



REI 20 BIOGAS Generator Sets

Production Specifications

Model Number: REI-0020A-RWSOSY

Net Electrical Output		kW	20
Net Electrical Efficiency		%	28
Pkg Efficiency w/ Thermal Heat recovery		%	86.5
Heat Rate (Rated, HHV)		Btu/kWh (kJ/kWh)	12,185 (12,856)
Engine/Generator Type			Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	28.2 (21)
Operating Speed		rpm	1800
Output Voltage		Vac	600 Volt/3-Phase
Emissions (phi = 0.850)	NOx	g/bhp-hr	2.06
	CO	g/bhp-hr	1.34
Sound Level		dB(A)	68 @ 7 meters
Operating Capability	Blackstart capable in either isolated or grid parallel		
Power Quality	THD		Meets IEEE 519
	Load Unbalance	%	10% (max)
	Overload	%	10% overload allowed 30x/yr w/ 30 min (max) ea
	Voltage Regulation Adjust	%	+/-0.5
	DC Current Injection	%	<0.5
Fuel Supply	Type		BIOGAS
	Fuel	MMBtu/hr (GJ/hr)	0.244 (0.258)
	Fuel Flow (HHV)	cu ft/hr (cu m/hr)	406 (11.5)
	Supply Pressure	psig (bar)	1.50-2.50 (0.102-0.170)
	Fuel Standard (HHV)	Btu/cu ft (kJ/cu m)	600 (26,827)
Enclosure	Length	in (mm)	84 (2,133)
	Width	in (mm)	42 (1066)
	Height	in (mm)	48 (1,219)
	Completely weatherproof All units fully lockable		
Heat Recovery (CHP)			
Jacket Water Flow		gpm (L/m)	11 (42)
Jacket Water Temp. (out)		deg F (deg C)	196 (91)
Jacket Water Temp. (in)		deg F (deg C)	170 (77)
Total Heat Recovery		MMBtu/hr (kW)	0.143 (42)
Warranty	18 months from delivery or 1 year from initial start up whichever comes first. Extended warranty option available.		

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1. All data based on ISO standard conditions of 29.54 in Hg barometric pressure, 77 deg F ambient and induction air temperatures, 30% rel. humidity.
2. Dimensions and weights do not include optional equipment.
3. The values in this specification subject to a tolerance of +/- 5%
4. Efficiency and performance values represent the base unit operating at 100% heat and electrical power. Data is taken at the connection points of the unit.
5. CHP performance with water.

BIOGAS Specification

Fuel	0.244 mmBTU/hr	Sulfur Compounds	0.1% (1000 ppm)
Fuel Standard HHV	600 BTU/cu ft	Siloxanes	25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water	100% Re. Hum.
		Oil Droplet	< 0.3 micron
		Solid Particle	< 5 micron
		Free Hydrogen	12% by volume

Issue Date: 2-2009



REI 55 BIOGAS Generator Sets

Production Specifications

Model Number: REI-0055A-RWSOS

Net Electrical Output		kW	55
Net Electrical Efficiency		%	28
Pkg Efficiency w/ Thermal Heat recovery		%	73
Heat Rate (Rated, HHV)		Btu/kWh (kJ/kWh)	12,185 (12,856)
Engine / Generator Type	Engine		GM Industrial 8.1L V8
	Generator		Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	83 (61.6)
Operating Speed		rpm	1500
Output Voltage		Vac	240 / 415 3 Phase 50 Hz
Emissions (phi = 0.850)	NOx	g/bhp-hr	2.06
	CO	g/bhp-hr	1.34
Sound Level		dB(A)	68 @ 7 meters (std)
Sound Level w/low sound option		dB(A)	60 @ 7 meters
Operating Capability	Blackstart capable in either isolated or grid parallel		
Power Quality	THD		Meets IEEE 519
	Load Unbalance	%	10% (max)
	Overload	%	10% overload allowed 30x/yr w/ 30 min (max) ea
	Voltage Regulation Adjust	%	+/-0.5
	DC Current Injection	%	<0.5
Fuel Supply	Type		BIOGAS
	Fuel	MMBtu/hr (GJ/hr)	0.670 (0.707)
	Fuel Flow (HHV)	cu ft/hr (cu m/hr)	1,117 (31.6)
	Supply Pressure	psig (bar)	2.00 (0.136)
	Fuel Standard (HHV)	Btu/cu ft (kJcu m)	600 (26,827)
Fuel Minimum Heating Value	Btu/cu ft (kJcu m)	500 (22,356)	
Enclosure	Length	in (mm)	120 (3,048)
	Width	in (mm)	48 (1,220)
	Height	in (mm)	89 (2,248)
			Completely weatherproof All units fully lockable
Heat Recovery (CHP)			
Jacket Water Flow		gpm (L/m)	39 (148)
Jacket Water Temp. (out)		deg F (deg C)	186 (86)
Jacket Water Temp. (in)		deg F (deg C)	170 (77)
Total Heat Recovery		MMBtu/hr (kW)	0.302 (88.4)
Warranty	18 months from delivery or 1 year from initial start up whichever comes first. Extended warranty option available.		
Standards			

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2. Dimensions and weights do not include optional equipment.
3. The values in this specification subject to a tolerance of +/- 5%
4. Efficiency and performance values represent the base unit operating at 100% heat and electrical power. Data is taken at the connection points of the unit.
5. CHP performance with water.

BIOGAS Specification

Fuel	0.670 mmBTU/hr	Sulfur Compounds	0.1% (1000 ppm)
Fuel Standard HHV	600 BTU/cu ft	Siloxanes	25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water	100% Re. Hum.
		Oil Droplet	< 0.3 micron
		Solid Particle	< 5 micron
		Free Hydrogen	12% by volume

Issue Date: 1-2010



REI 65 BIOGAS Generator Sets

Production Specifications

Model Number: REI-0065A-RWSOS

Net Electrical Output		kW	65
Net Electrical Efficiency		%	28
Pkg Efficiency w/ Thermal Heat recovery		%	86.5
Heat Rate (Rated, HHV)		Btu/kWh (kJ/kWh)	12,185 (12,856)
Engine/Generator Type			Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	92 (68)
Operating Speed		rpm	1800
Output Voltage		Vac	277 / 480 3 Phase
Emissions (phi = 0.850)	NOx	g/bhp-hr	2.06
	CO	g/bhp-hr	1.34
Sound Level		dB(A)	68 @ 7 meters (std)
Sound Level w/low sound option		dB(A)	60 @ 7 meters
Operating Capability	Blackstart capable in either isolated or grid parallel		
Power Quality	THD		Meets IEEE 519
	Load Unbalance	%	10% (max)
	Overload	%	10% overload allowed 30x/yr w/ 30 min (max) ea
	Voltage Regulation Adjust	%	+/-0.5
	DC Current Injection	%	<0.5
Fuel Supply	Type		BIOGAS
	Fuel	MMBtu/hr (GJ/hr)	0.792 (0.836)
	Fuel Flow (HHV)	cu ft/hr (cu m/hr)	1,320 (37.3)
	Supply Pressure	psig (bar)	2.00 (0.136)
	Fuel Standard (HHV)	Btu/cu ft (kJcu m)	600 (26,827)
	Fuel Minimum Heating Value	Btu/cu ft (kJcu m)	500 (22,356)
Enclosure	Length	in (mm)	120 (3,048)
	Width	in (mm)	48 (1,220)
	Height	in (mm)	89 (2,248)
			Completely weatherproof All units fully lockable
Heat Recovery (CHP)			
Jacket Water Flow		gpm (L/m)	65 (246)
Jacket Water Temp. (out)		deg F (deg C)	185 (85)
Jacket Water Temp. (in)		deg F (deg C)	170 (77)
Total Heat Recovery		MMBtu/hr (kW)	0.463 (135)
Warranty	18 months from delivery or 1 year from initial start up whichever comes first. Extended warranty option available.		
Standards	UL, CE Expected		

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2. Dimensions and weights do not include optional equipment.
3. The values in this specification subject to a tolerance of +/- 5%
4. Efficiency and performance values represent the base unit operating at 100% heat and electrical power. Data is taken at the connection points of the unit.
5. CHP performance with water.

BIOGAS Specification

Fuel	0.792 mmBTU/hr	Sulfur Compounds	0.1% (1000 ppm)
Fuel Standard HHV	600 BTU/cu ft	Siloxanes	25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water	100% Re. Hum.
		Oil Droplet	< 0.3 micron
		Solid Particle	< 5 micron
		Free Hydrogen	12% by volume

Issue Date: 2-2009



REI 100 BIOGAS Generator Sets

Production Specifications

Model Number: REI-0100A-RWSOS

Net Electrical Output		kW	100
Net Electrical Efficiency		%	38.6
Pkg Efficiency w/ Thermal Heat recovery		%	89.1
Heat Rate (Gen Output)		Btu/kWh (kJ/kWh)	9,505 (10,028)
Engine/Generator Type			Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	154 (115)
Operating Speed		rpm	1800
Output Voltage		Vac	277 / 480 3 Phase
Emissions (phi = 0.850)	NOx CO	g/bhp-hr g/bhp-hr	2.06 1.50
Sound Level		dB(A)	68 @ 7 meters (std)
Sound Level w/low sound option		dB(A)	60 @ 7 meters
Operating Capability		Blackstart capable in either isolated or grid parallel	
Power Quality	THD Load Unbalance Overload Voltage Regulation Adjust DC Current Injection	% % % %	Meets IEEE 519 10% (max) 10% overload allowed 30x/yr w/ 30 min (max) ea +/-0.5 <0.5
Fuel Supply	Type Fuel Fuel Flow (HHV) Supply Pressure Fuel Standard (HHV) Fuel Minimum Heating Value	MMBtu/hr (GJ/hr) cu ft/hr (cu m/hr) in water (mbar) Btu/cu ft (kJcu m) Btu/cu ft (kJcu m)	BIOGAS 1.016 (1.071) 1,693 (47.9) 3.0-20.1 (7.7-50.0) 600 (26,827) 500 (22,356)
Enclosure	Length Width Height	in (mm) in (mm) in (mm)	120 (3,048) 48 (1,220) 89 (2,248) Completely weatherproof All units fully lockable
Heat Recovery (CHP)			
Jacket Water Flow		gpm (L/m)	90 (341)
Jacket Water Temp. (out)		deg F (deg C)	182 (83)
Jacket Water Temp. (in)		deg F (deg C)	170 (77)
Total Heat Recovery		MMBtu/hr (kW)	0.513 (150)
Warranty		18 months from delivery or 1 year from initial start up whichever comes first. Extended warranty option available.	
Standards			

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2. Dimensions and weights do not include optional equipment.
3. The values in this specification subject to a tolerance of +/- 5%
4. Efficiency and performance values represent the base unit operating at 100% heat and electrical power. Data is taken at the connection points of the unit.
5. CHP performance with water.

BIOGAS Specification

Fuel Standard HHV	600 BTU/cu ft	Sulfur Compounds Siloxanes	0.1% (1000 ppm) 25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water Oil Droplet Solid Particle Free Hydrogen	100% Re. Hum. < 0.3 micron < 5 micron 12% by volume

Issue Date: 7-2009



REI 110 BIOGAS Generator Sets

Production Specifications

Model Number: REI-0110A-RWSOS

Net Electrical Output		kW	98
Net Electrical Efficiency		%	38.6
Pkg Efficiency w/ Thermal Heat recovery		%	92.2
Heat Rate (Rated, HHV)		Btu/kWh (kJ/kWh)	9,891 (10,435)
Engine/Generator Type			Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	148 (110)
Operating Speed		rpm	1800
Output Voltage		Vac	277 / 480 3 Phase
Emissions (phi = 0.850)	NOx	g/bhp-hr (ppm)	1.0 (91)
15% Oxygen	CO	g/bhp-hr (ppm)	1.5 (180)
Sound Level			68 @ 7 meters (std)
Sound Level w/low sound option			60 @ 7 meters
Operating Capability	Blackstart capable in either isolated or grid parallel		
Power Quality	THD		Meets IEEE 519
	Load Unbalance	%	10% (max)
	Overload	%	10% overload allowed 30x/yr w/ 30 min (max) ea
	Voltage Regulation Adjust	%	+/-0.5
	DC Current Injection	%	<0.5
Fuel Supply	Type		BIOGAS
	Fuel	MMBtu/hr (GJ/hr)	0.972 (1.025)
	Fuel Flow (HHV)	cu ft/hr (cu m/hr)	1,620 (45.8)
	Supply Pressure	in water (mbar)	3.0-20.1 (7.7-50.0)
	Fuel Standard (HHV)	Btu/cu ft (kJcu m)	600 (26,827)
	Fuel Minimum Heating Value	Btu/cu ft (kJcu m)	500 (22,356)
Enclosure	Length	in (mm)	120 (3,048)
	Width	in (mm)	48 (1,220)
	Height	in (mm)	89 (2,248)
			Completely weatherproof All units fully lockable
Heat Recovery (CHP)			
Jacket Water Flow		gpm (L/m)	90 (341)
Jacket Water Temp. (out)		deg F (deg C)	193 (89)
Jacket Water Temp. (in)		deg F (deg C)	180 (86)
Total Heat Recovery		MMBtu/hr (kW)	0.522 (152)
Warranty	18 months from delivery or 1 year from initial start up whichever comes first. Extended warranty option available.		
Standards			

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4. Efficiency and performance values represent the base unit operating at 100% heat and electrical power. Data is taken at the connection points of the unit.
5. CHP performance with water.

BIOGAS Specification

Fuel Standard HHV	600 BTU/cu ft	Sulfur Compounds	0.1% (1000 ppm)
		Siloxanes	25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water	100% Re. Hum.
		Oil Droplet	< 0.3 micron
		Solid Particle	< 5 micron
		Free Hydrogen	12% by volume

Issue Date: 8-2009



REI 280 BIOGAS Continuous Duty Synchronous Generator

Production Specifications (Preliminary)

Model Number: REI-0280A-RWSOSA

Net Electrical Output		kW	280
Net Electrical Efficiency		%	33
Pkg Efficiency w/ Thermal Heat recovery		%	86
Heat Rate (Rated, HHV)		Btu/kWh (kJ/kWh)	11,233 (11,851)
Engine/Generator Type		Engine	NG 22L V12 Turbocharged
		Generator	Continuous Duty Synchronous
Shaft BHP	@ ISO	hp (kW)	408 (304)
Operating Speed		rpm	1800
Output Voltage		Vac	277/480 3 Phase 60 Hz
Emissions	NOx	g/bhp-hr	1.61
	CO	g/bhp-hr	0.97
Sound Level		dB(A)	70 @ 1 meter
Operating Capability	Blackstart capable in either isolated or grid parallel		
Power Quality	THD		Meets IEEE 519
	Load Unbalance	%	10% (max)
	Overload	%	10% overload allowed 2hr / 24
	Voltage Regulation Adjustment	%	+/-0.5
Fuel Supply	Types		BIOGAS
	Fuel	MMBtu/hr (GJ/hr)	3,145 (3,319)
	Fuel Flow (HHV)	ft ³ /hr (m ³ /hr)	5,242 (148)
	Supply Pressure	psig (bar)	0.80 - 5.00 (0.05 - 0.34)
	Fuel Standard (HHV)	Btu/ ft ³ (KJ/m ³)	600 (26,827)
Enclosure	Length	in (mm)	132 (3,353)
	Width	in (mm)	60 (1,524)
	Height	in (mm)	84 (2,134)
	Weight	lbs (kg)	12,000 (5,443)
			Completely weatherproof All units fully lockable
Heat Recovery (CHP)			
Water Flow		gpm (L/m)	160 (606)
Water Temp. (out)		deg F (deg C)	191 (88)
Water Temp. (in)		deg F (deg C)	170 (77)
Total Heat Recovery		MMBtu/hr (kW)	1,667 (489)
Warranty	18 months from delivery or 1 year from initial start up whichever comes first.		
	Extended warranty option available.		
Standards			

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5. CHP performance with water.

BIOGAS Specification

Fuel Standard HHV	600 BTU/cu ft (min)	Sulfur Compounds	0.1% (1000 ppm)
		Siloxanes	25 ug/Liter
Fuel Temperature	-20 deg F to 140 deg F -29 deg C to 60 deg C	No Liquid Water	100% Re. Hum.
		Oil Droplet	< 0.3 micron
		Solid Particle	< 5 micron
		Free Hydrogen	12% by volume

Issue Date: 7-2010