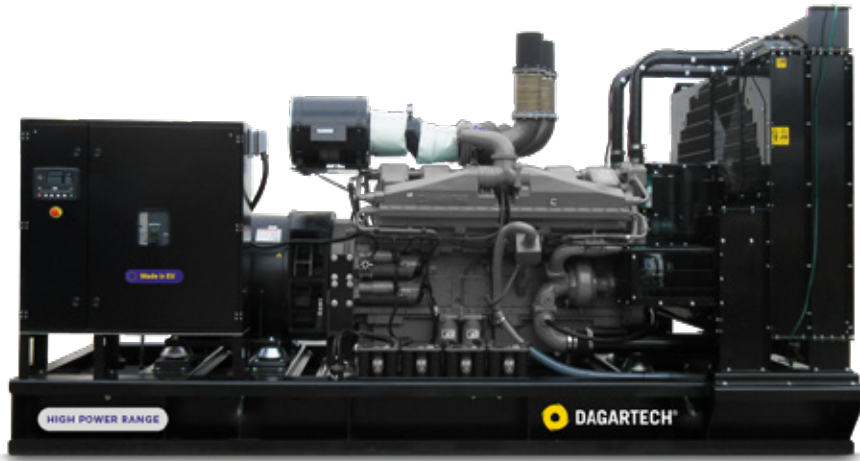


DGP 1650 ME

High Power Range



Ideal for...




MINING



DPCs



INFRASTRUCTURES

 Weight with liquids without fuel: 10670 kg

 Dimensions Plat 10K:
L: 5800 mm
W: 2150 mm
H: 2600* mm

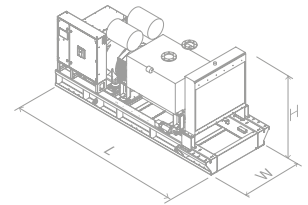


Image for orientation purposes. Dagartech reserves the right to modify the data in this technical sheet without prior notice. The weight of the equipment may vary depending on the equipment.



Diesel



EU Stage 0



Water cooled



Open



CE Conformity

1. General technical data

General technical data	Engine	PERKINS 4012-46TAG2A
	Alternator	MECCALTE ECO46 1S4 A
	Type of execution	G2
	Frequency	50Hz
	Voltage	400/230V
	Control panel	DSE 7320 MKII
	Fuel tank (l)	N/A
	Sound level-Lp(A) (dB(A)@7m)	N/A (Indoor)
	Sound power-LW(A) (dB(A))	N/A (Indoor)

Power ¹ (m.p. cos φ 0,8)	PRP (kVA / kW)	1500 / 1200
	ESP (kVA / kW)	1650 / 1320

¹PRP: Continuous power ("Prime Power"). ESP: Emergency Standby Power according to ISO8528-1.
Maximum active power tolerance (kW) ±5%

Voltage	PRP (KVA/KW)	ESP (KVA/KW)	Amperage (A)
400/230V	1500 / 1200	1650 / 1320	2384

Directives and Regulations

ENVIRONMENTAL CONDITIONS STANDARD ISO 8528-1:2018: 25°C, 100kPa and 30% relative humidity:

- **Prime Power (PRP):** Data on electrical power available at variable load without limit of hours per year. An overload of 10% is allowed for 1h out of 12. According to ISO 8528-1:2018.
- **Emergency Standby Power (ESP):** Data on electrical capacity available at variable load in case of emergency according to ISO 8528-1:2018.

The DAGARTECH Generating Set has EC labelling which includes the following directives:

- **2006/42/EC. Machine Safety Directive.**
- **EN ISO 8528-13:2016. Part 13: Safety.** Alternating current generator sets powered by reciprocating internal combustion engines.
- **2014/30/EU. Electromagnetic Compatibility Directive.**
- **2000/14/EC. Noise Emissions Directive.** Sound power levels evaluated in accordance with the procedure laid down in the directive.
- **Directive 2011/65/EU** on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

2. Engine specifications

2.1. General technical data of the engine	Make and model	PERKINS 4012-46TAG2A			
	r.p.m.	1500			
	Maximum ESP power (kWm)	1395			
	Power PRP (kWm)	1267			
	Fuel	Diesel			
	No. of cylinders	12 cylinders			
	Cylinder capacity (c.c.)	45842			
	Compression ratio	13:1 nominal			
	Cooling system	Water cooled			
	Type of regulation	electronic			
Type of engine/injection/suction	Diesel/direct/turbocharged				
2.2. Fuel	Type of fuel	Diesel			
	Fuel tank capacity	N/A			
2.3. Consumption and autonomy	Consumption (l/h)	Autonomy (h)			
		PRP	ESP	PRP	ESP
	50%	164	-	N/A	-
	75%	236	-	N/A	-
	100%	309	340	N/A	N/A
2.4. Cooling system	Fan flow (m ³ /s)	32,4			
	Fan power consumption (kW)	64			
	Radiator back pressure (Pa)	200			
	Total refrigerant capacity (l)	210			
2.5. Lubrication system	Oil capacity (l)	177			
2.6. Intake system	Combustion air intake flow (m ³ /min)	128			
2.7. Starter system	No. of batteries	4			
	Battery characteristics	12V 44Ah			
	Start-up voltage (V)	24V			
2.8. Exhaust system	Exhaust gas flow (m ³ /min)	320 [PRP]	320 [ESP]		
	Exhaust gas temperature (°C)	455° [PRP]	455° [ESP]		
	Exhaust outside diameter (mm)	6" - Ø152,4mm			
	Max. exhaust back pressure (kPa)	5			

- **12 cylinders 4-stroke diesel engine online** with mechanical regulation electronic by means of a fuel pump, original from the manufacturer.



Emissions compliance
EU Stage 0

- **Direct injection and suction system turbocharged.** Original manufacturer's particle separator filter.

- **Refrigeration through cooling liquid,** fully distributed in the closed circuit run by an engine driven pump, tropicalised radiator, original from the engine manufacturer.

- **Crankshaft-driven pump lubrication system.** The filter is a full-flow insert cartridge, front housing, original from the engine manufacturer.

- **Air intake system for turbo-fed combustion** with two-stage filter, original from the engine manufacturer.

- **Electric motor starting system, battery** (no maintenance) **with disconnecter and load alternator driven by the starter** 24V, original elements from the engine manufacturer.

Exhaust attenuation level
-10dB(A)

3. Alternator specifications

3.1. General technical data for the alternator	Make and model	MECCALTE ECO46 1S4 A		
	No. of poles	4		
	Insulation class	H		
	No. of threads	12		
	Mechanical protection index	IP23		
	Voltage Regulator (AVR)	DER1		
	Voltage regulation	+/-0.5%		
	ESP power 27°C (kVA)	1650		
	Power PRP 40°C (kVA)	1500		
	No. of phases	3		
	Power factor (cos φ)	0,8		
Performance η (%)				
	50%	75%	100%	110%
	95,9%	96,4%	96,2%	96,1%

- **Brushless 4-pole alternator.** Robust mechanical structure with easy access to connections and components. Insulation class H, coil pitch 2/3 and self-excited AVR.
- **Protection with premium epoxy resins.** High voltage parts are impregnated under vacuum, which always means very good insulation.

Standard regulations that the alternator fulfils:

CEI 2-3 | IEC 34-1 | EN 60034-1 | VDE 0530 | BS 4999-5000 | CAN/CSA-C22.2-No 100-95..

Low wave distortion:

- **THD (100% load) = 2%**
- **THF < 2%**

Complies with: EN61000-6-3, EN61000-6-2 regarding radio interference.

4. Frame Specifications

- Unit mounted on **electro-welded high-resistance steel frame**, painted with epoxy-polyester powder paint.
- Connection of the assembly to the frame by means of **anti-vibration dampers**.
- **No fuel tank located on the frame itself.** Available as an option. The engine is equipped with a measuring gauge and fuel system.
- **Tested in a saline mist chamber according to ASTM B-117-09, resistance 500h.**



Do you need an open or soundproofed generator?

The choice between an open or soundproofed unit will depend mainly on the location where it is to be installed and the permissible noise conditions at the site. So, if the equipment is going to be outdoors, or if noise pollution rates are a critical factor in your project, the obvious decision will be to opt for a soundproofed group.

Our cabs are tested in a salt spray chamber according to standard ASTM B-117-09 (resistance 720H. IP44 mechanical protection grade).



Not sure if you need a soundproofed generator set for your installation?

Get in contact with us and we will advise you.

Images for orientation purposes. Dagarotech reserves the right to modify the data in this technical sheet without prior notice.

6. Control panel

6.1. Main elements of the control panel

- Protection panel, distribution with **automatic control module** which allows you to work in manual, automatic or signal mode.
- **Emergency stop button.**
- **Deep Sea Electronics battery charger**, designed to be permanently connected to the battery and maintain 100% of the charge. The charger switches to float mode when charging is complete:

Model DSE 9255 24V, 5A

- **Protections:**
 - **4-pole magnetothermic protection** against overloads and short circuits.
 - **Protection fuses** for the control set.



6.2. Protection switch

Model Schneider ComPact 2500A 4P

6.3. Control module



Model DSE 7320 MKII

- 1 • 4 configurable indicator LEDs
- 2 • Generator on load
- 3 • Transfer to the generator (manual mode)
- 4 • **Start engine (manual mode)**
- 5 • Silence alarm
- 6 • Automatic mode
- 7 • Test mode
- 8 • Manual mode
- 9 • **Genset stop**
- 10 • Main network transfer (manual mode)
- 11 • Network in load
- 12 • Navigation keyboard
- 13 • Main status and instrument display

DSE 7320 MKII DEEP SEA control card with mains grid monitor. The genset will automatically start up when detecting a fault in the electric power network and it will turn off automatically as well, when the electrical supply is re-established. It can also work in manual mode and by signal. It allows you to monitor a wide range of generator parameters and display information alerts, status and alarms.

The module includes communication ports USB, RS232, RS485, and also DSENet® for system expansion. Possibility of Ethernet networking (plug).

The entire module is easily configurable via PC using the DSE specific software configuration.

It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

Different operating modes: AUTOMATIC mode, MANUAL mode, SIGNAL mode and TEST mode.

Other alternative configurations are available upon request to extend the capabilities of the operation modes.

Environmental Tests that the module complies with:

- BS EN 61000-6-2 (electromagnetic compatibility)
- BS EN 61000-6-4 (electromagnetic compatibility)
- BS EN 60950 (electrical safety) | BS EN 61000-6-2 (temperature) | BS EN 60068-2-6 (vibrations) | BS EN 60068-2-27 (shock)

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6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Operating modes	
STOP mode	✓
MANUAL mode	✓
TEST mode	✓
AUTO mode	✓
Module configuration options	
PC	✓
Group readings	
Generator voltage (F-F)	✓
Generator voltage (F-N)	✓
Generator current (A)	✓
Generator frequency	✓
Generator load F-N (kW / kVA / kVAr)	✓
Total generator load (kW / kVA / kVAr)	✓
Average generator power factor	✓
Accumulated generator load (kW, kVAh, kWh, kVAh)	✓
Network readings	
Network voltages (ph-N)	✓
Network voltages (ph-ph)	✓
Network frequency	✓
Network current (A)	■
Network load ph-N (kW / kVA / kVAr)	■
Total network load (kW / kVA / kVAr)	■
Engine readings	
Coolant temperature	✓
Oil pressure	✓
Engine fuel level	✓
Engine battery volts	✓
Engine speed	✓
Engine run time	✓

Do you want a superior performance control module?

Contact us and tell us what you need.



Ask us for further readings in generating sets equipped with electronically managed engines and DSE 7320MKII control module.



- ✓ Includes
- ✗ Not available
- Optional
- ⓘ Consult

Readings available at control module level.

Confirm the availability of these readings for this generator and engine.

Images for orientation purposes. Dagarotech reserves the right to modify the data in this technical sheet without prior notice.

6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Engine protections	
High water temperature	✓
Low oil pressure	✓
Low water level	✓
Fuel reserve by sensor	✓
Second fuel tank control	✓
Shutdown failure	✓
Battery voltage failure	✓
Battery charge alternator failure	✓
Overspeed	✓
Underfrequency	✓
Failure to start	✓
Emergency stop	✓
Maintenance notice	✓
Maintenance Alert	✓
Alternator protections	
High frequency	✓
Low frequency	✓
High voltage	✓
Low voltage	✓
Short circuit	✓
Asymmetry between phases	■
Incorrect phase sequence	✓
Reverse power	✓
Breaker Trip 4 poles	■
Overpressure alarm	✓
Counters	
Hour meter	✓
Kilowatt meter	✓
Starter counter	✓



Ask us for further readings in generating sets equipped with electronically managed engines and DSE 7320MKII control module.



Do you want a superior performance control module?

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- ✓ Includes
- ✗ Not available
- Optional
- ⓘ Consult

Readings available at control module level.

Confirm the availability of these readings for this generator and engine.

6. Control panel

6.3. Control module



Model	DSE 7320 MKII
Communications	
RS232	✓
RS485	✓
USB communication port	✓
Modbus IP	■ DSE 855/890/891
Modbus RS 485	✓
PC Software (Mimic)	✓
GSM/GRPS MODEM	■ DSE 890
Remote display < 1km	■ DSE 2520
Remote monitoring	■ DSE 855/890
Input expansion	■ DSE 2130 8 inputs
Output expansion	■ DSE 2157 8 inputs
SNMP protocol	■ DSE 892
Services	
Configurable alarm history	250
External start	✓
Start-up inhibition	■
Network Failure Start	✓
Activation of group counter	✓
Activation of grid and group counter	✓
Control of fuel transfer	✓
Motor temperature control	✓
Forced group operation	✓
Free programmable alarms	✓
Group start function in test mode	✓
Free programmable outputs	✓
Multilingual	✓
Special applications	
GPS localisation	■ DSE 890
Calendar scheduler	✓
DSE configuration suite via PC	✓
Front panel module configuration with PIN	✓
Alternative work	✓
Programmable PLC	✓
Power save mode	✓
Alternative configurations	✓
Dummy load control / load shedding	✓ 5 Stage dummy load

Do you want a superior performance control module?

Contact us and tell us what you need.

Ask us for further readings in generating sets equipped with electronically managed engines and DSE 7320MKII control module.

✓ Includes ■ Optional
 ✗ Not available ⓘ Consult

Readings available at control module level.

CONFIRM THE AVAILABILITY OF THESE READINGS FOR THIS GENERATOR AND ENGINE.

Images for orientation purposes. Dagartech reserves the right to modify the data in this technical sheet without prior notice.

7. Standard Scope of Delivery



Engine

- **PERKINS 4012-46TAG2A Trop Diesel Engine**, 1500 rpm water cooled.
- **Mechanical regulation.**
- **Protection from hot and moving parts.**
- Electric motor starting system, **battery (maintenance-free) with switch** and load alternator driven by **starter motor of 24V.**
- **Industrial exhaust silencer of -10d(BA).**



Alternator

- **12-Wire, 4-pole brushless MECCALTE ECO46 1S4 A alternator** with electronic voltage regulation type AVR (DER1).
- With IP23 protection level.
- **Insulation class H.**



Bench

- **Electro-welded bench** of high-strength steel.
- Painted with electrostatic epoxy-polyester powder paint.
- **Anti-vibration dampers** from the engine block to the bench.
- **No fuel tank in its standard scope of supply.** Optional 995-litre tank (see page 10).
- **Bench lifting points** (does not include central lifting pole).
- **With measuring gauge** and installation of fuel to the engine.
- **Liquid drainage connection** to the outside.
- **Tested in a salt spray chamber according to ASTM B-117-09 (500h resistance).**



Control panel

- **DeepSea Electronics automatic control module DSE 7320 MKII** which allows you to work in manual, automatic or signal mode.
 - It offers multiple event logging and is fully configurable through DeepSea Electronics' free-access specific configuration software.
 - Three-phase network and group detection with measurement for configurations upon network failure.
- DeepSea Electronics battery charger **DSE 9255 24V, 5A.** Designed to be permanently connected to the battery and maintain 100% of the charge. The charger switches to float mode when charging is complete.
- **Protections:**
 - 4-pole magnetothermic protection against overloads and short circuits.
 - Protection fuses for the control set.



Other equipment

- **Tropicalised Radiator** for work at 50°C*
- Prepared for maintenance intervals every 500 hours.
- **Emergency stop button.**
- **Reinforced pole** centrally-mounted (units > 75kVA).
- **Exhaust compensators.**



*CHECK THE SPECIFICATION ACCORDING TO THE MODEL.

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8. Featured options available

Do you need to include some options in the standard equipment of this genset to make it the perfect generator for you? We show you below some of the most demanded options in generator sets of the High Power range.



If your generator set must work as a supply source connected to the electrical network...

You will need a remotely-operated motorized transfer switch. This way, both energy sources will alternate their operation without you having to do anything.



Do you need to scale up the power of your installation by synchronising several generating sets?

You can include island units and network sync with the Synchronising Kit DSE 8610MKII (includes 4P motorisation + harthing connectors + 10 meters of connecting cable between sets + ground contactor + PMG).

See other options for available timing



Take control of your generator set at any time and without travel

If it is important for you to be able to monitor and control your generator set at any time, you can do it through your PC or your mobile phone with our communication options.



Check the availability of these options according to the model and, if you do not find what you are looking for, please contact us. We have many more options to offer you.

9. Even more options

If you're looking for other features to complete your machine, don't worry.

Below we detail many of the options from the Industrial range that we make available to you to turn your unit into a unique machine.



24 hour tank

AUTONOMY OPTIONS

You can include an integrated fuel tank in your generator set

Our high power open generator sets do not include a fuel tank in their standard scope of supply. However, **we offer you the option of incorporating a 995-liter integrated fuel tank, if you do not have an external supply source.**

Capacity (l): 995

% load	Consumption (l/h)		Run time (h)	
	PRP	ESP	PRP	ESP
50%	164	-	6,1	-
75%	236	-	4,2	-
100%	309	340	3,2	2,9



Engine heating system



Stamford alternator supplement

ENGINE - ALTERNATOR OPTIONS

- Engine heating system.
- Parker filter.
- Medium-Duty filters.
- Rotary drain pump.
- 6-way fuel valve kit.
- Silent exhaust attenuation of -35 dB (A).
- Exhaust installation kit (2 clamps + 3 m of flexible hose).
- Alternator anti-condensation resistors.
- Alternator superior impregnation systems.
- Stamford alternator supplement (for models equipped with a MeccAlte alternator).

9. Even more options



Retention bath

MECHANICAL OPTIONS

- Retention bath (see change of dimensions).
- Liquid leakage probe (requires retention tray).
- SilentBlocks for levelling.
- Damping - anti-vibration springs.



DSE 2157



DSE 334 network surveillance

COMMUNICATION OPTIONS

- Supplement to the DSE 7320 MKII control board (for models with the DSE 6020 MKII control board in the standard scope of supply).
- DSE 2157 8 potential free output (requires DSE 7320MKII).
- DSE 2130 8 inputs (requires DSE 7320MKII).
- DSE 2548 8 LED diodes (requires DSE 7320MKII).
- GSM modem (RS232) (requires DSE 7320MKII).
- DSE 855.
- DSE 890 webnet.
- DSE 7420 module.
- DSE 334 network surveillance.



Socomec motorised switchboard

POWER OPTIONS

- Differential protection.
- As an option, you can include a switch cabinet attached to the generating set.
 - Socomec motorised switches: $\geq 125A$.

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CHECK THE AVAILABILITY OF THESE OPTIONS DEPENDING ON THE MODEL