

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	Cento M150
Fuel Input	Natural Gas

System Performance	% rated load	100%	75%	50%	Notes
Electrical Output	<i>kW</i>	150	113	75	
Electrical Efficiency	<i>%, LHV</i>	36.7%	35.0%	30.4%	
Fuel Consumption	<i>BTU/hr, HHV</i>	1,549,864	1,218,857	935,526	
Max Hot Water Output	<i>BTU/hr</i>	761,000	628,000	522,000	Jacket Water + Exhaust Heat
Thermal Efficiency	<i>%, LHV</i>	54.6%	57.2%	62.0%	
Overall Efficiency	<i>%, LHV</i>	91.3%	92.2%	92.4%	
Heat Rate	<i>BTU/kWh, LHV</i>	9,299	9,751	11,226	

Heat Recovery	% rated load	100%	75%	50%	Notes
Jacket Water Heat	<i>BTU/hr</i>	416,362	365,170	337,802	includes lube oil heat
Exhaust Heat	<i>BTU/hr</i>	344,638	262,830	184,256	cooled to 250F
Engine Exhaust Temp	<i>°F</i>	1,220			
Exhaust Mass Flow, Wet	<i>lbs/hr</i>	1,131	917		
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>	42	35	29	
Chilled Water (with single-effect absorber)					
Chilled Water Output	<i>RTons</i>	44	37	30	COP=0.70 using max hot water output
Steam (with exhaust heat recovery steam generator (HRSG))					
Steam @ 15 psig	<i>lbs/hr</i>	300		0	
Steam @ 120 psig	<i>lbs/hr</i>	260		0	maximum practical pressure

Engine Specifications			Notes
Manufacturer Model # / Cylinders		MAN E2676 E302 / inline 6	
Engine Speed	<i>RPM</i>	1800	
Oil consumption, ave/max	<i>grams/kWh</i>	0.27 / 0.53	at rated power
Oil volume, engine/replenishment tank	<i>gallons</i>	18.5 / 33	Additional clean/waste oil tank available
Major overhaul interval	<i>operating hours</i>	40,000	

Generator Specifications			Notes
Manufacturer Model #		Leroy Somer LSA 46.3 S5	synchronous
Voltage / Frequency / Speed	<i>VAC / Hz / RPM</i>	480 / 60 / 1800	
Rated Power	<i>kVA</i>	187	
Rated Current	<i>A</i>	226	
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>	0.7 - 1.4	
Gas Temperature (maximum)	<i>°F</i>	95	

Combustion, Exhaust & Ventilation Air			Notes
Combustion Air Flow Rate	<i>CFM</i>	220	
Exhaust Gas Flow Rate	<i>CFM</i>	234	
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>	61,000	
Ventilation Air Flow, max	<i>CFM</i>	2,690	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
NOx	<i>g/bHP-h</i>	0.22	0.11	n/a	rich-burn engine with 3-way catalyst
CO	<i>g/bHP-h</i>	0.57	0.34	n/a	

Dimensions & Noise		Open Module (OM)	Sound Enclosure (SE)	Outdoor Container (C)	Notes
Length	<i>ft, in</i>	11' 0"	11' 0"	17' 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>	4' 1"	4' 1"	8' 0"	
Height	<i>ft, in</i>	7' 1"	7' 1"	8' 6"	
Operating weight	<i>lbs</i>	10,826		20,472	
Noise Emissions	<i>dba</i>	94 @ 3 ft	77* @ 3 ft	55 @ 33 ft	* option for 65 dba @ 3 ft

System performance subject to change without notice.

1/11/2021