

# 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 D1600</b>
Fuel Input	<b>Natural Gas</b>



System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	1,560	1,170	780	
Electrical Efficiency	<i>%, LHV</i>	43.0%	41.7%	39.4%	
Fuel Consumption	<i>BTU/hr, HHV</i>	13,757,023	10,639,424	7,507,005	
Max Hot Water Output	<i>BTU/hr</i>	5,422,939	4,300,128	3,187,555	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	43.8%	44.9%	47.2%	
Overall Efficiency	<i>%, LHV</i>	86.8%	86.6%	86.6%	
Heat Rate	<i>BTU/kWh, LHV</i>	7,937	8,184	8,662	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	2,743,891	2,098,872	1,518,696	includes lube oil heat
Turbo Intercooler Heat (low temp)	<i>BTU/hr</i>	491,443	348,106	204,768	not included in hot water output above
Exhaust Heat	<i>BTU/hr</i>	2,679,048	2,201,256	1,668,859	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	788	829	885	
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	18,896	14,348	9,900	
<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>	301	239	177	
<b>Chilled Water (with single-effect absorber)</b>					
Chilled Water Output	<i>RTons</i>	339	269	199	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>	2,657	2,188	1,669	
Steam @ 120 psig	<i>lbs/hr</i>	2,052	1,724	1,344	maximum practical pressure

Engine Specifications			Notes
Manufacturer Model # / Cylinders		MWM TCG2020 V16 / V-16	
Speed	<i>RPM</i>	1500	
Oil consumption, ave	<i>grams/kWh</i>	0.15	
Oil volume, engine/replenishment tank	<i>gallons</i>	251 / 132	Additional clean/waste oil tank available
Major overhaul interval	<i>operating hours</i>	64,000	

Generator Specifications			Notes
Manufacturer / Model #		Marelli MJB 500 MC4	synchronous
Voltage / Frequency / Speed	<i>VAC / Hz / RPM</i>	480 / 60 / 1800	medium voltage options available
Rated Power	<i>kVA</i>	1936	
Rated Current	<i>A</i>	2,329	
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>	3,819	
Exhaust Gas Flow Rate	<i>CFM</i>	3,949	
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>	351,000	
Ventilation Air Flow, max	<i>CFM</i>	22,378	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>	33' 1"	31' 6"	53' 6"	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' 4"	10' 4"	
Height	<i>ft, in</i>	8' 6"	13' 2"	10' 4"	
Operating weight	<i>lbs</i>			95,975	
Noise Emissions	<i>dBA</i>	116 @ 3 ft		65 @ 33 ft	

System performance subject to change without notice.

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