

APVR350-EU5

Diesel generating set



POWER
YOUR
FUTURE

355 kVA / 284 kW PRP
388 kVA / 310 kW ESP

Powered by Volvo

Voltage	400/230V		
Frequency	50Hz		
Number of phases	3		
Weight with liquids without fuel	5000 kg		
Dimensions (mm)	L	W	H
	4856	2066	2220

1. General technical data

Engine	VOLVO TAD1381GE
Alternator	STAMFORD S4L1D-E
Type of execution	G3
Frequency	50Hz
Voltage	400/230V
Control panel	ComAp InteliLite 4 AMF 25
Fuel tank (l)	995
Sound level-Lp(A) (dB(A)@7m)	67
Sound level-Lp(A) (dB(A)@1m)	78
Sound power-LW(A) (dB(A))	97

Power¹ (m.p. cos ϕ 0,8)	PRP (kVA / kW)	355 / 284
	ESP (kVA / kW)	388 / 310

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

Voltage	PRP (KVA/KW)	ESP (KVA/KW)	Amperage (A)
400/230V	355 / 284	388 / 310	560

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 AKSA Generating Set has CE 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).



APVR350-EU5 | VOLVO TAD1381GE | STAMFORD S4L1D-E

2. Engine specifications

2.1. General technical data of the engine	Make and model	VOLVO TAD1381GE	
	r.p.m.	1500	
	Maximum ESP power (kWm)	335	
	Power PRP (kWm)	303	
	Fuel	Diesel	
	No. of cylinders	6 cylinders	
	Cylinder capacity (c.c.)	12780	
	Compression ratio	16,8:1	
	Cooling system	Water-cooled	
	Type of regulation	Electronic	
	Type of engine/injection/suction	Diesel/common rail/turbo-charged	
2.2. Fuel	Type of fuel	Diesel	
	Fuel tank capacity	995	
2.3. Consumption and autonomy	Fuel consumption (l/h)	Autonomy (h)	
	PRP	PRP	
	50%	36,3	27,4
	75%	53	18,8
	100%	71,1	14
2.4. Cooling system	Fan flow (m³/s)	5,7	
	Fan power consumption (kW)	15	
	Radiator back pressure (Pa)	150	
	Total refrigerant capacity (l)	51	
2.5. Lubrication system	Oil capacity (l)	36	
2.6. Intake system	Combustion air intake flow (m³/min)	25,2	
2.7. Starter system	No. of batteries	2	
	Battery characteristics	12V 44Ah	
	Start-up voltage (V)	24V	
2.8. Exhaust system	Exhaust gas flow (m³/min)	43 [PRP]	48 [ESP]
	Exhaust gas temperature (°C)	425° [PRP]	449° [ESP]
	Exhaust outside diameter (mm)	5" (Ø 127)	
	Max. exhaust back pressure (kPa)	29	

- ✓ **6 cylinders 4-stroke diesel engine online** with Electronic regulation Electronic by means of a fuel pump, original from the manufacturer.

 **Emissions compliance EU Stage V**

ENGINE EQUIPPED WITH PARTICULATE FILTER (DPF) AND SCR CATALYST, WHICH TREATS THE EXHAUST GASES WITH THE DEF ADDITIVE.

70 L DEF ADDITIVE TANK

- ✓ EXTERNAL DEF FILLING NOZZLE.

Load	DEF Consumption (l/h)	Autonomy (h)
	PRP	PRP
50%	2,7	25,7
75%	4,1	17,1
100%	5,3	13,1

- ✓ **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** (maintenance-free) **with switch, 24V Charging alternator and starter motor.** Original elements from the engine manufacturer.

APVR350-EU5 | VOLVO TAD1381GE | STAMFORD S4L1D-E

3. Alternator specifications

3.1. General technical data for the alternator	Make and model	STAMFORD S4L1D-E		
	No. of poles	4		
	Insulation class	H		
	No. of threads	12		
	Mechanical protection index	IP23		
	Voltage Regulator (AVR)	PMG+MX341		
	Voltage regulation	±1%		
	ESP power 27°C (kVA)	415		
	Power PRP 40°C (kVA)	360		
	No. of phases	3		
	Power factor (cos φ)	0,8		
	Performance η (%)			
	50%	75%	100%	110%
	94,4%	94,2%	93,5%	92,5%

- ✓ **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:

- AS 1359 | IEC 34-1 1 | BS EN 60034-1 | VDE 0530 | BS 5000 | CAN/CSA-C22.2-100 | NEMA MG1-32

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. **With retention bath.**
- Connection of the assembly to the frame by means of anti-vibration dampers.
- Fuel tank located on the frame itself. 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.**

5. Soundproof canopy Specifications

- Electro-welded canopy made of high resistance galvanized steel painted with electrostatic epoxy-polyester powder paint.
- Interior soundproofing by means of a lining with soundproofing material.
- **Tested in a saline mist chamber according to ASTM B-117-09, resistance 720H. IP44 mechanical protection degree.**

Technical plan for orientation purposes. AKSA reserves the right to modify the data in this technical sheet without prior notice.



APVR350-EU5 | VOLVO TAD1381GE | STAMFORD S4L1D-E

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

6.2.
Protection
switch

Model	Schneider EasyPact 630A 4P
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6.3.
Control
module

Model	ComAp IntelliLite 4 AMF 25
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The IntelliLite 4 AMF 25 is an advanced single generating set controller meticulously designed for both stand-by and prime power applications. This intuitive and flexible controller is engineered for seamless installation and user-friendly operation, providing a comprehensive solution for the control and monitoring of your gen-sets, whether on-site or remotely.

Key Features

- ✓ **Versatile Application:** The controller is adept at handling both stand-by and prime-power applications within a single unit, offering unparalleled flexibility.
- ✓ **Intuitive Interface:** Equipped with backlit symbols, the IntelliLite 4 AMF 25 ensures ease of use and quick interpretation of information.
- ✓ **Extensive I/O Options:** Featuring 8 binary outputs, 8 + 1 binary inputs, and 4 analog inputs (U/I/R), including a +5 V output reference for analog inputs, the controller offers diverse input and output configurations.
- ✓ **Emergency Stop Functionality:** With 2 high-current E-Stop binary outputs, the controller ensures swift and secure emergency shutdowns when required.
- ✓ **Connectivity:** Boasting USB Host and inbuilt RS485, the controller supports easy configuration through IntelliConfig and facilitates seamless communication, both locally and remotely.
- ✓ **Expansion Capabilities:** The presence of 2 slots for extension plug-in modules (Modbus, Internet, SMS, inputs/outputs) and extension CAN modules enhances the controller's adaptability to diverse requirements.
- ✓ **Comprehensive Monitoring:** The built-in PLC logic, complemented with a PLC monitoring tool in IntelliConfig, offers detailed insights into the gen-set operation.
- ✓ **Remote Communication:** The controller provides full remote communications support, including AirGate 2.0, WSV, Internet access via Ethernet/4G, Modbus TCP/RTU, SNMP v1/v2c, Active SMS, and emails.

APVR350-EU5 | VOLVO TAD1381GE | STAMFORD S4L1D-E

7. Standard Scope of Supply

Engine

- ✓ VOLVO TAD1381GE Diesel Engine, 1500 rpm water cooled.
Engine equipped with particulate filter (DPF) and SCR catalyst, which treats the exhaust gases with the DEF additive.
- ✓ Electronic governor.
- ✓ Visco fan.
- ✓ Crankcase ventilation.
- ✓ **Sensors and Alarms:**
 - ✓ Oil pressure, temperature, and coolant level alarms.
 - ✓ Oil pressure and coolant temperature readings.
- ✓ Protection from hot and moving parts.
- ✓ Electric motor starting system, battery (maintenance-free) with switch, 24V Charging alternator and starter motor.
- ✓ High performance fuel particle separator filter. Original from manufacturer.
- ✓ Oil drain pump.

Alternator

- ✓ 12-Wire, 4-pole brushless STAMFORD S4L1D-E alternator with electronic voltage regulation type AVR (PMG+MX341).
- ✓ Auxiliary winding in the alternator.
- ✓ IP23 protection level.
- ✓ Insulation class H.

Frame

- ✓ Electro-welded frame made of high-strength steel.
- ✓ Painted with electrostatic epoxy-polyester powder paint.
- ✓ Anti-vibration dampers from the engine block to the frame.
- ✓ Fuel tank with capacity of 995 litres with retention bath, located on the frame itself. Equipped with cleaning record to facilitate maintenance work.
- ✓ Measuring gauge and installation of fuel to the engine.
- ✓ Liquid drainage connection to the outside.
- ✓ **Frame tested in a salt spray chamber according to ASTM B-117-09 (500h resistance).**

Soundproofed canopy

- ✓ Electro-welded canopy of high-strength galvanized steel.
- ✓ Painted with electrostatic epoxy-polyester powder paint.
- ✓ Interior soundproofing by means of a rigid panel made of glass wool with an exterior textile covering.
- ✓ IP44 mechanical protection level.
- ✓ **Canopy tested in salt spray chamber according to ASTM B-117-09 (resistance 720h).**

Control panel

- ✓ **ComAp IntelliLite 4 AMF 25 control module.**
- ✓ **CM-4G-GPS module.** An easy-to-use and highly efficient solution for connecting generator sets controllers online via 4G network. Enables remote monitoring and tracking of the gen-set's exact position, helping to optimise its uptime and reduce maintenance costs.
 - ✓ Reliable 4G connectivity with 2G or 3G fallback.
 - ✓ GPS location for geotracking and geofencing.
 - ✓ Alarm notification via SMS or email.
- ✓ WebSupervisor for remote monitoring. **Maintenance-free battery and battery disconnecter.**
- ✓ **Protections:**
 - ✓ 4-pole magnetothermic protection against overloads and short circuits.
 - ✓ Protection fuses for the control set.

APVR350-EU5 | VOLVO TAD1381GE | STAMFORD S4L1D-E

7. Standard Scope of Supply

Other equipment

- ✓ Mechanised fuel nozzle outside with key.
- ✓ Mechanised DEF nozzle outside with key.
- ✓ Tropicalised Radiator for work at 50°C. Prepared for maintenance intervals every 500 hours.
- ✓ Differential protection.
- ✓ Emergency stop button.
- ✓ Reinforced pole centrally-mounted.
- ✓ Radiator access door.
- ✓ Water deflector.
- ✓ Reinforced terminal block.
- ✓ Exhaust thermal sleeves.
- ✓ Spark arrestor.
- ✓ Document tray.

Power sockets configuration

✓ RCD Type B, Class B (Optional)

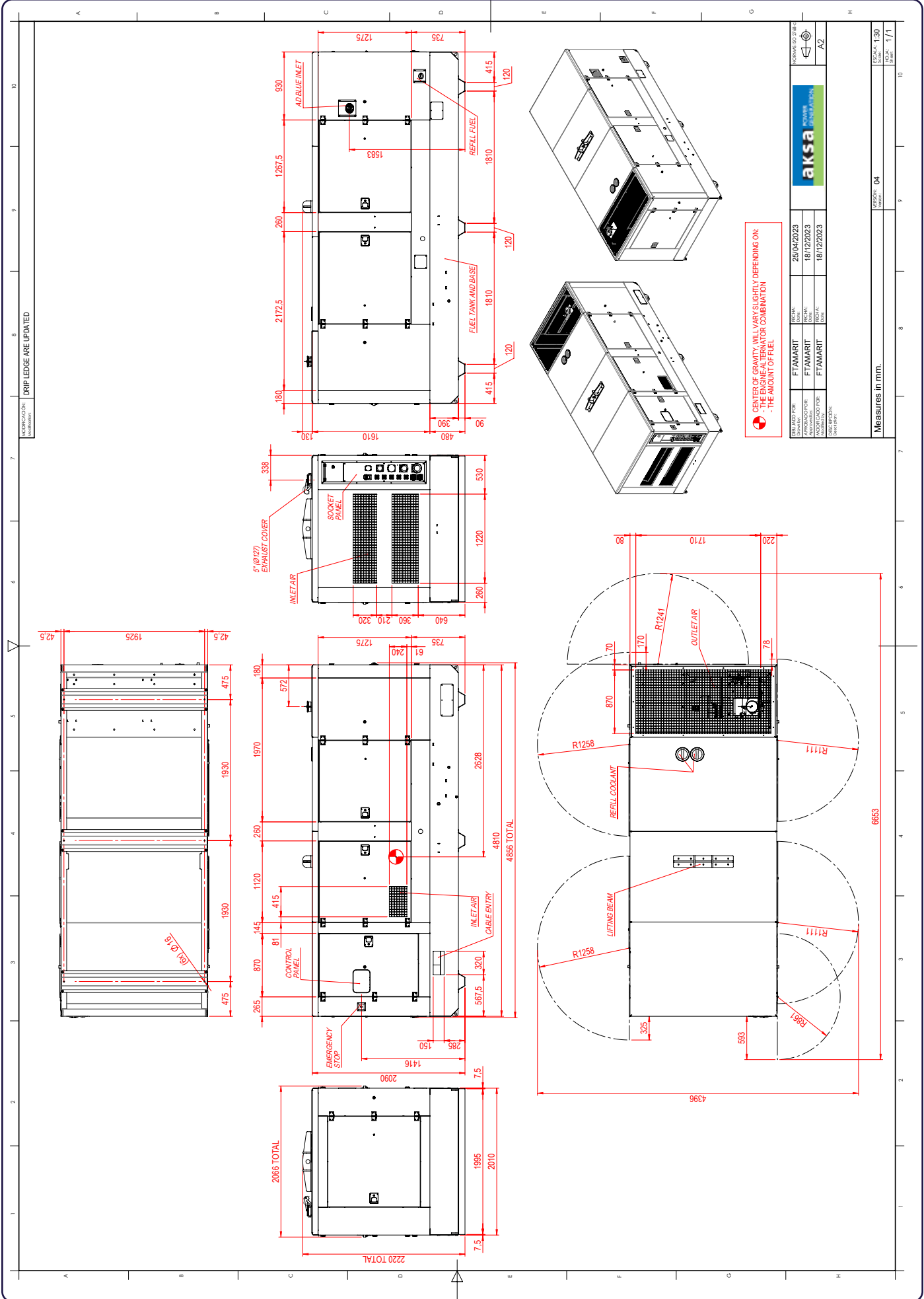


APVR200-EU5 APVR250-EU5 APVR400-EU5
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 CB 50 CB 50 CB 50

Schuko	2	2	2
16A 2P+T (230V)	1	1	1
16A 3P+N+T			
32A 3P+N+T	1	1	1
63A 3P+N+T	1	1	1
125A 3P+N+T	1	1	1

Technical plan for orientation purposes. AKSA reserves the right to modify the data in this technical sheet without prior notice.

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⚠ CENTER OF GRAVITY WILL VARY SLIGHTLY DEPENDING ON:
 - THE ENGINE-AIR-TERMINATOR COMBINATION
 - THE AMOUNT OF FUEL

REVISION FOR:	FTAMARIT	REVISION:	25/04/2023
APPROVED FOR:	FTAMARIT	REVISION:	18/12/2023
APPROVED FOR:	FTAMARIT	REVISION:	18/12/2023
REVISION FOR:		REVISION:	
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NORMALIZED FILE:		AKSA POWER GENERATION	
SCALE:		1:30	
MEASURES IN mm.		INDICATED IN: 1/1	

