

Model: X3100

Engine: MTU, 20V4000G63F

Alternator: LEROY SOMER, LSA54S7

Specifications

- Electronic governor
- Mechanically welded chassis with anti-vibration suspension
- Air cooler for wiring T° of 47/50°C max with electric fan
- Exhaust outlet with flexible and flanges
- 24 V charging alternator and starter
- Supplied with oil
- User manual and commissioning guide



Generator Ratings

Voltage	Power ESP kW/kVA	Power RRP kW/kVA	Standby Amps	Dimensions	Weight
415/240	2480/ 3100	2255/ 2818	4313	Length: 5730 Width: 2250 Height: 2454	18365kg Net 18976kg Gross
400/230	2480/ 3100	2255/ 2818	4475		
380/220	2480/ 3100	2255/ 2818	4710		

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.

Engine Data

Manufacturer/Model	MTU 20V4000G63F, 4-strokes, Turbo
Cylinder arrangement	20 x V
Displacement	95.4L [5821.7C.I.]
Bore and stroke	170mm [6.7in.] X 210mm [8.3in.]
Compression ratio	16.5
Rated RPM	1500 Rpm
Piston speed	10.5m/s [34.4ft./s]
Max. standby power at rated RPM	2662kW [3567BHP]
Frequency regulation, steady state	+/- 0.5%
BMEP	20.3bar [294psi]
Governor: type	ELEC

Exhaust System

Exhaust temperature	530°C [986°F]
Exhaust gas flow	7300L/s [15469cfm]
Max back pressure	300mm CE [12in. WG]

Fuel System

110% (Stand by power)	594L/h [156.9gal/hr]
100% (of the Prime Power)	543L/h [143.5gal/hr]
75% (of the Prime Power)	420L/h [111.0gal/hr]
50% (of the Prime Power)	295L/h [77.9gal/hr]
Total fuel flow	1500L/h [396.3gal/hr]

Oil System

Total oil capacity w/filters	300L [79.3gal]
Oil Pressure low idle	4.9bar [71.0psi]
Oil Pressure rated RPM	7.7bar [111.6psi]
Oil consumption 100% load	2.72L/h [0.719gal/hr]
Oil capacity carter	240L [63.4gal]

Thermal balance 100% load

Heat rejection to exhaust	[N/A]
Radiated heat to ambient	105kW [5970Btu/mn]
Heat rejection to coolant	[N/A]

Air intake

Max. intake restriction	150mm CE [6in. WG]
Engine air flow	2700L/s [5722cfm]

Coolant system

Radiator & engine capacity	[N/A]
Max water temperature	104°C [219°F]
Outlet water temperature	100°C [212°F]
Fan power	[N/A]
Fan air flow w/o restriction	[N/A]
Available restriction on air flow	[N/A]
Type of coolant	Coolelf mdx
Thermostat	79/92 °C

Emissions

PM	[N/A]
CO	[N/A]
Nox	[N/A]
HC	[N/A]

Alternator Specifications

Manufacturer/Type	LEROY SOMER (LSA54S7)
NUMBER OF PHASE	3
POWER FACTOR (Cos Phi)	0.8
ALTITUDE	1000
OVERSPEED	1800 rpm
POLE: NUMBER	4
EXCITER TYPE	AREP
INSULATION: CLASS, TEMPERATURE RISE	H/H
VOLTAGE REGULATOR	R449

Alternator Specifications Continued

SUSTAINED SHORT CIRCUIT CURRENT	[N/A]
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	900 ms
SKVA WITH 90% OF NORMAL SUSTAINED VOLTAGE (AT 0.4PF)	[N/A]

Other Alternator Data

CONTINUOUS NOMINAL RATING @ 40° C	2916 kVA
STANDBY RATING @ 27° C	3208 kVA
EFFICIENCIES @ 4/4 LOAD	96.4 %
AIR FLOW	3.4m ³ /s [7204.16cfm]
SHORT CIRCUIT RATIO: 50 (Kcc)	0.42
DIRECT AXIS SYNCHRO REACTANCE UNSATURATED (Xd)	279 %
QUADRA AXIS SYNCHRO REACTANCE UNSATURATED (Xq)	168 %
OPEN CIRCUIT TIME CONSTANT: 50 (T'do)	3160 ms
DIRECT AXIS TRANSIENT REACTANCE SATURATED (X'd)	26.2 %
SHORT CIRCUIT TRANSIENT TIME CONSTANT (T'd)	350 ms
DIRECT AXIS SUBTRANSIENT REACTANCE SATURATED (X'd)	16 %
SUBTRANSIENT TIME CONSTANT (T'd)	24 ms
QUADRA AXIS SUBTRANSIENT REACTANCE SATURATED (X'q)	20 %
ZERO SEQUENCE REACTANCE UNSATURATED (Xo)	3.8 %
NEGATIVE SEQUENCE REACTANCE SATURATED (X2)	18 %
ARMATURE TIME CONSTANT (Ta)	79 ms
NO LOAD EXCITATION CURRENT (io)	1.6 A

Other Alternator Data Continued

FULL LOAD EXCITATION CURRENT (ic)	5.7 A
FULL LOAD EXCITATION VOLTAGE (uc)	60 V
RECOVERY TIME (DELTA U = 20% TRANSITOIRE)	900 ms
MOTOR START (DELTA = 20% PERM. OR 50% TRANS.)	6000 kVA
TRANSIENT DIP (4/4 CHARGE) - PF : 1.8AR	14 %
NO LOAD LOSSES	29kW [29.00Kw]
HEAT REJECTION	87 kW