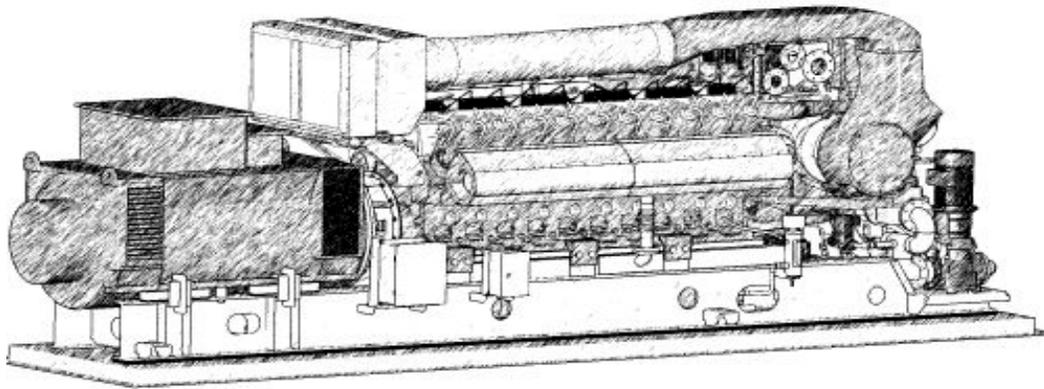




**Jenbacher gas engines**  
Technical Specification



**JMS 420 GS-N.L**  
Natural gas 1.415kW el.



# Jenbacher gas engines

## Technical Specification

### JMS 420 GS-N.L

Natural gas 1.415kW el.

#### CO-GEN Module data:

Electrical output	kW el.	1.415
Recoverable thermal output (120 °C)	kW	1.426
Energy input	kW	3.295
Fuel Consumption based on a LHV of 9,5 kWh/Nm <sup>3</sup>	Nm <sup>3</sup> /h	347
Electrical efficiency	%	42,9%
Thermal efficiency	%	43,3%
Total efficiency	%	86,2%
Heat to be dissipated (LT-Circuit)	kW	112

Emission values:

NOx < 310 ppm (0% O2)

#### Additional information:

Sound pressure level (engine, average value 1m)	dB(A)	97
Sound pressure level exhaust gas (1m, 30° off engine)	dB(A)	115
Exhaust gas mass flow rate, wet	kg/h	7.654
Exhaust gas volume, wet	Nm <sup>3</sup> /h	6.044
Max.admissible exhaust back pressure after engine	mbar	60
Exhaust gas temperature at full load	°C [8]	370
Combustion air mass flow rate	kg/h	7.417
Combustion air volume	Nm <sup>3</sup> /h	5.738
Max. inlet cooling water temp. (intercooler)	°C	40
Max. pressure drop in front of intake-air filter	mbar	10
Return temperature	°C	70
Forward temperature	°C	90
Hot water flow rate	m <sup>3</sup> /h	61,2

#### Engine data:

Engine type		J 420 GS-A09
Configuration		V 70°
No. of cylinders		20
Bore	mm	145
Stroke	mm	185
Piston displacement	lit	61,10
Nominal speed	rpm	1.500
Mean piston speed	m/s	9,25
Mean effe. press. at stand. power and nom. sp	bar	19,00
Compression ratio	Epsilon	13,5
ISO standard fuel stop power ICFN	kW	1451
Spec. fuel consumption of engine	kWh/kWh	2,27
Specific lube oil consumption	g/kWh	0,30
Weight dry	kg	6.600
Filling capacity lube oil	lit	457
Based on methane number	MZ	85

#### Alternator:

Manufacturer		STAMFORD
Type		PE 734 F2
Type rating	kVA	2.080
Efficiency at p.f. = 1,0	%	97,5%
Efficiency at p.f. = 0,8	%	96,6%
Ratings at p.f. = 1,0	kW	1.415
Ratings at p.f. = 0,8	kW	1.402
Frequency	Hz	50
Voltage	V	400
Protection Class		IP 23
Insulation class		H
Speed	rpm	1.500
Mass	kg	3.807

#### Technical parameters:

Applicable standards:

Based on DIN-ISO 3046

Based on VDE 0530 REM with specified tolerance

Standard conditions:

Air pressure: 1000 mbar or 100 m above sea level

Air temperature: 25°C or 298 K

Relative Humidity: 30%

Engine output derating:

for plants installed at > 500m above sea level and/or intake temperature > 30°C, the reduction of engine power is determined for each project.

Gas quality:

according to TA 1000-0300

Gas flow pressure: 80 - 200 mbar

(Lower gas pressures upon inquiry)

Max. variation in gas pressure: ±10%



### >>> Scope of supply genset - JGS 420 GS-N.L

#### Basic engine equipment:

- \*Exhaust gas turbocharger, Intercooler
- \*Motorized carburator for LEANOX control
- \*Electronic contactless high performance ignition system
- \*Lubricating oil pump (gear driven)
- \*Lubricating oil filters in main circuit
- \*Lubricating oil sump; Lubricating oil heat exchanger
- \*Jacket water pump
- \*Fuel-, lubricating oil and jacket water pipe work on engine
- \*Flywheel for alternator operation; Exhaust gas manifold
- \*Viscous damper
- \*Knock sensors

#### Engine accessories:

- \*Electric starter motor
- \*Electronic speed governor
- \*Electronic speed monitoring device including starting and overspeed control
- \*Transducers and switches for oil pressure, jacket water temp., jacket water pressure, charge pressure and mixture temperature
- \*One thermocouple per cylinder

#### Supplied loose:

- Gas train according to DIN-DVGW consisting of:
- \*Manual stop valve, fuel gas filter, two solenoid valves, Leakage control device, gas pressure regulator

#### Documentation:

- \*Operating and maintenance manual
- \*Spare parts manual
- \*Drawings

Assembly, painting, testing in Jenbach/Austria

### >>> Scope of supply module - JMS 420 GS-N.L

Identical to Genset except that heat recovery is included.

- \*jacket water heat exchanger mounted on module frame
- \*exhaust gas heat exchanger mounted as separate heat recovery module
- \*all heat exchangers with complete pipework
- \*Heat exchangers and all inherent auxiliaries

### >>> Scope of supply container - JG(M)C 420 GS-N.L

- \*Identical to module/genset but installed in 40' ISO container (65 dB(A) @ 10m); complete with all pipework and fittings
- \*Twin circuit radiation cooler for dissipation of intercooler jacket water and lube oil thermal output; ventilation equipment
- \*Gas & smoke detectors; exhaust silencer; lube oil equipment; starting system; flexible connections
- \*Separate control room complete with generator switchgear and all internal power and monitoring cables

#### Module equipment:

- \*Base frame for gas engine, alternator and heat exchangers
- \*Internal pole alternator with excitation alternator and with automatic voltage regulator; p.f. 0,8 lagging to 1,0
- \*Flexible coupling, bell housing
- \*Anti-vibration mounts
- \*Air filter
- \*Automatic lube oil replenishing with level control
- \*Wiring of components to module interface panel
- \*Crankcase breather
- \*Jacket water electric preheating

#### Module control panel:

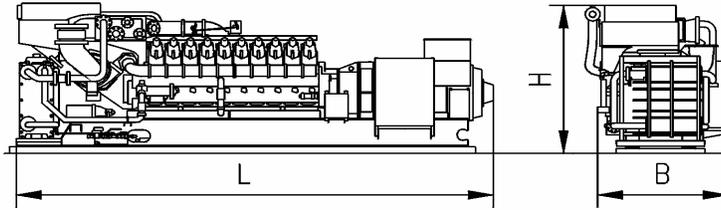
- \*Totally enclosed, single door cubicle, wired to terminals and ready to operate, protection IP 41 outside, IP 10 inside, according to VDE-standards

#### Control equipment:

- \*Engine-Management-System dia.ne (Dialog Network)
- \*\*Visualisation (industry PC-10" color graphics display): Operation data, controller display, Exh. gas temp., Generator electr. connection, etc.
- \*\*Central engine- and module control: Speed-, Power output-, LEANOX-Control and knock control, etc.
- \*Multi-transducer
- \*Lockable operation mode selector switch  
Positions: "OFF", "MANUAL", "AUTOMATIC"
- \*Demand switch



**Genset**



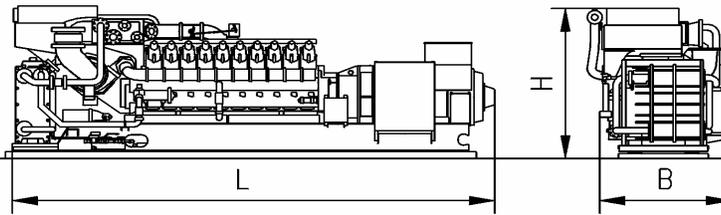
**Main dimensions and weights (approximate value)**

Length L	mm	7.100
Width B	mm	1.900
Height H	mm	2.200
Weight empty	kg	14.700
Weight filled	kg	15.400

**Connections (at genset)**

Jacket water inlet and outlet	DN/PN	100/10
Exhaust gas outlet	DN/PN	300/10
Fuel gas (at gas train)	DN/PN	80/16
Intercooler water connection:		
Low Temperature Circuit	DN/PN	65/10

**Module**



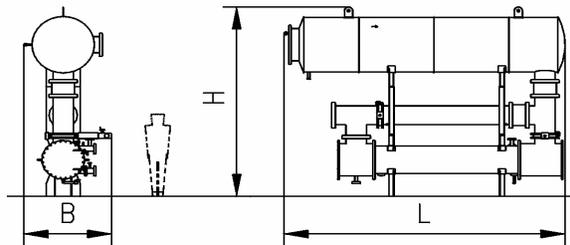
**Main dimensions and weights (approximate value)**

Length L	mm	7.100
Width B	mm	1.800
Height H	mm	2.200
Weight empty	kg	15.300
Weight filled	kg	16.000

**Connections (at module)**

Hot water inlet and outlet	DN/PN	100/10
Exhaust gas outlet	DN/PN	300/10
Fuel gas (at gas train)	DN/PN	80/16
Intercooler water connection:		
Intercooler water-Inlet/Outlet 2nd stage	DN/PN	65/10

**Heat recovery module**



**Main dimensions and weights (approximate value)**

Width B	mm	1.800
Height H	mm	4.158
Length L	mm	5.600

**Connections (on heat recovery module)**

Hot water inlet and outlet	DN/PN	100/10
Exhaust gas outlet	DN/PN	300/10
Condensate drain	DN/PN	50/10
Drain line	1/2"	1/2"