

# X3100

Engine MTU , 20V4000G63F  
Alternator LEROY SOMER , LSA545T

## STANDARD FEATURES

- Electronic governor
- Mechanically welded chassis with vibration isolators
- 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



Voltage	Power ESP kWe/kVA	Power PRP kWe/kVA	Standby Amps	Dimensions	Weight
415/240	2480 / 3100	2255 / 2818	4313	Length: 5730mm [226in]	18365kg [40476lbs] Net
400/230	2480 / 3100	2255 / 2818	4475	Width: 2250mm [89in]	18976kg [41823lbs] Gross
380/220	2480 / 3100	2255 / 2818	4710	Height: 2454mm [97in]	

## POWER DEFINITION

**PRP** : 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 12-hour 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.

## TERM OF USE

Standard reference conditions N/A °C Air Intlet Temp, N/A m A.S.L. 60 % relative humidity. All engine performance data based on the above mentioned maximum continuous ratings.

### ELEKTROMAK JENERATÖR

Jeneratör Alım Satım Kiralama Bobinaj ve Servis Hizmetleri

Merkez : Doğalpdere San.Sit.5 Ada No:27 İkitelli/İstanbul

İkitelli Tel / fax : (212) 671 02 71

Suavi Uyar : 0 532 767 32 23

Mustafa Uyar : 0 533 711 05 34

Süleyman Uyar : 0 535 205 28 53

Web Sitemiz : [www.elektromakjenerator.com](http://www.elektromakjenerator.com)

Mail Adresimiz : [info@elektromakjenerator.com](mailto:info@elektromakjenerator.com) , [elektromakjenerator@hotmail.com](mailto:elektromakjenerator@hotmail.com)

## ENGINE SPECIFICATIONS

STANDARD FEATURES	Manufacturer / Model	MTU 20V4000G63F , 4-strokes, Turbo , Air/Water DC 20 X
	Cylinder Arrangement	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. stand by 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]
	Max. fuel pump 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 [0.7gal/hr]
	Oil capacity carter	240L [63.4gal]
THERMAL BALANCE	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 LEVEL	PM	N/A
	CO	N/A
	Nox	N/A
	HC	N/A

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**ALTERNATOR SPECIFICATIONS**

GENERAL DATAS	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
	Sustained short circuit current	5.7 AC
	Total harmonics (TGH/THC)	< 2,5%
	Wave form : NEMA = TIF – TGH/THC	< 50
	Wave form : 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 nominal sustained voltage (at 0.4PF)	N/A
OTHER DATAS	Continuous nominal rating @ 40°C	2916 kVA
	Standby rating @ 27°C	3208 kVA
	Efficiencies @ 4/4 load	96.4 %
	Air flow	3.4m3/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
	Full load excitation current (ic)	N/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 : 1.8 AR	14 %
No load losses	29kW [29.00Kw]	
Heat rejection	87 kW	

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## CONTROL PANEL

### Option

### M80



#### Specifications :

Tachometer, Emergency stop button, client connection terminal strip, EC certified

#### Engine parameters :

Hours counter, Oil pressure gauge, Water temperature indicator, Oil pressure indicator

### Option

### TELYS



#### Specifications :

Frequency meter, Ammeter, Voltmeter

Alarms and faults Oil pressure, water temperature, No start-up, Overspeed, Min/max alternator, Min/max battery voltage, Low fuel level, Emergency stop  
Engine parameters Hours counter, Oil pressure, Water temperature, Engine speed, Battery voltage, Fuel level

### Option

### KERYS



#### Specifications :

Frequency meter, Ammeter, Voltmeter

Alarms and faults Oil pressure, water temperature, No start-up, Overspeed, Min/max alternator, Min/max battery voltage, Low fuel level, Emergency stop  
Engine parameters Hours counter, Oil pressure, Water temperature, Engine speed, Battery voltage, Fuel level  
Additional specifications Website, Troubleshooting, Assistance and Maintenance, Plotting and logging, Load impact, 8 configurations available, Compliance with international standards...

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