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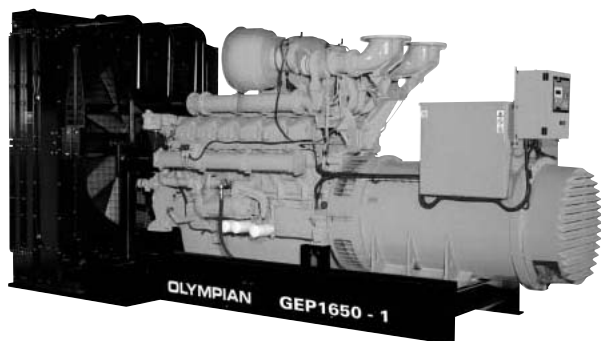


Image shown may not reflect actual package

**GEP1650-1 (3-phase)**  
**Standby 1650 kVA/1320 kW**  
**50 Hz**

**FEATURES**

**GENERATOR SET**

- Complete system designed and built at ISO 9001 certified facility
- Factory tested to design specifications at full load conditions
- Fully engineered with a range of options and accessories

**ENGINE**

- Industrial water cooled diesel engine
- Isochronous electronic speed control
- Governor, electronic
- Electrical systems, 24 VDC
- Cartridge type fuel and oil filters
- Air filter
- Lube oil drain valve
- Battery(ies), rack and cables

**GENERATOR**

- Self excited brushless generator
- Insulation system, class H
- Drip proof generator air intake (IP23)
- Electrical design in accordance with BS5000 Part 99, IEC60034-1, VDE0530, UTE51100

**CONTROL SYSTEM**

- PowerWizard 1.0 control panel
- Vibration isolated sheet steel enclosure with hinged lockable door

**MOUNTING ARRANGEMENT**

- Heavy-duty fabricated steel base with lifting points
- Anti-vibration pads to ensure vibration isolation
- Generator coupled to engine by flexible disc-coupling

**EXHAUST SYSTEM**

- Heavy duty industrial capacity exhaust silencer (approximately 10 dBA reduction) supplied loose

**COOLING SYSTEM**

- Standard ambient temperature
- Fan, fan drive and charging alternator fully guarded
- Coolant drain valve
- Antifreeze protection coolant

**CIRCUIT BREAKER**

- 3-pole molded case circuit breaker (MCCB)
- Vibration isolated sheet steel enclosure with removable cover plate
- Outgoing cable stub-up area directly below circuit breaker

**AUTOMATIC VOLTAGE REGULATOR**

- Voltage regulation  $\pm 0.5\%$
- Provides fast recovery from transient load changes

**EQUIPMENT FINISH**

- All electroplated hardware
- Anticorrosive paint protection
- High gloss polyurethane paint for durability and scuff-resistance

**QUALITY STANDARDS**

- BS4999, BS5000, BS5514, IEC60034, VDE0530

**DOCUMENTATION**

- Operation and maintenance manuals provided
- Wiring diagrams included

**WARRANTY**

- All equipment carries full manufacturer's warranty

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**OPTIONAL EQUIPMENT\***

System	Optional
Engine / Baseframe	<input type="checkbox"/> Lube oil drain pump <input type="checkbox"/> Lube oil temperature shutdown <input type="checkbox"/> Oil temperature gauge (includes wiring) (not for PowerWizard 2.0) <input type="checkbox"/> Lube oil temperature displayed on panel LCD system (only available with PowerWizard 2.0)
Generator	<input type="checkbox"/> Anti- condensation heater <input type="checkbox"/> Permanent magnet+ R450 Regulator <input type="checkbox"/> Permanent magnet+ R450 Regulator + R731 3- phase sensing module <input type="checkbox"/> AREP winding + R450 Regulator + R731 3-phase sensing module <input type="checkbox"/> Quadrature droop kit
Cooling System	<input type="checkbox"/> Coolant heater 220/240 Volt <input type="checkbox"/> Low coolant temperature alarm <input type="checkbox"/> Radiator transition flange <input type="checkbox"/> 50% antifreeze
Silencer	<input type="checkbox"/> Residential silencer with mounting kit <input type="checkbox"/> Critical silencer with mounting kit <input type="checkbox"/> Stainless steel bellows
Enclosures	<input type="checkbox"/> Consult your Cat dealer for options
Control System	<input type="checkbox"/> Panel upgrade with PowerWizard 2.0 <input type="checkbox"/> Panel functions upgrades <ul style="list-style-type: none"> <li>- Panel lockdown stop pushbutton with security key</li> <li>- Set of volt free contacts for common alarm</li> <li>- Volt free contacts for genset running</li> <li>- Speed adjust potentiometer</li> <li>- Voltage adjust potentiometer</li> <li>- Battery trickle charger ammeter</li> <li>- Audible alarm siren, supplied loose</li> <li>- Panel mounted audible alarm</li> <li>- Additional shutdowns with individual warning lamps</li> <li>- Static batter charger</li> <li>- Static batter charger with boost control 220/240V</li> </ul> <input type="checkbox"/> 6100 and 6200 Series control panel and function options
Remote Annunciator	<input type="checkbox"/> PowerWizard annunciator (only with PowerWizard 2.0)
Remote Monitoring and Control	<input type="checkbox"/> PowerWizard remote monitoring and control (only with PowerWizard 2.0)
Circuit Breaker	<input type="checkbox"/> Upgrades from 3-pole to 4-pole breakers (2500A and 3200A) <input type="checkbox"/> AC power looms (floor standing, 2500A and 3200A)
Transfer Switches	<input type="checkbox"/> TI Series load transfer panels and bypass switches (2500A and 3200A)
Certification	<input type="checkbox"/> Upgrade to CE Certification

\* Some options may not be available on all models.  
 Not all options are listed

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**SPECIFICATIONS**

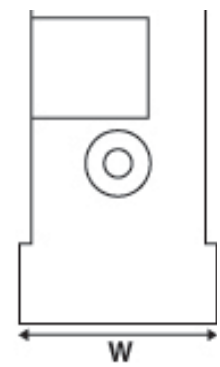
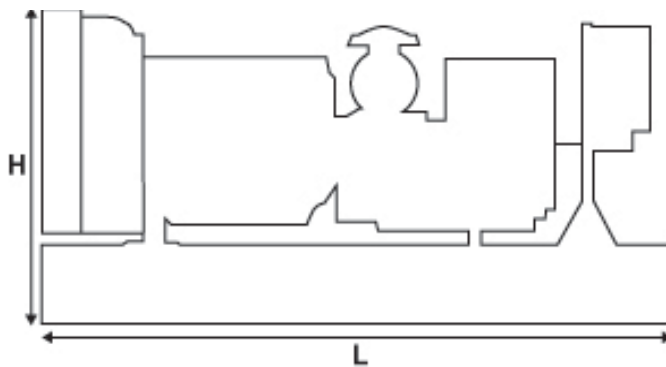
**ENGINE**

Manufacturer .....Perkins  
 Model.....4012-46TAG2A  
 Type.....4 Stroke  
 Aspiration .....Turbocharged Air-to-Air Charge Cooled  
 Cylinder configuration.....12/Vee  
 Displacement — L (cu in) .....45.8 (2,797.5)  
 Bore/Stroke — mm (in) .....160.0 (6.3)/190.0 (7.5)  
 Compression ratio .....13.0:1  
 Engine speed (rpm) .....1,500  
 Maximum power at rated rpm — kW (hp)  
 50 Hz Standby.....1437.0 (1,927.0)  
 BMEP — kPa (psi)  
 50 Hz Standby.....2508.0 (363.7)  
 Regenerative power — kW .....120.0  
 Governor  
 Type.....Electronic  
 Class.....ISO 8528 G2

**GENERATOR**

Manufacturer .....Olympian  
 Model .....LL8224N  
 No. of bearings .....1  
 Insulation class .....H  
 Winding pitch code .....2/3 – 6S  
 Wires .....6  
 Ingress protection rating .....IP23  
 Excitation system .....AREP  
 AVR model.....R450  
 Overspeed (rpm) .....2,250  
 Voltage regulation (steady state) (%).....±0.5  
 Wave Form NEMA = TIF.....50  
 Wave Form IEC = THF .....2.0%  
 Total harmonic content LL/LN .....3.5%  
 Radio interference.....Suppression is in line with European  
 Standard EN61000-6  
 Radiant heat — kW (Btu/min).....66.6 (3,787)

**GENERATOR SET DIMENSIONS AND WEIGHTS**



Model	Length	Width	Height	Weight*
GEP1650-1	5095 mm (200.6 in)	1900 mm (74.8 in)	2435 mm (95.9 in)	9910 kg (21,848 lb)

\*Includes oil and coolant

Note: Dimensions not for installation. See general dimension drawings for detail.

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**TECHNICAL DATA**

Generator Set — 50 Hz			Standby	
<b>Package Performance</b> Power rating	kVA (kW)		1650 (1320)	
<b>Lubricating System</b> Type Oil filter Oil cooler Oil type Total oil capacity Oil pan capacity			Wet sump Spin-on, full flow Water API CG4 15W-40	
	L	Gal	177	46.8
	L	Gal	159	42
<b>Fuel System</b> Fuel tank capacity Fuel consumption* 100% load 75% load 50% load	L	Gal		
	L/hr	Gal/hr	326.3	86.2
	L/hr	Gal/hr	246.4	65.1
	L/hr	Gal/hr	172.6	45.6
<b>Engine Electrical System</b> Voltage/Ground Battery charger alternator current			24 VDC/negative 40	
<b>Cooling System</b> Water pump type Cooling system capacity Heat rejected to coolant and lube oil Heat rejected to engine room Radiator fan load	L	Gal	Centrifugal	
	kW	Btu/min	207	54.7
	kW	Btu/min	485	27,581
	kW	hp	105	5,971
	kW	hp	42	56.3
<b>Air Requirements</b> Combustion air flow Max. combustion air intake restriction Radiator cooling air flow External restriction to cooling air flow	m <sup>3</sup> /min	cfm	128	4,520
	kPa	in H <sub>2</sub> O	4	16.1
	m <sup>3</sup> /min	cfm	1212	42,801
	kPa	in H <sub>2</sub> O	250	1
<b>Exhaust System</b> Maximum allowable backpressure Exhaust flow rate Exhaust temperature (dry)	kPa	in Hg	5	1.5
	m <sup>3</sup> /min	cfm	315	11,124
	Deg C	Deg F	450	842

\*Fuel consumption data at indicated load with diesel fuel with a specific gravity of 0.85 and conforming to BS2869, Class A2.

Generator Technical Data	50 Hz		
	415/240V	400/230V	380/220V
Motor starting capability* (SkVA)	3924	3658	3316
Short circuit capability** (%)	300	300	300
Reactance per unit			
X <sub>d</sub>	3.510	3.778	4.186
X' <sub>d</sub>	0.226	0.244	0.270
X'' <sub>d</sub>	0.126	0.136	0.151

\*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.

Note: Reactance shown are applicable to prime ratings.

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**RATINGS AT AVAILABLE VOLTAGES**

50 Hz Standby			
Voltage Code	Voltage	kVA	kW
V502	415/240	1650	1320
V503	400/230	1650	1320
V504	380/220	1650	1320

Ratings at 27° C (80° F) air inlet temperature, 152.4 m (500 ft) A.S.L., 60% relative humidity, 0.8 pf.

**RATING DEFINITIONS**

**STANDBY**

These ratings are applicable for supplying continuous electric power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternators on these models are peak continuous rated (as defined in ISO 8528-3).

**STANDBY 1650 kVA/1320 kW**  
**50 Hz**

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