# ULVAC

# ULVAC



## Contents

| CEO's Message     | ()4 |
|-------------------|-----|
| About ULVAC       | 06  |
| Company History   | 80  |
| Business Division | 10  |
| Group Companies   | 22  |

# 새로운 가치창조를 통해 한국사회에 공헌하는 기업 한국알박(주) 입니다.





한국알박(주) 대표이사 사장 김 선 길 *16/11* 

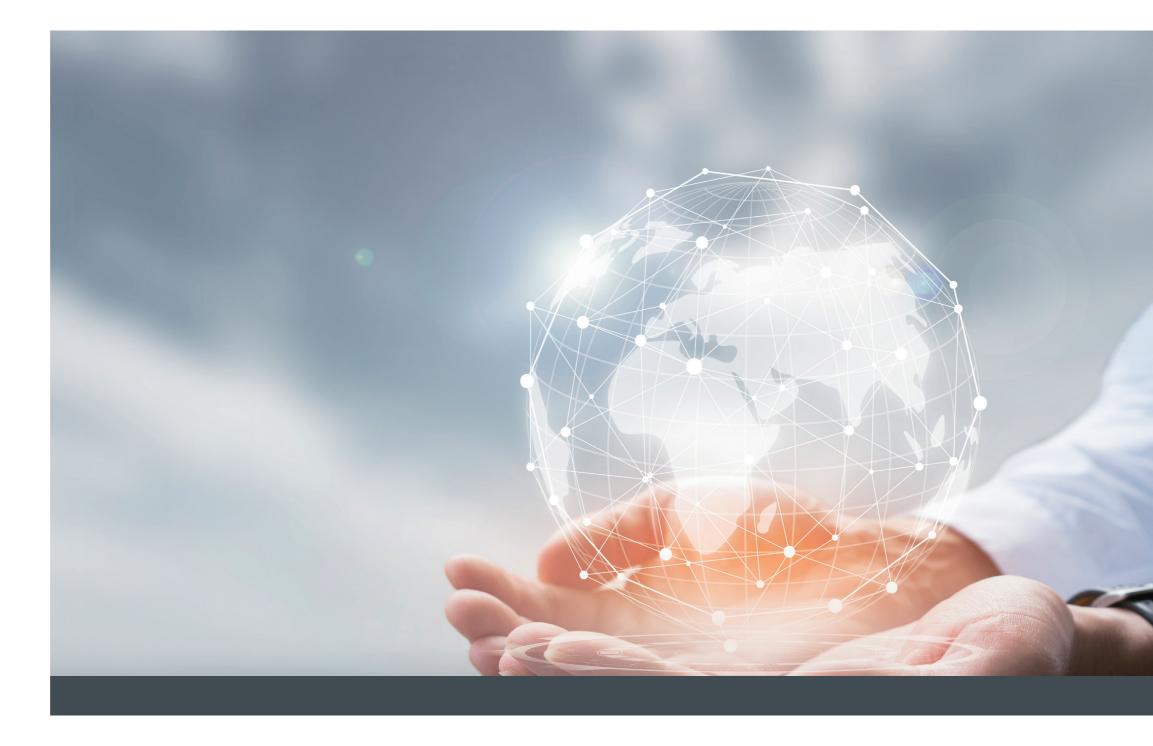
안녕하십니까. 저희 한국알박(주)를 찾아주셔서 진심으로 감사합니다.

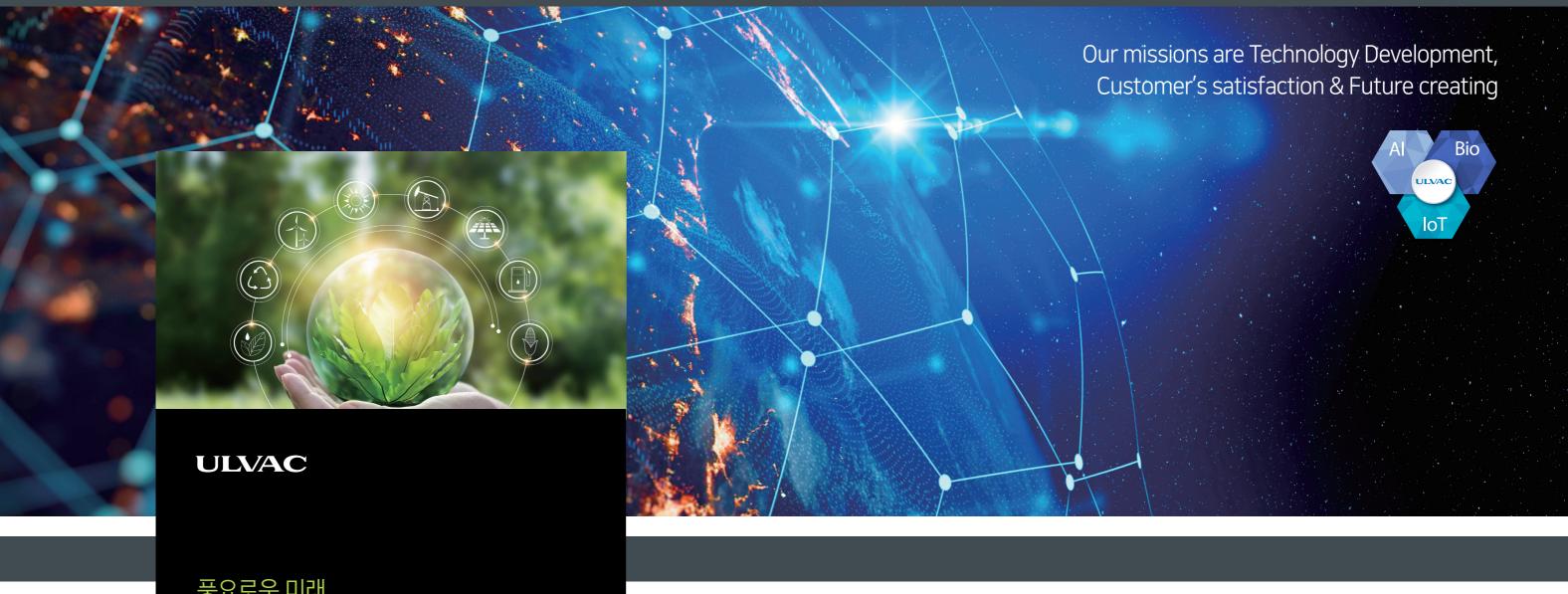
눈부신 발전을 거듭해 온 우리나라 산업기술은 이미 여러 분야에서 세계 최고의 경쟁력을 인정 받고 있습니다. 특히 메모리 반도체와 TFT-LCD 같은 진공기술 분야는 타의 추종을 불허하며 세계최고의 품질과 생산량을 자랑하고 있습니다. 이들 분야의 설비에 사용되고 있는진공기술은 일반산업에서 첨단산업에 이르기까지 광범위하게 적용되어 막대한 수입대체효과와 고부가가치를 창출하는 핵심기술입니다.

한국알박(주)는 세계최고의 진공기술을 보유한 일본기업 ULVAC,Inc가 축적해온 기술을 이용하여 새로운 장치와 최고의 제품을 고객에게 제공하고 있습니다. 또한, 예측 불가한 시장상황에서 우수한 경쟁력을 확보할 수 있도록 24시간 기술지원서비스를 실시하고 있습니다. 한국알박(주)는 한국진공기술 리더로서의 자부심과 사명감으로 관련장비의 100% 국산화 실현을 위하여 기술개발과 투자에 힘을 쏟고 있습니다.

한국알박(주)는 창사20년을 지나 새로운 한발을 내딛기로 하였습니다. 새로운 가치창조를 통해서 한국사회에 공헌하고 국가경쟁력으로 이어갈 수 있도록 최선의 노력을 다하고 세계 최고수준의 품질과 가격경쟁력을 추구하여 세계시장에서 성장과 확대를 목표로 하고 있습니다. 사원들을 위해서도 공정한 기회를 만들고 사회의 일원으로써 책임을 다하도록 노력하겠습니다.

여러분의 아낌없는 격려를 부탁드립니다.





# 풍요로운 미래, 가치있는 기술 \_ 한국알박

세계진공기술 1위기업을 지향하는 한국알박은 최고의 첨단기술력과 노하우를 바탕으로 세계 최강의 기술이될 수 있도록 최선의 지원을 펼치고 있습니다.

성공신화를 창조하는 기업파트너 한국알박과 미래를 함께하십시오.



## **Company History**

# R&D, Manufacturing in Korea



한국알박은 1995년 7월 설립 이래 진공전문 Maker로서 다양한 산업분야에 헌신하고 있습니다. 현재 본사는 경기도 평택시 청북면 어연한산 지방산업단지 내 위치하고 있으며 5천 평 부지에 반도체, 전자기기 장비 위주의 제조설비와 크린룸을 보유하고 있습니다.

그리고 현곡산업단지 내 1만여 평 규모의 부지에 8세대 이상의 Sputter 장치를 제조할 수 있는 제조설비 및 크린룸을 보유하고 있습니다. 그 외 분당, 부산에 영업소를 두고 있으며, 구미, 화성, 탕정, 파주에 고객지원센터를 설립하여 고객과 가까운 곳에서 신속한 서비스가 가능하도록 고객중심의 전국네트워크 망을 구축하고 있습니다. 뿐만 아니라 ISO9001, ISO14001, ISO 27001, ISO 45001의 인증취득과 2005년 외국인 투자유치 유공자 대통령 표창, 2010년 대·중소기업 동반성장 국무총리 표창, 경실련 주관의 바른 외국기업상 최우수상, 2015년 1억불 수출의 탑 수상을 통해 대내외적으로 경제, 사회적 성과를 인정받고있습니다.

### History

- 1995.07 / 한국알박(주) 설립
- 1997. 06 / 구미 고객지원 Center 설립
- 2000.08 / 평택 제1공장 준공
- 2000.09 / 백충렬 사장 취임
- 2001.04 / 평택 제2공장 준공
- 2003. 11 / 평택 제3공장 준공
- 2004.07 / 자회사 [한국알박정밀(주), PS Tech.(주)] 설립
- 2005.04 / 현곡 제4공장 준공
- 2005.12 / UF TECH(주) 인수
- 2006. 11 / 현곡 제5공장 준공

- 2008.08 / 자회사[한국알박머터리얼즈(주)] 설립
- 2011. 07 / 한국초재료연구소 설립
- 2016. 09 / 후지이마 사장 취임, 백충렬 회장 취임
- 2018.07 / 김선길 사장 취임
- 2021. 05 / 자회사 4사 합병 [PS Tech.(주), 한국알박정밀(주),
  - 한국알박머터리얼즈(주), UF TECH(주)]
  - PS Tech.(주) 설립
  - / 송탄공장 설립
- 2021. 09 / 서울 사무소 → 분당사무소 이전
- 2022. 11 / 고덕 고객지원 Center 설립

## 인증 및 수상

- 2001.02 / ISO9001 인증 취득
- 2001.03 / 모범 납세자 경제부총리 표창 수상
- 2003. 12 / IT 우수기업 중소기업청 표창 수상
- 2005.03 / 백충렬 대표이사 모범기업인 표창 수상
- 2005.06 / ISO 14001인증 취득
- 2005. 11 / 무역의 날 천만불 수출의 탑 수상
- 2005.12 / 백충렬 대표이사 투자유치유공자 대통령 표창 수상
- 2007.12 / 경실련 바른외국기업상 우수상 수상
- 2008.12 / 경기도 투자유치 우수기업인상 수상
- 2009.05 / 대일수출 유망기업 선정
- 2010. 10 / 경기도 성실납세법인 인증서 수상
- 2010. 12 / 백충렬 대표이사 대·중소기업 협력대상 국무총리 표창 수상
  - / 경실련 바른외국기업상 최우수상 수상
  - / 우수봉사기업 평택시장 표창 수상
- 2011. 04 / ISO 27001 인증 취득
- 2011. 06 / 지식경제부 일하기 좋은 기업 선정
- 2012. 01 / KOSHA/OHSMS 안전보건경영 인증 취득
- 2012.06 / 지식경제부 자율준수 무역거래자 지정
- 2012. 07 / 한국산업안전보건공단 주관 2012년도 안전보건활동 장려상 수상
- 2012. 12 / 한국무역협회 7000만불 수출의 탑 수상
- 2014. 12 / 산업통상자원부 주관 자율준수 무역 거래자 지정
- 2015. 12 / 무역의 날 1억불 수출의 탑 수상
- 2016. 03 / 삼성전자 16년도 상생협력DAY 혁신우수협력사 수상
- 2016. 10 / 한국디스플레이협회장상 수상
- 2019. 12 / 평택시 주관 사회복지향상 표창 수상
- 2020.01 / LG Display Best Partner Award 수상
- 2020.09 / 통계청 주관 통계유공자 경인청장 표창 수상
- 2021. 01 / ISO 45001 인증
- 2021. 03 / 제55회 납세자의 날 정부 포상 전수식 대통령 산업포장 수상
- 2021. 10 / 2021 한국 디스플레이 산업협회 공로상 수상
- 2022. 12 / LG Display 주관 안전관리부문 최우수협력사 수상









# Touch the Future with Dream Technology

Building a flourishing future by creating innovative solutions to deliver industrial and scientific advancement











### Semiconductor Production Equipment

Cutting-edge Products to Meet State-of-the-art Processing Requirements

### Industrial Vacuum Equipment

Wide Range of Product Applications Made Possible by ULVAC Technologies

### **Electronic Device Production Equipment**

Sputter, Plasma CVD and High Vacuum Evaporation Systems make Up The Main Product Line

### **FPD Production Equipment**

A Pioneer in Display Manufacturing Equipment with the Largest Share of Global Flat Panel Display Equipment Group

### **Vacuum Components**

Cutting-edge Products to Meet State-of-the-art Processing Requirements

### Semiconductor Production Equipment

Cutting-edge Products to Meet State-of-the-art Processing Requirements

### ENTRON™-EX W300

Multi-chamber Sputtering Systems

### Features

- ENTRON™-EX is the newest line-up developed based on exsiting. ENTRON™-W300/W200 series in order to achieve high productivity.
- Line up with detailed model (TiNK, CuRK) respond to various material.
- Up to 8 process chambers (PVD, ALD, CVD, etc.) and 2 chambers (Degas, cool).
- Mechanical throughput is 100wph or more using by ULVAC original new transfer robot.
- ENTRON<sup>TM</sup>-EX S-type (Single core type) is suitable for mini-fab concept and ENTRON<sup>TM</sup>-EX T-type (Tandem type) is good for mass production, they are flexible for customers' needs.
- ED-PMS system which monitor and administrate machine condition, and MESEC-BIT, which is no contact film thickness measurement tools.

### Applications

■ Advanced Semiconductor manufacturing equipment.



### RISE™-300

A Batch System to Remove Native Oxide

### Features

- Damage-free (remote plasma and low-temperature process).
- High throughput and low CoO.
- Processing in batches of fifty wafers.
- Superior uniformity of etching (5% or less per batch).
- Easy maintenance.
- Small foot print compare to cluster type equipment.
- 50% lower self-aligned contact resistance compared to current wet process.
- The Smallest foot print.

### Applications

- Pre-cleaning for self-aligned contact (SAC) formation.
- Pre-cleaning for capacitor formation.
- Pre-cleaning for epitaxial groeth.





## Industrial Vacuum Equipment

Wide Range of Product Applications Made Possible by ULVAC Technologies

### **DFB-Series** Lyophilizer

Freeze Drying/Vacuum Drying System

#### Features

- Touch-panel operation, operation display, warning display, maintenance display.
- Shelf temperatures can be controlled by programs.
- Completely automatic operation.
- Electronic expansion valve is provided standard.
- Stable vacuum control from primary to secondary drying.
- Standard lineup includes models supporting O/SIP.

### **Applications**

■ Freeze-drying processes for pharmaceutical products.

### **COMBAT-Series** Compact Batch System

#### Features

- Maximum temperature 1300°C, Operation temperature 400 to 1250°C.
- Temperature uniformity is within ±5°C at 1000°C.
- Ultimate vacuum Not more than 3 x 10-3 Pa.
- Working vacuum High vacuum mode 10-2 Pa, Carrier gas mode 20 ~ 100Pa.
- Keeping the heating chamber in vacuum for high quality and repeatability of products.
- Carrier gas system is implemented to minimize metal evaporation.
- The heating chamber is kept in vacuum to prevent from oxidizing so that lifetime for internal parts of the heating chamber can be longer.
- Ultimate vacuum: Not more than 3 x 10-3 Pa.
- Working vacuum: High vacuum mode 10-2 Pa, Carrier gas mode 20 ~ 100Pa.

### **Applications**

- Quenching, Tempering: various machine parts, parts for air plane.
- Brazing: Heat exchanger, machine parts, parts for air plane, vacuum interception.

### **FSC-Series** Vacuum Sintering Furnaces

### Features

- Inline system configuration enables high-quality product manufacture.
- Inline system configuration increases productivity.
- Highly reliable system with extensive sales records.

### Applications

- Computer drive system motors.
- Mobile phone capacitors.
- Edge chips for cutting tools.
- Precision parts (automotive, camera, sewing machine parts)



### H-Series Diffusion furance

### Features

- Can choose up to four different processes.
- Five zones heater control for highly uniform soaking.
- $\quad\blacksquare\quad$  Easy loading with boat elevator and soft-lander unit.
- Space saving design.
- Original control system dedicates easy and reliable operation.

### **Applications**

 Pyrogenic wet oxide, wet oxide, dry oxide, Phosphorus and Boron doping with POCI3 or BBr3, and anneal.



### **Electronic Device Production Equipment**

Sputtering, Plasma CVD and High Vacuum Evaporation Systems Make Up the Main Product Line

### ei-Series

### Batch-type High Vacuum Evaporation System

#### Features

- Supports various evaporation sources(i.e.EB. RH. EB+RH etc.).
- Substrate holders complying with each process(i.e.lift-off, planetary, satellite etc.).
- Supports various substrates; substrates size from Ø2in to 12in, rectangular substrates, Si, Compounds, glass and ceramics.
- Improved Lift-off function and increased number of loadable substrates(EVD-600LP).

### **Applications**

- Compound-related devices of Power devices.
- LED, LD and high speed devices.
- Various R&D and Other general electronic devices.

### **NE-Series**

### Load Lock Type Dry Etcher System

### Features

- Higher Though-put (by 140% than conventional systems).
- ICP with magnetic field high density plasma source which has over 600 delivery record in compound semiconductor market is equipped.
- Propriately Star electrode\*2 which has self-cleaning function for deposited material from RF window is equipped.
- High maintenance capability, stability, reliability are achieved through re-deposition preventative designing.
- Dry etching technology availability for various process application. (GaN, Sapphire, Metal, ITO, SiC, AIN, ZnO, 4 elements compound semiconductor materials, etc.).
- Various Option availability.

### **NA-Series**

### Luminous NA Series

#### Features

- High does ion implant stripping process and polymer removal process of 10E16 or higher level that are necessary for critical process for next generation wafers can be implemented free of damages.
- Chamber construction is arranged most suitably for an F-based gas addition process, and particle-free treatment is possible. Therefore, it is suitable to construct an extremely wide range of processes from nomal PR to high does ion implant stripping process, organic films (such as PI and DFR) peeling and oxidized film etching.
- A simple system construction is adopted, achieving "excellent maintainability and reliability" and "low cost" at the same time.
- $\blacksquare$  Flexible system construction is possible ( $\mu$  wave, RIE, and  $\mu$  wave + RIE), allowing a wide range of transfer channel selection.
- Wafer size can be switched by simply changing the recipe setting, achieving very easy wafer size change.

### Applications

- High does ion implant stripping process (10E16 or higher) and polymer removal in front end process.
- Wafer process that requires CF4 addition process (electronic parts and LEDs).
- Chip size package and bump process. CCD color filter manufacturing process.

### **ULDiS-Series**

### Sputtering System for Optical Filters and Coating

#### Features

- Coating of the filters of good spectrum characteristics. Precisely reproducible coating thickness.
- Low processing temperature.
- A wide variety of options including low-damage cathode.
- Prevent arching plasma by double cathodes; AC sputtering.

#### Applications

Mirror coating for DVD.

- Mirror coating for DVD.
- Other optical filters including anti-reflection coatings.
- Other optical filters including anti-reflection coatings.











### SiC Power Device

### Ion Implanter: IH-860PSIC

### Features

- High Temperature ion implantation.
- Energy
- 400Ke V (One vallance ion)
- 800Ke V (Two vallance ion) - 1.2Me V (Three vallance ion)
- Dual End Station.
- Chain Implantation by software.
- From R&D to mass production.



### **Ailesic Series**

### SiC Extra High Temp Process Equipment Series

#### Features

- Dry/Net Oxidation (O₂, Pyrogenic).
- Oxynltriding/Post Oxidation Anneal (N₂O, NO).
- Max. Operational Temperature : 700-1350/1450/1650 degree C.
- Max. Heating/Cooling Rate: 20 degree C/min.
- Available Wafer Size: 4-6 Inch.
- Batch Size: 50/50/25 Wafers / Batch.
- Activation Anneal (N<sub>2</sub>, Ar).
- Op Temp: 1200-1950 degree C.
- Max. Heating/Cooling Rate: 100 degree C/min.
- Available Wafer Size: 4-6 Inch.
- Batch Size: 25 Wafers / Batch.



### CS-200

### Load lock type Sputtering System

#### Features

- Substrate transfer capability up to Φ300mm (Deposition performance up to Φ200mm).
- Automatic multi-layered deposition by recipe control.
- Capable of automatic substrate transfer by simply loading the substrate on to manipulator in the Load-lock chamber.
- Cassete chamber available five substrates stocker inside of load-lock chamber.
- Co-sputtering and Multi-layer deposition using multi cathodes.
- Bias-sputtering available with optional substrate Bias power supply.

### **Applications**

- R&D.
- Small production purpose.

### uGmni-Series

### Combined deposition and etch modules' system of cluster type for advanced electronics

### Features

- Multi types of sputter, etcher, asher & PE-CVD modules can be equipped.
- All types of above modules are made by ULVAC.
- Up to Φ300mm wafer is applicable.

### **Applications**

(Examples follow)

Power Seed & matal layer sputtering ■ MEMS sensor PZT sputtering & etching

VCSEL etching Opt. device Packaging Descum ashing

Communication Insulated PE-CVD and etching



### **FPD Production Equipment**

A Pioneer in Display Manufacturing Equipment with the Largest Share of Global Flat Panel Display Equipment Group

### LCD & OLED Manufacturing Equipment / Roll coating system

### **SMD Series**

SMD series is a sputtering device for various membrane types such as metal, ITO, IGZO, etc.

We have delivered more than 1,000 units and are operating in various environments. We can further improve reliability by reflecting the raw voices obtained from our rich performance in a timely manner.

#### Features

- Suggest the best platform for your application (Vertical/Cluster).
- Space-saving design.
- Easy to manage individual substrates such as film forming conditions.
- Cathode lineup corresponding to film-forming substances.
- Extensive membrane-forming processes supported by rich experience and data.

### Applications

■ Display (TFT, Smartphone, Thin TV (4K, 8K), OLED).

### Sputtering Systems Single-substrate





### **CMD Series**

Single-substrate Plasma CVD Systems



CMD series are single-substrate CVD system for deposition of a-Si film, silicon oxide film and nitride film using SiH4 or TEOS.

### Features

- Compared with the existing process temperature, the driving system of each unit and the development of vacuum transport robot have been developed to achieve stable transportation system.
- The long-term stable rate of TEOS(SiO2) films can be obtained by improving the internal structure of the reaction chamber and the gas supply system.
- Due to the heating of the reaction gas path, the gas can be discharged to the excluded equipment, and the attachment of by-products to the piping can be suppressed without using the piping trap, thus reducing the maintenance time can be shortened.
- $\hfill \blacksquare$  It is easy to manage individual substrates such as film forming conditions.

#### **Applications**

■ Low temperature P-Si, a-Si TFT ,Oxide TFT.

### **ZELDA Series**

Single-substrate Organic EL Manufacturing Systems



The ZELDA series introduces a series of cluster systems for mass production from experimental systems for organic EL materials development.

### Applications

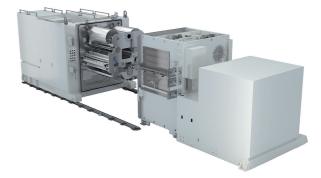
Organic EL displays, organic EL lighting.

### **EWE Series** (for Film Capacitor)

### RH Evaporation Roll Coater

#### Features

- Web Width: Up to 1050mm
- Evaporation Source: Resistance Heating type
- Thin web handling with high speed deposition : OPP 2.0µm – Depo speed 600m/min
- High speed patterning for self-security function
  : Pattern accuracy < 0.2±0.05mm
  : Depo speed 750m/min



### **EWA Series**

IH Evaporation Roll Coater

### Features

- Web Width: Up to 3300mm
- Evaporation Induction Heating Type
- Low pin-hole deposition with IH Heating
- Transparent barrier film(AlOx, SiOx) deposition

### **EWK Series** (for LiB/LiC)

RH Evaporation Roll Coater

### Features

- Web Width: Up to 600mm
- Evaporation Source: Resistance Heating type
- High rate deposition: 20µm·m/min
- Li surface protection with passivation treatment





## **Vacuum Components**

Cutting-edge Products to Meet State-of-the-art Processing Requirements

### **Leak Detector**

### HELIOT901W1 / 901D2 / 904W2 / 904D3 / 904D4

HELIOT 900 series is a leak detector which has high speed pumping capability and user-friendliness.

Highest performance is committed in all kinds of leak tests.

### Features

- High speed pumping capability 5L/sec helium in ULTRA flow mode.
- Tablet wireless remote control as standard.
- Simple and eye-friendly high-definition screen.
- Backing pump is selectable from oil rotary pump and dry scroll pump in different sizes.
- Mobile-friendly with maneuverable cart (904 series) and low height floor cart (901 series).
- Easy maintenance. Tool-free removal panel, easy access to each part and maintenance instruction movies installed.
- Aside from helium, hydrogen detection is possible in vacuum method.



### Process gas monitor

Residual Gas Analyzer

#### Features

Qulee CGM Series

For sputtering system for process control, quality control and yield ratio improvement.

Qulee BGM Series

For various kind of evaporator and vacuum furnace for quality control and yield ratio improvement.

Qulee HGM Series

For research & development equipment.

■ Quiee RGM Series

For etching and CVD system for process control, quality control, yield ratio improvement and end point monitoring.

Pumping System Qulee with YTP

For wide range of usage from process control, residual gas analysis of various vacuum equipments to R&D.



### SH200 / ST200 Series

Hot Cathode Gauge Tranducer Type

### Features

- New series of transducer type "G-TRAN series Multi Ionization Gauge" that is capable of connection to different type sensor heads.
- ULVAC own concept: Capable of connection of different measurement range sensor heads according to application.
- Compact: Significantly miniaturized compared to the previous series (56% reduction of controller volume). World's smallest class.
- High usability: Set point setting, condition check, etc. by connecting PC/Android.



### **ELEC / COVOT Series**

### Vacuum Transfer Robot

ULVAC's vacuum transfer robot is introduced a lot of technologies from our experiences as a Vacuum equipment manufacturer.

#### Features

- Offers variety of arms with various strokes, number of hands and turning radii.
- Enable to use in the high vacuum(10-6Pa~).

### Applications

- Automatic wafer transfer for various semiconductor equipment.
- Wafer transfer for various vacuum.



### **Power Supply**

#### Features

- High Power DC Power Supply DC series / DC-30H.
- Low Power DC Power Supply DC / DCS Series.
- DC Pulse Power Supply DPG-P Series.
- RF Power Generator / Matching Box RFS-N series.
- High Function EB Power Supply HPS-N series.



### **Dry Vacuum Pump**

### LS120A / 300A / 600A / 1200A

Dry Pump which has both high pumping speed and low power consumption. Enable to select suitable pump from 4 different pumping speed model depending on the use condition.

### Features

■ High pumping speed

High pumping speed at near atmosphere pressure, and pumping down time cab be drastically reduced.

Low power consumption

ECO-SHOCK technology realizes low power consumption(C Type) at the ultimate pressure is the industry-leading 0.6kW or less(LS120A-C).

Low noise

Built-in silencer achieves the noise level 61dB(A) or less.

Low running-cost

No shaft sealing gas.



Always the Spirit of Innovation

## Vacuum Components

Cutting-edge Products to Meet State-of-the-art Processing Requirements

## Charging System for Electric Vehicle

Cutting-edge products leading the market

### **Oil Rotary Pump**

### VS650A-A / 650A-W / 750A-A / 750A-W

Large size and low vibration (Single stage type)

### Features

- Selectable from air and water cooled type. Oil cooler is used for oil temperature cooling for a air cooled model.
- Equipped with a cartridge-type oil mist filter inside the oil tank.
- Cleaning of the inside of the oil tank and replacement of the oil mist filter are easy.

# Cryo Vacuum Pump

With proven reliability, excellent performance and quality, prompt and appropriate services, and many different models, our cryo pumps are ideal for production lines all over the world.

### Features

- Ultra-clean vacuum
- Mounts in any orientation
- High pumping speed
- Compact design
- Pumps all gases
- Quiet, easy, to operate
- No liquid helium nitrogen
- Lower operating cost



### Turbo Molecular Vacuum Pump

Controller integrated turbo molecular pump with magnetic bearings saves wiring work and installation space.

### Features

- Controller integrated with the pump body

  No wiring work between pump body and controller.
- Free mounting direction
- Free mounting direction makes the system design flexible.
- 5 models from 1000L/s to 4000L/s class.
- $\hfill \blacksquare$  Wide range and high flow for the light processes.
- Pump rotation variable from 25% to 100% Enabling the pressure adjustment in a chamber.
- High durability and safety
- Safety confirmation tests are passed, such as air rushing-in test and touch down test.



### Small Vacuum Pumps

### Features

- Diaphragm Type Vacuum Pumps DAP / DA / DAT / DAU / DTU / DTC Series.
- Rocking Piston Type Dry Vacuum Pumps DOP Series.
- Scroll Type Dry Vacuum Pumps DIS / DISL Series.
- Multi-Stage Roots Type Dry Vacuum Pump RDA Series.
- $\quad \blacksquare \quad \mbox{Oil-Sealed Rotary Vacuum Pumps GLD / GHD / GCD Series.}$
- Mechanical Booster Pump MBS Series.





### V1G, V2G Charger

UK20GV-NC7W

- ▶ V1G : Unidirectional Smart Charging
- ▶ V2G: Vehicle-to-Grid





Quick Charger UK-QC100D-DC

# **ULVAC GROUP COMPAINIES**



Europe



### ULVAC GmbH

ells and provides customer support for vacuum

### Korea



ULVAC KOREA, Ltd.

anufactures, sells, and provides customer support for



Japan

ULVAC, Inc.

ULVAC KIKO, Inc.

Manufactures and sells small vacuum pumps

Develops, manufactures, sells, and customer support for vacuum equipment, vacuum components, and materials

equipments

ULVAC TECHNO, Ltd.

ells and provides customer support

nsumable materials, surface

atment, cleaning and used

vacuum equipment, devices, parts,

ULVAC CRYOGENICS KOREA INCORPORATED



### ULVAC-PHI, Inc

Manufactures and sells surface analyzers

### ULVAC COATING CORPORATION

Manufactures, processes, and sells mask blanks for flat panel displays and semiconductors, and MEMS Glass

### SHOWA SHINKU CO., LTD.

Manufactures and sells vacuum equipments for quartz devices and optical applications

### ULVAC EQUIPMENT SALES, Inc.

Sells vacuum equipments and components

ULVAC KYUSHU CORPORATION Conducts contract manufacturing of vacuum equipments,

vacuum pumps, vacuum valves, sputtering targets, etc.

### ULVAC TOHOKU, Inc.

Pure Surface Technology, Ltd.

film deposition equipmennts

Provides a surface treatment service for parts used

Conducts contract manufacturing of vacuum equipments, sputtering targets, etc.

### TIGOLD CORPORATION

Develops technologies, sells and materials for composite film

### NISSIN SEIGYO Co., LTD.

manufactures and sells automatic control panels

### REJ Co., Ltd.

Development, manufacturing, sales and customer support of Motor drives and control systems for industrial machines

### FINE SURFACE TECHNOLOGY CO., LTD.

Provides ultra-precision polishing technologies for grass substrates and blasts parts for ultra-precision devices used in the semiconductor field

### North America



#### ULVAC Technologies, Inc.

Manufactures, sells, and provides customer support for vacuum equipments

### Physical Electronics USA, Inc.

Sells surface analyzers

#### Taiwan



### ULVAC TAIWANINC. Manufactures, sells, and provides customer support for

ULTRA CLEAN PRECISION TECHNOLOGIES CORP. Manufactures, cleans, conducts surface treatment, and ovides customer support for vacuum equipments and parts

### ULVAC SOFTWARE CREATIVE TECHNOLOGY, CO.,LTD.

Develops and produces software for vacuum equipment control systems

#### ULVAC AUTOMATION TAIWAN Inc.

Manufactures and sells control panels and automatic control equipments

#### ULCOAT TAIWAN, Inc.

Manufactures, processes, and sells mask blanks and black matrixes for flat panel displays, and mask blanks for semiconductors

#### ULVAC Materials Taiwan, Inc.

 $\label{thm:manufactures} \mbox{ and sells sputtering targets for flat panel displays}$ 

### Southeast Asia



#### ULVAC,Inc., India Branch

ells and provides customer support for vacuum quipments and components



#### ULVAC MALAYSIA SDN, BHD.

equipments and components, and provides parts leaning and target bonding services



### ULVAC SINGAPORE PTE LTD.

acuum equipments and components



### ULVAC (THAILAND) LTD.

Sells and provides customer support for vacuum equipments and components

### China



### ULVAC (CHINA) HOLDING CO., LTD.

Undertakes administrative and coordinating tasks for investment and business in China

### ULVAC (Shanghai) Trading Co., Ltd.

Sells and provides customer support for products manufactured by ULVAC group companies

### ULVAC Automation Technology (Shanghai) Corporation

Develops, designs, manufactures, and sells electrical panel and automatic control solution



### ULVAC (NINGBO) CO., LTD.

Manufactures and sells vacuum pumps



### ULVAC (SUZHOU) Co., Ltd.

Manufactures and sells vacuum equipments



### ULVAC Orient (Chengdu) Co., Ltd.

Manufactures and sells vacuum equipments

### ULVAC Tianma Electric (Jingjiang) Co., Ltd.

Manufactures and sells parts for vacuum pumps

### ULVAC Research Center SUZHOU Co., Ltd.

Provides technologies for R&D into vacuum equipments

### Sells vacuum equipments and components and trading in the free trade area

ULVAC VACUUM EQUIPMENT (SHANGHAI) CO., LTD.

ULVAC Coating Technology(HEFEI)Co.,Ltd. Produces optical films (e.g. touch panels) and manufactures and sells vacuum equipments

### ULVAC (Shenyang) Co., Ltd.

Manufactures, sells, and provides customer support for vacuum equipments

### ULVAC NONFERROUS METALS (NINGBO) CO., LTD.

Manufactures, sells, and provides research guidance/technical advice on casting materials (e.g. aluminum alloys) and the castings

### ULVAC CRYOGENICS (NINGBO) INCORPORATED

Manufactures, sells, and provides customer support for cryopumps

### ULVAC Materials (Suzhou) Co., Ltd.

Develops, manufactures, sells, and provides customer support for sputtering targets

### Hong Kong ULVAC Co., Ltd.

Sells vacuum equipments and components







본사/ 평택공장 tel. 031\_683\_2922 fax. 031\_683\_9034 17792 경기도 평택시 청북면 한산길 5

현곡공장 tel. 031\_617\_9500 fax. 031\_617\_9512 17812 경기도 평택시 청북면 현곡산단로 123

송탄공장 fax. 031\_680\_8462 17746 경기도 평택시 산단로 52번길 68

분당사무소 tel. 031\_8023\_9890 fax. 031\_8023\_9891 13558 경기도 성남시 분당구 성남대로 331번길 8 킨스타워 27층

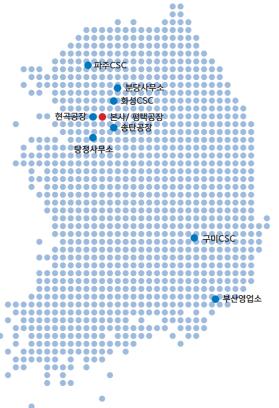
구미CSC tel. 054\_471\_3567 fax. 054\_471\_3569 39391 경상북도 구미시 3공단1로 302-7 (임수동) 구미공구상가내 지원동 4층

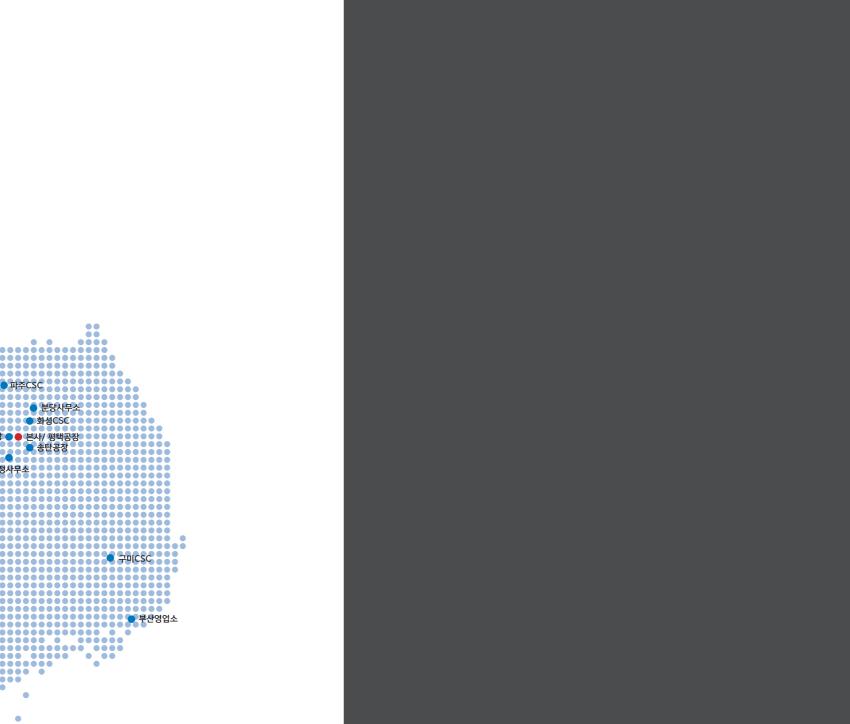
부산영업소 tel. 051\_317\_2920 fax. 051\_317\_2925 46721 부산광역시 강서구 유통단지1로50(대저2동 3138-1) 206동109호

화성CSC tel. 031\_206\_2931, 2921, 2910 fax. 031\_206\_3921 18384 경기도 화성시 효행로 1369 (반월동) 태양B/L 3층

**탕정CSC** tel. 041\_532\_2921 fax. 041\_532\_2924 31419 충청남도 아산시 음봉면 음봉로 791 부흥B/L 4층

파주CSC tel. 031\_8071\_2920 fax. 031\_8071\_0626 10845 경기도 파주시 월롱면 엘씨디로 6 디에이엘씨디프라자 3층







www.ulvackorea.co.kr