LG Air conditioning Company

Multi V Water Ⅱ

LG Air Conditioning Academy

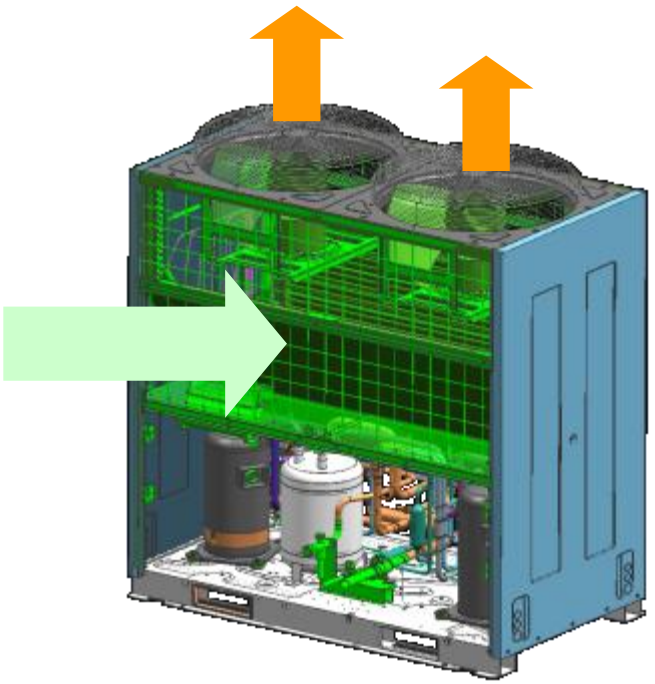
1.1 What is Multi V Water II?

- High Performance
- Prospect rights
- Beautiful Exterior
- Convenience and Comfort

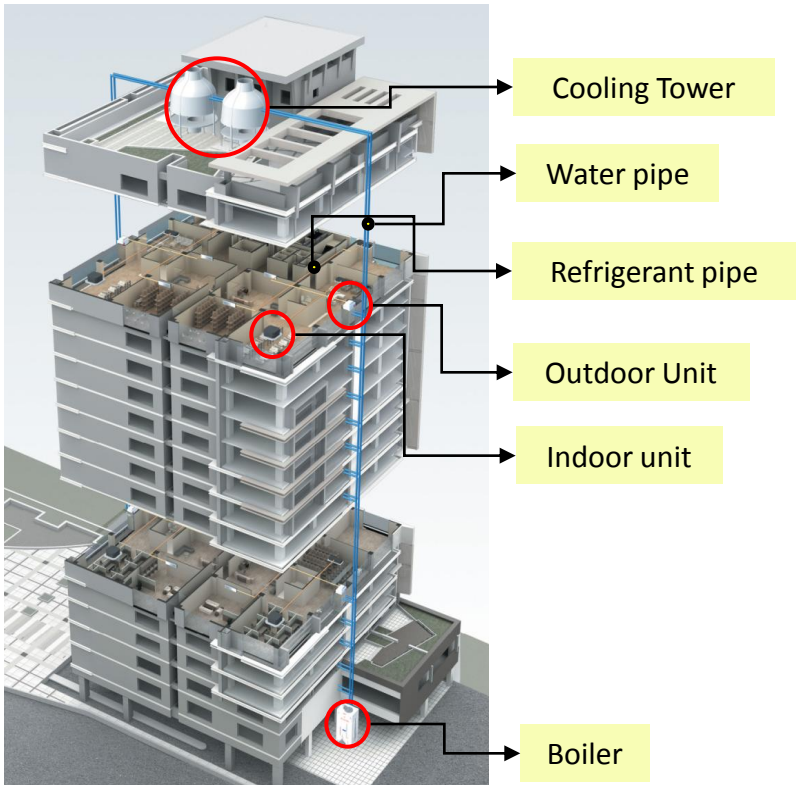
1.1 What is Multi V Water II?

LG Water Cooled system

Air Cooled System



Water Cooled System



1.2 External Appearance

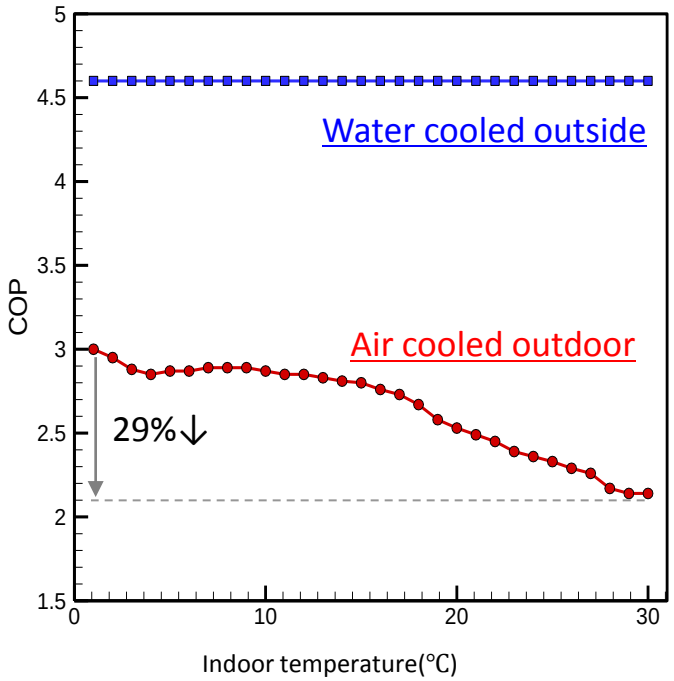
3Ø, 380-415V, 50Hz & 3Ø, 380V, 60Hz	
ARWN100LA2 ARWN200LA2	
ARWN300LA2 ARWN400LA2	
ARWN500LA2 ARWN600LA2	

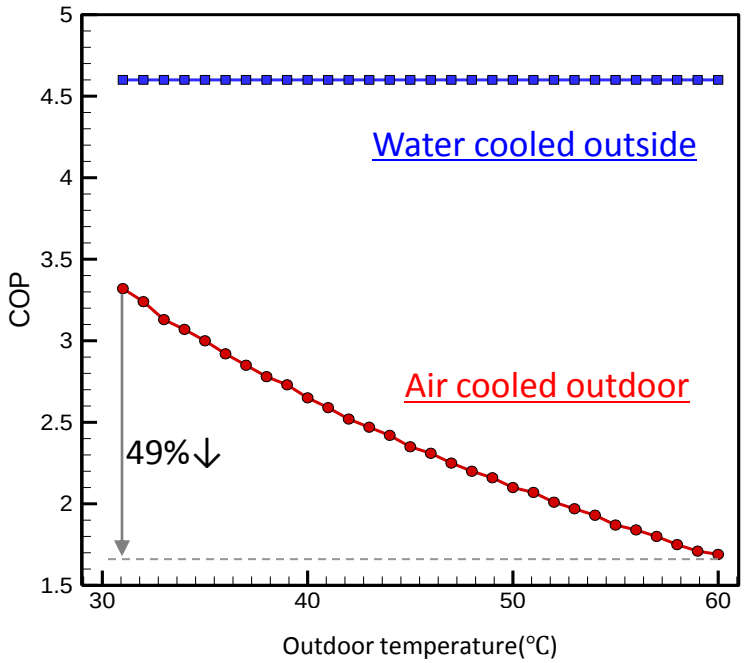
1.3 Product Background

High Performance

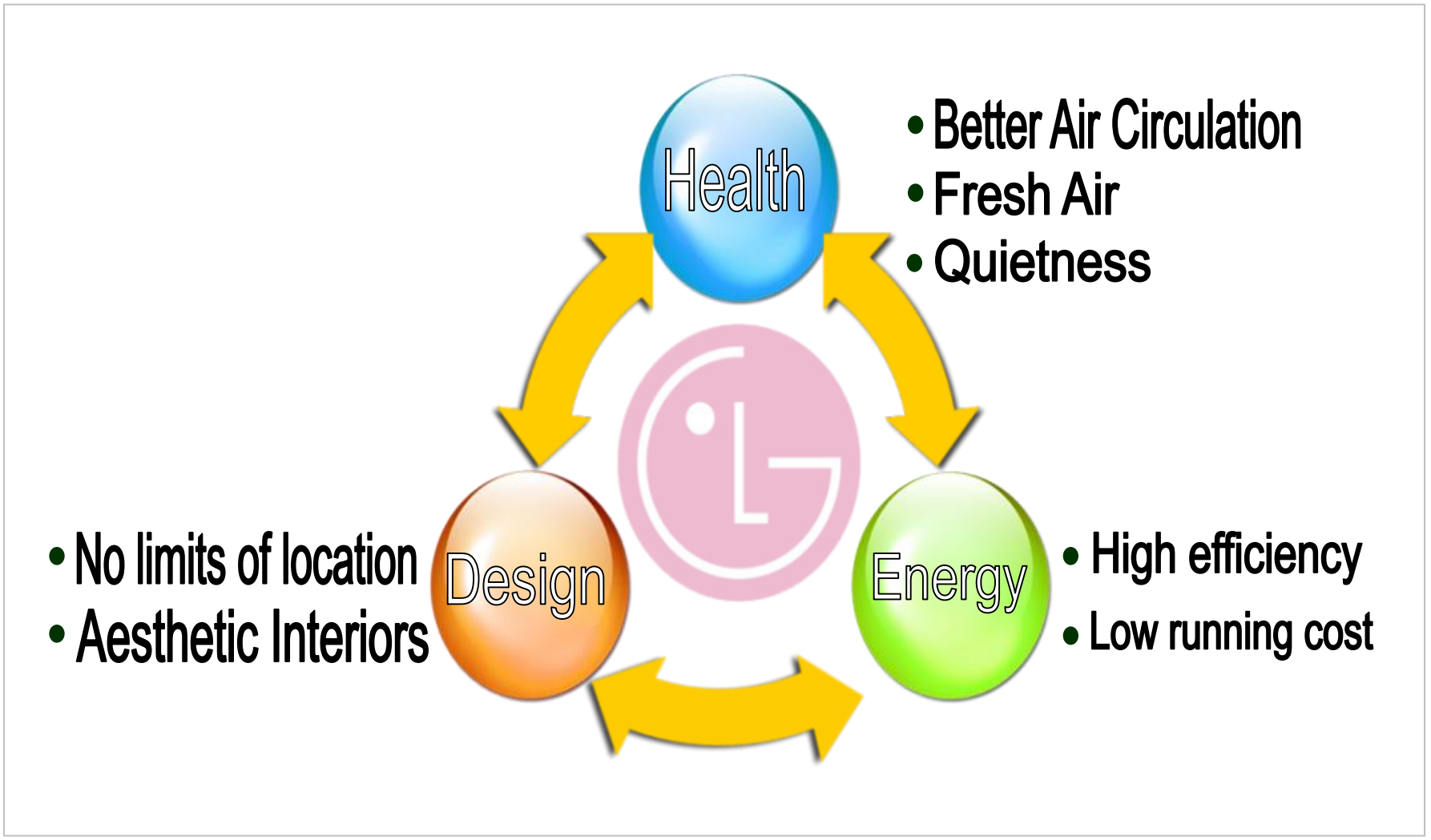
1.3 Product Background

High Performance





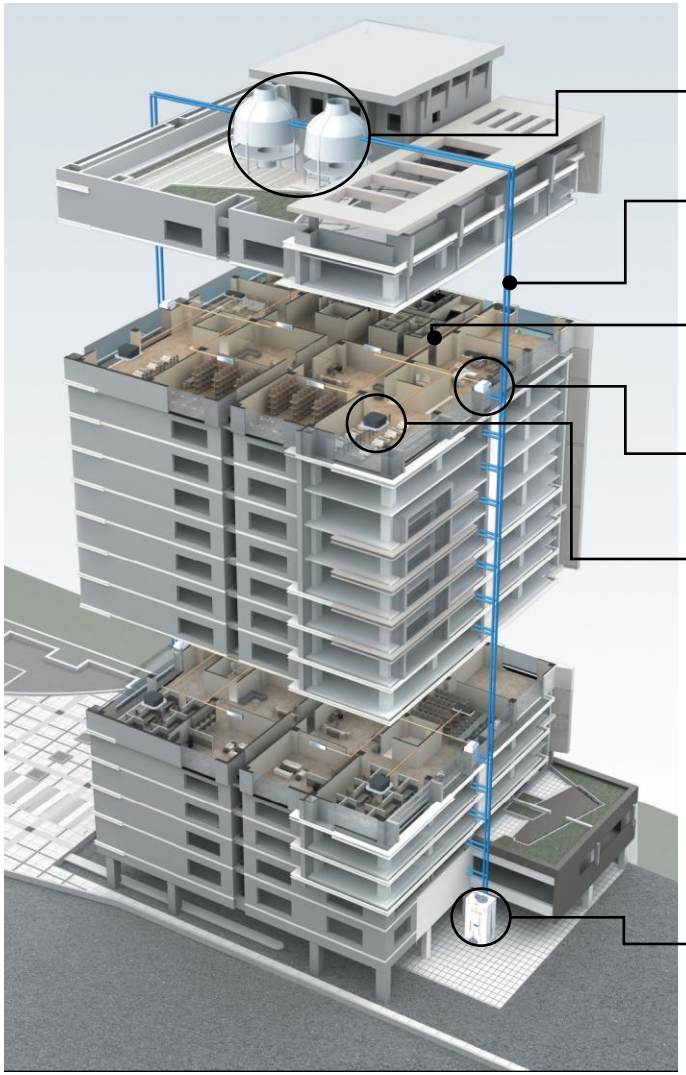
1.3 Product Background



1.4 System Layout

Beautiful Exterior

1.4 System Layout



Cooling Tower

Water pipe

Refrigerant pipe

Outdoor Unit

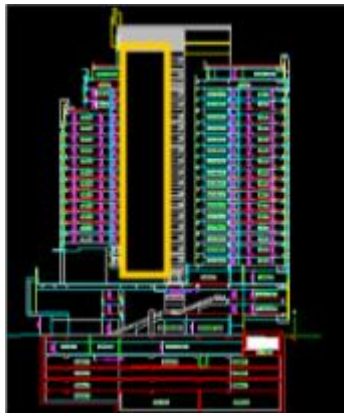
Indoor unit

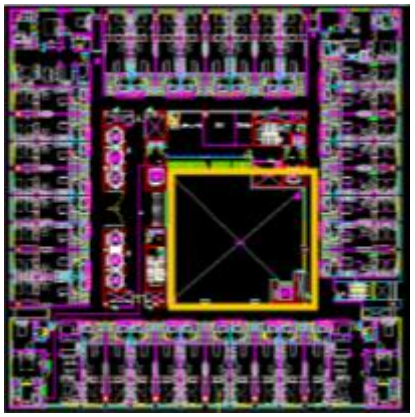
Boiler

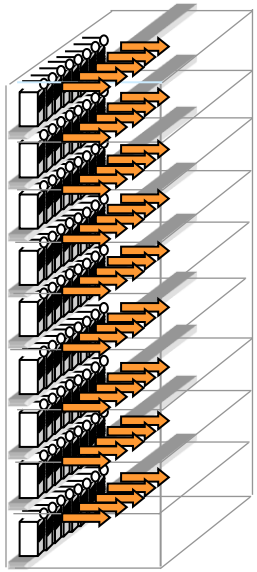
1.4 System Layout

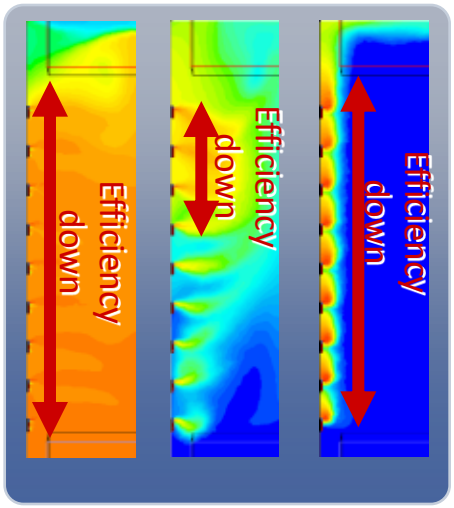
■ High Rising Building

- Solve the outside air flow problems
- Aesthetic external appearance
- Energy Saving









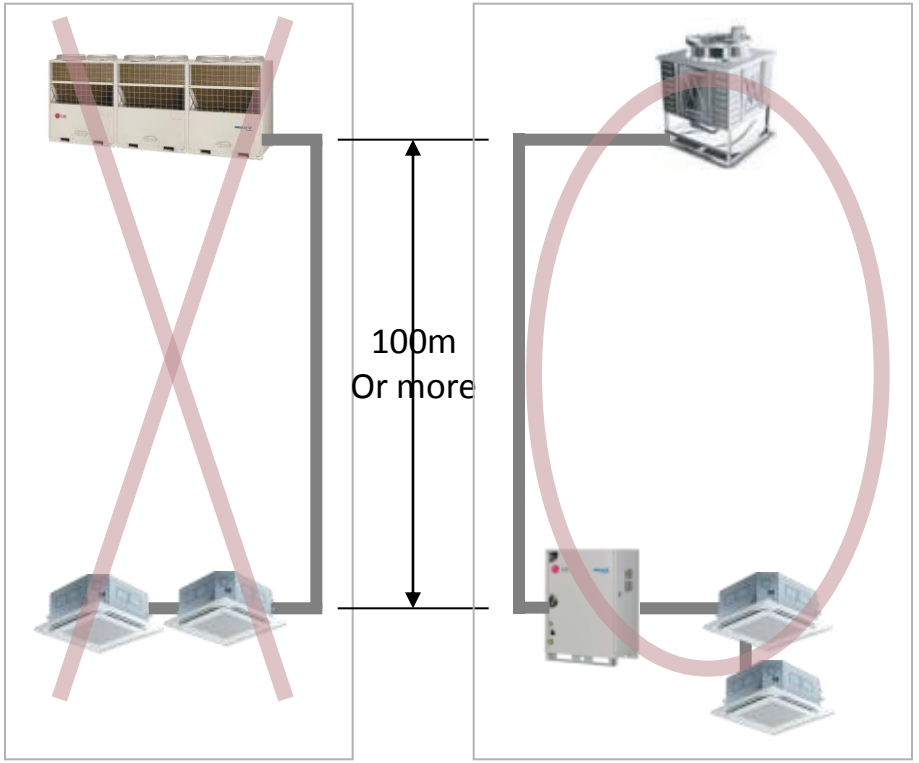
Discharge air circulation expected site

Water cooled system is the optimal solution

1.4 System Layout

■ Office Building

- The solution of discharge air circulation and indoor unit height difference limits
- Energy saving
- Aesthetic Appearance
- Simultaneous operation during interim season



- No external installation space for ODU
- Height difference is 50m or more

Water cooled system is the right solution

2.1 Product Line up

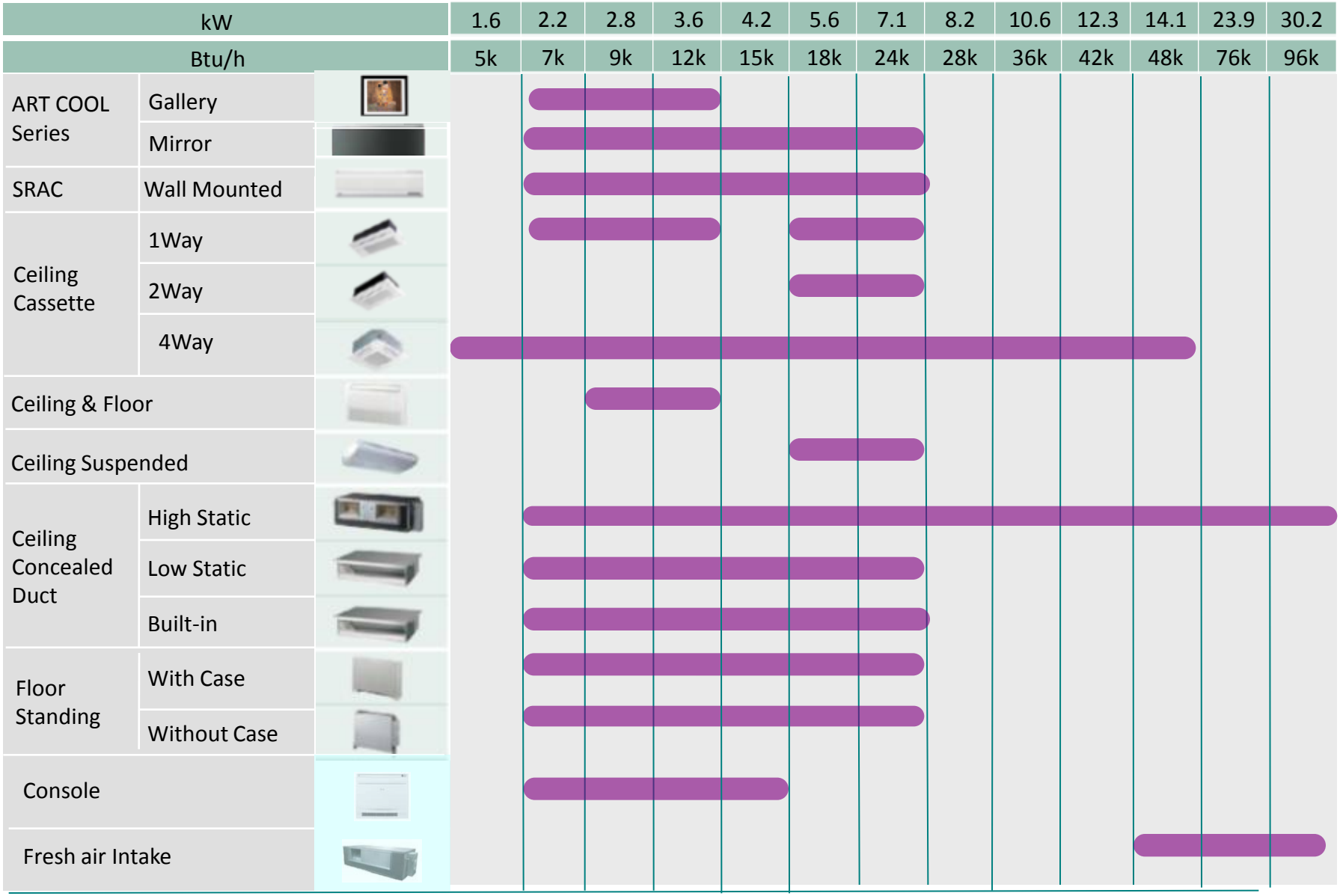
2.1.1 Outdoor Unit

Outdoor unit	Power	10HP	20HP	30HP	40HP	50HP	60HP
	3Ø 380~415V 50Hz						
	3Ø 380V 60Hz						
	3Ø 460V 60Hz						

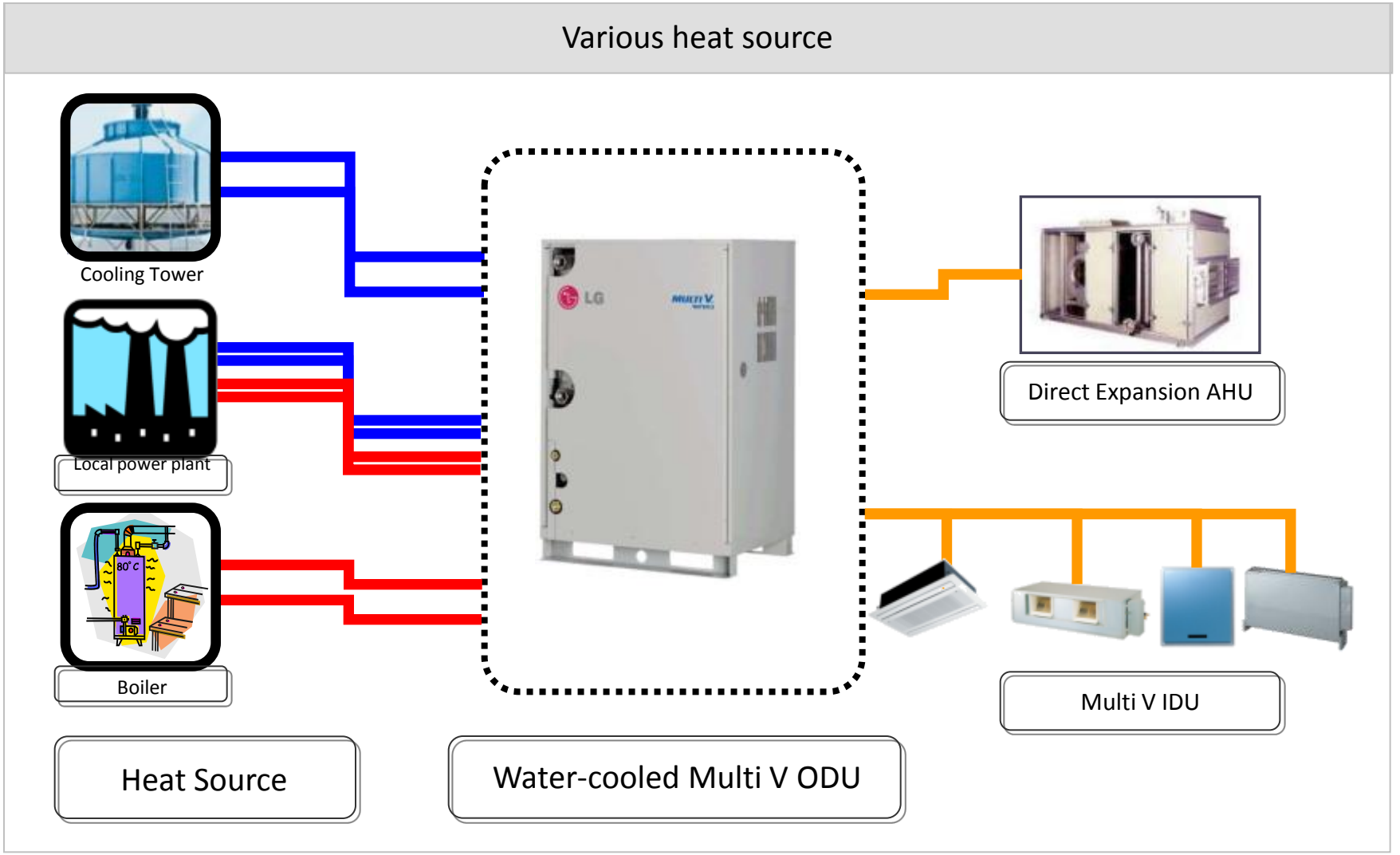
Outdoor unit	Power	8HP	16HP	24HP	32HP	40HP	48HP
	3Ø 220V, 60Hz						
							
							

2.1 Product Line up

2.1.2 Indoor Unit

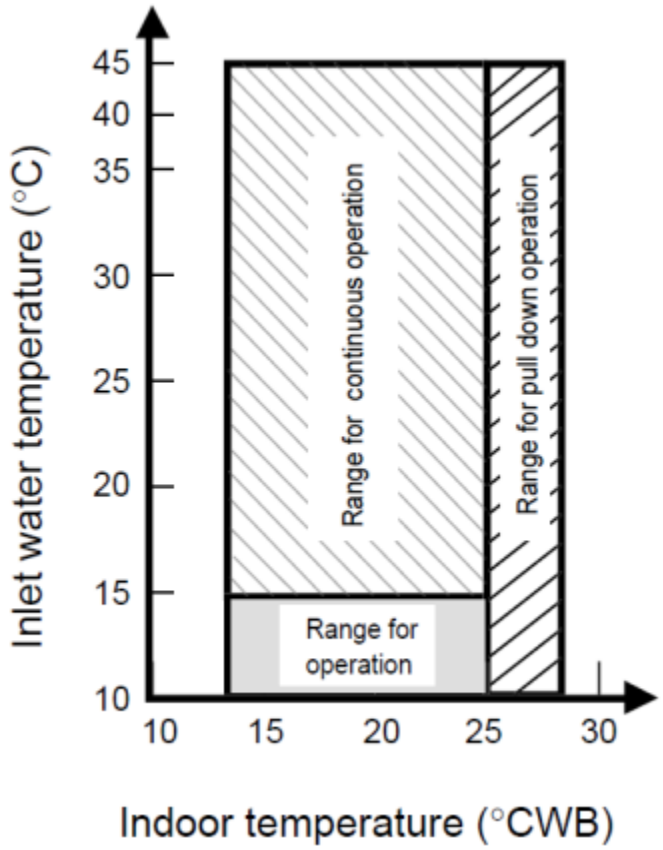


3.1.1 Multiple Heat Source

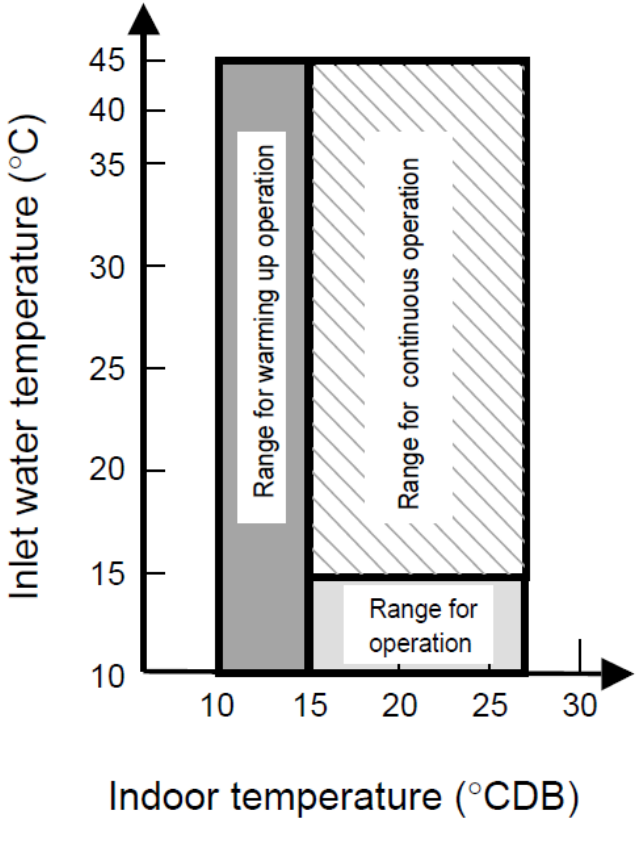


3.1.2 Wider Operation Range

Cooling



Heating



3.1.3 Installation Space / Reduced Installation Area

Compact Size and excellent space efficiency

※ Water Source Multi V 20HP
- Weight : 238 kg

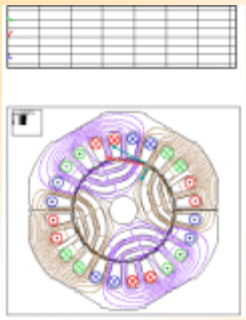
※ Stacking is possible which further saves space.

3.1.5 DC Inverter Compressor

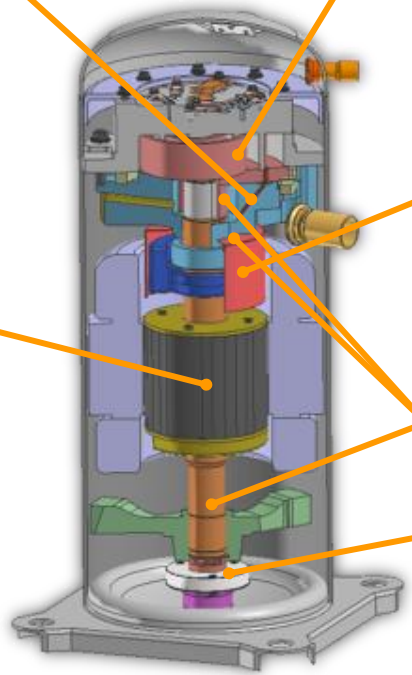
Optimized Scroll Shape

- For R410A

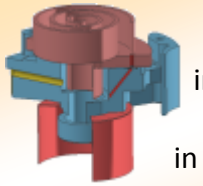
LG DC Inverter Motor



- High Efficiency
- Low Noise



Oil injection Mechanism



- High reliability in low rpm operation
- High Efficiency in partial-load operation

Oil Discharge Reduction

- High reliability in high rpm operation
- Enhanced Oil Circulation

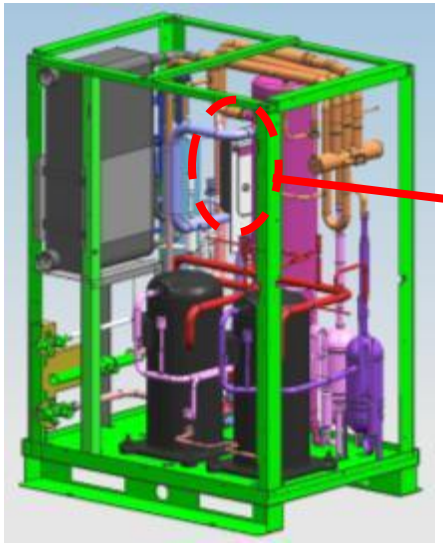
Teflon Coated Bearing

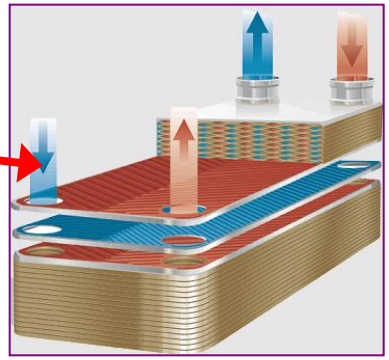
High-performance Oil Pump

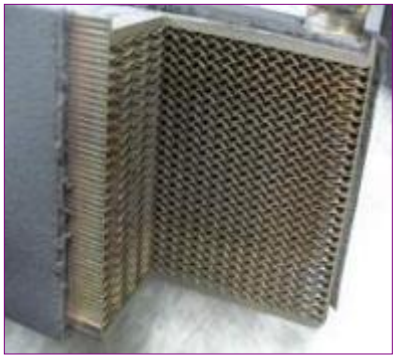
3.1.6 Plate Type Sub-cooler

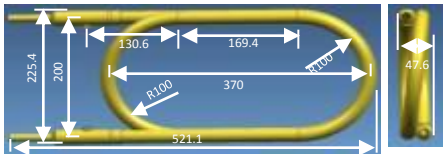
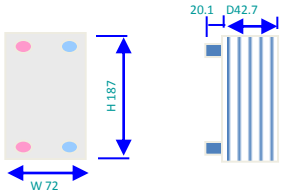
Unit: mm

Plate type Heat Exchanger

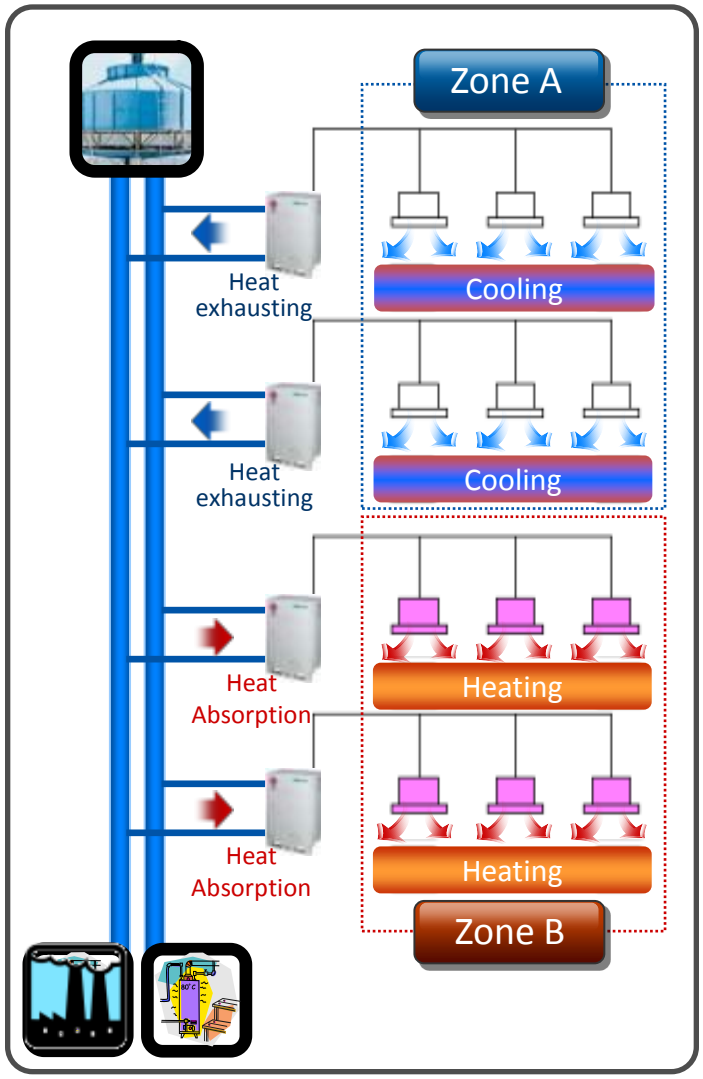






	Double Pipe	Plate HEX	Remark
Shape			Increased Sub cooling
	H254 x W521 x D47.6	H197 x W107 x D40	

3.1.7 Synchronized Operation



Optimal solution on simultaneous operation

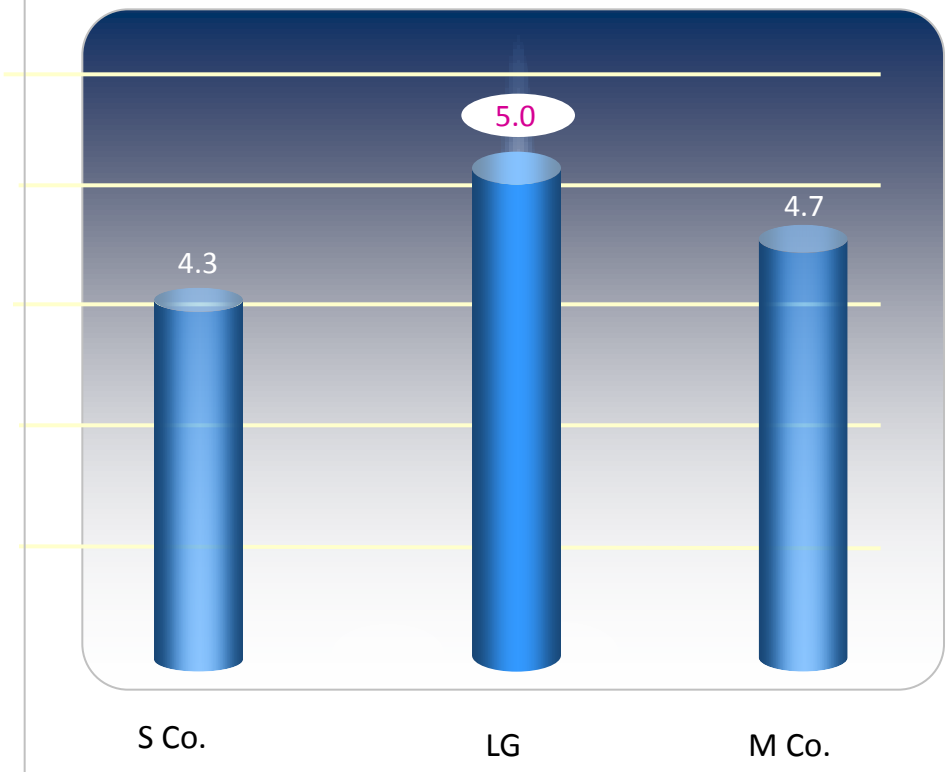
- Heating or cooling mode according to OSU.
- Need not separate Heating/Cooling pipe.
  (Central A/C : 4 pipe, W/C Multi V : 2 pipe)
- If the cooling & heating capacity are same, it operates only with the circulation of water.

High efficiency system

- Linear control with inverter system
- 40% higher COP compared with Air-cooled type
- Max. 80% higher COP in the case of simultaneous operation

3.1.8 Better Performance

Achieved World High COP!



- DC Inverter Compressor
- DC Inverter Unit Combination
- Plate Type Heat Exchanger

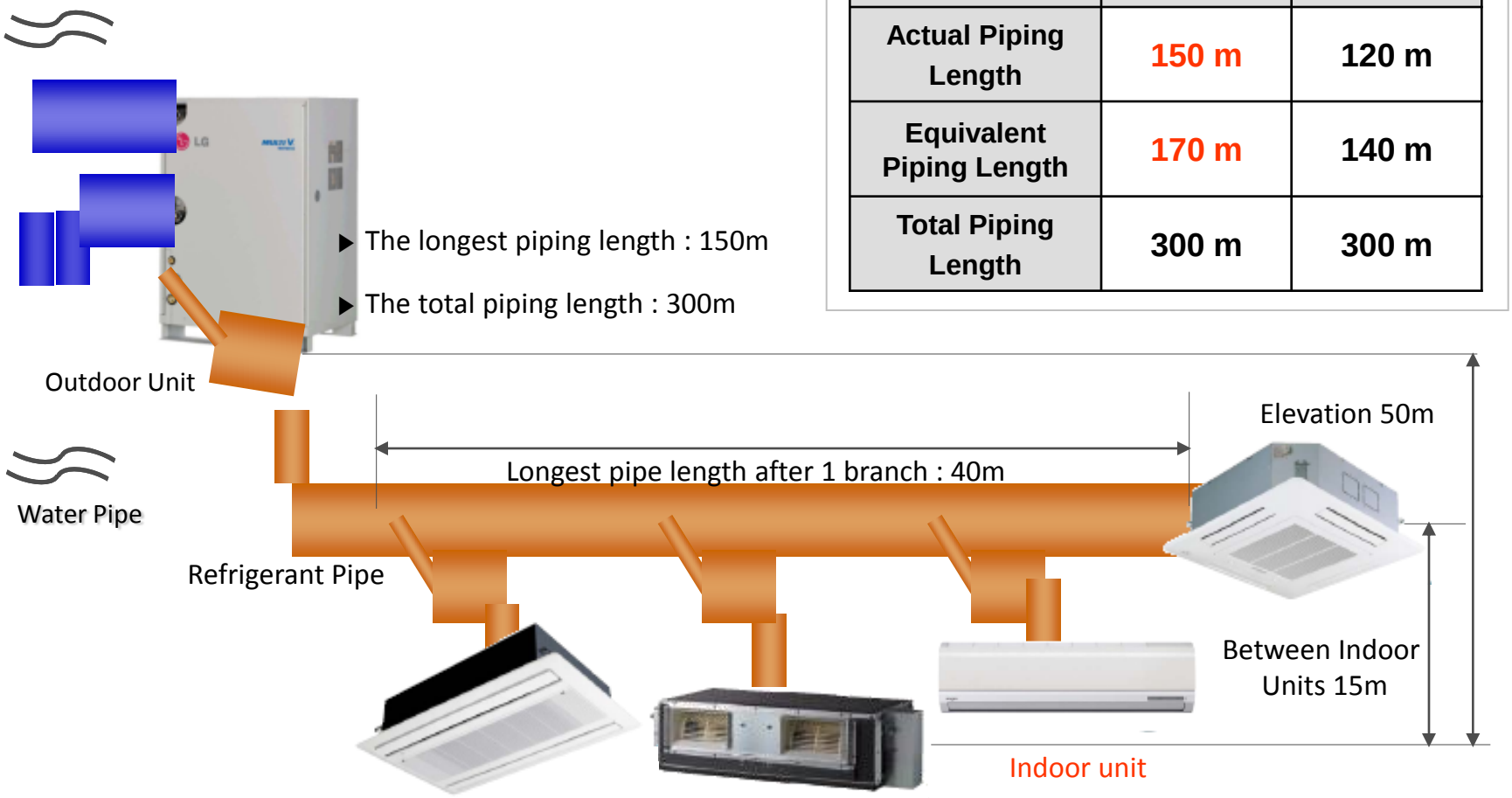
* Based on 10HP model

3.1.9 Long Piping

Longest Piping Length 150m, Total Piping Length 300m

Comparison with Competitor

	LG	A Co.
Actual Piping Length	150 m	120 m
Equivalent Piping Length	170 m	140 m
Total Piping Length	300 m	300 m



3.1.10 Black Box and Back-up Function

Black Box

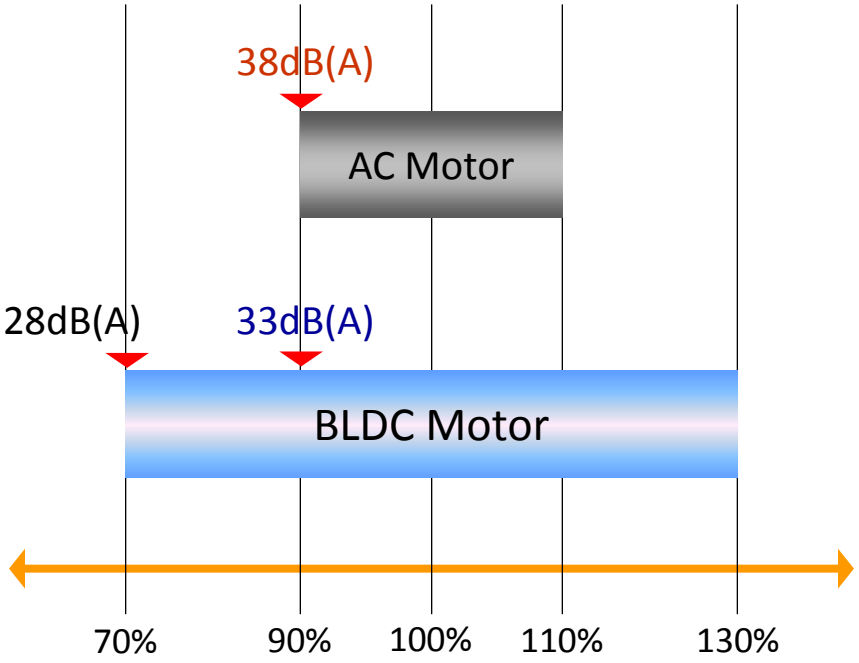
- Recording operation data history before system failure (3 min.)
- Precise Analysis & Decision
- Fast trouble-shooting

Back up function

Compressor failure situation

1. Inverter Comp. failure
2. CH21(Error code) is displayed
3. Back-up by field setting (Dip S/W)

3.1.11 BLDC Inverter Units



[Wide operation range]

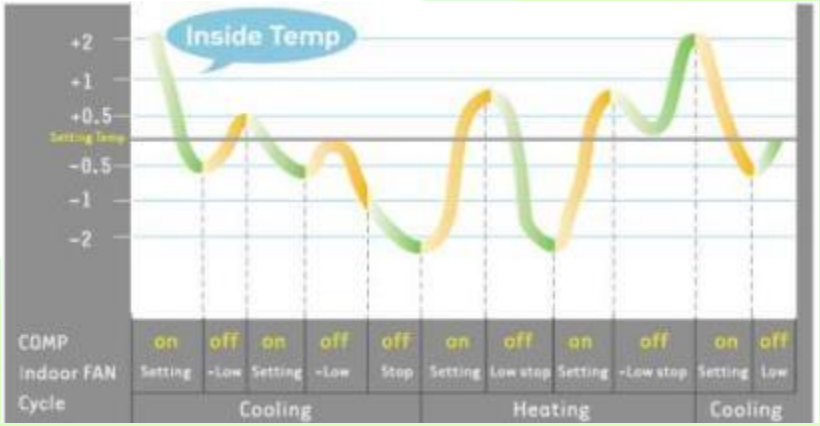
[BLDC motor for 4way]

[BLDC motor for 1way]

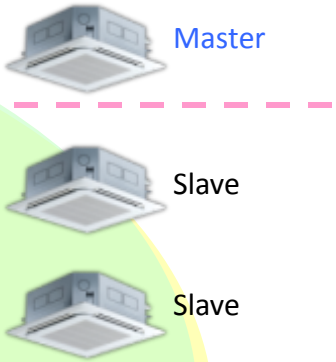
[Weight comparison]

3.1.12 Network Solution

• User-setting Auto Changeover



• Mode Override (Master / Slave)

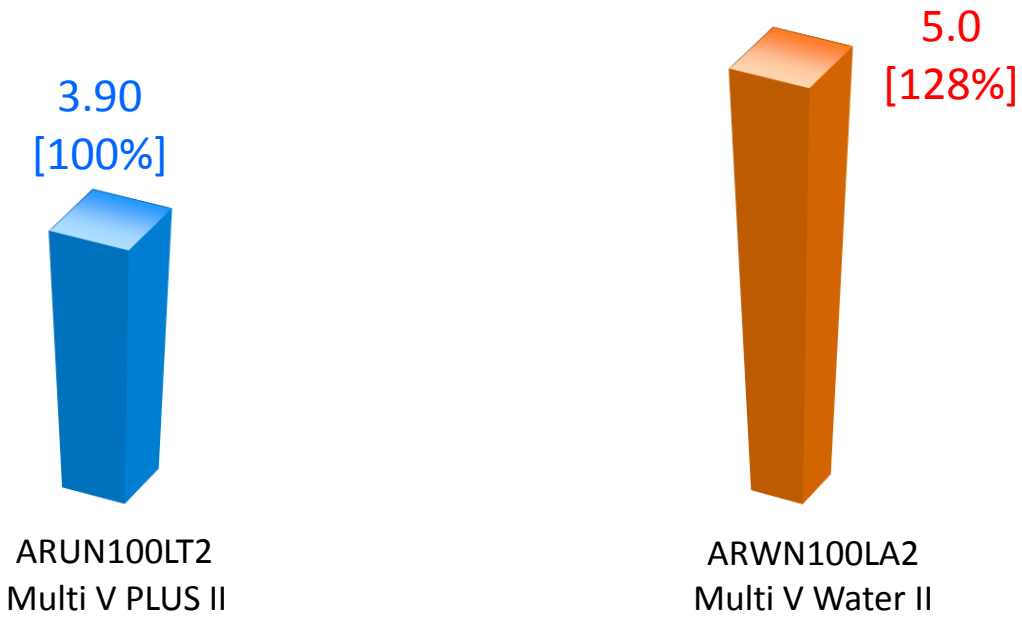


• Free Access of Group control

• Indoor Control

- Each IDU Lock Function
- Each IDU Temp. Range Setting

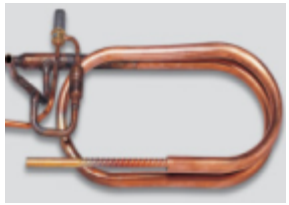
3.2.1 High Energy Efficiency



Better Performance and Stable than the same capacity air cooled system

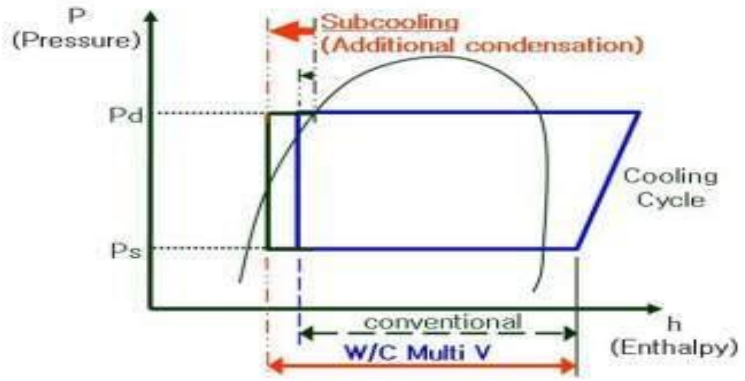
3.2.2 High Efficiency

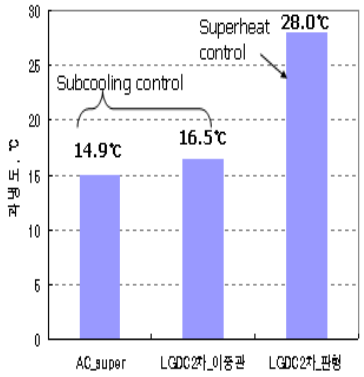
High Efficiency

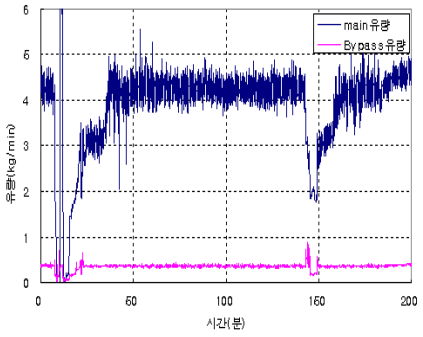


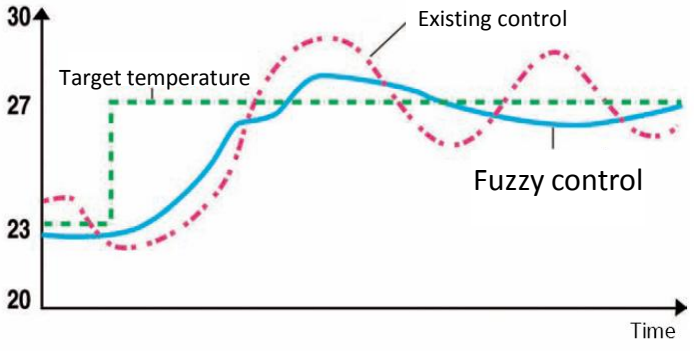
Volume
86% down

- Increase Sub Cooling : 100m height Installation
  - Optimization for EEV flow control factor
- Ensure Field Reliability
  - Stable Flow Rate, Refrigerant Noise down

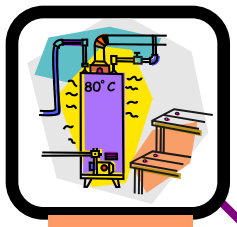








3.2.3 Self Diagnosis Function



Boiler

Cooling tower

Pump

☞ 'Flow S/W Error' caused by the water flow shortage [CH24]

- Check the cooling tower & pump
- Check the water pipe
- Check the strainer

☞ 'High pressure Error' [CH43]

- Water flow shortage
- Raise of water temperature (Check the cooling tower)
- Check the cooling cycle of product

Flow S/W error

Strainer

Flow S/W

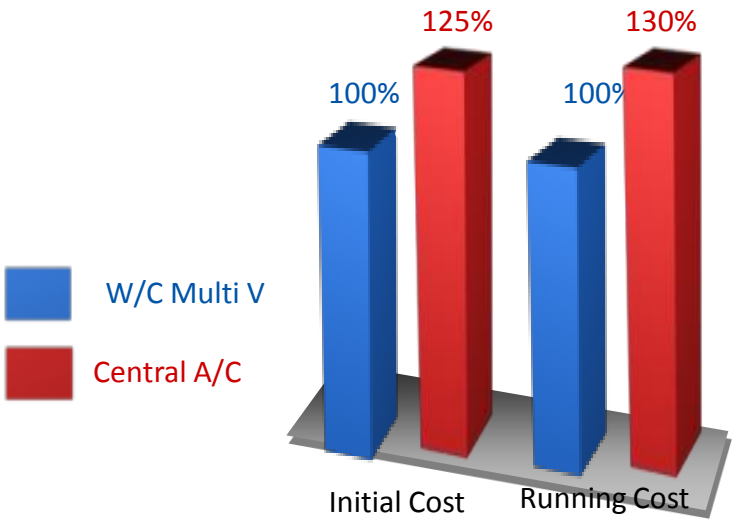
High/Low Presser error

3.3 Product Comparison

3.3.1 System Comparison

High Efficient System

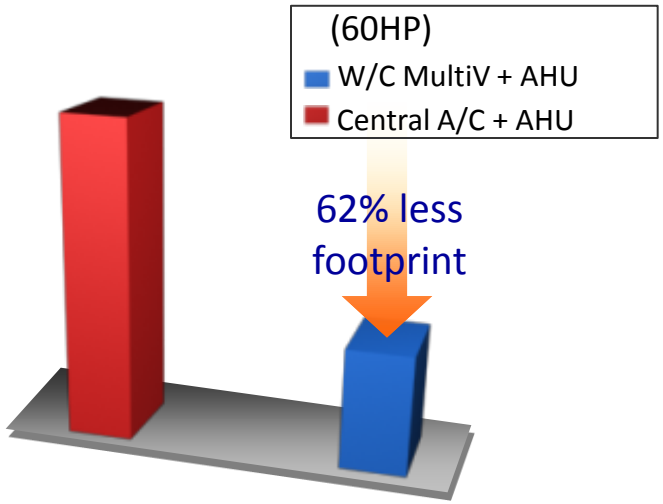
Cost Comparison



※B1F~F Office Building Case in Kazakhstan

Compact Design

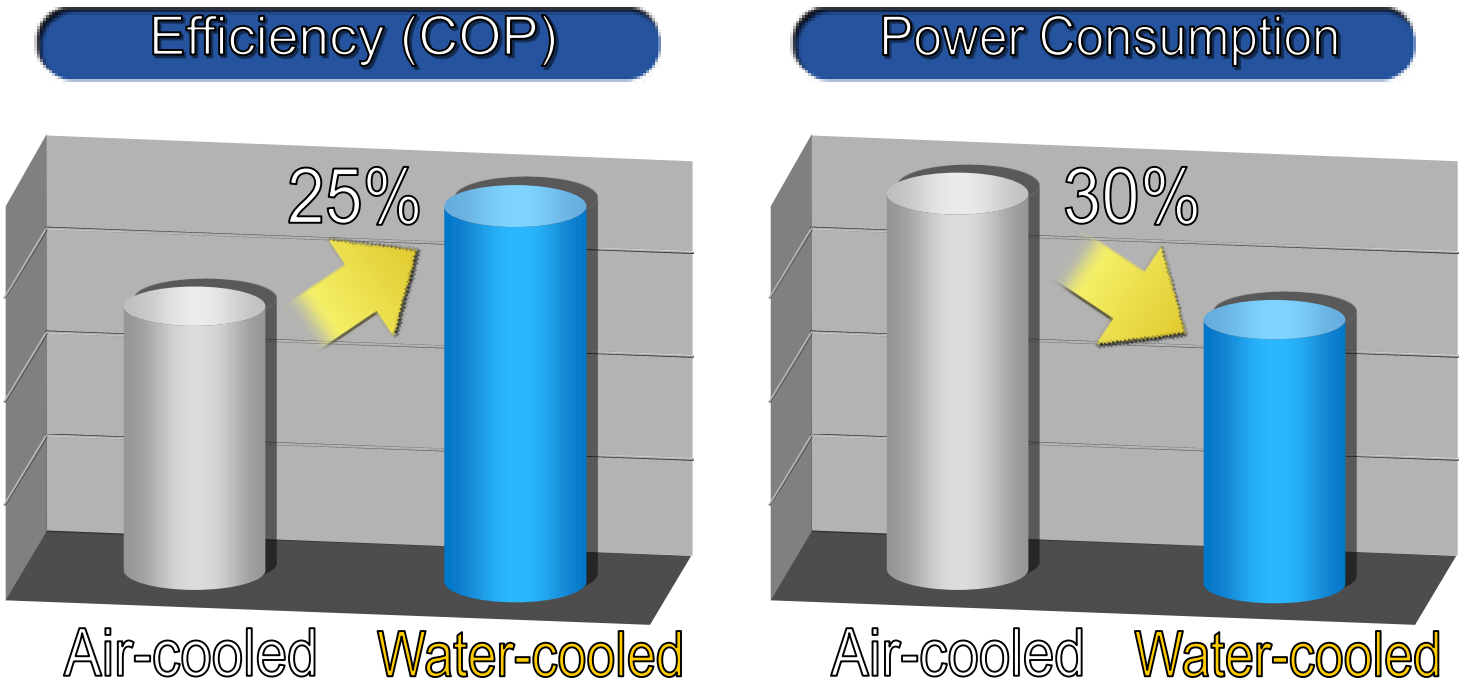
- Front SVC panel
- Weight (170kg)
- Pile up



3.4 Benefits

3.4.1 Low Running Cost

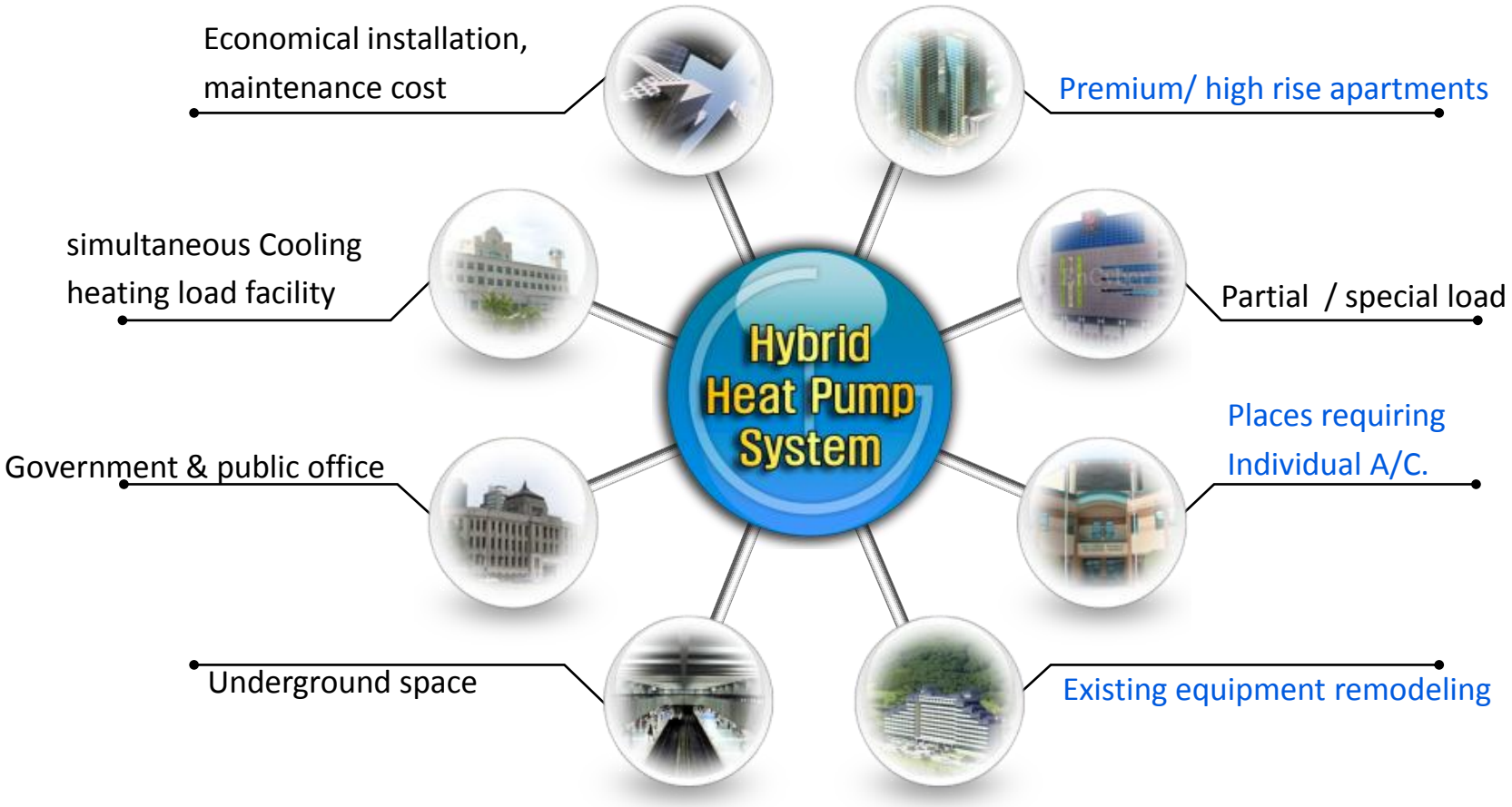
Low Running Cost



3.4 Benefits

3.4.2 Multiple Applications

Water cooled system is suitable for High rising building difficult to apply air cooled system, remodeling building installed central air conditioning system, severe cold area. etc.



3.4 Benefits

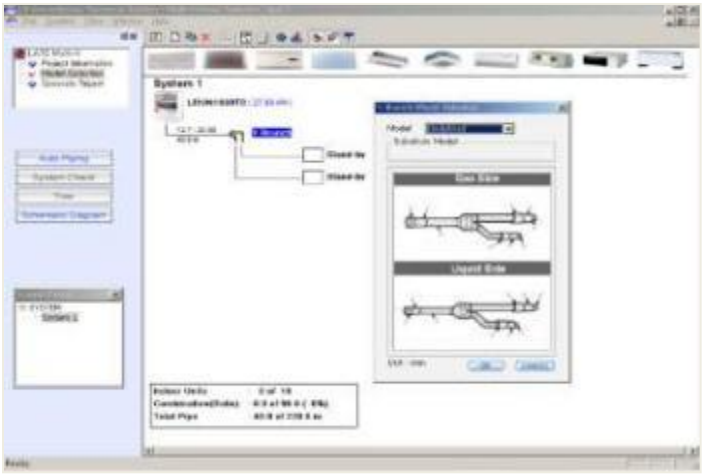
3.4.3 LG Air Conditioner Technical Solutions (LATS) - Multi V

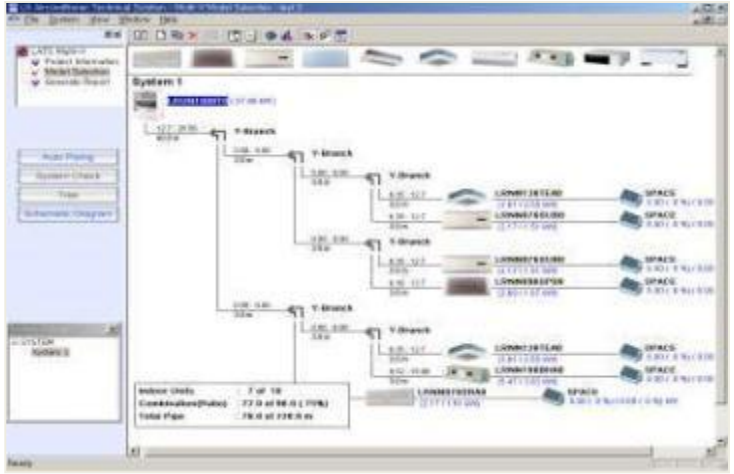
Consultant

Consultant

- Convenient model selection
- Highly user-friendly design (Autocad Version)
- Automatic piping design & check

Download & auto upgrade from Sales Supporting System
(http://www.lgeaircon.com)





<Multi V model selection>

3.4 Benefits

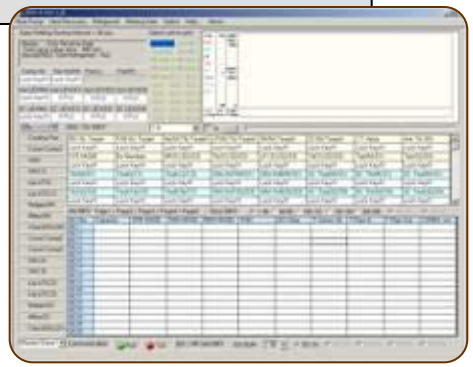
3.4.4 LG Monitoring Viewer (LGMV)

Installer

- Easy start-up, Easy trouble shooting
- Monitoring whole system such as compressor, fan, valves, etc

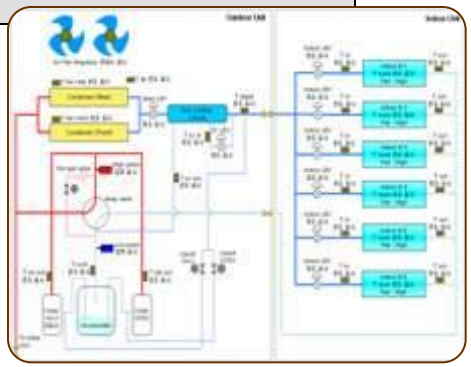
USB

- Operation State



- Indoor Controller

- Cycle View




LG
Life's Good