

# KVA POWERHOUSE RANGE

## 350 KVA – 650 KVA

### 50 Hz Three phase 380- 415 v

Model	Engine	Alternator	Manufacturing country of engine & alternator	PRP Output		ESP Output	
				Kva	Kw	Kva	Kw
PM350	2206A-E13TAG2	ECO38-3LN	USA/UK	350	280	370	296
PM400	2206A-E13TAG3	ECO401S	USA/UK	400	320	437	350
PM450	2506A-E15TAG1	ECO402S	USA/UK	450	360	491	392
PM500	2506A-E15TAG2	ECO403S	USA/UK	500	400	546	436
PM600	2806A-E18TAG1A	ECO401.5L	USA/UK	600	500	660	528
PM650	2806A-E18TAG2A	ECO402L	USA/UK	650	520	710	568
PS350	2206A-E13TAG2	HCI444E	USA/UK	350	280	380	304
PS400	2206A-E13TAG3	HCI444F	USA/UK	400	320	425	340
PS450	2506A-E15TAG1	HCI544C	USA/UK	450	360	495	396
PS500	2506A-E15TAG2	HCI544C	USA/UK	500	400	550	440
PS500	2506A-E15TAG2	HCI544D	USA/UK	500	400	520	416
PS600	2806A-E18TAG1A	HCI544E	USA/UK	600	480	660	528
PS650	2806A-E18TAG2A	HCI544F	USA/UK	650	520	710	568

### Ratings definitions:

Ratings are in accordance with ISO8528 and are based on a 25 Deg C ambient/air inlet temperature, 100 M altitude and 30% relative humidity and are based on 0.8 lagging power factor.

#### Prime Power (PRP)

Power available at variable load, with a load factor not exceeding the figure shown. An overload of 10% is permitted for 1 hour in any 12 hours operation.

#### Standby Power (ESP)

Power available at variable load in the event of a main power network failure upto a maximum of 500 hours per year. No overload is permitted.

# Data

		2206A- E13TAG2	2206A- E13TAG3	2506A- E15TAG1	2506A- E15TAG2	2806A- E18TAG1A	2806A- E18TAG2A
Performance class	ISO8528	G2	G2	G2	G2	G2	G2
Average load factor	% of PRP	70	70	80	80	80	80
Load acceptance	% of PRP	66	58	65	60	70	70
Hz regulation – constant load	%	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25
Voltage regulation	%	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1
Cooling clearance	Deg C	59	55	50	50	49	49
Fuel tank capacity	Open	760	760	1106	1106	1539	1539
	Canopied	750	750	860	860	1080	1080
Fuel consumption	50%	40.7	45.6	51.6	56.8	65.2	69.8
	75%	57.2	65.1	71.8	79.3	93.8	100.8
Litres/hour	100%	74.1	84.5	94	103.5	126.1	135.7
	110%	80.6	92	102.5	114	136.9	149.5
<b>Fuel consumption is based on fuel in accordance with BS2869 with a specific gravity of 0.845 and is subject to a +5% tolerance</b>							

Cylinders		6	6	6	6	6	6
Configuration		Inline	Inline	Inline	Inline	Inline	Inline
Aspiration		Turbo	Turbo	Turbo	Turbo	Turbo	Turbo
		Air/air	Air/air	Air/air	Air/air	Air/air	Air/air
		charge	charge	charge	charge	charge	charge
		cooled	cooled	cooled	cooled	cooled	cooled
Compression ratio		16.3:1	16.3:1	16:1	16:1	14.5:1	14.5:1
Bore x stroke	mm	130 x 157	130 x 157	137 x 171	137 x 171	145 x 183	145 x 183
Displacement	Litres	12.5	12.5	15.2	15.2	18.1	18.1
Mean piston speed	m/sec	7.8	7.8	8	8	9	9
Thermal efficiency	%	41.4	40.7	44	39.7	42.8	42.6
BMEP (PRP)	kPa	2061	2344	2235	2405	2381	2576
Cooling capacity	Litres	51.4	51.4	58	58	61	61
Lub. oil capacity	Litres	40	40	62	62	62	62
Airflow	M3/min	563	563	660	660	702	702
Duct	Pa	200	200			0	0
Exhaust gas flow (ESP)	M3/min	64.8	73.5	81	98	104	114
Exhaust back pressure	kPa	10	10	6.8	6.8	6.9	6.9

		HCI444E	HCI444F	HCI544C	HCI544D	HCI544E	HCI544F
Avr model		AS440	AS440	AS440	AS440	AS440	AS440
Bearings		1	1	1	1	1	1
Stator insulation	Class	H	H	H	H	H	H
Rotor insulation	Class	H	H	H	H	H	H
Temperature rise	PRP	125/40	125/40	125/40	125/40	125/40	125/40
	ESP	163/27	163/27	163/27	163/27	163/27	163/27
Winding pitch		2/3	2/3	2/3	2/3	2/3	2/3
Number of leads		12	12	12	12	12	12
Mechanical protection		IP23	IP23	IP23	IP23	IP23	IP23
THF		<2	<2	<2	<2	<2	<2
Inertia	Kgm2	4.63	5.42	6.89	8.00	8.98	10.03

		ECO383LN	ECO401S	ECO402S	ECO403S	ECO4015L	ECO402L
Avr model		DSR	DSR	DSR	DSR	DSR	DSR
Bearings		1	1	1	1	1	1
Stator insulation	Class	H	H	H	H	H	H
Rotor insulation	Class	H	H	H	H	H	H
Temperature rise	PRP	125/40	125/40	125/40	125/40	125/40	125/40
	ESP	163/27	163/27	163/27	163/27	163/27	163/27
Winding pitch		2/3	2/3	2/3	2/3	2/3	2/3
Number of leads		12	12	12	12	12	12
Mechanical protection		IP21	IP21	IP21	IP21	IP21	IP21
THF		<2	<2	<2	<2	<2	<2
Inertia	Kgm2	3.47	5.50	6.24	6.85	8.73	9.25

# Scope of standard supply

Cooling system	Set mounted tropical radiator- original Perkins supply Engine driven cooling fan Fan and matrix protection guard
Induction system	Dry paper element air filter Pressure drop indicator
Governor type	ECU
Fuel system	Fuel filter Fuel lines Contents gauge Vent and drain
Lubrication system	Lub oil filter Sump drain pump (optional on open sets) Standard on all canopied sets
Baseframe	Steel baseframe with integral steel base fuel tank
DC electrical system	24 v starter motor 24 v charge alternator 2 x 125 amp/hour lead acid maintenance free batteries
Control panel	Powder coated steel enclosure flexibly mounted above alternator terminal box
Controller	DSE 7120
Circuit breaker	Powder coated steel enclosure fitted to gen set 3 pole Terasaki /ABB MCCB
Monitoring	Oil pressure Engine temperature Engine speed Hours run Amps per phase Ac voltage Frequency Mains ac monitoring Maintenance scheduler
Exhaust	Industrial exhaust silencer Flexible exhaust section
Works Test	Full works test In accordance with ISO8528 covering Functions Load tests upto 110% Load acceptance capability Conducted at unity power factor
Paint colour	Black

# Canopy specifications

Our canopies are designed and manufactured in Western Europe to our own specifications and share the following in common:

- Acoustic & weatherproof
- Galvanised steel
- Stainless steel door handles
- Gloss powder coat
- Zinc plated door hinges
- Neatly fitted fireproof (DIN75200) soundproofing materials
- Detachable air inlet and outlet attenuators – allows access to radiator and maximises the space available when loading multiple sets into containers for shipment



## Prototype tested to ensure cooling clearance

Sound attenuation	Db@ 1m	85
Ambient cooling clearance	Deg C	50
Thickness of steel	mm	2
IP rating		IP44
Access		2 doors along each side 3 doors for the P600 & P650
Access points		Viewing window Cable gland plate Radiator filler
Exhaust position		Roof mounted
Lifting facilities		Single point lifting frame Forklift access from base
Colour	Canopy Base	RAL9010 White RAL9010 White



We can also offer Custom built soundproof canopies designed for specific applications or to suit plant room restrictions

## Options

Each set within the KVA Powerhouse range can be supplied with a number of options to tailor the set to a specific duty.

Mains coolant heater	Assists starting and load acceptance capability at low ambient temperatures
Permanent magnet excitation Alternator anti condensation heaters	Provides improved motor starting and voltage regulation Minimises damage to the windings caused by condensation build up
Alternator winding thermistors	Provides alarm/shutdown for high winding temperature
Alternator winding and bearing RTD's	Provides temperature readout of windings and bearing(s)
High specification fuel/water separator with alarm contact	Minimises damage to fuel systems and provides alarm indication
Single point exhaust temperature monitoring	Provides a temperature readout
DSE7220 controller DSE7320 controller DSE8610 controller	Enables remote communications Enables synchronising
Remote monitoring and control	
4 pole mccb Motor operator Earth fault protection	
5 amp or 10 amp battery charger Battery temperature monitoring	
Automatic Transfer Switch panel Bypass switch panel	Using either Contactors or circuit breakers
Synchronising	Available either between generators or between generator and mains
Custom built enclosures	Purposely designed tailor made canopies for specific installations such as water authorities
High attenuation enclosures	65 dba @ 1m for Hospitals and residential installations
Critical exhaust silencer systems	
Bunded base fuel tank	Required for EC countries
Ce compliance and certification	Required for EC countries

Further options are shown in our current price list.

# Weights and dimensions

The following is given for guidance. For installation purposes we can supply as built drawings

## Open Sets

Model	Length	Width	Height	Dry weight
	Cm	Cm	Cm	kg
PM350/400	310	113	215	3700
PM450/500	339	113	223	3900
PM600/650	340	154	224	4700
PS350/400	318	113	215	3700
PS450/500	340	113	222	3900
PS600/650	340	154	227	4700

## Canopied Sets

Model	Length	Width	Height	Dry weight
	Cm	Cm	Cm	kg
PM/PS350/400	471	117	279	4000
PM/PS450/500	545	117	267	4900
PM/PS600/650	507	160	281	5800

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**We have a policy of continuous product development and reserve the right to alter specifications without notice**