

Exclusively from your Caterpillar® dealer



GEH220 (3-Phase)

50 HZ

STANDBY 220 kVA / 176 kW

PRIME 200 kVA / 160 kW

60 HZ

STANDBY 250 kVA / 200 kW

PRIME 225 kVA / 180 kW

FEATURES

GENERATING SET

- Complete system designed and built at ISO9001 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
- Governor, electronic
- Electrical system, 24 VDC
- Cartridge type fuel and oil filters
- Air filter
- 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

- 2001 autostart 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
- Engine coupled to generator with flexible disc coupling
- Baseframe incorporates heavy-duty fabricated steel fuel tank, 8 hours running capacity

EXHAUST SYSTEM

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

COOLING SYSTEM

- Standard ambient temperatures up to 50° C (122° F)
- Fan, fan drive and charging alternator fully guarded
- Antifreeze protection coolant

CIRCUIT BREAKER

- 3-pole miniature circuit breaker (mcb) < 160 amps and 3-pole molded case circuit breaker (mccb) >= 160 amps
- Vibration isolated sheet steel enclosure with removable cover plate
- Outgoing cable stub-up area directly below circuit breaker

AUTOMATIC VOLTAGE REGULATOR

- Voltage regulation ±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*

Engine	<ul style="list-style-type: none"> Droop engine control module for synchronising purposes Isochronous electronic speed control Lube oil drain Lube oil drain valve Lube oil drain pump High lube oil temperature shutdown
Generator	<ul style="list-style-type: none"> Anti-condensation heater Quadrature droop upgrade Permanent magnet generator (PMG) AREP Excitation system
Cooling System	<ul style="list-style-type: none"> Coolant heater Low coolant temperature alarm Low coolant level shutdown Radiator transition flange Coolant drain Coolant drain valve 50% Anti-Freeze (Protection to -36°C)
Fuel System	<ul style="list-style-type: none"> Integral metal fuel tank Extended capacity metal basetank Manual fuel pump Low fuel level shutdown Low fuel level alarm Remote fuel systems Fuel transfer systems Manual Bypass Valve
Silencer System — Open Unit	<ul style="list-style-type: none"> Level 2 silencer with mounting kit (approximately 25 dB reduction) Level 3 silencer with mounting kit (approximately 35 dB reduction) Overhead mounting kit for level 1 silencer Level 1, 2 and 3 silencer installation kits
Enclosures	Sound attenuated (EC) canopy
Handling/Trailers	Oil field skid
Controls	<ul style="list-style-type: none"> Baseframe mounted terminal box instead of control panel 4001 Autostart panel 4001E Autostart panel 6000 Series digital synchronising control panels Automatic mains failure (AMF) upgrades for 2001, 4001 and 4001E panels Control panel upgrades — gauges, meters, battery chargers, alarms, shutdowns
Remote Annunciators	<ul style="list-style-type: none"> 8- and 16-channel remote annunciator panel for 4001 and 4001E control systems only (supplied loose) Remote annunciator upgrade — normal/run control switch Remote annunciator upgrade — lockdown stop pushbutton
Circuit Breaker	Upgrades from 3-pole to 4-pole breaker
Transfer Switches	<ul style="list-style-type: none"> TM Series manual load transfer panels TC Series automatic load transfer panels ATI Series load transfer panels
Certification	European CE certification (not available on 60 Hz models)

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

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SPECIFICATIONS



GENERATOR

Make..... Olympian
 Model LL5014F
 Type Self-excited, brushless
 Voltage regulation ±0.5% at steady state from
 from no load to full load
 Frequency ±0.25% for constant load from
 no load to full load
 Waveform distortion THD <4%
 Radio interference Compliance with EN61000-6
 Telephone Interference TIF <50, THF <2%
 Overspeed limit 2250 rpm
 Insulation Class H
 Temperature rise Within Class H limits
 Deration Consult factory for available outputs

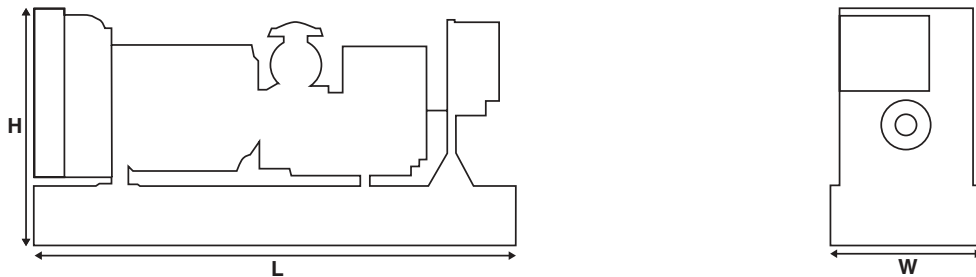


ENGINE

Manufacturer Perkins
 Model 1306-E87TA300
 Type 4-Cycle
 Aspiration Turbocharged
 Cylinder configuration In-line 6
 Displacement — L (cu in) 8.7 (531)
 Bore/stroke — mm (in) 117/136 (4.6/5.4)
 Compression ratio 16.9:1
 Engine speed — rpm
 50 Hz 1500
 60 Hz 1800

Piston speed — m/sec (ft/sec)
 50 Hz 6.8 (22.3)
 60 Hz 8.2 (26.9)
 Maximum power at rated rpm — kW (hp)
 Standby
 50 Hz 224 (300)
 60 Hz 243 (325)
 Prime
 50 Hz 206 (276)
 60 Hz 224 (300)
 BMEP — kPa (psi)
 Standby
 50 Hz 2058 (299)
 60 Hz 1857 (269)
 Prime
 50 Hz 1888 (274)
 60 Hz 1711 (248)
 Regenerative power — kW (hp)
 50 Hz 20.8 (27.9)
 60 Hz 28.6 (38.4)
 Governor
 Type Electronic
 Class ISO 8528 G2

GENERATING SET DIMENSIONS AND WEIGHTS



Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight* kg (lb)
GEH220	2960 (117)	1003 (39.5)	1718 (68.0)	2052 (4524)

Note: General configuration not to be used for installation. See general dimension drawings for detail.

*Includes oil and coolant

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GEH200 (3-Phase)

Generator Set Technical Data		50 Hz		60 Hz	
		Standby	Prime	Standby	Prime
Package Performance Power rating	kVA (kW)	220 (176)	200 (160)	250 (200)	225 (180)
Lubricating System Type: Wet sump Oil filter: Spin-on, full flow Oil cooler: Water Oil type required: API CG4 15W-40 Total lube system capacity Oil pan capacity	L (U.S. Gal) L (U.S. Gal)	26.4 (7.0) 22.7 (6.0)		26.4 (7.0) 22.7 (6.0)	
Fuel System Fuel Tank Capacity Generator set fuel consumption** 100% load 75% load 50% load	L (U.S. Gal) L/hr (U.S. g/hr) L/hr (U.S. g/hr) L/hr (U.S. g/hr)	350 (92.5) 47.0 (12.4) 36.3 (9.6) 25.8 (6.3)	43.1 (11.4) 33.3 (8.8) 23.9 (6.3)	350 (92.5) 56.9 (15.0) 42.1 (11.1) 29.6 (7.8)	50.7 (13.4) 38.1 (10.1) 27.4 (7.2)
Engine Electrical System Voltage/ground: 24 vDC/negative Battery charging alternator ampere rating	amps	45		45	
Cooling System Water pump type: Centrifugal Cooling system capacity Maximum coolant static head Coolant flow rate Minimum temperature to engine Temperature rise across engine Heat rejected to coolant at rated power Total heat radiated to room at rated power Radiator fan load	L (U.S. Gal) m H ₂ O (ft H ₂ O) L/hr (U.S. gal/hr) °C (°F) °C (°F) kW (Btu/min) kW (Btu/min) kW (hp)	39.8 (10.5) 13.0 (42.9) 293 (77.0) 79.0 (174) 5.0 (9.0) 82.5 (4692) 49.8 (2832) 7.0 (9.4)	73.0 (4151) 39.0 (2207)	39.8 (10.5) 15.5 (51.4) 351 (93.0) 79.0 (174) 5.0 (9.0) 107 (6102) 62.3 (3543) 12.0 (16.0)	96.0 (5454) 52.7 (2997)
Air Requirements Combustion air flow Maximum air cleaner restriction Radiator cooling air External restriction to cooling airflow Generator cooling air	m ³ /min (cfm) kPa (in H ₂ O) m ³ /min (cfm) Pa (in H ₂ O) m ³ /min (cfm)	9.8 (346) 6.2 (24.9) 324 (11442) 125 (0.5) 25.8 (912)	8.9 (314)	19.2 (678) 6.2 (24.9) 414 (14620) 125 (0.5) 30.6 (1081)	18.5 (653)
Exhaust System Maximum allowable backpressure Exhaust flow at rated power Exhaust temperature at rated power (dry exhaust)	kPa (in Hg) m ³ /min (cfm) °C (°F)	10.7 (3.20) 29.7 (1049) 573 (1064)	27.9 (985)	10.7 (3.20) 49.2 (1737) 487 (908)	47.7 (1685) 473 (884)
Generator Set Noise Rating* (without attenuation) at 1 m (3.28 ft)	dBA	96.9		98	

*dBA levels are for guidance only

**Fuel consumption data at indicated load with diesel fuel with a specific gravity of 0.85 and conforming to BS2869:1998 Class A2.

Generator Technical Data	50 Hz				60 Hz				
	415/240V	400/230V	380/220V	220/127V	480/277V	440/254V	208/120V	230/115V	380/220V
Motor Starting Capability:									
Self Excited (kVA)	414	389	356	457	454	392	355	332	303
AREP Excited*** (kVA)	496	465	426	547	543	469	425	397	363
PM Excited**** (kVA)	496	465	426	547	543	469	425	397	363
Full Load Efficiency									
Standby %	91.5	91.4	91.1	91.8	92.5	92.0	91.5	91.4	90.8
Prime %	92.0	92.7	91.6	92.1	92.8	92.4	92.0	91.8	91.4
Reactances (per unit)									
Saturated X'd	3.15	3.39	3.75	2.55	3.21	3.82	4.27	4.47	4.73
Reactances are shown	0.15	0.17	0.18	0.12	0.16	0.19	0.21	0.22	0.23
X"q	0.089	0.096	0.106	0.072	0.091	0.108	0.121	0.126	0.134
applicable to the standby rating	1.89	2.04	2.25	1.53	1.93	2.29	2.57	2.69	2.84
X"q	0.110	0.119	0.132	0.089	0.113	0.134	0.150	0.157	0.166
X2	0.099	0.107	0.118	0.080	0.101	0.120	0.135	0.141	0.149
X0	0.005	0.006	0.006	0.004	0.005	0.006	0.007	0.007	0.008
Time Constants:	t'd 100 ms		t'' 10 ms		t'do 2116 ms			ta 15 ms	

***With AREP Excited Option AR20A/AR21A

****With PMG Excited Option AR18A/AR19A

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RATINGS AT AVAILABLE VOLTAGES

50 Hz					
Voltage Code	Voltage	Standby		Prime	
		kVA	kW	kVA	kW
VOPT502	415/240	220	176	200	160
VOPT503	400/230	220	176	200	160
VOPT504	380/220	220	176	200	160
VOPT506	230/115	220	176	200	160
VOPT507	220/127	200	160	180	144
VOPT508	220/110	220	176	200	160
VOPT510	200/115	220	176	200	160

60 Hz					
Voltage Code	Voltage	Standby		Prime	
		kVA	kW	kVA	kW
VOPT601	480/277	250.0	200.0	225.0	180.0
VOPT603	440/254	250.0	200.0	225.0	180.0
VOPT605	380/220	231.0	184.8	210.0	168.0
VOPT606	240/120	249.0	199.2	225.0	180.0
VOPT607	230/115	242.0	193.6	220.0	176.0
VOPT608	220/127	250.0	200.0	225.0	180.0
VOPT609	220/110	231.0	184.8	210.0	168.0
VOPT610	208/120	249.0	199.2	225.0	180.0
VOPT611	240/139	250.0	200.0	225.0	180.0

Ratings at 27° C (80° F), 152.4 m (500 ft), 60% humidity, 0.8 pf

RATING DEFINITIONS

STANDBY

These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. When used at standby rating the alternator will be peak continuous rated (as defined in ISO8528-3).

PRIME POWER

These ratings are applicable for supplying continuous power (at variable load) in lieu of commercially 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.

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