Tech Data: MAN Rich Burn Engine

KRAFT ENERGY SYSTEMS
COMBINED HEAT AND POWER

KMGR-55-4SH

KRAFT ENERGY/MAN Rich Burn Engine

Electrical Output	55 kW
Thermal Output	300,318 BTU/hr
Fuel Consumption	10,133 BTU/kWhe
Overall Efficiency	87.56 %

STANDARD EQUIPMENT

- **Natural Gas Engine** and **Synchronous Generator** connected with flexible coupling
- **Digital Electronic Ignition**
- **Heat Exchangers** for jacket water and exhaust piped and insulated at the factory
- **Electric Circulation Pump** for jacket water, with electric temperature control valve
- **Secondary Exhaust Silencer**
- **Vibration Isolators** between engine/generator and base frame as well as between base frame and foundation
- **Sound Attenuated Enclosure**, 72-75 dB(A) avg. at 3 ft, for indoor installation, with ventilating fan
- **Utility Grade Protective Relay**
- Electrically operated **Power Circuit Breaker** with trip unit
- 24 V maintenance-free **Batteries**, 10 amp **Battery Charger**
- **Hot water temp up to 190 °F**
- **Lube Oil Make-up System** with 15 gal storage tank, unit mounted
- **Electric Pre-lubrication Pump**
- **Dual Solenoid Gas Train,** with zero pressure regulator per NFPA 37
- **Low Fuel Pressure** system 0.5-3 PSI
- **Remote Monitoring**

BENEFITS

- **Most Reliable MAN Gas Engines**
- **Naturally Aspirated Rich-Burn Engine**
- **High Efficiency**
- **Low Emissions**
- **Compact Design**
- **Easy On-site Installation**
- **PLC-based Digital Controls**
- **Remote Communication Capabilities**

OPTIONAL EQUIPMENT

- **Outdoor Enclosure**
- **Remote Heat Dump Radiator**
- **Induction Type Generator**
- **Secondary Exhaust Silencer**
- **Electric Circulation Pump for Process Hot Water**
- **Hot Water Temperature Control Valve**
- **Load Sharing Controls for Multiple Unit Applications**
- **Island Mode Operation Capability**

KRAFT ENERGY SYSTEMS
COMBINED HEAT AND POWER

TECH DATA: KMGR-55-4SH Rich Burn

		100%
MAN Engine Model		E 0834 E 302
Generator Model		UCI224G
Electric Output	kWe	55
Amps @ 480 Volts @ 0.8 P.F.	Amps	83
Amps @ 208 Volts @ 0.8 P.F.	Amps	190
Max. Engine BHP	BHP	83
Number of Cylinders/Arrangement		4 IL
Bore & Stroke	Mm	108 x 125
Displacement	Ltrs (cu in)	4.58 (279)
BMEP	Psi	131
Compression Ratio		13 : 1
Combustion Air Required	Scfm	96
Generator Cooling Air Required	Scfm	595
Total Air Required	Scfm	691
Fuel Consumption	Th/Hr	5.57
Electric Heat Rate (LHV)	BTU/kWhe	10,133
Hot Water Recovery - Jacket Water & Exhaust Combined		
Cogen Thermal Output	kW	88
Thermal Output	Th/Hr	3.00
Recoverable Heat from Jacket	BTU/Hr	169,775
Recoverable Heat from Exhaust	BTU/Hr	130,543
Total Heat Recovered	BTU/Hr	300,318
Process Water Flow	GPM @ 15° F Rise	40
Process Water Temp	Deg F	190
Exhaust Flow	Lbs/Hr	468
Exhaust Temp	Deg F	1191
Efficiencies		
Electrical Efficiency	%	33.67
Thermal Efficiency	%	53.89
Combined Efficiency	%	87.56
Environmental		
Emissions at 100% Load (Correlation 5% O2)	Pre-Catalyst Gms/BHP-Hr (ppm)	Post-Catalyst Gms/BHP-Hr
Post Catalyst NOx Emission	< 17.4 (< 1278)	0.1
Post Catalyst CO Emission	< 10.0 (<1200)	0.6
Sound Level at 1 Meter		73-75
Steady State Gas Pressure-min		20
Steady State Gas Pressure-max		40
Dimensions (LxWxH)		150"x65"x90"
Weight (lbs.)		6500

i) Tech Data is based on Natural Gas with a calorific value of 970 Btu/cu ft and a methane No. >80.

ii) The Tolerances: Electrical Output: +/- 0%, Fuel Consumption: +/- 5%, Thermal Output: +/- 8%

iii) Tech Data is based on standard conditions acc to DIN ISO 3046-1. Standard Conditions: Atmospheric pressure: 14.5 psi or 328 ft above sea level, Air Temperature: 77 deg F, Relative Humidity: 30%.

iv) The coolant data is based on 40% antifreeze.

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