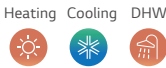


PRODUCT SPECIFICATION

R32 Hydrosplit Hydro Box



Indoor Unit

HN1600MC NK1

Outdoor Unit

HU121MRB U30 / HU123MRB U30

HU141MRB U30 / HU143MRB U30

HU161MRB U30 / HU163MRB U30



Features

- Water pipes connects IDU & ODU
- SCOP up to 4.60 (Average climate / Low temp. application): A+++
SCOP up to 3.50 (Average climate / Mid temp. application): A++
- COP up to 5.04 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient: -25 ~ 35°C / water side: 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Germany, Austria) / MCS / EUROVENT certification

* Only the outdoor units are registered in EHPA certification.

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 – 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1600MC NK1		
3 Phase Model 380 – 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MC NK1		

Seasonal Energy

Description			Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
			Indoor Unit	HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.60	4.57	4.55
		Seasonal Space Heating Efficiency (η _{ss})	%	181	180	179
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.50	3.47	3.45
		Seasonal Space Heating Efficiency (η _{ss})	%	137	136	135
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
				Indoor Unit	HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.38	2.86	3.33
		7°C	55°C		3.79	4.04	4.29
		2°C	35°C		3.01	3.31	3.83
	Cooling	35°C	18°C		2.53	3.26	4.00
		35°C	7°C		4.44	5.38	6.40
COP	Heating	7°C	35°C	W/W	5.04	4.89	4.80
		7°C	55°C		2.90	2.85	2.80
		2°C	35°C		3.65	3.63	3.60
EER	Cooling	35°C	18°C	W/W	4.75	4.30	4.00
		35°C	7°C		2.70	2.60	2.50

PRODUCT SPECIFICATION

R32 Hydrosplit Hydro Box

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
	Cooling			5 ~ 48					
Compressor	Quantity		EA	1					
	Type		-	Hermetic Sealed Scroll					
Refrigerant	Type		-	R32					
	GWP (global warming potential)		-	675					
	Precharged Amount		g	2,100					
	t-CO ₂ eq		-	1,418					
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
		Outlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
Rated Water Flow Rate (at LWT 35°C)			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55
Dimensions	Unit	W x H x D	mm	950 x 1,380 x 330					
Weight	Unit		kg	91.7					
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
	Rated Running Current	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9
		Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9
	Recommended Circuit Breaker		A	40			16		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm ² x cores	6.0 x 3C			2.5 x 5C		

- Note
- Due to our policy of innovation some specifications may be changed without notification.
 - Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
 - Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
 - Performances are based on the following conditions (It is according to EN14511):
 - Interconnected Pipe Length is standard length and difference of Elevation (Outdoor - Indoor Unit) is 0m.
 - This product contains Fluorinated greenhouse gases.

Product Specification (Indoor Unit)

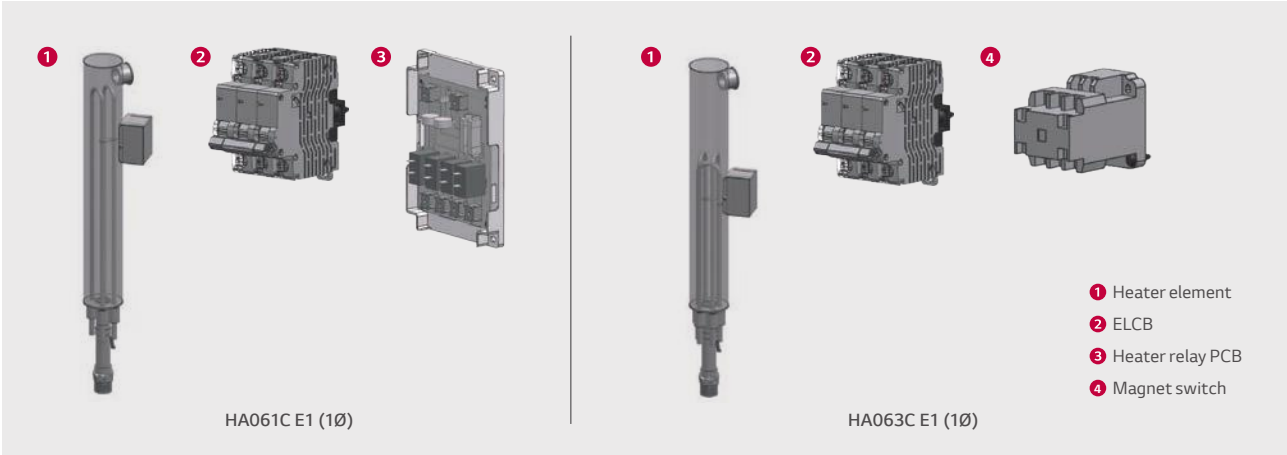
Technical Specification			Unit	HN1600MC NK1
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27) ¹⁾
	DHW			15 ~ 80 ²⁾
Flow Sensor	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~ 20
Expansion Vessel	Volume		ℓ	8
Safety Valve	Pressure Limit	Upper limit	bar	3
Piping Connections	Water Circuit	Outlet to Heat Load	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Inlet from Heat Load		Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Outlet to Outdoor Unit		Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Inlet from Outdoor Unit		Male PT 1" according to ISO 7-1 (tapered pipe threads)
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm ² x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	44
Dimensions	Unit	W x H x D	mm	490 x 850 x 315
Weight	Unit		kg	30.5
Exterior	Color / RAL Code		-	Noble White / RAL 9016

- 1) When fan coil unit not used.
 2) DHW 58-80°C Operating is available only when the booster heater is operating.

- Note
- Due to our policy of innovation some specifications may be changed without notification.
 - Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
 - Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
 - This product contains Fluorinated greenhouse gases.

Accessory Parts (Optional Accessory)

Backup Heater



Electrical Specification			HA061C E1 (1Ø)	HA063C E1 (1Ø)
Backup Heater	Type	-	Sheath	
	No. of Heating Coil	EA	2	3
	Max. Power Consumption	kW	3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Step	Step	1	1
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50	380 ~ 415, 3, 50
	Current (rated)	A	24.0	8.7
	Circuit Breaker (ELCB)	A	40	20
Wiring Connection	Power Cable (included earth, H07RN-F)	mm ² x cores	6.0 x 3C	2.5 x 5C

Accessory Parts (Separately Provided)

Strainer



Technical Specification		Details
Material	Body	Brass
	Mesh	Stainless steel (STS304)
Mesh	Mesh No.	30
	Max. Particle Size	0.6mm
Piping Connection		Female G 1" according to ISO 228-1

Maximum Heating Capacity (Including Defrost Effect)

[illegible]

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
	-25°C DB	10.04	9.21	8.76	8.62	-	-	-
	-20°C DB	11.82	11.25	10.95	10.67	10.59	-	-
	-15°C DB	12.52	12.90	13.26	12.88	12.81	12.63	-
	-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	-
	-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
	-25°C DB	10.98	10.00	9.50	9.33	-	-	-
	-20°C DB	13.43	12.54	12.03	11.78	11.47	-	-
	-15°C DB	14.23	14.39	14.50	13.95	13.86	13.12	-
	-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	-
	-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	

Maximum Cooling Capacity

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
30°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	11.75	12.00	12.00	12.00	12.00	12.00	12.00
45°C DB	11.50	12.00	12.00	12.00	12.00	12.00	12.00

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
30°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	13.75	14.00	14.00	14.00	14.00	14.00	14.00
45°C DB	13.50	14.00	14.00	14.00	14.00	14.00	14.00

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
30°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	15.75	16.00	16.00	16.00	16.00	16.00	16.00
45°C DB	15.50	16.00	16.00	16.00	16.00	16.00	16.00

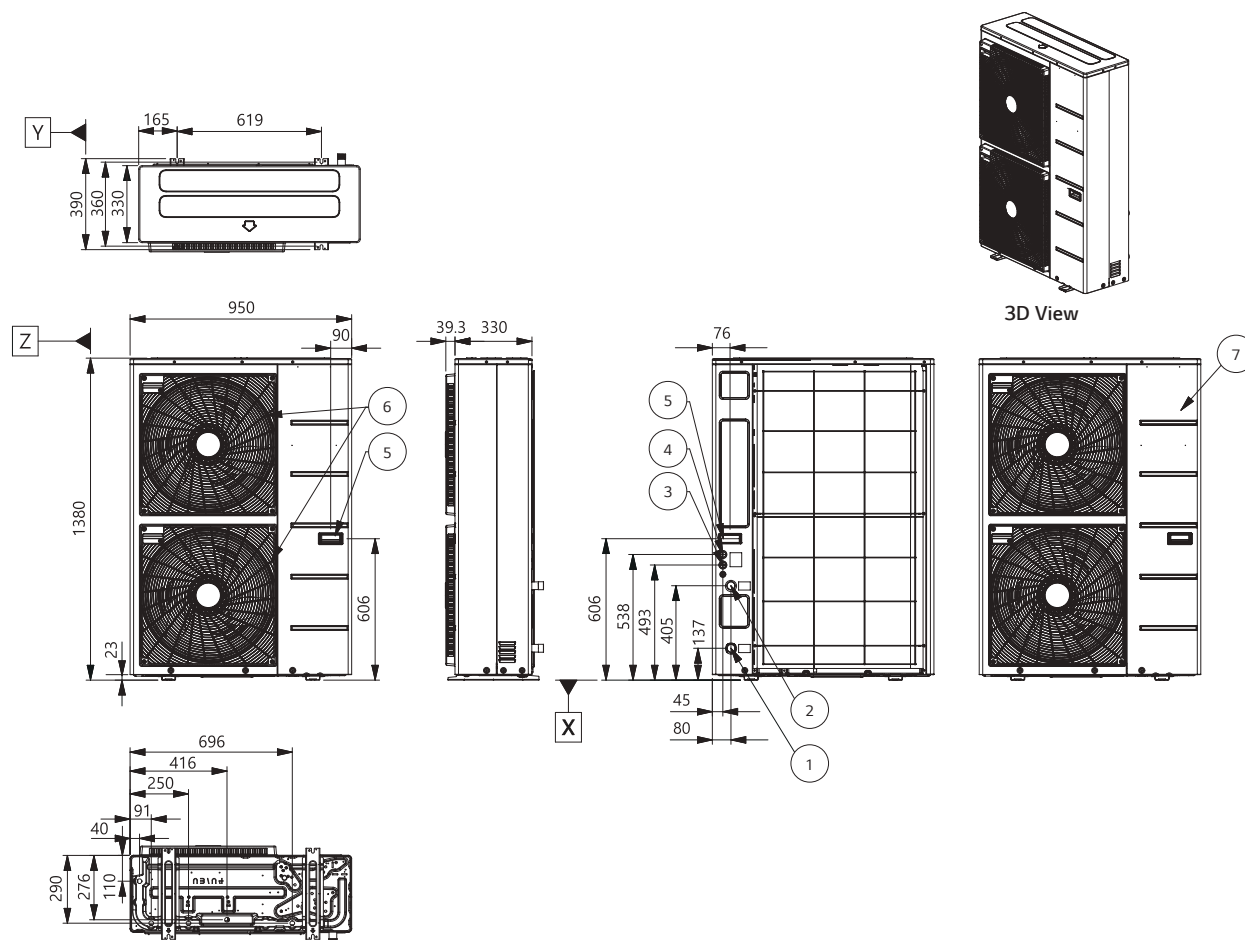
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1600MC NK1		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MC NK1		

HU121MRB U30 / HU141MRB U30 / HU161MRB U30
HU123MRB U30 / HU143MRB U30 / HU163MRB U30

[Unit : mm]



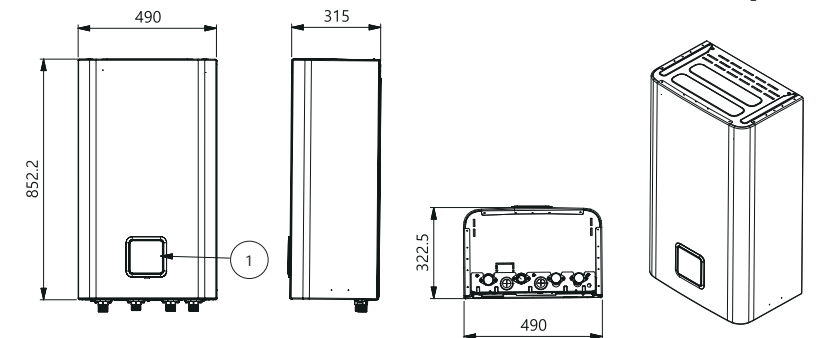
No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Unit Power	Power cable hole
4	Low Voltage	Communication cable hole
5	Handle	-
6	Air Outlet	-
7	Side Panel	-

078

HN1600MC NK1

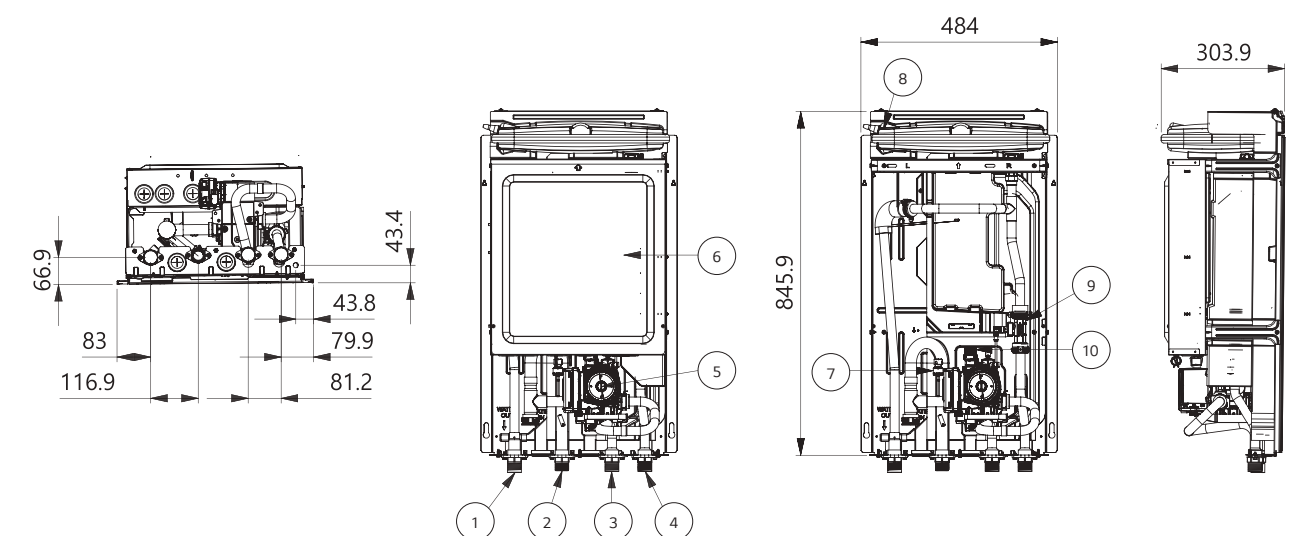
Unit : mm]

External



No.	Part Name	Description
1	Control Panel	Built-in remote controller

Internal



No.	Part Name	Description
1	Heating Circuit Outlet Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Heating Circuit Inlet Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Outlet Pipe to Outdoor Unit	Male PT 1" according to ISO 7-1 (tapered pipe threads)
4	Inlet Pipe to Outdoor Unit	Male PT 1" according to ISO 7-1 (tapered pipe threads)
5	Water Pump	GRUNDFOS UPML 20-105 CHBL
6	Control Box	PCB and Terminal blocks
7	Pressure Sensor	SENSATA 2HMP3-04W, 0-2Mpa
8	Expansion Tank	8 Liter, 3/4" connection
9	Flow Sensor	Flow range : 5 ~ 80 LPM
10	Safety Valve	Open at water pressure 3 bar

79