



# 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.

**2016.8**

GM cryocooler completed to provide scale selling through abroad marketing.

05

**2015.5**

GM cryocoolers were supplied towards MRI companies in large volumes.

04

**2013.7**

Became a member of CSSC

03

02

**2011.3**

Has successfully developed Helium Recovery Purification and Liquefaction system.

01

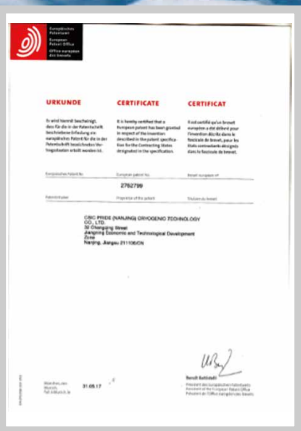
**2010.1**

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



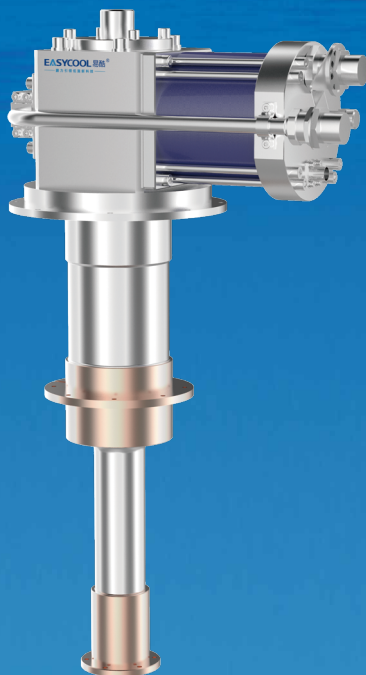
The application site of Cryocoolers.  
3



The application site of Cryocoolers.  
3



# KDE420SA <<

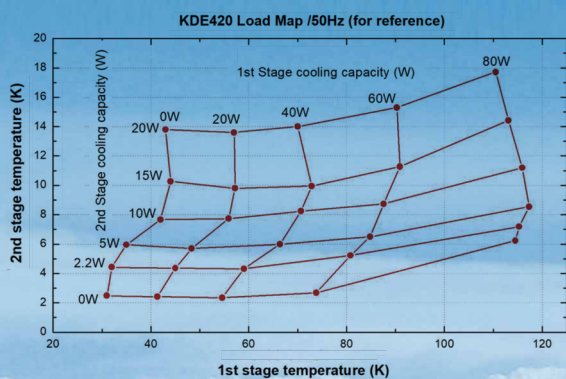


<b>SPECIFICATION</b>	KDE420SA		
	Lowest Temperature	< 3.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		20W @ 50K	2.0W @ 4.2K
	Cooldown Time (2nd stage)	< 60min(4.2K)	
	Weight	Coldhead	Compressor
		19 kg	118 kg
	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
		6.9kW	7.5kW
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

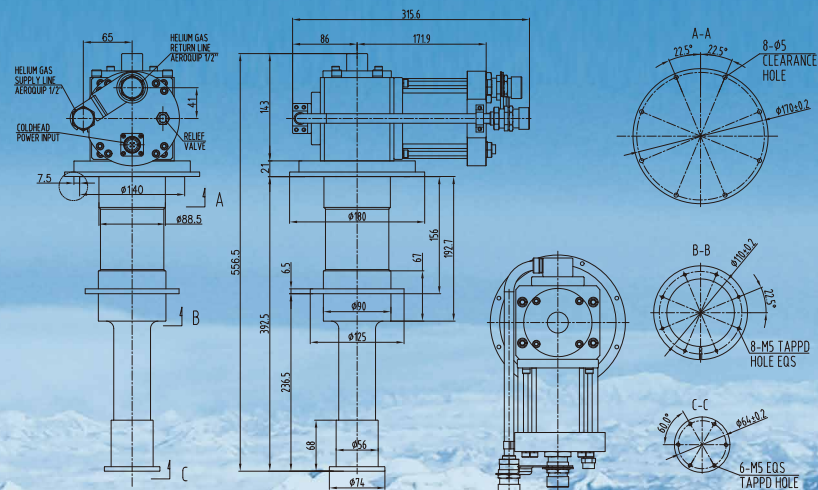
## AMBIENT REQUIREMENT

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)

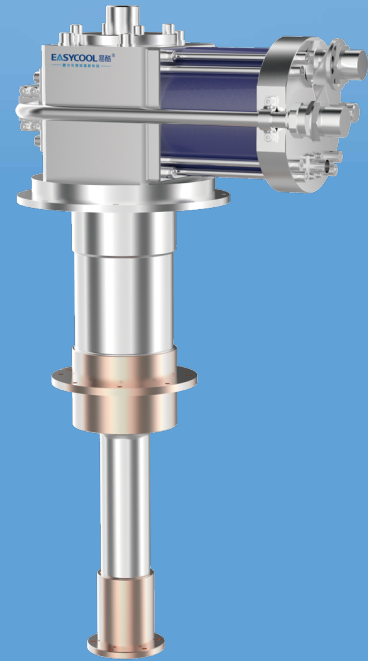


## OUTLINE DRAWING





# » KDE418SA



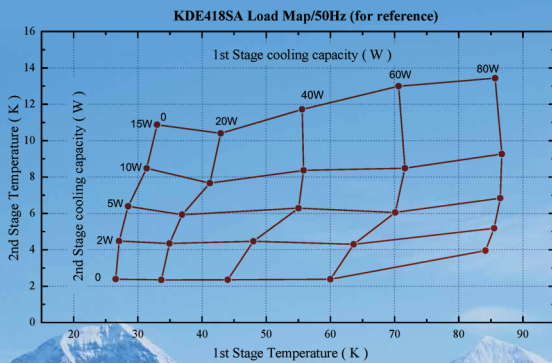
## SPECIFICATION

	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	

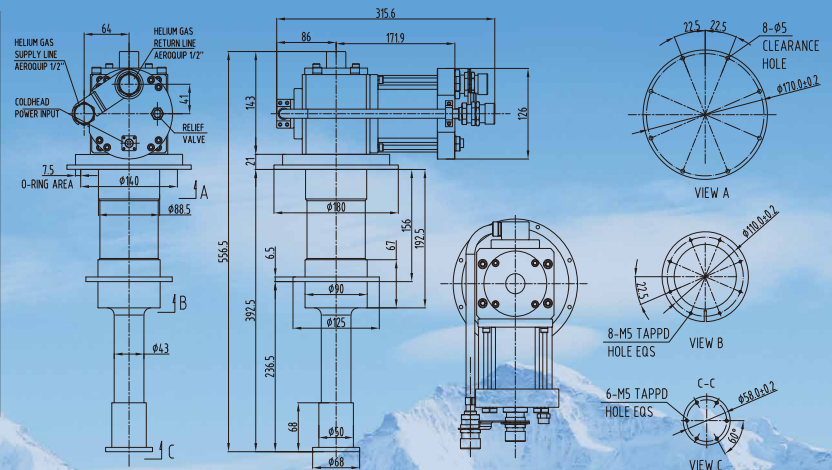
## AMBIENT REQUIREMENT

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

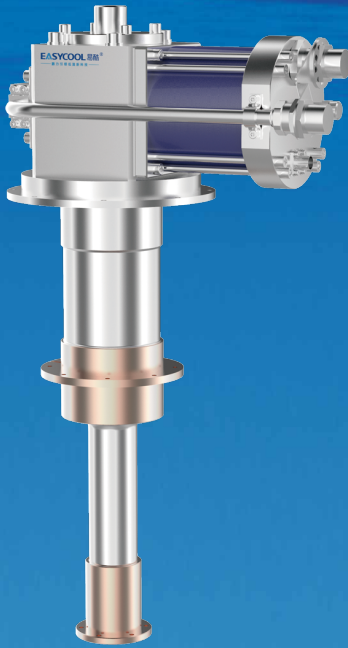
## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# KDE415SA <<

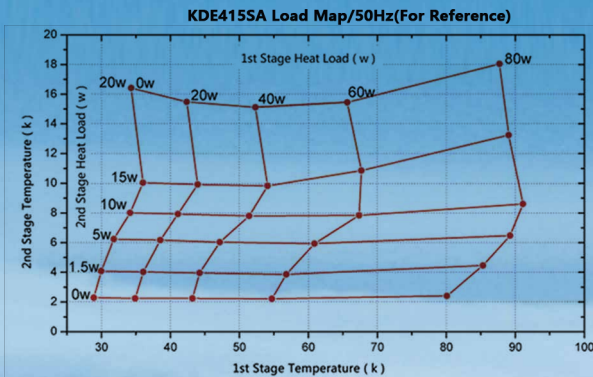


SPECIFICATION	KDE415SA		
	Lowest Temperature	< 3.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		35W @ 50K	1.5W @ 4.2K
	Cooldown Time (2nd stage)	< 60min(4.2K)	
	Weight	Coldhead	Compressor
		19 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling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

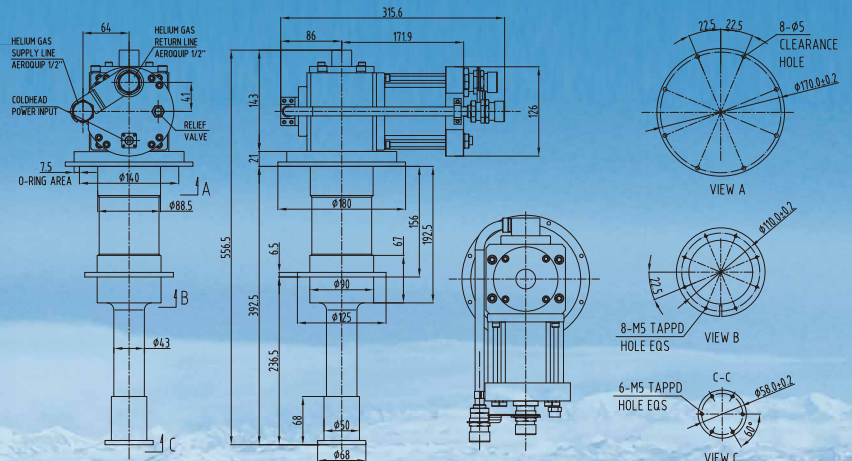
## AMBIENT REQUIREMENT

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

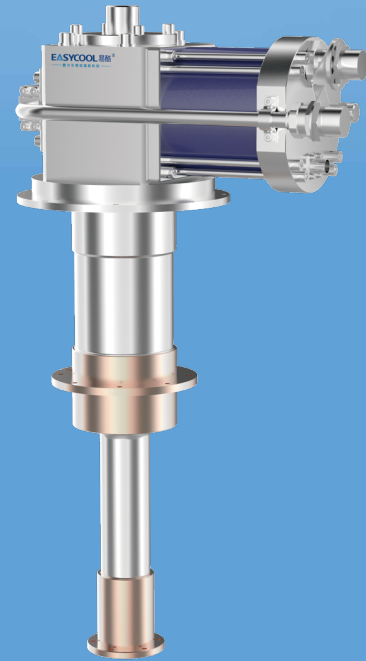
## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# » KDE412SA

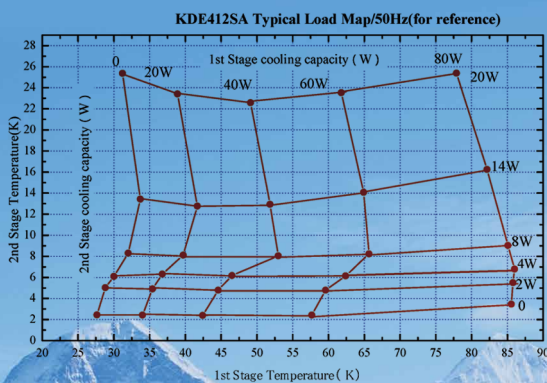


<b>SPECIFICATION</b>		KDE412SA	
	Lowest Temperature	< 3.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		40W @ 45K	1.25W @ 4.2K
	Cooldown Time (2nd stage)	< 60min(4.2K)	
	Weight	Coldhead	Compressor
		18.5 kg	118 kg
	Compressor Type	KDC6000V、KDC4000F	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	
	Cooling Water Requirement	> 7 L/min	
Standard Flexline	20A×20m		
Warranty Time	Coldhead		
	18 months		

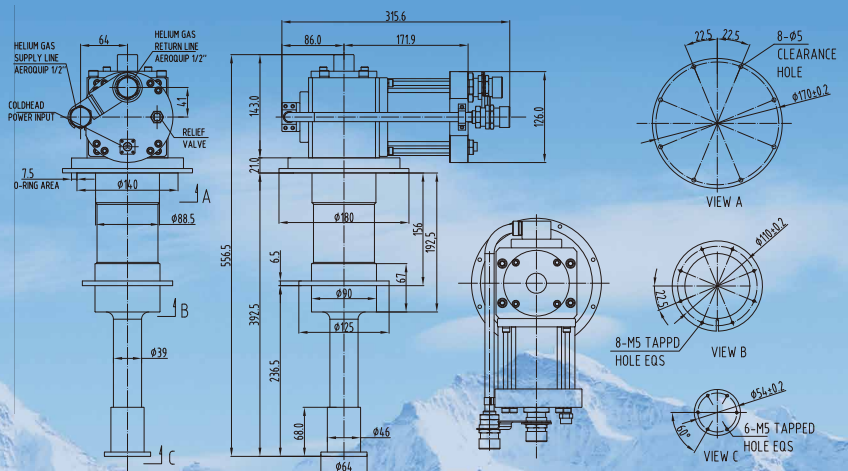
## AMBIENT REQUIREMENT

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



# KDE410SA <<

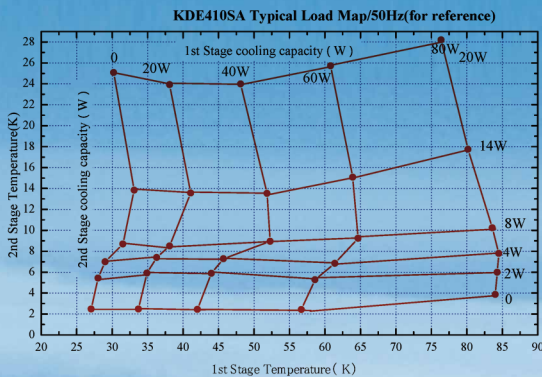


<b>SPECIFICATION</b>	KDE410SA		
	Lowest Temperature	< 3.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		40W @ 45K	1.0W @ 4.2K
	Cooldown Time (2nd stage)	< 60min(4.2K)	
	Weight	Coldhead	Compressor
		18.5 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW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

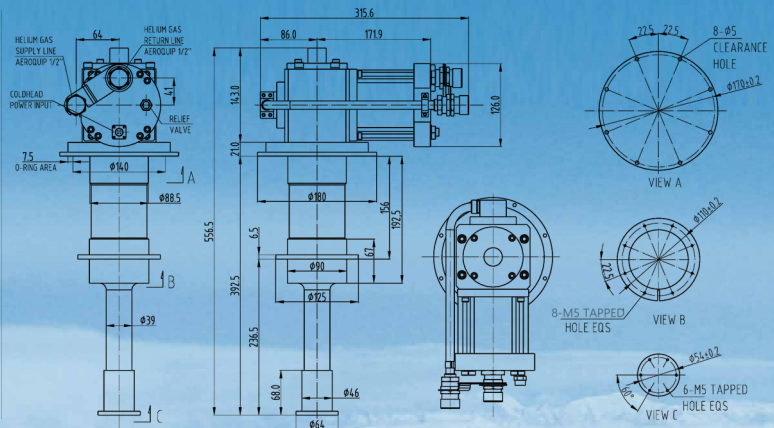
## AMBIENT REQUIREMENT

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

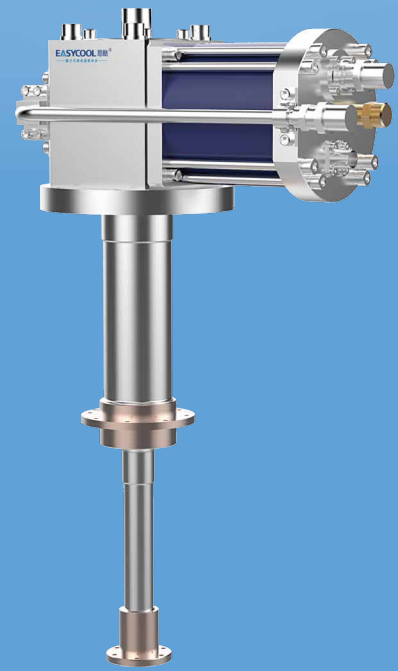
## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# » KDE401S2

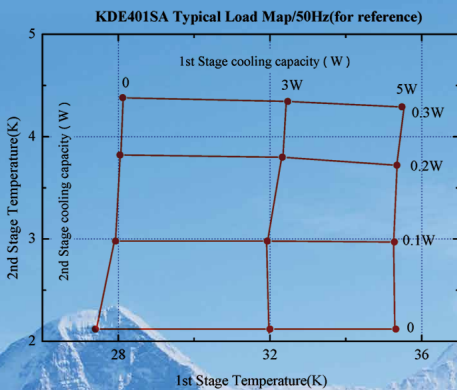


<b>SPECIFICATION</b>		KDE401S2	
	Lowest Temperature	< 2.5K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		3W @ 45K	0.2W/0.1W @ 4.2K
	Cooldown Time (2nd stage)	< 120min(4.2K)	
	Weight	Coldhead	Compressor
		8.9 kg	86 kg
	Compressor Type	KDC2000F/KDC1000A	
	Power Consumption(50Hz)	Steady	Cooldown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

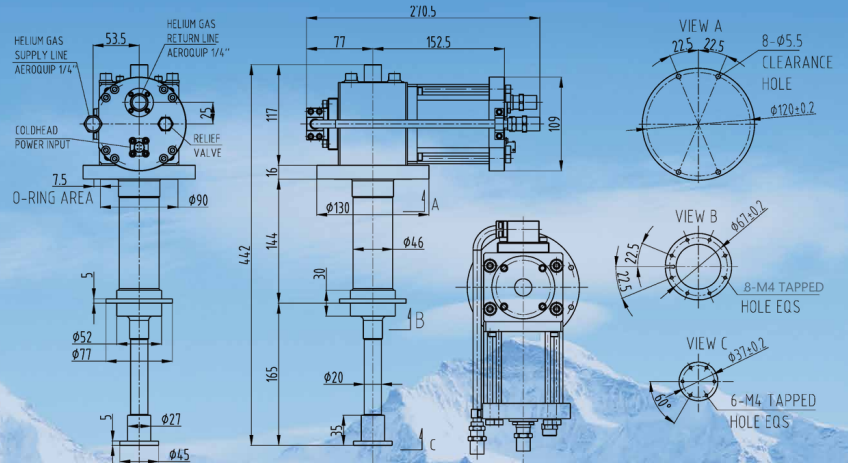
## AMBIENT REQUIREMENT

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



# KDE210SA <<

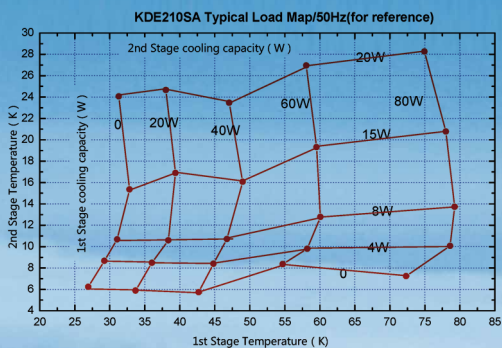


<b>SPECIFICATION</b>	KDE210SA		
	Lowest Temperature	< 10K	
	Cooling Capacity (50Hz)	First Stage	Second Stage
		40W @ 45K	5W @ 10K
	Cooldown Time (2nd stage)	< 60min(10K)	
	Weight	Coldhead	Compressor
		17.8 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling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

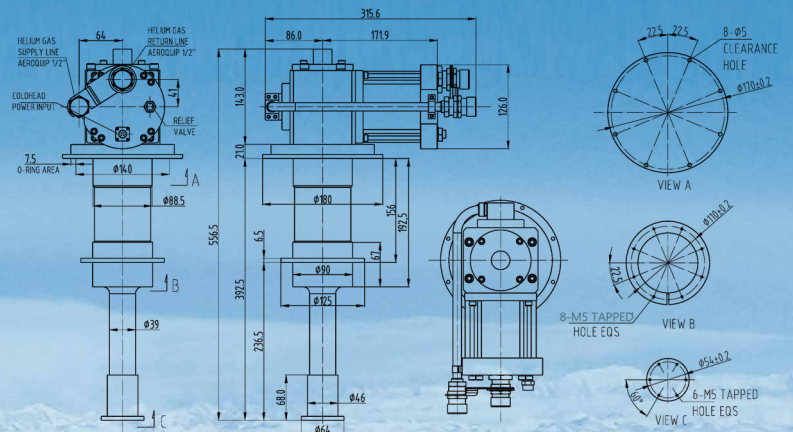
## AMBIENT REQUIREMENT

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

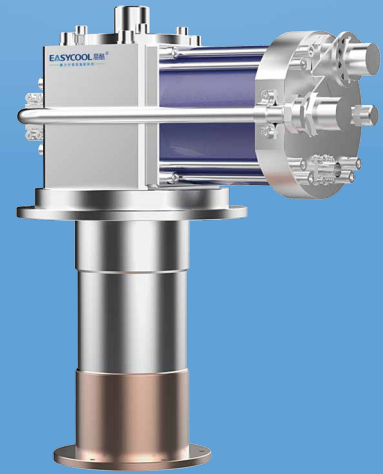
## TYPICAL LOAD MAP(50HZ)



## OUTLINE DRAWING



# » KDE400SA

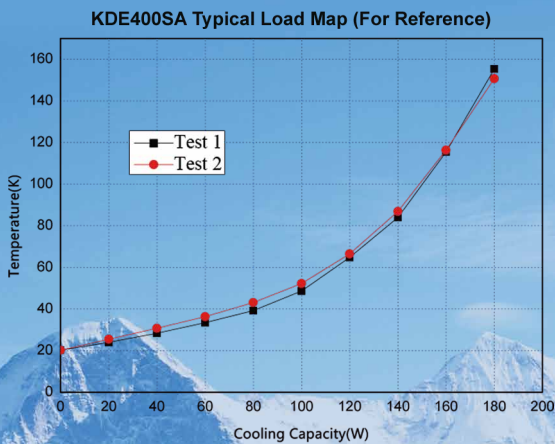


<b>SPECIFICATION</b>		KDE400SA	
	Lowest Temperature	< 30K	
	Cooling Capacity (50Hz)	First Stage	/
		54W @ 40K	/
	Cooldown Time (2nd stage)	< 40min(30K)	
	Weight	Coldhead	Compressor
		16.8 kg	118 kg
	Compressor Type	KDC6000V	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	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

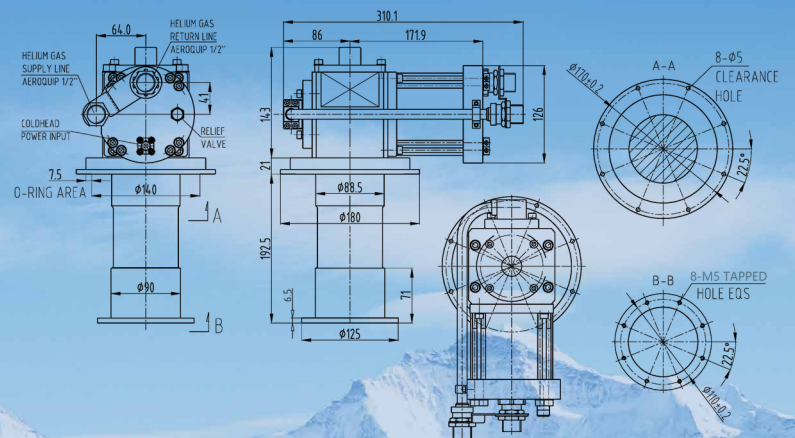
## AMBIENT REQUIREMENT

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 <<

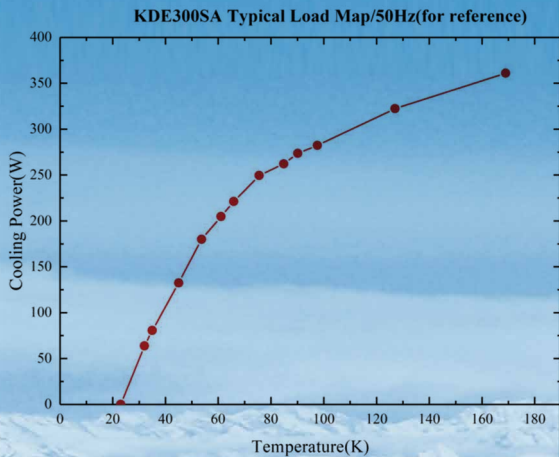


<b>SPECIFICATION</b>	KDE300SA		
	Lowest Temperature	< 25K	
	Cooling Capacity (50Hz)	First Stage	/
		250W @ 77K	/
	Cooldown Time (2nd stage)	< 20min(70K)	
	Weight	Coldhead	Compressor
		18 kg	118 kg
	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
		7.0kW	7.5kW
	Cooling Type	Water	
	Cooling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

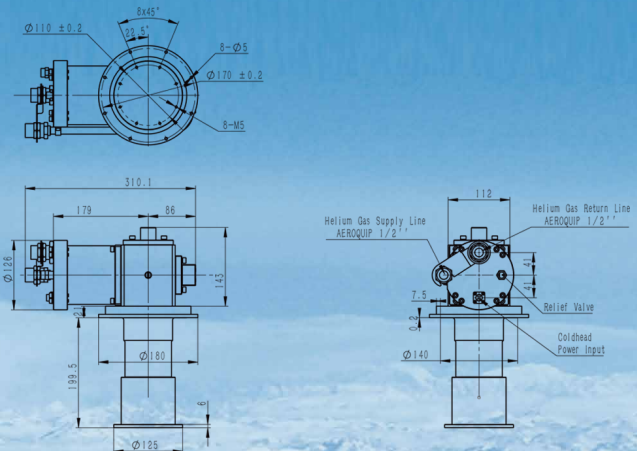
## AMBIENT REQUIREMENT

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

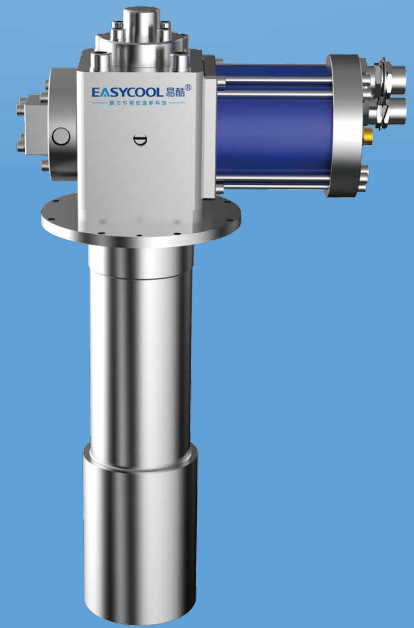


KDE300SA OUTLINE DRAWING



# » KDE400SX

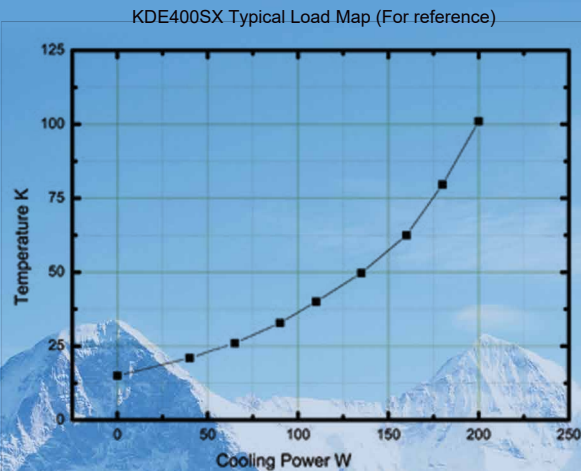
<b>SPECIFICATION</b>	KDE400SX		
	Lowest Temperature	< 14K	
	Cooling Capacity (50Hz)	First Stage	/
		40W @ 20K	/
	Cooldown Time (2nd stage)	< 60min(20K)	
	Weight	Coldhead	Compressor
		25 kg	118 kg
	Compressor Type	KDC6000	
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Cooling Type	Water	
Cooling Water Requirement	> 7 L/min		
Standard Flexline	20A×20m		
Warranty Time	Coldhead		
	18 months		



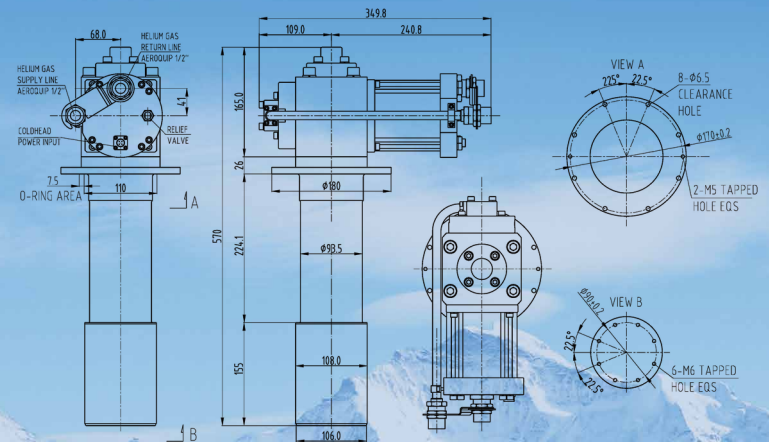
## AMBIENT REQUIREMENT

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



# KDC6000V <<

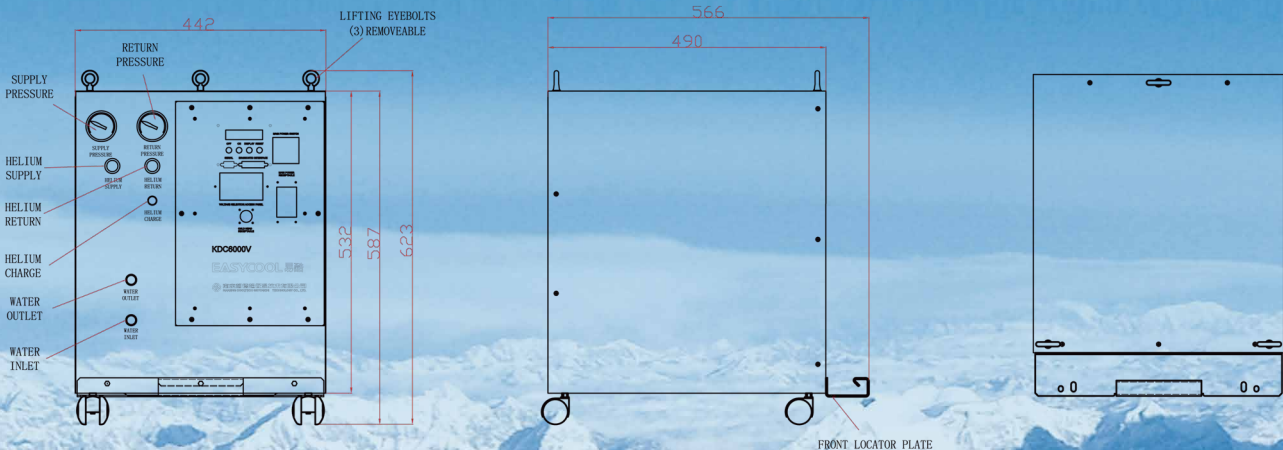


SPECIFICATION	Compressor Type	KDC6000V	
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Water	
	Water Flow	7L~10L/min (28°C)	
	Cooling Water Temperature	Inlet	Out
		5~25°C	< 44°C
	Power Consumption(50Hz)	Steady	Cooldown
		6.5kW	7.2kW
	Pressure Range(Operating)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



# » KDC6000

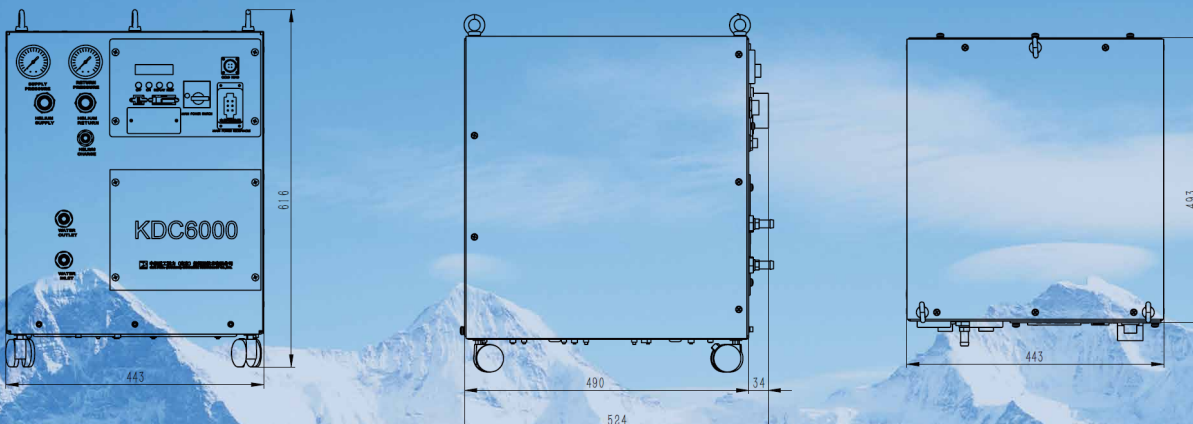


SPECIFICATION	Compressor Type	KDC6000	
	Electrical Power	380,400V@50Hz 3P 480V@60Hz 3P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Water	
	Water Flow	7L~10L/min (28°C)	
	Cooling Water Temperature	Inlet	Out
		5~35°C	< 44°C
	Power Consumption(50Hz)	Steady	Cooldown
		6.6~6.9kW	8.5kW
	Pressure Range(Operating)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

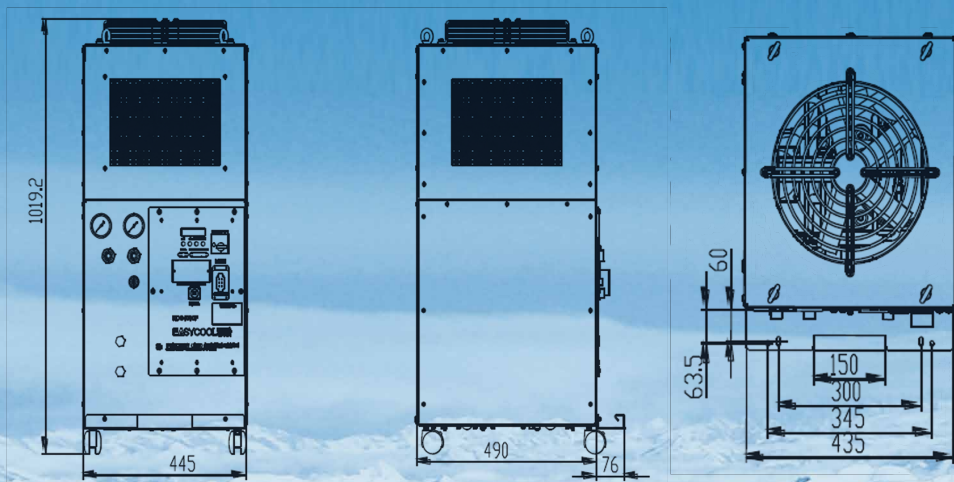


SPECIFICATION	Compressor Type	KDC4000F	
	Electrical Power	380V@50Hz 3P	
	Helium Purity Requirement	>99.999%	
	Gas Pressure	Exhaust	Return
		2.0MPa	0.7MPa
	Power Consumption(50Hz)	5.0kW	
	Cooling Type	Air cooling	
	Air Flow Rate	1300Nm <sup>3</sup> /h	
	Ambient Temperature	Operating	Storage
		4°C~38°C	-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		

## 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



## » KDC2000F

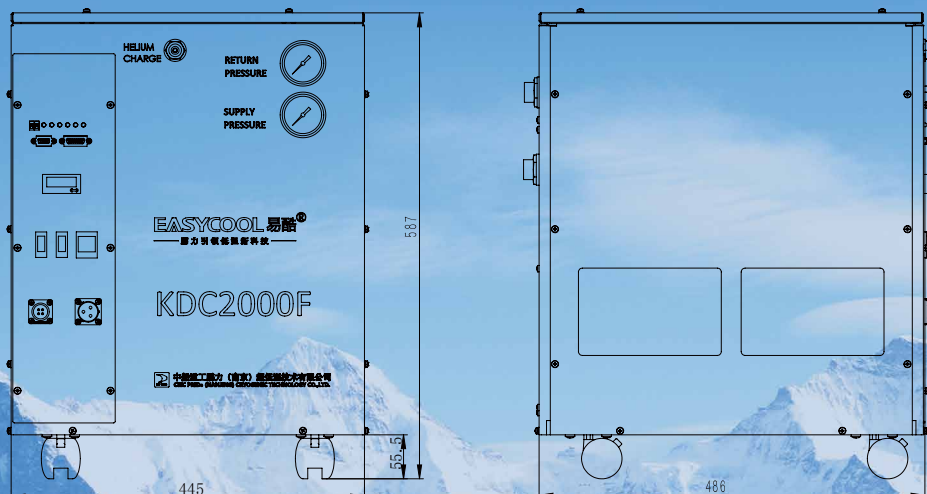
SPECIFICATION	Compressor Type	KDC2000F		
	Electrical Power	220V@50Hz 1P		
	Helium Purity Requirement	>99.999%		
	Cooling Type	Air		
	Air Flow Rate	1800Nm <sup>3</sup> /h		
	Power Consumption(50Hz)	Steady	Cooldown	
		3.2kW	3.5kW	
	Pressure Range(Operating)	Supply	Return	
		16~23bar	2.5~8bar	
	Ambient Temperature	Operating	Storage	
		4°C~30°C	-20°C~65°C	
	Standard Flexline	15A×10m		
Warranty Time	24months			
Weight	86kg			



## 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 <<

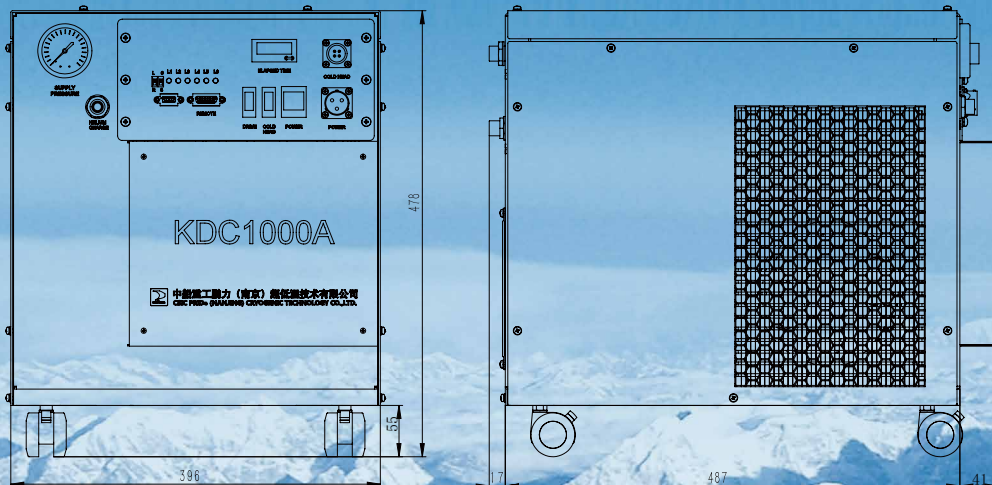


SPECIFICATION	Compressor Type	KDC1000A	
	Electrical Power	220V@50Hz 1P	
	Helium Purity Requirement	>99.999%	
	Cooling Type	Air	
	Air Flow Rate	180Nm <sup>3</sup> /h	
	Power Consumption(50Hz)	Steady	Cooldown
		1.3kW	1.5kW
	Pressure Range(Operating)	Supply	Return
		21~25bar	8~10bar
	Ambient Temperature	Operating	Storage
		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 °C
Relative Humidity	30%-70%	10%-90%(Requiring No-condensing)
Ambient atmospheric pressure	70kPa~110kPa	20kPa~110kPa

## OUTLINE DRAWING



# Appreciation to Partners

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