

## DIESEL GENERATING SETS

Model		202WS60	202W60
Type		SAE	Open
Standby Power (ESP)	kVA / kWe	202 / 161.6	
Prime Power (PRP)	kVA / kWe	184 / 147.2	
Phase / Volts		3 Phase / 220 V	

SAE: Sound Attenuated Enclosure, Ratings are as per ISO8528; refer page 5 for definitions



60 Hz

Power, Performance, Peace of mind

Generating Set Specifications			
Model		202WS60	202W60
Type		SAE	Open
Line Voltage	V	220	
Phase Voltage	V	127	
Power factor	---	0.8 (lag)	
Fuel tank capacity	L	350	280
Fuel consumption % of PRP <sup>1</sup>	50% load	L/hr	22.4
	75% load	L/hr	31.9
	100% load	L/hr	42.1
Sound level at 7m at 75% load as per ISO8528-10	dB(A)	70	---

Engine, Alternator and Controller			
	Engine	Alternator	Controller
Make	Kirloskar	Stamford	Deepsea
Model	6K1080TA	UCI274F1	DSE4522 A2
Type	Liquid cooled	Brushless	Microprocessor based

### Product Benefits

- High Performance and Reliability
- Low Fuel Consumption
- Extended Service Interval
- Easy Installations
- Low maintenance cost

### Performance Assurance

- Total Quality Management System
- Engines & Generating set fully manufactured by us in facilities certified to ISO9001, ISO 14001 & OHSAS 18001
- Generating set complies to ISO 8528
- Engines comply to ISO 3046 & AC Generators comply to BS5000, IEC34

### Support

- Service support in all countries of operation

---

1. +5% tolerance is applicable as per ISO3046. Fuel consumption based on diesel fuel with a specific gravity of 0.85 and confirming to BS 2869, Class A2.

## Engine Specifications

Physical Data		Air System	
Engine rpm	1800	Air filter type	Dry replaceable
Configuration	Inline	Air volume required for combustion (m <sup>3</sup> /hr)	843
Cylinders	6	Air volume required for cooling (m <sup>3</sup> /hr)	18000
Type	Four stroke	Air volume required by alternator (m <sup>3</sup> /hr)	1850
Bore x Stroke (mm)	105 x 125	Total fresh air required (m <sup>3</sup> /hr)	20694
Displacement (L)	6.48		
Cooling	Liquid cooled	Cooling System	
Aspiration	Turbocharged Aftercooled	Cooling system capacity (L)	54
Compression ratio	15.5 : 1	Coolant type	Ethylene glycol based premixed with water in ratio 50:50, antifreeze & anti corrosion type
Piston speed (m/s)	7.5	Radiator fan load (hp)	8
hp Prime @ 1800rpm	230		
hp Standby @ 1800rpm	253		

Fuel System		Exhaust System	
Type of fuel filter	Two stage spin on type	Exhaust gas flow rate (kg/hr)	1200
Governor type	Electronic	Maximum exhaust gas temperature (°C)	TBA
Class of governing	ISO 8528-5, Class G2	Max. allowed back pressure (mm of Hg)	50
Recommended Fuel	Class A2, High speed diesel	Flange details for exhaust piping extension (mm)	PCD 190+/-0.5, 8 holes 17.0 +/-0.5

Electrical System		Lubrication System	
Starting arrangement	12V Electric	Type of lube oil filter	Full flow spin on type
Starter battery rating	200Ah	Oil to be used	SAE 15W40 API:CI4
Battery charging alternator	Engine mounted 12V	Oil pump type	Through G-rotor gear pump
Battery charging alternator	35A	Lube oil sump capacity (L) refill / first fill	18 / 21
Battery charger <sup>2</sup>	12V 2A / 5A with float & boost mode	Lube oil consumption	0.3% of fuel consumption

2. Optional extra accessory.

## Alternator Specifications

Alternator Physical Data			Alternator Operating Data	
Continuous rating	Insulation Class	H	Over speed (RPM)	2250
	kVA at 0.8 PF	184	Excitation	Self-excited (brushless)
	Temperature rise (°C)	125 /40°C	Cooling method	Forced through shaft mounted blower fan
Number of bearings	1		THD at full linear balanced load AC waveform	Less than 5%
Pole	4		Efficiency at full load	92.4
Leads	6		Voltage Regulation (%)	± 1.0
Winding pitch	2/3		Reactance per unit (Xd)	2.37
Ingress Protection Rating	IP 23		Reactance per unit (X'd)	0.20
Voltage regulator	AS440		Reactance per unit (X''d)	0.13
Recommended earthing type	Solid separate for neutral and body			

## Control System Features and safeties

On display screen		Protections	Warning	Shutdown	Indication	Digital Input
Generator Volts, Amps. Hz	✓	Low oil pressure	No	✓	✓	-----
Generator kW, kVA, kVAr	✓	High coolant temperature	✓	✓	✓	-----
Generator per phase PF	✓	Low fuel level	✓	✓	✓	-----
Generator kWhr meter	✓	Low coolant level	No	✓	✓	-----
Earth current (A)	No	Under & over speed	✓	✓	✓	-----
Grid (Mains) Voltage (L-L)	✓	Low & high battery voltage	✓	No	✓	-----
Battery Voltage (V)	✓	Low charge alternator	✓	✓	✓	-----
Engine start attempts	No	Emergency stop	No	✓	✓	-----
Engine Temperature (°C)	✓	Fail to start & fail to stop warning	✓	No	✓	-----
Engine speed (RPM)	✓	Auto remote start/stop DI	----	----	----	✓
Engine Run Hours (Hours & Min.)	✓	Under & over voltage	✓	✓	✓	-----
Lube oil Pressure (kPa, PSI, bar)	✓	Under & over frequency	✓	✓	✓	-----
Fuel level (%)	✓	Over kW or Overcurrent	No	✓	✓	-----

Communication ports		✓ Available	No - Not available	---- Not applicable
RS485	✓			
RS232	No			

## Standard and Optional Features

### Generating Set (\*applicable only for SAE type)

- Top lifting arrangement\*
- Silencer mounted inside canopy\*
- External fuel filling access\*
- Longer fuel tank breather tube
- Door for radiator access\*
- Coolant drain arrangement
- Mesh on exhaust tail pipe
- Fuel transfer pump
- Stainless steel door hinges\*
- Control panel door stopper\*
- Fuel priming manual pump
- External standalone fuel tank

### Engine

- SMF Battery
- Lube oil drain pump\*
- Dual (electrical + mechanical) fuel gauge
- Guard for rotating parts
- Water separator
- Electronic governor
- Over-cranking protection
- Jacket water heater

### Alternator

- Alternator space heater
- Alternator inlet louver filter
- Remote voltage adjustment potentiometer
- Droop current transformer
- PMG

### Controls

- Automatic Starting & AMF facility
- ATS Panel
- 4 Pole circuit breaker
- Communication port RS485
- Kirloskar remote monitoring (KRM) unit
- 12V DC hooter
- Static Battery charger
- 3 Pole 630A MCCB
- Dummy Load bank

- Standard Feature
- Optional Feature

### Generating set ratings definitions as per ISO8528:

(De-rating is applicable for climatic conditions other than standard reference conditions of ISO8528-1)

**Standby Rating / Emergency Standby power / ESP:** These ratings are applicable for supplying electrical power at variable load in the event of a utility power failure. The standby power is maximum power available with no overload permitted on these ratings. The permissible average power output over 24 hours of operation shall not exceed 70% of the ESP. The alternator on this model is peak continuous rated (as defined in ISO 8528-3)

**Prime Rating / PRP:** These ratings are applicable for supplying continuous electrical power at variable load in lieu of commercial purchased power. There is no limitation to the annual hours of operation and this model can supply 10% overload power for 1 hour in 12 hours. The permissible average power output over 24 hours of operation shall not exceed 70% of the PRP.

**Continuous Rating / COP:** These ratings are applicable for supplying power continuously to a constant load up to the maximum output rating for unlimited hours. No sustained overload capability is available for this rating.

## Documents & Quality Standards

### Documents

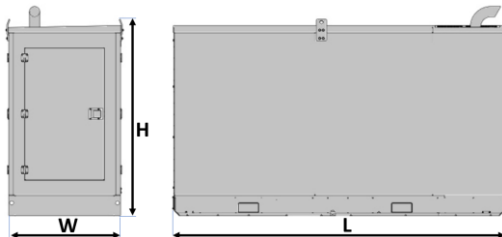
Generating set user manual, engine operation and maintenance manual – in soft form

### Quality standards

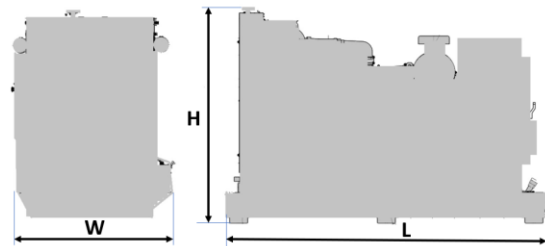
ISO 8528, ISO 3046, IS 10002, BS5514, DIN 6271, ISO 9001, ISO 14001

Weight & Dimensions				
Model			202WS60	202W60
Type			SAE	Open
Overall dimensions <sup>3</sup>	Length x Width x Height	cm	372 x 116 x 211	259 x 133 x 173
Weight <sup>4</sup>	Weight with oil & coolant	kg	2720	1910

#### SAE



#### OPEN



3. Dimensions are for logistics purpose only. Please refer installation / GA drawing for installation.  
 4. Weight mentioned is for indicative only. Actual weight may vary based on configuration.

## Global Presence

#### KIRLOSKAR DMCC

JBC-5, Cluster W, Jumeirah Lake Towers,  
 P. O .Box 37745, Dubai. U.A.E  
 Tel.: +971 4 443 8591  
 Fax: +971 4 441 4532  
 Email: [enquiry@kirloskar.ae](mailto:enquiry@kirloskar.ae)  
 Website: [www.kirloskarib.com](http://www.kirloskarib.com)

#### KIRLOSKAR TRADING SA (PTY) LTD

Unit B1, The Stables Business Park, Cnr of  
 Third Avenue & Second Road, Limbro Park,  
 Modderfontein, Johannesburg.  
 Tel.: +27(0) 11 553 6900/6903  
 Email: [kirsons@kirloskar.co.za](mailto:kirsons@kirloskar.co.za)

#### KIRLOSKAR KENYA LTD.

P.O. Box 60061, Off Dunga Road, Nairobi,  
 Kenya. Tel.: +254 20 653 6632  
 Fax: +254 20 653 3390  
 Email: [rspatil@kirloskar.co.ke](mailto:rspatil@kirloskar.co.ke)

#### KIRLOSKAR AMERICAS CORPORATION

33300 Egypt Lane, Suite C300, Magnolia,  
 TEXAS - 77354, United States  
 Tel.: +1 346 248 5777  
 Email: [Vinay.Kulkarni@koelamerica.com](mailto:Vinay.Kulkarni@koelamerica.com)



### Kirloskar Oil Engines Limited

A Kirloskar Group Company

Regd. Office : 13, Laxmanrao Kirloskar Road, Khadki,  
 Pune, Maharashtra 411 003 INDIA  
 Tel.: +91 (20) 2581 0341 | Fax : +91 (20) 2581 3208, 2581 0209  
 Helpline : 8806 33 44 33  
 Email : [koel.helpdesk@kirloskar.com](mailto:koel.helpdesk@kirloskar.com) | Website : [www.koel.co.in](http://www.koel.co.in)

Mark bearing word 'Kirloskar' in any form as a suffix or prefix is owned by Kirloskar Proprietary Ltd. and Kirloskar Oil Engines Ltd. is the Permitted User. This Catalog is copyrighted and may not be reproduced in any form not even parts of it, without previous written permission by copyright owners, Kirloskar Oil Engines Ltd. Product improvement is a continuous process. Kindly contact KOEL for latest information.