

X Q 2 0

OLYMPIAN™



STANDBY 20 kW
PRIME 18 kW

60 Hz

FEATURES

EPA & CARB CERTIFIED FOR NON-ROAD MOBILE APPLICATIONS

SOUND ATTENUATED ENCLOSURE

- The fully weatherproof enclosures incorporate internally mounted exhaust silencers and are of extremely rugged construction in order to withstand the rough handling common on many construction sites. Enclosures are designed on modular principles with many interchangeable components permitting on-site repair.
- Highly corrosion resistant construction.
 - Body made from sheet steel components pre-treated with zinc phosphate prior to polyester powder coating at 392°F (200°C)
 - Black stainless steel padlockable latches.
 - Zinc die cast hinges/grab handles.

- Excellent access for maintenance
 - Two large doors on each side. One rear door for distribution/control panel.
 - Front panel for air discharge box access.
 - Lube oil and cooling water drains piped to exterior of the enclosure.
- Security and safety
 - Safety glass control panel viewing window in a lockable access door.
 - Emergency stop button on enclosure exterior.
 - Cooling fan and battery charging generator fully guarded.
 - Lockable doors protect exclusive access to fuel fill and battery.
- Transportability
 - Tested and certified single point lifting eye.
 - Lifting points on baseframe.

ROBUST DESIGN FOR RENTAL ENVIRONMENT

- The rugged XQ20 package is designed to withstand the abuse and lack of maintenance typical of construction rental applications. Mounted on a trailer, the XQ20 is light enough to be towed by a pickup truck.

MULTI-VOLTAGE DISTRIBUTION PANEL

- Switchable voltage output: 480/277 volt 3 phase, 208/120 volt 3 phase and 240/120 volt for 1 phase.*

REAR CUSTOMER ACCESS

- Control panel access through single door.
- Separate connection console.
- Hinged door over main connectors.
- Emergency stop on panel.

ENVIRONMENTALLY FRIENDLY DESIGN

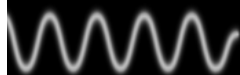
- EPA off-highway compliant engine.
- UL double walled fuel tank base with 24 hour minimum fuel supply.
- Containment area for oil, coolant and fuel spill.

OPTIONS

- AH1L — Anti-Condensation Heater 110-120 volt AC
- WHL — Coolant Heater 110-120 volt AC
- LOLR — Lube oil make-up system with REN automatic leveller

* Refer to distribution panel specifications for details.

LEHF2750-00 (10-02)



WHERE THE WORLD TURNS FOR POWER

S T A N D B Y 2 0 k W
P R I M E 1 8 k W
6 0 H z

OLYMPIAN™

STANDARD FEATURES

1. ENGINE

Perkins Engine Co. heavy duty industrial EPA compliant diesel engine.

1.1 Governor

Mechanical, compliant with BS5514, Class A1.

1.2 Electrical System

12 Volt DC. Energized to run shutdown solenoid. Oil pressure and coolant temperature/level shutdown switches and gauge senders.

3. ENGINE FILTRATION SYSTEM

Cartridge type dry air filters with restriction indicator. Fuel water separator in addition to engine filter. Cartridge type fuel filters and full flow lube oil filters.

All filters have replaceable elements.

4. EXHAUST SYSTEM

Critical Silencer with flexible connector.

All internal pipework lagged.

5. ELECTRICAL SYSTEM

12 Volt system with battery charging generator, and starter motor on engine, battery rack mounted on the generator set baseframe and battery charger mounted on control panel.

6. GENERATOR

Screen protected and drip-proof, self exciting, self-regulating brushless generator with fully interconnected damper windings, IC06 cooling system and sealed-for-life bearings. Simultaneous multi-voltage output.

6.1 Insulation System

The insulation system is Class H. All windings are impregnated in either a triple dip thermo-setting moisture, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin. Heavy coat of anti-tracking varnish for additional protection against moisture or condensation.

6.2 Electrical Characteristics

Electrical design in accordance with BS5000 Part 99, IEC60034-1, VDE0530, NEMA MG-1.22.

6.3 Automatic Voltage Regulator (AVR)

The fully sealed automatic voltage regulator maintains the voltage within the limits of $\pm 0.5\%$ at steady state from no load to full load including cold to hot variations at any power factor between 0.8 lagging and unity and inclusive of a speed variation of 4.5%.

Nominal adjustment is by means of a trimmer incorporated in the AVR.

The panel door incorporates an additional voltage adjustment potentiometer.

6.4 Waveform Distortion, THF and TIF Factors

The total distortion of the voltage waveform with open circuit between

phases or phase and neutral is in the order of 1.8. On a 3 phase balanced harmonic-free load the total distortion is in the order of 3.5%. Machines are designed to have a THF less than 2% and a TIF less than 50. A 2/3 pitch factor is standard on all stator windings.

6.5 Radio Interference

Suppression is in line with the provisions of BSEN55014 and VDE Class G and N.

7. MOUNTING ARRANGEMENT

7.1 Baseframe

The complete generator set is mounted on a heavy duty fabricated steel baseframe. The baseframe includes a UL listed closed top fuel tank and incorporates specially designed lifting points.

7.2 Coupling

The engine and generator are directly coupled by means of an SAE flange so there is no possibility of misalignment after prolonged use. The engine flywheel is flexibly coupled to the generator rotor and a full torsional analysis has been carried out to guarantee no harmful vibration will occur in the assembly.

7.3 Anti-Vibration Mounting Pads

Anti-vibration pads mounted between the engine/generator feet and baseframe, ensuring complete isolation from vibration caused by rotating components. As a result, the machine may be placed on an uneven surface without detrimental effects from vibration.

7.4 Safety Guards

The fan, fan drive and battery charging generator drive are fully guarded for personnel protection. All guards are to OSHA standards.

8. FUEL SYSTEM

Fuel feed and return lines to the engine are terminated at the baseframe mounted 24 hour extended capacity fuel tank. The entire fuel system is surrounded by a catchment area to prevent leakage. Three-way valves to allow connection of auxiliary fuel tank.

9. CONTROL SYSTEM

9.1 Control Panel

Set mounted autostart panel in a vibration isolated NEMA 1 sheet steel enclosure with a hinged lockable door.

a. DC and AC Wiring Looms

DC and AC wiring looms utilizing industrial type multi-pin connectors permit fast fault finding.

9.2 Circuit Breakers

UL and CSA-listed 3 pole molded case circuit breaker mounted on the generator set in a vibration isolated NEMA 1 distribution panel.

9.3 Small power receptacles housed in a NEMA 1 distribution panel. Receptacles accept industry standard male plugs. Each receptacle is protected by a miniature circuit breaker which also acts as an On/Off switch.

10. DOCUMENTATION

A full set of operation and maintenance manuals, circuit wiring diagrams, and instruction book is provided.

11. SOUND ATTENUATED ENCLOSURES

A noise reducing enclosure surrounds the entire generator set. Combined with a critical engine silencer this provides an overall noise reduction from 65 dBA at 23 feet, through the range.

12. FACTORY TESTS

The generator set is load tested before dispatch. All protective devices, control functions and site load conditions are simulated and the generator and its systems checked, proved and then passed for shipment. A test certificate can be provided upon request.

13. EQUIPMENT FINISH

All sheet metal components including the enclosure and the base tank are fully degreased, phosphated and chromated for anti-corrosive protection prior to painting with polyester powder. The powder is cured at a temperature of 392°F (200°C) to ensure maximum scuff resistance and durability. All fasteners are electroplated. The engine and generator are thoroughly cleaned and finished in temperature controlled ovens with industrial high gloss polyurethane paint.

14. STANDARDS

The equipment meets the following standards: BS4999, BS5000, BS5514, IEC60034, VDE0530, NEMA MG-1.22.

15. WARRANTY

Limited 12-month warranty from start-up (18 months from shipment from the factory).

STANDBY 20 kW
PRIME 18 kW
60 Hz

OLYMPIAN™

XQ20

Materials and specifications are subject to change without notice.

Generator Set Technical Data — 1800 rpm/60 Hz		Standby	Prime
Power Rating	kW (kVA)	20 (25)	18 (22.8)
Lubricating System Type: full pressure Oil filter: spin-on, full flow Oil cooler: water cooled Oil type required: API CF-4 Total oil capacity Oil pan	U.S. Gal (L) U.S. Gal (L)	1.6 (6) 1.4 (5.25)	1.6 (6) 1.4 (5.25)
Fuel System Fuel filter type: replaceable element Recommended fuel: #2 diesel Generator set fuel consumption 100% load 75% load 50% load Fuel tank capacity	G/hr (L/hr) G/hr (L/hr) G/hr (L/hr) U.S. Gal (L)	1.53 (5.8) 1.13 (4.3) 0.76 (2.9) 46.7 (177)	1.37 (5.2) 1.05 (4) 0.68 (2.6) 46.7 (177)
Engine Electrical System Voltage/ground: 12/Negative Battery charging generator ampere rating	Amps	55	55
Cooling System Water pump type: centrifugal Radiator system capacity including engine Maximum coolant static head Minimum temperature to engine Temperature rise across engine Heat rejected to coolant at rated power Radiator fan load	U.S. Gal (L) Ft H ₂ O (m H ₂ O) °F (°C) °F (°C) Btu/min (kW) Hp (kW)	1.83 (6.96) 10.2 (3.1) 76°C 43.8 (6.6) 1063 (18.7) 0.54 (0.4)	1.83 (6.96) 10.2 (3.1) 76°C 42.8 (6.0) 939 (16.5) 0.54 (0.4)
Air Requirements Combustion air flow Maximum air cleaner restriction Radiator cooling air Generator cooling air	Cfm (m ³ /min) In H ₂ O (kPa) Cfm (m ³ /min) Cfm (m ³ /min)	61 (1.74) 12 (3) 1673 (47.4) 6.4 (0.18)	61 (1.74) 12 (3) 1673 (47.4) 6.4 (0.18)
Exhaust System Exhaust backpressure (measured) Exhaust flow at rated kW Exhaust temperature at rated kW — dry exhaust	In wg (kPa) Cfm (m ³ /min) °F (°C)	10.4 (2.9) 181 (5.13) 1058 (570)	9.6 (2.4) 173 (4.9) 950 (510)
Generator Set Noise Rating* [with enclosure at 23 feet (7 meters)]	dBA	65	65

*dBA levels are for guidance only

SPECIFICATIONS

GENERATOR

Voltage regulation ± 0.5% at steady state from no load to full load including cold to hot variations at any power factor between 0.8 lagging and unity. Nominal adjustment is by means of a trimmer incorporated in the AVR.
 Frequency ± 0.25% for constant load from no load to 100% load
 Waveform distortion THD <1.8%, at no load
 Radio interference Suppression is in line with British Standard BSEN55014 and VDE Class G&N
 Telephone interference TIF <50, THF <2%
 Overspeed limit 2250 rpm
 Insulation Class H
 Temperature rise Within Class H limits
 Available voltages Simultaneous 3 Phase Voltage Output: 480/277 Volt, 208/120 Volt and adjustable for 3 Phase 240 Volt Output
 Deration Consult factory for available outputs
 Ratings At 86°F (30°C), 500 ft (152.4 m) 60% humidity, 0.8 pf

ENGINE

Manufacturer Perkins
 Model 404C-22
 Type 4-Cycle
 Aspiration Natural
 Cylinder configuration In-line 4
 Displacement — cu. in. (L) 135 (2.2)
 Bore — in (mm) 3.3 (84)
 Stroke — in (mm) 3.9 (100)
 Compression ratio 23.3
 Governor
 Type Mechanical
 Class Class A1
 Air cleaner type Dry, replaceable paper element, type with restriction indicator
 Piston speed — ft/sec (m/sec) 25.0 (7.6)
 Engine speed — rpm 1800
 Maximum power at rated rpm — hp (kW)
 Standby 32.6 (24.3)
 Prime 30 (22)
 BMEP — psi (kPa)
 Standby 106 (731)
 Prime 96 (662)
 Regenerative power — kW TBA

S T A N D B Y 2 0 k W
P R I M E 1 8 k W
6 0 H z

OLYMPIAN™

CONTROL PANEL — 2000 XQ

- NEMA 1 steel enclosure with hinged lockable door with viewing window.
- Manual Run/Off/Auto control switch.
- Separate Pre-Heat pushbutton.
- Red emergency stop pushbutton.
- Lamp test/reset pushbutton/activates fuel gauge.
- AC instrumentation: 1-voltmeter, 1-ammeter, 1-frequency meter.
- Engine gauges for: Oil pressure, Coolant Temperature, Battery Volts, Fuel Level.
- Fuel level display with momentary activation.
- Battery Charger, 3 Amp float/equalize, UL listed.
- Hours run meter.
- Voltage adjust potentiometer.
- Speed adjust potentiometer optional.
- Cycle cranking with 3 adjustable time crank/rest periods.
- 1 — 7 Position voltmeter phase selector switch.
- 1 — 4 Position ammeter phase selector switch.
- Shutdowns: High Coolant temperature/Low Coolant level, Low Oil pressure, Overcrank, Overspeed.
- Low Fuel level/Fuel tank leak.
- Printed circuit board control logic.
- Panel Light.

DISTRIBUTION PANEL

- NEMA 1 steel enclosure with hinged lockable door.
- 1 — 3 Pole MCCB's with solid neutral (4 Wire). UL/CSA listed with shunt trip.
- Integral trip unit for thermal and magnetic overload protection on MCCB's.
- Main bus connection studs enclosed with hinged transparent cover for easy access and operator safety.
- Common bus connection studs for 480/277 Volt 208/120 Volt, 3 phase and 240/120 Volt 1 Phase.*



- 2 — Single phase — California style Twistlocks, 50 Amps @ 208 Volt phase to phase, 120 Volt phase to ground or 240 Volt phase to phase, 139 Volt phase to ground.
- 2 — Single phase — GFCI Duplex receptacles, 20 Amps @ 120 Volts.***
- Individual circuit breaker protection for receptacles. Also act as on/off switches.

*** Receptacles not for use with low voltage adjusted to 240 Volts.

Model	Length in (mm)	Width in (mm)	Height in (mm)	Weight	
				With Lube Oil & Coolant lbs (kg)	With Fuel, Lube Oil & Coolant lbs (kg)
XQ20	78 (1980)	32.3 (820)	53 (1362)	2030 (921)	2359 (1070)

RATING DEFINITIONS

Standby — Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator on the generator set is peak prime rated (as defined in ISO8528-3) at 86°F.

Prime — Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and the generator set can supply 10% overload power for 1 hour in 12 hours.

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