



X1650F

DIESEL GENSET

MODEL	X1650F
Stand-by Power @ 50Hz	1320kW / 1650 kVA
Prime Power @ 50Hz	1200 kW / 1500 kVA

Standard Features

General features :

- Engine (MTU , 12V4000G61F)
- Charge alternator 24 V , Governor: Elec
- Alternator (LEROY SOMER , LSA50.1VL10)
- Single bearing alternator IP 23 , insulation class H /H
- Radiator 48°C [118°F]°C max. T° air inlet with coolant cap
- Skid and vibration isolators
- Dry type air filter
- Main line circuit breaker
- Microprocessor control panel
- User manual



Generator Ratings

Voltage	HZ	Phase	P.F	Standby Amps	Standby Ratings kW/kVA	Prime Ratings kW/kVA
415/240	50	3	0.8	2296	1320 / 1650	1200 / 1500
400/230	50	3	0.8	2382	1320 / 1650	1200 / 1500
380/220	50	3	0.8	2507	1320 / 1650	1200 / 1500

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.

Conditions of sale

- SDMO provides a full line of products with high quality recognized engines and alternators.
- Service and parts are available from SDMO distributors as a single source of responsibility.
- Electronic governor MDEC is available on all models from the XS range.
- Each and every units is factory tested. All generator sets are also prototype tested.
- Warranty according to our standard conditions. Five years extended also available



ENGINE DATA

Manufacturer / Model	MTU 12V4000G61F , 4-cycle, Turbo , Air/Water DC
Cylinder Arrangement	12 X V
Displacement	48.75L [2974.9C.I.]
Bore and Stroke	165mm [6.5in.] X 190mm [7.5in.]
Compression ratio	16.6 : 1
Rated RPM	1500 Rpm
Piston Speed	9.5m/s [31.2ft./s]
Max. stand by Power at rated RPM*	1465kW [1963BHP]*
Frequency regulation, steady state	+/-0. 5%
BMEP	21.82bar [316psi]
Governor : type	Elec

Exhaust System

Exhaust gas flow	3900L/s [8264cfm]
Exhaust temperature	470°C [878°F]
Max back pressure	300mm CE [12in. WG]

Fuel System

110% (Stand By power)	337L/h [89.0gal/hr]
100% (of the Prime Power)	303L/h [80.1gal/hr]
75% (of the Prime Power)	227L/h [60.0gal/hr]
50% (of the Prime Power)	155L/h [41.0gal/hr]
Total fuel flow	1098L/h [290.1gal/hr]

Oil System

Total oil capacity w/filters	260L [68.7gal]
Oil Pressure low idle	3bar [43.5psi]
Oil Pressure rated RPM	5.5bar [79.7psi]
Oil consumption 100% load	1.63L/h [0.4gal/hr]
Oil capacity carter	200L [52.8gal]

Thermal balance 100% load

Heat rejection to exhaust	818kW [46511Btu/mn]
Radiated heat to ambient	90kW [5117Btu/mn]
Heat rejection to coolant	N/A

Air intake

Max. intake restriction	150mm CE [6in. WG]
Engine air flow	1800L/s [3814cfm]

Coolant System

Radiator & engine capacity	N/A
Max water temperature	97°C [207°F]
Outlet water temperature	93°C [199°F]
Fan power	N/A
Fan air flow	24.2m ³ /s [51282cfm]
Available restriction on air flow	20mm CE [0.8in. WG]
Type of coolant	Coolelf mdx
Thermostat	79/-- °C

Emissions

HC	N/A
CO	N/A
Nox	N/A
PM	N/A

* For the 2000 series engines, the powers expressed are the net engine powers (cooling system as standard)
For the 4000 series engines, the powers expressed are the gross engine powers (cooling system optional, compact version)



ALTERNATOR SPECIFICATIONS

GENERAL DATA

- Compliance with NEMA MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards.
- Vacuum-impregnated windings with epoxy varnish.
- IP21 drip proof.

ALTERNATOR DATA

Manufacturer / Type	LERROY 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	3 IN = 10s
Total harmonics (TGH/THC)	< 4%
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	+/- 1%
Recovery time (20% Volt dip) ms	< 500 ms
SkVA with 90 % of nominal sustained voltage (at 0.4 PF)	4400

OTHER ALTERNATOR DATA

Continuous nominal rating @ 40°C	1740 kVA
Standby rating @ 27°C	2086 kVA
Efficiencies @ 4/4 load	95.8 %
Air flow	1.6m ³ /s [3390.19cfm]
Short circuit ratio;50 (Kcc)	0.38
Direct axis synchro reactance unsaturated (Xd)	343 %
Quadra axis synchro reactance unsaturated (Xq)	206 %
Open circuit time constant;50 (T'do)	2830 ms
Direct axis transient reactance saturated (X'd)	23.2 %
Short circuit transient time constant (T'd)	225 ms
Direct axis subtransient reactance saturated (X''d)	12.8 %
Subtransient time constant (T''d)	21 ms
Quadra axis subtransient reactance saturated (X''q)	16 %
Zero sequence reactance unsaturated (Xo)	3 %
Negative sequence reactance saturated (X2)	14.3 %
Armature time constant (Ta)	42 ms
No load excitation current (io)	1.3 A
Full load excitation current (ic)	5 A
Full load excitation voltage (uc)	63 V
Recovery time (Delta U = 20% transitoire)	< 500 ms
Motor start (Delta = 20% perm. Or 50% trans.)	3780 kVA
Transient dip (4/4 charge) – PF : 1.8 AR	12 %
No load losses	21 kW
Heat rejection	67 kW

Control Panels

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

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...

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

Options

Engine and Radiator

- Heat shield protection
- Oil drain extension
- Heavy duty air filter
- Lube oil drain pump
- Radiator core guard
- Battery charger
- Block heater

Alternator

- Anti condensation heater
- Enforced impregnation
- Oversized alternator

Control panel

- NFPA 110 level 1
- Paralleling system
- Remote annunciator
- Oil temperature shutdown

Exhaust

- Residential silencer
- Critical silencer
- Flexible exhaust conn.

- Key start panel

Literature

- Parts
- Maintenance

Fuel

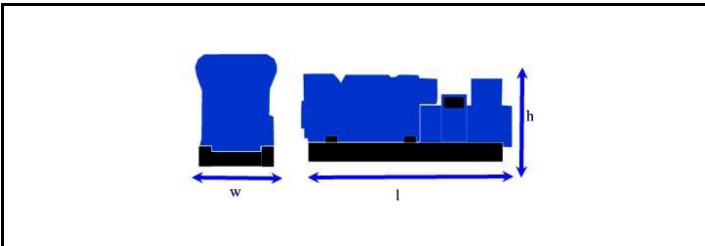
- Day tank
- Subbase fuel tanks UL
- Water separator fuel filter

Contenergy

- ISO40CSi
- Silent 79 db @ 7m [23 Ft] (stby)

Weight and Dimensions

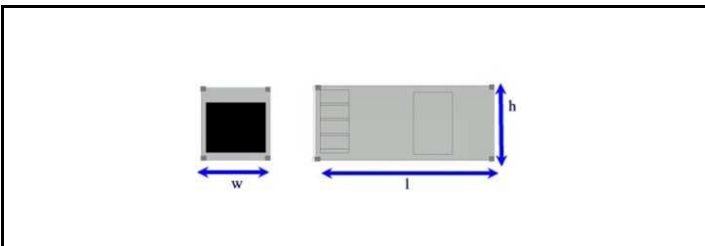
Open Model Excluding option



Overall size l x w x h :
3960mm [156in] x 1835mm [72in] x 2210mm [87in]

Weight :
9742kg [21471lbs] Net 10176kg [22428lbs] Brut

With Optional Enclosure



Overall size l x w x h :
12192mm [480in] x 2438mm [96in] x 2896mm [114in]

Weight :
18377kg [40503lbs] Net 19296kg [42528lbs] Brut

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