

# 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	<b>Quanto D800</b>
Fuel Input	<b>Natural Gas</b>

System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	800	600	400	
Electrical Efficiency	<i>%, LHV</i>	42.6%	40.8%	38.3%	
Fuel Consumption	<i>BTU/hr, HHV</i>	7,121,127	5,576,471	3,960,313	
Hot Water Output	<i>BTU/hr</i>	2,921,357	2,392,373	1,788,307	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	45.6%	47.7%	50.2%	
Overall Efficiency	<i>%, LHV</i>	88.2%	88.5%	88.5%	
Heat Rate	<i>BTU/kWh, LHV</i>	8,011	8,365	8,911	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	1,487,981	1,214,957	911,218	includes lube oil heat
Turbo Intercooler Heat (low temp)	<i>BTU/hr</i>	177,466	116,035	71,669	not included in hot water output above
Exhaust Heat	<i>BTU/hr</i>	1,433,376	1,177,416	877,090	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	820	858	898	
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	9,491	7,302	5,082	
<b>Hot Water</b>					
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>	162	133	99	
<b>Chilled Water (with single-effect absorber)</b>					
Chilled Water Output	<i>RTons</i>	183	150	112	COP=0.75 using max hot water output
<b>Steam (with exhaust heat recovery steam generator (HRSG))</b>					
Steam @ 15 psig	<i>lbs/hr</i>	1,423	1,174	875	
Steam @ 120 psig	<i>lbs/hr</i>	1,117	936	708	maximum practical pressure

Engine Specifications			Notes
Manufacturer Model # / Cylinders		MWM TCG3016 V16 / V 16	
Speed	<i>RPM</i>	1800	
Oil consumption, ave	<i>grams/kWh</i>	0.10	
Oil volume, engine/replenishment tank	<i>gallons</i>	150 / 95	Additional clean/waste oil tank available
Major overhaul interval	<i>operating hours</i>	80,000	

Generator Specifications			Notes
Manufacturer / Model #		Marelli MJB 400 LC4	synchronous
Voltage / Frequency / Speed	<i>VAC / Hz / RPM</i>	480 / 60 / 1800	
Rated Power	<i>kVA</i>	991	
Rated Current	<i>A</i>	1,192	
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>	1,976	
Exhaust Gas Flow Rate	<i>CFM</i>	2,219	
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>	181,000	
Ventilation Air Flow, max	<i>CFM</i>	9,417	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 <sub>2</sub> in exhaust)		Standard	Reduced	With SCR	Notes
NO <sub>x</sub>	<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>	22' 0"	21' 0"	39' 5"	Dimensions do not include accessories including exhaust silencer, exhaust heat exchanger, and cooling modules. See drawings for more details.
Width	<i>ft, in</i>	8' 10"	8' 3"	9' 10"	
Height	<i>ft, in</i>	7' 2"	10' 4"	9' 10"	
Operating weight	<i>lbs</i>			66,144	
Noise Emissions	<i>dBA</i>	109 @ 3 ft	80 @ 3 ft	65 @ 33 ft	

System performance subject to change without notice.

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