Report- No.		**K???2011T1**		
TÜV- order- No.		**212??????**		
Manufacturer		**Thermorossi**		
Type		**Ecotherm 1000**		
Model		**Room heater for wood pellets with internal fuel hopper and flue gas fan without water parts combustion air is taken from the room**		
Specifics				
Nominal heat output		**6,33 kW**		
Test place		**Thiene**		
Test date		**10-14/11/2011**		
Type of test		**Test at nominal load acc. EN 14785**		
		1. test	**2. test**	**Average**
Test date		10/11/2011	14/11/2011	
Time		14.00-17.00	10.00-13.00	
Ambient:				
Barometric pressure	mbar	1010	1010	1010
Temperature of combustion air	°C	21,6	17,7	19,7
Ambient rel. humidity	%	48	46	47
Ambient temperature (room)	°C	21,6	17,7	19,7
Fuel:				
Type of fuel		wood pellets	wood pellets	-
Number of fuel loadings		1	1	1
Total weight of appliance at start	kg	106,73	107,09	106,91
Weight of additional loads	kg	102,18	102,51	102,35
Total weight of appliance at end	kg	0,00	0,00	0,00
Fuel consumption, calculated of the difference	kg	4,55	4,58	4,57
Test duration	sec	10800	10800	10800
Fuel consumption "B"	kg/h	1,517	1,527	1,522
Combustible constituents in material passing through the grate "b", analyse	Gew. %	0,0	0,0	0,0
Residue passing through the grate, measurement	kg	0,000	0,000	0,000
Residue passing through the grate "R"	Gew. %	0,00	0,00	0,0
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew. %	0,10	0,10	0,10
Water part (average values)				
flow temperature	°C	0,0	0,0	0,0
return temperature	°C	0,0	0,0	0,0
delta-T	K	0,0	0,0	0,0
Cold water entrance temperature	°C	0,0	0,0	0,0
Cold water flow	kg/h	0,0	0,0	0,0
Additional energy of the pump	kW	0,000	0,000	0,000
Flue, average				
Flue gas temperature	°C	187,6	180,4	184,0
Flue gas draught	Pa	12,0	12,0	12,0
O_2 - concentration, calculated	Vol.-%	12,02	12,73	12,37
CO2 - concentration (measurement)	Vol.-%	8,63	7,95	8,29
lambda value, λ	-	2,324	2,523	2,423
CO - concentration (measurement)	ppm	51,0	108,7	79,9
CO - concentration (measurement)	Vol.-%	0,005	0,011	0,008
CO - concentration (measurement)	mg/m³	63,8	135,9	99,9
CO - concentr. (at reference - O_2)	Vol.-%	0,005	0,011	0,01
CO - concentr. (at reference - O_2)	mg/m³	56,8	131,5	94,1
CO - concentration rel. to fuel input	mg/kWh	128,0	296,3	212,2
CO - concentration rel. to fuel input	mg/MJ	35,6	82,3	58,9
NOx - concentration (measurement)	ppm	98,2	89,1	93,6
NOx - concentration (measurement)	mg/m³	201,3	182,7	192,0
NOx - concentr. (at reference - O_2)	mg/m³	179,2	176,7	177,9
NOx - concentration rel. to fuel input	mg/kWh	403,9	398,2	401,0
NOx - concentration rel. to fuel input	mg/MJ	112,2	110,6	111,4
CnHm - concentration (measurement)	mg/m³	2,4	2,2	2,3
CnHm concentr. (at reference - O_2)	mg/m³	2,2	2,2	2,2
CnHm - concentration (total C) rel. to fuel input	mg/kWh	4,9	4,9	4,9
CnHm - concentration (total C) rel. to fuel input	mg/MJ	1,4	1,4	1,4
Dust (measurement*)	mg	21,7	0,0	21,7
Dust concentration (measurement*)	mg/m³	31,0	0,0	31,0
Dust (at reference - O_2)*	mg/m³	29,2	0,0	29,2
Dust* rel. to fuel input	mg/kWh	65,8	0,0	65,8
Dust* rel. to fuel input	mg/MJ	18,3	0,0	18,3

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Specifics				
Nominal heat output		**6,33 kW**		
Test place		**Thiene**		
Test date		**10-14/11/2011**		
Type of test		**Test at nominal load acc. EN 14785**		
		1. test	**2. test**	**Average**
Test date		10/11/2011	14/11/2011	
Time		14.00-17.00	10.00-13.00	
Calculation				
"Qa" loss free heating flue gas	kJ/kg	2369,2	2497,7	2433,4
"qa" loss flue gas	%	13,58	14,31	13,94
"Qb" loss fix heating in flue gas	kJ/kg	6,3	14,6	10,5
"qb" loss fix heating in flue gas	%	0,04	0,08	0,06
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	0,0	0,0	0,0
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,20	0,20	0,20
"m" flue gas mass flow	g/s	5,7	6,2	5,9
cpm, acc. DIN 4702-2, version 03.90 for dry flue gas	kJ/(m³K)	1,35	1,34	1,34
cpm-H_2O	kJ/(m³K)	1,52	1,52	1,52
"eta" Efficiency (direct), to consider only water heating output Pw	%	entfällt	entfällt	entfällt
"eta" Efficiency (indirect)	%	86,19	85,40	85,80
Heating input	kW	7,35	7,40	7,38
"P" heating output, total	kW	6,34	6,32	6,33
"Pw" water heating output	kW	0,00	0,00	0,00
Space heating output: P_{STR} = P - Pw	kW	6,34	6,32	6,33
Space heating output, relating to heat input	%	86,19	85,40	85,80
Water heating output, relating to heat input	%	0,00	0,00	0,00
Settings				
Flue gas motor	rpm	1800	1800	-
Ambient motor	Volts	0	0	-
Fuel motor	sec	0	0	-
Fire door	pen/close	closed	closed	-

**) Average of 3 samples, based on separate calculation*