



Containerized Hot Water Boiler Rooms

A containerized boiler room is a transportable source of hot water for heating and technological purposes. It is adapted for hot water supplies to be used for heating buildings with potential heating of hot utility water. It is of special advantage in situations requiring the construction of a thermal source in a short time. The boiler room installation requires minimum space and minimum site preparation, minimum electrical installations and system of measuring and control. The boiler rooms are supplied with a burner for burning gaseous or liquid fuels. A standard boiler room set includes a self-supporting steel chimney.

Technical Specifications

A containerized hot water boiler room is completely fitted with machinery and electrical equipment housed in transportable containers suitable for railway transport. The installation is performed on site. The equipment includes the necessary piping, including pumps, a water treatment plant, system protection by means of an enclosed expansion vessel, the respective electrical installations of the system of measuring and control. Each boiler room type is supplied with a self-supporting steel chimney. On clients' request, the system may be supplemented with circulation pumps supplying the heat transfer liquid into the heating network with all related equipment for the preparation of hot utility water. The set also includes a regulative gas station.

MKJ modules with co-generating units based on gas engines or diesel generator sets, added to the containerized boiler room, serve for power generation to be supplied into the distribution network or for the boiler room operation in the case of a non-stable supply of electricity or in locations without access to the distribution network. Waste heat arising during the operation of these units can be used for hot utility water production or supplied into the heating system. The unit is supplied in a separate container of the same type.

The table below displays the basic technical data for boilers with outputs ranging up to 6 MW. Boiler rooms with outputs from 7 to 20 MW are designed individually on request, and, therefore, they are not included in the table. These boiler rooms, in their turn, are not housed in unified containerized modules, but they are transported to the operation site in pieces, in separate module containers, where they are assembled into one block.

Boiler Room Modulation

The required thermal power unit may be obtained by combining individual containerized boiler rooms of a modular system (see below).

Supply and Storage

A containerized boiler room is supplied as a unit, including a case (boiler, water treatment plant, system protection, operating heavy current wiring, system of measuring and control) and a container with a co-generating unit, including a self-supporting steel chimney. Installations for the preparation of hot utility water and a regulative gas station may be supplied on request.



Technical Parameters - Part No.1

PV Boiler Room	Units	PV 0,16	PV 0,25	PV 0,4	PV 0,65	PV 1	PV 1,6	PV 2,5
Rated output	kW	160	250	400	650	1000	1600	2500
Maximum output	kW	180	290	465	730	1150	1860	2900
Minimum output	kW	50	75	120	200	300	560	870
Number of boilers (the second one as a 100% back-up)	ks	TKU 160 TKU 160	TKU 250 TKU 250	TKU 400 TKU 400	TKU 650 TKU 650	TKU 1000 TKU 1000	TKU 1600 TKU 1600	TKU 2500 TKU 2500
Maximum allowable overpressure	MPa	0,6; (0,9; 1,4 ; 1,8)						
Water temperature drop	°C	90/70						
Minimum temperature of input water	°C	70						
Maximum temperature of output water	°C	110						
Minimum water volume flow	Nm ³ /h	3,6	5,6	9,2	14,1	22,4	36,8	58
Boiler efficiency	%	90 - 94						
Combustion air temperature	°C	20						
Maximum fuel consumption: - Natural gas - LO	Nm ³ /h kg/hr	20,5 18,4	33 30	52 47	83 75	130 117	211 190	330 297
Maximum of air for combustion (lambda=1,1)	Nm ³ /h	217	350	561	880	1387	2244	3498
Maximum amount of flue gases	Nm ³ /h	238	383	614	964	1518	2455	3828
Total electric input (SAHARA E) ¹	kW	23	23,5	24,5	25,5	26	41,5	45
Total electric input (SAHARA V) ²	kW	12	12,5	13,5	14,5	15	19,5	20,5
Electrical wiring		3 x 380V/50Hz						
Emissions ⁴								
Natural gas - standard / low emission	mg/Nm ³	NOx - 160, CO - 50 / NOx - 100, CO - 50						
LO	mg/Nm ³	NOx - 450, CO - 175, SO ₂ - 1000, solid substances - 100, smoke rate < 2						
Boiler Room Weight								
Basic / Operating weight	kg	12000 / 18000						
MKJ module with co-generating unit for electricity and thermal energy generation								
MKJ module ³	-	MKJ45	MKJ45	MKJ45	MKJ45	MKJ45	MKJ45	MKJ45
Power output per unit	kW	45	45	45	45	45	45	45
Thermal output per unit	kW	80,5	80,5	80,5	80,5	80,5	80,5	80,5
Technical changes are reserved								

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Technical Parameters - Part No.2

PV Boiler Room	Units	PV 3,5	PV 4,0	PV 5,0	PV 6,0
Rated output	<i>kW</i>	3500	4000	5000	6000
Maximum output	<i>kW</i>	4000	5000	6250	7500
Minimum output	<i>kW</i>	1100	1200	1500	1800
Number of boilers (the second one as a 100% back-up)	<i>ks</i>	KTU3500 KTU3500	KTU4000 KTU4000	KTU5000 KTU5000	KTU6000 KTU6000
Maximum allowable overpressure	<i>MPa</i>	0,6; (0,9; 1,4 ; 1,8)			
Water temperature drop	<i>°C</i>	90/70			
Minimum temperature of input water	<i>°C</i>	70			
Maximum temperature of output water	<i>°C</i>	110			
Minimum water volume flow	<i>Nm³/h</i>	81,2	92,8	116	139,2
Boiler efficiency	<i>%</i>	90 - 94			
Combustion air temperature	<i>°C</i>	20			
Maximum fuel consumption: - Natural gas - LO	<i>Nm³/h</i> <i>kg/hr</i>	462 402	528 503	698 627	839 753
Maximum of air for combustion (lambda=1,1)	<i>Nm³/h</i>	4897	5597	7399	8893
Maximum amount of flue gases	<i>Nm³/h</i>	5396	6167	8153	9799
Total electric input (SAHARA E) ¹	<i>kW</i>	52	56	59	60
Total electric input (SAHARA V) ²	<i>kW</i>	21,5	22	-	-
Electrical wiring		3 x 380V/50Hz			
Emissions ⁴					
Natural gas - standard / low emission	<i>mg/Nm³</i>	NOx - 160, CO - 50 / NOx - 100, CO - 50			
LO	<i>mg/Nm³</i>	NOx - 450, CO - 175, SO ₂ - 1000, solid substances - 100, smoke rate < 2			
Boiler Room Weight					
Basic / Operating weight	<i>kg</i>	25000 / 50000			
MKJ module with co-generating unit for electricity and thermal energy generation					
MKJ Module ³	-	MKJ75	MKJ75	MKJ75	MKJ75
Power output per unit	<i>kW</i>	75	75	75	75
Thermal output per unit	<i>kW</i>	125	125	125	125
Technical changes are reserved					

1) if the SAHARA electric heating unit is used

2) if the SAHARA water heating unit is used

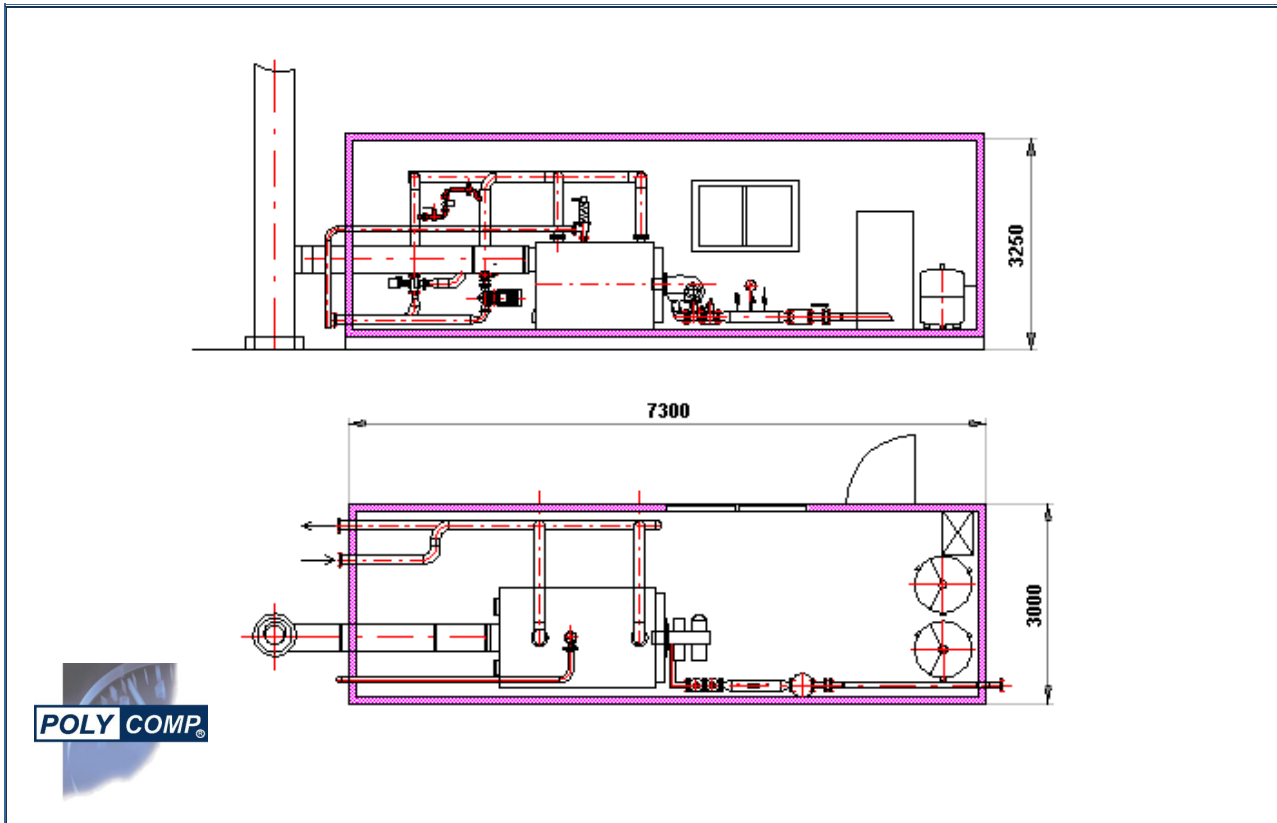
3) added units assure the total power input of the boiler room applying the SAHARA electric heating unit

4) Emission relate to 3% of O₂ in dry combustion products at t = 0°C and barometric pressure. The given emission levels may be maintained only provided that the liquid fuel contains (except for values according to CSN 656506) maximally: S < 5 000 mg/kg, N < 1 000 mg/kg, asphaltenes < 3 %.

Boiler rooms with outputs of 7000 to 20000 kg/hour are designed individually on request.

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Containerised Hot Water Boiler Rooms PV 0,16 - 1 MW



Containerised Hot Water Boiler Rooms PV 1 - 3,5 MW

