anniversary establishment
- 1995 Established stock Yamato Environmental Technology Research Institute
- 1999 Satoshi Morikawa became the 4th president  
Yamato Glass Co., Ltd. listed on JASDAQ
- 2000 Established Morikawa Yamato Medical Co. Ltd. (Merging Yamato Medical Co. Ltd. and Morikawa Medical device Manufacture Co. Ltd.)  
Established SUNMEDIX Co., Ltd. (Merging Morikawa Yamato Medical Co. Ltd. and Ishii Medical Factory Co. Ltd.)
- 2003 Started "Yamato Renaissance Campaign" promoting Yamato Brand Products
- 2004 Established Yamato Scientific Shanghai Corp.
- 2005 Established Yamato Scientific Chongqing Co., Ltd.
- 2006 New R&D Center opened at Minami Alps Factory  
Yamato Glass Co., Ltd. renamed to Yamato Material Co., Ltd.
- 2010 Opened Monzennaka-cho Annex
- 2012 Established Yamato Techno Engineering Co., Ltd.
- 2013 Relocation of headquarters (Nihonbashi Muromachi, Tokyo)
- 2014 Commemorated 125th Anniversary
- 2015 Established Lab Design Systems Co., Ltd.
- 2016 Completion of Yamato Scientific Chongqing Co., Ltd. new factory

# Sales and Service Network

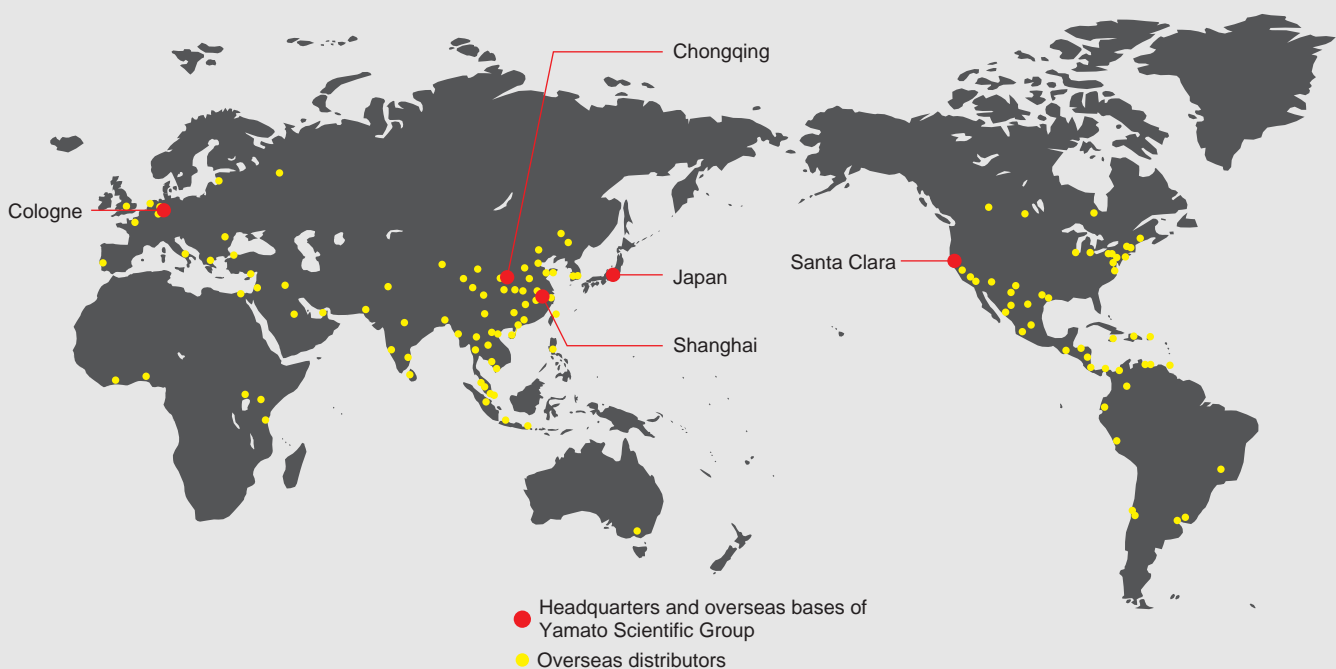
## Location

Four branch offices and ten sales offices have been deployed throughout Japan as sales and service bases.

Approx 150 dealers Network throughout Japan



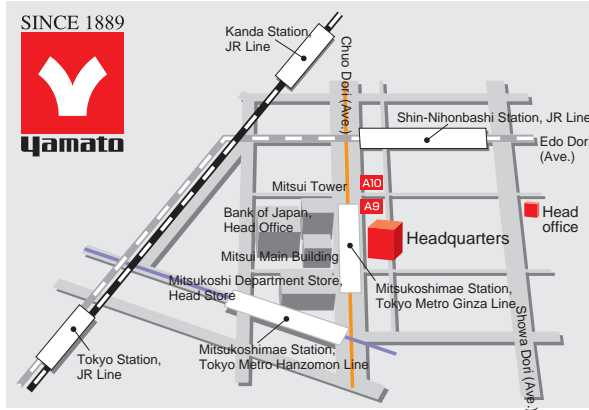
## Overseas Sales Offices and Overseas Dealers Network



## ■ Yamato Group Introduction



Yamato Scientific Co., Ltd. Headquarters



(Transportation)

- Direct connection to Mitsukoshimae Station, Exit A6, Tokyo Metro Ginza Line
- Direct connection to Mitsukoshimae Station, Exit A6, Tokyo Metro Hanzomon Line
- Direct connection to Shin-Nihonbashi Station, Exit A6, JR Line



Yamato Scientific Co., Ltd. Head Office



### SUNMEDIX Corporation

Establishment Date August 21, 1950  
 Capital 83 million yen  
 Employee 371  
 Location 17F Muromachi Higashi Mitsui Bldg. (COREDO Muromachi 1), 2-2-1 Nihonbashi Muromachi, Chuo-ku, Tokyo 103-0022, JAPAN  
 Website <http://www.sunmedix.co.jp/>

#### Business Contents

1. Sale of medical instruments, scientific instruments, medical X-ray devices, nursing care goods and various medical materials
2. Planning and consultation for medical facilities
3. Maintenance service

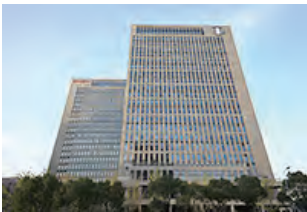


### Yamato Scientific America Inc.

Establishment Date January 23, 1989  
 Capital US\$2,000,000.00  
 Employee 7  
 Location 925 Walsh Ave. Santa Clara, CA 95050, U.S.A.  
 Website <http://www.yamato-usa.com>

#### Business Contents

1. Sales and import/export of yamato brand products.
2. Turn-key project coordination for laboratory facilities.
3. Business incidental to the business listed in the preceding items.



### Yamato Scientific Shanghai Corp.

Establishment Date June 22, 2004  
 Capital 35 million yen  
 Employee 20  
 Location Room 1001-1002, Block B, Xinyan Building, No.65 Guiqing Road, Xuhui District, Shanghai, China  
 Website <http://www.yamato-china.cn/>

#### Business Contents

1. Sale and import/export of scientific instruments, medical instruments and laboratory facilities.
2. Export and domestic sales for OEM products and customized products manufactured in China.
3. Import and domestic sales for laboratory facilities.
4. Installation, repair and maintenance service.
5. Consultation for establishing new laboratories.



### Yamato Scientific Chongqing Co., Ltd.

Establishment Date September, 2005  
 Capital 130 million yen  
 Employee 104  
 Location No.5-37, Yunhan Ave., Shuitu New & High-Tech, Industrial Park, Beibei Dist., Chongqing 400700, China

#### Business Contents

1. Investigation, R&D, design, production and sales of scientific instruments, medical instruments and laboratory facilities.
2. Medical Instruments Production Permission Number 20070012, ISO9001, ISO14001, GB/T28001



### Yamato Material Co., Ltd.

Establishment Date December 14, 1948  
 Capital 334 million yen  
 Employee 92  
 Location 24F 2-2-1 Kyobashi Edogrand, Kyobashi, Chuoku, Tokyo 104-8614, JAPAN  
 Major Branches Osaka Branch, Kyushu Business Office, Akita Factory  
 Website <http://www.yamato-material.co.jp/>

#### Business Contents

- Container Business
- 1. Plans, proposals, production and sales for packing materials to non-food industry such as cosmetics and toiletries, and for food industry such as beverages and seasonings.
- 2. Original Equipment Manufacturer (OEM) Sales of supplements, toiletry, etc.
- 3. Plans and sales of bottling system for food and medical industries
- 4. Plans and sales for environmental and energy saving products.
- 5. Cleaning and recycling for returnable beverage bottles, etc.
- Electronics Related Business
- 1. Plans, production, and sales for sockets, substrates, plastic products for electronic device, semiconductors, LCD, etc.
- 2. Plans and sales for testing devices for electronic device, semiconductors, LCD, etc
- 3. Plans and sales for image processing techniques and precision temperature control techniques.

| Page  | Product Name·Model or Content        | Correction Point                                 | Correctness details   |
|-------|--------------------------------------|--|---|
| P.010 | Table of Contents                    | Incubator  | Wrong) Page 146 Correct) Page 148   |
| P.010 | Table of Contents                    | Homogenizer, Mixers, Stirrer, Hot Plate, Shaker  | Wrong) Page 268 Correct) Page 263   |
| P.012 | Digest / Spray Dryer                 | Solvent Recovery Unit GAS410                     | Wrong) <u>Circulation flow</u> Correct) <u>Circulation volume flow</u>  |
| P.013 | Digest / Oven                        | Forced Convection Oven (Energy Saving)           | Wrong) <u>DNE670/810</u> Correct) <u>DNE670/670V</u>  |
| P.013 | Digest / Oven                        | Forced Convection Oven (Energy Saving)           | Wrong) <u>DNE401/410/601/610/810/910</u> Correct) <u>DNE401/411/601/611/811/911</u>   |
| P.016 | Digest / Incubator                   | Incubator IS412C/612C/812C/912C                  | Wrong) Page 147/148 Correct) Page 149/150   |
| P.016 | Digest / Incubator                   | Incubator IS401/601/801/901                      | Wrong) Page 149/150 Correct) Page 151/152   |
| P.016 | Digest / Incubator                   | Incubator IC412C/612C/812C/912C                  | Wrong) Page 151/152 Correct) Page 153/154   |
| P.016 | Digest / Incubator                   | Incubator IC□□□C                                 | Wrong) Page 153/154 Correct) Page 155/156   |
| P.016 | Digest / Incubator                   | Incubator IN602C/612C/802C/812C                  | Wrong) Page 155/156 Correct) Page 157/158   |
| P.016 | Digest / Incubator                   | Incubator IN604/604W/804                         | Wrong) Page 157/158 Correct) Page 159/160   |
| P.016 | Digest / Incubator                   | Incubator INE800                                 | Wrong) Page 159/160 Correct) Page 161/162   |
| P.016 | Digest / Incubator                   | Incubator IJ101/101W/201/300                     | Wrong) Page 161/162 Correct) Page 163/164   |
| P.016 | Digest / Incubator                   | Incubator INC821C                                | Wrong) Page 163 Correct) Page 165<br>Wrong) Model : <u>INC812C</u> Correct) Model : <u>INC821C</u><br>Wrong) (Upper) <u>+4 ~ 50 °C</u> Correct) (Upper) <u>R.T.+5 ~ 80 °C</u><br>Wrong) (Lower) <u>+5 ~ 80 °C</u> Correct) (Lower) <u>+4 ~ 50 °C</u>  |
| P.016 | Digest / Incubator                   | Incubator IQ822C                                 | Wrong) Page 164 Correct) Page 166   |
| P.016 | Digest / Incubator                   | Incubator BNA600/IP600                           | Wrong) Page 165/166 Correct) Page 167/168<br>Wrong) Temp. range : <u>±5 ~ 50°C</u> Correct) <u>RT +5 ~ 50 °C</u>  |
| P.016 | Digest / Incubator                   | Incubator IL603                                  | Wrong) Page 167/168 Correct) Page 169/170   |
| P.016 | Digest / Incubator                   | Incubator ILE800                                 | Wrong) Page 169/170 Correct) Page 171/172   |
| P.016 | Digest / Incubator                   | Incubator IL612C/812C                            | Wrong) Page 171 Correct) Page 173   |
| P.017 | Digest / Plasma Cleaner              | Plasma Cleaner (Barrel Chamber)                  | Wrong) PR300 : <u>100Wx2</u> Correct) <u>100Wx3</u>   |
| P.017 | Digest / Plasma Cleaner              | Plasma Cleaner (Parallel Electrode)              | Wrong) PDC210 : <u>500x300x200mm</u> Correct) <u>400x250x150mm</u>  |
| P.019 | Digest / Constant Temperature Bath   | Water Bath (Constant Temp.)                      | Wrong) BS200 <u>27L</u> Correct) <u>4.7L</u><br>Wrong) BS400 <u>42L</u> Correct) <u>9L</u><br>Wrong) BS600 <u>70L</u> Correct) <u>11L</u><br>Wrong) BS660 <u>109L</u> Correct) <u>14L</u>   |
| P.019 | Digest / Constant Temperature Bath   | Immersion Constant Temperature Device            | Wrong) <u>BS601</u> Correct) <u>BF601</u>   |
| P.019 | Digest / Constant Temperature Bath   | (Low Constant Temp.) BBL111C/311C                | Wrong) <u>RT -10 ~ +80°C</u> Correct) <u>-10 ~ +80°C</u>  |
| P.020 | Digest / Cooling Water Circulator    | Externally Opened Circulation CLS312C            | Wrong) <u>-10°C ~RT</u> Correct) <u>-15°C ~RT</u>   |
| P.021 | Digest / Stirrer, Shaker & Hot Plate | Magnetic Stirrer MA300                           | Wrong) <u>50~3,000ml</u> Correct) <u>100~3,000ml</u>  |
| P.022 | Digest / Stirrer, Shaker             | Laboratory Shaker SA300                          | Wrong) horizontal & vertical : <u>10~300rpm</u> Correct) <u>20~300rpm</u>   |
| P.022 | Digest / Stirrer, Shaker             | Laboratory Shaker SA400                          | Wrong) vertical : <u>10~300rpm</u> Correct) <u>20~300rpm</u>  |
| P.024 | Digest / Fume Hood, Enclosure        | Chemical Etching, PVC Exterior CVY-201/CYV2-210V | Wrong) Internal static pressure : 40Pa Correct) 90Pa  |
| P.024 | Digest / Fume Hood, Enclosure        | PVC Exterior, Clean Class 100                    | Wrong) Model : <u>CYF-120</u> Correct) <u>CYF-130</u>   |
| P.025 | Digest / Scrubber                    | Acid Fume Scrubber CRB-2                         | Wrong) Model : <u>CRB-2/CRH-20W</u> Correct) <u>CRB-2</u>   |
| P.025 | Digest / Laboratory Furniture        | Center Table (Steel)                             | Wrong) Model : <u>LFD</u> Correct) <u>LCD</u>   |
| P.027 | Digest / Laboratory Furniture        | Balance Table (Steel) LBC                        | Wrong) LBC-96 Correct) LBC-97<br>Wrong) LBC-126 Correct) LBC-127<br>Wrong) LBC-186 Correct) LBC-187   |
| P.027 | Digest / Laboratory Furniture        | Storage Cabinet (Steel)                          | Wrong) LSE Correct) LUN<br>Wrong) Model : <u>SU-1C</u> Correct) <u>LUN-1C</u><br>Wrong) Model : <u>SU-2C</u> Correct) <u>LUN-2C</u><br>Wrong) Model : <u>SU-3C</u> Correct) <u>LUN-3C</u><br>Wrong) Model : <u>SU-4C</u> Correct) <u>LUN-4C</u><br>Wrong) Model : <u>SU-5C</u> Correct) <u>LUN-5C</u> |



# Table of Contents

|  |          |
|--|----------|
| <b>Digest</b> .....  | Page 11  |
| <b>Sterilizer</b> .....                                      | Page 30  |
| <b>Spray Dryer</b> .....                                     | Page 50  |
| <b>Muffle Furnace</b> .....                                  | Page 65  |
| <b>Oven</b> .....  | Page 77  |
| <b>Incubator</b> .....                                       | Page 146 |
| <b>Plasma Reactors, Plasma Cleaner</b> .....                 | Page 173 |
| <b>Water Purifier</b> .....                                  | Page 186 |
| <b>Constant Temperature Bath</b> .....                       | Page 208 |
| <b>Cooling Water Circulator</b> .....                        | Page 229 |
| <b>Rotary Evaporator</b> .....                               | Page 245 |
| <b>Cold Trap, Immersion Cooler, Freeze Dryer</b> .....       | Page 257 |
| <b>Homogenizer, Mixers, Stirrer, Hot Plate, Shaker</b> ..... | Page 268 |
| <b>Laboratory Washer</b> .....                               | Page 281 |
| <b>Fume Hood, Enclosure</b> .....                            | Page 289 |
| <b>Clean Bench</b> .....                                     | Page 333 |
| <b>Laboratory Furniture</b> .....                            | Page 341 |
| <b>Customized Industrial Products</b> .....                  | Page 355 |



## Sterilizer

### Laboratory Use, Benchtop



**SK101C/111C**

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| SK101C/111C | 50~126°C    | 18L               |

→ Page 31

### Laboratory Use, Compact



**SK200C/210C/300C/310C**

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| SK200C/210C | 50~126°C    | 24L               |
| SK300C/310C |             | 30L               |

→ Page 32

### Laboratory Use, Large Capacity



**SQ500C/510C/810C**

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| SQ500C/510C | 45~135°C    | 50L               |
| SQ810C      |             | 80L               |

→ Page 35/36



**SN**

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| SN200C/210C | 45~135°C    | 20L               |
| SN300C/310C |             | 32L               |
| SN500C/510C |             | 47L               |

→ Page 33/34

### Laboratory Use, with Drying Process



**SM520/530/820/830**

| Model     | Temp. range  | Internal capacity |
|-----------|--|-------------------|
| SM520/530 | 45~60°C (retain temp.)<br>45~80°C (preheat temp.)              | 50L               |
| SM820/830 | 105~135°C (sterilize)<br>60~110°C (liquefy)<br>135~150°C (dry) |                   |

→ Page 37/38



**SM201/211/301/311/501/511**

| Model     | Temp. range                                       | Internal capacity |
|-----------|---|-------------------|
| SM201/211 | Sterilization 105 to 123°C<br>Drying 150 to 180°C | 20L               |
| SM301/311 | Sterilization 105 to 128°C                        | 32L               |
| SM501/511 | Drying 150 to 180°C                               | 47L               |

→ Page 39/40

### Dry Sterilizer (Laboratory use)



**SI411C/SI611C**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| SI411C | RT+5~260°C  | 77L               |
| SI611C |             | 159L              |

→ Page 41/42



**SK401/601/801/811**

| Model     | Temp. range | Internal capacity |
|-----------|-------------|-------------------|
| SK401     | RT+5~260°C  | 99L               |
| SK601     |             | 162L              |
| SK801/811 |             | 300L              |

→ Page 43/44

### Loop Cinerator



**SL-21**

| Model | Internal sterilizing Temp. | Time to reach |
|-------|----------------------------|---------------|
| SL-21 | 800~850°C                  | 10min.        |

→ Page 47

# Spray Dryer

## Spray Dryer



**ADL311SA**

| Model    | Evaporated water | Temp. control range |
|----------|------------------|---------------------|
| ADL311SA | Max. 1300mL/h    | 40~220°C            |

➔ Page 51/52

## Spray Dryer Pulvis Mini Spray



**GB210-A**

| Model  | Evaporated water | Temp. control range |
|--------|------------------|---------------------|
| GB210A | Max. 1300mL/h    | 40~220°C            |

➔ Page 53/54



**GB210-B**

| Model  | Granulation processing capacity | Temp. control range |
|--------|---------------------------------|---------------------|
| GB210B | 50~300g                         | 40~220°C            |

➔ Page 55/56

## Spray Dryer (Large Capacity)



**DL410**

| Model | Evaporated Water | Temp. control range |
|-------|------------------|---------------------|
| DL410 | Max. 3000mL/h    | 40~300°C            |

➔ Page 57/58

## Solvent Recovery Unit



**GAS410**

| Model  | Circulation flow              | Solvent recovery capacity |
|--------|-------------------------------|---------------------------|
| GAS410 | 0.12~0.65 m <sup>3</sup> /min | 1300ml/h or more          |

➔ Page 59/60

# Muffle Furnace

## Standard Electric Furnace



**FO□□□C**

| Model  | Temp. range | Internal capacity | Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|--------|-------------|-------------------|
| FO110C | 100~1150°C  | 1.5L              | FO510C | 100~1150°C  | 11.3L             |
| FO210C |             | 3.75L             | FO610C |             | 17.5L             |
| FO310C |             | 7.5L              | FO710C |             | 23.6L             |
| FO410C |             | 9L                | FO810C |             | 30L               |

➔ Page 65/66



**FO□□□CR**

| Model          | Temp. range | Internal capacity | Model   | Temp. range | Internal capacity |
|----------------|-------------|-------------------|---------|-------------|-------------------|
| FO100CR /110CR | 100~1150°C  | 1.5L              | FO410CR | 100~1150°C  | 9L                |
| FO200CR /210CR |             | 3.75L             | FO510CR |             | 11.3L             |
| FO300CR /310CR |             | 7.5L              | FO610CR |             | 17.5L             |
|                |             |                   | FO710CR |             | 23.6L             |
|                |             |                   | FO810CR | 30L         |                   |

➔ Page 67/68

## High Performance Muffle Furnace



**FP110C/310C/510C**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| FP110C | 100~1150°C  | 1.5L              |
| FP310C |             | 7.5L              |
| FP510C |             | 11.3L             |

➔ Page 69/70



**FP102/302/312/412**

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| FP102 | 100~1150°C  | 1.5L              |
| FP302 |             | 7.5L              |
| FP312 |             |                   |
| FP412 |             | 11.3L             |

➔ Page 71/72

## Nitrogen Gas Generator



**NF300**

| Model | N2 gas purity | N2 gas Generating volume |
|-------|---------------|--------------------------|
| NF300 | 99~99.99%     | Max. 10 NL/min           |

➔ Page 73

## Oven

### Forced Convection



#### DKN

| Model        | Temp. range  | Internal capacity |
|--------------|--------------|-------------------|
| DKN302C/312C | RT +10~260°C | 27L               |
| DKN402C/412C |              | 90L               |
| DKN602C/612C |              | 150L              |
| DKN812C      | RT +10~210°C | 300L              |
| DKN912C      |              | 535L              |

→ Page 79/80

### Economical Forced Convection Oven



#### DKM

| Model        | Temp. range  | Internal capacity |
|--------------|--------------|-------------------|
| DKM300C/310C | RT +10~260°C | 27L               |
| DKM400C/410C |              | 90L               |
| DKM600C/610C |              | 150L              |

→ Page 81/82



#### DKL

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DKL310C | RT +10~260°C | 27L               |
| DKL410C |              | 90L               |
| DKL610C |              | 150L              |

→ Page 83

### Forced Convection Oven (High Temp.)



#### DN410HC/610HC

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DN410HC | RT +10~360°C | 95L               |
| DN610HC |              | 223L              |

→ Page 84



#### DN411H/611H

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DN411H | RT +15~360°C | 95L               |
| DN611H |              | 223L              |

→ Page 85/86

### Fine Oven



#### DF/DH□□□C

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DF411C | RT +10~260°C | 91L               |
| DF611C |              | 216L              |
| DH411C | RT +10~360°C | 91L               |
| DH611C |              | 216L              |

→ Page 87/88



#### DF/DH412,DF/DH612

| Model | Temp. range  | Internal capacity |
|-------|--------------|-------------------|
| DF412 | RT +15~260°C | 91L               |
| DF612 |              | 216L              |
| DH412 | RT +15~360°C | 61L               |
| DH612 |              | 216L              |

→ Page 89/90

### Fine Oven (Large Capacity)



#### DF/DH811C,DF/DH1011C

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DF811C  | RT +10~200°C | 512L              |
| DF1011C |              | 1,000L            |
| DH811C  | RT +10~300°C | 512L              |
| DH1011C |              | 1,000L            |

→ Page 91



#### DF832/1032,DH832/1032

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DF832  | RT +15~200°C | 512L              |
| DF1032 |              | 1,000L            |
| DH832  | RT +15~300°C | 512L              |
| DH1032 |              | 1,000L            |

→ Page 92

### Fine Oven (Tall)



#### DFS710/810,DHS710/810

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DFS710 | RT +15~260°C | 418L              |
| DFS810 |              | 558L              |
| DHS710 | RT +15~360°C | 418L              |
| DHS810 |              | 558L              |

→ Page 93/94

### Fine Oven (High Temp., 500°C)



#### DH650C

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DH650C | RT +10~500°C | 216L              |

→ Page 95/96

### Forced Convection Oven (Energy Saving)



#### DNE650/650V/670/810/850/850V

| Model       | Temp. range  | Internal capacity |
|-------------|--------------|-------------------|
| DNE650/650V | RT +10~260°C | 150L              |
| DNE670/670V |              | 300L              |
| DNE850/850V |              | 300L              |

→ Page 97/98



#### DNE□□□C

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DNE410C | RT +20~210°C | 90L               |
| DNE610C |              | 150L              |
| DNE810C |              | 300L              |
| DNE910C |              | 540L              |

→ Page 99/100



#### DNE401/410/601/610/810/910

| Model      | Temp. range  | Internal capacity |
|------------|--------------|-------------------|
| DNE401/410 | RT +20~210°C | 90L               |
| DNE601/610 |              | 150L              |
| DNE811     |              | 300L              |
| DNE911     |              | 540L              |

→ Page 101/102

# Ovens

## Forced Convection Oven (Airflow Control)



### DNF□□□C

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DNF410C | RT +10~260°C | 90L               |
| DNF610C |              | 150L              |
| DNF810C |              | 300L              |
| DNF910C |              | 540L              |

→ Page 103/104



### DNF

| Model      | Temp. range  | Internal capacity |
|------------|--------------|-------------------|
| DNF301     | RT +15~260°C | 27L               |
| DNF401/411 |              | 90L               |
| DNF601/611 |              | 150L              |
| DNF811     |              | 300L              |
| DNF911     |              | 540L              |

→ Page 105/106

## Industrial Forced Convection Oven (Silicor/Fuoro-rubber Gasket)



### DKG

| Model       | Temp. range  | Internal capacity |
|-------------|--------------|-------------------|
| DKG610/610V | RT +30~260°C | 150L              |
| DKG650/650V |              |                   |
| DKG810/810V |              | 300L              |
| DKG850/850V |              |                   |

→ Page 107/108

## Natural Convection Oven (Programmable)



### DVS

| Model        | Temp. range | Internal capacity |
|--------------|-------------|-------------------|
| DVS402C/412C | RT          | 99L               |
| DVS602C/612C | +5~260°C    | 162L              |

→ Page 109/110

## Natural Convection Oven



### DX

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| DX302C/312C | RT +5~300°C | 28L               |
| DX402C/412C |             | 74L               |
| DX602C/612C |             | 153L              |

→ Page 111/112



### DY

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DY310C | RT +5~300°C | 28L               |
| DY410C |             | 74L               |
| DY610C |             | 153L              |

→ Page 113/114

## Inert Oven



### DN411/611

| Model | Temp. range  | Internal capacity |
|-------|--------------|-------------------|
| DN411 | RT +15~360°C | 95L               |
| DN611 |              | 223L              |

→ Page 115/116

## Fine Oven (with Explosion Vent)



### DF/DH411SC, DF/DH611SC

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DF411SC | RT +10~260°C | 91L               |
| DF611SC |              | 216L              |
| DH411SC | RT +10~360°C | 91L               |
| DH611SC |              | 216L              |

→ Page 117



### DF/DH412S, DF/DH612S

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DF412S | RT +10~260°C | 91L               |
| DF612S |              | 216L              |
| DH412S | RT +10~360°C | 91L               |
| DH612S |              | 216L              |

→ Page 118

## Glassware Drying Oven



### DG

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DG410C | RT +5~70°C  | 92L               |
| DG450C |             |                   |
| DG810C |             | 445L              |
| DG850C |             |                   |

→ Page 119/120

## Fail-safe Drying Oven



### DGS400

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DGS400 | RT +5~110°C | 93L               |

→ Page 121/122

## Clean Oven



### DT300/300H

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DT300  | RT +20~300°C | 27L               |
| DT300T |              |                   |

→ Page 123/124



### DE/DT/DE U

| Model         | Temp. range  | Internal capacity |
|---------------|--------------|-------------------|
| DE430C/630C   | RT +30~260°C | 91/216L           |
| DT430C/630C   | RT +30~360°C | 91/216L           |
| DE430UC/630UC | RT +50~200°C | 91/216L           |

→ Page 125/126



### DE411/611, DT411/611

| Model     | Temp. range  | Internal capacity |
|-----------|--------------|-------------------|
| DE411/611 | RT +30~260°C | 91/216L           |
| DT411/611 | RT +30~360°C | 91/216L           |

→ Page 127/128



### DES830/DTS830

| Model  | Temp. range  | Internal capacity |
|--------|--------------|-------------------|
| DES830 | RT +30~260°C | 327L              |
| DTS830 | RT +30~360°C |                   |

→ Page 129/130

## Ovens

### Clean Oven (Large Capacity)



**DEC812C/912C**

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DEC812C | RT +10~150°C | 236L              |
| DEC912C |              | 472L              |

→ Page 131

### Open Chamber



**OTC-213A/OTC-2D**

| Model    | Temp. range | Internal capacity |
|----------|-------------|-------------------|
| OTC-213A | -15~+60°C   | 134L              |
| OTC-2D   | -30~+80°C   | 300L              |

→ Page 132

### IR Oven (Far-infrared Heating)



**DIR631C**

| Model   | Temp. range  | Internal capacity |
|---------|--------------|-------------------|
| DIR631C | RT +10~360°C | 216L              |

→ Page 133

### Natural Convection Oven (High Temp., 700°C)



**DR210C**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DR210C | 300~700°C   | 13.75L            |

→ Page 134

### Vacuum Drying Oven



**DP200/300/410/610**

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| DP200 | 40~240°C    | 10L               |
| DP300 |             | 27L               |
| DP410 | 40~200°C    | 91L               |
| DP610 |             | 216L              |

→ Page 135/136



**DP43C/63C**

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| DP43C | 40~200°C    | 91L               |
| DP63C |             | 216L              |

→ Page 137/138

### Vacuum Drying Oven (Large Capacity)



**DP83C/103C**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DP83C  | 40~200°C    | 512L              |
| DP103C |             | 1,000L            |

→ Page 139



**DP810/1030**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DP810  | 40~200°C    | 512L              |
| DP1030 |             | 1,000L            |

→ Page 140

### Vacuum Drying Oven (Compact)



**DP23C/33C**

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| DP23C | 40~240°C    | 10L               |
| DP33C |             | 27L               |

→ Page 141



**ADP**

| Model        | Temp. range | Internal capacity |
|--------------|-------------|-------------------|
| ADP200C/210C | 40~240°C    | 10L               |
| ADP300C/310C |             | 27L               |

→ Page 142

### Vacuum Drying Oven



**DP43PC/63PC**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DP43PC | 40~200°C    | 91L               |
| DP63PC |             | 216L              |

→ Page 143



**DP610P**

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| DP610P | 40~200°C    | 216L              |

→ Page 144

# Incubator

## Incubator (Natural Convection, Air Jacket)



### IS□□□C

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IS412C | RT +5~80°C  | 97L               |
| IS612C |             | 159L              |
| IS812C |             | 318L              |
| IS912C |             | 567L              |

→ Page 147/148



### IS401/601/801/901

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| IS401 | RT +5~80°C  | 97L               |
| IS601 |             | 159L              |
| IS801 |             | 318L              |
| IS901 |             | 567L              |

→ Page 149/150

## Economical Incubator (Natural Convection)



### IC□□□C

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IC412C | RT +5~80°C  | 97L               |
| IC612C |             | 159L              |
| IC812C |             | 318L              |
| IC912C |             | 567L              |

→ Page 151/152

## Economical Incubator (Natural Convection)



### IC□□□C

| Model       | Temp. range | Internal capacity |
|-------------|-------------|-------------------|
| IC103C/113C | RT +5~80°C  | 37L               |
| IC403C/413C |             | 97L               |
| IC603C/613C |             | 159L              |
| IC803C/813C |             | 318L              |
| IC903C/913C |             | 567L              |

→ Page 153/154

## Low Temperature Incubator (Programmable)



### IN□□□C

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IN602C | -10~+50°C   | 143L              |
| IN612C |             | 143L              |
| IN802C |             | 286L              |
| IN812C |             | 286L              |

→ Page 155/156



### IN604/604W/804

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IN604  | -10~+50°C   | 143L              |
| IN604W |             | 143L              |
| IN804  |             | 286L              |

→ Page 157/158

## Low Temperature Incubator (Energy Saving & Programmable)



### INE800

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| INE800 | 0~+60°C     | 286L              |

→ Page 159/160

## Low Temperature Incubator (Programmable, Peltier Cooling)



### IJ101/101W/201/300

| Model      | Temp. range | Internal capacity |
|------------|-------------|-------------------|
| IJ101/101W | +5~+60°C    | 15.6L             |
| IJ201      |             | 27L               |
| IJ300      |             | 43L               |

→ Page 161/162

## Double Chamber Incubator (Natural Convection & Low Temp.)



### INC821C

| Model   | Temp. range      | Internal capacity |
|---------|------------------|-------------------|
| INC812C | (Upper) +4~+50°C | 150L              |
|         | (Lower) +5~+80°C | 143L              |

→ Page 163

## Double Chamber Incubator (Low Temp.)



### IQ822C

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IQ822C | -10~+50°C   | 143Lx2            |

→ Page 164

## CO<sub>2</sub> Incubator



### BNA600/IP600

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| BNA600 | +5~+50°C    | 167L              |
| IP600  |             |                   |

→ Page 165/166

## Low Temperature Incubator (Programmable, Air Jacket)



### IL603

| Model | Temp. range | Internal capacity |
|-------|-------------|-------------------|
| IL603 | 0~+50°C     | 159L              |

→ Page 167/168

## Low Temperature Incubator (Energy Saving, Programmable, Air Jacket)



### ILE800

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| ILE800 | 0~+60°C     | 300L              |

→ Page 169/170

## Low Temperature Incubator (Programmable, Air Jacket)



### IL612C/812C

| Model  | Temp. range | Internal capacity |
|--------|-------------|-------------------|
| IL612C | 0~+50°C     | 159L              |
| IL812C |             | 300L              |

→ Page 171

## Plasma Cleaner

### Plasma Reactor (Barrel Chamber)



**PR200/300/301**

| Model | High frequency output | Reaction chamber |
|-------|-----------------------|------------------|
| PR200 | 200W                  | ∅100x160mm       |
| PR300 | 100Wx2                | ∅64x160mmx3      |
| PR301 | 300W                  | ∅118x160mm       |

⇒ Page 175/176



**PR500/510**

| Model | High frequency output | Reaction chamber |
|-------|-----------------------|------------------|
| PR500 | 500W                  | ∅215x305mm       |
| PR510 |                       |                  |

⇒ Page 177/178

### Plasma Cleaner (Parallel Electrode)



**PDC200/210/510**

| Model  | High frequency output | Reaction chamber (WxDxHmm) |
|--------|-----------------------|----------------------------|
| PDC200 | 300W                  | 400x250x150                |
| PDC210 | 500W                  | 500x300x200                |
| PDC510 |                       |                            |

⇒ Page 179



**PDC610**

| Model  | High frequency output | Reaction chamber (WxDxHmm) |
|--------|-----------------------|----------------------------|
| PDC610 | 600W                  | 350x270x300                |

⇒ Page 180

### Plasma Cleaner (Parallel Electrode)



**V1000/1000X/1000XS**

| Model   | High frequency output | Reaction chamber (WxDxHmm) |
|---------|-----------------------|----------------------------|
| V1000   | 1,000W                | 400x400x380                |
| V1000X  | 1,000 & 1,500W        | 600x554x440                |
| V1000XS |                       |                            |

⇒ Page 181

### Plasma Modifier (Barrel Chamber)



**PM100**

| Model | Reaction chamber |
|-------|------------------|
| PM100 | I.D 100mmxL160mm |

⇒ Page 182

### Plasma Cleaner (Parallel Electrode, Compact)



**PiPi**

| Model | High frequency output | Reaction chamber |
|-------|-----------------------|------------------|
| PiPi  | 50~200W               | 230x130x130mm    |

⇒ Page 183



# Water Purifier

## Ion-exchange+Distillation



### WG250/1000

|        |                                |
|--------|--------------------------------|
| Model  | Purified water & Water quality |
| WG250  | Deionized water: Type 1/A4     |
| WG1000 | Distilled water: Type 2/A4     |

➔ Page 189/190

## Ion-exchange+Distillation, Large Capacity



### WG511/711

|       |                                |
|-------|--------------------------------|
| Model | Purified water & Water quality |
| WG511 | Deionized water: A4            |
| WG711 | Distilled water: A4            |

➔ Page 191/192



### WA511/711/731

|       |  |
|-------|--|
| Model | Purified water & Water quality             |
| WA511 | Deionized water: A4<br>Distilled water: A1 |
| WA711 |  |
| WA731 |  |

➔ Page 193/194

## Ion-exchange+Distillation



### WGH200

|        |  |
|--------|--|
| Model  | Purified water & Water quality                           |
| WGH200 | Deionized water: Type 1/A4<br>Distilled water: Type 2/A4 |

➔ Page 195/196

## Ion-exchange+Distillation



### WG203

|       |  |
|-------|--|
| Model | Purified water & Water quality                           |
| WG203 | Deionized water: Type 1/A4<br>Distilled water: Type 2/A4 |

➔ Page 197

## Distillation



### WS200/220

|       |                                |
|-------|--------------------------------|
| Model | Purified water & Water quality |
| WS200 | Distilled water: Type 4/A1     |
| WS220 |                                |

➔ Page 198

## Ion-exchange



### WL320A/320B

|        |                                |
|--------|--------------------------------|
| Model  | Purified water & Water quality |
| WL320A | Deionized water: Type 2/A4     |
| WL320B |                                |

➔ Page 199/200



### WL200/220/220T

|        |                                |
|--------|--------------------------------|
| Model  | Purified water & Water quality |
| WL200  | Deionized water: Type 2/A3     |
| WL220  |                                |
| WL220T |                                |

➔ Page 201/202

## RO+Ion-exchange



### WE200

|       |                                |
|-------|--------------------------------|
| Model | Purified water & Water quality |
| WE200 | Deionized water: Type 1/A4     |

➔ Page 203/204

## Ion-exchange



### WL100

|       |                 |
|-------|-----------------|
| Model | Purified water  |
| WL100 | Deionized water |

➔ Page 205

# Constant Temperature Bath

## Water Bath (Precision Constant Temp.)

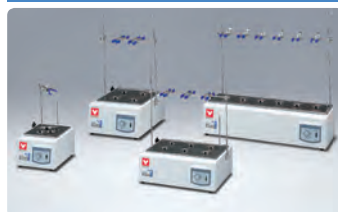


### BK

| Model     | Temp. range | Bath capacity |
|-----------|-------------|---------------|
| BK/BA310C | RT +5~80°C  | 27L           |
| BK/BA410C |             | 42L           |
| BK/BA510C |             | 70L           |
| BK/BA610C |             | 109L          |
| BK/BA710C |             | 144L          |

⇒ Page 208

## Water Bath (Constant Temp.)



### BS

| Model | Temp. range                   | Bath capacity |
|-------|-------------------------------|---------------|
| BS200 | RT +5~<br>Water boiling point | 27L           |
| BS400 |                               | 42L           |
| BS600 |                               | 70L           |
| BS660 |                               | 70L           |
|       |                               | 109L          |

⇒ Page 209

## Economical Water Bath (Constant Temp.)



### BM

| Model     | Temp. range | Bath capacity |    |
|-----------|-------------|---------------|----|
| BM100/110 | RT +5~95°C  | 4L            |    |
| BM200/210 |             | 7L            |    |
| BM401     |             | RT +5~90°C    | 4L |
| BM500/510 |             |               |    |

⇒ Page 210

## Immersion Constant Temperature Device



### BF201/401/501/601

| Model | Temp. range |             |
|-------|-------------|-------------|
| BF201 | RT +5~80°C  |             |
| BF401 |             |             |
| BF501 |             |             |
| BS601 |             | RT +5~180°C |
|       |             |             |

⇒ Page 211/212

## Water Bath (High Precision Constant Temp., Programmable)



### BH401/501

| Model | Temp. range  | Bath capacity |
|-------|--------------|---------------|
| BH401 | RT +15~100°C | 13L           |
| BH501 | RT +15~200°C |               |

⇒ Page 213/214

## Oil Bath (Large Capacity)



### BOA200/310

| Model  | Temp. range  | Bath capacity |
|--------|--------------|---------------|
| BOA200 | RT +15~200°C | 37L           |
| BOA310 | RT +15~270°C |               |

⇒ Page 215

## Economical Oil Bath



### BO400/410/500/601

| Model | Temp. range  | Bath capacity |
|-------|--------------|---------------|
| BO400 | RT +10~180°C | 4L            |
| BO410 | RT +10~199°C | 5.2L          |
| BO500 |              |               |
| BO601 | RT +10~180°C | 7L            |

⇒ Page 216

## Shaking Water Bath



### BW101/201/400

| Model | Shaking  | Bath capacity |
|-------|--|---------------|
| BW101 | Shaking width:<br>10~40 mm<br>Shaking speed:<br>20~160 time/min. | 12L           |
| BW201 |  | 20L           |
| BW400 |  | 30L           |

⇒ Page 217

## Shaking Water Bath Incubator



### BT100/200/300

| Model | Temp. range | Bath capacity |
|-------|-------------|---------------|
| BT100 | RT +5~80°C  | 19L           |
| BT200 |             | 23L           |
| BT300 |             | 34L           |

⇒ Page 218

## Water Bath (Low Constant Temp.)



### BBL111C/311C

| Model   | Temp. range  | Bath capacity |
|---------|--------------|---------------|
| BBL111C | RT -10~+80°C | 8L            |
| BBL311C |              | 13L           |

⇒ Page 219



### BB311C/411C/611C

| Model  | Temp. range | Bath capacity |
|--------|-------------|---------------|
| BB311C | -30~+80°C   | 6L            |
| BB411C |             | 13L           |
| BB611C |             | 26L           |
|        |             |               |

⇒ Page 221/222

## Water Bath (Low Constant Temp., Large Capacity)



### BL410C/810C

| Model  | Temp. range | Bath capacity |
|--------|-------------|---------------|
| BL410C | -15~+70°C   | 36L           |
| BL810C |             | 80L           |

⇒ Page 220

## Low Temp. Bath



### BLG100/200

| Model  | Temp. range | Bath capacity |
|--------|-------------|---------------|
| BLG100 | -80~0°C     | 300mL         |
| BLG200 | -40~0°C     | 1,000mL       |

⇒ Page 223/224

## Low Temp. Water Bath (Programmable, Peltier Cooling)



### BV100

| Model | Temp. range | Bath capacity |
|-------|-------------|---------------|
| BV100 | 0~+80°C     | 6L            |

⇒ Page 225

## Heating Block



### HF100/200

| Model | Temp. range | Bath dimensions (WxDxHmm) |
|-------|-------------|---------------------------|
| HF100 | RT +5~200°C | 112x112x70                |
| HF200 |             | 222x112x70                |

⇒ Page 226

# Cooling Water Circulator

## Externally Closed Circulation, Water Cooling



### CHW710C, CHS710C

| Model   | Temp. range | Pump (50/60Hz)  |
|---------|-------------|---|
| CHW710C | 10°C~RT     | Max. flow rate: 22.1/21.7L/min<br>Max. lift: 19.0/25.0m |
| CHS710C |             |   |

for Water (CHW710C) → Page 230  
for Pure Water (CHS710C)

## Externally Closed Circulation



### CF311C/810C

| Model  | Temp. range | Bath capacity |
|--------|-------------|---------------|
| CF311C | -20°C~RT    | 4L            |
| CF810C |             | 16L           |

→ Page 231/232

## Externally Closed Circulation, Inverter Control



### CFI

| Model   | Temp. range | Cooling capacity |
|---------|-------------|------------------|
| CFI701  | +5~30°C     | 1,000W           |
| CFI911  |             | 1,600W           |
| CFI1111 |             | 2,700W           |
| CFI601  | -10~30°C    | 1,000W           |
| CFI811  |             | 1,800W           |
| CFI1011 |             | 2,900W           |

→ Page 233/234

## Externally Closed Circulation, Air Cooling



### CFA311C/610C

| Model   | Temp. range | Pump (50/60Hz)                                       |
|---------|-------------|--|
| CFA311C | -30~+80°C   | Max. flow rate: 8.9/10.3L/min<br>Max. lift: 6.6/9.0m |
|         |             | Max. flow rate: 16.4/18.3L/min<br>Max. lift: 9.7/13m |
| CFA610C |             |  |

→ Page 235/236

## Externally Opened Circulation



### CLS312C/411C/610C

| Model   | Temp. range | Pump (50/60Hz)  |
|---------|-------------|---|
| CLS312C | -10°C~RT    | Max. flow rate: 5.4/6.2L/min<br>Max. lift: 3.5/5.0m   |
| CLS411C |             | Max. flow rate: 5.4/6.3L/min<br>Max. lift: 3.7/5.3m   |
| CLS610C |             | Max. flow rate: 6.7/7.8L/min<br>Max. lift: 6.2/8.7L/m |

→ Page 237/238



### CLH312C/411C/610C

| Model   | Temp. range | Pump (50/60Hz)  |
|---------|-------------|---|
| CLH312C | -10~+80°C   | Max. flow rate: 5.4/6.2L/min<br>Max. lift: 3.5/5.0m   |
| CLH411C | -15~+80°C   | Max. flow rate: 5.4/6.3L/min<br>Max. lift: 3.7/5.3m   |
| CLH610C |             | Max. flow rate: 6.7/7.8L/min<br>Max. lift: 6.2/8.7L/m |

→ Page 239/240

## Externally Opened Circulation, Peltier Cooling



### CTA402(S)/802(S)/412(S)/812(S)

### CTW402(S)/802(S)/412(S)/812(S)

| Model           | Temp. range | Pump (50/60Hz)           |
|-----------------|-------------|--------------------------|
| CTA402/CTA412   | 0~+70°C     | Max. flow rate: 8 L/min  |
| CTA402S/CTA412S |             | Max. flow rate: 11 L/min |
| CTA802/CTA812   |             | Max. flow rate: 11 L/min |
| CTA802S/CTA812S | -10~+70°C   | Max. flow rate: 8 L/min  |
| CTW402/CTW412   |             | Max. flow rate: 8 L/min  |
| CTW402S/CTW412S |             | Max. flow rate: 11 L/min |
| CTW802/CTW812   |             | Max. flow rate: 11 L/min |
| CTW802S/CTW812S |             |                          |

→ Page 241/242

# Rotary Evaporator

## Economical Rotary evaporator



### RE201/RE211

|                   |                        |
|-------------------|------------------------|
| Rotation speed    | 20~180 (rpm)           |
| Lifting feature   | Manual lifting         |
| Temperature range | Water Bath: RT +5~95°C |

→ Page 247/248

## Rotary evaporator



### RE301

|                   |  |
|-------------------|--|
| Rotation speed    | 20~250 (rpm)                                     |
| Lifting feature   | Motorized lifting                                |
| Lift stroke       | 130mm  |
| Temperature range | Water Bath: RT +5~90°C<br>Oil Bath: RT +10~180°C |

→ Page 249/250

## High Performance Rotary evaporator



### RE601/RE801

|                   |  |
|-------------------|--|
| Rotation speed    | 20~250 (rpm)                                     |
| Lifting feature   | Motorized lifting                                |
| Lift stroke       | 130mm  |
| Temperature range | Water Bath: RT +5~90°C<br>Oil Bath: RT +10~180°C |

→ Page 251/252/253

## Cold Trap, Immersion Cooler, Freeze Dryer

### Cold Trap



#### CA301/801

| Model | Max. low temperature | Dehumidifying capacity         |
|-------|----------------------|--------------------------------|
| CA301 | -45°C                | Max. 0.9kg (Water type liquid) |
| CA801 | -85°C                | Max. 1.0kg (Water type liquid) |

→ Page 257

### Immersion Cooler



#### BE201/201F/301

| Model  | Temp. range | Cooling capacity |
|--------|-------------|------------------|
| BE201  | -20~+35°C   | 190W             |
| BE201F |             |                  |
| BE301  |             | 350W             |

→ Page 258

### Freeze Dryer



#### DC401/801

| Model | Trap cooling temp. | Internal capacity | Dehumidify amount |
|-------|--------------------|-------------------|-------------------|
| DC401 | -45°C              | 4L                | 0.6L              |
| DC801 | -85°C              |                   | 1.0L              |

→ Page 259/260

## Stirrer, Shaker & Hot Plate

### Ultrasonic Homogenizer



#### LUH150/300

| Model  | Maximum output | Oscillation frequency |
|--------|----------------|-----------------------|
| LUH150 | 50W            | 20 kHz ±0.5 kHz       |
| LUH300 | 300W           |                       |

→ Page 263/264

### Laboratory Flask Mixer



#### LM100/110/200210

| Model                  | Operating speed range | Max. torque |
|------------------------|-----------------------|-------------|
| LM100/110<br>LM200/210 | 50~1000rpm            | 0.1N•m      |

→ Page 265/266

### Magnetic Stirrer



#### MA300A/300B, M-21

| Model            | Revolution   | Stirring capacity        |
|------------------|--------------|--------------------------|
| MA300A<br>MA300B | 100~1,200rpm | 50~3,000ml<br>50~1,000ml |
| M-21             | 200~2,500rpm |                          |

→ Page 267



#### MA100/300, MG120/600

| Model | Revolution   | Stirring capacity    |
|-------|--------------|----------------------|
| MA100 | 100~1,500rpm | 50~1,000ml           |
| MA300 | 400~1,550rpm | 50~3,000ml           |
| MG120 | 100~1,500rpm | 5~1,500ml<br>x12pcs. |
| MG600 | 200~1,500rpm | 50~2,000ml<br>x6pcs. |

→ Page 268

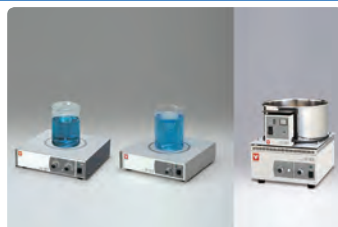
### Magnetic Stirrer



#### MD200/300/500/800, MS500D

| Model  | Revolution   | Stirring capacity |
|--------|--------------|-------------------|
| MD200  | 80~1,500rpm  | 50~2,000ml        |
| MD300  | 100~1,500rpm | 50~3,000ml        |
| MD500  | 70~1,300rpm  | 50~5,000ml        |
| MD800  | 50~1,400rpm  | 50~               |
| MS500D | 10~1,400rpm  | 10,000ml          |

→ Page 269



#### MC801, MF820, MB800

| Model | Revolution  | Stirring capacity |
|-------|-------------|-------------------|
| MC801 | 80~1,800rpm | 100~10,000ml      |
| MF820 | 80~1,500rpm | 100~20,000ml      |
| MB800 | 70~1,200rpm | 100~10,000ml      |

→ Page 270

### Magnetic Stirrer with Hot Plate



#### MH301/520/800, MG600H

| Model  | Revolution                   | Stirring capacity     |
|--------|------------------------------|-----------------------|
| MH301  | 400~1,500rpm                 | 100~3,000ml           |
| MH520  | 150~1,150rpm<br>150~1,300rpm | 50~5,000ml            |
| MH800  | 100~1,400rpm                 | 200~10,000ml          |
| MG600H | 300~1,500rpm                 | 100~2,000ml<br>x6pcs. |

→ Page 271

### Hot Plate, Touch Mixer



#### HK200/300, HM300/11, MT-31/51

| Model | Temp. range            |
|-------|------------------------|
| HK200 | 50~250°C               |
| HK300 |                        |
| HM300 |                        |
| HM-11 | RT.+5~80°C<br>50~200°C |

| Model | Revolution                       |
|-------|----------------------------------|
| MT-31 | 2,800rpm(50Hz)<br>3,300rpm(50Hz) |
| MT-51 | 600~3,000rpm                     |

→ Page 272

# Stirrers, Shakers

## Laboratory Stirrer



### LT·LR

| Model  | Speed range  |
|--------|--------------|
| LT400A | 10-300rpm    |
| LT400B | 15-600rpm    |
| LT400C | 25-1,200rpm  |
| LT400D | 60-3,000rpm  |
| LT500A | 60-3,000rpm  |
| LT500B | 25-1,200rpm  |
| LR500A | 34-340rpm    |
| LR500B | 100-1,000rpm |

→ Page 273/274

## Laboratory Shaker (Horizontal Shaking)



### MK161

| Model | Shaking range                     | Shaking frequency |
|-------|-----------------------------------|-------------------|
| MK161 | Rotary: 30mm<br>Reciprocate: 30mm | 20-200rpm         |

→ Page 275



### MK201D

| Model  | Shaking range                     | Shaking frequency |
|--------|-----------------------------------|-------------------|
| MK201D | Rotary: 30mm<br>Reciprocate: 30mm | 20-200rpm         |

→ Page 276

## Laboratory Shaker



### SA300/320/400

| Model | Shaking speed |            |
|-------|---------------|------------|
|       | horizontal    | vertical   |
| SA300 | 10-300rpm     | 10-300rpm  |
| SA320 | 20-210 rpm    | 20-210 rpm |
| SA400 | None          | 10-300rpm  |

→ Page 277/278

# Laboratory Washer

## Process Monitorable



### AWD510/510DRY

| Model     | Internal dimensions |
|-----------|---------------------|
| AWD510    | W500xD480xH480mm    |
| AWD510DRY |                     |

→ Page 281/282

## Fully-automatic, Large Capacity



### AW83

| Model | Internal dimensions |
|-------|---------------------|
| AW83  | W600xD630xH1,080mm  |

→ Page 283/284

## Fully-automatic, Compact



### AW62

| Model | Internal dimensions |
|-------|---------------------|
| AW62  | W594xD572xH564mm    |

→ Page 285

## Semi-automatic, Compact



### AW47

| Model | Internal dimensions |
|-------|---------------------|
| AW47  | W420xD450xH570mm    |

→ Page 286

## Ultrasonic Pipet Washer



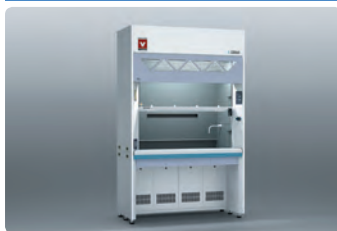
### AW31

| Model | Rack dimensions   |
|-------|-------------------|
| AW31  | I.D. φ 138xH540mm |

→ Page 287

## Fume Hood

### Standard



#### LDS

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDS-120 | 12m <sup>3</sup> /min | 30Pa                     |
| LDS-150 | 16m <sup>3</sup> /min | 59Pa                     |
| LDS-180 | 19m <sup>3</sup> /min | 79Pa                     |

→ Page 295/296

### Air Curtain



#### LDS-A

| Model    | Exhaust air volume    | Air intake volume       |
|----------|-----------------------|-------------------------|
| LDS-120A | 12m <sup>3</sup> /min | 8.4m <sup>3</sup> /min  |
| LDS-150A | 16m <sup>3</sup> /min | 11.2m <sup>3</sup> /min |
| LDS-180A | 19m <sup>3</sup> /min | 13.3m <sup>3</sup> /min |

→ Page 295/296

### Benchtop



#### LDS-T

| Model    | Exhaust air volume    | Internal static pressure |
|----------|-----------------------|--------------------------|
| LDS-120T | 12m <sup>3</sup> /min | 30Pa                     |
| LDS-150T | 16m <sup>3</sup> /min | 59Pa                     |
| LDS-180T | 19m <sup>3</sup> /min | 79Pa                     |

→ Page 295/296

### Low Height



#### LDS-J

| Model    | Exhaust air volume    | Internal static pressure |
|----------|-----------------------|--------------------------|
| LDS-120J | 10m <sup>3</sup> /min | 25Pa                     |
| LDS-150J | 13m <sup>3</sup> /min | 39Pa                     |
| LDS-180J | 16m <sup>3</sup> /min | 59Pa                     |

→ Page 295/296

### Energy Saving Structure

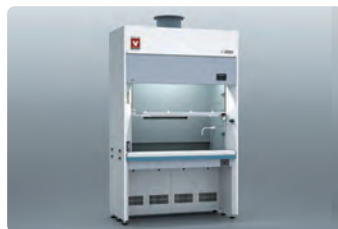


#### LDN

| Model   | Exhaust air volume       | Internal static pressure |
|---------|--------------------------|--------------------------|
| LDN-120 | 7/11m <sup>3</sup> /min  | 10/22Pa                  |
| LDN-150 | 9/14m <sup>3</sup> /min  | 14/34Pa                  |
| LDN-180 | 11/17m <sup>3</sup> /min | 23/55Pa                  |

→ Page 297

### with Exhaust Volume Controller



#### LDX

| Model   | Exhaust air volume      | Internal static pressure |
|---------|-------------------------|--------------------------|
| LDX-120 | 5~24m <sup>3</sup> /min | 128Pa                    |
| LDX-150 | 6~31m <sup>3</sup> /min | 196Pa                    |
| LDX-180 | 8~38m <sup>3</sup> /min | 280Pa                    |

→ Page 298

### with Exhaust Volume Controller and Slide Sash

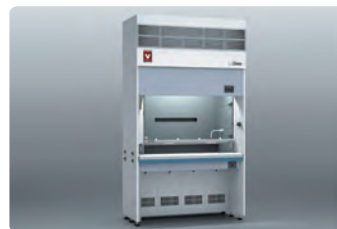


#### LDY

| Model   | Exhaust air volume      | Internal static pressure |
|---------|-------------------------|--------------------------|
| LDY-120 | 5~13m <sup>3</sup> /min | 36Pa                     |
| LDY-150 | 6~17m <sup>3</sup> /min | 58Pa                     |
| LDY-180 | 8~22m <sup>3</sup> /min | 83Pa                     |

→ Page 299

### with Exhaust Volume Controller for Air Intake and Exhaust



#### LDXA

| Model    | Exhaust air volume      | Air intake volume       |
|----------|-------------------------|-------------------------|
| LDXA-120 | 6~20m <sup>3</sup> /min | 6~20m <sup>3</sup> /min |
| LDXA-150 |                         |                         |
| LDXA-180 |                         |                         |

→ Page 300

### High Interior Ceiling



#### LDG

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDG-120 | 14m <sup>3</sup> /min | 59Pa                     |
| LDG-150 | 18m <sup>3</sup> /min | 98Pa                     |
| LDG-180 | 23m <sup>3</sup> /min | 167Pa                    |

→ Page 301

### Low Working Top



#### LDT

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDT-120 | 19m <sup>3</sup> /min | 118Pa                    |
| LDT-150 | 25m <sup>3</sup> /min | 197Pa                    |
| LDT-180 | 31m <sup>3</sup> /min | 148Pa                    |

→ Page 302

### Wet Scrubber Built-in



#### LDB

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDB-120 | 12m <sup>3</sup> /min | 491Pa                    |
| LDB-150 | 16m <sup>3</sup> /min | 687Pa                    |
| LDB-180 | 19m <sup>3</sup> /min | 785Pa                    |

→ Page 303



#### LDC1

| Model    | Exhaust air volume    | Internal static pressure |
|----------|-----------------------|--------------------------|
| LDC1-120 | 12m <sup>3</sup> /min | 170Pa                    |
| LDC1-150 | 16m <sup>3</sup> /min | 210Pa                    |
| LDC1-180 | 19m <sup>3</sup> /min | 290Pa                    |

→ Page 304

### Wet Scrubber Built-in



#### LDC2

| Model    | Exhaust air volume    | Internal static pressure |
|----------|-----------------------|--------------------------|
| LDC2-120 | 12m <sup>3</sup> /min | 196Pa                    |
| LDC2-150 | 16m <sup>3</sup> /min | 343Pa                    |
| LDC2-180 | 19m <sup>3</sup> /min | 490Pa                    |

→ Page 305

### Dry Scrubber Built-in



#### LDF

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDF-120 | 12m <sup>3</sup> /min | 216Pa                    |
| LDF-150 | 16m <sup>3</sup> /min | 245Pa                    |
| LDF-180 | 19m <sup>3</sup> /min | 275Pa                    |

→ Page 306

### Double-faced



#### LDD

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDD-120 | 20m <sup>3</sup> /min | 79Pa                     |
| LDD-150 | 24m <sup>3</sup> /min | 109Pa                    |
| LDD-180 | 27m <sup>3</sup> /min | 137Pa                    |

→ Page 307

### Perchloric Acid-resistant



#### LDP

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDP-120 | 24m <sup>3</sup> /min | 108Pa                    |
| LDP-150 | 30m <sup>3</sup> /min | 88Pa                     |
| LDP-180 | 37m <sup>3</sup> /min | 127Pa                    |

→ Page 308

# Fume Hood, Enclosure

## for Low Level RI



### LDL

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDL-120 | 24m <sup>3</sup> /min | 109Pa                    |
| LDL-150 | 30m <sup>3</sup> /min | 88Pa                     |
| LDL-180 | 37m <sup>3</sup> /min | 127Pa                    |

→ Page 309

## for Medium Level RI



### LDM

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDM-120 | 21m <sup>3</sup> /min | 118Pa                    |
| LDM-150 | 28m <sup>3</sup> /min | 148Pa                    |
| LDM-180 | 34m <sup>3</sup> /min | 157Pa                    |

→ Page 310

## Walk-in



### LDW

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDW-120 | 21m <sup>3</sup> /min | 88Pa                     |
| LDW-150 | 27m <sup>3</sup> /min | 137Pa                    |
| LDW-180 | 34m <sup>3</sup> /min | 118Pa                    |

→ Page 311

## Powder Containment



### LDH

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| LDH-150 | 17m <sup>3</sup> /min | 500Pa                    |
| LDH-180 | 21m <sup>3</sup> /min |                          |

→ Page 312

## Compact Fume Hood/Benchtop

### My Hood



### MS, MV

| Model       | Interior          | Exhaust air volume   |
|-------------|-------------------|----------------------|
| MS-90C/90TC | Stainless steel   | 7m <sup>3</sup> /min |
| MV-90C/90TC | Hard polyethylene |                      |

→ Page 313

## Aluminum Frame, Benchtop



### FHJ2-N/FHJ3-N

| Model     | Air volume            | Model     | Air volume            |
|-----------|-----------------------|-----------|-----------------------|
| FHJ2-N180 | 14m <sup>3</sup> /min | FHJ3-N120 | 5m <sup>3</sup> /min  |
| FHJ2-N240 | 19m <sup>3</sup> /min | FHJ3-N150 | 11m <sup>3</sup> /min |
| FHJ2-N300 | 23m <sup>3</sup> /min | FHJ3-N180 | 15m <sup>3</sup> /min |
| FHJ2-N360 | 28m <sup>3</sup> /min |           |                       |

→ Page 314



### FHJ5-N/FHJ6-N

| Model     | Air volume            | Model     | Air volume            |
|-----------|-----------------------|-----------|-----------------------|
| FHJ5-N120 | 14m <sup>3</sup> /min | FHJ6-N120 | 13m <sup>3</sup> /min |
| FHJ5-N150 | 19m <sup>3</sup> /min | FHJ6-N150 | 17m <sup>3</sup> /min |
| FHJ5-N180 | 23m <sup>3</sup> /min | FHJ6-N180 | 20m <sup>3</sup> /min |
| FHJ5-N240 | 28m <sup>3</sup> /min |           |                       |
| FHJ5-N300 | 37m <sup>3</sup> /min |           |                       |
| FHJ5-N360 | 45m <sup>3</sup> /min |           |                       |

→ Page 315



### FHJ7-N/FHJ8-N

| Model      | Air volume            | Model      | Air volume            |
|------------|-----------------------|------------|-----------------------|
| FHJ7-N120  | 17m <sup>3</sup> /min | FHJ8-N120  | 15m <sup>3</sup> /min |
| FHJ7-N150  | 22m <sup>3</sup> /min | FHJ8-N150  | 20m <sup>3</sup> /min |
| FHJ7-N180  | 27m <sup>3</sup> /min | FHJ8-N180  | 24m <sup>3</sup> /min |
| FHJ7-N240S | 37m <sup>3</sup> /min | FHJ8-N240S | 33m <sup>3</sup> /min |
| FHJ7-N300S | 47m <sup>3</sup> /min | FHJ8-N300S | 42m <sup>3</sup> /min |
| FHJ7-N240D | 33m <sup>3</sup> /min | FHJ8-N240D | 30m <sup>3</sup> /min |
| FHJ7-N300D | 43m <sup>3</sup> /min | FHJ8-N300D | 39m <sup>3</sup> /min |
| FHJ7-N360D | 53m <sup>3</sup> /min | FHJ8-N360D | 48m <sup>3</sup> /min |

→ Page 316

## Chemical Etching, All PVC Structure



### FHV

| Model   | Exhaust air volume    | Internal static pressure |
|---------|-----------------------|--------------------------|
| FHV-120 | 10m <sup>3</sup> /min | 50Pa                     |
| FHV-150 | 13m <sup>3</sup> /min | 59Pa                     |
| FHV-180 | 15m <sup>3</sup> /min | 40Pa                     |

→ Page 317

## Chemical Etching, PVC Exterior



### CYV/CYV2

| Model     | Exhaust air volume    | Internal static pressure |
|-----------|-----------------------|--------------------------|
| CYV-180V  | 21m <sup>3</sup> /min | 70Pa                     |
| CYV2-180V |                       |                          |
| CYV-210V  | 24m <sup>3</sup> /min | 40Pa                     |
| CYV2-210V |                       |                          |

→ Page 318

## PVC Exterior, Clean Class 100



### CYF

| Model   | Exhaust air volume    | Air intake volume     |
|---------|-----------------------|-----------------------|
| CYF-120 | 29m <sup>3</sup> /min | 22m <sup>3</sup> /min |
| CYF-160 | 36m <sup>3</sup> /min | 28m <sup>3</sup> /min |
| CYF-200 | 43m <sup>3</sup> /min | 33m <sup>3</sup> /min |

→ Page 319

## Steel Exterior, Clean Class 100



### CYG

| Model   | Exhaust air volume    | Air intake volume     |
|---------|-----------------------|-----------------------|
| CYG-120 | 16m <sup>3</sup> /min | 12m <sup>3</sup> /min |
| CYG-150 | 21m <sup>3</sup> /min | 16m <sup>3</sup> /min |
| CYG-180 | 26m <sup>3</sup> /min | 20m <sup>3</sup> /min |

→ Page 320

## Powder Weighing Enclosure



### ST1

| Model    | Dimension (WxDxH) |
|----------|-------------------|
| ST1-900  | 888x776x626mm     |
| ST1-1200 | 1,188x776x626mm   |
| ST1-1500 | 1,488x776x626mm   |

→ Page 321

## Bulk Powder Enclosure



### ST1-BP

| Model      | Dimension (WxDxH)   |
|------------|---------------------|
| ST1-1200BP | 1,200x1,090x1,647mm |
| ST1-1500BP | 1,500x1,090x1,647mm |
| ST1-1800BP | 1,800x1,090x1,647mm |

→ Page 322

## Nano Enclosure



### NE1-NE2

| Model    | Dimension (WxDxH) |
|----------|-------------------|
| NE1-900  | 900x750x910mm     |
| NE1-1200 | 1,200x750x910mm   |
| NE1-1500 | 1,500x750x910mm   |
| NE2-1200 | 1,200x750x1,380mm |
| NE2-1500 | 1,500x750x1,380mm |

→ Page 323/324

## Temperature, Humidity and Dew Point Control System



### FCCZ

| Model | Dimension (WxDxH) |
|-------|-------------------|
| FCCZ  | 1,200x850x2,285mm |

→ Page 325

## Personal Hood/Desktop



### Lab Bubble

|               | Concept     |
|---------------|-------------|
| Safety Bubble | Containment |
| PCR Bubble    | Clean       |
| Glove Bubble  | Enclosure   |

→ Page 326

## Scrubber

### Exhaust Gas Scrubber (Wet)



**CRW3**

| Model   | Processing air volume | Internal static pressure |
|---------|-----------------------|--------------------------|
| CRW3-12 | 12m <sup>3</sup> /min | 196Pa                    |
| CRW3-16 | 16m <sup>3</sup> /min | 294Pa                    |
| CRW3-19 | 19m <sup>3</sup> /min | 343Pa                    |
| CRW3-33 | 33m <sup>3</sup> /min | 392Pa                    |
| CRW3-42 | 42m <sup>3</sup> /min |                          |
| CRW3-52 | 52m <sup>3</sup> /min |                          |

➔ Page 327

### Exhaust Gas Scrubber (Dry)



**CRF3**

| Model    | Processing air volume     | Internal static pressure |
|----------|---------------------------|--------------------------|
| CRF3-12L | 12m <sup>3</sup> /min     | 294Pa                    |
| CRF3-12V |                           |                          |
| CRF3-19L | 16~19 m <sup>3</sup> /min | 343Pa                    |
| CRF3-19V |                           |                          |
| CRF3-45L | 28~45 m <sup>3</sup> /min | 294~490Pa                |
| CRF3-45V |                           |                          |

➔ Page 328

### Acid Fume Scrubber



**CRH**

| Model   | Processing air volume     | Internal static pressure |
|---------|---------------------------|--------------------------|
| CRH-20S | 10~20 m <sup>3</sup> /min | 0.6~1.6kPa               |
| CRH-20W |                           |                          |

➔ Page 329



**CRB-2**

| Model   | Processing air volume  | Internal static pressure |
|---------|------------------------|--------------------------|
| CRB-2   | 1.5m <sup>3</sup> /min | 5~10kPa                  |
| CRH-20W |                        |                          |

➔ Page 330

## Clean Bench

### for Biological Use, Vertical Laminar Flow



**ADS-UG**

| Model  | Air volume            | Air flow direction |
|--------|-----------------------|--------------------|
| ADS101 | 13m <sup>3</sup> /min | Vertical           |
| ADS131 | 18m <sup>3</sup> /min |                    |
| ADS161 | 22m <sup>3</sup> /min |                    |
| ADS191 | 27m <sup>3</sup> /min |                    |

➔ Page 335

### for Biological Use, Vertical Laminar Flow with Exhaust



**ADE**

| Model  | Air volume              | Air flow direction         |
|--------|-------------------------|----------------------------|
| ADE101 | 12m <sup>3</sup> /min   | Vertical                   |
| ADE131 | 16m <sup>3</sup> /min   | Forced circulation exhaust |
| ADE161 | 19.5m <sup>3</sup> /min |                            |
| ADE191 | 23.5m <sup>3</sup> /min |                            |

➔ Page 336

### for Industrial Use, Vertical Laminar Flow



**ADS**

| Model  | Air volume            | Air flow direction |
|--------|-----------------------|--------------------|
| ADS101 | 13m <sup>3</sup> /min | Vertical           |
| ADS131 | 18m <sup>3</sup> /min |                    |
| ADS161 | 22m <sup>3</sup> /min |                    |
| ADS191 | 27m <sup>3</sup> /min |                    |

➔ Page 337

### for Biological Use, Horizontal Laminar Flow



**AHS**

| Model  | Air volume               | Air flow direction |
|--------|--------------------------|--------------------|
| AHS101 | 16/20m <sup>3</sup> /min | Horizontal         |
| AHS131 | 22/27m <sup>3</sup> /min |                    |
| AHS161 | 27/33m <sup>3</sup> /min |                    |
| AHS191 | 32/39m <sup>3</sup> /min |                    |

➔ Page 338

## Laboratory Furniture

### Center Table (Steel)



**LCA**

| Model            | Feature                   |
|------------------|---------------------------|
| LCA-185T (-182T) |                           |
| LCA-245T (-242T) |                           |
| LCA-305T (-302T) |                           |
| LCA-365T (-362T) |                           |
| LCA2-185T(-182T) |                           |
| LCA2-245T(-242T) | With drawer               |
| LCA2-305T(-302T) |                           |
| LCA2-365T(-362T) |                           |
| LCA3-185T(-182T) | With drawer and cart unit |
| LCA3-245T(-242T) |                           |
| LCA3-305T(-302T) |                           |
| LCA3-365T(-362T) |                           |

➔ Page 343



**LCB**

| Model            | Feature                   |
|------------------|---------------------------|
| LCB-185T (-182T) |                           |
| LCB-245T (-242T) |                           |
| LCB-305T (-302T) |                           |
| LCB-365T (-362T) |                           |
| LCB2-185T(-182T) |                           |
| LCB2-245T(-242T) | With drawer               |
| LCB2-305T(-302T) |                           |
| LCB2-365T(-362T) |                           |
| LCB3-185T(-182T) | With drawer and cart unit |
| LCB3-245T(-242T) |                           |
| LCB3-305T(-302T) |                           |
| LCB3-365T(-362T) |                           |

➔ Page 343



**LCC**

| Model            | Feature                   |
|------------------|---------------------------|
| LCC-185T (-182T) |                           |
| LCC-245T (-242T) |                           |
| LCC-305T (-302T) |                           |
| LCC-365T (-362T) |                           |
| LCC2-185T(-182T) |                           |
| LCC2-245T(-242T) | With drawer               |
| LCC2-305T(-302T) |                           |
| LCC2-365T(-362T) |                           |
| LCC3-185T(-182T) | With drawer and cart unit |
| LCC3-245T(-242T) |                           |
| LCC3-305T(-302T) |                           |
| LCC3-365T(-362T) |                           |

➔ Page 344



**LFD**

| Model            | Feature                   |
|------------------|---------------------------|
| LCD-245T (-242T) |                           |
| LCD-305T (-302T) |                           |
| LCD-365T (-362T) |                           |
| LCD2-245T(-242T) |                           |
| LCD2-305T(-302T) |                           |
| LCD2-365T(-362T) | With drawer               |
| LCD3-245T(-242T) |                           |
| LCD3-305T(-302T) | With drawer and cart unit |
| LCD3-365T(-362T) |                           |

➔ Page 344



# Laboratory Furniture

## Center Table (Steel)



**LCE**

| Model            | Feature                   |
|------------------|---------------------------|
| LCE-245T (-245T) |                           |
| LCE-305T (-305T) |                           |
| LCE-365T (-365T) |                           |
| LCE2-245T(-245T) | With drawer               |
| LCE2-305T(-305T) |                           |
| LCE2-365T(-365T) |                           |
| LCE3-245T(-245T) | With drawer and cart unit |
| LCE3-305T(-305T) |                           |
| LCE3-365T(-365T) |                           |

➔ Page 345

**LCF**



| Model            | Feature                   |
|------------------|---------------------------|
| LCF-245T (-242T) |                           |
| LCF-305T (-302T) |                           |
| LCF-365T (-362T) |                           |
| LCF2-245T(-242T) | With drawer               |
| LCF2-305T(-302T) |                           |
| LCF2-365T(-362T) |                           |
| LCF3-245T(-242T) | With drawer and cart unit |
| LCF3-305T(-302T) |                           |
| LCF3-365T(-362T) |                           |

➔ Page 345

## Side Table (Steel)



**LFA**

| Model     | Feature     |
|-----------|-------------|
| LFA-97T   | With drawer |
| LFA-127T  |             |
| LFA-157T  |             |
| LFA-187T  |             |
| LFA-247T  |             |
| LFA-307T  |             |
| LFA2-97T  |             |
| LFA2-127T |             |
| LFA2-157T |             |
| LFA2-187T |             |
| LFA2-247T |             |
| LFA2-307T |             |

➔ Page 346

**LFB**



| Model     | Feature     |
|-----------|-------------|
| LFB-97T   | With drawer |
| LFB-127T  |             |
| LFB-157T  |             |
| LFB-187T  |             |
| LFB-247T  |             |
| LFB-307T  |             |
| LFB2-97T  |             |
| LFB2-127T |             |
| LFB2-157T |             |
| LFB2-187T |             |
| LFB2-247T |             |
| LFB2-307T |             |

➔ Page 346

## Side Table (Steel)

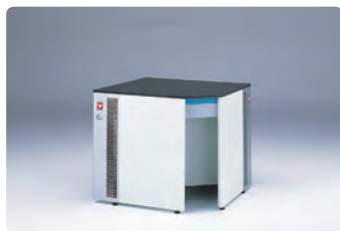


**LFC**

| Model     | Feature                   |
|-----------|---------------------------|
| LFC-97T   | With drawer and cart unit |
| LFC-127T  |                           |
| LFC-157T  |                           |
| LFC-187T  |                           |
| LFC-247T  |                           |
| LFC-307T  |                           |
| LFC2-97T  |                           |
| LFC2-127T |                           |
| LFC2-157T |                           |
| LFC2-187T |                           |
| LFC2-247T |                           |
| LFC2-307T |                           |

➔ Page 347

## Corner Table (Steel)



**LFP**

| Model   | Feature |
|---------|---------|
| LFP-97T |         |

➔ Page 347

## Shelf for Laboratory Table (Steel)



**LRA, LRB, LRC, LRD**

| Model   | Remarks   |
|---------|---|
| LRA-93  | For center laboratory table                                   |
| LRA-123 |   |
| LRA-153 |   |
| LRB-94  | Set up with LUA, fluorescent lamp for center laboratory table |
| LRB-124 |   |
| LRB-154 |   |
| LRC-92  | For side laboratory tables                                    |
| LRC-122 |   |
| LRC-152 |   |
| LRD-92  | Set up with LUD, fluorescent lamp for center laboratory table |
| LRD-122 |   |
| LRD-152 |   |

➔ Page 348

**LUA, LUC, LUD**

| Model   | Remarks   |
|---------|---|
| LUA-93  | For center laboratory table with a box for plumbing         |
| LUA-123 |   |
| LUA-153 |   |
| LUC-92  | For center laboratory table (right) with a box for plumbing |
| LUC-122 |   |
| LUC-152 |   |
| LUD-92  | For center laboratory table (left) with a box for plumbing  |
| LUD-122 |   |
| LUD-152 |   |

➔ Page 348

## Sink (Steel)



**LSA**

| Model   | Feature              |
|---------|----------------------|
| LSA-67  | One-compartment sink |
| LSA-97  |                      |
| LSA-127 |                      |
| LSA-157 |                      |
| LSA-187 |                      |

➔ Page 349



**LSB**

| Model   | Feature              |
|---------|----------------------|
| LSB-127 | Two-compartment sink |
| LSB-157 |                      |
| LSB-187 |                      |

➔ Page 349



**LSC**

| Model   | Feature                              |
|---------|--------------------------------------|
| LSC-127 | One-compartment sink with drainboard |
| LSC-157 |                                      |
| LSC-187 |                                      |

➔ Page 349



**LSD**

| Model   | Feature                           |
|---------|-----------------------------------|
| LSD-126 | One-compartment sink Depth: 600mm |
| LSD-156 |                                   |

➔ Page 350

## Laboratory Furniture

### Sink (Steel)



#### LSE

| Model   | Feature              |
|---------|----------------------|
| LSE-127 |                      |
| LSE-157 | Top surface: Trespa  |
| LSE-187 | One-compartment sink |

→ Page 350

### Balance Table (Steel)



#### LBA

| Model   | Feature                          |
|---------|----------------------------------|
| LBA-96  |                                  |
| LBA-126 | Top board: Stone (terrazzo) 50mm |
| LBA-186 |                                  |

→ Page 351



#### LBB

| Model   | Feature                          |
|---------|----------------------------------|
| LBB-96  |                                  |
| LBB-126 | Top board: Stone (terrazzo) 50mm |
| LBB-186 |                                  |

→ Page 351



#### LBC

| Model   | Feature             |
|---------|---------------------|
| LBC-96  |                     |
| LBC-126 | Top board: Melamine |
| LBC-186 | Vibration proof     |

→ Page 351

### Storage Cabinet (Steel)



#### LSE

| Model | Dimensions       |
|-------|------------------|
| SU-1C |                  |
| SU-2C |                  |
| SU-3C | W450xD400xH600mm |
| SU-4C |                  |
| SU-5C |                  |

→ Page 351

### Chemical Storage Shelf/Cabinet (Steel)



#### LLA

| Model   | Feature                |
|---------|------------------------|
| LLA-94  |                        |
| LLA-124 | Upper unit: Glass door |
| LLA-154 | Lower unit: Hinge door |
| LLA-184 |                        |

→ Page 352



#### LLB

| Model   | Feature                           |
|---------|-----------------------------------|
| LLB-94  |                                   |
| LLB-124 | Upper unit: Glass door            |
| LLB-154 | Lower unit: Drawer and hinge door |
| LLB-184 |                                   |

→ Page 352

## Industrial Equipment

### Chiller (Large Capacity)



#### C1-001

| Temp. range | Circulating capacity                 |
|-------------|--------------------------------------|
| 4~22°C      | Max. flow: 24L/min<br>Max. lift: 30m |

→ Page 355

### Chiller (Large Capacity, for Narrow Space)



#### C1-002

| Temp. range | Circulating capacity                 |
|-------------|--------------------------------------|
| 4~10°C      | Max. flow: 24L/min<br>Max. lift: 30m |

→ Page 355

### Multi-Chamber Oven



#### C1-003

| Temp. range | Internal dimension |
|-------------|--------------------|
| 40~260°C    | W450xD520xH300mm   |

→ Page 356

### Clean Inert Oven



#### C1-004

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+30~360°C | W660xD660xH500mm   |

→ Page 356

### Double Entry Oven



#### C1-005

| Temp. range | Internal dimension     |
|-------------|------------------------|
| RT+20~180°C | W1,000xD1,850xH2,150mm |

→ Page 357

### Stackable Oven



#### C1-006

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+10~260°C | W700xD500xH500mm   |

→ Page 357

### Conveyor Oven (Fully Automatic)



#### C1-007

| Temp. range | Conveyor length | Inlet and outlet dimension |
|-------------|-----------------|----------------------------|
| RT+20~80°C  | 600mm           | W400xH65mm                 |

→ Page 358



#### C1-008

| Temp. range | Conveyor length | Inlet and outlet dimension |
|-------------|-----------------|----------------------------|
| RT+20~120°C | 3,000mm         | W800xH215mm                |

→ Page 358

# Industrial Equipment

## Modular Vacuum Oven



**C2-001**

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+30~250°C | W600xD600xH600mm   |

→ Page 359

## 2-Chamber Vacuum Oven (Far-infrared Heating)



**C2-002**

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+10~200°C | W700xD1,250xH700mm |

→ Page 359

## 2-Chamber Vacuum Oven (Automatic Control)



**C2-003**

| Temp. range | Internal dimension                   |
|-------------|--------------------------------------|
| 40~200°C    | W450xD450xH450mm<br>W600xD600xH600mm |

→ Page 360

## Vacuum Oven (Fully Automatic Programmable Control)



**C2-004**

| Temp. range                      | Internal dimension   |
|----------------------------------|--|
| 40~200°C<br>40~200°C<br>40~200°C | 4 type:<br>W450xD450xH450mm<br>6 type:<br>W600xD600xH600mm |

→ Page 360

## Autoclave (Industrial Use, Large Capacity)



**YYK**

| Model  | Temp. range | Internal dimension |
|--------|-------------|--------------------|
| YKK500 | RT+10~70°C  | φ500x850Lmm        |
| YKK750 |             | φ750x1,100Lmm      |
| YKK800 |             | φ800x1,100Lmm      |
| YKK900 |             | φ900x1,300Lmm      |

→ Page 361

## LCD Aging Chamber (Drawer)



**C3-001**

| Temp. range | LCD size          |
|-------------|-------------------|
| 50~60°C     | Less than 45 inch |

→ Page 362

## LCD Aging Chamber (Insertion Slot)



**C3-002**

| Temp. range | LCD size   |
|-------------|------------|
| 50~60°C     | 32~50 inch |

→ Page 362

## Clean Oven (Class 1000)



**C3-003**

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+10~260°C | W600xD500xH1,000mm |

→ Page 363

## Clean Oven (Class 100)



**C3-004**

| Temp. range | Internal dimension WxDxHmm |
|-------------|----------------------------|
| RT+10~150°C | 500x450x1,050              |

→ Page 363

## Vacuum Inert Oven (with Humidity Monitoring System)



**C4-001**

| Temp. range | Internal dimension WxDxHmm |
|-------------|----------------------------|
| 40~240°C    | 300x300x300                |

→ Page 364

## Forced Convection Oven (with Oxygen & Humidity Monitor)



**C4-002**

| Temp. range | Internal dimension WxDxHmm |
|-------------|----------------------------|
| RT+10~150°C | 800x600x1,265              |

→ Page 364

## Forced Convection Oven (Cart)



**C4-003**

| Temp. range | Internal dimension WxDxHmm |
|-------------|----------------------------|
| RT+20~120°C | 700x700x1,200              |

→ Page 365



**C4-004**

| Temp. range | Internal dimension WxDxHmm |
|-------------|----------------------------|
| RT+20~150°C | 820x820x1,370              |

→ Page 365

## Burn-in Testing Chamber



**C4-005**

| Temp. range | Internal dimension |
|-------------|--------------------|
| RT+10~260°C | W600xD500xH1,000mm |

→ Page 366



**C4-006**

| Temp. range | Internal dimension                  |
|-------------|-------------------------------------|
| RT+10~100°C | Each temp. zone<br>W710xD460xH140mm |

→ Page 366

## Coating Machine



**C4-007**

| Temp. range | Conveyor                                |
|-------------|---|
| 80~100°C    | Stainless steel<br>Speed: 300~600mm/min |

→ Page 367

## Walk-in Drying Chamber



**C4-008**

| Temp. range | Internal dimension     |
|-------------|------------------------|
| RT+10~100°C | W3,500xD3,500xH3,000mm |

→ Page 367

# Yamato

## GENERAL CATALOG

### **Yamato Scientific Co., Ltd.**

International Sales Department

Haseman Bldg. 6F, 2-11-6, Tomioka, Koto-ku, Tokyo 135-0047, Japan

TEL: +81-3-5639-7076 FAX: +81-3-5639-6034

<Customer Service/Technical Support> [english-website@yamato-net.co.jp](mailto:english-website@yamato-net.co.jp)

### **Yamato Scientific Shanghai Corp.**

Room 1001-1002, Block B, Xinyan Building, No.65 Guiqing Road, Xuhui District, Shanghai, China

TEL: +86-21-6443-5319 FAX: +86-21-5452-0268

<Customer Service/Technical Support> [info@yamato-shanghai.com](mailto:info@yamato-shanghai.com)

### **Yamato Scientific America Inc.**

925 Walsh Ave. Santa Clara, CA 95050, U.S.A.

TEL: +1-408-235-7725 FAX: +1-408-235-7730

<Customer Service> [customerservice@yamato-usa.com](mailto:customerservice@yamato-usa.com)

<Technical Support> [www.yamato-usa.com](http://www.yamato-usa.com)

SINCE 1889



For the development of scientific technologies

**Yamato Scientific Co., Ltd.**

[www.yamato-scientific.com](http://www.yamato-scientific.com)