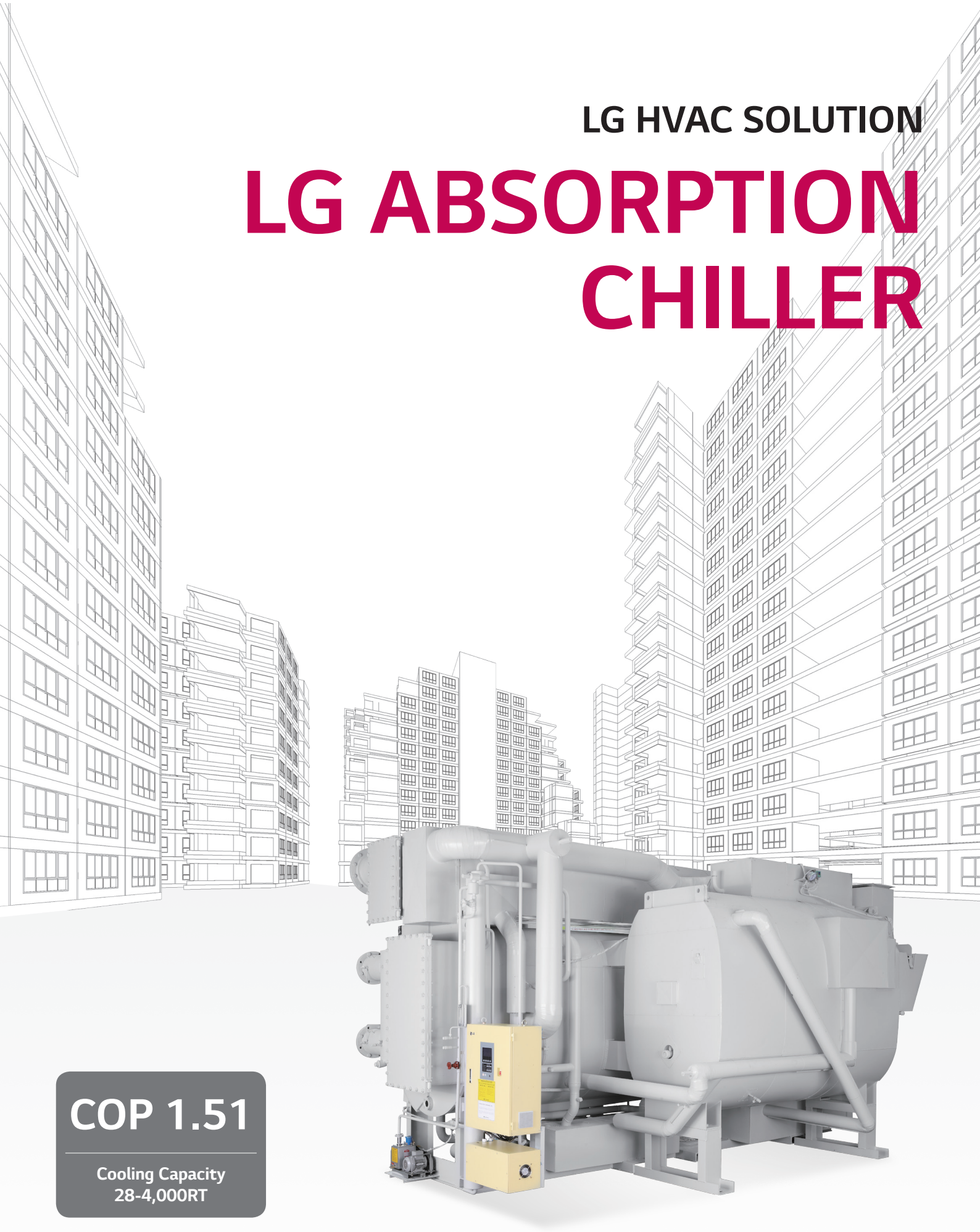
LG Business Solutions

LG HVAC SOLUTION

LG ABSORPTION CHILLER



COP 1.51

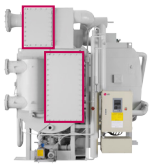
Cooling Capacity
28-4,000RT

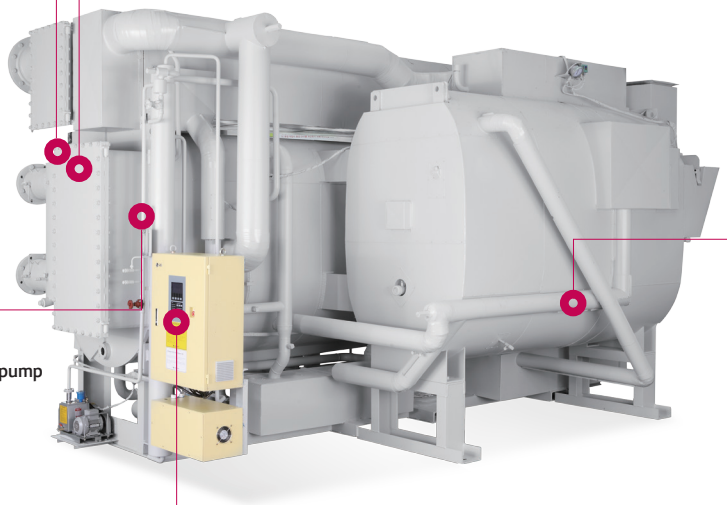
Why LG Absorption Chiller?

LG Electronics developed world class absorption chiller through advanced technologies and manufacturing/installation/operation experience over several decades. LG absorption chiller is high efficient and reliable by adapting newly designed stainless steel tube, inverter pump, and various safety functions.

Stainless Steel Tube
Corrosion resistance characteristic
Powerful heat transfer performance

Marine Type Water Box
Simple & convenience pipe cleaning





Series Solution Flow
Inverter pump : easy & reliable flow control
Simple piping line : maintenance convenience

Inverter pump

Purge System
Oil separator for protecting machine
Absorbent separator for protecting vacuum pump

Vacuum pump

Purge system

User Friendly Controller
LCD display : easy to check status
Various control functions

Direct Fired Absorption Chiller & Heater

COP 1.51

Model : WCDH
Temperature condition
- Evaporator : 12℃⟶7℃
- Condenser : 32℃⟶37℃
  Fouling Factor : 0.0001 m^2/hr ℃ kcal

High energy efficiency

- Develop COP 1.51 absorption chiller
- High part load efficiency with inverter pump

Convenience

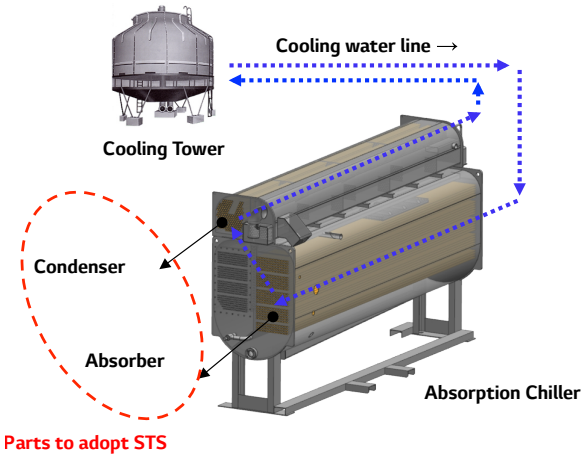
- Multi-sectional shipment
- Easy Maintenance (Simple pipe cleaning)
- Digital pressure transmitter
- Easy BMS Interface
  (Modbus, TCP/IP, BACnet, LONWORK)

Reliability & Stability

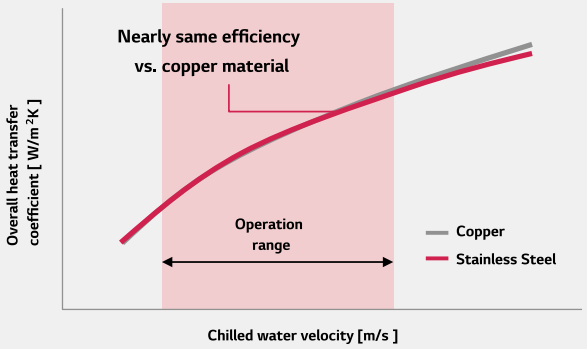
- Adopt stainless steel tube
- Gravity loading tray type dropping
- Series flow with inverter pump control
- Self-diagnosis functions, safety functions
  (Crystallization prevention, Freezing prevention, Leakage detection)

High Reliable Stainless Steel Tube

For product reliability, cooling water tubes in absorber & condenser should be protected from corrosive environment.
Specially designed stainless steel(STS) tube has much lower corrosiveness compared to copper tube.
Also, it achieved powerful heat transfer performance which is nearly same as copper tube's performance



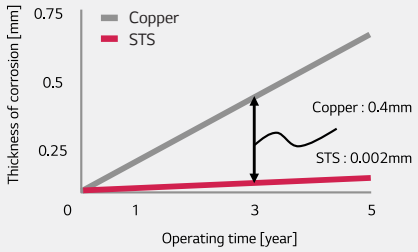
Powerful Heat Transfer efficiency Almost same (vs. copper)



Much lower corrosiveness

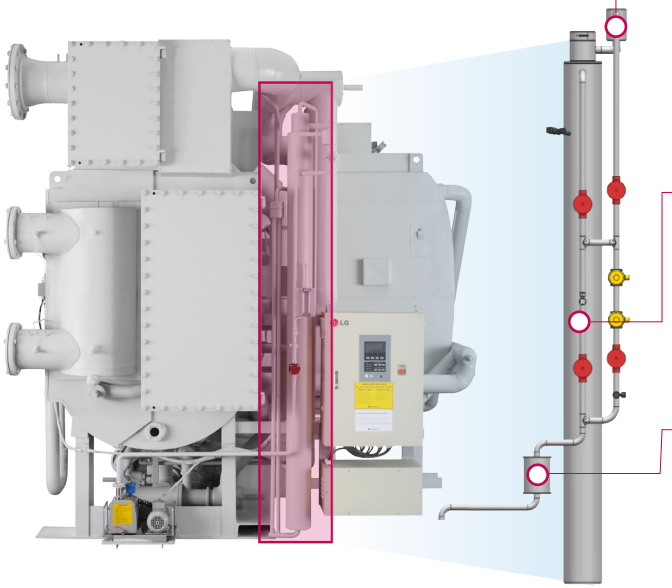
Corrosion rate : 24 times ↓
Weight Loss rate :15 times ↓

	Copper	Stainless steel (LG)
Corrosion rate (mm/year)	2,400% (0.1352700)	100% (0.0056209)
Weight loss rate (mg/year)	1,500% (-0.0196)	100% (-0.00013)

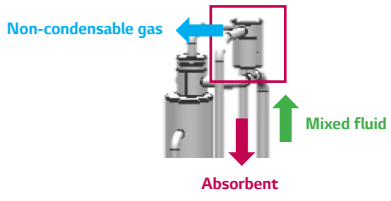


Auto purging system

Maintain stable vacuum condition by avoiding liquid carry over and oil backflow when blackout or emergency stop occur.



• **Liquid separator** → Prevention of liquid suction

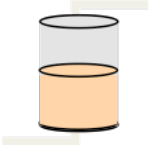


• **Digital type pressure trans mitter**

Vacuum level monitoring

• **Oil separator**

When the blackout happens, vacuum oil flow backward to machine.

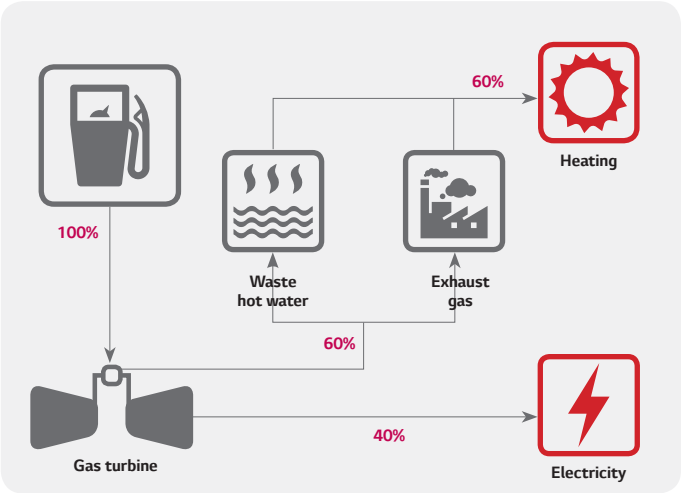


Oil separator can avoid vacuum oil backflow
➡ Vacuum pump stability & long lifetime

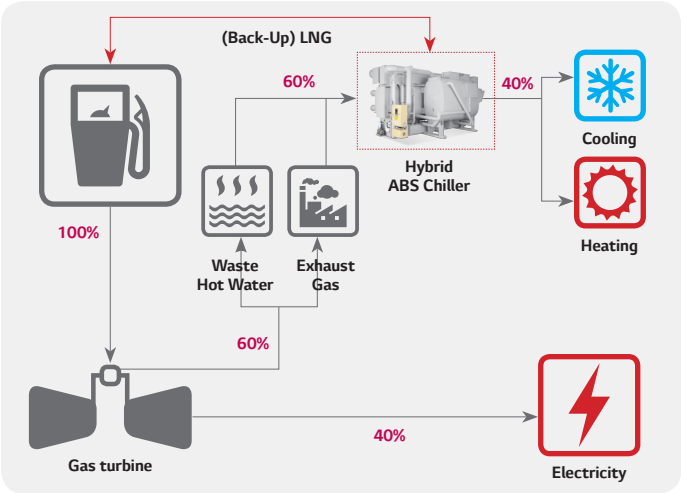
Hybrid Absorption Chiller

Hybrid absorption chiller adapted to tri-generation(electricity + steam + chilled water) system utilizes various heat sources, such as multiple source(steam/hot water) and waste heat.
By recovering waste heat, the chiller is eco-friendly and high energy efficient.

Cogeneration System



Tri-generation



By using LNG, chiller can operation in isolation from turbine.

Absorption chiller application

Product	Division	Available	Type	Efficiency(COP)	Line-up	Stainless Steelapplication (STS)		Remark
Direct fired	Ultra-High Efficiency	LNG LPG Bio-Gas Exhaust gas Oil	WCDH	1.51	100~1,500RT	Con (CU)	Gen (CU)	World class high efficiency
						Eva (CU)	Abs (CU)	
	High Efficiency		WCDN(3)	1.41	50~1,500RT	Con (STS)	Gen (CU)	Enhanced efficiency of the part load(Part load : 25 ~ 75%)
						Eva (CU)	Abs (STS)	
			WCDN(2)	1.34	100~700RT	Con (STS)	Gen (CU)	Enhanced stability & Reliability
						Eva (CU)	Abs (STS)	
	Standard Efficiency		WCDS(2)	1.12	100~1,500RT	Con (STS)	Gen (CU)	Steady best selling model
						Eva (STS)	Abs (STS)	
Hot water	2-stage Driven (Single Effect)	Inlet Temperature Standard 95°C (130 ~ 85°C)	WC2H	0.82	90~1,350RT	Con (CU)	Gen (STS)	Low Temperature outlet Outlet Temp : 55°C
						Eva (CU)	Abs (STS)	
			WC2N	0.74	90~1,350RT	Con (CU)	Gen (STS)	Low Temperature outlet Outlet Temp : 55°C
						Eva (CU)	Abs (STS)	
	1-stage Driven (Single Effect)		WCMH	0.9	30~1,350RT	Con (CU)	Gen (STS)	World Class High Efficiency Expansion of coverage (Hot water : △t 23°C) Outlet Temp : 72°C
						Eva (CU)	Abs (CU)	
Steam	Steam Pressure 1~8 kg/cm^2	Steam	WCSH	1.67	100~1,500RT	Con (CU)	Gen (STS)	High Temp Generator (STS) Low Temp Generator (CU)
						Eva (CU)	Abs (CU)	
			WCSS(2)	1.34	100~1,500RT	Con (STS)	Gen (STS)	High Temp Generator (Cu-Ni) Low Temp Generator (CU)
						Eva (STS)	Abs (STS)	
Application (Hybrid)	Complex Heat Source	Multi heat source	WCHA	-	-	Depending on site conditions		3-stage heat source (Exhaust Gas + How Water + LNG(Back-up))
			WCHW	-	-			2-stage heat source (Exhaust Gas + Hot water)
	Exhaust gas		WCEH	-	100~1,500RT			Only Exhaust gas
	Heat pump	Waste heat Source	WCPX	-	260~2,600 10^4kcal/h			1-stage heat pump

Line-up

(Unit : usRT)

Direct fired absorption chiller & heater	0	100	500	1,000	1,500	3,000
 WCDH (H Series)		100			1,500	3,000
 WCDN(3) (N Series)		50			1,500	3,000
 WCDN(2) (N Series)		100	700			3,000
 WCDS(2) (S Series)		100			1,500	3,000

(Unit : usRT)

Hot water fired absorption chiller	0	100	500	1,000	1,500	2,000	4,000
 WCMH		30			1,350	2,000	
 WC2H		90			1,350	2,000	
 WC2N		90			1,350	2,000	

(Unit : usRT)

Steam fired absorption chiller	0	100	500	1,000	1,500	4,000
 WCSH		100			1,500	4,000
 WCSS(2)		100			1,500	4,000

(Unit : usRT)

Hybrid absorption chiller	0	100	500	1,000	1,500	2,000	3,000	4,000
 WCHA		100			1,500		3,000	
WCHW		100			1,500		3,000	
WCEH		100			1,500		3,000	

(Unit : 10^4kcal/h)

Heat pump	0	300	500	1,000	1,500	2,000	3,000
 WCPX		260					2,600

* Available on request.

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