IVECO aifo

G

GAS GENSET

G.E. 8291 SRG 85

NATURAL GAS

Generating set performance

	1500 rpm				1800 rpm				
	110%	100%	75%	50%	110%	100%	75%	50%	
Peak efficiency net rated output	425	387			-	-			kVA
Peak efficiency net active power output at 0,8 p.f.	340	310			-	-			kW
Lean burn net rated output (*)	400	360			-	-			kVA
Lean burn net active power output at 0,8 p.f.	320	290			-	-			kW
Voltage available (L - L)	190 to 440				190 to 480				V

(*) According to TA-Luft emissions rule

Prime mover performance

Peak efficiency power	375	342	257	172	-	-	-	-	kW
Lean burn power	353	321	241	162	-	-	-	-	kW
Mean piston speed	6,5				7,8				m/s

Derating

(see general genset installation manual)

Prime mover data

Type	Four stroke gas engine with direct injection	
Induction type	TCA air / water	
Cylinders, number and arrangement	12V	
Bore x Stroke	145 x 130	mm
Total displacement	25,8	l
Cooling system	closed circuit	
Exhaust manifold pattern	wet	
Speed governor	electronic	
Max speed drop steady conditions	isochronous	
Engine rotation mass moment of inertia (less flywheel)	2,12	kgm²
Moment of inertia of flywheel	3,51	kgm²
Engine rotation (viewed facing flywheel)	CCW	
Compression ratio	11:1	

Lubrication system

Total lube oil capacity (including filters)	~71,5	l
Oil sump capacity: min	~44	l
max	~60,5	l
Lube oil specifications	see Technical Data	
Maximum oil temperature	120	°C
Minimum oil pressure at rated speed	2,94	bar
Max Specific lube oil consumption	0,7% max of gas consumption	

1500 rpm				1800 rpm			
110%	100%	75%	50%	110%	100%	75%	50%

Intake and exhaust system

Maximum allowable intake restriction with clean air filter	250							mmH_2O
Maximum allowable intake restriction with dirty air filter	500							mmH_2O
Air filter type	dry, paper cartridge							
Maximum allowable back pressure in exhaust system	500							mmH_2O
Charge pressure (peak efficiency)		0,51				-		bar
Charge pressure (lean burn)		0,64				-		bar

Carburation

Venturi based air/gas mixer and zero pressure governor.
Interfaceable with automatic lambda control system

Ignition

Digital, single firing
On request interfaceable with knocking control system

Electric system

Breakaway current	1670		A
Cranking motor rating	6		kW
Minimum recommended battery capacity	2 x 150		Ah
Auxiliary voltage	24		V
Alternator with voltage electronic control unit (negative earth)	28V, 30A		
Terminal connection board	Standard		

Cooling system

Coolant capacity (engine only)	~100							l
Coolant capacity (engine + radiator)	~440							l
Coolant pump flow rate		46				57		m^3/h
Max allowable pressure drop on external water circuit		0,4				0,12		bar
Max static pressure on exhaust side of radiator	10							mmH_2O
Fan power consumption	-				-			kW
Electric fan power consumption	10				N.A.			kW
Fan air flow	13				N.A.			m^3/s
Max engine outlet water temperature (alarm)	98							°C
Recommended coolant	50% water, 50% glycol							
Radiator core size B x H	1400 x 1400							mm
Water pressure drop in the jacket water coolant circuit at minimum coolant flow (#)	1							bar
Minimum allowable water coolant flow to intercooler (#)	21							m^3/h
Max pressure drop on external intercooler water circuit (#)	0,38							bar
Max inlet water temperature to intercooler (#)	54							°C
Max inlet water temperature to oil cooler (#)	80							°C

(#) to utilize only with alternative exchanger (no std radiator)

1500 rpm				1800 rpm			
110%	100%	75%	50%	110%	100%	75%	50%

Synchronous generator data

Poles	4	
Phases	3 + N	
Standard winding connections	STAR	
Windings treatment	for humide and saline climates	
Stator/rotor impregnation	class H	
Temperature rise	according to class H	
Frame mounting	B3-B14	
Enclosure (according to IEC 34-5 Standards)	IP21	
Cooling	air	
Damper windings	for parallel (optional)	
Maximum overspeed	2250	min^{-1}
Waveform distorsion	no more than 5%	
Overexcitation device	for Icc>3In (optional)	
Exciter	brushless rotating exciter design with solid state	
Voltage regulator	static electronic design	
Steady voltage precision	within ± 1% Vn from no load to full at 0,8 ÷ 1 p.f.	%

Basic data

Installation dimensions (width x length x height)	1500 x 4995 x 2070	mm
Dry weight (with standard accessories)	~5010	kg
Wet weight (with standard accessories)	~5515	kg

Electric control board (only on request)

The manual starting control panel has been designed and built to combine all the instruments control and warnings lights both for the engine and the generator.
The sheet steel made panel is carefully painted for tropical climate and is designed for generator mounting and dust proof application.
The main equipments included on the control panel are the following: three ammeters with CT's; voltmeter; voltmeter selector switch; frequency meter; moulded case triple-pole circuit breaker with termal and magnetic releasesand minimum voltage coil; electronic device for shut-down of the engine in case of HWT, LOP and overspeed; starting key and stop push button; acoustic signal; warning light for: high cooling water temperature, low oil pressure, high oil temperature, battery charging, overspeed, low and high gas pressure, low water level, high supercharged air temperature; outlet power cable terminal box; hours meter; instruments for: water temperature, oil temperature, oil pressure, supercharged air pressure, exhaust temperature, water temperature outlet to oil cooler.

	1500 rpm				1800 rpm			
	110%	100%	75%	50%	110%	100%	75%	50%

Heat balance (Peak efficiency) (§)

Input energy (LHV)	-	936(100)	737(100)	551(100)	-	-	-	-	kW (%)
Work	-	342(37)	257(35)	172(31)	-	-	-	-	kW (%)
Heat to coolant (water + oil)	-	346(37)	295(40)	251(46)	-	-	-	-	kW (%)
Heat to exhaust (LHV)	-	209(22)	158(21)	107(19,5)	-	-	-	-	kW (%)
Heat to intercooler	-	14,1(1,5)	5,7(1)	3(0,5)	-	-	-	-	kW (%)
Heat to radiation	-	24(2,5)	22(3)	18(3)	-	-	-	-	kW (%)
Heat to exhaust cooled to 140 °C	-	144	108	74	-	-	-	-	kW
Max exhaust temperature (after turbine)	-	390	382	369	-	-	-	-	°C
Exhaust gas flow	-	1614	1225	889	-	-	-	-	kg/h
Induction air flow	-	1198	909	658	-	-	-	-	m^3_N/h
SFC - Specific fuel consumption	-	9,8	10,3	11,5	-	-	-	-	MJ/kWh
BMEP	-	10,6	8	5,3	-	-	-	-	bar

Heat balance (Lean burn) (§)

Input energy (LHV)	-	946(100)	742(100)	536(100)	-	-	-	-	kW (%)
Work	-	321(34)	241(33)	162(30)	-	-	-	-	kW (%)
Heat to coolant (water + oil)	-	344(36)	300(40)	241(45)	-	-	-	-	kW (%)
Heat to exhaust (LHV)	-	234(25)	179(24)	121(23)	-	-	-	-	kW (%)
Heat to intercooler	-	22,6(2,5)	8,5(1)	2,8(0,5)	-	-	-	-	kW (%)
Heat to radiation	-	23,9(2,5)	14,3(2)	8,8(1,5)	-	-	-	-	kW (%)
Heat to exhaust cooled to 140 °C	-	160	122	80	-	-	-	-	kW
Max exhaust temperature (after turbine)	-	390	386	358	-	-	-	-	°C
Exhaust gas flow	-	1842	1419	1025	-	-	-	-	kg/h
Induction air flow	-	1374	1057	764	-	-	-	-	m^3_N/h
SFC - Specific fuel consumption	-	10,6	11,1	11,9	-	-	-	-	MJ/kWh
BMEP	-	9,95	7,47	5,02	-	-	-	-	bar

(§) Indicative average figures depending on installation, setting of speed regulator and carburator