

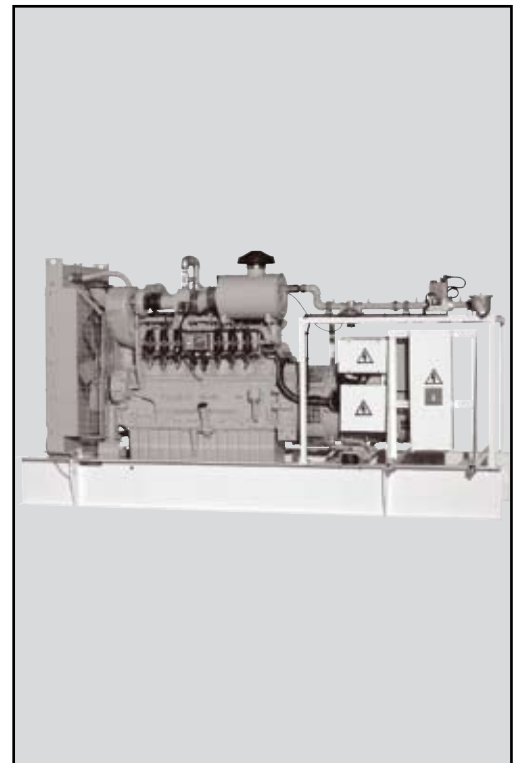
# SG180



Output Ratings	
Generating Set Model	SG180 Baseload*
380-415V, 50 Hz	180 kVA 144 kW

\* Refer to ratings definitions on page 4.  
Ratings at 0.8 pf

Technical Data	
Engine Make & Model	Scania SGI-9
Alternator Model	LL5014H
Base Frame Type	Heavy Duty Fabricated Steel
Circuit Breaker Type/Rating	3 Pole MCCB
Frequency	50 Hz
Engine Speed	1500
Fuel Consumption m <sup>3</sup> /min (cfm)	0.75 (26.4)



## Weights & Dimensions

Weights: kg (lbs)		Dimensions: mm (in)	
Wet (+ lube oil & coolant)	4100 (9041)	Length	3900 (154)
		Width	1600 (63.0)
		Height	2150 (84.6)



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## Engine Technical Data

Physical Data		Air System		50 Hz	
Manufacturer:	Scania	Air Filter Type:	Replaceable Element		
Model:	SG1-9	Combustion Air Flow:	m <sup>3</sup> /min (cfm) 10.1 (357)		
No. of Cylinders/Alignment:	6 in-line	Max. Combustion Air Intake	Restriction: kPa (in H <sub>2</sub> O) 2.98 (12.0)		
Cycle:	4 Stroke	Radiator Cooling Airflow:	m <sup>3</sup> /min (cfm) 201 (7097)		
Induction:	TurboCharged	External Restriction to	Cooling Airflow: Pa (in Wg) 190 (0.75)		
Cooling Method:	Water	<b>Cooling System</b>			
Governing Type:	Electronic	<b>50 Hz</b>			
Class:	ISO8528 G2	Cooling System	Capacity: L (US Gal) 22.0 (5.8)		
Compression Ratio:	11.0:1	Water Pump Type:	Centrifugal		
Displacement: L (cu.in):	9.0 (550)	Heat Rejected to Water & Lube Oil:	kW (Btu/min) 80.0 (4551)		
Bore/Stroke: mm (in)	115 (4.5) / 144 (5.7)	Heat Radiation to Room:	kW (Btu/min): 18.0 (1024)		
Engine Electrical System:		Radiator Fan Load:	kW (hp) 7.5 (10.0)		
-Voltage/Ground	24/Negative	<b>Lubrication System</b>			
-Battery Charger Amps	65	Oil Filter Type:	Spin-On, Full Flow		
Weight: kg (lbs) -Dry	na	Total Oil Capacity L (US Gal):	31.0 (8.2)		
-Wet	4100 (9041)	Oil Pan L (US Gal):	7.0 (1.85)		
<b>Performance</b>		Oil Type:	SAE 15W-40		
<b>50 Hz</b>		Cooling Method:	Water		
Engine Speed: rpm	1500	<b>Exhaust System</b>			
Gross Engine Power: kW (hp)	160 (215)	<b>50 Hz</b>			
BMEP: kPa (psi)	1430 (207)	Silencer Type:	Level 1		
<b>Fuel System</b>		Silencer Model & Qty:	SD100		
Fuel Filter Type:	Replaceable Element	Silencer Noise Reduction	Level: dBA 12		
Recommended Fuel:	Natural gas with lower calorific value of 34.71MJ/m <sup>3</sup> and minimum methane number of 70	Max. Allowable Back Pressure:	kPa (in Hg) 4.97 (20.0)		
Fuel Consumption m <sup>3</sup> /min (cfm)		Exhaust Gas Flow:	m <sup>3</sup> /min (cfm) 15.0 (529)		
50 Hz	<b>100% Load</b>	Exhaust Gas Temperature:	°C (°F) 495 (923)		
	0.75 (26.5)	Heat Rejected to Exhaust System	kW (Btu/min) 138 (7850)		
	<b>75% Load</b>				
	0.58 (20.5)				
	<b>50% Load</b>				
	0.39 (13.8)				
	<b>25% Load</b>				
	0.20 (7.06)				

## Alternator Performance Data

Data Item	50 Hz		
	415/240	400/230	380/220
<b>Motor Starting Capability* kVA</b>	414	389	356
<b>Short Circuit Capacity**%</b>	300	300	300
<b>Reactances: Per Unit</b>			
<b>X<sub>d</sub></b>	2.79	3.01	3.33
<b>X'<sub>d</sub></b>	0.14	0.15	0.16
<b>X''<sub>d</sub></b>	0.081	0.087	0.097

Reactances shown are applicable to baseload ratings

\* Based on 30% voltage dip. Improved motor starting capability is available with optional Permanent Magnet generator or AREP excitation

\*\* With optional Permanent Magnet generator or AREP excitation.

## Alternator Technical Data

Physical Data		Operating Data		
<b>Manufacturer:</b>	FG Wilson	<b>Overspeed: RPM</b>	2250	
<b>Model:</b>	LL5014F	<b>Voltage Regulation (steady state)</b>	±0.5%	
<b>No. of Bearings:</b>	Single	<b>Wave Form NEMA =TIF</b>	<50	
<b>Insulation Class:</b>	H	<b>Wave Form IEC=THF</b>	<2%	
<b>Winding Pitch (Code):</b>	2/3 (No.6)	<b>Total Harmonic Content LL/LN</b>	<4%	
<b>Wires:</b>	12	<b>Radio Interference</b>	Suppression is in line with British Standard BSEN50081 & BSEN50082	
<b>Ingress Protection Rating:</b>	IP23	<b>Radiant Heat: kW (Btu/min)</b>		
<b>Excitation System:</b>	Shunt		-50 Hz:	16.5 (938)
<b>AVR Model:</b>	R448			

## Technical Data

### 3 Phase Ratings and Performance at 50 Hz, 1500 RPM

Voltage	Model: SG180 Baseload	
	kVA	kW
415/240	180	144
400/230	180	144
380/220	180	144

## Definitions

### Baseload Rating

These ratings are applicable for supplying continuous electrical power for variable load operations. There is no overload available. The ratings represent the engine performance in accordance with ISO3046 at reference conditions equivalent to those specified in ISO3046/1 based on the use of natural gas having a lower calorific value of 34.71MJ/m<sup>3</sup>

### Standard Reference Conditions

Note: Standard reference conditions 27°C (80°F) Air Inlet Temp, 152.4m (500ft) A.S.L. 60% relative humidity. All engine performance data based on the above mentioned maximum continuous ratings. Fuel consumption data at full load using gas fuel with a lower calorific value of 34.71MJ/m<sup>3</sup>

## General Data

### Documents

A full set of operation and maintenance manuals, circuit wiring diagrams, and commissioning/fault finding instruction leaflets.

### Generating Set Standards

The equipment meets the following standards: BS5000, ISO 8528, ISO 3046, IEC 60034, VDE 0530, NEMA MG-1.22.

FG Wilson is a fully accredited ISO9001 company.

### Warranty

All equipment carries full manufacturer's warranty. Extended warranty terms available. For details on warranty cover please contact your local dealer, or visit our website, [www.FGWilson.com](http://www.FGWilson.com)

