

Model: X1650

Engine: MTU, 12V4000G23F

Alternator: LEROY SOMER, LSA50.1VL10

Specifications

- Electronic governor
- Mechanically welded chassis with anti-vibration suspension
- Air cooler for wiring T° of 38/40°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	1320/ 1650	1200 / 1500	2296	Length: 4160 Width: 1885 Height: 2158	10820kg Net 11261kg Gross
400/230	1320 / 1650	1200 / 1500	2382		
380/220	1320 / 1650	1200 / 1500	2507		

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
EUR40SSi	69	Length: 12192 Width: 2438 Height: 2896	24337kg Net 25714kg Gross	500 L
EUR40Si	75	Length: 12192 Width: 2438 Height: 2896	23303kg Net 24680kg Gross	500 L

All units supplied with canopy as standard except when requested.

Engine Data

Manufacturer/Model	MTU 12V4000G23F, 4-strokes, Turbo
Cylinder arrangement	12 x V
Displacement	57.24L [3493.0C.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	1562kW [2093BHP]
Frequency regulation, steady state	+/- 0.5%
BMEP	19.9bar [288psi]
Governor: type	ELEC

Exhaust System

Exhaust temperature	455°C [851°F]
Exhaust gas flow	4000L/s [8476cfm]
Max back pressure	300mm CE [12in. WG]

Fuel System

110% (Stand by power)	351L/h [92.7gal/hr]
100% (of the Prime Power)	317L/h [83.8gal/hr]
75% (of the Prime Power)	241L/h [63.7gal/hr]
50% (of the Prime Power)	168L/h [44.4gal/hr]
Total fuel flow	1500L/h [396.3gal/hr]

Oil System

Total oil capacity w/filters	260L [68.7gal]
Oil Pressure low idle	3.5bar [50.7psi]
Oil Pressure rated RPM	7bar [101.4psi]
Oil consumption 100% load	1.59L/h [0.420gal/hr]
Oil capacity carter	200L [52.8gal]

Thermal balance 100% load

Heat rejection to exhaust	[N/A]
Radiated heat to ambient	75kW [4265Btu/mn]
Heat rejection to coolant	[N/A]

Air intake

Max. intake restriction	150mm CE [6in. WG]
Engine air flow	1600L/s [3391cfm]

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 (LSA50.1VL10)
NUMBER OF PHASE	3
POWER FACTOR (Cos Phi)	0.8
ALTITUDE	< 1000 m
OVERSPEED	2250 rpm
POLE: NUMBER	4
EXCITER TYPE	AREP
INSULATION: CLASS, TEMPERATURE RISE	H/H
VOLTAGE REGULATOR	R449
SUSTAINED SHORT CIRCUIT CURRENT	
TOTAL HARMONICS (TGH/THC)	< 4%
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	+/- 1%
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	1580 kVA
STANDBY RATING @ 27° C	1740 kVA
EFFICIENCIES @ 4/4 LOAD	95.7 %
AIR FLOW	1.6m ³ /s [3390.19cfm]
SHORT CIRCUIT RATIO: 50 (Kcc)	0.38
DIRECT AXIS SYNCHRO REACTANCE UNSATURATED (Xd)	342 %
QUADRA AXIS SYNCHRO REACTANCE UNSATURATED (Xq)	205 %
OPEN CIRCUIT TIME CONSTANT: 50 (T'do)	2830 ms
DIRECT AXIS TRANSIENT REACTANCE SATURATED (X'd)	23.1 %
SHORT CIRCUIT TRANSIENT TIME CONSTANT (T'd)	225 ms

Other Alternator Data Continued

DIRECT AXIS SUBTRANSIENT REACTANCE SATURATED (X'd)	12.7 %
SUBTRANSIENT TIME CONSTANT (T'd)	21 ms
QUADRA AXIS SUBTRANSIENT REACTANCE SATURATED (X'q)	16 %
ZERO SEQUENCE REACTACE UNSATURATED (X ₀)	3 %
NEGATIVE SEQUENCE REACTANCE SATURATED (X ₂)	14.3 %
ARMATURE TIME CONSTANT (T _a)	42 ms
NO LOAD EXCITATION CURRENT (i ₀)	1.3 A
FULL LOAD EXCITATION CURRENT (i _c)	5 A
FULL LOAD EXCITATION VOLTAGE (u _c)	63 V
RECOVERY TIME (DELTA U = 20% TRANSITOIRE)	< 500 ms
MOTOR START (DELTA = 20% PERM. OR 50% TRANS.)	3150 kVA
TRANSIENT DIP (4/4 CHARGE) - PF : 1.8AR	12 %
NO LOAD LOSSES	16kW [16.00Kw]
HEAT REJECTION	57 kW