

# ALPHA Marine Series Heat-Exchanger Cooled Generating Sets

LLDM 95(A), LLDM 135, LLDM 140(A), LLDM 190(A), LLDM 200, LLDM 250(A), LLDM 275, LLDM 400

50 Hz; 1500/3000 r/min; power outputs: 5.9—43.5 kVA 60 Hz; 1800 r/min; power outputs: 7.3—25.3 kVA

# Heat-exchanger cooled gensets with electronic control module

#### **Basic Characteristics**

- ✓ Lister Petter ALPHA series Marine engine
- ✓ 2, 3 or 4 cylinders
- √ heat-exchanger cooled
- √ direct or indirect injection
- √ naturally aspirated or turbocharged
- √ open set (LLDM) or acoustic set (LLDAM)

# **Standard Features**

- heat-exchanger cooling
- water-cooled exhaust manifold
- water-injected exhaust bend
- raw water connectors
- control system with electronic digital control module (for features see page 3)
- single-bearing, 2 or 4-pole brushless alternator
- 66-litre polypropylene fuel tank with contents gauge
- galvanised steel base-plate with forklift pockets and bunding for the fuel tank
- anti-vibration mountings
- 12 V starter battery and leads
- mechanical governing
- emergency stop button (lock-down type)
- Operators' Handbook
- electrical diagrams

### **Open Sets Only:**

engine-mounted exhaust silencer



# **Acoustic Sets Only:**

- acoustic canopy
- central point lifting eye
- external emergency stop button



# ALPHA Series: Heat-Exchanger Cooled Genset Technical Data Sheet

# **Engine Accessories**

- medium-duty air cleaner
- oil and fuel filters
- fuel-lift pump
- 12 V electric starting system

# **Alternator Specification**

- single-bearing, 2 or 4-pole brushless alternator
- solid state AVR with ±1.5% as standard
- class H insulation on the rotor and stator, with ingress protection rating 23

# **Optional Items**

- residential exhaust silencer for open sets (as fitted to acoustic)
- acoustic canopy kit (including residential silencer kit) for retro-fitting to electric-start open sets only
- basic tool kit

#### **Control Cubicle**

All LLDM and LLDAM 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 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

# **ALPHA Series: Heat-Exchanger Cooled Genset Technical Data Sheet**

# Power Outputs to ISO 8528-11 and Emissions Compliance

50 Hz, 1500 r/min									
Model	Engine Rating		22 23	Phase OV O V O V	Three Phase 380/220 V 400/230 V 415/240 V				
			kVA	kW	kVA	kW			
	LPW2	Prime	5.6	5.6	7.0	5.6			
LLDM	LI VVZ	Standby	6.1	6.1	7.6	6.1			
95(A)	LPWS2	Prime	5.6	5.6	7.0	5.6			
	LFW32	Standby	6.1	6.1	7.6	6.1			
	LPW3	Prime	8.7	8.7	10.9	8.7			
LLDM		Standby	9.5	9.5	12.0	9.6			
140(A)	LPWS3	Prime	8.7	8.7	10.9	8.7			
		Standby	9.5	9.5	12.0	9.6			
	LPW4	Prime	12.2	12.2	15.0	12.0			
LLDM		Standby	13.5	13.5	16.5	13.2			
190(A)	LPWS4	Prime	12.2	12.2	15.0	12.0			
		Standby	13.5	13.5	16.5	13.2			
	LPWT4	Prime	15.4	15.4	20.0	16.0			
LLDM	LF W 14	Standby	17.0	17.0	21.9	17.6			
250(A)	LPWST4	Prime	15.4	15.4	19.7	15.8			
	LPVV514	Standby	17.0	17.0	21.7	17.4			

60 Hz, 1800 r/min										
			Single	Three Phase						
			230 oı	110 V 115 V 120 V	220/127 230/133					
Model	Engine	Rating	kVA	kW	kVA	kW				
	LPW2	Prime	6.9	6.9	8.6	6.9				
LLDM	LPWZ	Standby	7.5	7.5	9.5	7.6				
95(A)	LDWGG	Prime	6.9	6.9	8.6	6.9				
	LPWS2	Standby	7.5	7.5	9.5	7.6				
	LPW3	Prime	10.5	10.5	13.3	10.6				
LLDM		Standby	11.5	11.5	14.6	11.7				
140(A)	LPWS3	Prime	10.5	10.5	13.3	10.6				
	LPWSS	Standby	11.5	11.5	14.6	11.7				
	LPW4	Prime	14.8	14.8	18.5	14.8				
LLDM	LPW4	Standby	16.3	16.3	20.3	16.2				
190(A)	LPWS4	Prime	14.8	14.8	18.5	14.8				
	LPW54	Standby	16.3	16.3	20.3	16.2				
	I DWT4	Prime	19.0	19.0	24.4	19.5				
LLDM	LPWT4	Standby	20.9	20.9	26.9	21.5				
250 (A)	LPWST4	Prime	19.0	19.0	24.4	19.5				
	LPW314	Standby	20.9	20.9	26.9	21.5				

**Approximate Fuel Consumption** 

Values refer to litres/hour

50 Hz, 3000 r/min									
Model	Engine	Engine Rating		Phase 0V 0 V 0 V	Three Phase 380/220 V 400/230 V 415/240 V				
		Prime	kVA 10.2	kW 10.2	kVA 13.7	kW 11.0			
LLDM	LPW2	Standby	11.2	11.2	15.1	12.1			
135	LPWS2	Prime	10.2	10.2	13.7	11.0			
		Standby	11.2	11.2	15.1	12.1			
	LPW3	Prime	15.4	15.4	20.3	16.3			
LLDM		Standby	16.9	16.9	22.4	17.9			
200	LPWS3	Prime	15.4	15.4	20.3	16.3			
		Standby	16.9	16.9	22.4	17.9			
	LPW4	Prime	20.9	20.9	28.1	22.5			
LLDM	LPW4	Standby	23.0	23.0	30.9	24.8			
275	LPWS4	Prime	20.9	20.9	28.1	22.5			
	LPVV54	Standby	23.0	23.0	30.9	24.8			
LLDM	LPWT4	Prime			39.5	31.6			
400	LI WI4	Standby			43.5	34.8			

33 112, 3333 1/ 111111								
			Single	Phase	Three Phase			
Model				OV	380/220 V			
	Engine	Rating		0 V	400/230 V			
				0 V	415/240 V kVA kW			
			kVA	kVA kW		kW		
	LPW2	Prime	10.2	10.2	13.7	11.0		
LLDM	LPVVZ	Standby	11.2	11.2	15.1	12.1		
135	LPWS2	Prime	10.2	10.2	13.7	11.0		
		Standby	11.2	11.2	15.1	12.1		
LLDM	LPW3	Prime	15.4	15.4	20.3	16.3		
		Standby	16.9	16.9	22.4	17.9		
200	LPWS3	Prime	15.4	15.4	20.3	16.3		
		Standby	16.9	16.9	22.4	17.9		
	LPW4	Prime	20.9	20.9	28.1	22.5		
LLDM	LPW4	Standby	23.0	23.0	30.9	24.8		
275	LPWS4	Prime	20.9	20.9	28.1	22.5		
	LPW54	Standby	23.0	23.0	30.9	24.8		
LLDM	LPWT4	Prime			39.5	31.6		
400	LPVV14	Standby			43.5	34.8		
For rating definitions see page 4. Power Factor: single phase 1.0								

<sup>1.</sup> For rating definitions see page 4. Power Factor: single phase, 1.0 pf; three phase, 0.8 pf. Other voltages are available on request. Power outputs are based on standard Lister Petter alternators (but see 2). 2. LPWT4 single-phase outputs are based on Mecc Alte alternators.

Sound Pressure <sup>3</sup>										
Acoustic sets, 75% load at 7m										
	50 Hz, 1500 r/min									
LPW2/3	LPW2/3 LPW4 LPWT4 LPWS2/3 LPWS4 LPWST4									
64 dBA	64 dBA 65 dBA 62 dBA 64 dBA 65 dBA N/D									

Genset	Engine	Load	1500	3000	1800			
Genset	Eligille	Luau	r/min	r/min	r/min			
	LPW2	100%	1.9		2.3			
LLDM	LFVVZ	75%	1.5		1.8			
95(A)	LPWS2	100%	2.1		2.5			
	LFW32	75%	1.6		2.0			
	LPW2	100%		3.9				
LLDM	LPVVZ	75%		3.1				
135	LPWS2	100%		4.4				
	LPW52	75%		3.4				
	LDWO	100%	2.8		3.4			
LLDM	LPW3	75%	2.2		2.7			
140(A)	LDWCO	100%	3.1		3.7			
	LPWS3	75%	2.4		2.9			
	LDWO	100%		5.9				
LLDM	LPW3	75%		4.6				
200	LDWC2	100%		6.6				
	LPWS3	75%		5.1				
	LDW/4	100%	3.8		4.6			
LLDM	LPW4	75%	2.9		3.6			
190(A)	LPWS4	100%	4.1		5.0			
	LPW54	75%	3.2		3.9			
	LDW/A	100%		7.8				
LLDM	LPW4	75%		4.6				
275	I DWC/	100%		8.8				
	LPWS4	75%		6.9				
	LPWT4	100%	4.9		6.0			
LLDM	LPW14	75%	3.7		4.6			
250(A)	I DWCT4	100%	5.4		6.6			
. ,	LPWST4	75%	4.1		5.1			
	I DWT/	100%		10.6				
LLDM	LPWT4	75%		8.3				
400	I DWCT4	100%						
	LPWST4	75%						
I/D = No data available at going to press. Please ask your distributor								

3. In accordance with European Noise Directive 2001/14/EC. N/D = No data available at going to press. Please ask your distributor.

**Key to Colour Coding** 

page 3

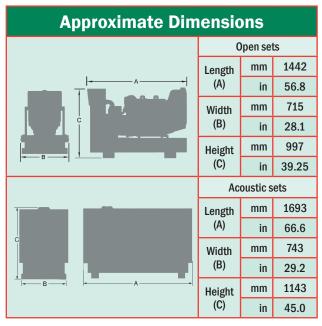
Fully compliant with EU Stage 3A, USA EPA Interim Tier 4 and India GSR 448(E) legislation.

Compliant with EU Stage 3A and India GSR 448(E) legislation.

Compliant with USA EPA Interim Tier 4 legislation only.

Compliant with EU Stage 3A legislation only.

# **ALPHA Series: Heat-Exchanger Cooled Genset Technical Data Sheet**



#### **Rating Definitions to ISO 8528-1**

Ratings are in accordance with ISO 8528-1. Power Factor: Single phase, 1.0 pf; three-phase, 0.8 pf. Other voltages are available on request.

#### **Rating Conditions**

A standard generating set is designed to operate in environmental reference conditions of 25  $^{\circ}$  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.

Weight													
Open Sets Acoustic Sets													
	LLDM LLDM LLDM LLDM LLDM LLDM LLDM				LLDM	LLDM	LLDM	LLDM	LLDM				
		95	135	140	190	200	250	275	400	95A	140A	190A	250A
Dryweight	kg	396	396	417	456	417	466	456	466	500	540	580	590
Dry weight	lb	873	873	919	1005	919	1027	1005	1027	1102	1190	1279	1301

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

# Distributor's Address

Lister Petter have made efforts to ensure that the information in this data sheet is accurate but reserve the right to amend specifications and information without notice and without obligation or liability.



Lister Petter Limited, Dursley, Gloucestershire GL11 4HS England; Tel: +44 (0)1453 544141; Fax: +44 (0)1453 546732;

E-mail: sales@lister-petter.co.uk http://www.lister-petter.co.uk