

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

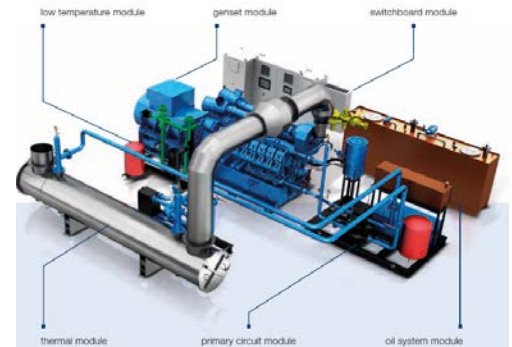
Full range of power ratings - from 35 kW to 4.0 MW in a single engine

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 D4000
Fuel Input	Natural Gas



System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	4,000	3,000	2,000	
Electrical Efficiency	<i>%, LHV</i>	43.7%	42.3%	40.1%	
Fuel Consumption	<i>BTU/hr, HHV</i>	34,709,382	26,893,617	18,912,718	
Max Hot Water Output	<i>BTU/hr</i>	13,299,682	10,545,552	7,689,038	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	42.6%	43.6%	45.2%	
Overall Efficiency	<i>%, LHV</i>	86.3%	85.9%	85.3%	
Heat Rate	<i>BTU/kWh, LHV</i>	7,810	8,068	8,511	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	5,897,318	4,344,494	3,044,218	includes lube oil heat
Exhaust Heat	<i>BTU/hr</i>	7,402,363	6,201,058	4,644,821	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	844	909	970	
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	46,858	35,156	23,991	
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>	739	586	427	
Chilled Water (with single-effect absorber)					
Chilled Water Output	<i>RTons</i>	831	659	481	COP=0.75 using max hot water output
Steam (with exhaust heat recovery steam generator (HRSG))					
Steam @ 15 psig	<i>lbs/hr</i>	7,341	6,164	4,630	
Steam @ 120 psig	<i>lbs/hr</i>	5,820	5,004	3,826	maximum practical pressure

Engine Specifications			Notes
Manufacturer / Model #		MWM TCG2032 V16	
Cylinder arrangement, quantity		V 16	
Speed	RPM	900	
Oil consumption, ave	grams/kWh	0.20	
Oil volume, engine	gallons	487	
Oil volume, replenishment tank	gallons		Additional clean/waste oil tank available
Major overhaul interval	operating hours	80,000	

Generator Specifications			Notes
Manufacturer / Model #		Marelli MJH 800 LA8	synchronous
Voltage / Frequency	VAC	4160	Additional voltage options available
Speed / Frequency	RPM / Hz	900 / 60	
Rated Power	kVA	4994	
Rated Current	A	6,014	
Power Factor		0.8 - 1.0	

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

Combustion & Ventilation Air			Notes
Combustion Air Mass Flow	lbs/hr	45,351	
Exhaust Back Pressure Allowed	psi	0.14	after exhaust heat exchanger and silencer
Heat Rejection to Ventilation Air	BTU/h	1,081,858	
Ventilation Inlet Air Temp, min/max	°F	32 / 95	Indoor OM and SE installations.
Outdoor Air Temp, min/max	°F	-4 / 95	Outdoor C installations.

Emissions (@ 15% O ₂ in exhaust)		Standard	Reduced	With SCR	Notes
NOx	g/bHP-h	1.0	0.5	<0.05	lean-burn engine
CO	g/bHP-h	1.3	0.6	<0.05	system includes oxidation catalyst

Dimensions & Noise		Open Module (OM)	Sound Enclosure (SE)	Outdoor Container (C)	Notes
Length	ft, in	40' 0"	not available	not available	Dimensions do not include accessories including exhaust silencer, exhaust heat exchanger, and cooling modules. See drawings for more details.
Width	ft, in	15' 3"			
Height	ft, in	13' 6"			
Operating weight	lbs				
Noise Emissions	dBA	126 @ 3 ft			

System performance subject to change without notice.

4/7/2020