

# Combined Heat & Power Units

## Turboden Combined Heat & Power (CHP) Units - Standard Sizes and Typical Performances



		TD 6 CHP	TD 7 CHP	TD 10 CHP	TD 14 CHP	TD 18 CHP	TD 22 CHP	TD 30 CHP
<b>INPUT - Thermal oil</b>								
Nominal temperature "HT" loop (in/out)	°C	302/242	302/242	300/240	300/240	300/240	300/240	300/240
Overall thermal power input	kW	3340	3895	5140	6715	9790	12020	16800
Nominal temperature "HT" loop (in/out)	°F	576/468	576/468	572/464	572/464	572/464	572/464	572/464
Overall thermal power input	MMBtu/hr	11.4	13.29	17.54	22.91	33.4	41.01	57.32
<b>OUTPUT - HOT WATER</b>								
Hot water temperature (in/out)	°C	60/80	60/80	60/80	60/80	60/90	60/90	69/94
Thermal power to hot water circuit	kW	2664	3117	4081	5313	7834	9601	13610
Hot water temperature (in/out)	°F	140/176	140/176	140/176	140/176	140/194	140/194	156/201
Thermal power to hot water circuit	MMBtu/hr	9.09	10.64	13.92	18.13	26.73	32.76	46.44
<b>PERFORMANCE</b>								
Gross active electric power	kW	643	739	1016	1339	1863	2304	3083
Gross electric efficiency		19.3%	19.0%	19.8%	19.9%	19.0%	19.2%	18.4%
Captive power consumption	kW	32	37	48	58	79	97	179
Net active electric power	kW	611	702	968	1281	1784	2207	2904
Net electric efficiency		18.3%	18.0%	18.8%	19.1%	18.2%	18.4%	17.3%
Electric generator*		50Hz, 400V 60Hz, 480V	50Hz, 400V 60Hz, 480V	50Hz, 400V 60Hz, 480V	50Hz, 400V 60Hz, 480V	50Hz, 660V 60Hz, 4160V	50Hz, 660V 60Hz, 4160V	50Hz, 6kV 60Hz, 4160V
Plant size		Single Skid	Single Skid	Multiple Skid	Multiple Skid	Multiple Skid	Multiple Skid	Multiple Skid
Biomass consumption**	kg/h	1606	1873	2471	3228	4707	5779	8077
Typical delivery times (FCA)		9-11	9-11	9-11	9-11	9-11	9-11	11-13

\* Induction or synchronous, medium voltage available upon request. If reduction gear is required, electric efficiency is reduced of about 1.5%.

\*\*Assuming a low heating value of biomass = 2,6 kWh/kg and boiler efficiency = 0,80. The thermal oil boiler is not included in the Turboden scope of supply.



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