



# **Product Catalog**





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Pride Cryogenic is a technology oriented company concentrated on the development and manufacturing of cryocoolers and cryogenic engineering application devices. Pride Cryogenics's products include 4K GM cryocoolers, 10K GM cryocoolers, 77K GM cryocoolers, cryostats, helium reliquefiers, gas recovery, purification and liquefaction systems and other customised cryogenic systems.

#### **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 HISTORY (

2016.8

GM cryocooler completed to provide scale selling through abroad marketing.

<sub>06</sub> 2018.9

Has successfully developed Ne-He Refining Units in September, 2018.

05

03

2015.5

GM cryocoolers were supplied towards MRI companies in large volumes.

2013.7

Became a member of CSSC

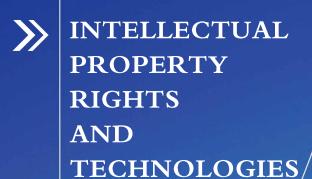
2011.3

Has successfully developed Helium Recovery Purification and Liquefaction system.

2010.1

Founded in Jan, 2010 with a registered capital of RMB 30 Million. In August, the first GM cryocooler was developed.

01



- Gas phase-shifting cryogenic technology
- Nanoscale filtration channel oil separation technology
- Gas purification separation, condensation, liquefaction, recovery technology
- Ultra-low vibration, ultra-precision temperature control, ultra-low temperature cryostat technology
- Large-scale cryogenic cold box, valve box integration technology
  - Multi-channel composite pipe technology

















#### **CRYOCOOLERS**

KDE420SA KDE418SA, KDE415SA, KDE412SA, KDE410SA, KDE401SA, KDE210SA, KDE400SA, KDE300SA KDE400SX, KDC6000V, KDC6000, KDC4000F, KDC2000F, KDC1000A

Gifford-Mcmahon (GM) cryocooler is invented by Gifford and Mcmahon, whose refrigeration principle is Gas Adiabatic Expansion. Its main components include cold head, helium hose 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 application site of Cryocoolers.



The application site of Cryocoolers.





The application site of Cryocoolers.



#### KDE420SA «

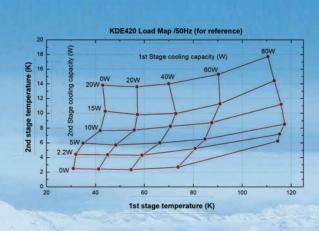


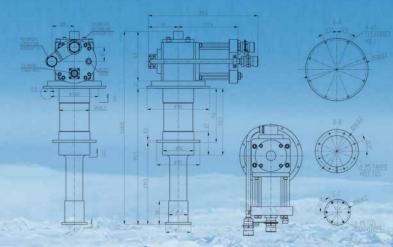
	The second second		- Control of the control of
		KDE420SA	
	Lowest Temperature	< 3.5K	
	Cooling Conscity (FOLIZ)	First Stage	Second Stage
	Cooling Capacity (50Hz)	20W @ 50K	2.0W @ 4.2K
	Cooldown Time (2nd stage)	< 60mir	n(4.2K)
SPECIFICATION	Weight	Coldhead	Compressor
Ë	Weight	19 kg	118 kg
Ç	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
ž		6.9kW	7.5kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
	Trairie IIIIc	18 months	

#### AMBIENT 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)





#### >> KDE418SA

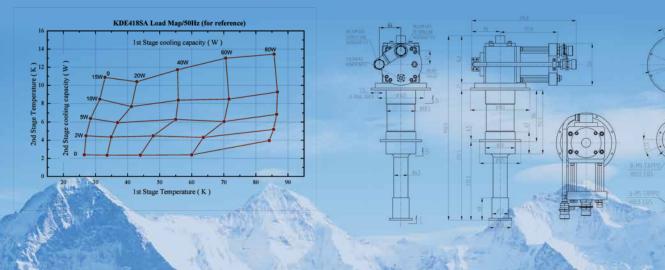
		KDE41	8SA
	Lowest Temperature	< 3.5K	
	Caaling Caracity (FOLL)	First Stage	Second Stage
	Cooling Capacity (50Hz)	35W @ 50K	1.75W @ 4.2K
	Cooldown Time (2nd stage)	< 60mir	n(4.2K)
SPECIFICATION	Weight	Coldhead	Compressor
Ë ₩	Weight	19 kg	118 kg
Ç	Compressor Type	KDC6000V	
Ţ	Power Consumption(50Hz)	Steady	Cooldown
ž		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
	Warranty Time	18 months	



#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)



#### KDE415SA 🕊

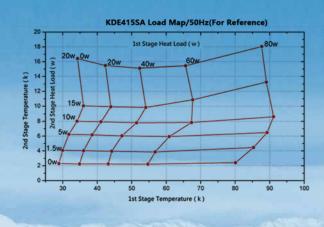


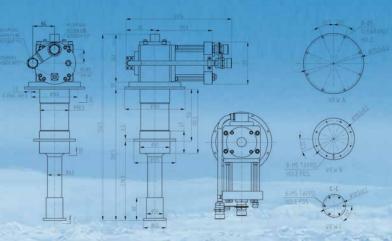
	The second second		The state of the s
		KDE415SA	
	Lowest Temperature	< 3.5K	
		First Stage	Second Stage
	Cooling Capacity (50Hz)	35W @ 50K	1.5W @ 4.2K
	Cooldown Time (2nd stage)	< 60mir	n(4.2K)
SPE	Weight	Coldhead	Compressor
SPECIFICATION	Weight	19 kg	118 kg
Ŝ	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
ž		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
	Warranty Time	18 months	

#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)





#### >> KDE412SA

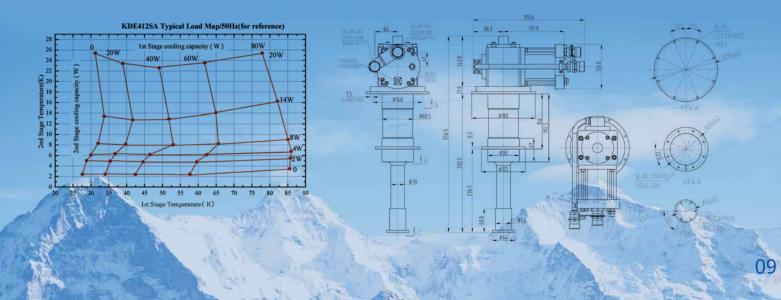
		KDE41	2SA
	Lowest Temperature	< 3.5K	
Carling Carreits (FOLIS)	First Stage	Second Stage	
	Cooling Capacity (50Hz)	40W @ 45K	1.25W @ 4.2K
	Cooldown Time (2nd stage)	< 60mir	n(4.2K)
SPE Weight		Coldhead	Compressor
SPECIFICATION	Weight	18.5 kg	118 kg
Š	Compressor Type	KDC6000V、KDC4000F	
	Power Consumption(50Hz)	Steady	Cooldown
ž		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
- vvarranty fille		18 months	



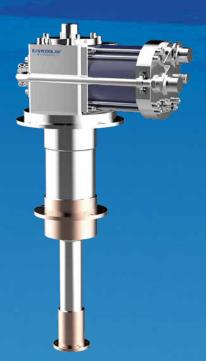
#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)



#### KDE410SA 🕊

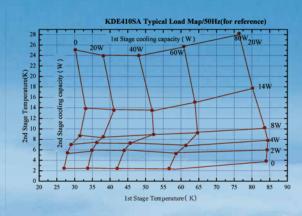


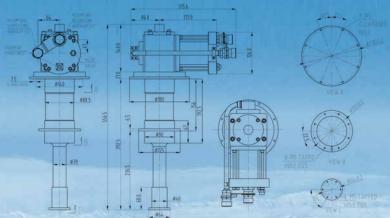
		KDE410SA		
	Lowest Temperature	< 3.5K		
	Cooling Capacity (FOLIZ)	First Stage	Second Stage	
	Cooling Capacity (50Hz)	40W @ 45K	1.0W @ 4.2K	
	Cooldown Time (2nd stage)	< 60mir	n(4.2K)	
SPI Weight	Weight	Coldhead	Compressor	
SPECIFICATION	vveignt	18.5 kg	118 kg	
Ŝ	Compressor Type	KDC6000V		
	Power Consumption(50Hz)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

#### AMBIENT REQUIREMENT

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

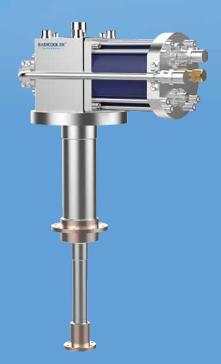
#### TYPICAL LOAD MAP(50HZ)





# FIFTORTION Lowest Temperature Cooling Capacity (50Hz) Cooldown Time (2nd stage) Weight Compressor Type Power Consumption(50Hz) Air Flow Rate Standard Flexline Warranty Time First Stage First Stage Second Stage 3W @ 45K 0.25W @ 4.2K Coldhead Compressor 8.9 kg KDC2000F Steady Cooldown 3.2kW 3.5kW Cooling Type Air 600Nm³/hr Standard Flexline Coldhead Coldhead 12 months

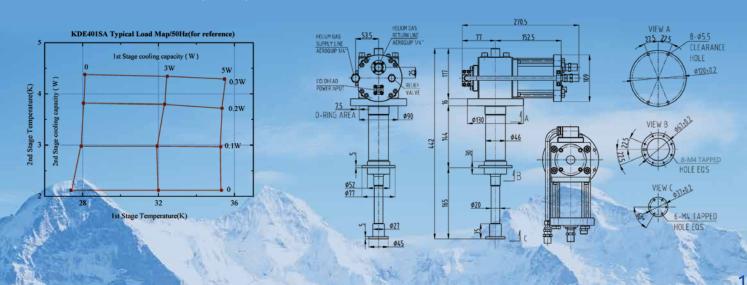
#### >> KDE401SA



#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)



#### KDE210SA «

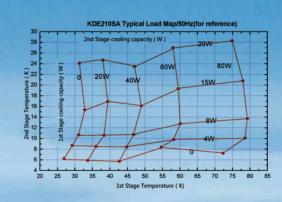


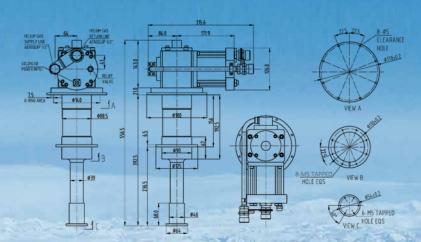
		KDE210SA			
	Lowest Temperature	< 10K			
	C ! C ! (FOLL)	First Stage	Second Stage		
	Cooling Capacity (50Hz)	40W @ 45K	5W @ 10K		
	Cooldown Time (2nd stage)	< 60mi	n(10K)		
SPECIFICATION	Weight	Coldhead	Compressor		
Ë		17.8 kg	118 kg		
Š	Compressor Type	KDC6000V			
	Power Consumption(50Hz)	Steady	Cooldown		
ž		6.5kW	7.2kW		
	Cooling Type	Wat	er		
	Cooling Water Requirement	> 7 L/min			
	Standard Flexline	20A×20m			
	Warranty Time	Coldhead			
	18 months		nths		

#### AMBIENT REQUIREMENT

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

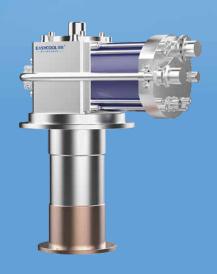
#### TYPICAL LOAD MAP(50HZ)





#### >> KDE400SA

		KDE40	IOSA
	Lowest Temperature	< 30K	
		First Stage	/
	Cooling Capacity (50Hz)	54W @ 40K	/
	Cooldown Time (2nd stage)	< 40mi	n(30K)
SPECIFICATION	Weight	Coldhead	Compressor
CF		16.8 kg	118 kg
Š	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
ž		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
	Wallanty Time	18 months	

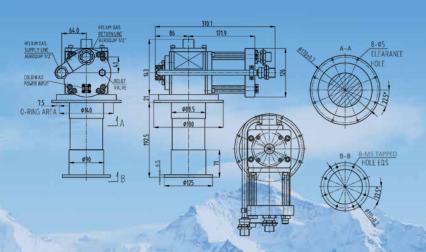


#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)

# KDE400SA Typical Load Map (For Reference) 160 140 120 Test 1 Test 2 0 20 40 60 80 100 120 140 160 180 200 Cooling Capacity(W)



#### KDE300SA «



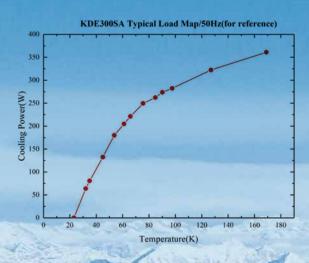
		KDE300SA			
	Lowest Temperature	< 25K			
	Cooling Conscity (FOLL=)	First Stage	/		
	Cooling Capacity (50Hz)	250W @ 77K	/		
	Cooldown Time (2nd stage)	< 20min	(70K)		
SPECIFICATION	Weight	Coldhead	Compressor		
Ë		18 kg	118 kg		
Ë	Compressor Type	KDC6000			
	Power Consumption(50Hz)	Steady	Cooldown		
ž		7.0kW	7.5kW		
	Cooling Type	Wate	r		
	Cooling Water Requirement	> 7 L/r	min		
	Standard Flexline	20A×20m			
	Warranty Time	Coldhead			
	Transfer Time	18 months			

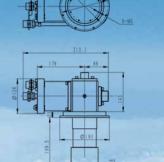
#### AMBIENT REQUIREMENT

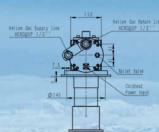
ltem	Operating	Storage
Ambient Temperature	4-40 °C	-20-65 ℃
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

#### TYPICAL LOAD MAP(50HZ)

#### **OUTLINE DRAWING**







KDE300SA OUTLINE DRAWING

# 

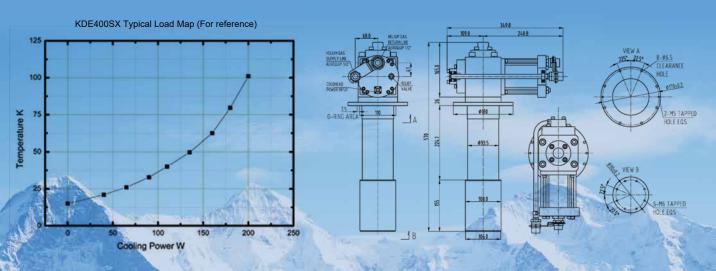
#### >> KDE400SX



#### AMBIENT REQUIREMENT

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

#### TYPICAL LOAD MAP(50HZ)



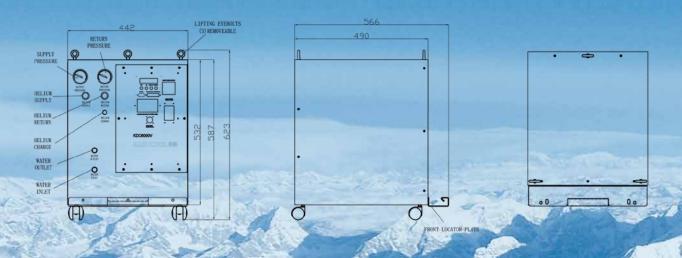
#### KDC6000V **≪**



	Compressor Type	KDC6	000V	
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P		
	Helium Purity Requirement	>99.999%		
	Cooling Type	Water		
SÞ	Water Flow	7L~10L/m	nin (28℃)	
ĚCI	Cooling Water Temperature	Inlet	Out	
SPECIFICATION		5~25°C	< 44°C	
	Power Consumption(50Hz)	Steady	Cooldown	
S		6.5kW	7.2kW	
	Pressure Range(Operating)	Supply	Return	
	Pressure Range(Operating)	16.6~23bar	2.8~6.9bar	
	Ambient Temperature	Operating	Storage	
		4~40°C	-20~65°C	
	Standard Flexline	20A×20m		
	Warranty Time	36 months		
	Weight	118kg		

#### AMBIENT REQUIREMENT

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



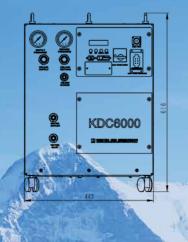
#### **≫** KDC6000

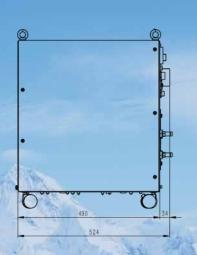
	Compressor Type	KDC	6000
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Water	
q <sub>S</sub>	Water Flow	7L~10L/n	nin (28°C)
SPECIFICATION	Cooling Water Temperature	Inlet	Out
FC		5~35°C	< 44°C
AT	Power Consumption(50Hz)	Steady	Cooldown
S		6.6~6.9kW	8.5kW
	Pressure Range(Operating)	Supply	Return
		15.6~23bar	2.8~6.9bar
	Ambient Temperature	Operating	Storage
		4~40°C	-20~65°C
	Standard Flexline	20A×20m	
	Warranty Time	36 months	
	Weight	118kg	



#### AMBIENT 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







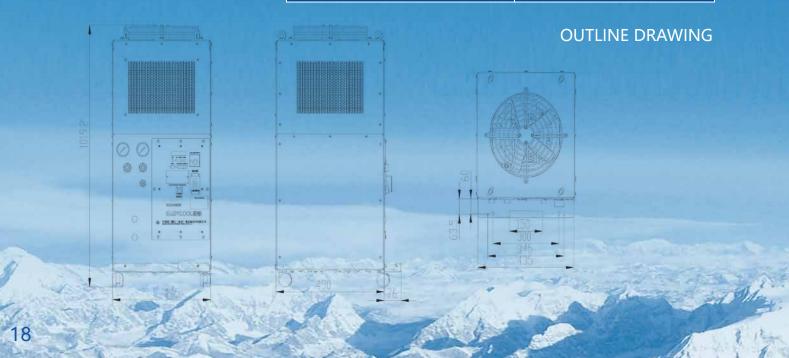
#### KDC4000F **《**



	Compressor Type	KDC2	1000F		
	Electrical Power	380V@50Hz 3P			
	Helium Purity Requirement	>99.999%			
	Gas Pressure	Exhaust	Return		
	das riessule	2.0MPa	0.7MPa		
ЗÞ	Power Consumption(50Hz)	5.0kW			
ECI	Cooling Type	Air cooling			
FC	Air Flow Rate	1300Nm³/h			
ATIO	Ambient Temperature	Operating	Storage		
S		4°C∼38°C	-20°C~65°C		
	Relative Humidity	Operating	Storage		
		30%~70%	10%~90%		
	Weight	130kg			
	Dimension(L*W*H)	445*490*1019(mm)			
	Normal Warranty Time	24months			
SPECIFICATION	Power Consumption(50Hz)  Cooling Type  Air Flow Rate  Ambient Temperature  Relative Humidity  Weight  Dimension(L*W*H)	5.0 Air co 1300N Operating 4°C~38°C Operating 30%~70% 13	kW poling Nm³/h Storage -20°C~65°C Storage 10%~90% Okg *1019(mm)		

#### KDE412SA-KDC4000F PARAMETERS

1st stage cooling power	35W@50K
2nd stage cooling power	0.85W@4.2K
cool down time (to 4.2K)	60min



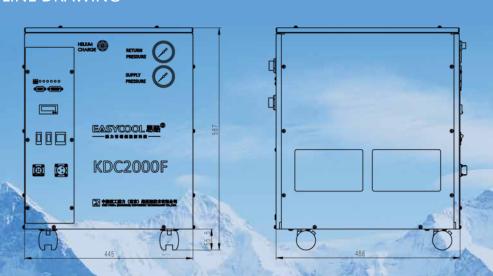
#### **≫** KDC2000F

	Compressor Type	KDC2000F		
	Electrical Power	220V@50Hz 1P		
	Helium Purity Requirement	>99.9	>99.999%	
	Cooling Type	Air		
	Air Flow Rate	18001	Nm³/h	
SPE	Power Consumption(50Hz)	Steady	Cooldown	
CIF	Tower Consumption(30112)	3.2kW	3.5kW	
SPECIFICATION	Pressure Range(Operating)	Supply	Return	
ПО	Pressure Kange(Operating)	16~23bar	2.5~8bar	
	Ambient Temperature	Operating	Storage	
	Ambient temperature	4°C~30°C	-20°C~65°C	
	Standard Flexline	15A×10m		
	Warranty Time	24months		
	Weight	86kg		



#### AMBIENT REQUIREMENT

ltem	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



#### KDC1000A **≪**

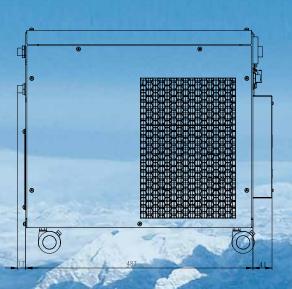


	and the second second		Amilia Allandia
	Compressor Type	KDC1000A	
	Electrical Power	220V@50Hz 1P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Air	
	Air Flow Rate	180N	m³/h
SPE	Power Consumption(50Hz)	Steady	Cooldown
SPECIFICATION	rower consumption(30112)	1.3kW	1.5kW
	Droccure Dange (Operating)	Supply	Return
	Pressure Range(Operating)	21~25bar	8~10bar
Z	Ambient Temperature	Operating	Storage
	Ambient lemperature	4°C~30°C	-20°C~65°C
	Standard Flexline	10A×3m	
	Warranty Time	24months	
	Weight	68kg	

#### AMBIENT REQUIREMENT

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







# Helium 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.



CAN BE CUSTOMIZED ACCORDING TO CUSTOMERS' REQUIREMENTS

## Helium Purifier - Cold Source is GM Cryocooler

	Dimension	0.8 ×1 .1×2.1m
	Purity Requirements for Inlet Helium	>90% [ Water concentration: ≤2PPM CO₂ concentration: ≤2PPM ]
	Purification Rate	≤10Nm³/h
SP	Working Pressure	2.5~5MPa
ĔCI	Purity of Outlet Helium	>99.999%
FIC/	Purification Time	≥6h
SPECIFICATION	Regeneration Time	≤6h
ž	Power Consumption	3P, AC380V, 50Hz; 1P, AC220V, 60Hz (Power consumption < 9kW )
	Power supply of control unit	Single PH AC110V—240V 50~60Hz
	Number of GM Coolers	1
	Features	Automatic Control

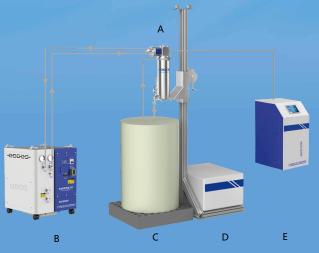


### Helium Purifier - Cold Source is liquid Nitrogen



	Single treatment capacity		≥1000Nm³	
	Purification Pressure		2-3MPa	
	Purification flo	ow .	60-1000 SLM	
	Feed gas concentration		≥98%	
<u>S</u>	Purification Temp.		77K	
H	Purity of outlet helium		>99.999%	
Ħ	Regenerated Nitrogen consumption		≈120Nm³/h	
SPECIFICATION	Liquid Nitroge	n consumption	≈15L/h	
N	Dimension (mm:L*W*H)		760*760*2700	
	Weight		≈3000kg	
	Dawer augusti.	Power electricity	4kW@380V	
	Power supply	Instrument electricity	1kW@220V	

#### >> KDHR15 Helium Reliquefier



A: Liquefier Coldbox

B: KDC6000V Compressor

C: Customer's Device(PPMS)

D: Lifting Frame

E: Control Unit

	,	
	Liquefy rate	15L/d@1psi
	Reliquefy rate	20L/d@1psi (Inlet is boiled-off cryo He)
	Vibration index	±2 μm
	Compressor power supply	3 phase 380V (50Hz) ; 3 phase 480V (60Hz)
	Control unit power supply	Single phase 110~240V (50~60Hz)
SPEC	Cooling water	Inlet temperature 5~25°C; Flow rate 7~10L/min; Pressure < 8bar
SPECIFICATION	Helium purity requirement	>99.999%
NOI	Cool down time(to full load liquefaction)	<3.5h
	Liquid helium infusion line	Material: SUS304, O.D: 9.5 mm, Length: 550mm (can be customized)
	Dimension(Cold box)	φ400×685mm (not include infusion tube)
	Dimension(Control unit)	<600×600×1500mm
	Features	The whole system is non-magnetic and has good electrical insulation from the customer equipment.
	Components	One KDE418SA-KDC6000V GM Cryocooler, one cold box, lifting frame , two sets 20A*20M helium lines , Control unit, pipes, valves and parts kit

#### Application site



#### Reference

Tsinghua University
Peking University
Institute of Physics,
Chinese Academy
of Sciences

#### KDHR30 Helium Reliquefier ≪

KDHR30 Helium Reliquefier integrates 2 sets of GM Cryocoolers, which is external hanging and vibration damping type. The boil off high purity helium gas from the customer's cryogenics cryostat get into the Helium reliquefier directly and be condensed to be liquid helium and get back to cryostat again through helium infusion tube.



	Liquefy rate	30L/Day@1Psi
	Reliquefy rate	40L/Day@1Psi
	Vibration index	±2um
	Dimension	450×220×666mm
		Cold box (without infusion tube)
	Weight	72kg (cold box)
	Cold head Model type	KDE418SA
SF	Compressor Model type	KDC6000V
SPECIFICATION	GM Cryocooler quantity	2 sets
CATI	Cool down time	4h
8	Cryocooler Power	3P, AC380V,50HZ:
	Consumption	Cool down:14.4kW
		Steady operation: 13.0kW
		Single phase,AC110V-240V,
	Control unit Power consumption	50-60HZ:
		1Kw
	Cooling water	Inlet temperature:5-25 °C
		Flow rate:14-18L/min, pressure<8bar
	Helium gas	Purity: >99.999%
	Honum gas	Temperature:-20-40 C

#### >> I-Liquefier20 Compact Movable Helium Liquefier

I-Liquefier20 Compact Movable Helium Liquefier integrates 1 set GM Cryocooler as cold source, which has a typical feature that the cold head inserts into the Dewar directly. The Helium compressor and the liquefier cold box is installed together and skid-mounted into a small dimension. Such design allows that the liquid helium can be transferred into the customer's device directly and easy, no need a transportation Dewar so as to avoid liquid helium consumption.

	Helium liquefy rate	20L/d
	Dimension	1600x700x1500mm (compressor included)
	Weight	420kg(excluding compressor weight)
	Cold head	KDE415SA
	compressor	KDC6000V
	Quantity of cryocooler	1 set
(0	Dewar	150L
SPECI	Cooling time	<4h
SPECIFICATION	Power supply of GM cryocooler	3PH AC380V 50Hz Cooling down: 7.2Kw Steady Operation: 6.5Kw
Ž	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption < 1KW)
	Cooling water	Inlet temperature 5~25 °C, flow rate7-9L/min, pressure < 8bar
		Purity: >99.999%
	Helium requirement	Inlet Temp.: -20 °C ~40 °C



#### I-Liquefier40 Compact Movable Helium Liquefier 《

I-Liquefier40 Compact Movable Helium Liquefier integrates 1 set GM Cryocooler as cold source, which has a typical feature that the cold head inserts into the Dewar directly. The Helium compressor and the liquefier cold box is installed together and skid-mounted into a small dimension. Such design allows that the liquid helium can be transferred into the customer's device directly and easy, no need a transportation Dewar so as to avoid liquid helium consumption.



	Helium liquefy rate	40L/d
	Dimension	1650x760x1735mm (compressor included)
	Weight	570kg(excluding compressor weight)
	Cold head	KDE415SA
	compressor	KDC6000V
	Quantity of cryocooler	2 sets
S	Dewar	200L
PECIF	Cooling time	<4h
SPECIFICATION	Power supply of GM cryocooler	3PH AC380V 50Hz Cooling down: 14.4Kw Steady Operation:13Kw
Z	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption < 1KW)
	Cooling water	Inlet temperature 5~25℃, flow rate14-18L/min, pressure<8bar
		Purity: >99.999%
	Helium requirement	Inlet Temp.: -20 ℃~40 ℃

#### Movable Helium Liquefier KDHRR40

	Liquefy rate	36L/day(5PSI)、40L/day(10PSI)
	Dimension	1850*1150*2300
	Weight	≈1000kg
	Coldhead	KDE415SA
	Compressor	KDC6000V
န	Quantity of cryocooler	2 sets
ECIFIC	Dewar	250L(can be selected according to customer requirements)
SPECIFICATION	Cool down time to liquid generation	<4h
	Power supply of GM cryocooler	3P, AC380V, 50Hz; 3P, AC480V, 60Hz Cooling down: 15kW Steady: 14kW
	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption<1kW)
	Cooling water	Inlet temperature 5~25°C, flow rate14~18 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)
	3.5	Gas purity: >99.999%
		Inlet temperature: -20℃~40℃





#### Movable Helium Liquefier KDHRR60 《







	Liquefy rate	54L/day(5PSI)、60L/day(10PSI)	
	Dimension	1850*1150*2300	
	Weight	≈1380kg	
	Coldhead	KDE415SA	
	Compressor	KDC6000V	
	Quantity of cryocooler	3 sets	
SPECIFICATION	Dewar	250L(can be selected according to customer requirements)	
	Cool down time to liquid generation	<4h	
	Power supply of GM cryocooler	3P, AC380V, 50Hz; 3P, AC480V, 60Hz Cooling down: 22kW Steady: 20kW	
	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption<1kW)	
	Cooling water	Inlet temperature 5~25°C, flow rate21~27L/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%	
	Andrew Co.	Inlet temperature: -20°C~40°C	

#### **>>**

#### Helium Liquefier KDHRR80

	Liquefy rate	72L/day(5PSI)、80L/day(10PSI)	
	Dimension(mm)	Electric control cabinet: 750*1050*1600	
		Helium Liquefier: 1250*1230*2500	
		Electric control cabinet: ≈333kg	
	Weight	Cold box: ≈240kg	
		Frame: ≈75kg	
	Coldhead	KDE415SA	
	Compressor	KDC6000V	
	Quantity of cryocooler	4 sets	
SPECIF	Dewar	500L(can be selected according to customer requirements)	
SPECIFICATION	Cool down time to liquid generation	<4h	
ON.	Power supply of GM cryocooler	3P, AC380V, 50Hz; 3P, AC480V, 60Hz Cooling down: 29kW Steady: 26kW	
	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption<1kW)	
	Cooling water	Inlet temperature 5~25°C, flow rate28~36 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~40°C	



#### Helium Liquefier KDHRR100 ≪



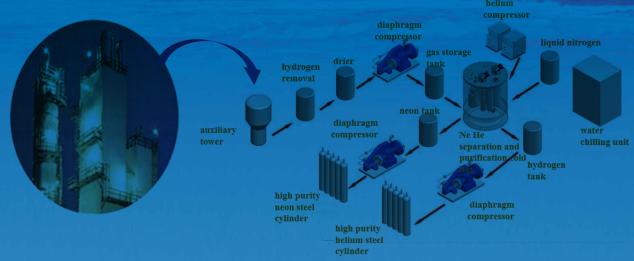
	Liquefy rate	90L/day(5PSI)、100L/day(10PSI)	
	Dimension(mm)	Electric control cabinet: 750*1050*1600	
		Helium Liquefier: 1250*1230*2500	
	salta aras esta de la frança de la composição de la frança	Electric control cabinet: ≈333kg	
	Weight	Cold box: ≈260kg	
		Frame: ≈75kg	
	Coldhead	KDE415SA	
	Compressor	KDC6000V	
SPECIFICATION	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	3P, AC380V, 50Hz; 3P, AC480V, 60Hz Cooling down:36kW Steady: 33kW	
	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption<1kW)	
	Cooling water	Inlet temperature 5~25°C, flow rate28~36 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~40°C	

#### Helium Liquefier KDHRR200

	Helium Liquefy rate	200L/day	
	Dimension(mm)	Electric control cabinet: 684*1180*1702	
		Helium Liquefier: 1720*1607*2739	
		Electric control cabinet: ≈333kg	
	Weight	Cold box: ≈594kg	
		Frame: ≈312kg	
	Coldhead	KDE415SA	
	Compressor	KDC6000V	
SPE	Quantity of cryocooler	10 sets	
SPECIFICATION	Dewar	1000L	
	Cool down time to liquid generation	<4h	
	Power supply of GM cryocooler	3P, AC380V, 50Hz; 3P, AC480V, 60Hz Cooling down:72kW Steady: 65kW	
	Power supply of control unit	Single PH AC110V—240V 50~60Hz (Power consumption<1kW)	
	Cooling water	Inlet temperature 5~25°C, flow rate14~18L/min, pressure<8bar;	
	Helium requirement	purity: >99.999%	
	The lium requirement	Inlet temperature: -20°C~40°C	



#### Neon - Helium Refining Unit 《



Item	Raw gas	Product Gas
	Content	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	







#### Cryogenic Helium Cycling System

The cold source of Cryogenic Helium Cycling System is KDE400SX-KDC6000 or KDE300A-KDC6000 cryocooler, one or multiple KDE400SX/KDE300A cold heads are paralleled inside the cold box. Helium gas is cooled by each cold head and equally distributed into helium cycling pump or room temperature helium compressor for pressurization and flow to cool down the customer's equipment. The main components of Cryogenic Cycling System is GM cryocooler, heat exchanger, control unit, tank, cycling compressor/cryogenic pump. This product can be used in the fast cool down process of magnet, superconducting motor cooling and other applications.

#### **Main features**

- The system can output one way or multiple ways cryogenic helium gas to cool down customer's equipment
- The cooling power range provided by the system can be 80~800W@70K, 50~800W@30K
- This system can provide different cooling power at different temperature according to customer's requirement
- The outlet and inlet port of cryogenic helium gas can be either or VCR
- The Circulating power of the system can be either room temperature cycling compressor or cryogenic cycling pump.

Room temperature cycling: The Circulating power of the system is room temperature cycling compressor, the lift is big, complex structure, and helium flow rate is small, mostly used in small cooling power and small temperature difference equipment

Cryogenic cycling: The Circulating power of the system is cryogenic cycling pump, the lift is small, simple structure, and helium flow rate is big, mostly used in big cooling power and big temperature difference equipment.



Cryogenic Helium Cycling System (6 Cold Heads)



KDE400SX



Cryogenic Helium Cycling System (10 Cold Heads)



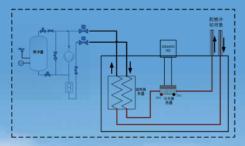
#### >> HCS-1 Cryogenic Cycling Helium System

HCS-1 Cryogenic Cycling Helium System uses room temperature helium compressor as circulating power, the cycling pressure is 3-5 bar, cold source is one set of GM Cryocooler and provide cooling power at 20K-80K.

SPECIFICATION	Flow rate	0~20Nm³/h	0~80Nm³/h
	Outlet cooling power	30W@30K (KDE400SX)	160W@70K (KDE300SA)
	Cycling type	Room temperature cycling	
	Cycling pressure	3~5bar	
	Quantity of GM Cryocooler	1	
	Temperature range	20~300K	
	Temperature control precision	±1K	



Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 1 set	Vacuum pump
KDC6000 compressor, 2 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
Tank, 1 set	1



## 

e helium compressor as circ

HCS-2 Cryogenic Cycling Helium System uses room temperature helium compressor as circulating power, the cycling pressure is 3-5 bar, cold source is two sets of GM Cryocooler and provide cooling power at 20K-80K.



	Flow rate	0~20Nm³/h	0~80Nm³/h
SPI	Outlet cooling power	90W@30K (KDE400SX)	400W@70K (KDE300SA)
SPECIFICATION	Cycling type	Room temperature cycling	
ICA.	Cycling pressure	3∼5bar	
ĪOĪ	Quantity of GM Cryocooler	1	
_	Temperature range	20~300K	
	Temperature control precision	±1K	

No. II		KDE4005X KDE4005	到被冷却放
	A MANA NAB	m yaa yaa	723.

Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 2 sets	Vacuum pump
KDC6000 compressor, .3 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
Tank, 1 set	1

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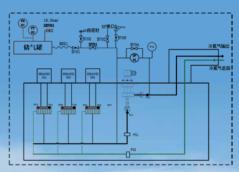
## HCS-3 Cryogenic Cycling Helium System

HCS-3 Cryogenic Cycling Helium System uses cryogenic cycling pump as circulating power, the cycling pressure is 1-10 bar, cold source is three sets of GM Cryocooler and provide cooling power at 20K-80K.

	Cycling type	cryogenic cycling
	Cycling pressure	1~10bar
SPE	Flow rate	500~1000Nm³/h
SPECIFICATION	Quantity of GM Cryocooler	3
CATI	Temperature range	20~300K
ŌN	Temperature control precision	±1K
	Outlet cooling power	90W@30K (KDE400SX)
		600W@70K (KDE300SA)

EASYCOOL®

Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 3 sets	Vacuum pump
KDC6000 compressor, .3 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
cryogenic cycling pump, 1 set	1



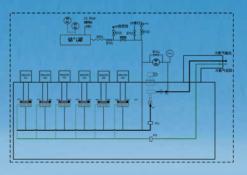
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HCS-4 Cryogenic Cycling Helium System uses cryogenic cycling pump as circulating power, the cycling pressure is 1-10 bar, cold source is four sets of GM Cryocooler and provide cooling power at 20K-80K.



	Cycling type	cryogenic cycling
	Cycling pressure	1~10bar
SPE	Flow rate	500~1000Nm³/h
SPECIFICATION	Quantity of GM Cryocooler	4
CATI	Temperature range	20~300K
N N	Temperature control precision	±1K
	Outlet cooling power	140W@30K (KDE400SX)
		840W@70K (KDE300SA)



Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 4 sets	Vacuum pump
KDC6000 compressor, .4 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
cryogenic cycling pump, 1 set	1

### **>>>**

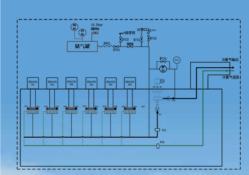
## HCS-6 Cryogenic Cycling Helium System

HCS-6 Cryogenic Cycling Helium System uses cryogenic cycling pump as circulating power, the cycling pressure is 1-10 bar, cold source is six sets of GM Cryocooler and provide cooling power at 20K-80K.

	Cycling type	cryogenic cycling
SPE	Cycling pressure	1~10bar
	Flow rate	500~1000Nm³/h
SPECIFICATION	Quantity of GM Cryocooler	6
CAT	Temperature range	20~300K
ON N	Temperature control precision	±1K
	Outlet cooling power	300W@30K (KDE400SX)
		1300W@70K (KDE300SA)



Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 6 sets	Vacuum pump
KDC6000 compressor, .6 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
cryogenic cycling pump, 1 set	1

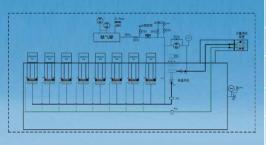


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HCS-8 Cryogenic Cycling Helium System uses cryogenic cycling pump as circulating power, the cycling pressure is 1-10 bar, cold source is six sets of GM Cryocooler and provide cooling power at 20K-80K.



	Cycling type	cryogenic cycling
	Cycling pressure	1~10bar
SPE	Flow rate	500~1000Nm³/h
SPECIFICATION	Quantity of GM Cryocooler	8
CATI	Temperature range	20~300K
9	Temperature control precision	±1K
	Outlet cooling power	400W@30K (KDE400SX)
		1780W@70K (KDE300SA)



Typical configuration	
Necessary components	Optional components (can be bought by customer)
KDE400SX or KDE300SA cold head, 8 sets	Vacuum pump
KDC6000 compressor, 8 sets	Water chiller
Vacuum chamber, 1 set	1
Control unit, 1 set	1
Heat exchanger, 1 set	1
cryogenic cycling pump, 1 set	1

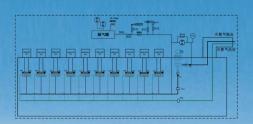
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HCS-10 Cryogenic Cycling Helium System uses cryogenic cycling pump as circulating power, the cycling pressure is 1-10 bar, cold source is ten sets of GM Cryocooler and provide cooling power at 20K-80K.

SPECIFICATION	Cycling type	cryogenic cycling	
	Cycling pressure	1~10bar	
	Flow rate	500~1000Nm³/h	
	Quantity of GM Cryocooler	10	
	Temperature range	20~300K	
	Temperature control precision	±1K	
		500W@30K (KDE400SX)	
	Outlet cooling power	2260W@70K (KDE300SA)	



Typical configuration			
Necessary components	Optional components (can be bought by customer)		
KDE400SX or KDE300SA cold head, 10 sets	Vacuum pump		
KDC6000 compressor, 10 sets	Water chiller		
Vacuum chamber, 1 set	1		
Control unit, 1 set	1		
Heat exchanger, 1 set	1		
cryogenic cycling pump, 1 set	1		





# 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.



CAN BE CUSTOMIZED ACCORDING TO CUSTOMERS' REQUIREMENTS

### KDSSPD-4/6/9 «

### 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.).

SPE(	Limit Temperature	<2.3K	
	Temperature stability	±5 mK	
불	Number of SMA channels	4/6/9	
CIFICATION	Fiber-optic interface	FC / PC multi-mode fiber	
	Signal interface	SMA	
ž	Leakage rate	<5 × 10 <sup>9</sup> Pa⋅m³ / 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

## PDCS04-ULV / PDCS10-ULV Ultra-low Vibration Cryostat

To creat 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.

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

		PDCS04-ULV	PDCS10-ULV
	Temperature Range	4K~373K	10K~373K
co	Vibration of sample position	±100nm	±100nm
Ϋ́Ε	Limited temperature	4.2K	4.2K
SPECIFICATION	Temperature fluctuation	±10mK	±10mK
.i.	Helium consumption	0	0
Τ	Sample position	Under the cryostat	Under the Cryostat
8	Sample test	Through the observation window	Through the pbservation window
	Number of sample lead	16pin(optional)	16 pin(optional)
	Number of optical window	2(Can be increased)	2(Can be increased)
	Shape of vacuum hood	Cylindrical(or customized)	Cylindrical(or customized)

#### TYPICAL APPLICATIONS

Micro-photoluminescence Micro-Raman Micro-spectroscopy Quantum dots

Low vibration optical experimen

Magneto-optic Kerr

# 1.5K GM+JT Cryostat 《



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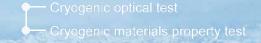
This cryostal takes GM Cryocooler as its cold source and uses JT Throttling technology and Evacuation decompression technique. It can realize<1.5K ultra-low temperature and have a little helium consumption and short cooling down time features.

규	Quickly cool down to 1.5K
	Quickly sample changed
ATC	Optional superconducting magnet field
FEATURES	Low vibration
	Customized
	Application in optical/superconducting/cryogenic material

	Standard Configuration
_1 <u></u>	4K GM Cryocooler System
	JT System
	Vacuum Chamber
n ŝ	Radiation-proof Screen
Ų.	16-pin Sample Lead
4	Temp. Control System
Su	Vacuum Valve Block
	16-pin Sample Lead
	Cooling Component, Sample Holder
	Helium Circulation System Liquid Helium Pool
4.1	
	TYPICAL APPLICATION

## **CONFIGURATION Optional Configuration** Vacuum System Control System Chiller Interface Number of optical windows and materials **Supporting Structure** Vacuum Pump Sample Holder

### SNC





## >> Cryostat - Optical Type

Using GM Cryocooler as cold resource to cool down the sample, The main components of the cryostat include GM Cryocooler, vacuum can, radiation shield and sample holder. By configuring different types of vacuum cover and related equipment, the cooling requirements of many samples for cryogenic test can be realized. At the same time, the cryostat of this type optical can cooperate with precision displacement platform to carry out three-dimensional high precision and large quantity of the whole structure. The positioning accuracy of the process can reach up to 0.01mm by measuring the location of different positions of the sample.

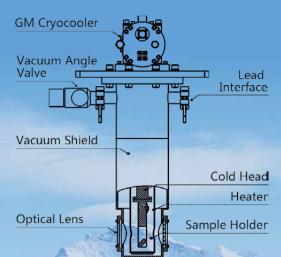


SPE	Model type	PDCS04	PDCS10	PDCS77
SPECIFICATION	Temperature range	4-373K	8-373K	30-373K
CAT	Temp Accuracy	±0.05K	±0.05K	±0.05K
N O N	Vacuum degree	5×10 <sup>-4</sup> Pa	5×10 <sup>-4</sup> Pa	5×10 <sup>-4</sup> Pa

#### **TYPICAL APPLICATIONS**

Ultraviolet / IR spectroscopic low temperature experiment
 Raman spectroscopy experiment electroluminescence
 photoluminescence
 Conductivity Holzer test

- Terahertz



### >> CRYOPUMPS

#### **PREVIEW**

Cryopump, also known as cryogenic vacuum pump, which is pumped by cryogenic condensation and cryogenic adsorption. It is an oil free and high vacuum environment acquisition device. Cryogenic pumps are suitable for environments requiring clean oil-free and fast pumping ultra-high vacuum circumstances, mainly used in applications such as sputtering coating equipment, evaporation coating equipment, ion implantation equipment, molecular beam epitaxy equipment, space simulation device, high energy physics research device, accelerator beam tube, and ultra-high vacuum devices.

#### **FEATURES**

Oil-free and pollution-free, low-temperature cold plate is used to absorb gas to obtain vacuum.

The gas pumping speed is high, and the exhausting speed is fast.

The operation cost is low, no liquid nitrogen is needed.

Simple operation and high performance.

High reliability, long using period.



## >> KDCP-8L

	Pumping Speed (L/S)	Hydrogen	2300
		Argon	1300
		Water	4000
		Natrogen	1500
	Limit Vacuum (Pa	1)	5×10 <sup>-7</sup>
	Canacity (Std.)	Argon	1200
SF	Capacity ( Std·L)	Hydrogen	12
SPECIFICATION	Throughput (sccm)	Argon	700
I CA	Cooldown Time (min)		60
	Regeneration Time Rapidly (min)		35
	Regeneration Time Completely (min)		100
	Crossover Rating (Pa•L)		220
	Control Type		Hand operater/ RS232 Remote Control
	Port Flange		ISO/CF200
	Maintenand	ce	15000h



### **Standard Scope of Supply:**

- KDCP-8L Cryopump
- HPC6000V Compressor
- Customized Helium Hose
- 6m Cryopump Power Cord
- 6m Helium Compressor Power Cord

#### Note:

One HPC6000V compressor can drive 1 to 6 pumps.





		Hydrogen	2300
	Pumping Speed (L/S)	Argon	1300
		Water	4000
		Natrogen	1500
	Limit Vacuum (Pa	)	5×10 <sup>-7</sup>
	Capacity ( Std·L)	Argon	1200
SF		Hydrogen	12
SPECIFICATION	Throughput (sccm)	Argon	700
iCA:	Cooldown Time (min)		60
TO	Regeneration Time Rapidly (min)		35
_	Regeneration Time Completely (min)		100
	Crossover Rating (Pa•L)		220
	Control Type		Hand operater/ RS232 Remote Control
	Port Flange		ISO/CF200
	Maintenance		15000h

### **Standard Scope of Supply:**

- KDCP-8 Cryopump
- Customized Helium Hose
- 6m Cryopump Power Cord
- HPC6000V Compressor
   6m Helium Compressor Power Cord

#### Note:

## >> KDCP-10L

	Pumping Speed (L/S)	Hydrogen	4800
		Argon	2000
		Water	6500
	(=/ = /	Natrogen	2600
	Limit Vacuum (Pa	1)	5×10 <sup>-7</sup>
	Canacity (Std.)	Argon	1650
SP	Capacity ( Std·L)	Hydrogen	24
SPECIFICATION	Throughput (sccm) Argon		700
CA:	Cooldown Time	70	
I O	Regeneration Time Rapidly (min)		50
_	Regeneration Time Completely (min)		120
	Crossover Rating (Pa•L)		220
	Control Type		Hand operater/ RS232 Remote Control
	Port Flang	e	ISO/CF250
	Maintenand	ce	15000h



### **Standard Scope of Supply:**

- KDCP-10L Cryopump
- HPC6000V Compressor
- Customized Helium Hose
- 6m Cryopump Power Cord
- 6m Helium Compressor Power Cord

### Note:

One HPC6000V compressor can drive 1 to 3 pumps.

# KDCP-12L 《



		Hydrogen	9000
	Pumping Speed (L/S)	Argon	3000
		Water	11000
		Natrogen	3800
	Limit Vacuum (Pa	1)	5×10 <sup>-7</sup>
	Capacity ( Std·L)	Argon	2000
SP		Hydrogen	32
SPECIFICATION	Throughput (sccm)	Argon	700
Ċ.	Cooldown Time	85	
	Regeneration Time Ra	75	
_	Regeneration Time Completely (min)		150
	Crossover Rating (Pa•L)		220
	Control Type		Hand operater/ RS232 Remote Control
	Port Flange		ISO/CF300
	Maintenance		15000h

### **Standard Scope of Supply:**

- KDCP-12L Cryopump
- Customized Helium Hose
- 6m Cryopump Power Cord
- HPC6000V Compressor
   6m Helium Compressor Power Cord

### Note:

## >> KDCP-16

SI	Pumping Speed (L/S)	Hydrogen	12000
		Argon	4500
		Water	16800
		Natrogen	4800
	Limit Vacuum (Pa)		5×10 <sup>-7</sup>
	Capacity (Std·L)  Throughput (sccm)	Argon	5000
		Hydrogen	48
Ĕ		Argon	900
SPECIFICATION	Cooldown Time (min)		105
	Regeneration Time Rapidly (min)		95
	Regeneration Time Completely (min)		185
	Crossover Rating (Pa•L)		380
	Control Type		Hand operater/ RS232 Remote Control
	Port Flange		ISO/CF400
	Maintenance		15000h



### **Standard Scope of Supply:**

- KDCP-16 Cryopump
- KDC6000V Compressor
- 10m Helium Hose
- 6m Cryopump Power Cord
- 6m Helium Compressor Power Cord

#### Note:

One KDC6000V compressor can drive 1 to 2 pumps.





SF	Pumping Speed (L/S)	Hydrogen	15000
		Argon	8300
		Water	28500
		Natrogen	9700
	Limit Vacuum (Pa)		5×10 <sup>-7</sup>
	Capacity ( Std·L)	Argon	5800
		Hydrogen	50
ĚCIF	Throughput (sccm)	Argon	900
SPECIFICATION	Cooldown Time (min)		115
	Regeneration Time Rapidly (min)		105
	Regeneration Time Completely (min)		165
	Crossover Rating (Pa•L)		380
	Control Type		Hand operater/ RS232 Remote Control
	Port Flange		ISO/CF500
	Maintenance		15000h

## **Standard Scope of Supply:**

- KDCP-20 Cryopump
- 10m Helium Hose
- 6m Cryopump Power Cord
- KDC6000V Compressor 6m Helium Compressor Power Cord

#### Note:

## >> KDCP-50

SPECIFICATION	Pumping Speed (L/S)	N	60000
		Natrogen	60000
		Argon	47000
		Water	180000
		Hydrogen	57000
		Helium	15000
	Capacity ( Std·L)	Argon	9000
		Natrogen	9000
	Capacity (Std·L@5*10 <sup>-4</sup> Pa)	Hydrogen	150
	Throughput (sccm)	Natrogen/Argon	1500
		Helium	700
	Cooldown Time (h)		6
	Liquid Nitrogen Consumption		10
	Regeneration Time Completely (min)		8
	Crossover Rating (Pa•L)		1×10 <sup>5</sup>



### **Standard Scope of Supply:**

- KDCP-50 Cryopump
- 10m Helium Hose
- 6m Cryopump Power Cord
- ► KDC6000V Compressor\*2
   ► 6m Helium Compressor Power Cord

### Note:

# >> APPRECIATION TO PARTNERS

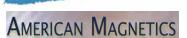




















**Mr. Solution** 





















































### 华北电力大学



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園房科学技術大学 National University of Defense Technology









同為大學 TONGJI UNIVERSITY

































Tel: 025-87173705

E-mail: cryosales@724pride.com

Add: No.32, Changqing Street, Jiangning District, Nanjing, Jiangsu

Province, China, 211106

Web: http://www.724pridecryogenics.com/