

**Model: V220C2**

**Engine: VOLVO, TAD733GE**

**Alternator: LEROY SOMER, LSA462M5**

## Specifications

- Compliant with stage 2 of the European pollutant emissions directive
- Electronic governor
- Mechanically welded chassis with anti-vibration suspension
- Power circuit breaker
- Radiator for wiring T° of 50°C [122°F] max with mechanical fan
- Protective grille for fan and rotating parts
- 9dB(A) silencer supplied separately
- Charged DC starting battery with electrolyte
- 12 V charging alternator and starter
- Supplied with oil and coolant -30°C
- User manual and commissioning guide



## Generator Ratings

Voltage	Power ESP kW/kVA	Power RRP kW/kVA	Standby Amps	Dimensions	Weight
415/240	176 / 220	160 / 200	306	Length: 2370 Width: 1114 Height: 1538	1850kg Net 2200kg Gross
400/230	176 / 220	160 / 200	318		
380/220	176 / 220	160 / 200	334		
240/120	176 / 220	160 / 200	529		
230/115	176 / 220	160 / 200	552		
220/110	176 / 220	160 / 200	577		
200/115	176 / 220	160 / 200	635		

**RRP:** Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. A 10% overload capability is available for a period of 1 hour within 12hour period of operation, in accordance with ISO 3046-1.

**ESP:** The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed.

**Terms of Use:** Standard reference conditions 25 °C Air Inlet Temp, 100m A.S.L 60%

relative humidity. All engine performance data based on the above mentioned continuous ratings.

### Canopy Version

Type	dB(A)@7m	Dimensions	Weight	Tank
M226	68.5	Length: 3508 Width: 1200 Height: 1830	2540kg Net 2890kg Gross	340 L
M226-DW	68.5	Length: 3560 Width: 1200 Height: 2182	2960kg Net 3790kg Gross	868 L

All units supplied with canopy as standard except when requested.

### Engine Data

Manufacturer/Model	VOLVO TAD733GE, 4-strokes, Turbo
Cylinder arrangement	6 x L
Displacement	7.15L [436.3C.I.]
Bore and stroke	108mm [4.3in.] X 130mm [5.1in.]
Compression ratio	18.1 : 1
Rated RPM	1500 Rpm
Piston speed	6.5m/s [21.3ft./s]
Max. standby power at rated RPM	197kW [264BHP]
Frequency regulation, steady state	+/- 0.5%
BMEP	23bar [333psi]
Governor: type	ELEC

### Exhaust System

Exhaust temperature	540°C [1004°F]
Exhaust gas flow	565L/s [1197cfm]
Max back pressure	1000mm CE [39in. WG]

### Fuel System

110% (Stand by power)	47.6L/h [12.6gal/hr]
100% (of the Prime Power)	42.7L/h [11.3gal/hr]
75% (of the Prime Power)	31.7L/h [8.4gal/hr]
50% (of the Prime Power)	21.3L/h [5.6gal/hr]
Total fuel flow	360L/h [95.1gal/hr]

## Oil System

Total oil capacity w/filters	34L [9.0gal]
Oil Pressure low idle	2bar [29.0psi]
Oil Pressure rated RPM	4bar [58.0psi]
Oil consumption 100% load	0.08L/h [0.021gal/hr]
Oil capacity carter	31L [8.2gal]

## Thermal balance 100% load

Heat rejection to exhaust	143kW [8131Btu/mn]
Radiated heat to ambient	13kW [739Btu/mn]
Heat rejection to coolant	91kW [5174Btu/mn]

## Air intake

Max. intake restriction	250mm CE [10in. WG]
Engine air flow	211L/s [447cfm]

## Coolant system

Radiator & engine capacity	35.8L [9.5gal]
Max water temperature	105°C [221°F]
Outlet water temperature	102°C [216°F]
Fan power	4.4 kW
Fan air flow w/o restriction	5.5m <sup>3</sup> /s [11655cfm]
Available restriction on air flow	20mm CE [0.8in. WG]
Type of coolant	Glycol-Ethylene
Thermostat	87-102 °C

## Emissions

PM	0.064 g/KW.h
CO	0.504 g/KW.h
Nox	5.813 g/KW.h
HC	0.323 g/KW.h

## Alternator Specifications

Manufacturer/Type	LEROY SOMER (LSA462M5)
NUMBER OF PHASE	3
POWER FACTOR (Cos Phi)	0.8
ALTITUDE	< 1000 m
OVERSPEED	2250 rpm
POLE: NUMBER	4
EXCITER TYPE	SHUNT
INSULATION: CLASS, TEMPERATURE RISE	H / H
VOLTAGE REGULATOR	R230
SUSTAINED SHORT CIRCUIT CURRENT	
TOTAL HARMONICS (TGH/THC)	< 2.5%
WAVE FROM : NEMA = TIF- TGH/THC	< 50
WAVE FROM: CEI = FHT - TGH/THC	< 2%
BEARING: NUMBER	1
COUPLING	Direct
VOLTAGE REGULATION 0 TO 100% LOAD	+/- 0.5%
RECOVERY TIME (20% VOLT DIP) MS	500 ms
SkVA WITH 90% OF NORMAL SUSTAINED VOLTAGE (AT 0.4PF)	[N/A]

## Other Alternator Data

CONTINUOUS NOMINAL RATING @ 40° C	200 kVA
STANDBY RATING @ 27° C	223 kVA
EFFICIENCIES @ 4/4 LOAD	92.3 %
AIR FLOW	0.43m <sup>3</sup> /s [911.11cfm]
SHORT CIRCUIT RATIO: 50 (Kcc)	0.45
DIRECT AXIS SYNCHRO REACTANCE UNSATURATED (Xd)	301 %
QUADRA AXIS SYNCHRO REACTANCE UNSATURATED (Xq)	180 %
OPEN CIRCUIT TIME CONSTANT: 50 (T'do)	2042 ms
DIRECT AXIS TRANSIENT REACTANCE SATURATED (X'd)	14.7 %
SHORT CIRCUIT TRANSIENT TIME CONSTANT (T'd)	100 ms

## Other Alternator Data Continued

DIRECT AXIS SUBTRANSIENT REACTANCE SATURATED (X'd)	8.8 %
SUBTRANSIENT TIME CONSTANT (T'd)	10 ms
QUADRA AXIS SUBTRANSIENT REACTANCE SATURATED (X'q)	10.9 %
ZERO SEQUENCE REACTACE UNSATURATED (X <sub>0</sub> )	0.8 %
NEGATIVE SEQUENCE REACTANCE SATURATED (X <sub>2</sub> )	9.9 %
ARMATURE TIME CONSTANT (T <sub>a</sub> )	15 ms
NO LOAD EXCITATION CURRENT (i <sub>0</sub> )	1 A
FULL LOAD EXCITATION CURRENT (i <sub>c</sub> )	3.7 A
FULL LOAD EXCITATION VOLTAGE (u <sub>c</sub> )	32 V
RECOVERY TIME (DELTA U = 20% TRANSITOIRE)	500 ms
MOTOR START (DELTA = 20% PERM. OR 50% TRANS.)	397 kVA
TRANSIENT DIP (4/4 CHARGE) - PF : 1.8AR	15.4 %
NO LOAD LOSSES	3.04kW [3.04Kw]
HEAT REJECTION	13.18 kW