This document gives a complete list of technical data with some detailed explanations of the main systems, subsystems and performance of our generators, in order to support local sales documentation, tenders or even technical doubts.

Atlas Copco does not assume responsibility for possible errors. Atlas Copco reserves the right to make changes without prior notice.

Standard Model Scope

The QAC is our twenty-foot High Cube containerized unit, which provides superior power, is super silent and ideal for heavy duty applications. Its complete configuration makes it our High spec product.

The innovative dual compartment design whereby the power compartment and the cooling compartment are completely separate ensures maximum efficiency and safe operation in the most extreme conditions. In the power compartment, which houses the alternator and the engine, there are dual, contra-rotating fans facing each other, which help to reduce the noise level.

Serviceability is one our main concerns. Doors can be easily opened so that all components are always within reach, ensuring maintenance a service. Engine has full step-in access, alternator and air filters share same door access to avoid wasting time and sliding base concept also enables parts to be accessed by simply sliding out the appropriate section.

Standard Qc4004 controller with paralleling system makes possible to work with the mains and with other units (till 16) in applications as Independent Power Plants (IPP). Providing Atlas Copco Power Management System (PMS), which is a smart management of the load of our customers, saving costs in terms of fuel, maintenance and performance.

Features

- Carefully selected components, accurately developed and tested configuration
- Superior standard configuration and extensive option list
- 500 hours service interval and superior accessibility to all service points
- Compact and safe concept and sturdy design
- Designed and built to last

Benefits

- Accurate and stable power regardless of the conditions
- Ability to power a wide range of applications
- Service efficiency: increased up-time
- Increased transport efficiency, separated control and power cubicle
- Superior resale value / longer life time

Manufacturing and Environmental Standards

The QAC range is manufactured following stringent ISO 9001 regulations, and by a fully implemented Environmental Management System fulfilling ISO 14001 requirements.

Attention has been given to ensure minimum negative impact to the environment.

The QAC range complies with the latest noise emission directives.

Declaration of Conformity

Our QAC falls under the provisions of the article 12.2 of the EC Directive 2005/42/EC on the approximation of the laws of the Member States relating to machinery, is in conformity with, the relevant Essential Health and Safety Requirements of this directive:
MACHINERY SAFETY (2006/42/EC): EN ISO 12100-1, EN ISO 12100-2, UNE EN 12601
ELECTROMAGNETIC COMPATIBILITY (2004/108/EC): EN 61000-6-5, EN 61000-6-4
LOW VOLTAGE EQUIPMENT (2006/95/EC): EN 60034, EN60204-1, EN 60439
ISO 8528: QAC generators are design to comply with ISO 8528 regulation

1. Performance Data

Generator		QAC 1350 TwinPower 2Vd Stage V	
Rated speed	rpm	1500	1800
Rated power factor (lagging)		0.80	0.80
Rated Prime Power, PRP	kVA	1364	1450
	kW	1091	1160
Limited Time Power, ESP (Stand-by)	kVA	1446	1587
	kW	1157	1270
Continuous Operation Power, COP (Continuous)	kVA	1029	1091
	kW	823	873
Rated voltage (3ph. line to line)	V	400	480
Rated voltage (1ph. line to neutral)	V	230	277
Rated current 3ph. (PRP)	A	1970	1744
Rated current 3ph. (ESP)	A	2089	1909
Rated current 3ph. (COP)	A	1485	1312
Maximum sound power level (LWA) complies with 2000/14/EC	dB(A)	103	106
Maximum sound pressure level (LPA) at 7 m	dB(A)	73	76
Coupling engine/alternator		Disc Coupling	
Fuel Autonomy at full load	h	7:30	7
Single step load acceptance (within G2, acc. ISO 8528-5:1993)	%	50	60
Single step load capability	%	100	100
Frequency droop (lower than % isochronous)	%	≤0.25	
Maximum oil consumption 100% load	l/h	0.2	0.2

Derating Table (%)

50Hz

Height m (ft)	Temperature °C (°F)									
	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)
0	100	100	100	100	100	100	100	95	90	80
500 (1640)	100	100	100	100	100	100	100	95	90	80
1000 (3280)	100	100	100	100	100	100	100	95	90	80
1500 (4921)	100	100	100	100	100	100	100	95	90	80
2000 (6561)	100	100	100	100	100	100	100	95	90	80
2500 (8202)	100	100	100	100	100	100	100	95	90	80
3000 (9842)	95	95	95	95	95	95	95	90	85	NA

60Hz

Height m (ft)	Temperature °C (°F)									
	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)
0	100	100	100	100	100	100	100	85	70	60
500 (1640)	100	100	100	100	100	100	100	85	70	60
1000 (3280)	100	100	100	100	100	100	100	85	70	60
1500 (4921)	100	100	100	100	100	100	100	85	70	60
2000 (6561)	100	100	100	100	100	100	100	85	70	60
2500 (8202)	100	100	100	100	100	100	100	85	70	60
3000 (9842)	95	95	95	95	95	95	95	80	65	NA

Limitations*		QAC 1350 TwinPower 2Vd Stage V
Maximum ambient temperature	°C (°F)	50 (122)
Altitude capability	m (ft)	4000 (13123)
Relative air humidity maximum	%	85
Minimum starting temperature	°C (°F)	-10 (14)
Minimum starting temperature, with coldstart equipment	°C (°F)	-25 (-13)
Minimum running temperature, with coldstart equipment*	°C (°F)	-10 (14)

*** on high humidity regions freezing may occur on the *breather pipes***

Application Data	QAC 1350 TwinPower 2Vd Stage V
Mode of operation	PRP / ESP / COP
Max. Inclination	15 °
Operation	Single / Parallel
Start-up and control mode	Manual / Auto
Climatic exposure	Open air

Application Data – Fuel consumption		QAC 1350 TwinPower 2Vd Stage V	
Fuel tank capacity	l	2x 793	
Fuel consumption at 0% load	l/h	22,3	29,3
Fuel consumption at 50% load	l/h	146,3	147,8
Fuel consumption at 75% load	l/h	189,1	207,6
Fuel consumption at 100% load	l/h	246.9	270,4
Specific fuel consumption	g/kWh	212	214

Specific mass fuel used: 0.86 kg/l

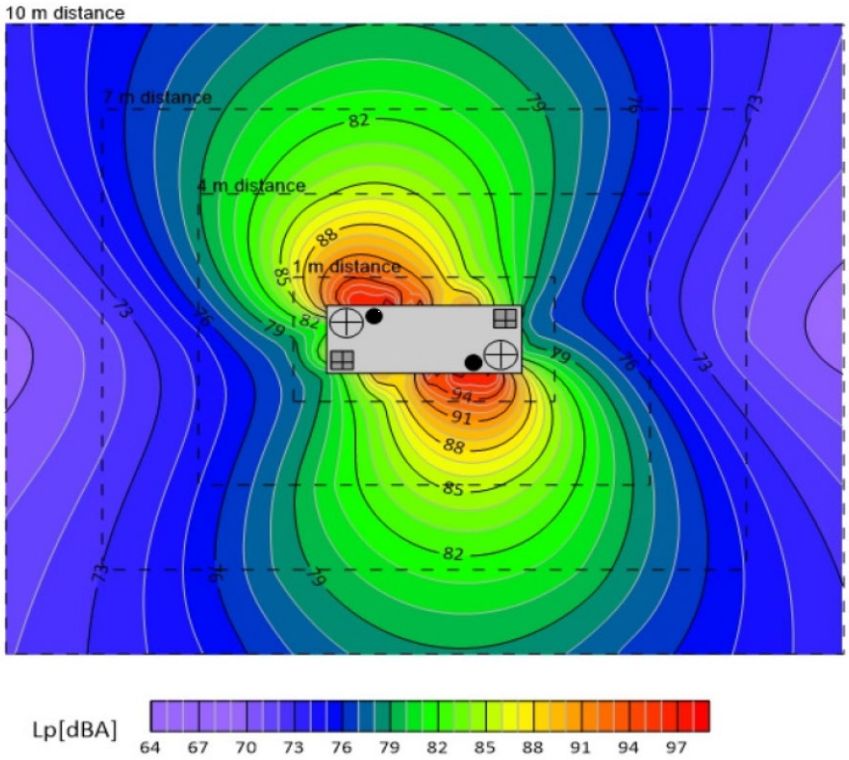
Application Data – Urea Consumption		QAC 1350 TwinPower 2Vd Stage V	
Urea tank capacity	l	2x 70	
Urea consumption at 50% load	l/h	9,7	9
Urea consumption at 75% load	l/h	14,1	15,4
Urea consumption at 100% load	l/h	18,3	18,4

Specific mass urea used: 1,09 kg/l

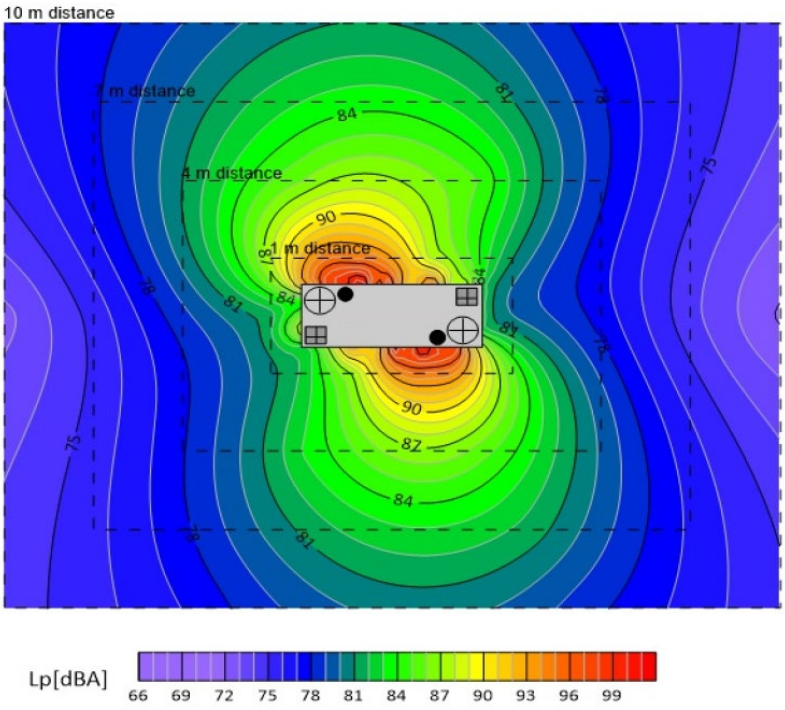
Application Data – Exhaust system		QAC 1350 TwinPower 2Vd Stage V	
Exhaust pipe diameter (outer)	mm	2x 228	
Ehaust gasTemperature	°C	464	461
Exhaust gas flow	m³/min	2x 104	2x 113

(Reference conditions at 25°C(77F) Air Inlet Temperature, 60% Relative Humidity, 1bar Absolute inlet pressure, for different conditions or limitations contact Atlas Copco technical support).

Application Data – Noise map **QAC 1350 TwinPower 2Vd Stage V**



The test is done at 75% of the prime power at 50Hz

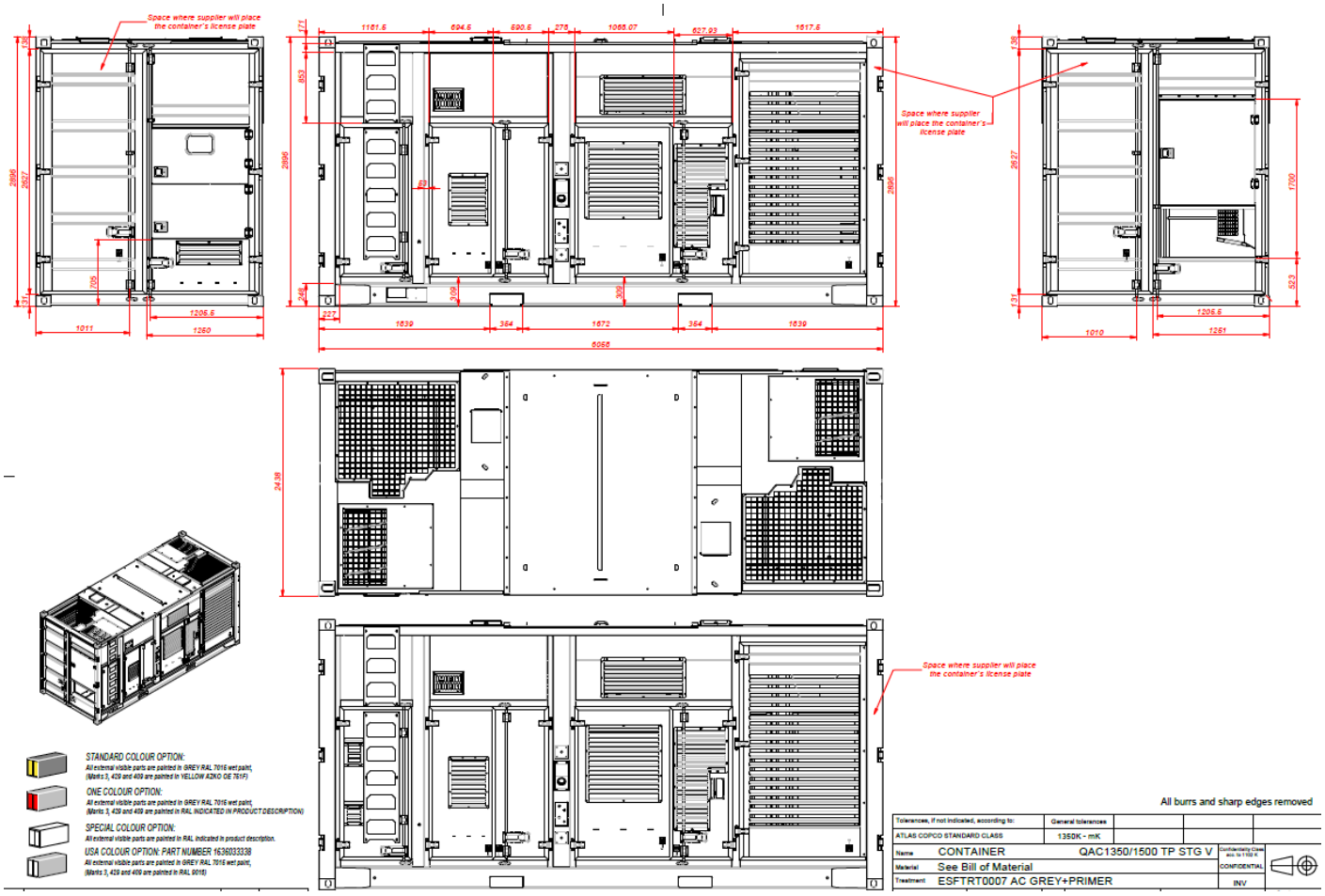


The test is done at 75% of the prime power at 60Hz

2. Box

		QAC 1350 TwinPower 2Vd Stage V
Dimensions (L x W x H)	mm (ft)	6058 x 2438 x 2900 (20 x 8 x 9,6) (ISO 20' High Cube)
Weight		
Net mass	kg (lb)	18200 (40130)
Wet mass	kg (lb)	19700 (43450)
Capacity of spillage free frame	l (Gal)	1770 (468)
Foam silencer		
Thickness	mm	50
Temperature	°C	Min -30 Max 120

Containers metal structure (internal and external) are all treated with a prime process that avoids rust and corrosion.



3. Engine

		QAC 1350 TwinPower 2Vd Stage V	
	rpm	1500	1800
General			
Manufacturer		Volvo	
Model		TWD 1683 GE	
Standard		ISO 3046 / ISO 8528-2	
Power rated speed	kW	590	626
Number of cylinders	u.	6	
Configuration		6 in L	
Aspiration		Turbocharged	
Speed governor		Electronic	
Bore	mm	144	
Stroke	mm	165	
Electrical system (DC)	V	24	
Compression ratio		16.8:1	
Displacement (swept volume)	l	16,12	
Piston speed	m/s	7.7	9.24
Combustion system		Direct injection	
Charged air cooling system		Intercooled	
Maximum permissible load factor of PRP during 24h period	%	70	
Air intake system			
Air consumption 25ºC (PRP)	m³/min	2x 43	2x 48
Air consumption 25ºC (ESP)	m³/min	2x 45	2x 51
Max allowable air intake restriction	kPa	3	
Air Filters		Atlas Copco (2 per engine)	
Air filter cleaning efficiency	%	99.9	
Cooling system			
Coolant volume	l	2x 95	
Coolant radiator liquid		Water / Glycol 50/50	
Coolant radiator heat rejection	kW	188	218
Coolant radiator max. temperature	ºC	110	
Coolant radiator flow rate	l/s	6.5	7.7
CAC radiator liquid		Water / Glycol 50/50	
CAC radiator heat rejection	kW	139	160
Air radiator flow rate	l/s	1.7	2.0

TWD1683GE is a reliable, powerful and compact in-line 6 cylinder diesel engine.
This 16 liter diesel engine utilizes dual-stage turbochargers and heavy-duty steel pistons to provide excellent power density.
It features a proven combustion technology with high-pressure unit injectors, resulting in high fuel efficiency and low exhaust emission levels.
Efficient injection as well as robust engine design in combination with SCR technology (Selective Catalyst Reduction) contributes to low exhaust emission, excellent combustion and low fuel consumption.
The exhaust after-treatment system consists of only SCR, without EGR, DOC or DPF. A minimum of components are used and no downtime for regeneration or decreased service intervals. No EGR also results in less heat rejection, leading to excellent power density and improved fuel economy.
The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise and vibration. It is designed for easily accessible service points.

4. Alternator

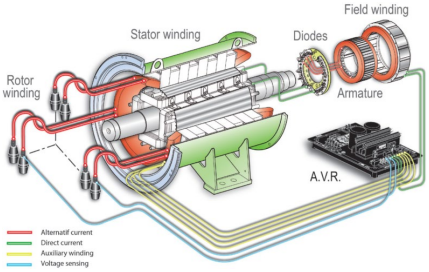
		QAC 1350 TwinPower 2Vd Stage V	
	rpm	1500	1800
General			
Manufacturer		Leroy Somer	
Model		LSA 49.3 M6	
Standard		IEC 60034 / NEMAG MG 1.32-33 / ISO 8528-3 / CSA / UL 1446	
Rated net power (Continuous duty/40°C)	kVA	730	915
Number of wires		12	
Voltage regulator accuracy		+/- 0.5%	
Degree of protection / Insulation class		IP 23 / H	
Environment Protection		System 2 (Humid atmosphere)	
Number of poles		4	
Number phases		3	
Overspeed	rpm	2250	
Air flow	m³/s	1	1.2
Total Harmonic Distortion THD		< 4%	
Waveform: NEMA = TIF		< 50	
Waveform: IEC = THF		< 2%	
Xd Direct axis synchro reactance unsaturated	%	294	307
X'd Direct axis transient reactance saturated	%	14.2	14.8
X"d Direct axis subtransient reactance saturated	%	11.3	11.8
Excitation system		AREP	
Sustained short-circuit current	%	300% (3 x In)	
Time sustained short-circuit current	s	10	
Frame dimensions (single bearing)			
Lmax	mm	1372	
Height	mm	1008	
Width	mm	786	
Weight	kg	1578	
AVR			
Model		DVC550	
Sensing		3 phase	
Range of sensing	V(AC)	0-530	
Field excitation rated	A	0-8	
Field excitation short-circuit (max.)	A	15	
Power supply	V(AC/DC)	50-277 /8-35	
Communication		USB port & CANJ1939	
PC Software		EasyReg	

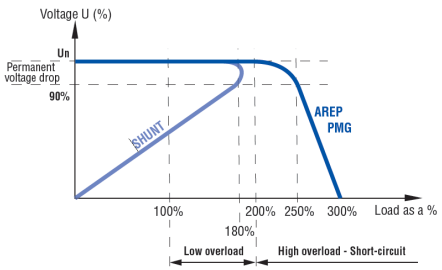
The AREP system uses 2 independent auxiliary windings located in the main stator to send supply voltage to the AVR:

- The voltage delivered by the first auxiliary winding H1 is proportional to the alternator output voltage (shunt characteristic).
- The voltage delivered by the second auxiliary winding H3 is proportional to the current drawn by the alternator and is a function of the applied load (compound characteristic – booster effect).
- The resulting phase-to-phase voltage supplies power to the AVR.

This power supply to the AVR power circuit is independent of the voltage sensing measured on the alternator output terminals. Therefore, the excitation current delivered by the AVR to the alternator exciter is independent of any voltage distortions (harmonics) due to the load.

The AREP system gives the alternator a high overload capacity (load impact or starting electric motors) and a short-circuit capability (300% - 10 s) in order to provide discriminating protection: the alternator with AREP excitation is shorter than the one with PMG excitation. It is particularly suitable for demanding applications.





Battery		
Quantity		2x 4
Voltage (one unit)	V	12
Capacity (one unit)	Ah	44
Connection		2x Series / 2x Parallel / engine
Dimensions (L x W x H)	mm	237 x 172 x 197
Cold cranking current (one unit)	A	730 (-18ºC) / 910 (0ºC)
Time to 90% charge (100A) from 10,5V	min	35
Time to 90% charge (50A) from 10,5V	min	75
Time to 90% charge (25A) from 10,5V	min	140
Sensor		
Oil (temp, pressure & level)		via EMS
Coolant (temp & level)		via EMS
Intake manifold (temp)		via EMS
Fuel (boost pressure)		via EMS
Charge air (temp & pressure)		Via EMS
Fuel Level		4-20 mA sensor
Air Temperature		PT100 sensor
Coolant (temp) VSD		PT100 sensor

Earth leakage protection		
Relay model		RH99M (Schneider Electric)
Type		A
Relay power supply	V(dc)	24
Threshold	A	0,03-30
Fleetlink		
Model		SmartBox
Power supply	V(dc)	24
Coverage		2G-3G (Advanced)
COM Protocol		Modbus Serial (Advanced)

6. Power Output

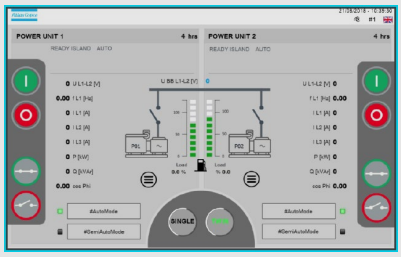
		QAC 1350 TwinPower 2Vd Stage V	
	rpm	1500	1800
Circuit Breaker			
Model		NS1250 (Schneider Electric)	
Poles		4P	
Rated current (In)	A	1250	
Long time protection (Ir)	A	1000 (In x 0.8)	875 (In x 0.7)
Long time protection timer (tr)	s	12	
Short time protection (Isd)	A	4000 (4 x Ir)	3500 (4 x Ir)
Motor Driven DC voltage	V	24	
Breaking capacity (at 440V AC 50/60 Hz)	kA	50	
Rated service breaking cap. (at 440VAC 50/60 Hz)	kA	37	
Mounting mode		Fixed	
Neutral position		Left	
Status of neutral			
TN-S (earthed)		Standard	
Terminal Board			
Type		4 + 4 Strip copper 100x10 mm	
Bolts diameter per strip	mm	4 x 12	

7. Controller

Controller		
Base Box model		2 x Qc4004
Touchscreen / Display model		Qd1001

Qc4004

Qc4004



Qd1001

8. Options

Mechanical Options		QAC 1350 TwinPower 2Vd Stage V
Special Equipment (Refinery kit)		
Inlet shutdown valve		
Model		Wyndham FS1
Reset		Manual
Actuator		Electric power to close – 24VDC
Ambient air temperature	°C	From -20° To +120°
Switch type		Mechanically latched open, energise to close, manual reset
Offshore Container		
Standards & Regulations		EN 12079-1 / DNV 2.7-1
Painting		One colour / Special colour
Oil level maintainer		
Capacity of oil tank	l	2x 45

Electrical Options		
PowerLocks		
660A connectors		4 rows