

LLD WATER COOLED GENSET

LLD 410

50 Hz; 1500 r/min; power outputs: 33 kVA

60 Hz; 1800 r/min; power outputs: 39.6 kVA

WATER COOLED MOUNTED GENSET WITH ELECTRONIC CONTROL MODULE

CHOICE OF:

- 50 Hz, 1500 r/min or 60 Hz, 1800 r/min
- Lister Petter DELTA Series water cooled engine
- open set (LLD 410) or acoustic set (LLD 410A)

STANDARD FEATURES

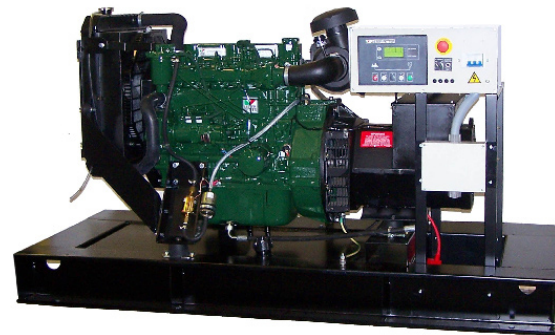
- control system with electronic digital control module
- single bearing, 4-pole brushless alternator
- 95-litre integral fuel tank with contents gauge
- black steel base-plate
- anti-vibration mountings
- 12 V starter battery and leads
- mechanical governing
- output circuit breaker
- emergency stop button (lock-down type)
- high engine temperature and low oil pressure shutdown system
- pusher fan
- operators' handbook
- electrical diagram

OPEN SETS ONLY:

- engine mounted exhaust silencer

ACOUSTIC SETS ONLY:

- acoustic canopy
- residential exhaust silencer
- external emergency stop button



OPEN SET (LLD 410)



ACOUSTIC SET (LLD 410A)

OPTIONAL ITEMS:

- residential exhaust silencer for open sets (as fitted to acoustic sets)
- 2-wheel trailer
- basic tool kit

ENGINE SPECIFICATION

- Lister Petter DELTA Series diesel engine
- water cooled
- indirect injection
- naturally aspirated
- four cylinders
- medium duty cyclonic air cleaner
- oil and fuel filters
- fuel lift pump
- 12 V electric starting system with battery charge alternator

ALTERNATOR SPECIFICATION

- single bearing, 4-pole brushless alternator
- solid state AVR with $\pm 1.5\%$ voltage regulation as standard
- class "H" insulation on the rotor and stator
- IP23 protection class

CONTROL SYSTEM FEATURES**CONTROL CUBICLE**

All LLD and LLDA sets have a control cubicle mounted on a vibration-isolated support, which has the following features:

- electronic digital control module with monitoring/control facility and warning indicators
- automatic shutdown protection
- emergency stop button (lock-down type)
- AC output circuit breaker with over-current protection
- DC circuit control switch and overload circuit breaker

The control module gives digital readouts of:

- generator voltage (phase-to-phase and phase-to-neutral)
- generator current (each phase displayed separately)
- output frequency
- engine speed
- engine oil pressure

- engine coolant temperature
- battery voltage
- engine hours run

The control module has indicators for:

- overspeed/underspeed
- emergency stop
- engine oil pressure
- engine temperature
- failure to start
- battery charger failure

Automatic shutdown occurs under:

- low engine oil pressure
- high engine temperature
- overspeed/underspeed
- failure to start after three attempts

MANUAL/REMOTE START SETS

These sets have the flexibility of either manual or remote automatic operation:

- manual operation is by **START** and **STOP** push-buttons on the control module
- remote operation is achieved by connecting a 2-wire circuit to the relevant terminals on the control module and is activated by setting the control module to **AUTO**

AUTOMATIC MAINS FAILURE SETS (AMF)

In the event of a mains failure, the generating set will automatically operate to supply the electrical load. In addition to the standard features, automatic mains failure sets have:

- wall mounted cubicle governing automatic mains failure operation
- control module timer circuits set to delay start, delay transfer back to mains and delay stop to allow for engine cooldown
- solid state automatic battery charger that maintains charge when set is not running

The wall-mounted cubicle features:

- mains monitoring unit to control set operation
- load transfer contactors, mechanically and electrically interlocked (rated for set output)
- indicator for mains-on-load or plant-on-load

POWER OUTPUTS									
50 Hz 1500 r/min					60 Hz 1800 r/min				
			Three-Phase ¹					Three-phase ¹	
Model	Engine	Rating	kVA	kW	Model	Engine	Rating	kVA	kW
LLD 410	DWS4	Prime	30.0	24.0	LLD 410	DWS4	Prime	36.0	28.8
LLD 410A		Standby	33.0	26.4	LLD 410A		Standby	39.6	31.7
Voltages available: three-phase 380/220, 400/230, 415/240. ²					Voltages available: three-phase 220/127, 230/133. ²				

1. Power Factor: Three-phase, 0.8 pf. Single-phase versions available on request.
2. Voltages available: Other voltages are available on request.

Power outputs are based on the optimum make of alternator for the set.

RATING DEFINITIONS TO ISO 8528-1

All ratings are in accordance with ISO 8528-1.

Rating Conditions

A standard generating set is designed to operate in environmental reference conditions of 25 °C, 100 kPa and 30% humidity.

Prime Power

This rating is for the supply of continuous electrical power (at variable load). There is no limit on the annual hours of operation and 10% overload power can be supplied for 1 hour in 12.

Standby Power

This rating is for the supply of continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted.

APPROXIMATE FUEL CONSUMPTION				
			litres/hour	
			50 Hz	60 Hz
Model	Engine	Load	1500 Tr/min	1800 Tr/min
LLD (410A)	DWS4	100%	8.6	10.3
		75%	6.3	7.4

SOUND PRESSURE LEVELS (DBA) ²	
50 Hz, 1500 r/min	
Acoustic genset	dBA at 75% load, 7m
LLD 410A	70

2. Noise levels are in accordance with European Noise Directive 2001/14/EC.

APPROXIMATE DIMENSIONS AND WEIGHT			
		Open set LLD 410	Acoustic set LLD 410A
Dry Weight	kg	592	820
	lb	1305	1808
Length (A)	mm	1600	2000
	in	63	79
Width (B)	mm	700	850
	in	27.5	33.5
Height (C)	mm	1110	1300
	in	44	51

A comprehensive range of options allows you to select a specification that matches your requirements. Please ask your Lister Petter distributor (see panel below right).

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