

# 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

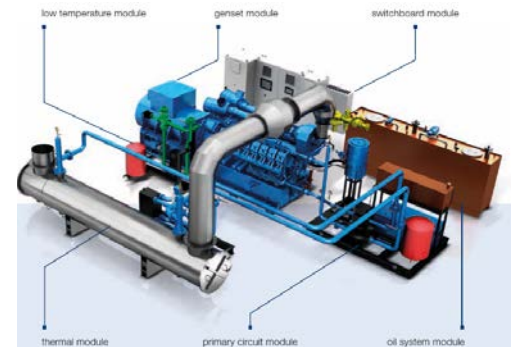
**Full range of power ratings** - from 35 kW to 4.0 MW in a single engine

**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 D3000</b>
Fuel Input	<b>Natural Gas</b>



System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	3,000	2,250	1,500	
Electrical Efficiency	<i>%, LHV</i>	43.9%	42.4%	39.7%	
Fuel Consumption	<i>BTU/hr, HHV</i>	25,913,440	20,122,642	14,327,456	
Max Hot Water Output	<i>BTU/hr</i>	9,818,626	7,876,742	5,846,126	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	42.1%	43.5%	45.3%	
Overall Efficiency	<i>%, LHV</i>	86.0%	85.9%	85.0%	
Heat Rate	<i>BTU/kWh, LHV</i>	7,774	8,049	8,596	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	4,549,262	3,477,643	2,491,344	includes lube oil heat
Exhaust Heat	<i>BTU/hr</i>	5,269,363	4,399,099	3,354,782	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	810	867	918	
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	35,651	26,849	18,885	
<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>	545	438	325	
<b>Chilled Water (with single-effect absorber)</b>					
Chilled Water Output	<i>RTons</i>	614	492	365	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>	5,234	4,388	3,360	
Steam @ 120 psig	<i>lbs/hr</i>	4,087	3,511	2,736	maximum practical pressure

Engine Specifications			Notes
Manufacturer / Model #		MWM TCG2032 V12	
Cylinder arrangement, quantity		V 12	
Speed	<i>RPM</i>	900	
Oil consumption, ave	<i>grams/kWh</i>	0.20	
Oil volume, engine	<i>gallons</i>	382	
Oil volume, replenishment tank	<i>gallons</i>		Additional clean/waste oil tank available
Major overhaul interval	<i>operating hours</i>	80,000	

Generator Specifications			Notes
Manufacturer / Model #		Marelli MJH 710 MC8	synchronous
Voltage / Frequency	<i>VAC</i>	4160	Additional voltage options available
Speed / Frequency	<i>RPM / Hz</i>	900 / 60	
Rated Power	<i>kVA</i>	3746	
Rated Current	<i>A</i>	4,511	
Power Factor		0.8 - 1.0	

Fuel			Notes
Fuel type		Natural Gas	
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 & Ventilation Air			Notes
Combustion Air Flow Rate	<i>CFM</i>	7,451	
Exhaust Back Pressure Allowed	<i>psi</i>	0.14	after exhaust heat exchanger and silencer
Heat Rejection to Ventilation Air	<i>BTU/h</i>	826,000	
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>	34' 4"	not available	not available	Dimensions do not include accessories including exhaust silencer, exhaust heat exchanger, and cooling modules. See drawings for more details.
Width	<i>ft, in</i>	14' 5"			
Height	<i>ft, in</i>	13' 6"			
Operating weight	<i>lbs</i>				
Noise Emissions	<i>dBA</i>	125 @ 3 ft			

System performance subject to change without notice.

3/19/2020