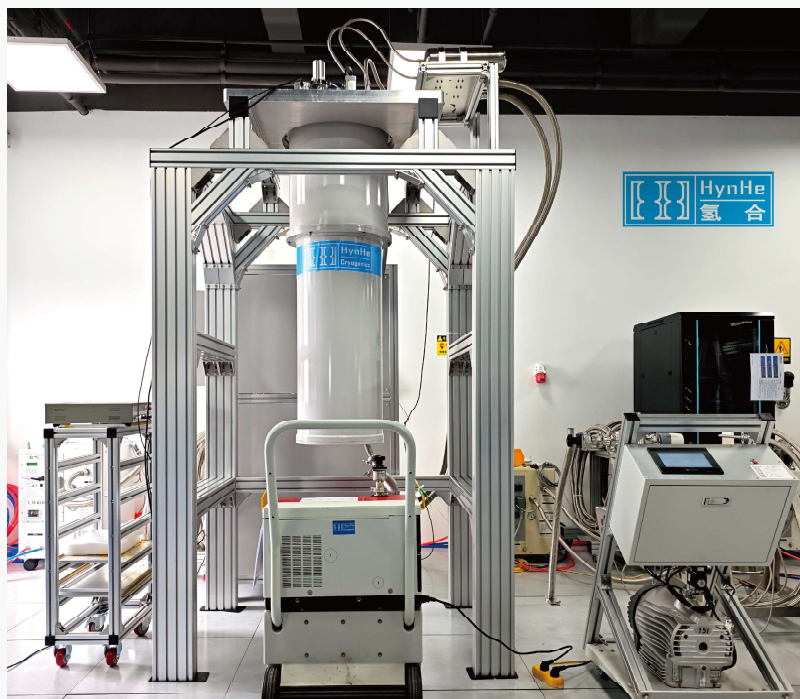




超低温、高真空产品研发制造



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公司: 氢合科技(广州)有限公司
地址: 广东省广州市增城区增江街塔山大道166号(专精特新园区)
邮箱: service@hynhe.com
电话: 020-32229088

Company: Hynhe Technology (Guangzhou) Co., Ltd.
Add : No.166, Tashan Dadao, Zengjiang Street, Zengcheng District, Guangzhou
City, GuanDong Province, 511358, PR.CHINA
Email : service@hynhe.com
Tel : 0086-20-32229088

超低温 高真空 Specializes in Cryogenics



氢合科技(广州)有限公司
Hynhe Technology (Guangzhou) Co., Ltd.



氢合科技 专注超低温 高真空产品研发制造

氢合科技(广州)有限公司是广州市引进的一家高新科技公司。公司专注于超低温、高真空技术在医疗, 半导体及科研大国家工程等的应用的产品和服务。

公司拥有雄厚的科技力量和强大的科研实力, 建立了一支囊括高校教授, 外企专家等高素质人才的研发团队。公司以强大的技术为最大优势, 加之专业的服务团队, 致力于与国内外众多企业建立了长期合作关系。

氢合科技(广州)有限公司将“以市场为引导, 以客户为中心, 为客户和社会创造非凡价值”为发展目标, 扬帆起航, 开启无限未来!



Hynhe Specializes in Cryogenic Equipments R&D and Manufacturing

Hynhe Technology (GuangZhou) Co., Ltd. is a high-tech company, founded by several professor engineers. It focuses on the R&D and industrialization of cryogenic technology and high-precision temperature control technology in Medical, High Technology and Research & Development industries.

The company has strong scientific and technological strength, and the team members include senior talents such as university professors and engineers experts.

With strong technology as its greatest advantage and professional service team, the company is committed to establishing long-term cooperative relations with many enterprises at home and abroad.

In the future, Hynhe technology will "take the market as the guide, take the customer as the center, create extraordinary value for customers and society" as the development goal, set sail and open up the infinite future!

概述

GM制冷机冷头/脉管制冷机

型号 Model Name	HE-408D		HE-412D		HE-415D		HE-418D		HE-418 PRO		HE-421D	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
制冷量 Capacity 50Hz	>44W@4.3K	>1.0W@4.23K	>53W@3K	>1.25W@4.23K	>42W@50K	>1.5W @4.23K	>42W @50K	>1.8W @4.23K	>53W@4.3K	>1.8W @4.23K	>30W @50K	>2.1W@4.23K
最低温度 Min Temp	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K
降温时间 Time 300~4K	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes	60 Minutes

型号 Model Name	HE-412L		HE-418L		HE-4030D		HE-20100D		HE-60500D		HE-500B Pro	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
制冷量 Capacity 50Hz	>53W @3K	>1.25W@4.23K	>2V@50K	>1.8W @4.23K	>60W @4.3K	>3W @4.23K	>380W @20K	-	>350W@ 60K	-	>60W@20K	-
最低温度 Min Temp	<3K	<3K	<3K	<3K	<3K	<3K	<1.4K	<1.4K	<30K	<30K	<1.4K	<1.4K
降温时间 Time 300~min	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes	<60 Minutes

型号 Model Name	PT-415RM		PT-415RM/SS		PT-415RM/DS		PT-420RM		PT-420RM/SS		PT-420RM/DS	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
制冷量 Capacity 50Hz	>36 W @ 48 K	>1.5W @4.2K	>36 W @ 48 K	>1.5W @4.2K	>36 W @ 48 K	>1.5W @4.2K	>36 W @ 48 K	>1.8W @4.2K	>36 W @48 K	>1.8W @4.2K	>36 W @ 48 K	>1.8W @4.2K
最低温度 Min Temp	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K	<3K
降温时间 Time 300~4K	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes	< 60 Minutes

概述

低温真空泵/氦气压缩机

型号 Model Name	CP-8L	CP-8L	CP-8L	CP-12L	CP-16H	CP-630H	CT-300UHV
抽速 (L/S) Pump	1200	2300	15000	18000	20000	15000	15000
Speed	氦气/Argon	1200	4000	6000	15000	4000	4000
	水/Water	4000	6000	11000	15000	40000	11000
极限真空/Ultimate Pressure (Pa/Torr)	氦气/Nitrogen	900	1500	4800	12000	18000	4800
	10E-7/10E-9	10E-7/10E-9	10E-7/10E-9	10E-7/10E-9	10E-7/10E-9	10E-7/10E-9	10E-9/10E-12
容积 (Std. L) Volume	500	1000	4000	5000	8000	4000	4000
最大抽气能力	氦气/Hydrogen	12	18	40	50	50	40
Throughput (sccm)	氦气/Argon	120	200	700	900	4100	700
降温时间/Cold Down Time (h)	2	2	2	3	3	2~20h	
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen						
泵口法兰 Flange	CF150	CF200	TSO/UVG/GB/A NSL_320	ISO/UVG/GB/ ANSI_400	ISO-R630	CF300	CF300

型号 Model Name	LAVROCK 60	LAVROCK 70V	LAVROCK 100
电源规格 Power Supply	380~480V, 3Ph, 50/60Hz		
尺寸 Dimension L*W*H	471mmx541mmx618mm	459mmx491mmx761mm	550mmx593mmx792mm
氦气静态压力 Balance Pressure	1.55M(Pag-1.7MPag)		
功率/Power	降温/Cold Down	稳态/Stable	降温/Cold Down
	稳态/Stable	降温/Cold Down	稳态/Stable
水流量 Workflow	<6.5kW@50Hz <7.5kW@60Hz	<6kW@50Hz <6.8kW@60Hz	降温/Cold Down <6.5kW@50Hz <8.0kW@60Hz
	7~10L/Min(25 °C), <0.8MPag; 进水/Inlet : 5~28 °C		

Cryo Sensor Type 传感器类型	铂电阻传感器/PT100 Series (AA, AB)	薄膜传感器/CCR Series (AA, CD)	氧化钨/RU02 Series (CU, RS)	二极管传感器/DIODE Series (CU)	铂铱传感器/PTCO Series (AA, AA)	氮氧化锆传感器/Honox-ZRNO (CU, AA, SD)
Temperature Coefficient	Positive	Negative	Negative	Negative	Negative	Negative
Sensor Units	Ohms (Ω)	Ohms (Ω)	Ohms (Ω)	Volts (V)	Ohms (Ω)	Ohms (Ω)
Input Range	0~5000Ω	0~75000Ω	1000~100KΩ	0~2.5V	0~1000Ω	10 ³ ~100KΩ
Sensor Excitation	1mA±0.3%	10μA±0.05%	10μA±0.05%	10μA±0.05%	10μA±0.05%	10μA±0.05%
Temperature Range	14K~300K	1.4K/2.8K~310K	10mK/1.4K/2.8K~40K	1.4K/2.8K~310K	1.4K/2.8K~310K	0.1/0.3/1.4K/2.8/5K~310/325K
Standard Curve	PT100-HE; calibrated	Need calibrated	RU02-HE; calibrated	SD2201 Curve; calibrated	Need calibrated	Need calibrated
Model & Accuracy	±2K @20K	±30mK @4.2K	RU02-CU-D9L4.3-2.8-A (WT calib &WT Mount Pack)	WT calib &WT Pack	WT calib &WT Mount Pack	±1K @2.8K~350K
	±0.8K @77K	CCR-BARE-P3 (3 points calib & WT Mount Pack)	±100mK @77K	±30mK @4.2K	±100mK @4.2K	±100mK @20K
	±0.5K @300K	±5K @300K	±2K @40K	±50mK @10K	±50mK @10K	HX-CU/AA/SD-1.4E (With calibration & Mounting Package)
	±100mK @20K	±100mK @77K	RU02-CU D9L4.3-2.8-B (WT calib &WT Mount Pack)	Diode-CU-D9L4.3-2.8 (WT calib &WT Mount Pack)	PTCO-AA-D3L18-2.8	±75mK @300K
±500mK @300K	CCR-AA-D4L14-2.8; CCR-CD D14.3L5-2.8 (WT calib &WT Mount Pack)	±50mK @10K	±1.25K @20K	PTCO-4M-L18M14B-2.8; (WT calib &WT Mount Pack)	±30mK @4.2K	
±2K @20K	±2K @20K	RU02-RS-D8L21.8-0.01-A (WT calib &WT Mount Pack)	±4K @40K	±1K @300K	±35mK @20K	
±0.8K @77K	PT100-BARE-13.8 (WT calib &WT Mount Pack)	±2.5K @300K	±20mK @4.2K	±1K @300K	With calibration & Mounting Package	
±0.5K @300K	±0.5K @300K		±60K @10K		±300mK @300K	



Core Technology

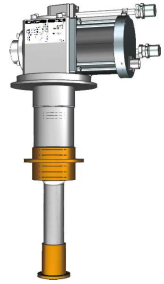
1. Cryogenic temperature acquisition technology
2. Cryogenic temperature thermal insulation and thermal insulation material technology
3. Precision temperature measurement and control technology
4. Ultra high vacuum acquisition and material processing technology
5. Cryogenic radiation characteristics and optimization technology
6. Vacuum welding technology of special materials
7. R & D and manufacturing technology of superconducting magnet

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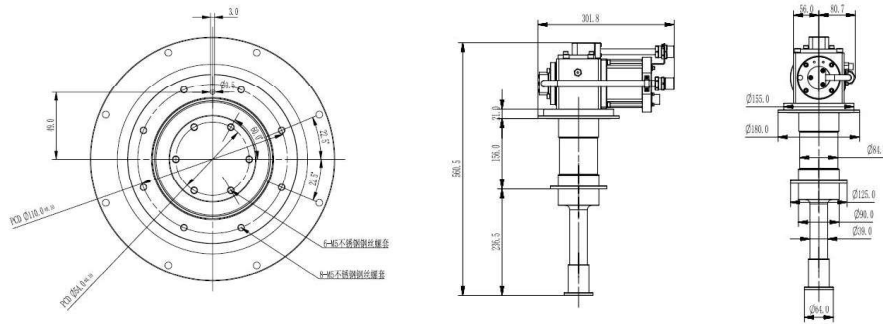
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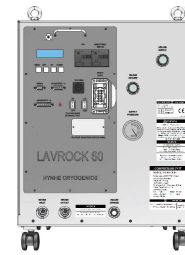
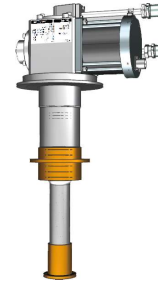
GM 低温冷头
4K Cold Head



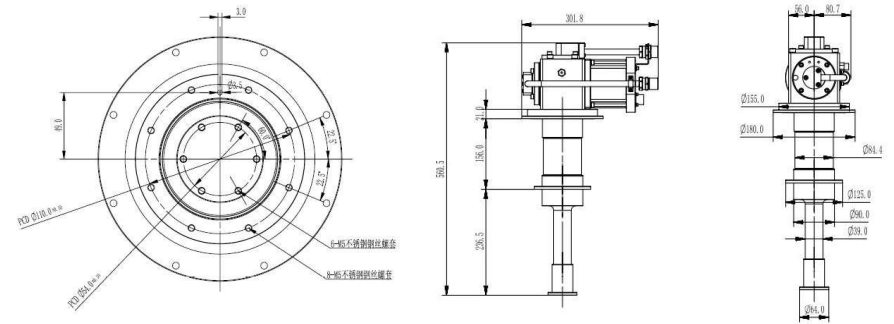
技术参数 / S P C	型号 Model Name	HB-408D	
	制冷量 Capacity 50HZ	1st	2nd
		>44W@43K	>1.0W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		18kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		



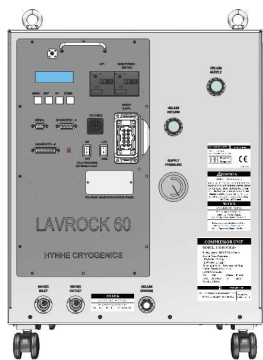
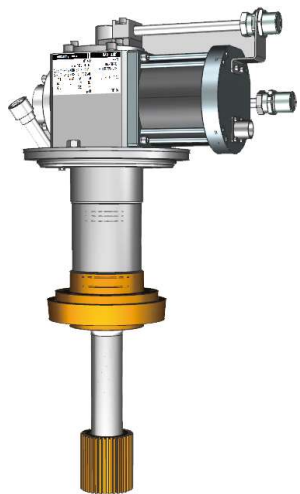
GM 低温冷头
4K Cold Head



技术参数 / S P C	型号 Model Name	HB-412D	
	制冷量 Capacity 50HZ	1st	2nd
		>53W@43K	>1.25W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		18kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		



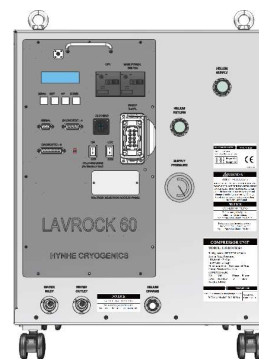
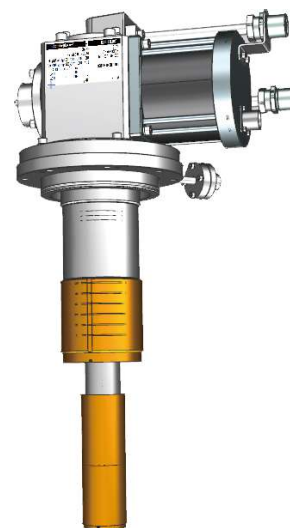
GM 低温冷头
4K Cold Head



技术参数 / S P C	型号 Model Name	HB- 412L	
	制冷量 Capacity 50HZ	1st >53W@43K	2nd >1.25W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		23kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
	连接软管/Pipe	20A X20m	
维护周期 Maintenance Period	10000hrs		

环境要求 / Req	项目/Item	运行/Runing	储存/Storage
	环境温度要求 Amb. Temp	4~40° C	-20~40° C
	相对湿度 RH	30%~70%	10%~90% (不凝露/No sweat)
	环境压力要求 Amb. Pressure	70kpa~110kpa	20kpa~110kpa

GM 低温冷头
4K Cold Head

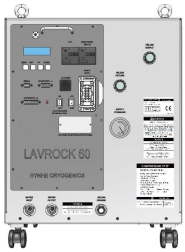


技术参数 / S P C	型号 Model Name	HB- 412A	
	制冷量 Capacity 50HZ	1st >53W@43K	2nd >1.25W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		18kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
	连接软管/Pipe	20A X20m	
维护周期 Maintenance Period	10000hrs		

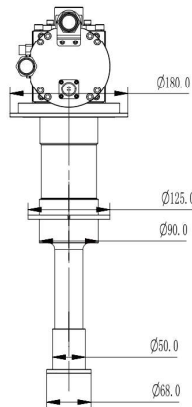
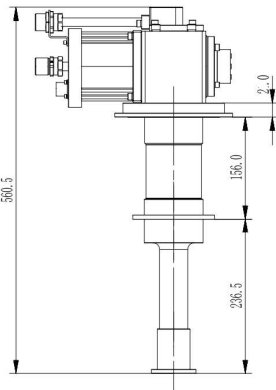
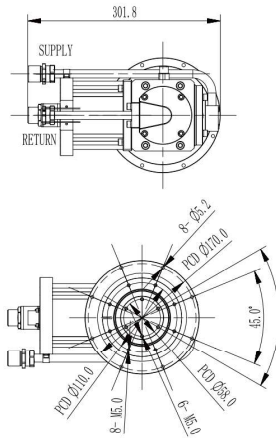
环境要求 / Req	项目/Item	运行/Runing	储存/Storage
	环境温度要求 Amb. Temp	4~40° C	-20~40° C
	相对湿度 RH	30%~70%	10%~90% (不凝露/No sweat)
	环境压力要求 Amb. Pressure	70kpa~110kpa	20kpa~110kpa

*Remark:Specifications subject to change without notice

GM 低温冷头
4K Cold Head

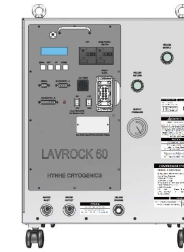


技术参数 / S P C	型号 Model Name	HE-415D	
	制冷量 Capacity 50HZ	1st	2nd
		>42W@50K	>1.5W @4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		19kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		

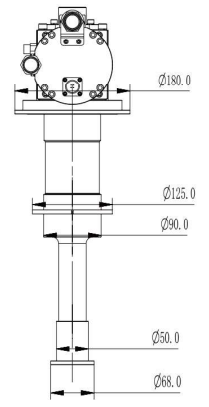
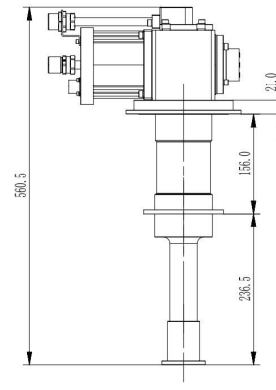
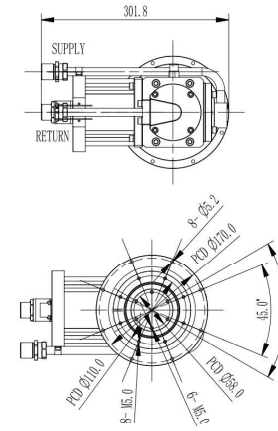


GM 低温冷头
4K Cold Head

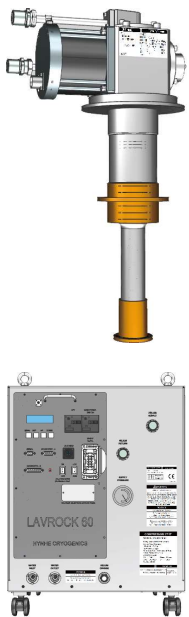
可定制盘管/Spiral Tube



技术参数 / S P C	型号 Model Name	HE-418D	
	制冷量 Capacity 50IIZ	1st	2nd
		>42W@50K	>1.8W @4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		19kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60IIZ	<6kW@50HZ <6.8kW@60IIZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		



GM 低温冷头
4K Cold Head



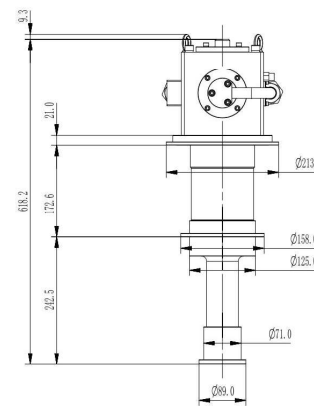
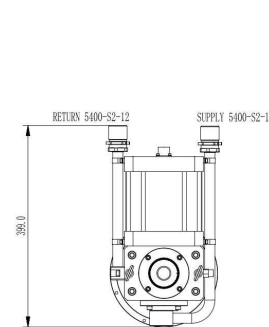
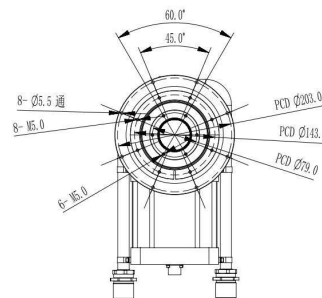
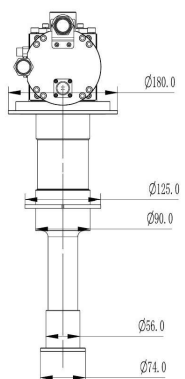
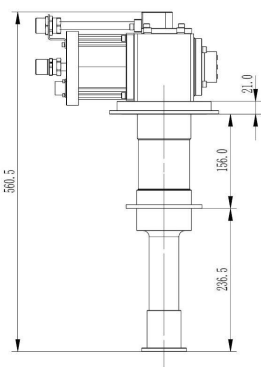
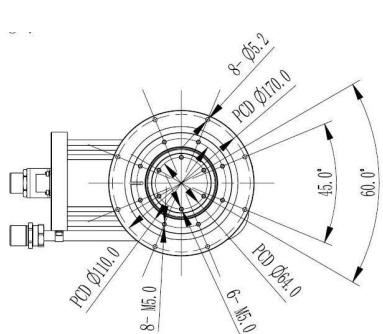
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	制冷量 Capacity 50HZ	1st	2nd
		>30W@50K	>2.1W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		20kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		

GM 低温冷头
4K Cold Head

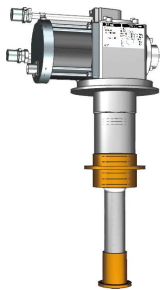
可定制盘管/Spiral Tube



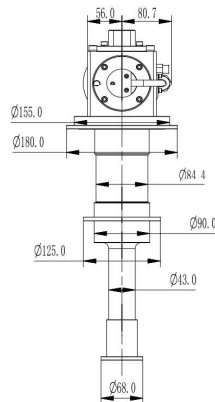
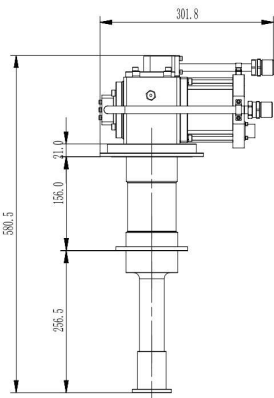
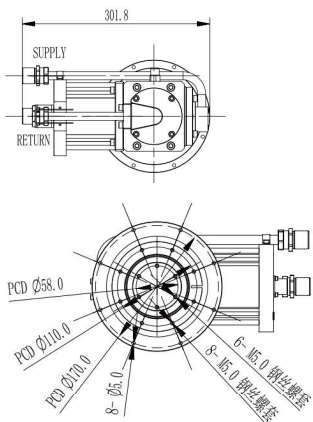
技术参数 / S P C	型号 Model Name	HE-4030D	
	制冷量 Capacity 50HZ	1st	2nd
		60W@43K	3W@4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		40kg	250kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<13.5kW@50HZ <14.5kW@60HZ	<12kW@50HZ <13kW@60HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	10000hrs		



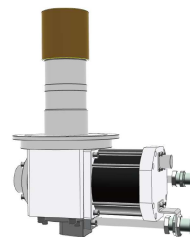
GM 低温冷头
4K Cold Head
可定制盘管/Spiral Tube



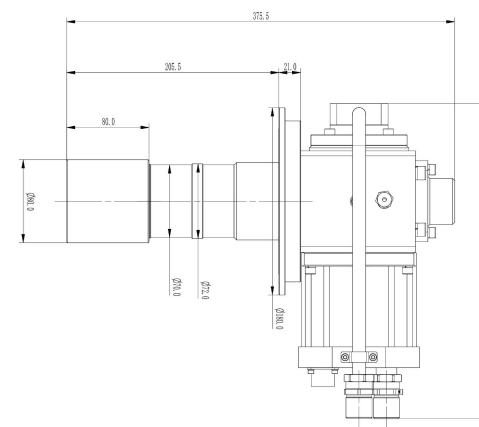
技术参数 / S P C	型号 Model Name	HE-418PRO	
	制冷量 Capacity 50HZ	1st	2nd
		>53W@43K	>1.8W @4.23K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		20kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		



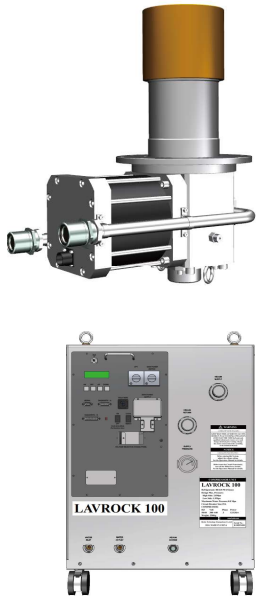
GM 低温冷头
40K Cold Head



技术参数 / S P C	型号 Model Name	HE-405XS	
	制冷量 Capacity 50HZ	1st	2nd
		>30W @40K	
	最低温度 Min Temp	<25K	
	降温时间 Time 300-20K	< 40 Minutes	
	对应压缩机 Compressor	LAVROCK 60	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		17kg	130kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	10000hrs		



GM 低温冷头
60K Cold Head

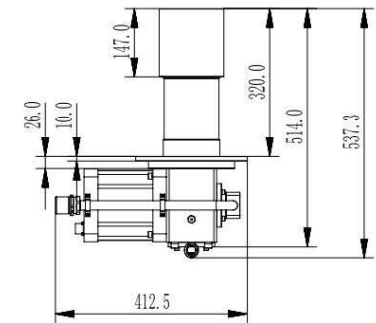
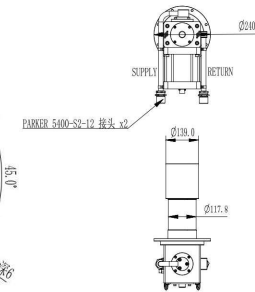
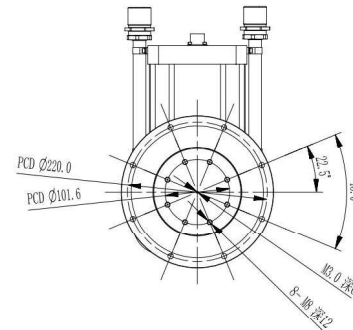
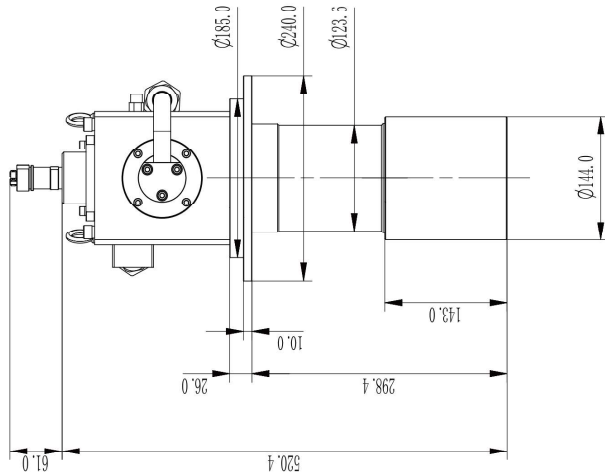
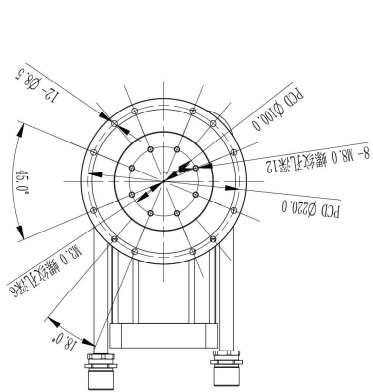


技术参数 / S P C	型号 Model Name	HE-60500D	
	制冷量 Capacity 50HZ	1st	2nd
		380W@60K	-
	最低温度 Min Temp	<12K	
	降温时间 Time 300-60K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		53kg	250kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		< 13.5kW@50HZ < 14.5kW@60HZ	< 12kW@50HZ < 13kW@60HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	10000hrs		

GM 低温冷头/双盘管
20K Cold Head



技术参数 / S P C	型号 Model Name	HE-20100D	
	制冷量 Capacity 50HZ	1st	2nd
		85W@20K	-
	最低温度 Min Temp	<12K	
	降温时间 Time 300-20K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		47kg	250kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		< 13.5kW@50HZ < 14.5kW@60HZ	< 12kW@50HZ < 13kW@60HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	10000hrs		

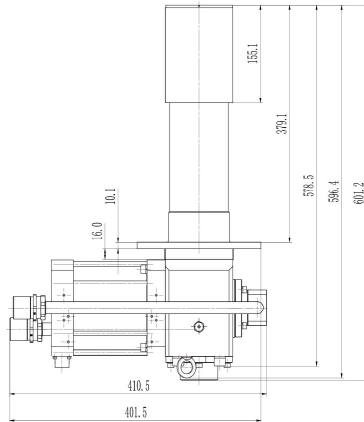
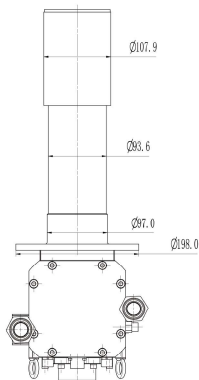
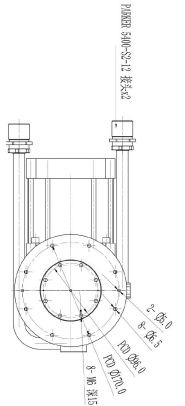


*Remark: Specifications subject to change without notice

GM 低温冷头
20K Cold Head



技术参数	型号 Model Name	HE-500B PRO	
	制冷量 Capacity 50HZ	1st	-
		>60W @20K	-
	最低温度 Min Temp	<15K	
	降温时间 Time 300-20K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		36kg	220kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<13.5kW@50HZ	<12kW@50HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	10000hrs		



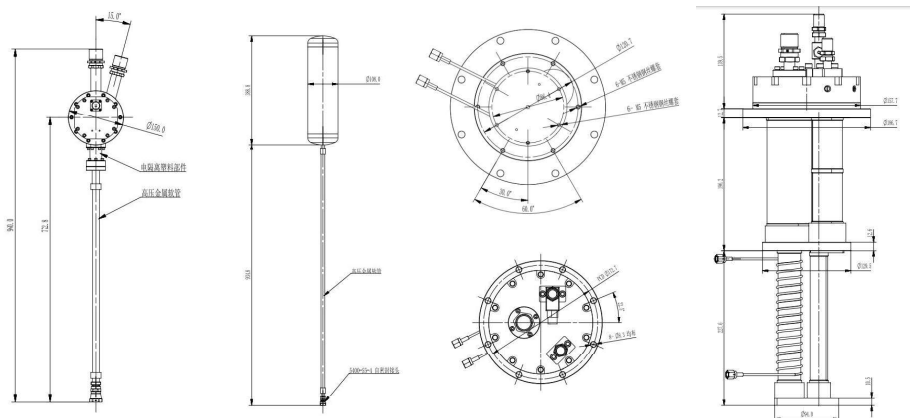
*Remark: Specifications subject to change without notice

PT GM脉管制冷机
Pluse Tube GM Cryocooler

可定制盘管/Spiral Tube

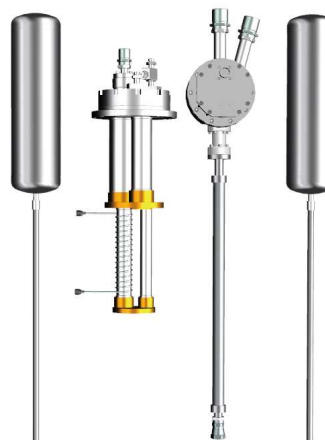


技术参数 / S P C	型号 Model Name	PT-415RM	
	制冷量 Capacity 50HZ	1st	2nd
		>45 W @ 45 K	>1.5W @4.2K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		28kg	250kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<13.5kW@50HZ <14.5kW@60HZ	<12kW@50HZ <13kW@60HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	20000hrs		



PT GM脉管制冷机
Pluse Tube GM Cryocooler

可定制盘管/Spiral Tube



技术参数 / S P C	型号 Model Name	PT-420RM	
	制冷量 Capacity 50HZ	1st	2nd
		>45 W @ 48 K	>1.8W @4.2K
	最低温度 Min Temp	<3K	
	降温时间 Time 300-4K	< 60 Minutes	
	对应压缩机 Compressor	LAVROCK 100	
	重量 Weight	冷头/Cold Head	压缩机/Comp
		28kg	250kg
	功率/Power (Compressor)	降温/Cold Down	稳态/Stable
		<13.5kW@50HZ <14.5kW@60HZ	<12kW@50HZ <13kW@60HZ
连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	20000hrs		

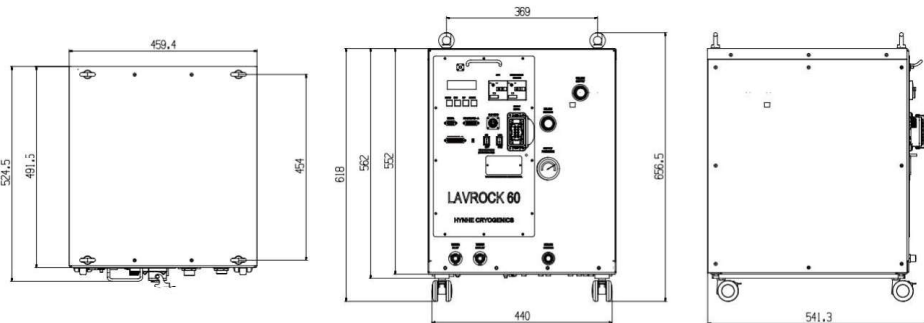
环境要求 / Req	项目/Item	运行/Runing	储存/Storage
	环境温度要求 Amb. Temp	4~40 ° C	-20~40 ° C
	相对湿度 RH	30%~70%	10%~90% (不凝露/No sweat)
环境压力要求 Amb. Pressure	70kpa~110kpa	20kpa~110kpa	

氦气压缩机
Helium Compressor



技术参数 / S P C

型号 Model Name	LAVROCK 60	
电源规格 Power Supply	380~480V, 3Ph, 50/60Hz	
氦气纯度 He Purity	>99.999%	
尺寸 Demision L*W*H	471mmx541mmx618mm	
水流量 WorkFlow	7~10L/Min(25° C), <0.8MPag	
冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet
	5~28° C	<45° C
运行压力 Runing Pressure	排气/Supply	回气/Return
	19~24bar	2~6bar
静态压力 Balance Pressure	1.55MPag-1.7MPag	
功率/Power	降温/Cold Down	稳态/Stable
	<6.5kW@50HZ <7.5kW@60HZ	<6kW@50HZ <6.8kW@60HZ
连接软管/Pipe	20A X20m	
维护周期 Maintenance Period	36 months	

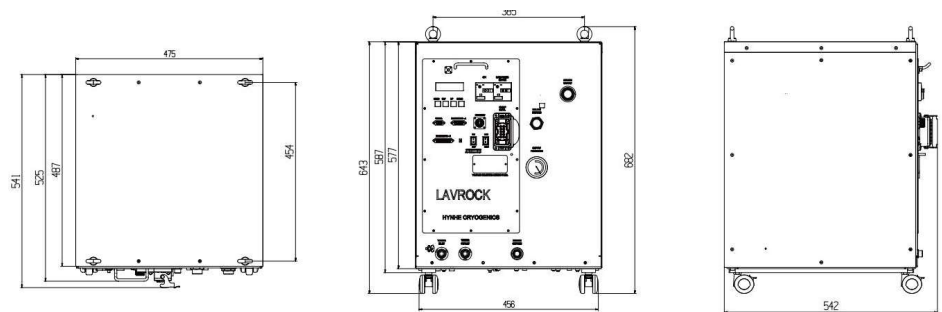


氦气压缩机
Helium Compressor



技术参数 / S P C

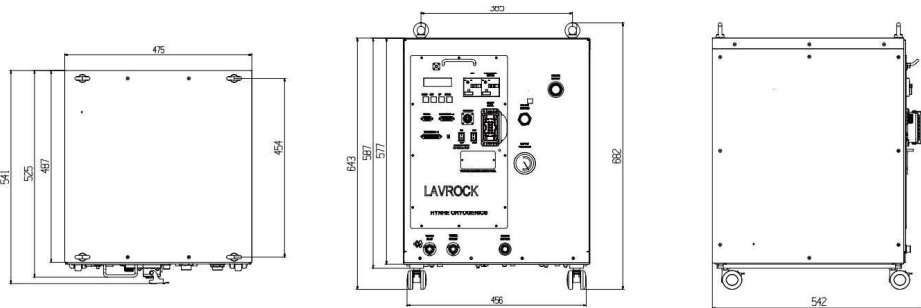
型号 Model Name	LAVROCK 60E	
电源规格 Power Supply	380~480V, 3Ph, 50/60Hz	
氦气纯度 He Purity	>99.999%	
尺寸 Demision L*W*H	471mmx541mmx643mm	
水流量 WorkFlow	7~10L/Min(25° C), <0.8MPag	
冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet
	5~28° C	<45° C
运行压力 Runing Pressure	排气/Supply	回气/Return
	19~24bar	2~6bar
静态压力 Balance Pressure	1.55MPag-1.7MPag	
功率/Power	降温/Cold Down	稳态/Stable
	<7.0kW@50HZ <8.0kW@60HZ	<6.5kW@50HZ <7.5kW@60HZ
连接软管/Pipe	20A X20m	
维护周期 Maintenance Period	36 months	



氦气压缩机
Helium Compressor



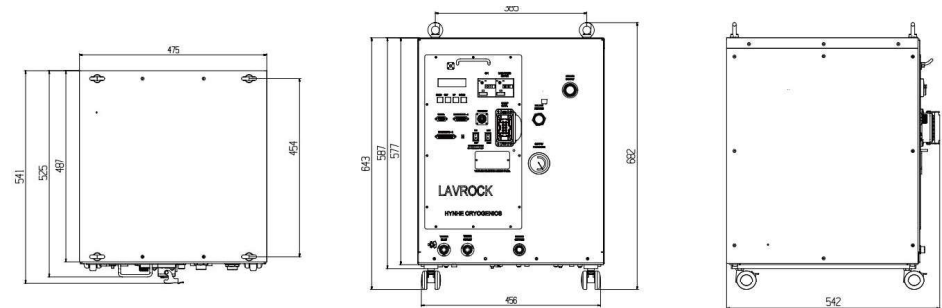
技术参数 / S P C	型号 Model Name	LAVROCK 50E	
	电源规格 Power Supply	380~480V, 3Ph, 50/60Hz	
	氦气纯度 He Purity	>99.999%	
	尺寸 Demision L*W*H	471mmx541mmx643mm	
	水流量 WorkFlow	7~10L/Min(25 ° C), <0.8MPag	
	冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet
		5~28 ° C	<45 ° C
	运行压力 Runing Pressure	排气/Supply	回气/Return
		19~24bar	2~6bar
	静态压力 Balance Pressure	1.55MPag-1.7MPag	
功率/Power	降温/Cold Down	稳态/Stable	
	<6.5kW@50HZ <7.5kW@60HZ	<6.0kW@50HZ <7.0kW@60HZ	
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	36 months		



氦气压缩机
Helium Compressor



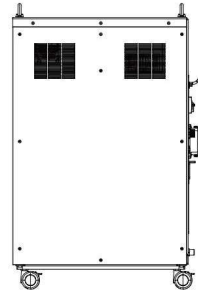
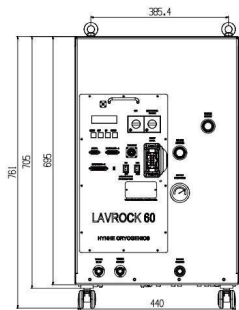
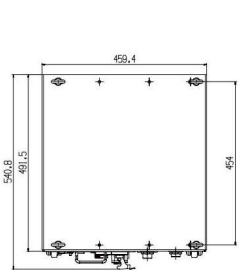
技术参数 / S P C	型号 Model Name	LAVROCK 40B	
	电源规格 Power Supply	380~480V, 3Ph, 50/60Hz	
	氦气纯度 He Purity	>99.999%	
	尺寸 Demision L*W*H	471mmx541mmx643mm	
	水流量 WorkFlow	7~10L/Min(25 ° C), <0.8MPag	
	冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet
		5~28 ° C	<45 ° C
	运行压力 Runing Pressure	排气/Supply	回气/Return
		19~24bar	2~6bar
	静态压力 Balance Pressure	1.55MPag-1.7MPag	
功率/Power	降温/Cold Down	稳态/Stable	
	<5.5kW@50HZ <6.5kW@60HZ	<5.0kW@50HZ <6.0kW@60HZ	
连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	36 months		



变频氦气压缩机
Inverter Helium Compressor



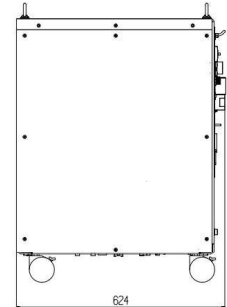
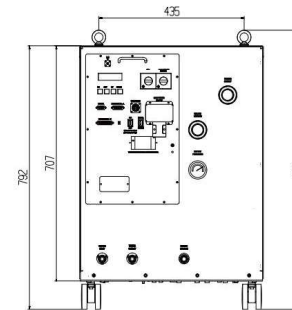
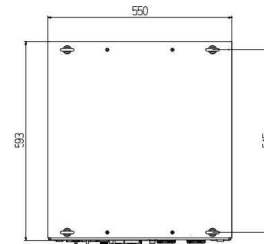
技术参数 / S P C	型号 Model Name	LAVROCK 70V		
	电源规格 Power Supply	380~480V, 3Ph, 50/60Hz		
	氦气纯度 He Purity	>99.999%		
	尺寸 Demision L*W*H	459mmx491mmx761mm		
	水流量 WorkFlow	7~10L/Min(25 ° C), <0.8MPag		
	冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet	
		5~28 ° C	<45 ° C	
	运行压力 Runing Pressure	排气/Supply	回气/Return	
		19~24bar	2~6bar	
	静态压力 Balance Pressure	1.50MPag- 1.60MPag		
	功率/Power	降温/Cold Down	稳态/Stable	
		<6.0kW@50HZ	<6.5kW@50HZ	
		<7.5kW@60HZ	<8.0kW@60HZ	
	连接软管/Pipe	20A X20m		
维护周期 Maintenance Period	36 months			



氦气压缩机
Helium Compressor



技术参数 / S P C	型号 Model Name	LAVROCK 100		
	电源规格 Power Supply	380~480V, 3Ph, 50/60Hz		
	氦气纯度 He Purity	>99.999%		
	尺寸 Demision L*W*H	550mmx593mmx792mm		
	水流量 WorkFlow	7~10L/Min(25 ° C), <0.8MPag		
	冷水范围 Water Flow Temp	进水/Inlet	出水/Outlet	
		5~28 ° C	<45 ° C	
	运行压力 Runing Pressure	排气/Supply	回气/Return	
		19~24bar	2~6bar	
	静态压力 Balance Pressure	1.50MPag- 1.60MPag		
	功率/Power	降温/Cold Down	稳态/Stable	
		<13.5kW@50HZ	<12kW@50HZ	
		<14.5kW@60HZ	<13kW@60HZ	
	连接软管/Pipe	25A X20m		
维护周期 Maintenance Period	36 months			



低温泵
Cryopump

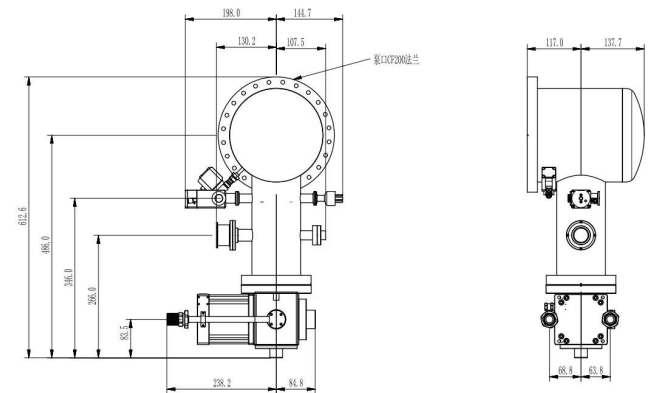
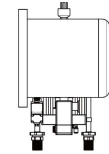


技术参数 / S P C	型号 Model Name	CP-6L	
	抽速 (L/S) Pump Speed	氢气/Hydrogen	1200
		氩气/Argon	600
		水/Water	4000
		氮气/Nitrogen	900
	极限真空/Ultimate Pressure (Pa/Torr)	10E-7/10E-9	
	容积 (Std.L) Volume	氩气/Argon	500
		氢气/Hydrogen	12
	最大抽气能力 Throughput (sccm)	氩气/Argon	100
	降温时间/Cold Down Time (min)	120	
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen		
泵口法兰 Flange	CF150		
维护周期 Maintenance Period	15000hrs		

低温泵
Cryopump



技术参数 / S P C	型号 Model Name	CP-8L	
	抽速 (L/S) Pump Speed	氢气/Hydrogen	2300
		氩气/Argon	1200
		水/Water	6000
		氮气/Nitrogen	1500
	极限真空/Ultimate Pressure (Pa/Torr)	10E-7/10E-9	
	容积 (Std.L) Volume	氩气/Argon	1000
		氢气/Hydrogen	18
	最大抽气能力 Throughput (sccm)	氩气/Argon	200
	降温时间/Cold Down Time (min)	120	
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen		
泵口法兰 Flange	CF200		
维护周期 Maintenance Period	15000hrs		



*Remark: Specifications subject to change without notice

低温泵
Cryopump

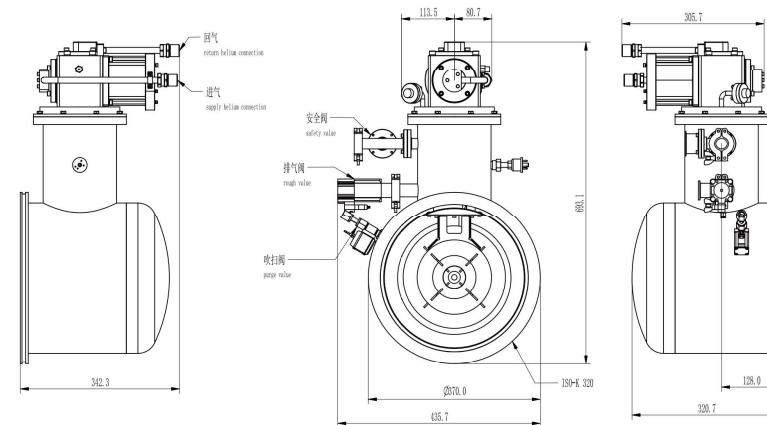


技术参数 / S P C	型号 Model Name	CP-10L		
	抽速(L/S) Pump Speed	氢气/Hydrogen	6000	
		氩气/Argon	2500	
		水/Water	12000	
		氮气/Nitrogen	3000	
	极限真空/Ulimate Pressure (Pa/Torr)	10E-7/10E-9		
	容积 (Std.L) Volume	氩气/Argon	2000	
		氢气/Hydrogen	30	
	最大抽气能力 Throughput(scmm)	氩气/Argon	400	
	降温时间/Cold Down'Time (min)	120		
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen			
泵口法兰 Flange	CP250			
维护周期 Maintenance Period	15000hrs			

低温泵
Cryopump



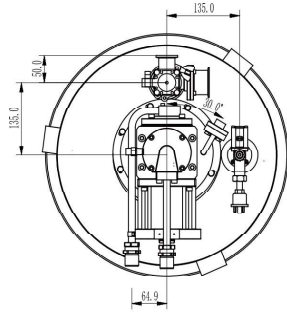
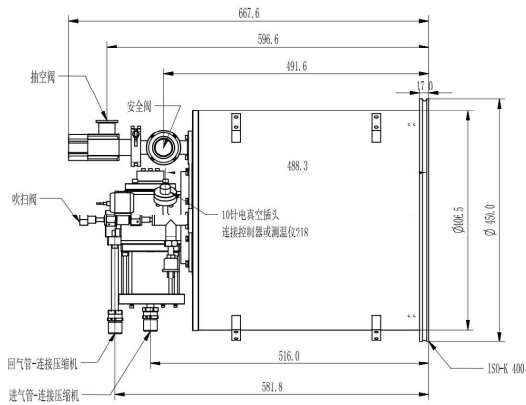
技术参数 / S P C	型号 Model Name	CP-12L		
	抽速(L/S) Pump Speed	氢气/Hydrogen	15000	
		氩气/Argon	4000	
		水/Water	11000	
		氮气/Nitrogen	4800	
	极限真空/Ulimate Pressure (Pa/Torr)	10E-7/10E-9		
	容积 (Std.L) Volume	氩气/Argon	4000	
		氢气/Hydrogen	40	
	最大抽气能力 Throughput	氩气/Argon	700	
	降温时间/Cold Down'Time (min)	120		
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen			
泵口法兰 Flange	ISO/UVG/GB/ANSI, 320			
维护周期 Maintenance Period	15000hrs			



低温泵
Cryopump



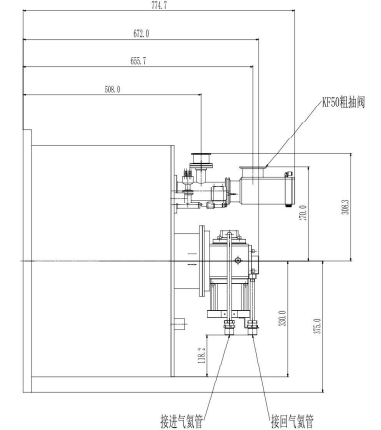
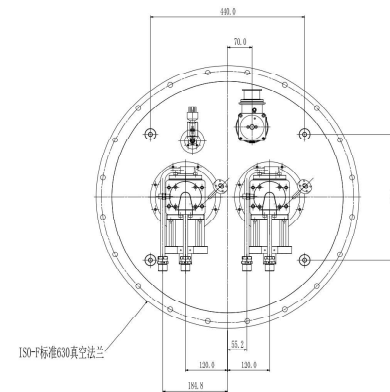
技术参数 / S P C	型号 Model Name	CP-16H		
	抽速(L/S) Pump Speed	氢气/Hydrogen	18000	
		氩气/Argon	6000	
		水/Water	15000	
		氮气/Nitrogen	12000	
	极限真空/Ultimate Pressure (Pa/Torr)	10E-7/10E-9		
	容积 (Std.L) Volume	氩气/Argon	5000	
		氢气/Hydrogen	50	
	最大抽气能力 Throughput(sccm)	氩气/Argon	900	
	降温时间/Cold DownTime (min)	180		
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen			
泵口法兰 Flange	ISO/UVG/GB/ANSI, 400			
维护周期 Maintenance Period	15000hrs			



低温泵
Cryopump



技术参数 / S P C	型号 Model Name	CP-630H		
	抽速(L/S) Pump Speed	氢气/Hydrogen	20000	
		氩气/Argon	15000	
		水/Water	40000	
		氮气/Nitrogen	18000	
	极限真空/Ultimate Pressure (Pa/Torr)	10E-7/10E-9		
	容积 (Std.L) Volume	氩气/Argon	8000	
		氢气/Hydrogen	50	
	最大抽气能力 Throughput	氩气 /Argon	4100	
	降温时间/Cold DownTime (min)	180		
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen			
泵口法兰 Flange	ISO- K630			
维护周期 Maintenance Period	15000hrs			



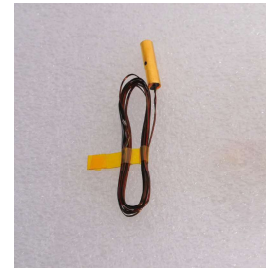
低温泵

Cryopump (Ultra High Vacuum Series)

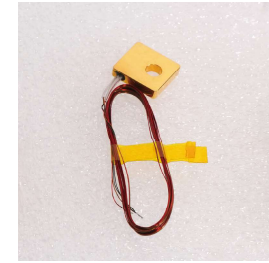


技术参数 / S P C	型号	CT-300UHV	
	Model Name		
	Roughing Pressure	Baking Time for Vac Chamber	Ultimate Pressure
	~10E-3pa	0h	10E-8pa
	~10E-3pa	(150~250° C) X 3~8h	10E-9pa
	抽速 (L/S) Pump Speed	氢气/Hydrogen	12000
		氩气/Argon	4000
		水/Water	11000
		氮气/Nitrogen	4800
	极限真空/Ultimate Pressure (Pa/Torr)	10E-9/10E-11	
容积 (Std. L) Volume	氩气/Argon	4000	
	氢气/Hydrogen	40	
最大抽气能力 Throughput (sccm)	氩气/Argon	700	
控制方式 Control	智能控制, 自动再生 Intelligent, Auto Regen		
泵口法兰 Flange	CF300		
维护周期 Maintenance Period	15000hrs		

测温仪、传感器
Low Temp Monitor & Sensor



AA Mounting Package
Calibrated

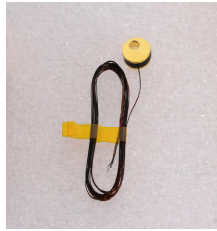


AM Mounting Package
Calibrated

Low Temp Sensor Type		PT100 Series (AA、AM)
Temperature Coefficient		Positive
Sensor Units		Ohms(Ω)
Input Range		0~500 Ω
Sensor Excitation		1mA ±0.3%
Temperature Range		14K~800K
Standard Curve		Pt100 -IIE
Wiring		Standard 1m (optional for Customization)
Resolution	Model:PT100 -AM-L14W12.7H3 -U (Without calibration & With Mounting Package)	±2K @20K
		±0.8K @77K
		±0.5K @300K
	A Model:PT100 -AM-L14W12.7H3 -13.8	±100mK @20K
	B Model:PT100 -AA-D4L14 -13.8 (With calibration & With Mounting Package)	±100mK @77K
		±500mK @300K
Model:PT100 -BARE -13.8 (Without calibration & Without Mounting Package)		±2K @20K
		±0.8K @77K
		±0.5K @300K

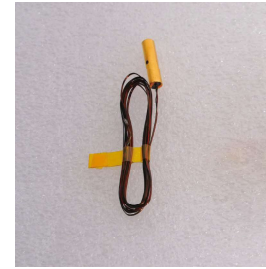
*Remark:Specifications subject to change without notice

测温仪、传感器
Low Temp Monitor & Sensor

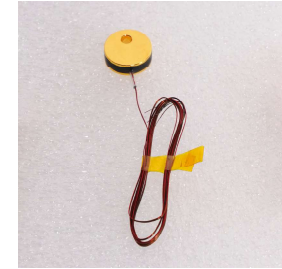


CU Mounting Package
Calibrated

Low Temp Sensor Type		二极管传感器/DIODE Series
Temperature Coefficient		Negative
Sensor Units		Volts(V)
Input Range		0~2.5V
Sensor Excitation		10 μ A \pm 0.05%
Temperature Range		2.8K~350K
Standard Curve		SD2201 Curve
Wiring		Standard 1m (optional for Customization)
Resolution	Without calibration & With Mounting Package	\pm 1K at 2.8K~350K
	Model:Diode -CU-D9L4.3 -2.8 (With calibration & With Mounting Package)	\pm 30mK @4.2K
		\pm 50mK @10K
		\pm 80mK @20K
		\pm 150mK @77K
		\pm 1K @300K



AA Mounting Package
Calibrated



CD Mounting Package
Calibrated

Low Temp Sensor Type		薄膜电阻传感器/CCR Series
Temperature Coefficient		Negative
Sensor Units		Ohms(Ω)
Input Range		0~7500 Ω
Sensor Excitation		10 μ A \pm 0.05%
Temperature Range		2.8K~310K
No Standard Curve		Must be individually calibrated
Wiring		Standard 1m (optional for Customization)
Resolution	Model:CCR -BARE -P3 (3 points calibration & Without Mounting Package)	\pm 30mK @4.2K
		\pm 100mK @77K
		\pm 5K @300K
	A Model:CCR -AA-D4L14 -2.8 B Model:CCR -CD-D14.3L5 -2.8 (With calibration & With Mounting Package)	\pm 30mK @4.2K
		\pm 50mK @10K
		\pm 100mK @20K
		\pm 1.5K @77K
		\pm 2.5K @300K

*Remark:Specifications subject to change without notice

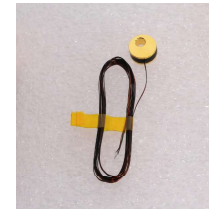
测温仪、传感器
Low Temp Monitor & Sensor



AA Mounting Package
Calibrated



AM Mounting Package
Calibrated



CU Mounting Package
Calibrated



RS Mounting Package
Calibrated

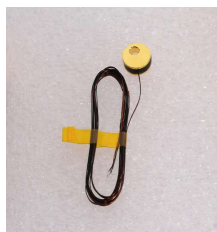
Low Temp Sensor Type		铂钴传感器/PTCO Series
Temperature Coefficient		Negative
Sensor Units		Ohms(Ω)
Input Range		1000~100K Ω
Sensor Excitation		10 μA ±0.05%
Temperature Range		10mk/2.8K~40K
Standard Curve		RUO2-HE
Wiring		Standard 1m (optional for Customization)
Resolution	Bare (Without calibration & Mounting Package)	±1K@2.8K~350K
	PTCO-AA-D3L18 -2.8; PTCO-AM-L18W14H3 -2.8; (With calibration & Mounting Package)	±100mK@4.2K
		±100mK@10K
		±100mK@20K
		±100mK@77K
	±500mK@50K	

Low Temp Sensor Type		氧化钨/RUO2 Series
Temperature Coefficient		Negative
Sensor Units		Ohms(Ω)
Input Range		1000~100KΩ
Sensor Excitation		10μA±0.05%
Temperature Range		2.8K~40K
No Standard Curve		RUO2-HE
Wiring		Standard 1m (optional for Customization)
Accuracy	RUO2-CU-D9L4.3-2.8-A (Standard curve & With Mounting Package)	±100mk @4.2K
		±500mk @20K
		±1.5K @40K
	RUO2-CU-D9L4.3-2.8-B (Standard curve & With Mounting Package)	±200mk @4.2K
		±1k @20K
		±2.5K @40K
	RUO2-RS (Calibration & With Mounting Package)	±1.5mk @10mk
		±16mk @1.4K
		±20mK @4.2K
		±60mK @10K

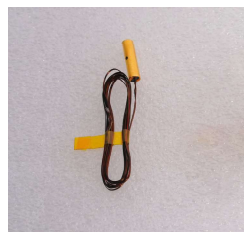
*Remark: Specifications subject to change without notice

测温仪、传感器

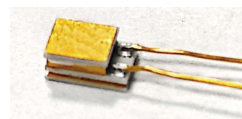
Low Temp Monitor & Sensor



CU Mounting Package



AA Mounting Package



SD Mounting Package

Low Temp Sensor Type		氮氧化锆/Henox Series
Temperature Coefficient		Negative
Sensor Units		Ohms(Ω)
Input Range		10~100K Ω
Sensor Excitation		10 μ A \pm 0.05%
Temperature Range		0.1/0.3/1.4/2.8/5K~310/325K
No Standard Curve		Individually calibrated
Wiring		CU/AA Standard 1m (optional for Customization)
Accuracy	A model: HX-CU/AA/SD-1.4E (With calibration & Mounting Package)	\pm 5mk @4.2K
		\pm 9mk @20K
		\pm 25mk @77K
		\pm 75mk @300K
	A model: HX-CU/AA/SD--2.8E (With calibration & Mounting Package)	\pm 30mk @4.2K
		\pm 35mk @20K
		\pm 50mk @77K
		\pm 300mk @300K

测温仪、传感器

Low Temp Monitor & Sensor



技术参数 / S P C	型号 Model	低温测温仪/Low Temp Monitor: D181					
	特征 Feature	Operation as low as 1.2 K with appropriate sensor 8 channels inputs Continuous 8-channel display with K, $^{\circ}$ C, V, or Ω Diode and RTD sensors supported					
	温度计类型 Sensor Type	传感器温度系数 Sensor temperature coefficient	输入范围 Input range	激励电流 Excitation current	显示分辨率 Display resolution	测量分辨率 Measurement resolution	电子精度 Electronic accuracy
	二极管 Diode	负 negative	0V至2.5V	10 μ A \pm 0.05%	100 μ V	20 μ V	\pm 200 μ V \pm 0.01%
		负 negative	0V至7.5V	10 μ A \pm 0.05%	100 μ V	20 μ V	\pm 350 μ V \pm 0.02%
	PTC RTD	正 positive	0 Ω 到250 Ω	1ma \pm 0.3%	10 m Ω	2m Ω	\pm 0.06 Ω \pm 0.02%
		正 positive	0 Ω 至500 Ω	1ma \pm 0.3%	10 m Ω	2m Ω	\pm 0.06 Ω \pm 0.02%
		正 positive	0 Ω 至5000 Ω	1ma \pm 0.3%	100m Ω	20m Ω	\pm 0.4 Ω \pm 0.04%
	NTC RTD	正 positive	0 Ω 至7500 Ω	10 μ A \pm 0.05%	100m Ω	50m Ω	\pm 0.8 Ω \pm 0.04%

*Remark: Specifications subject to change without notice

测温仪、传感器 Low Temp Monitor & Sensor



低温控温仪Cryo Temp Controller 型号: M361

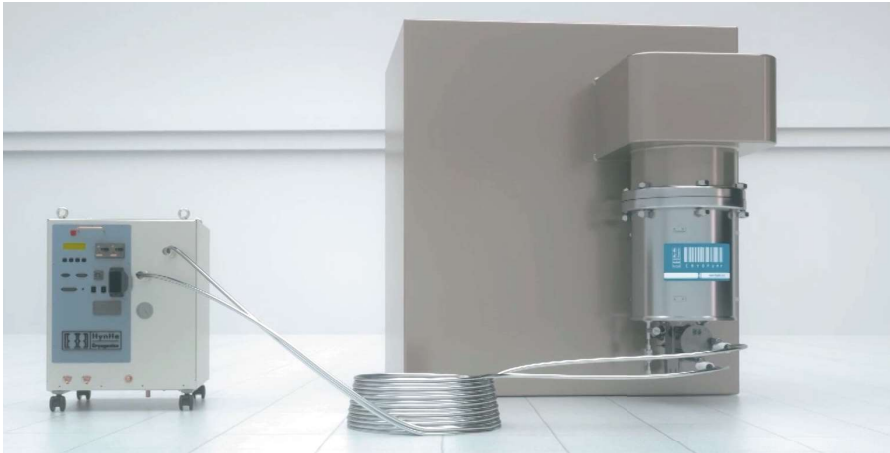
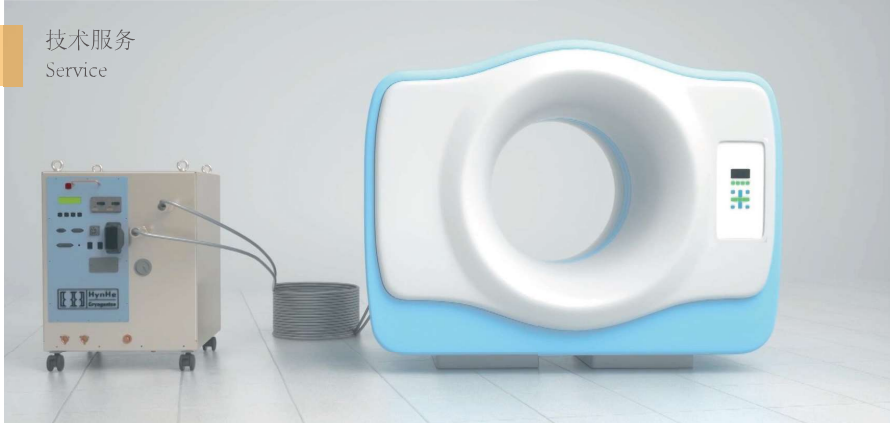
低温控温仪Cryo Temp Controller 型号: M361									
输入规格 INPUT SPEC									
PID 调节	自动调节 Automatic adjustment								
测量方式 Measurement method	4 wirings								
激励源 Exciting Source	恒流双向电流源 Constant current bidirection								
传感器支持 Sensor support	二极管 Diode: Si, GaAlAs; 电阻温度传感器 Resistance: 100 Ω Platinum, 1000 Ω Platinum, Germanium, Carbon-glass, Cernox®, and Rox™								
NTC 输入档位 Input Level	0-10Ω	0-30Ω	0-100Ω	0-300Ω	0-1kΩ	0-3kΩ	0-10kΩ	0-30kΩ	0-100kΩ
NTC 激励电流 Excitation Current	1mA	300 μA	100μA	30μA	10μA	3μA	1μA	300nA	100nA
NTC 测量分辨率 Measurement Resolution	0.15mΩ	0.45mΩ	1.5mΩ	4.5mΩ	15mΩ+0.002% of rdg	45mΩ+0.002% of rdg	150mΩ +0.002% of rdg	450mΩ +0.002% of rdg	1.5Ω+0.005% of rdg
NTC 精确度 Accuracy	±0.002 Ω ± 0.06% of rdg	±0.002 Ω ± 0.06% of rdg	±0.01 Ω ± 0.04% of rdg	±0.01 Ω ± 0.04% of rdg	±0.1Ω±0.04% of rdg	±0.1Ω±0.04% of rdg	±1.0 ±0.04% of rdg	±2.0Ω ±0.04% of rdg	±10.0Ω±0.04% of rdg
PTC 输入档位 Input Level	0-10Ω	0-30Ω	0-100Ω	0-300Ω	0-1kΩ	0-3kΩ	0-10kΩ		
PTC 激励电流 Excitation Current	1mA	1mA	1mA	1mA	1mA	1mA	1mA		
PTC 测量分辨率 Measurement Resolution	0.2 mΩ	0.2 mΩ	2 mΩ	2 mΩ	20 mΩ	20 mΩ	200 mΩ		
PTC 精确度 Accuracy	±0.002Ω ±0.01% of rdg	±0.002Ω ±0.01% of rdg	±0.004Ω ±0.01% of rdg	±0.004Ω ±0.01% of rdg	±0.04Ω±0.02% of rdg	±0.04Ω±0.02% of rdg	±0.4Ω±0.02% of rdg		

低温附件 Accessory



技术参数 / S P C	附件/Accessories			
	型号 Model	类型 Type	特征 Feature	定制 Customize
	15A, 20A, 25A	氦气金属管 /Helium Pipes	316L不锈钢编制网, 耐腐蚀, 耐压强 (4.5mpa), 高纯处理工艺	可以, 定制管径和长度 /Acceptable
	HF50/70/P70; CP2800/CP1000/CP1114	吸附器 /Adsorber	27000Hrs, 高长吸附效率的氦气压缩机吸附器	可以/Acceptable
	HMT-4-0.2-DT-CM	低温线/Cryo wirings	Kapton绝缘锰铜双绞-双绞(四绞)四芯; Kapton绝缘磷青铜四芯并排/Manganese copper DUO-twisted pair four-core insulated wire (HMT-4-0.2-BT-CM); Phosphor bronze four-core side-by-side insulated wire (HLT-4-0.16-P)	可以/Acceptable
	其他/Others	低温真空附件	低温制冷机, 超导, 低温泵等常用物料 /Cryogenic Materials	可以/Acceptable

技术服务
Service



技术服务 / SERVICE	项目/ Item	标准内容/Criteria
	低温制冷机维保 Cryocooler Service	如408 机型典型值: 一级冷量> 44W@43K;二级冷量>1W@4.2K 如412 机型典型值: 一级冷量>53W@43K;二级冷量>1.25W@4.2K; 冷头; 冷头维修包 (Cold Head Service Pack); 压缩机维保
	低温泵维保/Cryopump Service	冷伞, 吸附器, 制冷机等维保
	磁体维保/MRI Service	磁体退磁, 励磁及匀场服务 磁体输液氮服务 磁体失超诊断及热循环修复 磁体磁体液氮非正常挥发

部分应用 / Application

