

EASYCOOL 易酷®

—— 鹏力引领低温新科技 ——



  
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PRIDe TECHNOLOGY GROUP



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CSIC PRIDe (NANJING) CRYOGENIC TECHNOLOGY CO.,LTD.





LEADING NEW CRYOGENICS TECHNOLOGIES

# CONTENTS

## Contents

|  |    |
|--|----|
| Company Profile                                    | 2  |
| Development Course                                 | 3  |
| Intellectual Property Rights and Key Technologies  | 4  |
| Cryocoolers  | 5  |
| Gas Recovery, Purification and Liquefaction System | 16 |
| Cryostats  | 24 |
| Appreciation to Customers                          | 28 |



CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd (PRIDE Cryogenics) is a high-tech company founded by China Shipbuilding Industry Corporation, 724 Institute and Nanjing Pride Technology Group. PRIDE Cryogenics is only cryogenic equipment manufacturer who masters 4K cryocooler technology in China and also the only one of the cryogenic equipment manufacturers who can supply with 4K cryocoolers, standard and customized cryostats, and large scale cryogenic systems for liquefaction of Natural Gas, Helium and Hydrogen around the world.

## COMPANY PROFILE

PRIDE Cryogenics brings together many talents in technique, management and marketing areas. PRIDE Cryogenics is specialized in the research and development of cryogenic and electronic devices. PRIDE Cryogenics has independent intellectual property rights for several key technologies, such as Inertance Gap Phase Shift Cryocooler, Nano-Filtration Channel Oil Separation Technology, which improve the performance and reliability of products, and thus enlarge the application area of cryogenic products.

PRIDE Cryogenics takes "Optimizing Management, Pursuing Excellence, Continuous Improvement, Customer Satisfaction" as quality policy. PRIDE Cryogenics has obtained ISO9001, CE, UL certificates. With the series of quality detection means, PRIDE Cryogenics's products have high stability and high reliability.

PRIDE Cryogenics takes "Integrity, Diligence, Adherence" as company spirit to create a world leading business, and aims at boosting the nationalization and industrialization of cryogenic technology. PRIDE Cryogenics focuses on the development of cryogenic industry, works hard to meet the customers' needs in all aspects, provides cost effective products, professional technical support and customer-oriented services, and eventually contributes to the industrial and research development all around.

## LEADING NEW CRYOGENICS TECHNOLOGIES

## DEVELOPMENT COURSE

**CRYOGENIC PRODUCTS  
MANUFACTURER  
CRYOGENIC SYSTEMS  
SERVICE-PROVIDER**

2010.1

Founded

2013.7

To be a member of CSIC

2014.3

CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd. was founded

**Registered Capital: RMB 30,000,000.00**





# INTELLECTUAL PROPERTY RIGHTS AND TECHNOLOGIES

1 Gas phase-shifting cryogenic technology

2 Nanoscale filtration channel oil separation technology

3 Gas purification separation, condensation, liquefaction, recovery technology

4 Ultra-low vibration, ultra-precision temperature control, ultra-low temperature cryostat technology

5 Large-scale cryogenic cold box, valve box integration technology

6 Multi-channel composite pipe technology



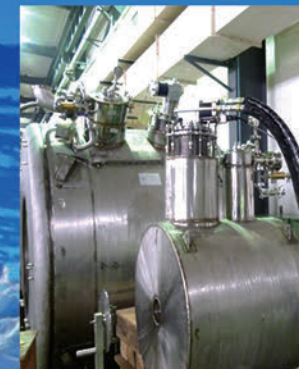
# CRYOCOOLERS

KDE418SA, KDE415SA, KDE410SA, KDE401SA, KDE210SA, KDE400SX, KDC6000V, KDC2000A

Gifford-McMahon (GM) cryocooler is invented by Gifford and McMahon, whose refrigeration principle is Gas Adiabatic Expansion. Its main components include cold head, helium and helium compressor.

Due to the property of high reliability, long service life and easy to control, GM cryocooler becomes the only one of cryocoolers which has been industrialized. This kind of cryocooler entirely depended on import until Pride Cryogenics was founded. We break the technology monopolistic of foreign companies.

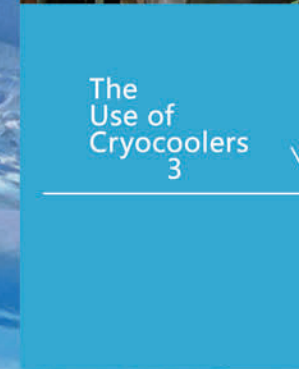
## CRYOCOOLERS APPLICATION SITE



The Use of Cryocoolers 1



The Use of Cryocoolers 2



The Use of Cryocoolers 3



The Use of Cryocoolers 4





# KDE418SA <<

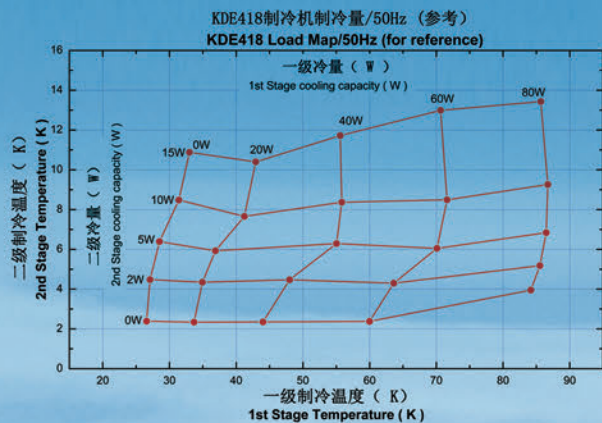


| SPECIFICATION             |               | KDE418SA           |        |
|---------------------------|---------------|--------------------|--------|
|                           |               | Lowest Temperature | < 3.5K |
| Cooling Capacity (50Hz)   | First Stage   | Second Stage       |        |
|                           | 35W @ 50K     | 1.7W @ 4.2K        |        |
| Cooldown Time (2nd stage) | < 60min(4.2K) |                    |        |
| Weight                    | Coldhead      | Compressor         |        |
|                           | 19 kg         | 118 kg             |        |
| Compressor Type           | KDC6000V      |                    |        |
| Power Consumption(50Hz)   | Steady        | Cooldown           |        |
|                           | 6.5kW         | 7.2kW              |        |
| Cooling Type              | Water         |                    |        |
| Cooling Water Requirement | > 7 L/min     |                    |        |
| Standard Flexline         | 20A×20m       |                    |        |
| Maintenance Interval      | 18 months     |                    |        |

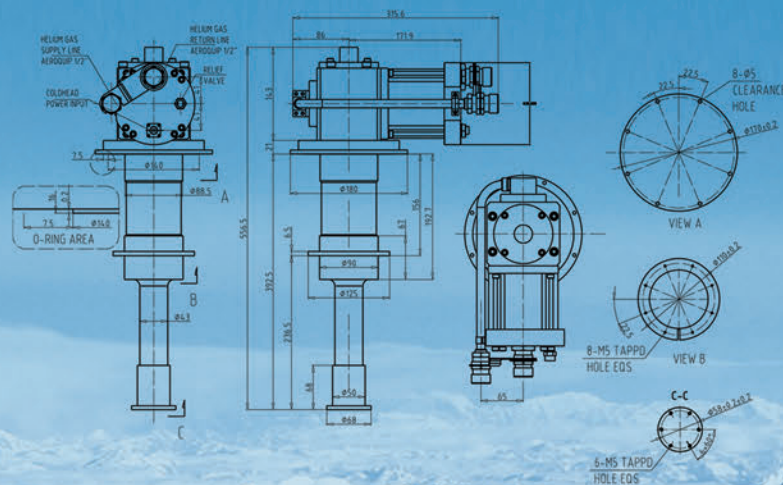
## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# >> KDE415SA

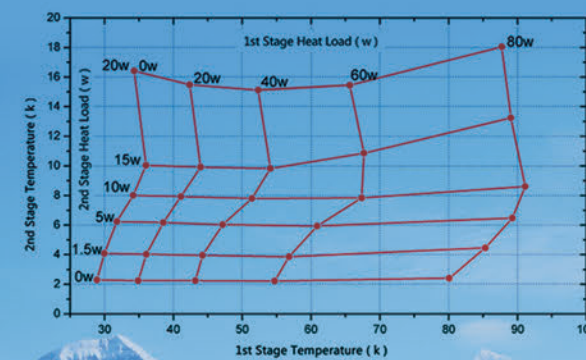


| SPECIFICATION             |               | KDE415SA           |        |
|---------------------------|---------------|--------------------|--------|
|                           |               | Lowest Temperature | < 3.5K |
| Cooling Capacity (50Hz)   | First Stage   | Second Stage       |        |
|                           | 35W @ 50K     | 1.5W @ 4.2K        |        |
| Cooldown Time (2nd stage) | < 60min(4.2K) |                    |        |
| Weight                    | Coldhead      | Compressor         |        |
|                           | 19 kg         | 118 kg             |        |
| Compressor Type           | KDC6000V      |                    |        |
| Power Consumption(50Hz)   | Steady        | Cooldown           |        |
|                           | 6.5kW         | 7.2kW              |        |
| Cooling Type              | Water         |                    |        |
| Cooling Water Requirement | > 7 L/min     |                    |        |
| Standard Flexline         | 20A×20m       |                    |        |
| Maintenance Interval      | 18 months     |                    |        |

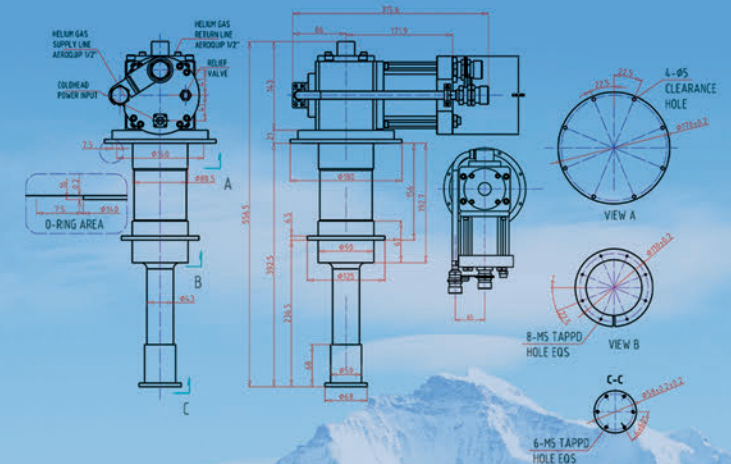
## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING





# KDE412SA <<

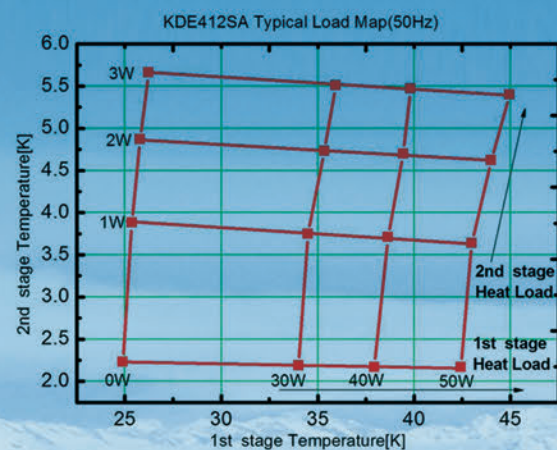


|                           |                           | KDE412SA      |              |
|---------------------------|---------------------------|---------------|--------------|
| SPECIFICATION             | Lowest Temperature        | < 3.5K        |              |
|                           | Cooling Capacity (50Hz)   | First Stage   | Second Stage |
|                           |                           | 40W @ 45K     | 1.25W @ 4.2K |
|                           | Cooldown Time (2nd stage) | < 60min(4.2K) |              |
|                           | Weight                    | Coldhead      | Compressor   |
|                           |                           | 18.5 kg       | 118 kg       |
|                           | Compressor Type           | KDC6000V      |              |
|                           | Power Consumption(50Hz)   | Steady        | Cooldown     |
|                           |                           | 6.5kW         | 7.2kW        |
|                           | Cooling Type              | Water         |              |
| Cooling Water Requirement | > 7 L/min                 |               |              |
| Standard Flexline         | 20A×20m                   |               |              |
| Maintenance Interval      | 18 months                 |               |              |

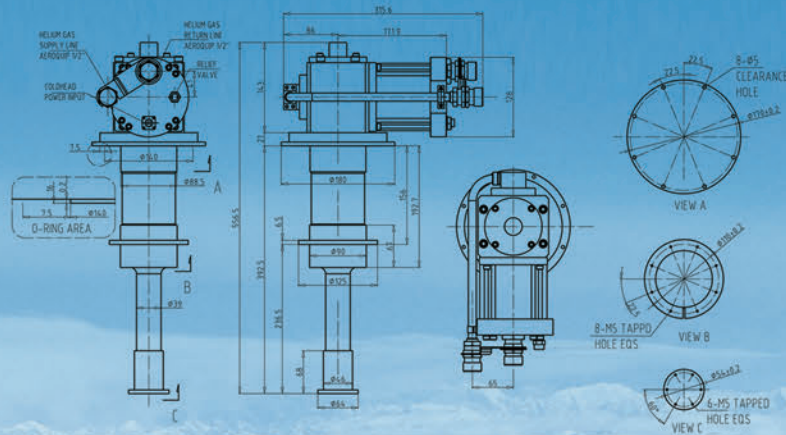
## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# >> KDE410SA

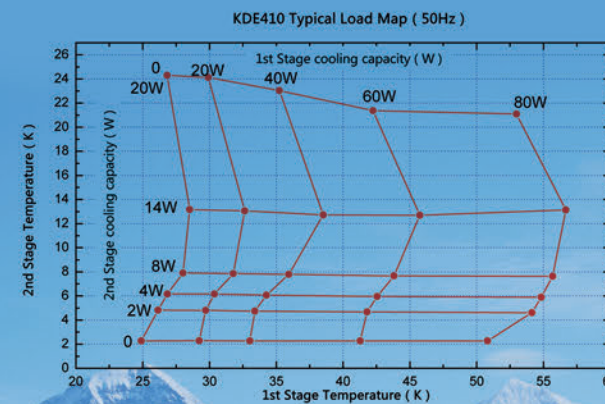


|                           |                           | KDE410SA      |              |
|---------------------------|---------------------------|---------------|--------------|
| SPECIFICATION             | Lowest Temperature        | < 3.5K        |              |
|                           | Cooling Capacity (50Hz)   | First Stage   | Second Stage |
|                           |                           | 40W @ 45K     | 1.0W @ 4.2K  |
|                           | Cooldown Time (2nd stage) | < 60min(4.2K) |              |
|                           | Weight                    | Coldhead      | Compressor   |
|                           |                           | 18.5 kg       | 118 kg       |
|                           | Compressor Type           | KDC6000V      |              |
|                           | Power Consumption(50Hz)   | Steady        | Cooldown     |
|                           |                           | 6.5kW         | 7.2kW        |
|                           | Cooling Type              | Water         |              |
| Cooling Water Requirement | > 7 L/min                 |               |              |
| Standard Flexline         | 20A×20m                   |               |              |
| Maintenance Interval      | 18 months                 |               |              |

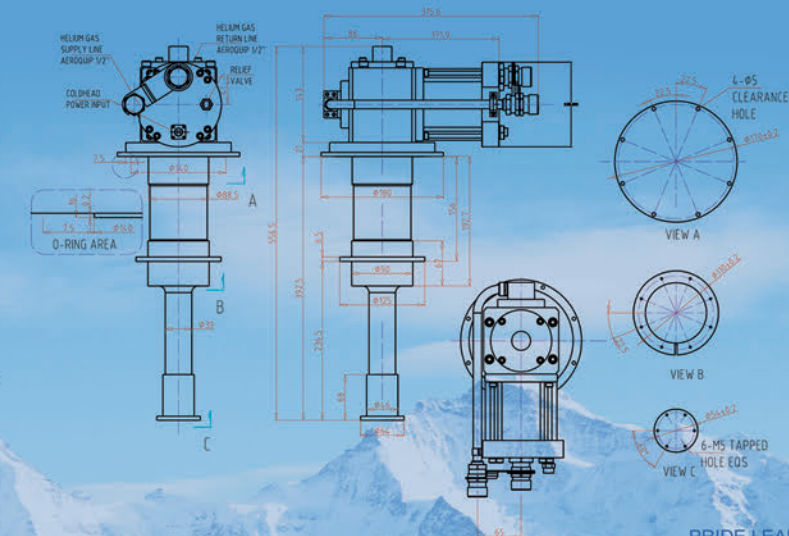
## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING













# KDC6000V

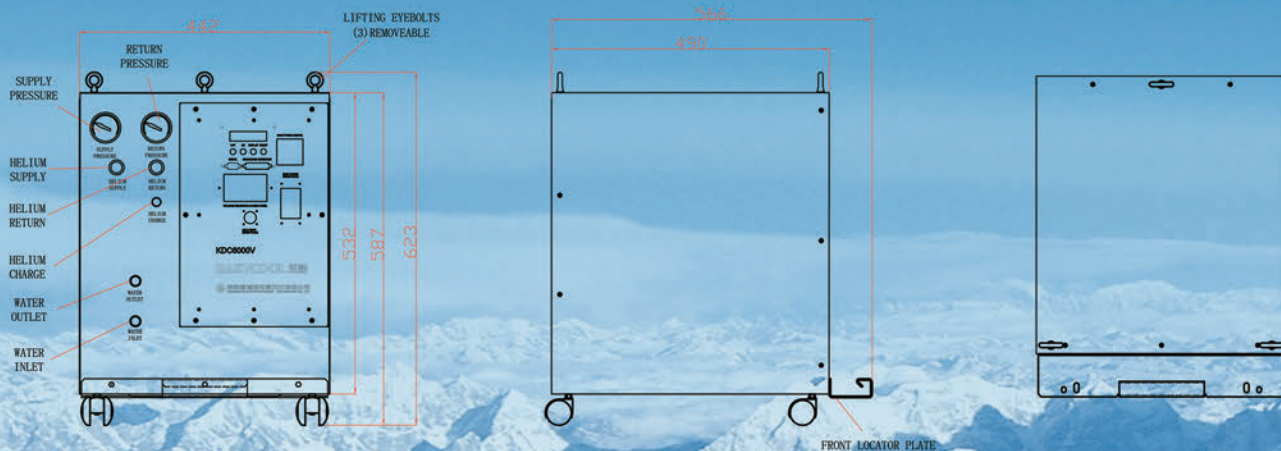


|                      |                           |                                  |            |
|----------------------|---------------------------|----------------------------------|------------|
| SPECIFICATION        | Compressor Type           | KDC6000V                         |            |
|                      | Electrical Power          | 380,400V@50Hz 3P<br>480V@60Hz 3P |            |
|                      | Helium Purity Requirement | >99.999%                         |            |
|                      | Cooling Type              | Water                            |            |
|                      | Water Flow                | 7L~10L/min (28°C)                |            |
|                      | Cooling Water Temperature | Inlet                            | Out        |
|                      |                           | 5~25°C                           | <44°C      |
|                      | Power Consumption(50Hz)   | Steady                           | Cooldown   |
|                      |                           | 6.5kW                            | 7.2kW      |
|                      | Pressure Range(Operating) | Supply                           | Return     |
|                      |                           | 16.6~23bar                       | 2.8~6.9bar |
|                      | Ambient Temperature       | Operating                        | Storage    |
| 4~40°C               |                           | -20~65°C                         |            |
| Standard Flexline    | 20A×20m                   |                                  |            |
| Maintenance Interval | 36 months                 |                                  |            |
| Weight               | 118kg                     |                                  |            |

## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## OUTLINE DRAWING



# KDC2000F

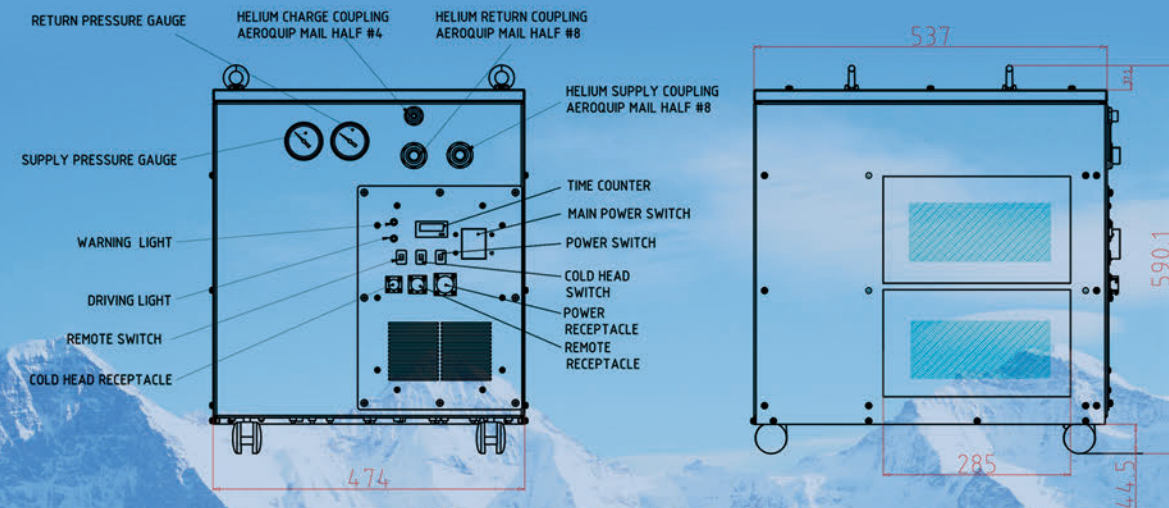


|                      |                           |              |          |
|----------------------|---------------------------|--------------|----------|
| SPECIFICATION        | Compressor Type           | KDC2000F     |          |
|                      | Electrical Power          | 220V@50Hz 1P |          |
|                      | Helium Purity Requirement | >99.999%     |          |
|                      | Cooling Type              | Air          |          |
|                      | Air Flow                  | 1800Nm³/hr   |          |
|                      | Power Consumption(50Hz)   | Steady       | Cooldown |
|                      |                           | 3.2kW        | 3.5kW    |
|                      | Pressure Range(Operating) | Supply       | Return   |
|                      |                           | 16~23bar     | 2.5~8bar |
|                      | Ambient Temperature       | Operating    | Storage  |
|                      |                           | 4~30°C       | -20~65°C |
|                      | Standard Flexline         | 15A×10m      |          |
| Maintenance Interval | 36 months                 |              |          |
| Weight               | 86kg                      |              |          |

## ENVIRONMENTAL REQUIREMENT

| Item                         | Operating    | Storage                          |
|------------------------------|--------------|----------------------------------|
| Ambient Temperature          | 4-40 °C      | -20-65 °C                        |
| Relative Humidity            | 30%-70%      | 10%-90%(Requiring No-condensing) |
| Ambient atmospheric pressure | 70kPa~110kPa | 20kPa~110kPa                     |

## OUTLINE DRAWING







# Gas Recovery, Purification and Liquefaction System

The chemical reaction of noble gas is very difficult and it is colorless and odorless. Due to the special nature, noble gas is indispensable in some application areas, especially the high purity noble gas is needed by more and more industries nowadays. Because of this, the price of this kind of gas is going higher continuously, so its recovery and re-purification is very meaningful. However, most of equipment for the noble gas recovery and re-purification depend on import. PRIDE Cryogenics uses the purification principle of low-temperature condensation, curing and adsorption to get high purity gas (purity > 99.999%) according to the difference condensation point, freezing point of different gas and the nature of the adsorption agent's ability will be greatly enhanced, can also be liquefied storage. This kind of system also can be customized and auto-control designed by our company, and it is no need for personnel on duty and easy to use.

| Purification capacity  | Liquefaction rate |
|------------------------|-------------------|
| 5-20Nm <sup>3</sup> /h | 15~100L/d         |



CAN BE CUSTOMIZED ACCORDING TO CUSTOMERS' REQUIREMENTS

# EAS COOL

## » Helium Purifier - Cold Source is GM Cryocooler

| SPECIFICATION | Dimension                            | 0.8 × 1.1 × 2.3m     |
|---------------|--------------------------------------|----------------------|
|               | Purity Requirements for Inlet Helium | > 90%                |
|               | Handling Capacity                    | 10Nm <sup>3</sup> /h |
|               | Working Pressure                     | 2.5~5MPa             |
|               | Purity of Outlet Helium              | > 99.999%            |
|               | Purification Time                    | > 12h                |
|               | Regeneration Time                    | < 6h                 |
|               | Power Consumption                    | 9KW                  |
|               | Number of GM Coolers                 | 1                    |
|               | Features                             | Automatic Control    |



## « Neon Purifier - Cold Source is GM Cryocooler



| SPECIFICATION | Dimension                          | 1.1 × 1.6 × 2.2m    |
|---------------|------------------------------------|---------------------|
|               | Purity Requirements for Inlet Neon | > 80%               |
|               | Handling Capacity                  | 2Nm <sup>3</sup> /h |
|               | Working Pressure                   | 1~2MPa              |
|               | Purity of Outlet Neon              | > 99.999%           |
|               | Purification Time                  | > 12h               |
|               | Regeneration Time                  | < 12h               |
|               | Power Consumption                  | 20KW                |
|               | Number of GM Coolers               | 2                   |
|               | Features                           | Automatic Control   |



## Movable Helium Liquefier KDHRR20M <<

This movable helium liquefier KDHRR20M integrates the GM Cold head, Dewar and Compressor into one Cabinet. The liquefier's area is about 1.2 square meters, and its height is about 2 meters. The liquefier is PLC fully automatic control, and can be moved to the right position conveniently because the joints of the helium gas inlet, cooling water inlet/outlet, power supply port are all quick fitting. Meanwhile, UPS has been installed into the liquefier to supply power during the move.



|               |                    |   |
|---------------|--------------------|---|
| SPECIFICATION | Size               | 1850*1150*2300mm  |
|               | Weight             | ≈820kg  |
|               | Cooling water      | 7~10L/min@28°C  |
|               | Energy consumption | cool down state: 8KW<br>Liquefy state: 6.5KW  |
|               | Liquefy rate       | 20L/day(4PSI)<br>24L/day(8PSI)  |
|               | Feature            | Movable, auto control, can liquefy the pure helium gas either from cylinder or experimental equipment |

## >> Movable Helium Liquefier KDHRR40

|               |  |   |
|---------------|--|---|
| SPECIFICATION | Liquefy rate   | 36L/day(5PSI)、40L/day(10PSI)  |
|               | Dimension  | 1850*1150*2300  |
|               | Weight   | ≈1000kg   |
|               | Coldhead   | KDE415SA  |
|               | Compressor   | KDC6000V  |
|               | Quantity of cryocooler   | 2 sets  |
|               | Dewar  | 250L(can be selected according to customer requirements)                                      |
|               | Cool down time to liquid generation  | <4h   |
|               | Power supply of GM cryocooler  | 3PH AC380V 50Hz (Power consumption: 14~16KW)/<br>3PH AC380V 60Hz (Power consumption: 14~16KW) |
|               | Power supply of control unit   | Single PH AC110V—240V 50~60Hz (Power consumption < 1KW)                                       |
| Cooling water | Inlet temperature 5~25°C, flow rate 14~18 L/min, pressure < 8bar; Pure water |   |
| Helium gas    | Gas supply from high-pressure cylinder (Pressure: 2~40bar)                   |   |
|               | Gas supply from helium recovery equipment (Pressure: 0~10PSI)                |   |
|               | Gas purity: >99.999%   |   |
|               | Inlet temperature: -20°C~300°C   |   |





## Movable Helium Liquefier KDHRR60 <<

|                                |                                     |   |
|--------------------------------|-------------------------------------|---|
| SPECIFICATION                  | Liquefy rate                        | 54L/day(5PSI)、60L/day(10PSI)  |
|                                | Dimension                           | 1850*1150*2300  |
|                                | Weight                              | ≈1380kg   |
|                                | Coldhead                            | KDE415SA  |
|                                | Compressor                          | KDC6000V  |
|                                | Quantity of cryocooler              | 3 sets  |
|                                | Dewar                               | 250L(can be selected according to customer requirements)  |
|                                | Cool down time to liquid generation | <4h   |
|                                | Power supply of GM cryocooler       | 3PH AC380V 50Hz<br>(Power consumption: 21~24KW)/<br>3PH AC380V 60Hz<br>(Power consumption: 21~24KW) |
|                                | Power supply of control unit        | Single PH AC110V—240V 50~60Hz<br>(Power consumption<1KW)  |
|                                | Cooling water                       | Inlet temperature 5~25°C, flow rate 21~27 L/min, pressure<8bar;<br>Pure water                       |
|                                | Helium gas                          | Gas supply from high-pressure cylinder<br>(Pressure: 2~40bar)                                       |
|                                |                                     | Gas supply from helium recovery equipment(Pressure: 0~10PSI)  |
| Gas purity: >99.999%           |                                     |   |
| Inlet temperature: -20°C~300°C |                                     |   |



## >> Helium Liquefier KDHRR80

|                                |                                     |   |
|--------------------------------|-------------------------------------|---|
| SPECIFICATION                  | Liquefy rate                        | 72L/day(5PSI)、80L/day(10PSI)  |
|                                | Dimension                           | 2010*1230*2600  |
|                                | Weight                              | ≈1600kg   |
|                                | Coldhead                            | KDE415SA  |
|                                | Compressor                          | KDC6000V  |
|                                | Quantity of cryocooler              | 4 sets  |
|                                | Dewar                               | 500L(can be selected according to customer requirements)  |
|                                | Cool down time to liquid generation | <4h   |
|                                | Power supply of GM cryocooler       | 3PH AC380V 50Hz<br>(Power consumption: 28~32KW)/<br>3PH AC380V 60Hz<br>(Power consumption: 28~32KW) |
|                                | Power supply of control unit        | Single PH AC110V—240V 50~60Hz<br>(Power consumption<1KW)  |
|                                | Cooling water                       | Inlet temperature 5~25°C, flow rate 28~36 L/min, pressure<8bar;<br>Pure water                       |
|                                | Helium gas                          | Gas supply from high-pressure cylinder<br>(Pressure: 2~40bar)                                       |
|                                |                                     | Gas supply from helium recovery equipment(Pressure: 0~10PSI)  |
| Gas purity: >99.999%           |                                     |   |
| Inlet temperature: -20°C~300°C |                                     |   |

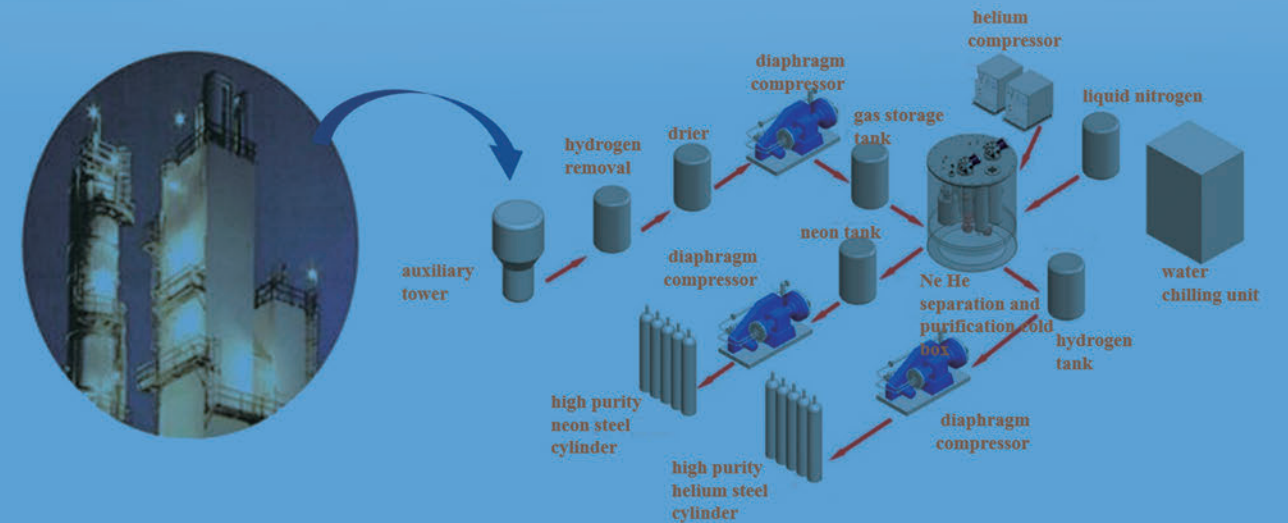




# Helium Liquefier KDHRR100 <<

# >> Neon - Helium Refining Unit

|               |  |   |
|---------------|--|---|
| SPECIFICATION | Liquefy rate   | 90L/day(5PSI)、100L/day(10PSI)   |
|               | Dimension  | 2010*1230*2600  |
|               | Weight   | ≈1800kg   |
|               | Coldhead   | KDE415SA  |
|               | Compressor   | KDC6000V  |
|               | Quantity of cryocooler   | 5 sets  |
|               | Dewar  | 1000L(can be selected according to customer requirements)                                     |
|               | Cool down time to liquid generation  | <4h   |
|               | Power supply of GM cryocooler  | 3PH AC380V 50Hz (Power consumption: 35~40KW)/<br>3PH AC380V 60Hz (Power consumption: 35~40KW) |
|               | Power supply of control unit   | Single PH AC110V—240V 50~60Hz (Power consumption<1KW)   |
| Cooling water | Inlet temperature 5~25°C, flow rate 28~36 L/min, pressure<8bar; Pure water |   |
| Helium gas    | Gas supply from high-pressure cylinder (Pressure: 2~40bar)                 |   |
|               | Gas supply from helium recovery equipment(Pressure: 0~10PSI)               |   |
|               | Gas purity: >99.999%   |   |
|               | Inlet temperature: -20°C~300°C   |   |



| Item          | Raw gas Content | Product Gas Parameter |
|---------------|-----------------|-----------------------|
| N2(V/V%)      | 12              | —                     |
| Ne(V/V%)      | 56              | >99.999               |
| He(V/V%)      | 29              | >99.999               |
| H2(V/V%)      | 3               | —                     |
| Pressure(bar) | 5               | —                     |
| Flow(Nm3/h)   | 20              | —                     |







# CRYOSTATS

CSIC Pride (Nanjing) Cryogenic Technology Co., Ltd will spare no efforts to provide our customers with various customized cryogenic solutions, such as cryogenic systems which take cryocoolers, liquid nitrogen or liquid helium as cold source. We can meet our customers' kinds of requirements, including 300K to 1.2K temperature demand, vibration requirements less than 10nm, temperature fluctuation less than ±1mk, etc. We also can provide solutions to meet the demand of special shape structure, bigger work space, observation window and filter.

| Temperature | Vibration | Temperature fluctuation |
|-------------|-----------|-------------------------|
| 1.2K-800K   | < 10nm    | ±1mK                    |

## Cryostat used in Superconducting Single Photon Detection System



The ultra-low temperature cryostat (Limit temperature < 2.3K) used in superconducting single photon detection system (SNSPD) is a standard and technically mature product of our company, which has been applied in quantum communication successfully. The SNSPD system using this cryostat has an apparent advantage over traditional semiconductor (APD, PMT) detection technology in detection performance (Including detection efficiency and dark count, etc.).

| SPECIFICATION | Limit Temperature      | < 2.3K  |
|---------------|------------------------|---|
|               | Temperature stability  | ±5 mK   |
|               | Number of SMA channels | 4/6/9   |
|               | Fiber-optic interface  | FC / PC multi-mode fiber                            |
|               | Signal interface       | SMA   |
|               | Leakage rate           | < 5 × 10 <sup>-6</sup> Pa·m <sup>3</sup> / s @ 300K |

### TYPICAL APPLICATIONS

- Shanghai Institute of Microsystem And Information Technology, Chinese Academy of Sciences
- Nanjing University
- University of Science and Technology of China
- Changchun University of Science and Technology,
- Tsinghua University, etc.



CAN BE CUSTOMIZED ACCORDING TO CUSTOMERS' REQUIREMENTS

# EASYCOOL



## Ultra-low Vibration Cryostat <<

To create an ultra-low vibration environment, Pride Cryogenic uses the helium gas as heat transfer medium, make the KDE415SA GM Cryocooler completely isolated from the sample to avoid vibration transfer to the sample holder. By using this technology, we realize the nanoscale ultra-low vibration control.



|               |                              |                                |
|---------------|------------------------------|--------------------------------|
| SPECIFICATION | Vibration of sample position | ±30nm                          |
|               | Limited temperature          | 4.2K                           |
|               | Temperature fluctuation      | ±3mK                           |
|               | Helium consumption           | 0                              |
|               | Sample position              | Under the cryostat             |
|               | Sample test                  | Through the observation window |
|               | Number of sample lead        | 16pin(optional)                |
|               | Number of optical window     | 2(Can be increased)            |
|               | Shape of vacuum hood         | Cylindrical(or customized)     |

|               |                              |                     |
|---------------|------------------------------|---------------------|
| CONFIGURATION | KDE415SA Coldhead            | 1set                |
|               | KDC6000V Helium Compressor   | 1set                |
|               | 20A*20m Flexible Gas Line    | 2sets               |
|               | Temperature control unit     | 1set                |
|               | Stainless steel vacuum hood  | 1set                |
|               | Oxygen-free radiation shield | 1set                |
|               | High purity quartz glass     | 2 pieces            |
|               | Sample connection plug       | 1set of 16-pin lead |

### TYPICAL APPLICATIONS

- Micro-photoluminescence
- Micro-Raman
- Micro-spectroscopy
- Micro-FTIR
- Quantum dots
- Low vibration optical experiment
- Magneto-optic Kerr

## >> Ultra-low Temperature Cryostat

This cryostat takes GM Cryocooler as its cold source and uses JT Throttling technology and Evacuation decompression technique. It can realize <1.5K ultra-low temperature and have a little helium consumption and short cooling down time features.



|               |                         |                   |
|---------------|-------------------------|-------------------|
| SPECIFICATION | Limited temperature     | < 1.5K            |
|               | Refrigeration capacity  | 20-300mW@1.5K     |
|               | Temperature fluctuation | ±5mK              |
|               | Helium consumption      | 1SLM              |
|               | Sample position         | Under thecryostat |
|               | Number of sample lead   | 16pin(optional)   |
|               | Continuous working time | >6h               |

|               |                             |                      |
|---------------|-----------------------------|----------------------|
| CONFIGURATION | KDE401SA Coldhead           | 1 set                |
|               | KDC2000A Helium Compressor  | 1 set                |
|               | 20A*20m Flexible Gas Line   | 2 sets               |
|               | Temperature control unit    | 1 set                |
|               | Stainless steel vacuum hood | 1 set                |
|               | Copper radiation shield     | 1 set                |
|               | Sample connection plug      | 1 set of 16-pin lead |

### TYPICAL APPLICATIONS

- Cryogenic optical test
- Cryogenic materials property test
- Cryogenic detector
- MRI magnet



# » APPRECIATION TO CUSTOMERS

The image displays a collection of logos for various customers and partners, arranged in a grid. The logos include:

- Companies and Organizations:** Suzuki Shokan Co., Ltd., Institute of Modern Physics, Chinese Academy of Sciences, Ningbo Jansen Mechanism Corp., Shanghai Electric Cable Research Institute, Suzhou Sanchuan Heat-Exchanger Co., Ltd., National Institute of Metrology, China, Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Institute of High Energy Physics, Chinese Academy of Sciences, China Academy of Engineering Physics, Suzhou Sanchuan Heat-Exchanger Co., Ltd., Innovative Cryogenic Engineering (ICE), Quantum technology, Shanghai Chenguang Medical Technologies Co., Ltd., Institute of Plasma Physics, Chinese Academy of Sciences, Frako-term Sp. z o.o., JAcube (Beijing) Technologies Co., Ltd., SUPCON Sp. z o.o., Mr. Solution, VACREE 万瑞, UNITED 联影 IMAGING, alltech Medical Systems, 国家电网 STATE GRID, 华中科技大学 HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY, 宝钢气体 BAOSTEEL GASES, MR SOLUTIONS Creative Solutions for MRI systems, IECAS, 富通集团 FUTONG GROUP, 富通集团 FUTONG GROUP, 东北大学 Northeastern University, 清华大学 Tsinghua University, 南京大學 Nanjing University, 同濟大學 TONGJI UNIVERSITY, 中国科学院自动化研究所 INSTITUTE OF AUTOMATION CHINESE ACADEMY OF SCIENCES, 国防科学技术大学 National University of Defense Technology, 哈爾濱工業大學 HARBIN INSTITUTE OF TECHNOLOGY, 中国科学院等离子体物理研究所 Institute of Plasma Physics Chinese Academy of Sciences, 中国科学院高能物理研究所 Institute of High Energy Physics Chinese Academy of Sciences, 中国工程物理研究院 CHINA ACADEMY OF ENGINEERING PHYSICS, 中国科学院电工研究所 IECAS, 上海辰光医疗科技股份有限公司 Shanghai Chenguang Medical Technologies Co., Ltd., 中国科学院等离子体物理研究所 Institute of Plasma Physics Chinese Academy of Sciences, 中国科学院高能物理研究所 Institute of High Energy Physics Chinese Academy of Sciences, 中国工程物理研究院 CHINA ACADEMY OF ENGINEERING PHYSICS, 中国科学院电工研究所 IECAS.
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- Other Institutions:** 中国科学院近代物理研究所 Institute of Modern Physics, Chinese Academy of Sciences, 宁波健信机械有限公司 NINGBO JANSEN MECHANISM CORP., 上海电缆研究所 Shanghai Electric Cable Research Institute, 苏州三川换热器有限公司 SUZHOU SANCHUAN HEAT-EXCHANGER CO., LTD., 中国计量科学研究院 National Institute of Metrology, China, 中国科学院上海应用物理研究所 Shanghai Institute of Applied Physics, Chinese Academy of Sciences, 中国科学院高能物理研究所 Institute of High Energy Physics, Chinese Academy of Sciences, 中国工程物理研究院 CHINA ACADEMY OF ENGINEERING PHYSICS, 中国科学院电工研究所 IECAS, 富通集团 FUTONG GROUP, 东北大学 Northeastern University, 清华大学 Tsinghua University, 南京大學 Nanjing University, 同濟大學 TONGJI UNIVERSITY, 中国科学院自动化研究所 INSTITUTE OF AUTOMATION CHINESE ACADEMY OF SCIENCES, 国防科学技术大学 National University of Defense Technology, 哈爾濱工業大學 HARBIN INSTITUTE OF TECHNOLOGY, 中国科学院等离子体物理研究所 Institute of Plasma Physics Chinese Academy of Sciences, 中国科学院高能物理研究所 Institute of High Energy Physics Chinese Academy of Sciences, 中国工程物理研究院 CHINA ACADEMY OF ENGINEERING PHYSICS, 中国科学院电工研究所 IECAS.