

X650UC

DIESEL GENSET

MODEL	X650UC
Stand-by Power @ 60Hz	650kW / 813 kVA
Prime Power @ 60Hz	591 kW / 739 kVA

Standard Features

General features :

- Engine (MTU , 12V2000G43)
- Engine EPA Carb Charge alternator 24 V , Governor: Elec
- Alternator (LEROY SOMER , LSA491M5)
- Single bearing alternator IP 23 , insulation class H /H
- Radiator 40°C [104°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 ^pCSA Certified (consult us)



Generator Ratings

Voltage	HZ	Phase	P.F	Standby Amps	Standby Ratings kW/kVA	Prime Ratings kW/kVA
480/277	60	3	0.8	978	650 / 813	591 / 739
440/254	60	3	0.8	1067	650 / 813	591 / 739
380/220	60	3	0.8	1235	650 / 813	591 / 739
240/120	60	3	0.8	1956	650 / 813	591 / 739
220/127	60	3	0.8	2134	650 / 813	591 / 739
208/120	60	3	0.8	2257	650 / 813	591 / 739

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 12V2000G43 , 4-cycle, Turbo , Air/Air DC
Cylinder Arrangement	12 X V
Displacement	23.9L [1458.5C.I.]
Bore and Stroke	130mm [5.1in.] X 150mm [5.9in.]
Compression ratio	14 : 1
Rated RPM	1800 Rpm
Piston Speed	9m/s [29.5ft./s]
Max. stand by Power at rated RPM*	694kW [930BHP]*
Frequency regulation, steady state	+/-0.5%
BMEP	20.5bar [297psi]
Governor : type	Elec

Exhaust System

Exhaust gas flow	2580L/s [5467cfm]
Exhaust temperature	500°C [932°F]
Max back pressure	500mm CE [20in. WG]

Fuel System

110% (Stand By power)	N/A
100% (of the Prime Power)	174L/h [46.0gal/hr]
75% (of the Prime Power)	130.5L/h [34.5gal/hr]
50% (of the Prime Power)	90.5L/h [23.9gal/hr]
Total fuel flow	450L/h [118.9gal/hr]

Oil System

Total oil capacity w/filters	82L [21.7gal]
Oil Pressure low idle	5bar [72.5psi]
Oil Pressure rated RPM	6bar [86.9psi]
Oil consumption 100% load	0.87L/h [0.2gal/hr]
Oil capacity carter	67L [17.7gal]

Thermal balance 100% load

Heat rejection to exhaust	556kW [31614Btu/mn]
Radiated heat to ambient	45kW [2559Btu/mn]
Heat rejection to coolant	310kW [17627Btu/mn]

Air intake

Max. intake restriction	150mm CE [6in. WG]
Engine air flow	1000L/s [2119cfm]

Coolant System

Radiator & engine capacity	180L [47.6gal]
Max water temperature	97°C [207°F]
Outlet water temperature	93°C [199°F]
Fan power	40 kW
Fan air flow	20.1m3/s [42594cfm]
Available restriction on air flow	20mm CE [0.8in. WG]
Type of coolant	Coolelf mdx
Thermostat	75-88 °C

Emissions

HC	9.70 gr/bhp/h
CO	85.04 gr/bhp/h
Nox	68.63 gr/bhp/h
PM	40.28 gr/bhp/h

* 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	LEROY SOMER LSA491M5
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	R448
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)	2250

OTHER ALTERNATOR DATA

Continuous nominal rating @ 40°C	830 kVA
Standby rating @ 27°C	860 kVA
Efficiencies @ 4/4 load	94.1 %
Air flow	1.2m ³ /s [2542.64cfm]
Short circuit ratio;50 (Kcc)	0.41
Direct axis synchro reactance unsaturated (Xd)	350 %
Quadra axis synchro reactance unsaturated (Xq)	210 %
Open circuit time constant;50 (T'do)	2270 ms
Direct axis transient reactance saturated (X'd)	17.6 %
Short circuit transient time constant (T'd)	100 ms
Direct axis subtransient reactance saturated (X''d)	14.1 %
Subtransient time constant (T''d)	10 ms
Quadra axis subtransient reactance saturated (X''q)	16.20 %
Zero sequence reactance unsaturated (Xo)	0.7 %
Negative sequence reactance saturated (X2)	15.1 %
Armature time constant (Ta)	15 ms
No load excitation current (io)	1 A
Full load excitation current (ic)	3.5 A
Full load excitation voltage (uc)	35 V
Recovery time (Delta U = 20% transitoire)	500 ms
Motor start (Delta = 20% perm. Or 50% trans.)	1488 kVA
Transient dip (4/4 charge) – PF : 1.8 AR	12.3 %
No load losses	9.55 kW
Heat rejection	27.7 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
- Key start panel

Exhaust

- Residential silencer
- Critical silencer
- Flexible exhaust conn.

Literature

- • Parts
- • Maintenance

Fuel

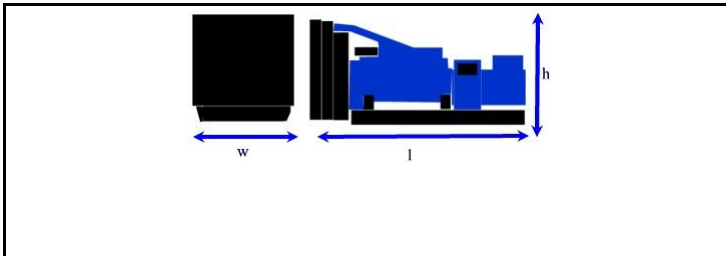
- Day tank
- Subbase fuel tanks UL
- Water separator fuel filter

Contenergy

- ISO20CSi
- Silent 78 db @ 7m [23 Ft] (stby)

Weight and Dimensions

Open Model Excluding option



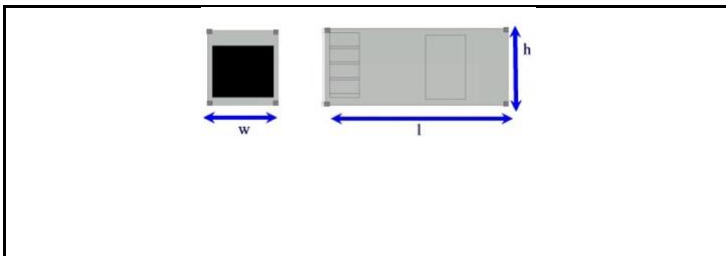
Overall size l x w x h :

3981mm [157in] x 1630mm [64in] x 1950mm [77in]

Weight :

5216kg [11496lbs] Net 5470kg [12056lbs] Brut

With Optional Enclosure



Overall size l x w x h :

6058mm [239in] x 2438mm [96in] x 2896mm [114in]

Weight :

10359kg [22831lbs] Net 11463kg [25264lbs] Brut