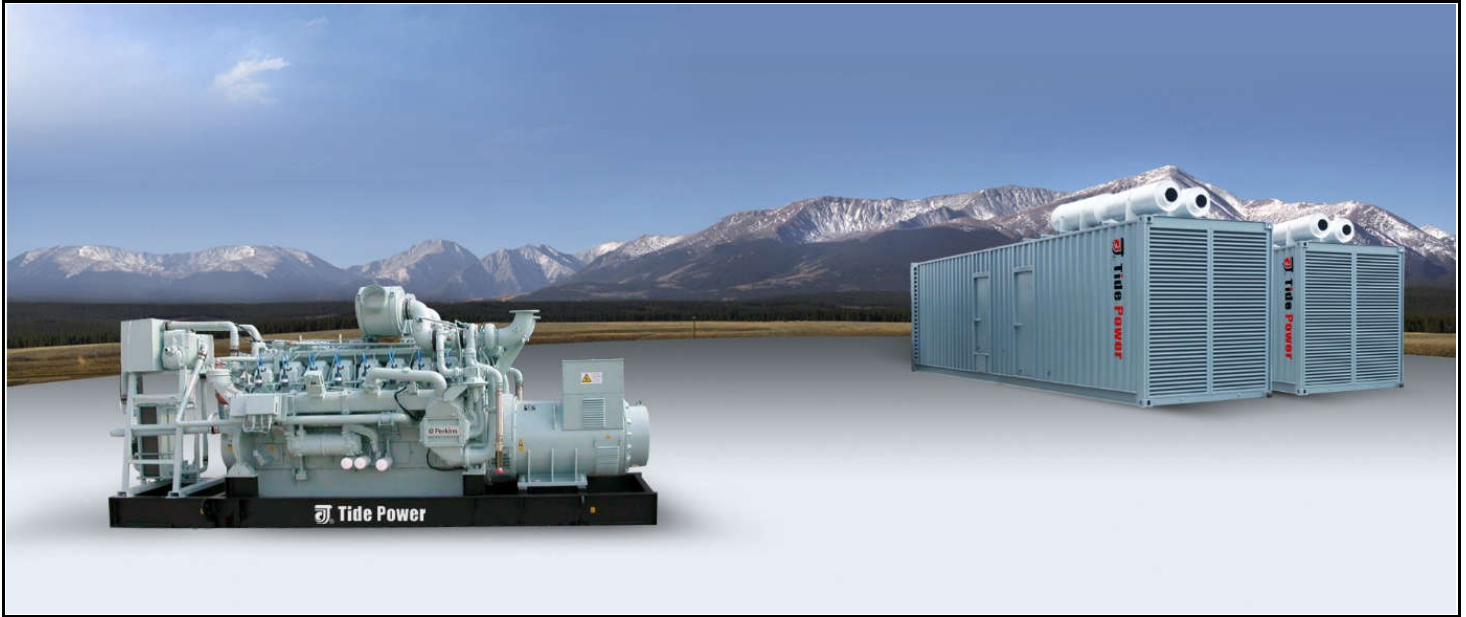


# Natural Gas Generator set data sheet (01-01-2018)



Continuous 300 kWe, Natural Gas



<b>Gas Generator Set Model:</b>	TPE375G	<b>Gas Engine Model:</b>	UK Perkins 4006-23TRS1	<b>Alternator Model:</b>	Leroy Somer LSA47.2S4
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<b>50Hz</b> 1500 r.p.m	<b>3 Phase</b> 4 Wires	<b>Power Factor:</b> Cos $\phi$ = 0.8	<b>Emissions Standard</b>	TA luft (NOx)
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RATINGS <sup>2)</sup>	Prime Power		Continuous Power		Rated Current	Thermal Output	Efficiency	
	(PRP)		(COP)				Eletrical	Thermal <sup>3)</sup>
Voltage (V)	kW	kVA	kW	kVA	Amps	kW	$\eta$ (%)	
380/220	N/A	N/A	300	375	569.8	428	<b>38.7%</b>	<b>55.2%</b>
<b>400/230</b>	<b>N/A</b>	<b>N/A</b>	<b>300</b>	<b>375</b>	<b>541.3</b>	<b>428</b>		
415/240	N/A	N/A	300	375	521.7	428		
440/254	N/A	N/A	300	375	492.1	428		

### Conditions and Defintions:

- 1) COP are applicable for supplying continuous electrical power for full load operations, there is no overload available.
- 2) Engine output data under ISO8528/1, ISO3046/1, BS5541/1, DIN6271 conditions, performance tolerance :  $\pm 5\%$

## Genset General Specifications

Gas Genset model	TPE375G	Electrical efficiency	<b>38.7%</b>
Gas Engine model	4006-23TRS1	Thermal efficiency	<b>55.2%</b>
Electrical output (kW/kVA)	300/375	Total efficiency	<b>93.9%</b>
Fuel	Natural gas	Speed regulating rate	0-5% Adjustable
Frequency (HZ)	50	Dimension (length×width×height) (mm)	3800×1710×2230
Speed (rpm)	1500	Net Weight (kg)	5400

## Engine Specifications

Manufacturer	UK Perkins
Model	4006-23TRS1
Mechanical power	322 kWm
Speed	1500 rpm
Configuration / number of cylinders	In line / 6
Bore / Stroke	160/190 mm
Displacement	22.92 L
Compression ratio	12.0:1
Mean piston speed	9.5 m/s
Firing Order	1-5-3-6-2-4
Direction of rotation	Anti-clockwise viewed on flywheel
Speed Governor	Heinzmann
Ignition system	Altronic
Induction system	Turbocharged
Combustion type	Spark ignition
Cooling mode	Radiator

### Cooling system

Total coolant capacity (engine only)	36 Litres
Jacket coolant flow	36 m <sup>3</sup> /h
Jacket coolant entry/exit temperature (max)	88/96 °C
Charge coolant flow	24 m <sup>3</sup> /h
Charge coolant entry temperature	45 °C

### Lubrication system

Total lubricating oil capacity	122.7 Litres
Sump min-max	90.7-113.4 Litres
Oil consumption	0.14 g/kW.h
Maximum Lubricating oil temperature	105 °C
Oil grade	API CD or higher, sae 15W-40

### Induction system

Maximum air intake restriction of engine	
Clean filter	1.2 kPa
Dirty filter	3.7 kPa
Air filter type	1 of dry type

### Gas Inlet System

Air-Gas mixing system	Heinzmann
Gas inlet pressure	1.5-25 kPa
Aftercooler temperature	40

### Exhaust system

Maximum back pressure for total system	3.9 kPa
Exhaust gas flow	3964 m <sup>3</sup> /h
Exhaust gas temperature (max) after turbo	495 °C
Exhaust outlet flange size	1 x 152 mm

### Combustion air system

Combustion air mass flow (25°C)	1769kg/h
Combustion air volume flow (25°C)	1572m <sup>3</sup> /h

### Fuel system

Gas Methane No.	≥75
Lower calorific value	34.71 MJ/Nm <sup>3</sup>
Gas consumption at 100% load	86 m <sup>3</sup> /h
Gas consumption at 75% load	66 m <sup>3</sup> /h
Gas consumption at 50% load	48 m <sup>3</sup> /h

### Electrical system

Type	Insulated return
Starter motor voltage	24 V
Starter motor power	7.5 kW
Minimum cranking speed	120 rev/min

### Thermal Data

Energy in exhaust	266 kW
Energy to coolant and oil	154 kW
Energy to radiation	39 kW

## Alternator Specifications

**50HZ/1500R.P.M**

Manufacture / Brand	Leroy-Somer
Model	LSA47.2S4
AVR model	R250
Coupling / Bearing	Direct /Single bearing
Phase	3 Phase
Power factor	Cos φ = 0.8
Winding pitch - code	2/3 - (N° 6S)
Drip proof	IP 23
Excitation	Shunt

Prime output power	328kW/410kVA
Insulation class	H
Voltage regulation	± 0,5 %
Totale Harmonic distortion THDno load < 1.5% - on load < 2%	
Waveform: NEMA = TIF	< 50
Number of wires	12 (N° 6) / 6 (N° 6S)
Altitude	≤ 1000 m
Overspeed	2250 min <sup>-1</sup>
Air flow	0.9m <sup>3</sup> /s

## Control Panel

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- Deep sea DSE7320 controller
  - Digital control panel
  - Volts, current, frequency, rpm (instruments)
  - Genset running hours
  - Battery voltage and charging
  - Over speed pre-alarm & shutdown
  - High water temp. pre-alarm & shutdown
  - Low oil pressure pre-alarm & shutdown
  - Low voltage pre-alarm & shutdown
  - Overcurrent pre-alarm & shutdown
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## Standard Features

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- High efficient water cooled gas engine
- Brushless alternators (Class H, with AVR.)
- Heavy duty rubber anti-vibration mountings
- Starter batteries and connecting cables
- Separate engine-drive battery charging alternator
- Industrial silencer for open type generator sets
- Breaker
- Maintenance free battery
- Low coolant level sensor
- Oil filter - Air filter
- Fully welded steel baseframe
- Ignition system
- Gas train: ball valve, gas filter, gas pressure regulator, pressure gauge, Button valve;
- Wiring with IEC standard
- Factory test certificate
- Operation & Maintenance manual & Diagrams
- Worldwide product / Technical support

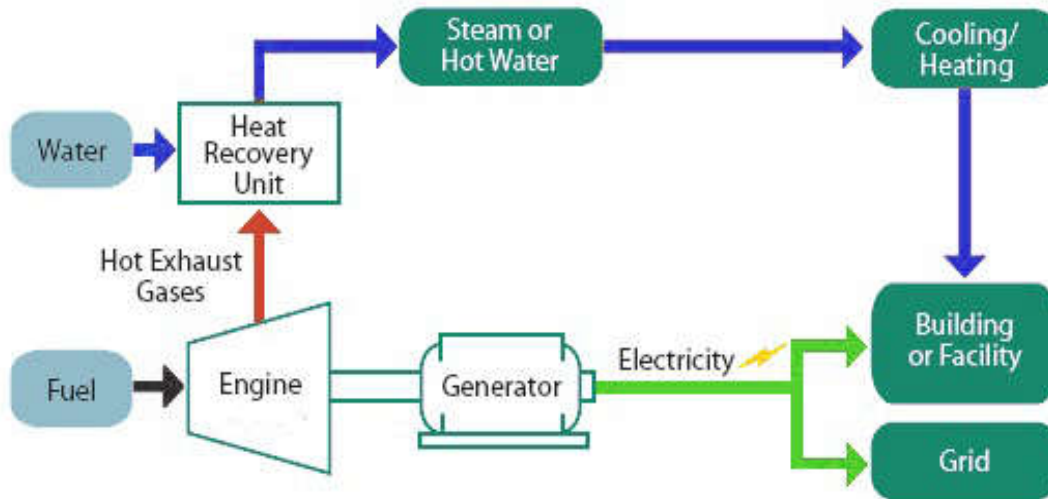
## Optional

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- Automatic Transfer Switch (ATS)
- 20FT or 40FT silent containerised box
- Water heater for severe cold weather
- Lub-oil heater for severe cold weather
- Horizontal motorized radiator
- Residential silencer
- Panel for auto synchronization with Mains
- Extra air filters for time-maintenance
- Automatic oil supply system
- Extra oil filters for time-maintenance
- Parallel cabinet
- Full range of attachments and options available for alternator
- Flame arrestor in gas train
- Desulfurization system
- Gas pretreatment system
- Dehydration system
- Genset Commissioning / Testing on site

## Combined Heat and Power Systems

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We offer Combined Cooling Heating and Power (CHP and CCHP ) packages for our gas generator sets. It can recover 75%-90% combined electrical and thermal efficiency, resulting in major reductions in your overall energy costs. In the past years we have supplied CHP systems to Germany, Russia,Indonesia etc. We have the experience and capabilities to meet your total energy requirements.

## Warranty

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The goods of Tide Power Technology are under warranty against defects in materials and workmanship for period 1 year or 2000 hours operation time whichever come first from the date of delivery to the end user (except the damageable spare parts of genset caused by incorrect man-made operation), and that the aforementioned warranty for the same token is back up by the engine (8000 hours no limited operation time) & alternator manufactures and their global distributors.