



GM Cryocooler

Product Catalog





LEADING NEW CRYOGENICS TECHNOLOGIES



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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 «

06

2018.9

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

05

2016.8

GM cryocooler completed to provide scale selling through abroad marketing.

04

2015.5

GM cryocoolers were supplied towards MRI companies in large volumes.

03

2013.7

Became a member of CSSC

02

2011.3

Has successfully developed Helium Recovery Purification and Liquefaction system.

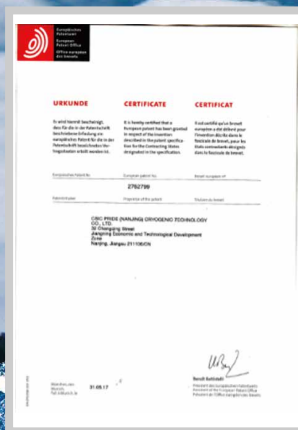
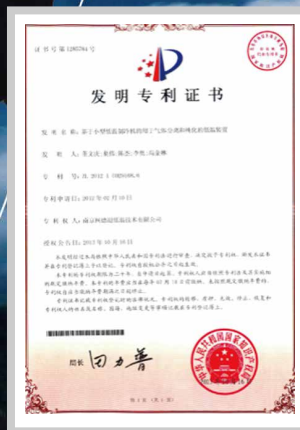
01

2010.1

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

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

KDE420SA KDE418SA, KDE415SA, KDE412SA, KDE410SA, KDE401S2,
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.

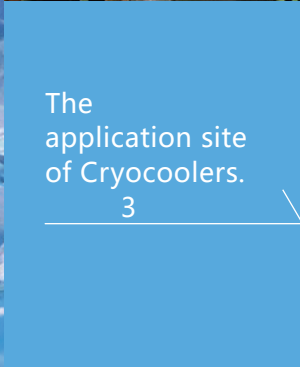
CRYOCOOLERS APPLICATION SITE



The
application site
of Cryocoolers.
1



The
application site
of Cryocoolers.
2



The
application site
of Cryocoolers.
3



The
application site
of Cryocoolers.
3



KDE420SA <<



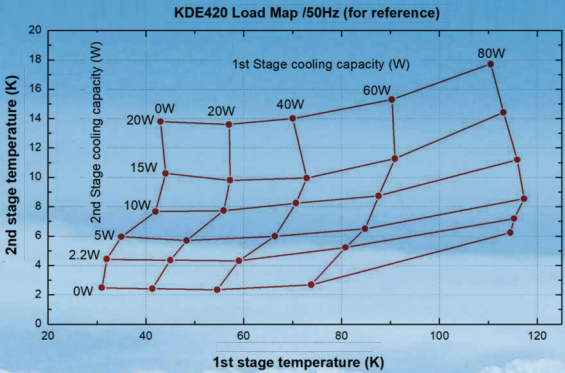
SPECIFICATION

	KDE420SA	
Lowest Temperature	< 3.5K	
Cooling Capacity (50Hz)	First Stage	Second Stage
	20W @ 50K	2.0W @ 4.2K
Cooldown Time (2nd stage)	< 60min(4.2K)	
Weight	Coldhead	Compressor
	19 kg	118 kg
Compressor Type	KDC6000	
Power Consumption(50Hz)	Steady	Cooldown
	6.9kW	7.5kW
Cooling Type	Water	
Cooling Water Requirement	> 7 L/min	
Standard Flexline	20A×20m	
Warranty Time	Coldhead	
	18 months	

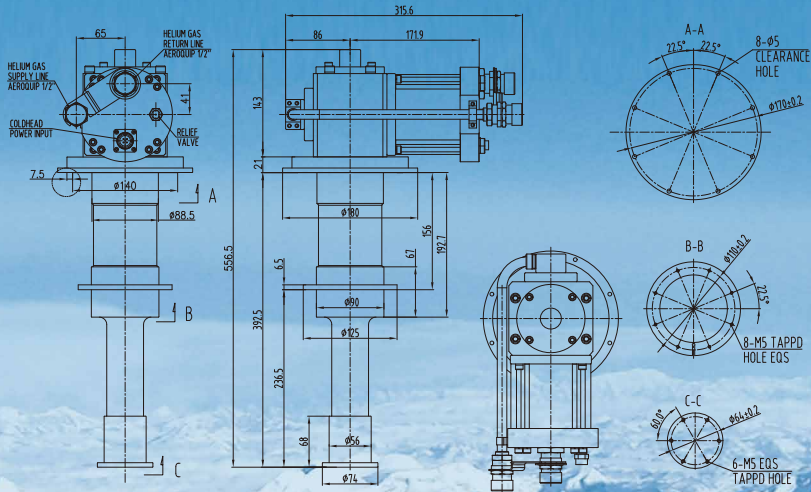
AMBIENT REQUIREMENT

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

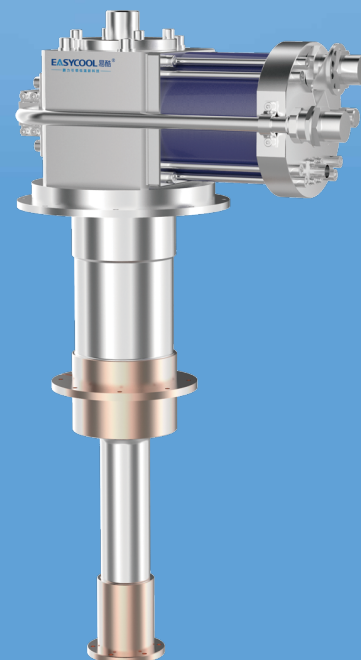
TYPICAL LOAD MAP(50HZ)



OUTLINE DRAWING



» KDE418SA

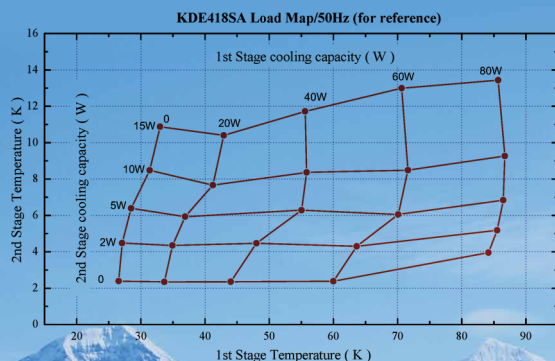


SPECIFICATION		KDE418SA	
	Lowest Temperature	< 3.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		35W @ 50K	1.75W @ 4.2K
	Cooldown Time (2nd stage)	< 60min(4.2K)	
	Weight	Coldhead	Compressor
		19 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
Standard Flexline	20A×20m		
Warranty Time	Coldhead		
	18 months		

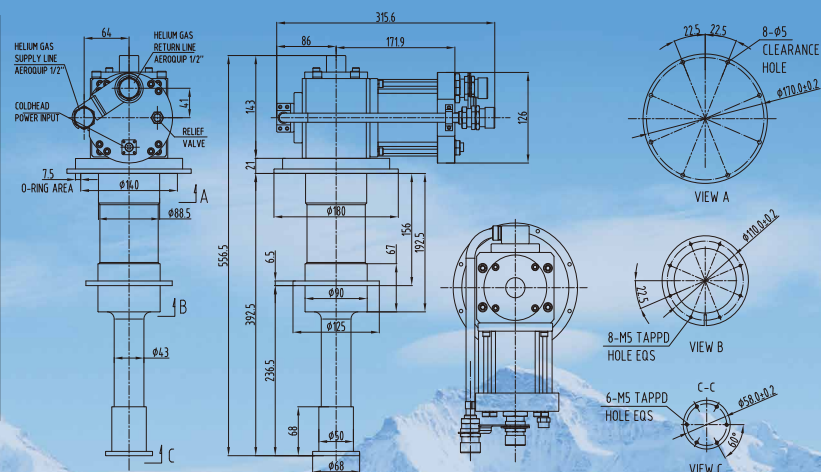
AMBIENT REQUIREMENT

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)



OUTLINE DRAWING





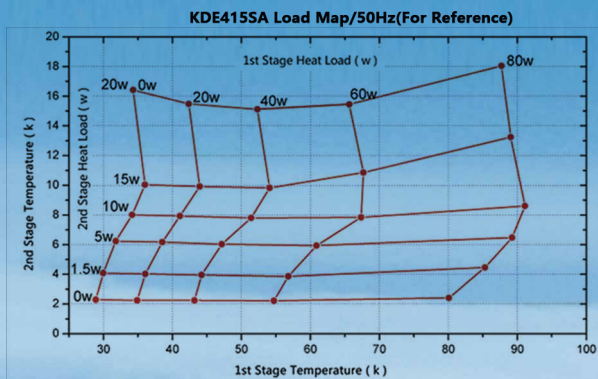
SPECIFICATION

SPECIFICATION

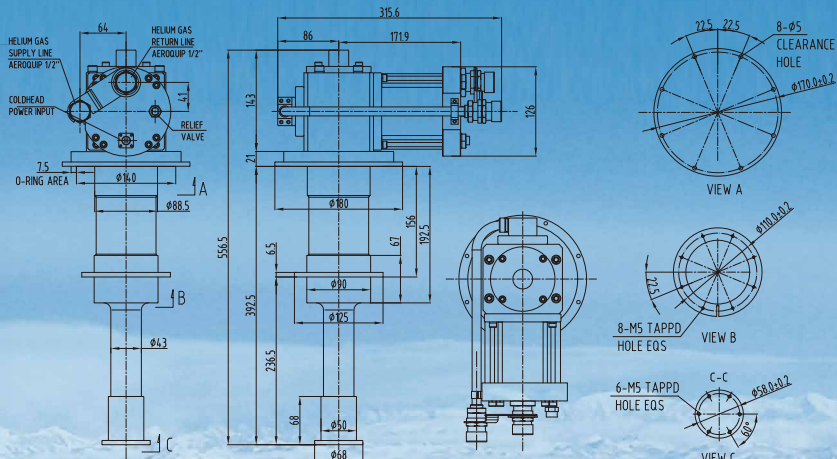
AMBIENT REQUIREMENT

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)



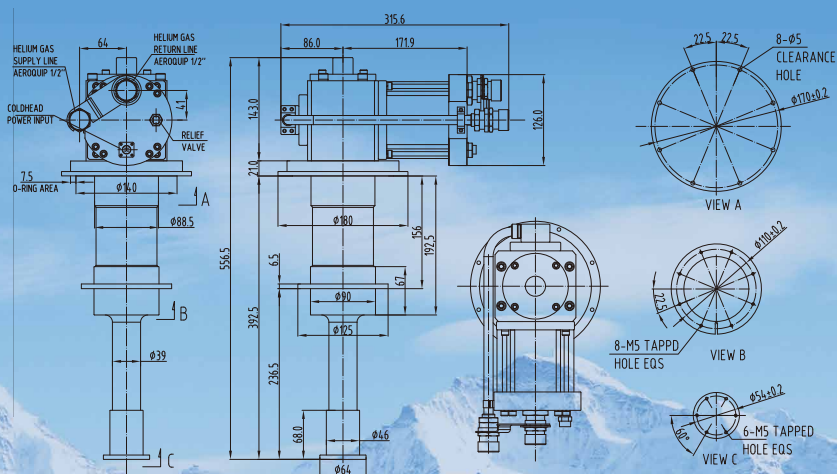
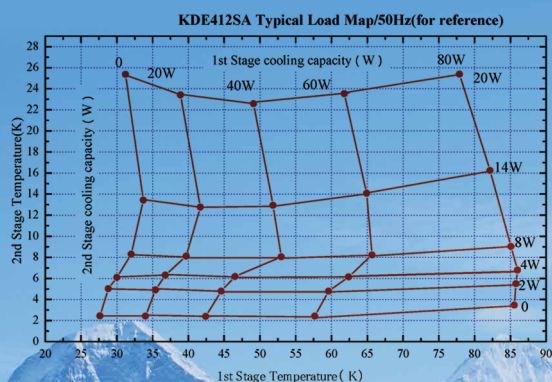
OUTLINE DRAWING



SPECIFICATION		KDE412SA	
	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、KDC4000F	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
Standard Flexline	20A×20m		
Warranty Time	Coldhead		
	18 months		

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



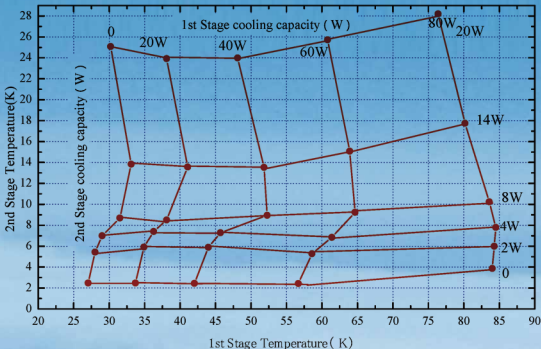


SPECIFICATION

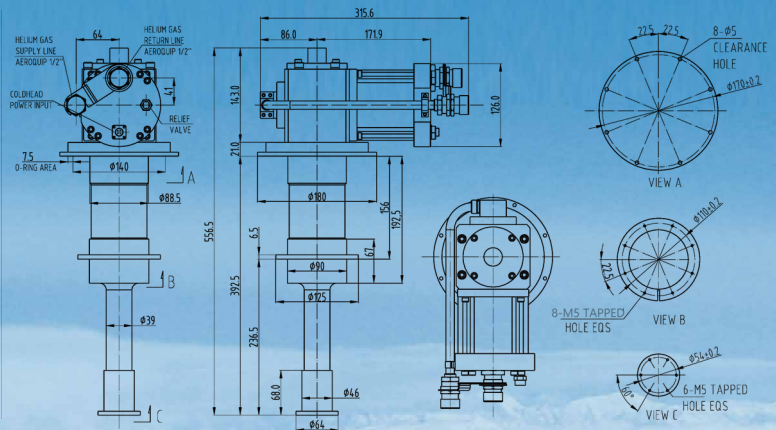
AMBIENT REQUIREMENT

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)

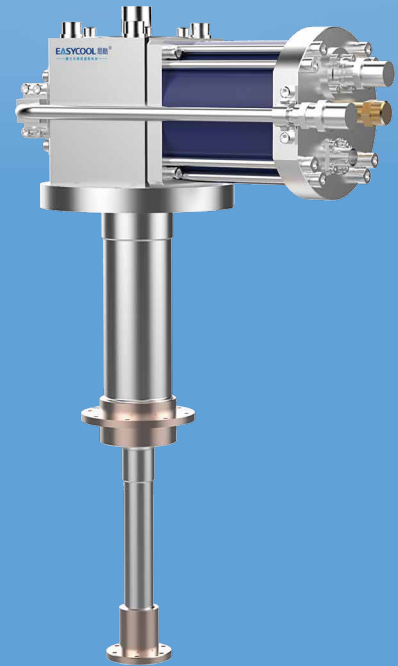


OUTLINE DRAWING



» KDE401S2

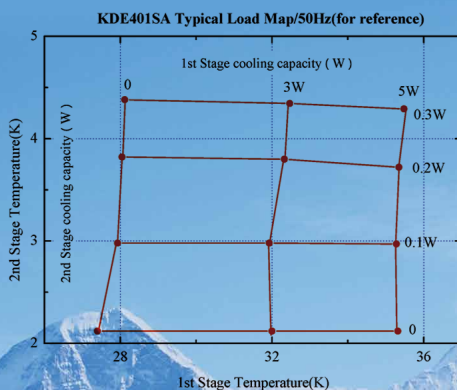
SPECIFICATION	KDE401S2		
	Lowest Temperature	< 2.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		3W @ 45K	0.2W/0.1W @ 4.2K
	Cooldown Time (2nd stage)	< 120min(4.2K)	
	Weight	Coldhead	Compressor
		8.9 kg	86 kg
	Compressor Type	KDC2000F/KDC1000A	
	Power Consumption(50Hz)	Steady	Cooldown
		3.2kW	3.5kW
	Cooling Type	Air	
	Air Flow Rate	600Nm ³ /hr	
	Standard Flexline	15A×10m	
	Warranty Time	Coldhead	
		12 months	



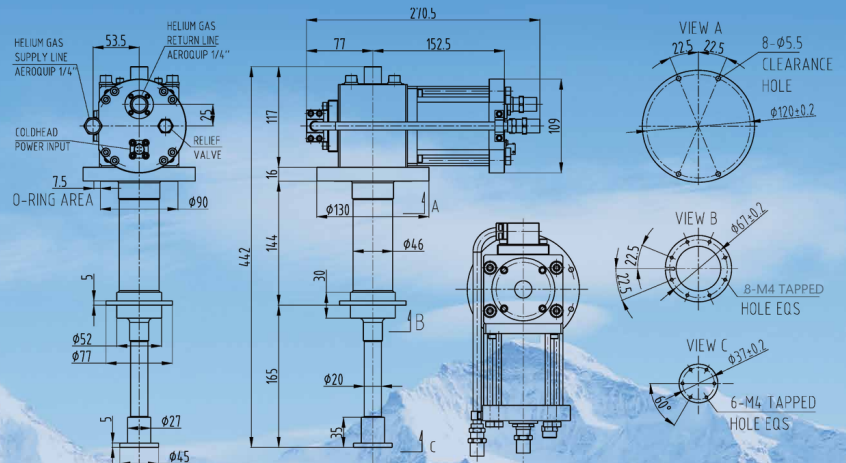
AMBIENT REQUIREMENT

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)

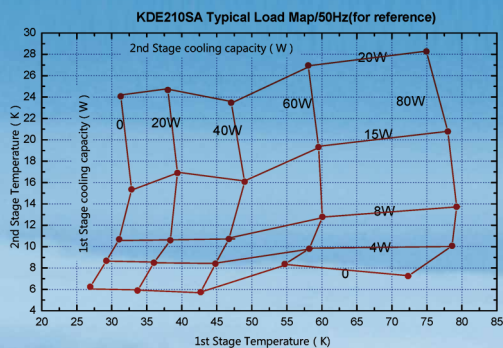


OUTLINE DRAWING



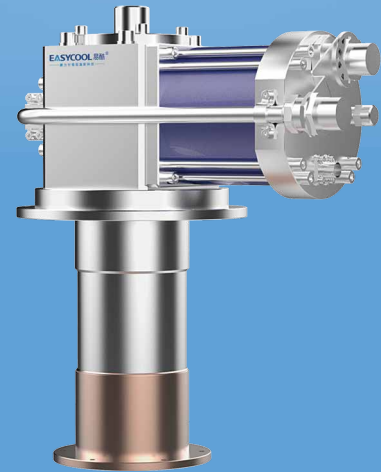
AMBIENT REQUIREMENT

TYPICAL LOAD MAP(50HZ)



Technical drawing of a 1000W 12VDC 12000RPM brushless motor. The drawing includes a side view (A), a front view (B), and a rear view (C). Key dimensions include a total length of 315.6mm, a shaft diameter of 9.525mm, and a base diameter of 86.0mm. The motor is shown with a 12VDC input and a 12000RPM output. The drawing also shows the motor's internal components, including the stator and rotor, and the cooling fan.

» KDE400SA



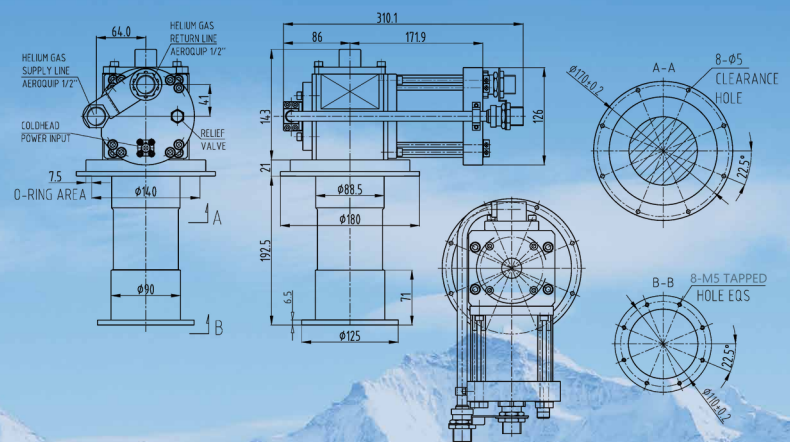
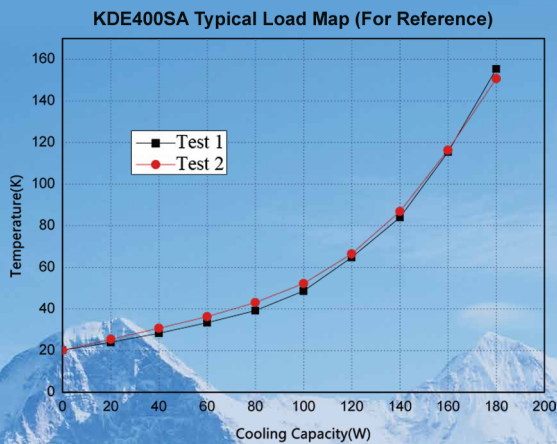
SPECIFICATION		KDE400SA	
	Lowest Temperature	< 30K	
	Cooling Capacity (50Hz)	First Stage	/
		54W @ 40K	/
	Cooldown Time (2nd stage)	< 40min(30K)	
	Weight	Coldhead	Compressor
		16.8 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
		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)

OUTLINE DRAWING



KDE300SA <<

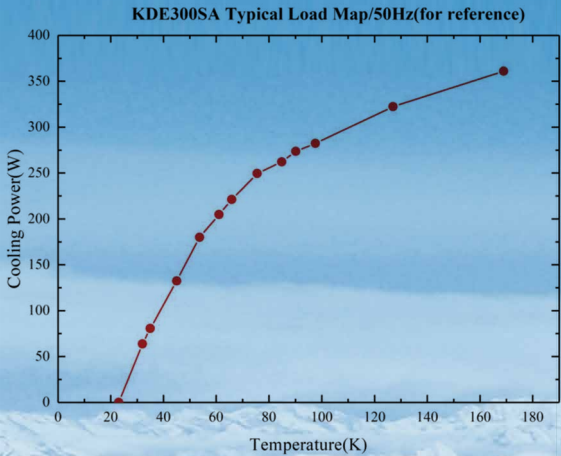


SPECIFICATION		KDE300SA	
	Lowest Temperature	< 25K	
	Cooling Capacity (50Hz)	First Stage	/
		250W @ 77K	/
	Cooldown Time (2nd stage)	< 20min(70K)	
	Weight	Coldhead	Compressor
		18 kg	118 kg
	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
		6.6~6.9kW	8.5kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
Warranty Time	Coldhead		
	18 months		

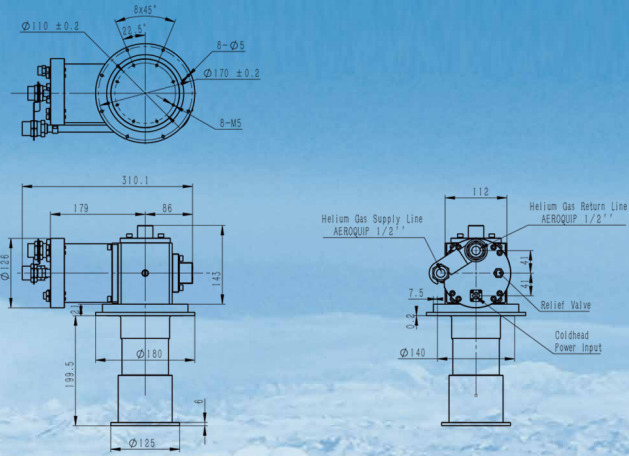
AMBIENT REQUIREMENT

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)



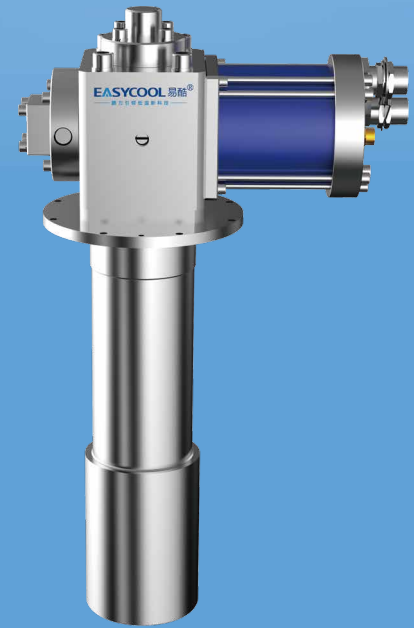
OUTLINE DRAWING



KDE300SA OUTLINE DRAWING

» KDE400SX

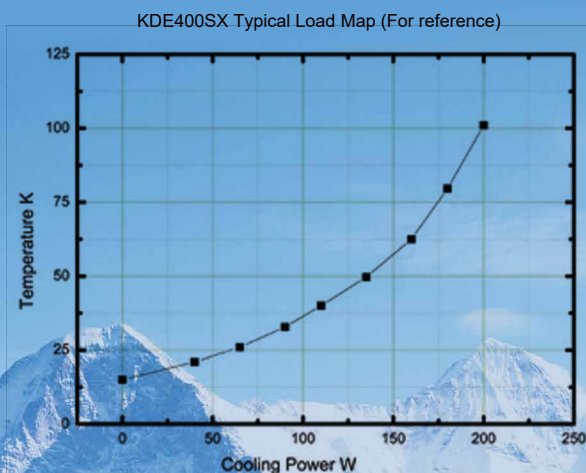
SPECIFICATION	KDE400SX		
	Lowest Temperature	< 14K	
	Cooling Capacity (50Hz)	First Stage	/
		40W @ 20K	/
	Cooldown Time (2nd stage)	< 120min(20K)	
	Weight	Coldhead	Compressor
		25 kg	118 kg
	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
		6.6~6.9kW	8.5kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
	Standard Flexline	20A×20m	
	Warranty Time	Coldhead	
		18 months	



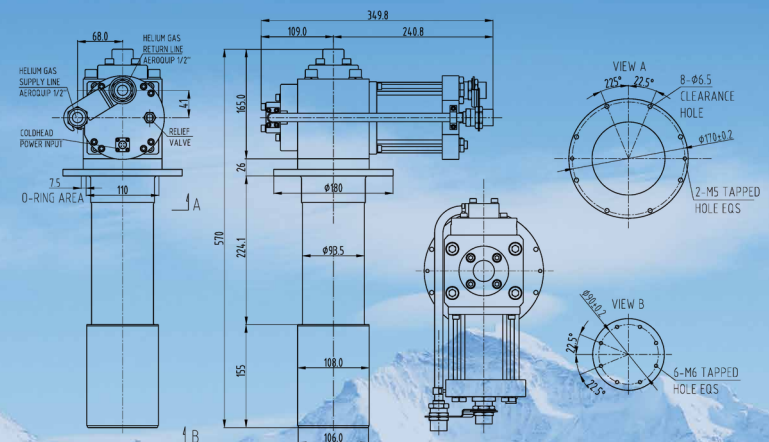
AMBIENT REQUIREMENT

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)



OUTLINE DRAWING



KDC6000V <<



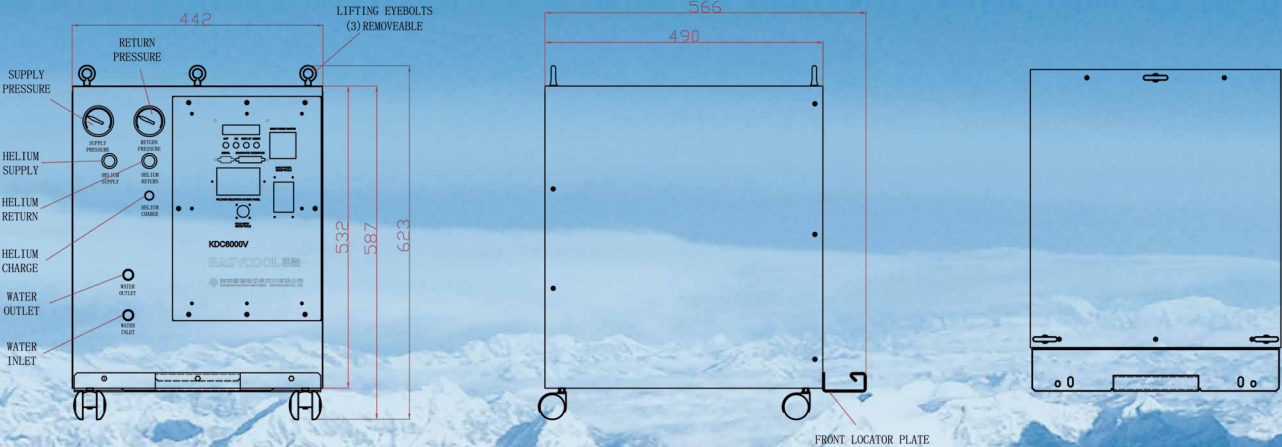
SPECIFICATION

SPECIFICATION	Compressor Type		KDC6000V	
	Electrical Power		380,400V@50Hz 3P 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	

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

OUTLINE DRAWING



>> KDC6000

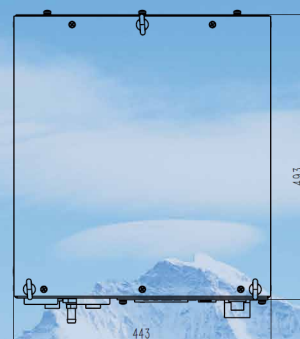
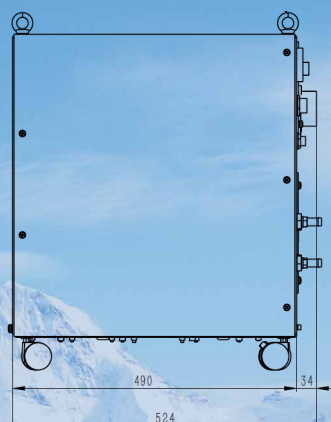
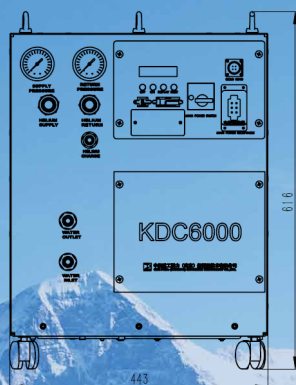


SPECIFICATION	Compressor Type	KDC6000	
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Water	
	Water Flow	7L~10L/min (28°C)	
	Cooling Water Temperature	Inlet	Out
		5~35°C	< 44°C
	Power Consumption(50Hz)	Steady	Cooldown
		6.6~6.9kW	8.5kW
	Pressure Range(Operating)	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

OUTLINE DRAWING



KDC4000F <<

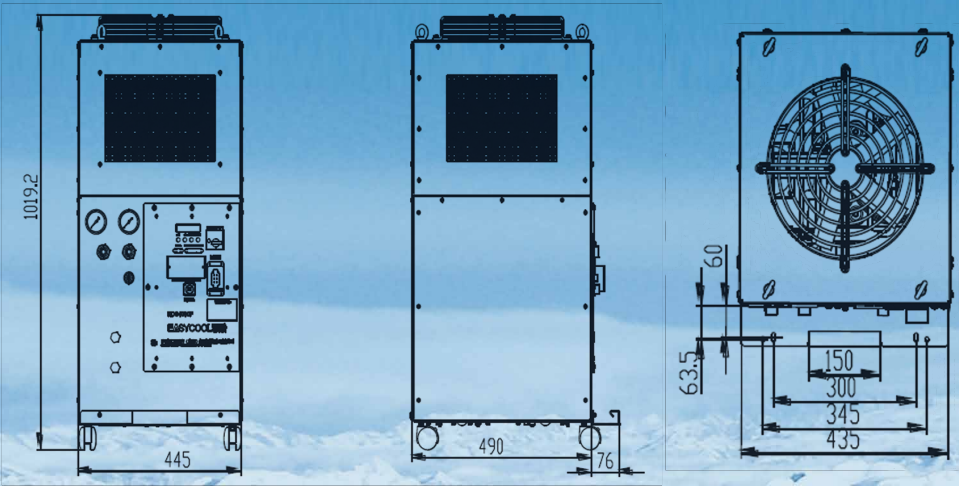


SPECIFICATION	Compressor Type	KDC4000F	
	Electrical Power	380V@50Hz 3P	
	Helium Purity Requirement	>99.999%	
	Gas Pressure	Exhaust	Return
		2.0MPa	0.7MPa
	Power Consumption(50Hz)	5.0kW	
	Cooling Type	Air cooling	
	Air Flow Rate	1300Nm ³ /h	
	Ambient Temperature	Operating	Storage
		4℃~38℃	-20℃~65℃
	Relative Humidity	Operating	Storage
		30%~70%	10%~90%
	Weight	130kg	
	Dimension(L*W*H)	445*490*1019(mm)	
	Normal Warranty Time	24months	

KDE412SA-KDC4000F PARAMETERS

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

OUTLINE DRAWING



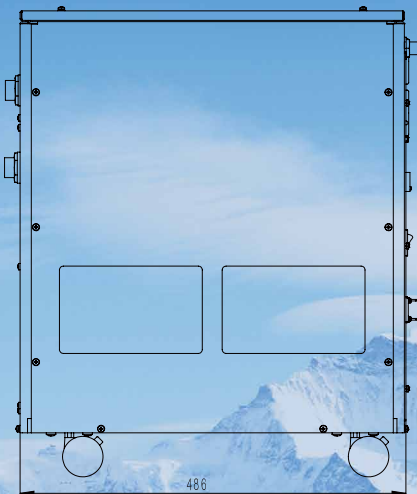
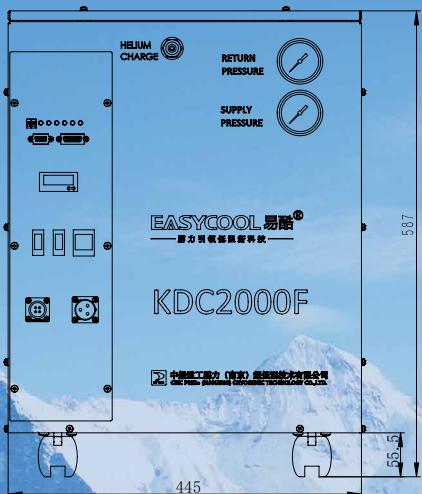
SPECIFICATION



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

OUTLINE DRAWING



KDC1000A <<



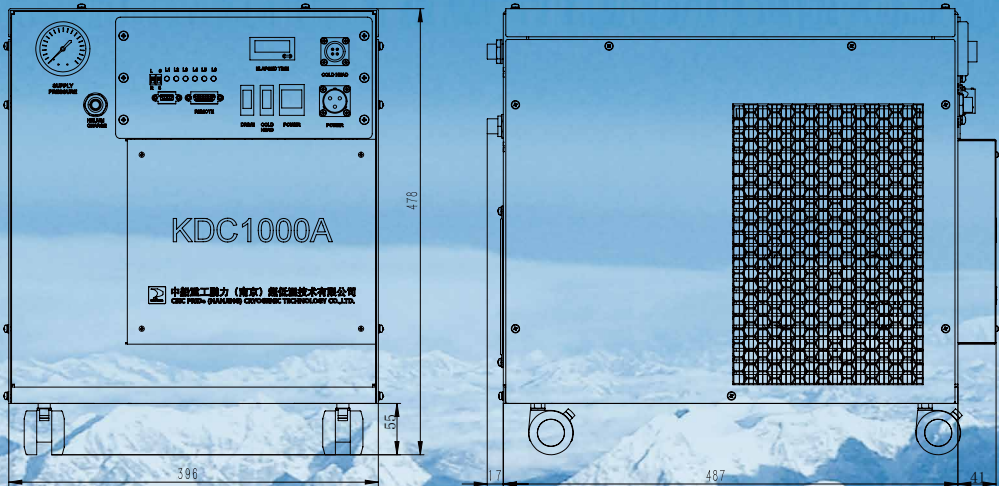
SPECIFICATION

Compressor Type	KDC1000A	
Electrical Power	220V@50Hz 1P	
Helium Purity Requirement	>99.999%	
Cooling Type	Air	
Air Flow Rate	180Nm³/h	
Power Consumption(50Hz)	Steady	Cooldown
	1.3kW	1.5kW
Pressure Range(Operating)	Supply	Return
	21~25bar	8~10bar
Ambient Temperature	Operating	Storage
	4℃~30℃	-20℃~65℃
Standard Flexline	10A×3m	
Warranty Time	24months	
Weight	68kg	

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

OUTLINE DRAWING



Appreciation to Partners

UNITED 联影
IMAGING

lonwin
朗润医疗

XGY 鑫高益医疗

杭州汉胜科磁体设备有限公司

Neusoft 东软医疗

国家电网
STATE GRID

宝钢气体
BAOSTEEL GASES

富通集团
FUTONG GROUP

alltech
Medical Systems

安科
ANKE

BASDA
贝斯达

宁波健信机械有限公司
NINGBO JANSEN MECHANISM CORP

东南大学
SOUTHEAST UNIVERSITY

中南大学
CENTRAL SOUTH UNIVERSITY

山西大学
SHANGXI UNIVERSITY

美|时|医|疗
TIME MEDICAL
SYSTEMS

浙江大学
Zhejiang University

华中科技大学
HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

复旦大学
FUDAN UNIVERSITY

同济大学
TONGJI UNIVERSITY

北京航空航天大学
BEIHANG UNIVERSITY

哈尔滨工业大学
HARBIN INSTITUTE OF TECHNOLOGY

国防科学技术大学
National University of Defense Technology



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