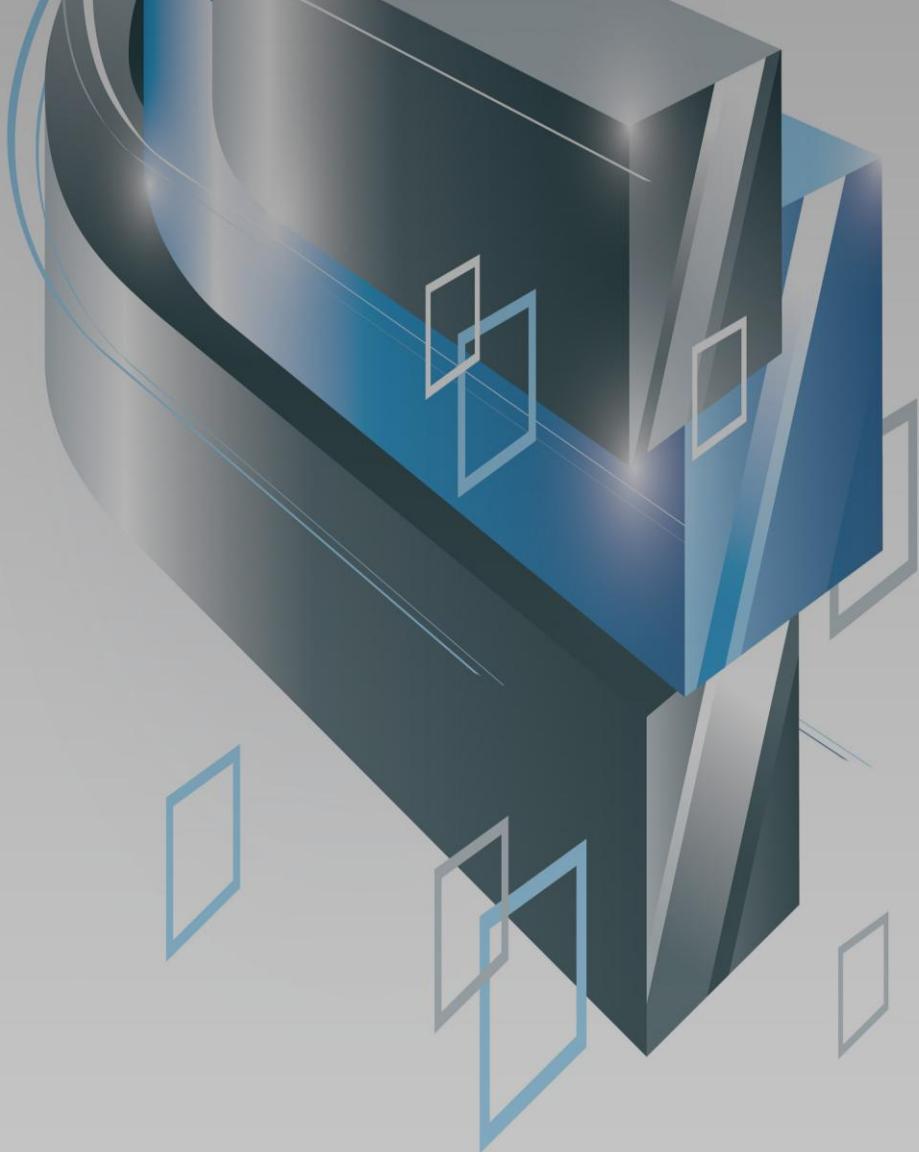


# HVAC System

Solutions to MRI room  
MRI室解决方案



# Technology FUTURE

## List (目录)

HVAC design guide for MRI room (MRI 室的 HVAC 设计指南) .....	1
Specifications for M series (M 系列规格) .....	4
The standard diameter and electrical data series (标准管径及电气技术数据) .....	9
Parameters for outdoor units (室外机参数) .....	10

# Technology FUTURE

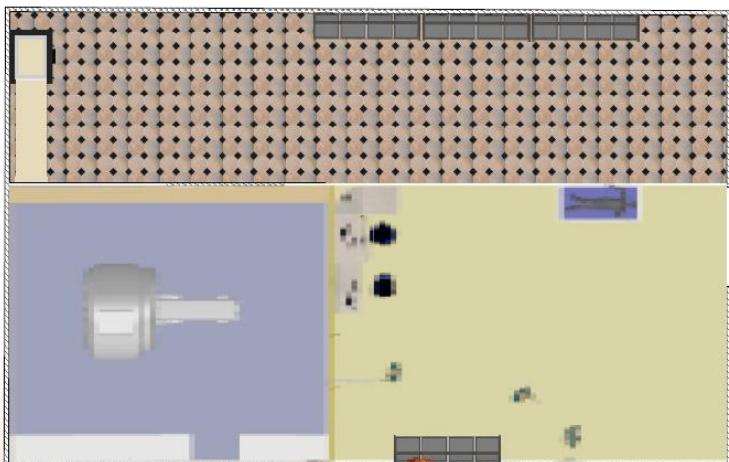
## HVAC design guide of MRI room( MRI 室的 HVAC 设计指南 ):

### Operation (操作):

- Air conditioning systems should be provided to heat, cool and ventilate the individual spaces, as required to satisfy the design criteria.
- Provide a dedicated HVAC unit to cool the MRI System Component Room. Verify the HVAC requirements with equipment supplier.
- Humidification / dehumidification may be required for the MRI Scanner Room and / or the MRI System Component Room to keep the MR equipment and electronics within MR vendor tolerances.
- Return air duct serving the MRI Scanner Room should be equipped with an electronically actuated damper, located outside of the MRI Scanner Room, to close whenever the MRI Scanner Room emergency exhaust fan is activated.
- As directed by MRI equipment vendor's requirements, provide tie-in for magnet ventilation system.
- All ductwork, fasteners, hangers and appurtenances within the radio frequency (RF) shield shall be non-ferrous. Ductwork penetrations must utilize RF wave guides at the shielding feed-through points.
- 空调系统应按照要求提供加热、冷却、和通风至各个空间，以满足设计标准。
- 提供专用的 HVAC 机组来冷却 MRI 系统组件室。与设备供应商验证 HVAC 机组规格。
- MRI 扫描室和/或 MRI 系统组件室可能需要进行加湿/除湿，使 MR 设备和电子设备保持在制造商的容差范围内。
- MRI 扫描室的回风管应配备一个位于 MRI 扫描室外部的电子控制的阻尼器，以便在 MRI 扫描室紧急排风扇激活时关闭。
- 根据 MRI 设备供应商的要求，为磁体通风系统提供联接。
- 所有管道系统、紧固件、吊架和附件的射频 (RF) 屏蔽措施应为有色金属。管道穿透必须在屏蔽馈通点使用 RF 波导管。

### Capacities (能力):

- The number of people and the air conditioning load noted on the room design standard sheet is for the purpose of establishing the basis of design guide and its use in planning.
- Verify the actual number of people and the air conditioning load to agree with the project requirements.
- Verify equipment AC loads based on the actual equipment furnished on the project.
- 房间设计标准表上注明的人数和空调负载是为了建立设计指南的基础及其在规划中的使用。
- 验证实际人数和空调负载是否符合项目要求。
- 根据项目提供的实际设备交流负载的验证。



暖通空调系统



# Technology FUTURE

## Air Quality and Distribution (空气质量分布):

- All rooms shall have positive air pressure unless specified differently with respect to the adjoining areas. This is to help maintain a reduced dust environment for the electronic equipment.
- The transferred air should be no more than 150 cfm (71.0 liters/sec) per undercut door.
- Design of air distribution system shall be in accordance with criteria given in the HVAC Design Manual.
- Provide linear diffusers for the spaces qualified to receive linear diffusers.
- 所有房间应具有正气压，除非相邻区域有不同的规定。这是为了帮助电子设备提供减少灰尘的环境。
- 转移的空气量应不大于每个底切门每分钟 150 立方英尺 (71.0 升/秒)。
- 空气分配系统的设计应符合 HVAC 设计手册中的标准。
- 为有资格接收线性扩散器的空间提供线性扩散器。

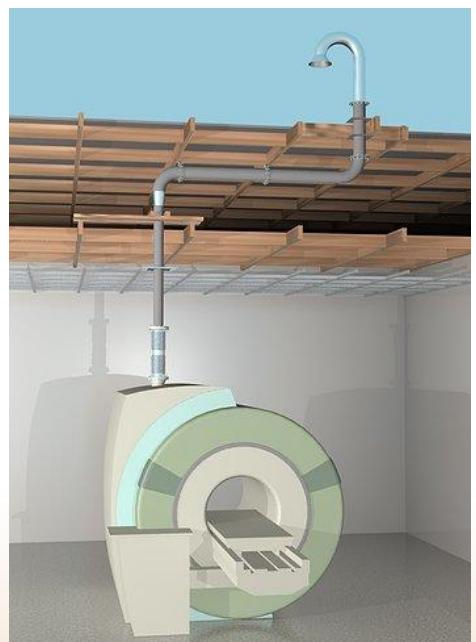


## Cryogen (Quench) Vent Pipe (低温（淬火）排气管):

- Provide a dedicated cryogen vent pipe (quench pipe) run as directly as possible to the outdoors. The vent pipe must meet the pressure and diameter requirements of the MRI system manufacturer and is to be fully insulated to the point of discharge. At the discharge, the vent pipe must provide a weather-head to prevent the introduction of horizontally driven precipitation.
- Discharge direction should be downward. Cryogenic gas vent discharge should be located 25 feet from any air intake or operable window. The 25 foot radius exclusion zone should be clearly marked and staff and contractor personnel should be restricted from working in the area until they have been educated to the risks of cryogenic gasses escaping the vent pipe.
- 提供专用的冷却剂通风管（淬火管），尽可能直接连到户外。通风管必须满足MRI系统制造商的压力和直径要求，并且完全绝缘到放电点。在排放处，排气管必须提供气象头以防止引入水平流动的降水。
- 排出方向应向下。低温气体排放口应位于距离任何进气口或可操作窗口25英尺处。25英尺半径禁区应明确标示，工作人员和承包商人员应限制在该地区工作，并清楚明白低温气体排气管泄漏所带来的风险。

## Emergency Exhaust System (紧急排气系统):

- Provide a dedicated emergency exhaust system to exhaust the MRI Scanning Room in the event of a cryogen discharge into the room. The system shall be activated either automatically by the MRI alarm panel (or oxygen sensor for MRI systems without a quench alarm relay) or a manual wall switch, one located inside the MRI Scanning Room and another located at the operator's console in the MRI Control Room. Locate the grille for the exhaust system in the ceiling to the rear of the MRI Scanner Room, opposite the location of the MRI Scanner Room door.
- 提供专用的紧急排气系统，以便在冷冻剂泄漏至房间时排空MRI扫描室。该系统应由MRI报警面板（或MRI系统的氧气传感器，无淬火报警继电器）或手动墙壁开关自动激活，一个位于MRI扫描室内，另一个位于MRI控制室的操作员控制台。将排气系统的格栅定位在MRI扫描仪室后部的天花板中，与MRI扫描仪室门的位置相对。



# Technology FUTURE

## Overpressure Relief (过压释放):

- All vendors of superconducting MRI now require a form of overpressure relief in the event of a cryogen breach into the MRI Scanner Room. Consult the MRI equipment vendor and RF shield vendor for recommended details. It is strongly recommended that overpressure relief systems not communicate with occupied areas and discharge to the exterior, whenever possible.
- Micro bacterium Tuberculosis – refer to General Comments.
- MRI waiting rooms to be minimum 12 air changes / hour. Supply air with all air exhausted to the outdoors.
- Seismic – refer to General Comments.
- 超导 MRI 的所有供应商现在需要一种形式的超压释放，在致冷剂破裂进入 MRI 扫描室的情况下。有关推荐的详细信息，请咨询 MRI 设备供应商和 RF 屏蔽供应商。强烈建议在可能的情况下，过压释放系统不与被占用区域通信并排放到外部。
- 微生物结核病 - 参考一般性意见。
- MRI 等候室至少 12 次空气变化/小时。供应空气，所有的空气排到户外。
- 地震 - 参见一般性评论。

## Noise Level (噪声级别):

- Select HVAC equipment, ductwork and air distribution devices to achieve noise levels listed in the HVAC Design Manual.
- Provide hospital grade acoustic duct silencers in all ductwork that communicates between the MRI Scanner Room and any other occupied space.
- 选择HVAC设备，管道系统和空气分配装置，以达到“HVAC设计手册”中所列出的噪声级别。
- 在MRI扫描室与任何其他占用空间之间通信的所有管道系统中提供医院级声管消音器。



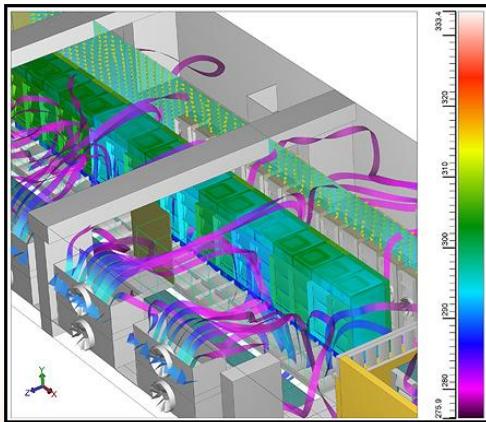
## Advantages of HVAC system: (HVAC 系统特点)

- Advanced intelligent control technology (先进智能化控制技术)
- Highly reliable (高可靠性)
- Fully front maintenance (全正面维护)
- Network management function (网络管理功能)
- High SHR (高显热比)
- Advanced microcomputer controller (先进的微电脑控制器)
- Structure design for easy operation and maintenance (易操作维护的结构设计)
- High efficient compressor (高效压缩机)
- Step less and low noise air-cooling condenser (无级调速低噪风冷冷凝器)
- EC fan (EC 风机)
- Unit with humidifying function (加湿功能的机型)
- Unit with heating function (加热功能的机型)
- Air filter (空气过滤器)
- The unit can adapt to outdoor environment very wide. The general model is suitable for the temperature from -15 °C to +45 °C, and the LEE-TEMP model is good for the temperature from -34 °C to +45 °C. The heating is not affected by temperature conditions. (可适应极宽温度的室外环境。普通型在-15°C~+45°C范围内工作，LEE-TEMP 机型在-34°C~+45°C范围内工作。加热不受温度条件限制)
- Comprehensive configurations: conventional air-cooled, water-cooled, chilled water, double cold source, natural cooling, high precision (applicable to the temperature and humidity particularly high requirements of the occasion ± 0.3 °C, ± 2%). (全面的机型配置：常规风冷式、水冷式、冷冻水型、双冷源型、自然冷却型、高精度型(适用于特别高的温湿度要求的场合±0.3° C, ±2%))



## Specifications for M series (M 系列规格):

Direct expansion air cooling/water cooling - AW (直接膨胀风冷、水冷型 - A/W):						
Air flow: below, above (送风方式: 下送风、上送风)						
Model (型号)	M25	M29	M32	M34	M35	M41
<b>Characteristics (性能)</b>						
Total cooling cap. (总冷量)	kW	26.5	30.7	33.3	36.2	37.0
Humidity cap. (湿冷量)	kW	24.2	29.3	32.5	34.1	35.1
Hum. Heat ratio (湿热比)		0.91	0.92	0.97	0.94	0.95
EER (效能比)		3.58	3.35	3.51	3.62	3.58
Compressor Q. (压缩机数量)	n	1	1	1	2	1
Compressor power (压缩机功率)	kW	5.89	6.96	6.94	2x3.82	7.96
Fan Q. (风机数量)	n	1	1	2	2	2
Fan input power (风机输入功率)	kW	1.52	1.90	1.99	2.38	2.38
Wind rate (风量)	m³/h	7100	7880	10040	11140	11220
Max. Pressure (最大风压-上/下风送)	Pa	380	280	420	350	340
Noise (噪音-下送风)	dB(A)	53	55	58	61	61
Humidity (加湿量)	kg/h	9	9	13	13	13
Power of hum. (加湿功率)	kW	5.8	5.8	9	9	9
Heating power (加热功率)	kW	7.5	7.5	15	15	15
Tube (气/液管径)	mm	22/18	22/18	22/18	16/16	28/22
標準水冷型 - W (进水温度 30°C, 出水温度 45°C) standard water-cooling type - W (inlet water temperature of 30 °C, outlet water temperature of 45 °C)						
Water flow (水流量)	l/s	0.64	0.71	0.74	2x0.43	0.87
Pressure (水端压降)	kPa	19	12	13	12	13
Pipe (水管管径)	inch	1"	1"	1 1/4"	2x3/4"	1 1/4"
Max. power consumption (最大耗电量)	kW	14.9	16.3	23.0	21.2	25
Length (长度)	mm	1200	1200	1200	1200	1200
Width (宽度)	mm	800	800	800	800	800
Height (高度)	mm	1800	1800	1800	1800	1800
Weight (净重)	kg	425	430	575	590	580



M series is equipped with high precision temperature and humidity control with diffuse type air supply.

M 系列配有高精度恒温恒湿控制器与弥漫式送风的配置。



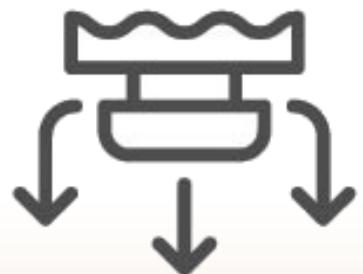
Air circulation in equipment room (送风空气在机房的循环方式)

## Specifications for M series (M 系列规格):

Direct expansion air cooling/water cooling - AW (直接膨胀风冷、水冷型 - A/W):								
Air flow: below, above (送风方式: 下送风、上送风)								
Model (型号)	M42	M47	M50	M58	M66	L83U	L99U	
<b>Characteristics (性能)</b>								
Total cooling cap. (总冷量)	kW	42.8	53.7	54.9	60.1	70.3	86.3	104.6
Humidity cap. (湿冷量)	kW	41.5	49.0	52.2	58.3	68.9	79.5	95.2
Hum. Heat ratio (湿热比)		0.97	0.91	0.95	0.97	0.98	0.92	0.92
EER (效能比)		3.63	3.45	3.59	3.40	3.49	3.31	3.68
Compressor Q. (压缩机数量)	n	2	1	2	2	2	2	2
Compressor power (压缩机功率)	kW	2x4.39	12.1	2x5.9	2x6.96	2x7.98	2x9.0	2x11.2
Fan Q.(风机数量)	n	2	2	2	2	2	2	2
Fan input power (风机输入功率)	kW	2x1.51	2x1.74	2x1.74	2x1.89	2x2.09	2x2.8	2x3.0
Wind rate (风量)	m³/h	12530	13550	13540	14580	15470	21520	24000
Max. Pressure (最大风压-上/下风送)	Pa	390	300	300	250	180	200	120
Noise (噪音-下送风)	dB(A)	58	60	59	61	63	64.9	66.3
Humidity (加湿量)	kg/h	13	13	13	13	13	13	13
Power of hum.(加湿功率)	kW	9	9	9	9	9	9	9
Heating power (加热功率)	kW	15	15	15	15	15	22.5	22.5
Tube (气/液管径)	mm	22/18	28/22	22/18	22/18	28/22	28/22	28/22
標準水冷型 - W (进水温度 30°C, 出水温度 45°C) standard water-cooling type - W (inlet water temperature of 30 °C, outlet water temperature of 45 °C)								
Water flow (水流量)	l/s	2x0.51	1.28	2x0.66	2x0.72	2x0.84	2x1.12	2x1.35
Pressure (水端压降)	kPa	12	13	20	12	12	10	11
Pipe (水管管径)	inch	2 3/4"	1 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"	2 1/4"
Max. power consumption (最大耗电量)	kW	22.4	30.5	24.4	25.8	27.2	37	39.7
Length (长度)	mm	1500	1850	1850	1850	1900	2150	2300
Width (宽度)	mm	800	850	850	850	950	1000	1080
Height (高度)	mm	1800	1800	1800	1800	1800	1800	1800
Weight (净重)	Kg	600	620	635	650	670	950	1000

The large surface area of evaporator coil improves the efficiency of units to ensure the effect of energy saving. The "V" structure of coil can make refrigeration system cycle match the refrigeration load. The air flow through the coil surface is smooth, and the "V" structure of coil also reduces the noise. When dehumidification, turn off the coil that only uses the part of 2/3. 65% of energy is used for dehumidification and it can effectively remove the moisture, greatly reduce the chance for reheating, and obviously provide the effect of energy saving.

超大表面积的蒸发器盘管，提高机组效率确保节能。采用“V型”结构盘管可使制冷系统的循环与制冷负荷相匹配，通过盘管表面的气流更加平稳，最大限度的降低机组噪声。除湿时，关掉部分盘管，只利用2/3的部分，将65%的能量用于除湿，更能有效地去掉湿气，大大减少再热器的启动，节能效果显著。



# Technology FUTURE

## Specifications for M series (M 系列规格):

Frozen Water (冷冻水型):										
Model (型号)	M31	M42	M44	M52	M55	M65	M66	M72	M77	
<b>Characteristics (性能)</b>										
Total cooling cap. (总冷量)	kW	31.2	42.1	43.6	51.8	58.6	65.4	68.8	71.8	83.5
Humidity cap. (湿冷量)	kW	25.3	33.7	34.9	42.5	49.7	53.1	56.4	56.7	65.1
Hum. Heat ratio (湿热比)		0.81	0.80	0.80	0.82	0.85	0.81	0.82	0.79	0.78
Fan Q.(风机数量)	n	1	1	1	2	2	2	2	2	2
Wind rate (风量)	m³/h	7800	8600	8650	13000	13740	15000	15370	15500	15950
Max. Pressure (最大风压 -上/下风送)	Pa	150	170	170	170	340	245	245	170	170
Noise (噪音-下送风)	dB(A)	54.1	55	55	56	58	61	60	61.1	62
Water flow (水流量)	l/s	1.78	2.01	2.08	2.69	2.79	3.23	3.28	3.81	3.99
Pressure (水端压降)	kPa	81	89	91	90	89	67	65	80	81
Pipe (水管管径)	inch	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Length (长度)	mm	1320	1500	1500	1850	1850	1850	1850	2200	2200
Width (宽度)	mm	800	800	800	850	850	850	850	950	950
Weight (净重)	kg	280	320	330	440	480	540	550	580	600

Frozen Water (冷冻水型):										
Model (型号)	L90U	L10U	L12U	L14U	L15U					
<b>Characteristics (性能)</b>										
Total cooling cap. (总冷量)	kW	90.7	103.4	117.9	142.8	158.9				
Humidity cap. (湿冷量)	kW	76.8	83.9	97.9	111.7	121.5				
Hum. Heat ratio (湿热比)		0.85	0.81	0.83	0.78	0.76				
Fan Q.(风机数量)	n	2	2	3	3	3				
Wind rate (风量)	m³/h	19060	20400	23100	25100	26070				
Max. Pressure (最大风压 -上/下风送)	Pa	330	310	290	250	250				
Noise (噪音-下送风)	dB(A)	58.7	61	62.1	62.1	63.8				
Water flow (水流量)	l/s	4.33	4.93	5.62	6.81	7.58				
Pressure (水端压降)	kPa	75	79	104	80	80				
Pipe (水管管径)	inch	2"	2"	2 1/2"	2 1/2"	2 1/2"				
Length (长度)	mm	2200	2300	2550	2550	2550				
Width (宽度)	mm	950	1080	1080	1080	1080				
Weight (净重)	kg	620	610	740	800	810				

The floor bracket height is adjustable to make all series and movable floor in equipment room becoming one. With the use of frozen water units and natural cooling system will have the obvious effect for energy saving.

高度可调整的地板支架，可以使所有系列模块机组与机房的活动地板成为一体。冷冻水机组与自然冷却系统配合使用，会有显著的节能效果。



# Technology FUTURE

## Specifications for M series (M 系列规格):

Free cooling – F (自然冷却型 – F):										
Air flow: below, above (送风方式: 下送风、上送风)										
Model (型号)	M25	M32	M34	M35	M41	M42	M47	M50	M58	L83U
<b>Characteristics (性能)</b>										
<b>Total cooling cap. (总冷量)</b>	kW	25.7	33.3	34.4	35.7	41.0	42.1	51.6	51.7	57.1
<b>Humidity cap. (湿冷量)</b>	kW	22.7	32.5	32.1	32.8	40.2	41.5	45.6	44.9	48.5
<b>Hum. Heat ratio (湿热比)</b>		0.88	0.93	0.93	0.92	0.91	0.92	0.88	0.87	0.85
<b>Fan Q. (风机数量)</b>	n	1	2	2	1	2	2	2	2	2
<b>Wind rate (风量)</b>	m³/h	7100	10040	11140	11220	12470	12530	13550	13540	14580
<b>Max. Pressure (最大风压-上/下风送)</b>	Pa	270	320	250	200	330	330	250	250	190
<b>Noise (噪音-下送风)</b>	dB(A)	54	59	59	60	59	59	62	60	62
<b>Length (长度)</b>	mm	1200	1200	1200	1200	1200	1500	1500	1850	1850
<b>Width (宽度)</b>	mm	800	800	800	800	800	800	800	850	850
<b>Weight (净重)</b>	kg	510	715	725	720	730	745	740	755	770
										1140

Dual fluid air cooling/water cooling – D/H (双冷源风冷、水冷型 – D/H):										
Air flow: below, above (送风方式: 下送风、上送风)										
Model (型号)	M25	M32	M34	M35	M41	M42	M47	M50	M58	L83U
<b>Characteristics (性能)</b>										
<b>Total cooling cap. (总冷量)</b>	kW	25.7	33.3	34.4	35.7	41.0	42.1	51.6	51.7	57.1
<b>Humidity cap. (湿冷量)</b>	kW	22.7	32.5	32.1	32.8	40.2	41.5	47.0	47.5	51.5
<b>Hum. Heat ratio (湿热比)</b>		0.88	0.93	0.93	0.92	0.91	0.92	0.91	0.92	0.88
<b>EER (效能比)</b>		3.31	3.29	3.30	3.26	3.28	3.36	3.25	3.33	3.11
<b>Characteristic of water cooling (水冷性能)</b>										
<b>Total cooling cap. (总冷量)</b>	kW	29.3	44.6	47.0	48.1	56.3	56.8	60.1	60.1	62.5
<b>Humidity cap. (湿冷量)</b>	kW	24.8	37.4	39.9	40.7	46.1	46.3	49.6	49.6	51.9
<b>Hum. Heat ratio (湿热比)</b>		0.85	0.84	0.85	0.85	0.82	0.83	0.83	0.83	0.86
<b>Compressor Q. (压缩机数量)</b>	n	1	1	2	1	1	2	1	2	2
<b>Fan Q. (风机数量)</b>	n	1	2	2	1	2	2	2	2	2
<b>Wind rate (风量)</b>	m³/h	7100	10040	11140	11220	12470	12530	13550	13540	14580
<b>Water flow (水流量)</b>	l/s	0.64	0.74	2x0.43	0.87	1.08	2x0.51	1.28	2x0.66	2x0.72
<b>Pressure (水端压降)</b>	kPa	19	13	12	13	12	12	13	20	12
<b>Pipe (水管管径)</b>	inch	1"	1 1/4"	2 3/4"	1 1/4"	1 1/4"	2x 3/4"	1 1/4"	2x1 1/4"	2x 1 1/4"
<b>Max. Pressure (最大风压)</b>	Pa	270	320	250	200	330	330	250	250	190
<b>Noise (噪音-下送风)</b>	dB(A)	54	59	59	60	59	59	62	60	62
<b>Weight (净重)</b>	kg	510	715	725	720	730	745	740	755	770
										1115

The indoor unit of all series can be matched with different wind hood. For bottom air supply, the unit can be connected with air inlet duct. For top air supply, top air supply hood can make air flow which is stable and uniform in the room.

所有系列室内机组可匹配不同的风帽，在下送风机组中，可安装回风风管道与机组相连接。在上送风系统中，上送风风帽可使机房各个角落的气流稳定均匀。



## Specifications for M series (M 系列规格):

Diffuse air flow (弥漫式送风) :			
Model (型号)	M25	M29	
Characteristics (性能)			
Total cooling cap. (总冷量)	kW	26.4	30.7
Humidity cap. (湿冷量)	kW	23.6	29.3
Hum. Heat ratio (湿热比)		0.89	0.90
EER (效能比)		3.56	3.39
Compressor Q. (压缩机数量)	n	1	1
Fan Q. (风机数量)	n	1	1
Wind rate (风量)	m³/h	6680	7470
Max. Pressure (最大风压-上/下风送)	Pa	0	0
Noise (噪音-下风送)	dB(A)	62	64
Length (长度)	mm	1200	1200
Width (宽度)	mm	800	800
Weight (净重)	kg	425	430



All routine maintenances of all series can be accessed in front and all parts can be taken out easily. Air filter can also be replaced in front. Under the normal operation condition, the maintenance for the refrigeration system can be carried out. Because the design of all series is very flexible, it can be utilized in a variety of ways of cooling.

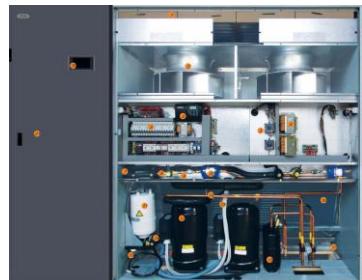
所有系列的所有日常维护工作都可以在机组的正面完成，所有的部件都可以从机组的正面取出来。空气过滤器可以从机组的正面进行更换。在机组正常运行的情况下，可以对制冷系统进行检修。由于所有系列有非常灵活的设计，使其可以采用多种冷却方式。

Our company attaches great importance to environmental protection issues. Now, all series is used the refrigerant of R22 that is HCFC kind of refrigerant and the ozone damage index (ODP) value is very low. In addition, all series can also use R407C refrigerant -- now has been widely applied. In Europe, the new refrigeration equipment will not use R22 refrigerant after 2000. The air-conditioning system using new refrigerant can provide the same effect as R22 refrigerant. Need to pay attention to that the compression system using new refrigerant needs to replace the mineral oil with synthetic ester lubricant.

公司非常重视环境保护的问题。现在，所有系列标准型机组选用的是R22制冷剂，这是HCFC类制冷剂，其臭氧破坏指数(ODP)值非常低。此外，所有系列也可以选用R407C制冷剂——现在已经广泛地得到应用。在欧洲，公元2000年以后生产的新制冷设备中，将不再采用R22制冷剂，采用新型制冷剂的空调系统，可以提供与采用R22制冷剂相同的制冷功率。需注意的情况是，选用新型制冷剂的压缩系统，需使用合成酯类润滑剂替代矿物质油。

The compressor is mounted on the rubber shock absorber base that reduces noise and vibration. And its design is in the outside of the air stream. Flow channel is the curvature design that reduces the noise.

压缩机安装在橡皮胶避震底座上，减少噪音和震动。并将其设计在气流之外。气流通道曲线设计，以减少噪音。

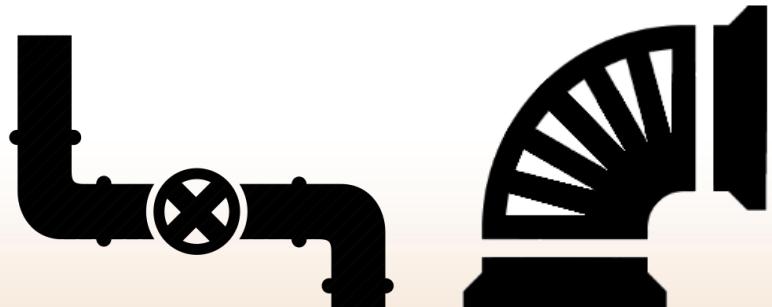


## The standard diameter and electrical data series (标准管径及电气技术数据):

Model (型号)	Tube diameter for air (气管直径) (mm)	Tube diameter for liquid (液管直径) (mm)	Running current (运行电流) FLA(A)	Current protection (断路器保护电流) IΔ n=0.3A(400V)	Min. cable diameter (最小电缆线直径) (mm)
S03/S04/S05/W03/W04/W05	12×1	12×1	16.9	32A	6
S07/W08	16×1	12×1	17.5	32A	6
S10/W10	16×1	12×1	18.5	32A	6
S12	16×1	12×1	20	32A	6
S13/W13	18×1	16×1	22	32A	6
S16/S17/S18/W16/W18	18×1	16×1	24	32A	10
S20/S21/W21	18×1	16×1	28	50A	10
S23/W23	18×1	16×1	30	50A	10
S25/M25/W26	22×1	18×1	31	50A	10
S29/M29	22×1	18×1	43.1	50A	10
M32	22×1	18×1	45.2	50A	10
M34	18×1	16×1	45.4	50A	16
M35	28×1	22×1	47.9	63A	10
M41	28×1	22×1	52.7	63A	16
M42	22×1	18×1	46.8	63A	16
M47	28×1	22×1	57.5	63A	16
M50	22×1	18×1	64.5	80A	25
M58	22×1	22×1	68.3	80A	25
M66	28×1	22×1	69.3	80A	25
28A/W/F/D/H	22×1	18×1	45.2	50A	10
34A/W/F/D/H	28×1	22×1	47.9	50A	10
40A/W/F/D/H	28×1	22×1	52.7	63A	16
26A/W/F/D/H	18×1	18×1	40.2	50A	16
32A/W/F/D/H	18×1	18×1	44.4	50A	16
42A/W/F/D/H	22×1	18×1	46.8	63A	16
46A/W/F/D/H	22×1	18×1	55.2	63A	25
55A/W	22×1	18×1	69.3	80A	25
65A/W	28×1	22×1	69.3	80A	25
81A/W	28×1	22×1	75.2	100A	35
99A/W	28×1	22×1	83.6	100A	35

P.S. The diameter of gas or liquid tube and electrical parameters will be adjusted in accordance with local regulations. The list above is for reference only.

附：气/液管径及电气参数会依照当地法规规定而调整，上述表列仅供参考。

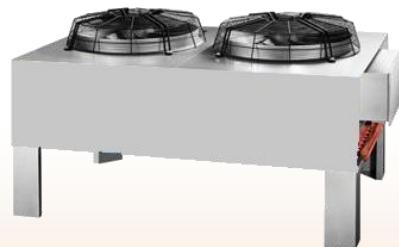


## Parameters for outdoor units (室外机参数):

Model (型号)	Length (长度) (mm)	Width (宽度) (mm)	Height (高度) (mm)	Weight (重量) (kg)
S03/S04/W03/W04	780	260	540	45
S05/S07/W05	840	285	610	50
S08/W08	830/880	310/360	710/800	52/55
S10/W10	880	360	800	55
S12/S13/W13	830/930	310/390	1260/1270	60/64
S16/S17/S18/W16/W18	930	390	1270	68
S20/S21/S23/S25/M25/P06/W21/W23/W26	1220	450	1180	80
S20/S21/S23/S25/M25/P06/W21/W23/W26 (Optional)	940	1120	935	83
S29/M29/P07/P08/P09/E08/26U/28U	1220	450	1180	95
S29/M29/P07/P08/P09/E08/26U/28U (Optional)	940	1120	1195	99
M32/M34/M35/P10/32U/34U	1500	450	1180	130
M32/M34/M35/P10/32U/34U (Optional)	940	1120	1195	133
M41/M42/Q11/P11/E14/42U	1500	450	1425	149
M41/M42/Q11/P11/E14/42U (Optional)	1190	1190	1425	154
M47/M50/Q14/P16/40U	2165	450	1180	168
M47/M50/Q14/P16/40U (Optional)	1880	1120	1030	172
M58/P17/E16/E17/46U/55U	2165	450	1180	184
M58/P17/E16/E17/46U/55U (Optional)	1880	1120	1030	189
Q17/E18	2400	450	1180	246
Q17/E18 (Optional)	1880	1120	1195	252
M66/Q19/65U	2640	450	1180	260
M66/Q19/65U (Optional)	1880	1120	1195	268
L83U	2820	1120	1030	281
Q22/Q25U	2820	1120	1195	293
L99U/Q29U	2820	1120	1195	311

P.S. (备注): The parameters for non-standard products do not show in here, if necessary, please contact the manufacturer. The new design of components and structures for the unit will change depending on the actual situation.

非标准型号机型参数不列在此处，如果有需要，请和生产厂家联系。新机型所使用的元件及机组内部的设计会根据实际状况而有所变动。



Office: No. 125, Zhongxing Rd., Bantian,  
Shenzhen City, Guangdong  
Address 1: Economic Development Zone,  
Futian Free Trade Zone, Shenzhen City,  
Guangdong  
Address 2: CBOS Industrial Park, Dongguan,  
Guangdong  
Phone: +86-755-89202131  
Fax: +86-755-89202105  
<http://www.hirossz.com>  
Email: hiross@hiross.org

办公地点: 深圳坂田中兴路 125 号  
厂 1 深圳: 深圳福田保税区经济开发区  
厂 2 东莞: 广东东莞冷博工业园  
电话: +86-755-89202131  
传真: +86-755-89202105  
<http://www.hirossz.com>  
电子邮箱: hiross@hiross.org

Agency ( 经销商 ):

