Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 35 ←	
Model		Pellet boiler	
Specifics			
Nominal heat output		8,83 kW ← MIN OUTPUT	
Test place		Thiene	
Test date		01/09/2011	
Type of test		prEN 303-5:2010 Reduced load ← MIN INPUT	
		1. Period	
Test date		01/09/2011	
Time		10.30-16.30	
Ambient:			
Ambient pressure, measurement	mbar	1005	
Air temperature (combustion air), measurement	°C	28,9	
Humidity of combustion air, measurement	%	45	
Ambient temperature, measurement	°C	28,9	
Fuel:			
Type of fuel		Wood pellets	
Number of fuel tasks		1	
Weight of the stove, start, measurement	kg	489,66	
Weight of the stove, end, measurement	kg	478,08	
Weight of additional fuel tasks	kg	11,58	
Fuel consumption, calculated of the difference	sec	21600	
Test duration, measurement			
Fuel consumption "B"	kg/h	1,930	
Combustible constituents in material passing through the grate "b", analyse	Gew. %	15,0	
Residue passing through the grate, measurement	kg	0,220	
Residue passing through the grate "R"	Gew. %	1,9	
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew. %	0,28	
Water side, measurement			
Flow, measurement	°C	73,2	
Return, measurement	°C	51,3	
Delta T	K	21,9	
Cold water flow, measurement	kg/h	346,9	
Additional energy of the pump	kW	0,000	
Flue, average			
Flow, measurement	°C	58,0	
Flue draught, measurement	Pa	10,0	
O_2 - concentration, measurement	Vol.-%	12,1	
CO_2 - concentration, calculated	Vol.-%	8,5	—
lambda figure	-	2,356	
CO - concentration, measurement	ppm	265,5	
CO - concentration, measurement	Vol.-%	0,027	
CO - concentration, measurement	mg/m³	331,9	
CO - concentr. (at reference - O_2)	Vol.-%	0,033	
CO - concentr. (at reference - O2)	mg/m³	412,1	—
CO - concentration	mg/kWh	699,3	
CO - concentration	mg/MJ	194,2	
NOx - concentration, measurement	ppm	102,6	
NOx - concentration, measurement	mg/m³	210,4	
NOx - concentr. (at reference - O2)	mg/m³	261,2	
NOx - concentration	mg/kWh	443,2	
NOx - concentration	mg/MJ	123,1	
CnHm concentration, measurement	ppm	4,3	
CnHm concentration, measurement	mg/m³	7,0	
CnHm concentr. (at reference - O2)	mg/m³	8,7	
CnHm - concentration (total C)	mg/kWh	14,8	
CnHm - concentration (total C)	mg/MJ	4,1	
Dust, measurement*	mg	0,0	
Dust, measurement*	mg/m³	0,0	
Dust (at reference - O2)*	mg/m³	0,0	
Dust*	mg/kWh	0,0	
Dust*	mg/MJ	0,0	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 35	
Model		Pellet boiler	
Specifics			
Nominal heat output		8,83 kW	
Test place		Thiene	
Test date		01/09/2011	
Type of test		prEN 303-5:2010 Reduced load	
		1. Period	
Test date		01/09/2011	
Time		10.30-16.30	
Calculation			
"Qa" loss free heating flue gas	kJ/kg	449,9	
"qa" loss flue gas	%	2,54	
"Qb" loss fix heating in flue gas	kJ/kg	34,8	
"qb" loss fix heating in flue gas	%	0,20	
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	95,5	
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,54	
"m" flue gas mass flow	g/s	7,6	
cpm, acc. DIN 4702-2, version 03.90for dry flue gas	kJ/(m³K)	1,33	
"eta" Efficiency (direct), to consider only water heating output Pw	%	93,02	
"eta" Efficiency (indirect)	%	93,63	
Heating input	kW	9,50	
"Pw" water heating output	kW	8,83	
Adjustments			
Flue gas motor	rpm	580	
Ambient motor	-	-	
Fuel motor	sec	2	
Cleaning time	min	60	
Firedoor	open/closed	closed	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 35 ←	
Model		Pellet boiler	
Specifics			
Nominal heat output		31,26 kW ← MAX OUTPUT	
Test place		Thiene	
Test date		31/08/2011	
Type of test		prEN 303-5:2010	
		Nominal load ← MAX INPUT	
		1. Period	
Test date		31/08/2011	
Time		11.15-17.15	
Ambient:			
Ambient pressure, measurement	mbar	1005	
Air temperature (combustion air), measurement	°C	30,0	
Humidity of combustion air, measurement	%	42	
Ambient temperature, measurement	°C	30,0	
Fuel:			
Type of fuel		Wood pellets	
Number of fuel tasks		1	
Weight of the stove, start, measurement	kg	502,96	
Weight of the stove, end, measurement	kg	462,00	
Weight of additional fuel tasks	kg	40,96	
Fuel consumption, calculated of the difference	sec	21600	
Test duration, measurement			
Fuel consumption "B"	kg/h	6,826	
Combustible constituents in material passing through the grate "b", analyse	Gew. %	15,0	
Residue passing through the grate, measurement	kg	0,220	
Residue passing through the grate "R"	Gew. %	0,5	
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew. %	0,08	
Water side, measurement			
Flow, measurement	°C	72,9	
Return, measurement	°C	48,6	
Delta T	K	24,4	
Cold water flow, measurement	kg/h	1105,0	
Additional energy of the pump	kW	0,000	
Flue, average			
Flow, measurement	°C	109,2	
Flue draught, measurement	Pa	10,0	
O_2 - concentration, measurement	Vol.-%	8,0	
CO_2 - concentration, calculated	Vol.-%	12,5	
lambda figure	-	1,614	
CO - concentration, measurement	ppm	189,0	
CO - concentration, measurement	Vol.-%	0,019	
CO - concentration, measurement	mg/m³	236,2	
CO - concentr. (at reference - O_2)	Vol.-%	0,016	
CO - concentr. (at reference - O2)	mg/m³	200,5	
CO - concentration	mg/kWh	340,2	
CO - concentration	mg/MJ	94,5	
NOx - concentration, measurement	ppm	149,4	
NOx - concentration, measurement	mg/m³	306,3	
NOx - concentr. (at reference - O2)	mg/m³	260,0	
NOx - concentration	mg/kWh	441,2	
NOx - concentration	mg/MJ	122,5	
CnHm concentration, measurement	ppm	3,6	
CnHm concentration, measurement	mg/m³	5,9	
CnHm concentr. (at reference - O2)	mg/m³	5,0	
CnHm - concentration (total C)	mg/kWh	8,6	
CnHm - concentration (total C)	mg/MJ	2,4	
Dust, measurement*	mg	0,0	
Dust, measurement*	mg/m³	0,0	
Dust (at reference - O2)*	mg/m³	0,0	
Dust*	mg/kWh	0,0	
Dust*	mg/MJ	0,0	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 35	
Model		Pellet boiler	
Specifics			
Nominal heat output		31,26 kW	
Test place		Thiene	
Test date		31/08/2011	
Type of test		prEN 303-5:2010 Nominal load	
		1. Period	
Test date		31/08/2011	
Time		11.15-17.15	
Calculation			
"Qa" loss free heating flue gas	kJ/kg	893,2	
"qa" loss flue gas	%	5,04	
"Qb" loss fix heating in flue gas	kJ/kg	17,0	
"qb" loss fix heating in flue gas	%	0,10	
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	27,0	
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,15	
"m" flue gas mass flow	g/s	19,0	
cpm, acc. DIN 4702-2, version 03.90for dry flue gas	kJ/(m³K)	1,35	
"eta" Efficiency (direct), to consider only water heating output Pw	%	93,08	← 3
"eta" Efficiency (indirect)	%	93,38	
Heating input	kW	33,59	
"Pw" water heating output	kW	31,26	
Adjustments			
Flue gas motor	rpm	1900	
Ambient motor	-	-	
Fuel motor	sec	7,1	
Cleaning time	min	60	
Firedoor	open/closed	closed	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 22	
Model		Pellet boiler	
Specifics			
Nominal heat output		20,0 kW	
Test place		Thiene	
Test date		29/08/2011	
Type of test		DIN EN 303-5	
		Nominal load	MAX INPUT
		1. Period	
Test date		29/08/2011	
Time		11.30-17.30	
Ambient:			
Ambient pressure, measurement	mbar	1004	
Air temperature (combustion air), measurement	°C	29,3	
Humidity of combustion air, measurement	%	38	
Ambient temperature, measurement	°C	29,3	
Fuel:			
Type of fuel		Wood pellets	
Number of fuel tasks		1	
Weight of the stove, start, measurement	kg	523,87	
Weight of the stove, end, measurement	kg	498,08	
Weight of additional fuel tasks	kg	25,79	
Fuel consumption, calculated of the difference	sec	21600	
Test duration, measurement			
Fuel consumption "B"	kg/h	4,298	
Combustible constituents in material passing through the grate "b", analyse	Gew. %	15,0	
Residue passing through the grate, measurement	kg	0,220	
Residue passing through the grate "R"	Gew. %	0,9	
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew. %	0,13	
Water side, measurement			
Flow, measurement	°C	70,7	
Return, measurement	°C	49,4	
Delta T	K	21,3	
Cold water flow, measurement	kg/h	808,8	
Additional energy of the pump	kW	0,000	
Flue, average			
Flow, measurement	°C	91,0	
Flue draught, measurement	Pa	10,0	
O_2 - concentration, measurement	Vol.-%	8,6	
CO_2 - concentration, calculated	Vol.-%	12,0	
lambda figure	-	1,681	
CO - concentration, measurement	ppm	209,2	
CO - concentration, measurement	Vol.-%	0,021	
CO - concentration, measurement	mg/m³	261,5	
CO - concentr. (at reference - O_2)	Vol.-%	0,018	
CO - concentr. (at reference - O2)	mg/m³	231,2	
CO - concentration	mg/kWh	392,4	
CO - concentration	mg/MJ	109,0	
NOx - concentration, measurement	ppm	153,9	
NOx - concentration, measurement	mg/m³	315,5	
NOx - concentr. (at reference - O2)	mg/m³	279,0	
NOx - concentration	mg/kWh	473,4	
NOx - concentration	mg/MJ	131,5	
CnHm concentration, measurement	ppm	3,4	
CnHm concentration, measurement	mg/m³	5,6	
CnHm concentr. (at reference - O2)	mg/m³	4,9	
CnHm - concentration (total C)	mg/kWh	8,4	
CnHm - concentration (total C)	mg/MJ	2,3	
Dust, measurement*	mg	0,0	
Dust, measurement*	mg/m³	0,0	
Dust (at reference - O2)*	mg/m³	0,0	
Dust*	mg/kWh	0,0	
Dust*	mg/MJ	0,0	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 22	
Model		Pellet boiler	
Specifics			
Nominal heat output		20,0 kW	
Test place		Thiene	
Test date		29/08/2011	
Type of test		DIN EN 303-5 Nominal load	
		1. Period	
Test date		29/08/2011	
Time		11.30-17.30	
Calculation			
"Qa" loss free heating flue gas	kJ/kg	718,1	
"qa" loss flue gas	%	4,05	
"Qb" loss fix heating in flue gas	kJ/kg	19,6	
"qb" loss fix heating in flue gas	%	0,11	
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	42,9	
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,24	
"m" flue gas mass flow	g/s	12,4	
cpm, acc. DIN 4702-2, version 03.90for dry flue gas	kJ/(m³K)	1,35	
"eta" Efficiency (direct), to consider only water heating output Pw	%	94,57	← 97
"eta" Efficiency (indirect)	%	93,73	
Heating input	kW	21,15	
"Pw" water heating output	kW	20,00	
Adjustments			
Flue gas motor	rpm	1650	
Ambient motor	-	-	
Fuel motor	sec	4,5	
Cleaning time	min	60	
Firedoor	open/closed	closed	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 22 ←	
Model		Pellet boiler	
Specifics			
Nominal heat output		6,62 kW ← 42 o OUTPUT	
Test place		Thiene	
Test date		30/08/2011	
Type of test		DIN EN 303-5	
		Reduced load ← MIN. INPUT	
		1. Period	
Test date		30/08/2011	
Time		10.30-16.30	
Ambient:			
Ambient pressure, measurement	mbar	1004	
Air temperature (combustion air), measurement	°C	29,6	
Humidity of combustion air, measurement	%	40	
Ambient temperature, measurement	°C	29,6	
Fuel:			
Type of fuel		Wood pellets	
Number of fuel tasks		1	
Weight of the stove, start, measurement	kg	494,36	
Weight of the stove, end, measurement	kg	485,86	
Weight of additional fuel tasks	kg	8,50	
Fuel consumption, calculated of the difference	sec	21600	
Test duration, measurement			
Fuel consumption "B"	kg/h	1,417	
Combustible constituents in material passing through the grate "b", analyse	Gew. %	15,0	
Residue passing through the grate, measurement	kg	0,220	
Residue passing through the grate "R"	Gew. %	2,6	
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew. %	0,39	
Water side, measurement			
Flow, measurement	°C	74,5	
Return, measurement	°C	55,9	
Delta T	K	18,6	
Cold water flow, measurement	kg/h	305,6	
Additional energy of the pump	kW	0,000	
Flue, average			
Flow, measurement	°C	57,4	
Flue draught, measurement	Pa	10,0	
O_2 - concentration, measurement	Vol.-%	12,6	
CO_2 - concentration, calculated	Vol.-%	8,1	—
lambda figure	-	2,470	
CO - concentration, measurement	ppm	197,1	←
CO - concentration, measurement	Vol.-%	0,020	
CO - concentration, measurement	mg/m³	246,4	
CO - concentr. (at reference - O_2)	Vol.-%	0,026	
CO - concentr. (at reference - O2)	mg/m³	320,7	
CO - concentration	mg/kWh	544,3	
CO - concentration	mg/MJ	151,2	
NOx - concentration, measurement	ppm	100,4	
NOx - concentration, measurement	mg/m³	205,8	
NOx - concentr. (at reference - O2)	mg/m³	267,9	
NOx - concentration	mg/kWh	454,6	
NOx - concentration	mg/MJ	126,3	
CnHm concentration, measurement	ppm	3,9	
CnHm concentration, measurement	mg/m³	6,4	
CnHm concentr. (at reference - O2)	mg/m³	8,3	
CnHm - concentration (total C)	mg/kWh	14,1	
CnHm - concentration (total C)	mg/MJ	3,9	
Dust, measurement*	mg	0,0	
Dust, measurement*	mg/m³	0,0	
Dust (at reference - O2)*	mg/m³	0,0	
Dust*	mg/kWh	0,0	
Dust*	mg/MJ	0,0	

Report- No.		Kxxx2011T1	
TÜV- order- No.		21217498	
Manufacture		Puros	
Type		Biomax 22	
Model		Pellet boiler	
Specifics			
Nominal heat output		6,62 kW	
Test place		Thiene	
Test date		30/08/2011	
Type of test		DIN EN 303-5 Reduced load	
		1. Period	
Test date		30/08/2011	
Time		10.30-16.30	
Calculation			
"Qa" loss free heating flue gas	kJ/kg	446,3	
"qa" loss flue gas	%	2,52	
"Qb" loss fix heating in flue gas	kJ/kg	27,0	
"qb" loss fix heating in flue gas	%	0,15	
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	130,1	
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,73	
"m" flue gas mass flow	g/s	5,8	
cpm, acc. DIN 4702-2, version 03.90for dry flue gas	kJ/(m³K)	1,33	
"eta" Efficiency (direct), to consider only water heating output Pw	%	94,94	← 3)
"eta" Efficiency (indirect)	%	92,54	
Heating input	kW	6,97	- BRUC.
"Pw" water heating output	kW	6,62	- RRZ
Adjustments			
Flue gas motor	rpm	600	
Ambient motor	-	-	
Fuel motor	sec	1,5	
Cleaning time	min	60	
Firedoor	open/closed	closed	

PUROS s.r.l.

Dati caldaie BIOMAX

	Modello		22	27	35
Dati tecnici	Potenza Termica Nominale al focolare (Q_B)	kW	21,2	26,2	34,4
	Potenza Termica Minima al focolare (Q_{Bmin})	kW	6,8	6,8	9,5
	Potenza Termica Nominale Utile (Q_N)	kW	20	25	32
	Potenza Termica Minima Utile (Q_{min})	kW	6,5	6,5	8,8
	Rendimento Potenza Termica Nominale	%	94,6	93,8	93,1
	Rendimento Potenza Termica Minima	%	94,9	94,9	93,0
	Rendimento di combustione alla Q_N	%	96,0	95,5	95,0
	Perdita di calore mantello alla Q_N	%	1,4	1,6	1,9
Emissioni	Temperatura fumi alla Q_N	°C	91	100	109
	Emissioni di CO_2 alla Q_N	%	12	12,3	12,5
	Emissioni di CO alla Q_N (riferito al 10% di O_2)	mg/m³	231	220	201
	Emissioni di CO alla Q_{min} (riferito al 10% di O_2)	mg/m³	321	366	412
	Emissioni di OCG alla Q_N (riferito al 10% di O_2)	mg/m³	5	5	5
	Quantità polveri alla Q_N (riferito al 10% di O_2)	mg/m³	17	20	25
	Tiraggio minimo al camino	mbar	0,1	0,1	0,1
	Portata di massa fumi alla Q_N	g/s	12,4	15,7	19
Dati idraulici	Contenuto d'acqua	lt	52	52	52
	Pressione idraulica max d'esercizio	bar	3	3	3
	Prevalenza utile impianto (Δt 20 K)	mbar	460	420	350
	Prevalenza utile impianto (Δt 15 K)	mbar	415	330	240
	Volume vaso d'espansione	lt	10	10	10
	Attacchi idraulici impianto	inch	G ¾	G ¾	G ¾
Dati elettrici	Alimentazione elettrica	VAC	230	230	230
	Frequenza	Hz	50	50	50
	Potenza Elettrica Assorbita all'Accensione	W	296	296	326
	Potenza Elettrica Assorbita a Regime	W	108	108	126
Dimensioni	Larghezza	mm	700	700	700
	Altezza	mm	1395	1395	1395
	Profondità	mm	810	810	810
	Peso netto	kg	280	280	285
	Diametro Scarico Fumi	mm	100	100	100
Dati funzionali	Capacità serbatoio pellet (d. 0,68 kg/lt)	kg	120	120	120
	Consumo orario alla Potenza massima (pellet 4,9 kW/kg)	kg/h	4,30	5,35	6,83
	Consumo orario alla Potenza minima (pellet 4,9 kW/kg)	kg/h	1,42	1,4	1,93
	Autonomia massima (30% carico max)	ore	93	75	59

Classe 5 di rendimento ed emissioni secondo Pr EN 303-5:2010