

**kirloskar**  
powergen

**60Hz**

**GENSET SERIES**

MODELS

**50WS60-3**

**50W60-3**



**BETTER POWER  
FOR A**

*limitless*

**T O M O R R O W**

MODELS:

50WS60-3

Type: SAE

50W60-3

Type: Open



ENGINE:

KIRLOSKAR 3R1040TAG1  
LIQUID COOLED



ALTERNATOR:

STAMFORD S1L2N1  
BRUSHLESS



CONTROLLER:

DEESEA DSE4522 A2  
MICROPROCESSOR BASED



Power Factor: 0.8 [Lag]



Line Voltage: 220V / 380V



Phase Voltage: 127V / 220V



Fuel Tank Capacity:

50WS60-3: 99L

50W60-3: 95L



Sound Level at 7m at 75%

load as per ISO8528-10:

50WS60-3: 70 dB(A)

Standby Power (ESP) kVA / kW: 50 / 40

Prime Power (PRP) kVA / kW: 45 / 36

Phase / Volts: 3 Phase / 220V / 380V

SAE: Sound Attenuated Enclosure, Ratings are as per ISO 8528-1; refer page 6 for definitions

<sup>1</sup>+5% tolerance is applicable as per ISO 3046. Fuel consumption based on diesel fuel with a specific gravity of 0.85 and conforming to BS 2869, Class A2.

Fuel Consumption % of PRP<sup>1</sup>

L/hr

50% Load

5.9

75% Load

8.1

100% Load

10.6

BUILT FOR EFFICIENCY. ENGINEERED FOR POWER.



High Performance & Reliability



Low Fuel Consumption



Easy Installation



Low Maintenance Cost



Service Support in all Countries of Operation



Extended Service Intervals

# PERFORMANCE ASSURANCE



Total Quality Management System



Engines & Generating set fully manufactured by us in facilities certified to ISO 9001, ISO 14001 and OHSAS 18001



Generating set complies to ISO 8528



Engines comply to ISO 3046 and AC Generators comply to BS5000, IEC34

## STANDARD AND OPTIONAL FEATURES



### Generating Set

(\*Applicable only for SAE type)

- |                                   |                             |                                 |
|-----------------------------------|-----------------------------|---------------------------------|
| ● Top Lifting Arrangement*        | ● Door for Radiator Access* | ● Stainless steel door hinges*  |
| ● Silencer Mounted Inside Canopy* | ● Coolant Drain Arrangement | ● Control Panel Door Stopper*   |
| ● External Fuel Filling Access*   | ● Mesh on Exhaust Tail Pipe | ○ Fuel Priming Manual Pump      |
| ● Longer Fuel Tank Breather Tube  | ○ Fuel Transfer Pump        | ○ External Standalone Fuel Tank |



### Engine

- |                           |                            |   |
|---------------------------|----------------------------|---|
| ● SMF Battery             | ● Water Separator          | ● Dual (Electrical + Mechanical) Fuel Gauge |
| ● Lube Oil Drain Pump*    | ● Over-Cranking Protection |   |
| ● Guard for Rotating Part | ○ Jacket Water Heater      |   |



### Alternator

- |                           |   |
|---------------------------|---|
| ○ Alternator Space Heater | ○ Remote Voltage Adjustment Potentiometer |
| ○ EBS                     | ○ Alternator Inlet Louver Filter          |



### Controls

- |                                       |                                    |                          |
|---------------------------------------|------------------------------------|--------------------------|
| ● Automatic Starting and AMF Facility | ● Communication Port RS485         | ○ Static Battery Charger |
| ○ 4 Pole Circuit Breaker              | ○ Kirloskar Remote Monitoring Unit | ● 3 Pole 160A MCB        |
| ○ ATS Panel                           | ○ 12V DC Hooter                    | ○ Dummy Load Bank        |

- Standard Feature  
○ Optional Feature



# ENGINE SPECIFICATIONS 50WS60-3 / 50W60-3

## PHYSICAL DATA



Engine RPM	1800
Configuration	Inline
Cylinders	3
Type	Four Stroke
Bore x Stroke (mm)	105 x 120
Displacement (L)	3.12
Cooling	Liquid Cooled
Aspiration	Turbo Charged After Cooled
Compression Ratio	18:1
Piston Speed (m/s)	7.2
HP Prime @ 1800 RPM	62
HP Standby @ 1800 RPM	68.2

## AIR SYSTEM



Air Filter Type	Dry Replaceable
Air Volume Required for Combustion (m <sup>3</sup> /hr)	187
Air Volume Required for Cooling (m <sup>3</sup> /hr)	9300
Air Volume Required by Alternator (m <sup>3</sup> /hr)	634
Total Fresh Air Required (m <sup>3</sup> /hr)	10121

## COOLING SYSTEM



Cooling system capacity (L)	12
Coolant Type	Ethylene glycol based premixed with water in ratio 50:50, anti freeze & anti corrosion type
Radiator Fan Load (hp)	3

## ELECTRICAL SYSTEM



Starting Arrangement	12V Electric
Starter Battery Rating	110Ah
Battery Charging Alternator	Engine Mounted 12V
Battery Charging Alternator	35A
Battery Charger <sup>2</sup>	12V 2A/5A with Float and Boost Mode

## LUBRICATION SYSTEM



Type of Lube Oil Filter	Full Flow Spin On Type
Oil to be used	SAE 15W40 API: CI4
Oil Pump Type	Through G-Rotor Gear Pump
Lube Oil Sump Capacity (L) Refill / First Fill	7.5 / 9
Lube Oil Consumption	0.3% of Fuel Consumption

## FUEL SYSTEM



Type of Fuel Filter	Two Stage Spin on Type
Governor Type	Mechanical
Class of Governing	ISO 8528-5, Class G2
Recommended Fuel	Class A2, High Speed Diesel

## EXHAUST SYSTEM



Exhaust Gas Flow Rate (kg/hr)	170
Maximum Exhaust Gas Temperature (°C)	TBA
Maximum Allowed Back Pressure (mm of Hg)	50
Flange Details for Exhaust Piping Extension (mm)	PCD 148 +/-0.5, 4 Holes 12.0 +/-0.5

<sup>2</sup> Optional Extra Accessory



# ALTERNATOR SPECIFICATIONS 50WS60-3 / 50W60-3

## ALTERNATOR PHYSICAL DATA



Continuous Rating	Insulation Class	H
	kVA at 0.8 PF	45
	Temp Rise (°C)	125 / 40°C
Number of Bearings		1
Pole		6
Leads		4
Winding Pitch		2 / 3
Ingress Protection Rating		IP23
Voltage Regulator		AS540
Recommended Earthing Type		Solid, separate for neutral and body

## ALTERNATOR OPERATING DATA



Over Speed (RPM)	2250	
Excitation	Self-excited (Brushless)	
Cooling Method	Forced through shaft mounted blower fan	
THD at full linear balanced load AC waveform	Less than 5%	
Voltage Regulation (%)	± 1.0	
Voltage	220V	380V
Efficiency at full load (%)	90.4	90.5
Reactance per unit (Xd)	1.813	1.912
Reactance per unit (X'd)	0.110	0.116
Reactance per unit (X''d)	0.120	0.126



# CONTROL SYSTEMS FEATURES AND SAFETIES

## ON SCREEN DISPLAY

Generator Volts, Amps, Hz	Y
Generator kW, kVA, kVAr	Y
Generator per phase PF	Y
Generator kWhr meter	Y
Earth current (A)	N
Grid (Mains) Voltage (L-L)	Y
Battery Voltage (V)	Y
Engine start attempts	N
Engine Temperature (oC)	Y
Engine speed (RPM)	Y
Engine Run Hours (Hours & Min.)	Y
Lube oil Pressure (kPa, PSI, bar)	Y
Fuel level (%)	Y

## PROTECTIONS

Low oil pressure	N
High coolant temperature	Y
Low fuel level	Y
Low coolant level	N
Under & over speed	Y
Low & high battery Voltage	Y
Low charge alternator	Y
Emergency stop	N
Fail to start & fail to stop warning	Y
Auto remote start/stop Di	.....
Under & over voltage	Y
Under & over frequency	Y
Over kW or Overcurrent	N

## WARNING

## SHUTDOWN

## INDICATION

## DIGITAL INPUT

Y	Y	.....
Y	Y	.....
Y	Y	.....
Y	Y	.....
Y	Y	.....
N	Y	.....
Y	Y	.....
Y	Y	.....
Y	N	Y
.....	.....	.....
Y	Y	.....
Y	Y	.....
Y	Y	.....

## COMMUNICATION PORTS

RS485	Y
RS232	N

Y - Available

N - Not Available

..... Not Applicable



# DOCUMENTS AND 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

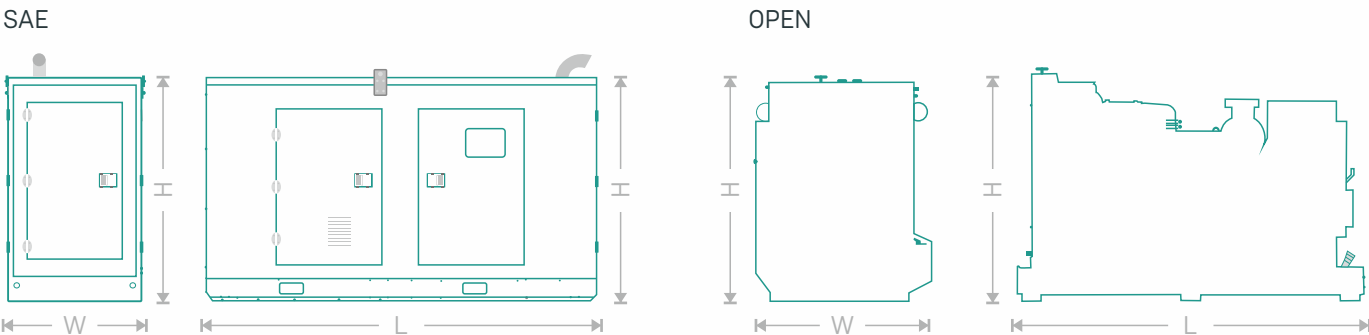
# WEIGHT AND DIMENSIONS

## 50WS60-3

Type:	Overall Dimension <sup>3</sup> (LxWxH) cms:	Weight <sup>4</sup> with Oil and Coolant (kg):
SAE	256 x 111 x 157	1310

## 50W60-3

Type:	Overall Dimension <sup>3</sup> (LxWxH) cms:	Weight <sup>4</sup> with Oil and Coolant (kg):
Open	175 x 109 x 136	840



<sup>3</sup>Dimensions are for logistics purpose only. Please refer installation / GA drawing for installation.

<sup>4</sup>Weight mentioned is for indicative only. Actual weight may vary based on configuration.

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.



## A RICH HERITAGE OF OVER A CENTURY OF ENGINEERING EXCELLENCE.

Kirloskar power generating sets prioritize user experience, delivering exceptional features and benefits. Streamlined installation and enhanced dependability to expedited service, reduced maintenance costs, and optimized performance.

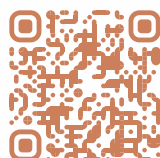
Kirloskar Powergen sets itself apart with groundbreaking engineering that establishes new industry benchmarks.

*limitless* **POTENTIAL, SUSTAINABLE PRACTICES**

Our state-of-the-art manufacturing facility embodies our commitment to sustainable practices. We partner with nature to power the facility itself, transforming waste into valuable resources. This focus on sustainability inspires both our workforce and surrounding communities.

It's here, where cutting-edge technology meets exceptional skills,  
that we engineer solutions to empower limitless possibilities.

Discover our Plant with a  
QR Code Scan.





SHAPING THE FUTURE.  
DELIVERING POWER GLOBALLY.

INGENIOUS DESIGN.  
UNMATCHED PERFORMANCE.

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T O M O R R O W

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