

TEDOM CHP System Datasheet

Key features of Kinsley TEDOM Combined Heat and Power Systems

Complete, integrated CHP systems - engineered, built and tested in a high-quality factory environment

Full range of power ratings - from 35 kW to 4.0 MW in a single engine

Customizable, engineered solutions to meet the specific needs of each application, including:

- fuel - natural gas, biogas, propane
- heat recovery - hot water, steam, chilled water
- emissions control - rich-burn, low NOx lean-burn, SCR
- packaging - indoor open module, indoor sound enclosure, outdoor container

Comprehensive long-term service by Kinsley, including 24/7 remote monitoring and U.S. parts management

TEDOM Model	Quanto D2000
Fuel Input	Natural Gas



System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	2,000	1,500	1,000	
Electrical Efficiency	<i>%, LHV</i>	43.4%	42.0%	39.6%	
Fuel Consumption	<i>BTU/hr, HHV</i>	17,474,654	13,542,857	9,575,758	
Max Hot Water Output	<i>BTU/hr</i>	6,794,885	5,419,526	4,006,627	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	43.2%	44.5%	46.5%	
Overall Efficiency	<i>%, LHV</i>	86.6%	86.5%	86.1%	
Heat Rate	<i>BTU/kWh, LHV</i>	7,864	8,126	8,618	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	3,460,579	2,621,030	1,853,150	includes lube oil heat
Turbo Intercooler Heat (low temp)	<i>BTU/hr</i>	641,606	464,141	279,850	not included in hot water output above
Exhaust Heat	<i>BTU/hr</i>	3,334,306	2,798,496	2,153,477	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	775	826	882	
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	24,061	18,418	12,841	
Hot Water					
Maximum Supply Temperature	<i>°F</i>	194	194	194	Option for 210 F
Maximum Return Temperature	<i>°F</i>	158	158	158	158 F is maximum for full heat recovery
Nominal Flow Rate (water)	<i>GPM</i>	377	301	223	
Chilled Water (with single-effect absorber)					
Chilled Water Output	<i>RTons</i>	425	339	250	COP=0.75 using max hot water output
Steam (with exhaust heat recovery steam generator (HRSG))					
Steam @ 15 psig	<i>lbs/hr</i>	3,296	2,790	2,152	
Steam @ 120 psig	<i>lbs/hr</i>	2,528	2,195	1,731	maximum practical pressure

Engine Specifications			Notes
Manufacturer Model # / Cylinders		MWM TCG2020 V20 / V-20	
Speed	<i>RPM</i>	1500	
Oil consumption, ave	<i>grams/kWh</i>	0.15	
Oil volume, engine/replenishment tank	<i>gallons</i>	260 / 171	Additional clean/waste oil tank available
Major overhaul interval	<i>operating hours</i>	64,000	

Generator Specifications			Notes
Manufacturer / Model #		Marelli MJB 560 LA4	synchronous
Voltage / Frequency / Speed	<i>VAC / Hz / RPM</i>	480 / 60 / 1800	medium voltage options available
Rated Power	<i>kVA</i>	2485	
Rated Current	<i>A</i>	2,989	
Power Factor		0.8 - 1.0	

Fuel			Notes
Fuel type		Natural Gas	biogas options available
Lower heating value (minimum)	<i>BTU/SCF</i>	912	
Methane Number (minimum)		80	
Gas Pressure	<i>psi</i>	1.2 - 2.2	
Gas Temperature (maximum)	<i>°F</i>	95	

Combustion, Exhaust & Ventilation Air			Notes
Combustion Air Flow Rate	<i>CFM</i>	4,864	
Exhaust Gas Flow Rate	<i>CFM</i>	5,029	
Exhaust Temperature, nom/max	<i>°F</i>	248 / 302	
Exhaust Back Pressure Allowed	<i>psi</i>	0.15	after exhaust heat exchanger and silencer
Heat Rejection to Ventilation Air	<i>BTU/h</i>	450,000	
Ventilation Air Flow, max	<i>CFM</i>	28,689	SE, C at 122F ventilation outlet temp.
Ventilation Inlet Air Temp, min/max	<i>°F</i>	32 / 95	Indoor OM and SE installations
Outdoor Air Temp, min/max	<i>°F</i>	-4 / 95	Outdoor C installations

Emissions (@ 15% O ₂ in exhaust)		Standard	Reduced	With SCR	Notes
NO _x	<i>g/bHP-h</i>	1.0	0.5	<0.05	lean-burn engine
CO	<i>g/bHP-h</i>	1.3	0.6	<0.05	system includes oxidation catalyst

Dimensions & Noise		Open Module (OM)	Sound Enclosure (SE)	Outdoor Container (C)	Notes
Length	<i>ft, in</i>	37' 3"	38' 1"	65' 7"	Dimensions do not include accessories including exhaust silencer, exhaust heat exchanger, and cooling modules. See drawings for more details.
Width	<i>ft, in</i>	9' 3"	9' 6"	10' 10"	
Height	<i>ft, in</i>	8' 11"	14' 1"	10' 10"	
Operating weight	<i>lbs</i>	69,578		130,502	
Noise Emissions	<i>dBA</i>	113 @ 3 ft		65 @ 33 ft	

System performance subject to change without notice.

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