

# Atlas Copco

## Oil-free rotary screw compressors



### ZR/ZT 110-750-FF & ZR/ZT 132-900 VSD-FF 110-935 kW/150-1253 hp



*Atlas Copco*

# Setting the standard in energy efficiency, safety and reliability

## ▶ Energy, safety & reliability

The shortest route to superior productivity is to minimize operational cost. The Atlas Copco Z compressor series is focused on effectively saving energy, ensuring product safety – only oil-free machines exclude contamination risks for 100% – and

guaranteeing the utmost reliability around the clock. And not just today, but day after day, year after year, with minimal maintenance cost, few service interventions and long overhaul intervals.

### Choice

Atlas Copco masters each compression principle and offers the most energy efficient technology for the application.



### The right drive

Fixed speed machines are fine at full load but when air demand fluctuates, a Variable Speed Drive ensures substantial savings.



### Optimal use

Central control of a multi-compressor installation can reduce the pressure band and achieve the lowest overall energy cost.



### Complete safety

Process, products and environment are safeguarded from contamination. The first air compressors TÜV-certified as "oil-free" (ISO 8573-1 CLASS 0).

### Expertise

Since 1903, Atlas Copco's philosophy has been to continually improve our products through intensive R&D, with the aim to maximize the value for our customers.



### The integrated design

Internal piping, Variable Speed Drive, 100 % matched components... the only way to ensure total reliability.



### Trouble-free installation & commissioning

The ZR oil-free compressor is truly plug-and-play. Put it on a flat floor, connect the power line and the air outlet... and push the start button.





### Energy recovery

Heat from compression can be recovered and put to good use in pre-heating of boiler feed water, heating of buildings etc.

## Energy

## Safety

### The professional follow-up

Service Contracts will ensure you of the right maintenance, immediate response and genuine spare parts... all over the globe.

## Reliability



# ISO 8573-1 CLASS 0

## Atlas Copco sets a new industry standard

### ▶ Class zero

When it comes to clean, oil-free compressed air for your critical processes, you can't afford to compromise. Atlas Copco, a pioneer in oil-free air screw technology, is known for its range of compressors designed especially for applications that require oil-free air.

Now Atlas Copco has achieved a new milestone: Setting the standard for air purity as the first manufacturer to be certified ISO 8573-1 CLASS 0.



### ▶ Why a new class?

Industries such as pharmaceuticals, food and beverages, electronics and textiles must exclude any risk of contamination. Otherwise severe consequences could follow: spoiled or unsafe products, production downtime and damage to both brand and reputation. To address the needs of critical applications where air purity is essential, the ISO 8573-1 compressed air standard was revised in 2001. Along with a more comprehensive measuring methodology, a new and more stringent class was added to the five existing purity classes: ISO 8573-1 CLASS 0.

CLASS	Concentration total oil (aerosol, liquid, vapour) mg/m <sup>3</sup>
0	As specified by the equipment user or supplier and more stringent than class 1
1	≤ 0.01
2	≤ 0.1
3	≤ 1
4	≤ 5

### ▶ First to achieve ISO 8573-1 CLASS 0

As the industry leader committed to meeting the needs of the most demanding customers, Atlas Copco requested the renowned TÜV institute to type-test its Z range of oil-free screw compressors. Using the most rigorous testing methodologies available, all possible oil forms were measured across a range of temperatures and pressures. The TÜV found no traces of oil at all in the output air stream. Thus Atlas Copco not only became the first compressor manufacturer to receive CLASS 0 certification, but also exceeded ISO 8573-1 CLASS 0 specifications.

### ▶ Atlas Copco eliminates any risk

Only oil-free compressors deliver oil-free air. Whether your activities are in pharmaceutical production, food processing, critical electronics or a similarly exacting industry, it is essential to eliminate risk. That's why you need an Atlas Copco risk-free solution: oil-free screw compressors especially for applications demanding the highest levels of purity. Zero oil means zero risk. Zero risk of contamination. Zero risk of damaged or unsafe products. Zero risk of losses from operational downtime. Above all, zero oil means zero risk of ruining your hard-won reputation.



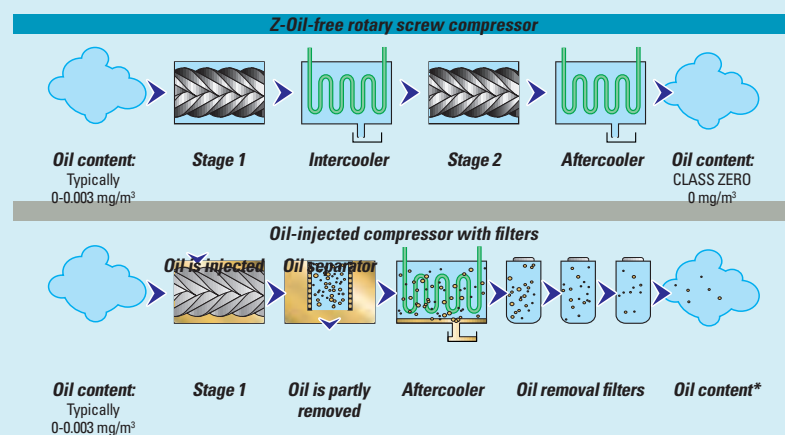
## ▶ The most stringent air purity testing available

Most manufacturers prefer “partial flow” testing, which targets only the center of the air flow. The Atlas Copco Z range of oil-free screw compressors was tested using the more stringent “full flow” method. This examines the entire air flow to measure aerosols, vapors and wall flow. Even with such rigorous testing, no traces of oil were found in the output air stream.

TÜV (Technische Überwachungsverein/Technical Monitoring Association) reporting on the Atlas Copco Z range of oil-free screw compressors

## ▶ Can oil-injected compressors with oil removal filters deliver oil-free air?

Often referred to as “technically oil-free air”, this system relies on air cooling devices (e.g. refrigeration dryers) and several stages of oil removal with multiple components. A failure of any of these components or inadequate maintenance can result in oil contamination of a process. Therefore, with oil-injected compressors there will always be a risk of contamination and the possibility of severe consequences for your business.



**Move up to a risk-free standard.**  
Visit [www.classzero.com](http://www.classzero.com)

\* If low ambient temperature + clean filters = Class 2 edition 2001 ( $\leq 0.1 \text{ mg/m}^3$ )  
If high ambient temperature + saturated filters = Class 3 edition 2001 ( $\leq 1 \text{ mg/m}^3$ )

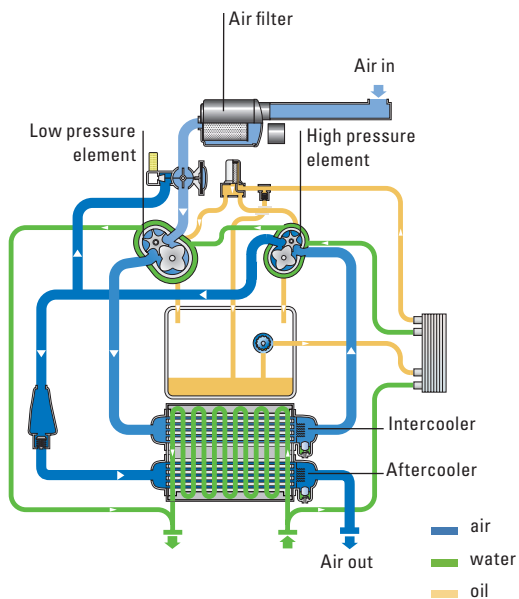
# Proven Z-technology in one complete package

## Watercooled ZR 250

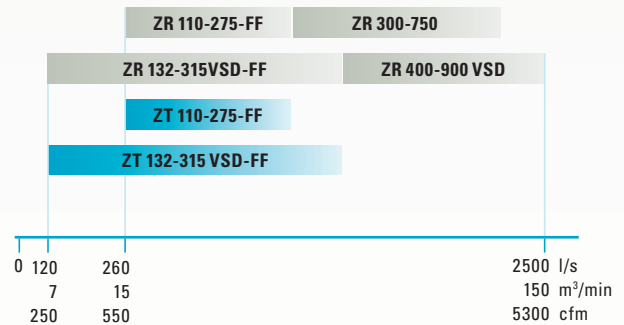
- 1 Advanced Elektronikon control and monitoring system
- 2 Oil-free screw compression element
- 3 High efficiency coolers and water separator
- 4 Inlet compensators on all piping connections



## Watercooled ZR: air/oil/coolant flow



## ZR/ZT 110-750-FF and ZR/ZT 132-900 VSD-FF Capacity range (50 & 60 Hz)



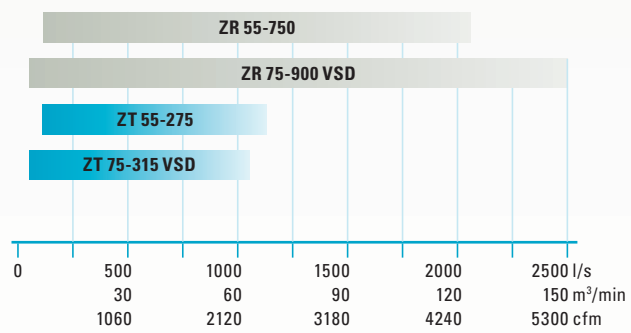
ZT: Aircooled / ZR: Watercooled / VSD: Variable Speed Drive / FF: Full Feature.  
See data pages for range details.

- ❶ Efficient intake air filtration
- ❷ Integrated frequency converter for Variable Speed Drive operation
- ❸ IP55 totally enclosed high efficiency electric motor
- ❹ Built-in IMD adsorption dryer

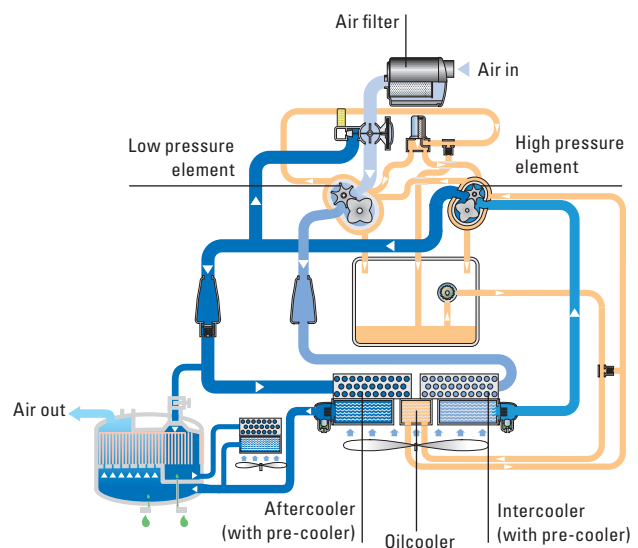
▶ Aircooled ZT 160 VSD-FF  
Integrated VSD, Full Feature  
version with IMD dryer



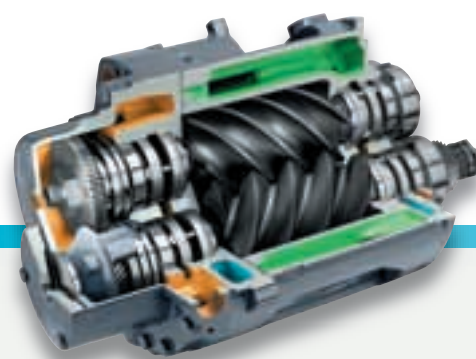
▶ Complete ZR/ZT range



▶ Aircooled ZT-FF:  
air/oil/coolant flow



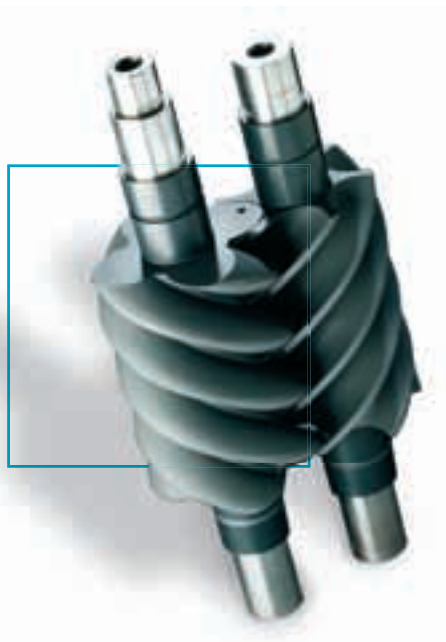
# Superior design in every detail



## ▶ Proven Z-technology

### World class oil-free compression element

- ▶ unique Z-seal design guarantees 100 % oil-free air
- ▶ operation far below critical speed
- ▶ high overall efficiency, thanks to:
  - superior rotor coating
  - element cooling jackets
- ▶ no oil 'clean up' problems



### Superior element bearings

- ▶ high stability under varying load conditions
- ▶ no need for pre-lubrication/stabilisation time
- ▶ bearings operate below wear limit



### Reliable element intake protection

- ▶ machine mounted, easy to maintain air filter
- ▶ minimum intake losses



## ▶ High precision drive system

### AGMA Q13/DIN Class 5 gears

- ▶ long lifetime
- ▶ low transmission losses
- ▶ low noise and vibration



### Totally enclosed motor

- ▶ IP55 TEFC protection against dust and humidity
- ▶ high efficiency

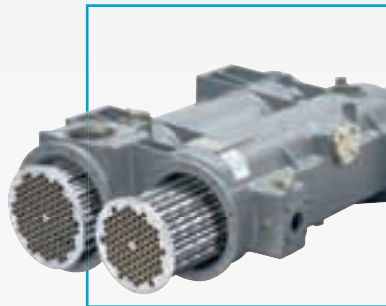




## ▶ Cooling system designed for life

### High efficiency + high reliability water cooling (ZR)

- ▶ corrosion resistant stainless steel tubing
- ▶ highly reliable robot welding; no risk for leaks
- ▶ aluminium star insert increases heat transfer
- ▶ cooling water outside tubes guided by baffles
  - no dead zones – limited fouling
  - no degradation in cooler performance
  - easy cleaning
  - very long service intervals

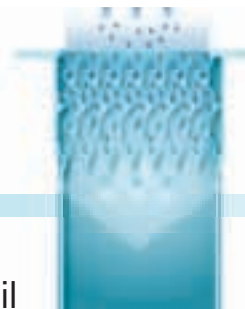


### High efficiency + high reliability air cooling (ZT)

- ▶ stainless steel pre-cooler with fins
- ▶ excellent heat transfer
- ▶ easy access for cleaning
- ▶ low noise + low energy cooling fans



## ▶ Reliability in every detail



### Water separator

- ▶ the labyrinth design efficiently separates the condensate from the compressed air
- ▶ low moisture carry-over protects downstream equipment:
  - long High Pressure element lifetime
  - better dryer performance

### Inlet valve

- ▶ air operated diaphragm
- ▶ lowest unloaded power by tuning with bypass screw
- ▶ mechanical interlock of inlet and blow-off valves



### Advanced Elektronikon® control and monitoring system

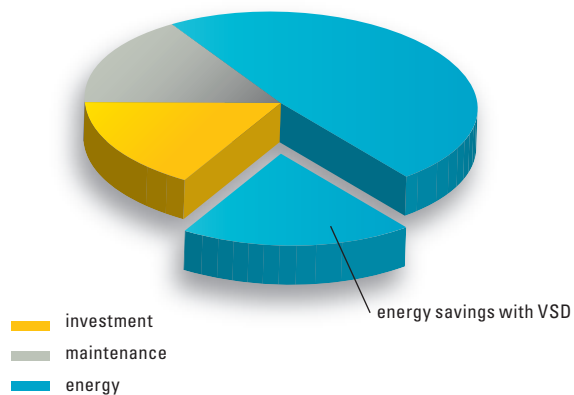
- ▶ overall system performance status with pro-active service indications, alarms for malfunctions and safety shutdowns
- ▶ multi-language selectable display
- ▶ all monitoring and control functions via one interface
- ▶ wide communication possibilities
- ▶ integration possible in many process control systems (field bus system)



# Why Variable Speed Drive (VSD) compressors?

## ▶ Direct energy savings of up to 35%

- ▶ Unload losses are reduced to a minimum
- ▶ No blow-off of compressed air to the atmosphere
- ▶ Load/no load transition losses are eliminated
- ▶ The precise pressure control of the VSD compressor allows for a tighter pressure band and a lower average working pressure, resulting in reduced energy consumption



### Predicting your savings

Call upon the expertise of Atlas Copco specialists and have an assessment carried out in your factory. A detailed report will show your current operation and the achievable savings when adding a VSD solution to your compressed air system.

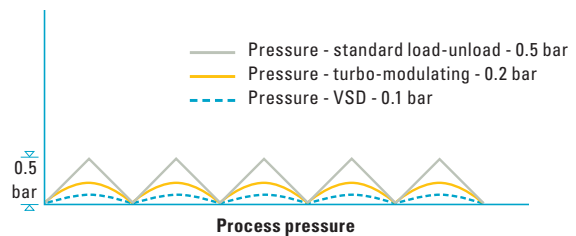


## ▶ Indirect energy savings

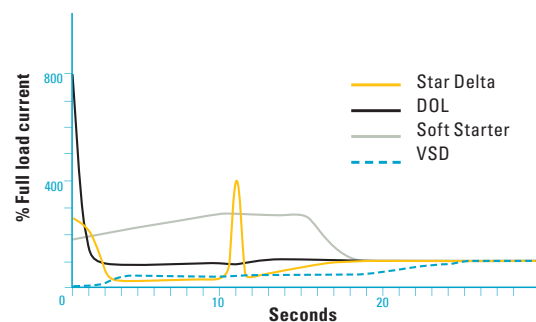
- ▶ The lower system pressure obtained by VSD results in up to 10% additional yearly savings:
  - lower energy consumption of (other) base load machines
  - leak losses are significantly reduced: e.g. leakage at 6 bar is 13 % lower than at 7 bar
  - most compressed air applications consume less air at a reduced pressure

## ▶ Additional VSD benefits

- ▶ **The stable system** pressure provides stability for all processes using compressed air.



- ▶ **No current peaks** during start-up
  - unlimited starting and stopping
  - no risk of current peak penalties upon starting



- ▶ Savings in electrical installation - smaller breakers, fuses, transformers and cables.

## ▶ The magic of VSD



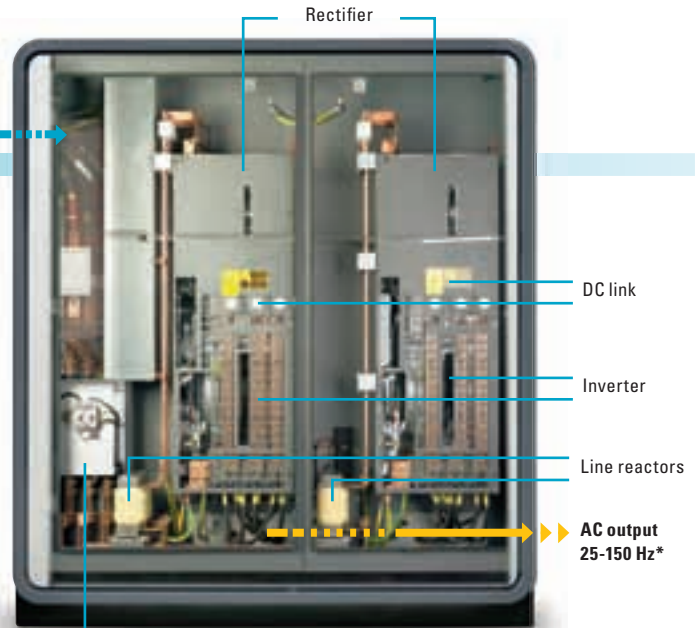
— AC input 50 or 60 Hz  
— AC output 25 to 150 Hz\*



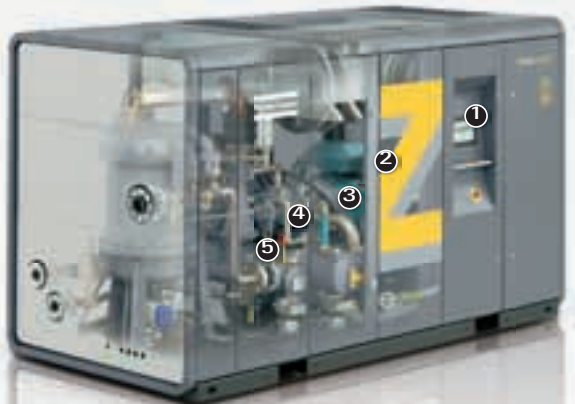
The frequency of the drive motor is continuously adapted to the fluctuating air demand.

\* Depending on type

AC input  
50 or 60 Hz



## ▶ Integrated VSD - The only way



### 1 Elektronikon® controls compressor and inverter

- ⊖ maximum machine safety
- ⊖ easy networking of the compressor

### 2 EMC tested and certified

- ⊖ maximum operating range
- ⊖ no influence of external sources
- ⊖ no emissions to other equipment

### 3 Motor specifically designed for VSD

- ⊖ bearings protected against induced bearing currents
- ⊖ motor & converter perfectly tuned to obtain best efficiency over entire speed range
- ⊖ optimized cooling air flow

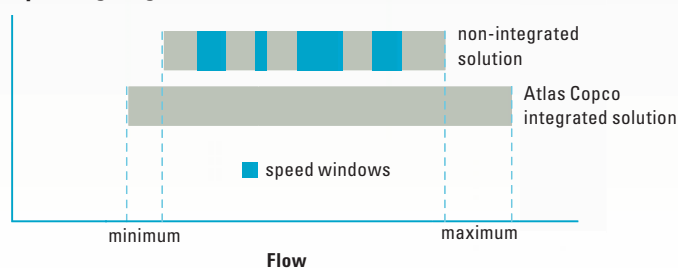
### 4 Mechanical enhancements

- ⊖ proper lubrication to gears and bearings for all speeds
- ⊖ all components operate below critical vibrations

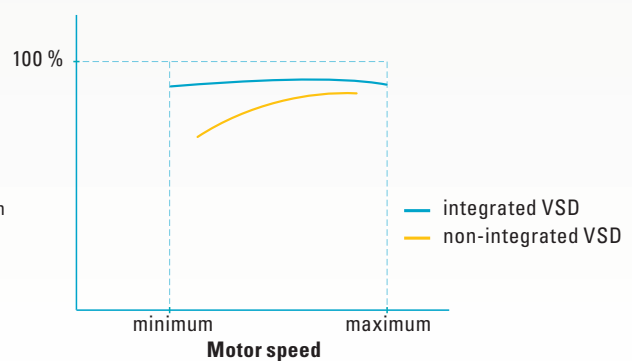
### 5 Tested over complete speed range

- ⊖ elimination of "speed windows", ensuring stable pressure and consistent energy savings

### Operating range



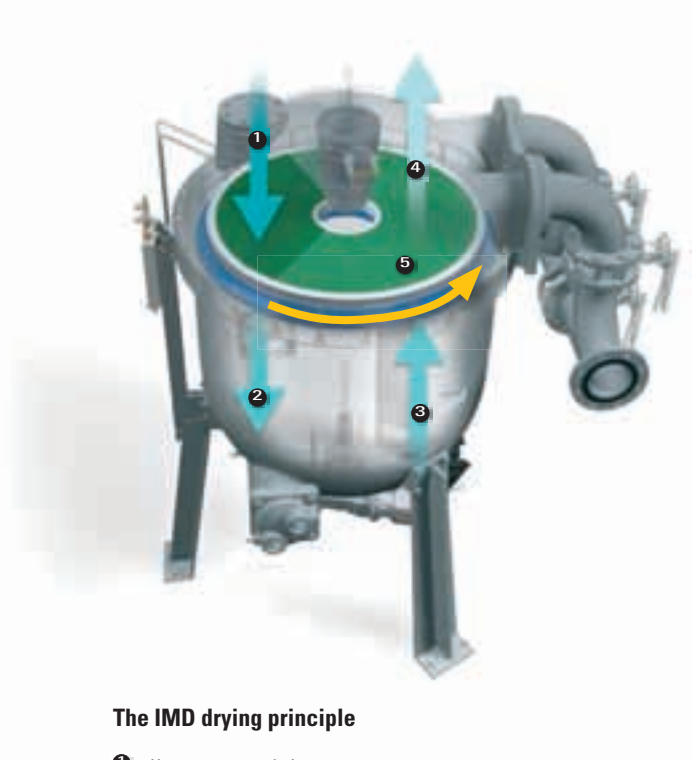
### Combined motor/converter efficiency



# The Full Feature compressor – a compact, all-in-one quality air solution

## ▶ Dry compressed air out of the box

- ▶ The Full Feature concept is a total installation, providing dry compressed air. Integrating the IMD dryer and its Variable Speed Drive on VSD models, this compact package offers high quality air at the lowest cost.
- ▶ The IMD adsorption dryer eliminates the moisture before it enters the air net, ensuring a reliable process and an impeccable end product.  
**No external energy is needed to dry the air**, resulting in large savings.
- ▶ The pressure drop through the dryer is minimal, which again cuts down the operating cost.
- ▶ The IMD dryer needs **no purge air**: no compressed air is wasted.
- ▶ The Full Feature compressor is a pre-wired and pre-piped solution, ready to use.



**The IMD drying principle**

- 1 Hot unsaturated air
- 2 Hot saturated air
- 3 Cold saturated air
- 4 Dry air
- 5 Drying section



**Watercooled  
ZR 160 VSD-FF**



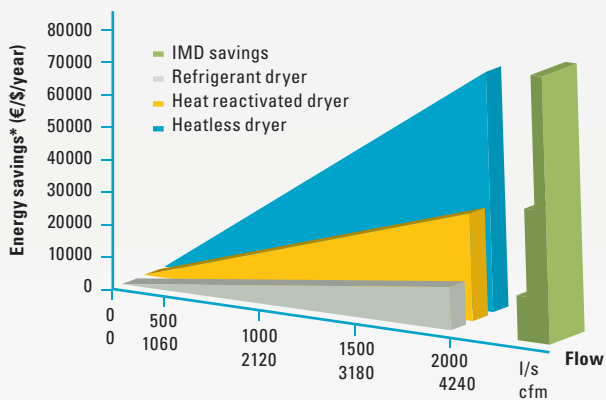
**Overall system control and monitoring**

- ☉ One integrated control system for compressor and dryer
- ☉ Monitoring of the IMD dryer includes:
  - Temperature readings of
    - IMD dryer inlet and outlet
    - regeneration air inlet and outlet
    - mix air inlet
  - Pressure dewpoint after the IMD (option)
  - Loading reporting of dryer

▶ **Energy savings with Full Feature/MD**

**Direct savings**

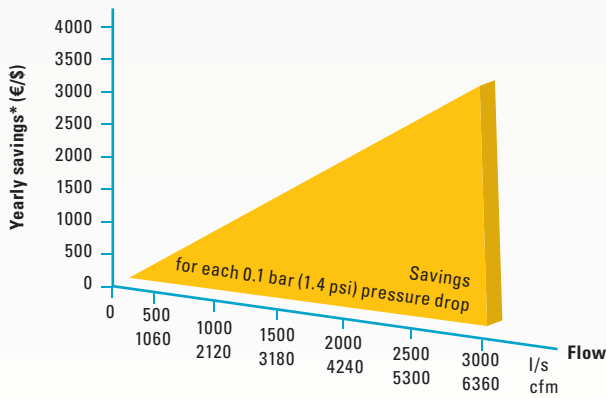
The IMD drying process requires no external energy; over time this results in large savings.



\* Assumptions: 1kWh = 0.05 €/€/\$ – 8000 h/year

**Indirect savings**

Other than direct energy input, the pressure drop in dryers causes indirect energy consumption as well. IMD dryers have a very low pressure drop, which leads to a further reduction in energy cost.



# CustomDesign

## ▶ The answer to every non-standard question

The new generation of Z-compressors is designed as standard to perform in a wide range of operating and site conditions.

However some environments call for additional measures. For all those special requests Atlas Copco's CustomDesign department offers an adequate solution.

- ▶ **Customizing** the standard products to fit your local plant standards. Meeting these standards on electrical voltage, colour coatings, explosion proof zones, documentation, test and inspection requirements...
- ▶ **Designing** products to secure operation in harsh environments. Allow outdoor installation in sub-zero temperatures, increase corrosion resistance for windy coastal and off-shore applications or ensure performance in hot, moist or dusty environments...
- ▶ **Extending** the range to nitrogen compressors and booster units to suit your specific application...

All this of course retaining the high standards on energy, safety and reliability, inherent to all Atlas Copco products.

With dedicated teams in both Product Companies and Regional Engineering Centers CustomDesign offers close-to-home solutions fitting your applications world-wide.



## Global presence – local service



Our Aftermarket product portfolio is designed to add maximum value for our customers by ensuring the optimum availability and reliability of their compressed air equipment with the lowest possible operating costs. We deliver this complete service guarantee through our extensive Aftermarket organization, maintaining our position as the leader in compressed air.

### ▶ Full range of available Aftermarket products

Activity	Product*
Genuine parts	Atlas Copco Service kits & oils
Extended warranties	AIRXtend
Service contracts	ServicePlan
System audits	AIRScan™
Remote monitoring	AIRConnect™
Energy saving	AIROptimizer™
Product improvements	Upgrade programs

\* More information is available from your local Atlas Copco customer centre

# The perfect match for your needs

## Z-compressors

The new generation of Z-compressors provides unprecedented freedom to select the right features for your specific needs.

**The compressor you want is the compressor we build.**

### Pressure

- 50 Hz:
  - 7.5 bar
  - 8.6 bar
  - 10 bar
  - 13 bar (only on ZR145/250/275)
- 60 Hz:
  - 7 bar / 100 psi
  - 8.6 bar / 125 psi
  - 10.4 bar / 150 psi
  - 13 bar / 188 psi (only on ZR145/250/275)

### Capacity (power)

- 110 kW (fixed speed)
- 132 kW (fixed speed & VSD - Variable Speed Drive)
- 145 kW (fixed speed)
- 160 kW (fixed speed & VSD - Variable Speed Drive)
- 200 kW (fixed speed)
- 250 kW (fixed speed & VSD - Variable Speed Drive)
- 275 kW (fixed speed)
- 300 kW (fixed speed)
- 315 kW (fixed speed & VSD - Variable Speed Drive)
- 355 kW (fixed speed)
- 400 kW (fixed speed & VSD - Variable Speed Drive)
- 425 kW (fixed speed)
- 450 kW (fixed speed)
- 500 kW (fixed speed & VSD - Variable Speed Drive)
- 630 kW (fixed speed)
- 700 kW (VSD - Variable Speed Drive)
- 750 kW (fixed speed)
- 900 kW (VSD - Variable Speed Drive)

### Cooling

- ZR: watercooled
- ZT: aircooled (up to 315 kW)

### Motor drive

- Fixed Speed Drive
- Variable Speed Drive (VSD) - saving up to 35% in energy costs

### Dryer

- MD dryer for dry air at no energy cost:
  - integrated IMD for Z 110-275 and Z 132-315 VSD
  - free-standing MD for ZR 300-750 and ZR 400-900 VSD
- BD/XD dryer for very dry air
- Compressor without dryer

### In/outdoor

- Standard package for indoor use
- Outdoor variant mounted in a standard container (up to 315 kW)

### Ambient temperature

- Standard machine: operating range between 0 and 40 °C
- HAT (High Ambient Temperature) version: operating range between 0 and 50 °C
- Winterization option: temperatures to -20 °C (only on outdoor variant)



# Complete scope suiting all needs

## ▶ Features and benefits

Numerous features are included as standard. Some applications may also need or benefit from one of the factory installed options.

### Standard

<input checked="" type="checkbox"/>	Air intake filter and silencer	<input checked="" type="checkbox"/>	Complete oil circuit pre-piped
<input checked="" type="checkbox"/>	Air intake flexible	<input checked="" type="checkbox"/>	Built-in oil breather system
<input checked="" type="checkbox"/>	Stainless steel inter and aftercooler cores *	<input checked="" type="checkbox"/>	AGMA class 13, DIN class 5 gears
<input checked="" type="checkbox"/>	Outlet air silencer	<input checked="" type="checkbox"/>	Electric IP 55 motors pre-mounted **
<input checked="" type="checkbox"/>	Six sided silencing canopy	<input checked="" type="checkbox"/>	Starters **
<input checked="" type="checkbox"/>	Terminal expansion joints – air and water side	<input checked="" type="checkbox"/>	Pre-mounted electrical and VSD cubicles
<input checked="" type="checkbox"/>	Outlet air flange	<input checked="" type="checkbox"/>	Skid with no need for foundations
<input checked="" type="checkbox"/>	Complete integrated water circuit *	<input checked="" type="checkbox"/>	Suppression of emissions/harmonic distortions in VSD
<input checked="" type="checkbox"/>	Single point inlet and outlet cooling water connection *		
<input checked="" type="checkbox"/>	Back-flush arrangement for cooler cleaning *		

\* Only for watercooled versions  
 \*\* Standard on LV, optional on MV

### Options

	ZT110-275	ZT132-315VSD	ZR110-275	ZR132-315VSD	ZR300-750	ZR400-900VSD
<input type="checkbox"/> Energy recovery						
<input type="checkbox"/> Hot air version (= without aftercooler)						
<input type="checkbox"/> HAT (High Ambient Temperature) version						
<input type="checkbox"/> Teflon-free elements						
<input type="checkbox"/> Pre-filter kit						
<input type="checkbox"/> Separate air intake						
<input type="checkbox"/> Automatic water shut off valve						
<input type="checkbox"/> Thermostatic water valve						
<input type="checkbox"/> Electronic drain	std	std	std	std		std
<input type="checkbox"/> ANSI flange(s) for air (and water) connections						
<input type="checkbox"/> Duplex oil filters						
<input type="checkbox"/> IP55 (TEFC) enclosure for MV motors (1)	std on LV	std	std on LV	std	std on LV	std
<input type="checkbox"/> Anti condensation heater for motor						
<input type="checkbox"/> Heavy duty dust filter for VSD inverter						
<input type="checkbox"/> PT1000 motor winding protection						
<input type="checkbox"/> PT1000 motor bearing protection						std
<input type="checkbox"/> Oversized motor						
<input type="checkbox"/> MODBUS interface						
<input type="checkbox"/> PROFIBUS interface						
<input type="checkbox"/> ETHERNET/IP interface						
<input type="checkbox"/> Remote speed or setpoint control						
<input type="checkbox"/> Witness performance test (2)						
<input type="checkbox"/> Performance test certificates (2)						
<input type="checkbox"/> Material certificates (2)						
<input type="checkbox"/> Wooden packing case						
<input type="checkbox"/> SPM (Shock Pulse Measurement) monitoring						std
<input type="checkbox"/> (I)MD dryer bypass (3)					std	std
<input type="checkbox"/> PDP (Pressure Dew-Point) sensor behind (I)MD (3)						

(1) MV = Medium Voltage (= above 2130 V AC) / LV = Low Voltage

(2) Fixed content

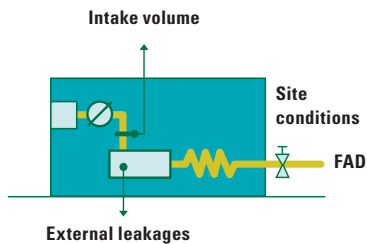
(3) On Full Feature units or units with free-standing MD

# Technical data

## True performance

Atlas Copco Z-compressors are measured according to ISO 1217, Annex C, Edition 3, stipulating the FAD (Free Air Delivery) measurement at the outlet of the package, net of all losses.

Atlas Copco specifications correspond to the capacity and pressure that are effectively available to the user, not to the air volume that is sucked in. Differences can be substantial.

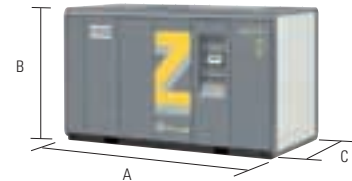


### Reference conditions

- (1) Reference conditions:
  - Dry air
  - Absolute inlet pressure 1 bar(a)
  - Cooling and air intake temperature 20 °C
  - Nominal working pressure:
    - 7 bar(e) for 7, 7.5 and 8.6 bar(e) variants
    - 9 bar(e) for 10 and 10.4 bar(e) variants
    - 12 bar(e) for 13 bar(e) variants
  - Z VSD: 5 % derating for 380V nets
  - Capacity of the compressor package measured according to ISO 1217, Third Edition, Annex C
- (2) Cooling water temp. rise of 15 °C (10 °C for FF)
- (3) Pressure dewpoint is specified for
  - 20 °C cooling air/water temperature
  - relative humidity of 60 %
  - nominal working pressure
  - load level of minimum 50 %
- (4) ± 3 dB(A) according to ISO 2151:2004 and using ISO 9614-2

### Conversions

- 1 kg = 2.2 lbs
- 1 mm = 0.039 inch
- °F = °C x 9/5 + 32



## ZR 110-750 and ZR 132-900 VSD compressors - 50 Hz

ZR watercooled	Free air delivery <sup>(1)</sup>			Installed motor	Cooling water consumption <sup>(2)</sup>	Pressure dewpoint <sup>(3)</sup>	Sound pressure level <sup>(4)</sup>		Weight	Dimensions			
	Type	l/s	m <sup>3</sup> /min				cfm	kW		l/s	°C	w/o duct dB(A)	with duct dB(A)
50 Hz - 7.5 bar(e)													
FF (with IMD Dryer)	ZR 110	318	19.1	674	110	3.5	-28	70	68	3265	3440	2000	1650
	ZR 132	367	22.0	778	132	4.1	-29	70	68	3390	3440	2000	1650
	ZR 145	394	23.6	835	145	4.2	-30	70	68	3530	3440	2000	1650
	ZR 160	471	28.3	998	160	4.4	-25	67	66	4705	4340	2000	1650
	ZR 200	607	36.4	1286	200	5.1	-25	67	66	5365	4340	2000	1650
	ZR 250	726	43.6	1538	250	5.8	-28	67	66	5360	4340	2000	1650
	ZR 275	780	46.8	1653	275	6.2	-30	67	66	5560	4340	2000	1650
Pack (w/o IMD Dryer)	ZR 110	318	19.1	674	110	1.7	-	67	65	2635	2540	2000	1650
	ZR 132	367	22.0	778	132	1.9	-	67	65	2760	2540	2000	1650
	ZR 145	394	23.6	835	145	2.0	-	67	66	2900	2540	2000	1650
	ZR 160	471	28.3	998	160	2.3	-	67	66	3795	3140	2000	1650
	ZR 200	607	36.4	1286	200	3.0	-	67	66	3995	3140	2000	1650
	ZR 250	726	43.6	1538	250	3.7	-	67	66	3990	3140	2000	1650
	ZR 275	780	46.8	1653	275	4.1	-	67	66	4190	3140	2000	1650
	ZR 300	775	46.5	1642	315	4.0	-	70	69	6650	3700	2400	2120
	ZR 315	855	51.3	1812	315	4.4	-	71	69	6650	3700	2400	2120
	ZR 355	949	56.9	2011	355	4.8	-	71	69	6950	3700	2400	2120
	ZR 400	1049	62.9	2223	400	5.4	-	71	70	7050	3700	2400	2120
	ZR 425	1162	69.7	2462	450	6.2	-	72	70	7250	3700	2400	2120
	ZR 450	1257	75.4	2663	450	7.2	-	73	71	9500	4060	2400	2120
	ZR 500	1387	83.2	2939	500	7.8	-	73	71	9500	4060	2400	2120
	ZR 630	1726	103.6	3657	630	9.4	-	75	73	10225	4060	2400	2120
	ZR 750	2075	124.5	4397	750	11.3	-	75	73	10325	4060	2400	2120



## ▶ ZR 110-750 and ZR 132-900 VSD compressors - 60 Hz

ZR watercooled	Free air delivery <sup>(1)</sup>			Installed motor HP	Cooling water consumption <sup>(2)</sup> l/s	Pressure dewpoint <sup>(3)</sup> °C	Sound pressure level <sup>(4)</sup>		Weight kg	Dimensions			
	Type	l/s	m <sup>3</sup> /min				cfm	w/o duct dB(A)		with duct dB(A)	A mm	B mm	C mm
<b>60 Hz - 7 bar(e)</b>													
FF (with IMD)	ZR 110	352	21.1	746	150	3.9	-28	70	68	3265	3440	2000	1650
	ZR 160	463	27.8	981	200	4.4	-25	67	66	4695	4340	2000	1650
	ZR 200	574	34.4	1216	250	4.9	-25	67	66	5305	4340	2000	1650
	ZR 250	667	40.0	1413	300	5.4	-28	67	66	5515	4340	2000	1650
	ZR 275	752	45.1	1593	350	5.9	-30	67	66	5635	4340	2000	1650
Pack (w/o IMD)	ZR 110	352	21.1	746	150	1.9	-	67	65	2635	2540	2000	1650
	ZR 160	463	27.8	981	200	2.3	-	67	66	3785	3140	2000	1650
	ZR 200	574	34.4	1216	250	2.9	-	67	66	3935	3140	2000	1650
	ZR 250	667	40.0	1413	300	3.4	-	67	66	4145	3140	2000	1650
	ZR 275	752	45.1	1593	350	3.8	-	67	66	4265	3140	2000	1650
<b>60 Hz - 8.6 bar(e)</b>													
FF (with IMD Dryer)	ZR 110	321	19.3	679	150	3.8	-28	70	68	3265	3440	2000	1650
	ZR 132 VSD	372	22.3	778	175	3.9	-28/-32	68-72	66-69	3500	3440	2000	1650
	ZR 145	398	23.9	843	200	4.1	-30	70	68	3530	3440	2000	1650
	ZR 160	419	25.1	888	200	4.4	-25	67	66	4695	4340	2000	1650
	ZR 160 VSD	431	25.9	913	215	4.2	-28/-32	68-74	66-71	3500	3440	2000	1650
	ZR 200	516	31.0	1093	250	4.6	-25	67	66	5305	4340	2000	1650
	ZR 250	619	37.1	1312	300	5.2	-28	67	66	5515	4340	2000	1650
	ZR 250 VSD	721	43.3	1528	335	5.8	-25/-30	63-73	62-71	6080	4340	2000	1650
	ZR 275	726	43.6	1538	350	5.8	-30	67	66	5635	4340	2000	1650
	ZR 315 VSD	836	50.2	1771	400	6.8	-25/-30	63-73	62-71	6080	4340	2000	1650
	ZR 110	321	19.3	679	150	1.7	-	67	65	2635	2540	2000	1650
Pack (w/o IMD Dryer)	ZR 132 VSD	376	22.6	797	175	1.9	-	62-68	61-66	2870	2540	2000	1650
	ZR 145	398	23.9	843	200	2.1	-	68	66	2900	2540	2000	1650
	ZR 160	419	25.1	888	200	2.1	-	67	66	3785	3140	2000	1650
	ZR 160 VSD	436	26.1	922	215	2.2	-	62-70	61-66	2870	2540	2000	1650
	ZR 200	516	31.0	1093	250	2.6	-	67	66	3935	3140	2000	1650
	ZR 250	619	37.1	1312	300	3.1	-	67	66	4145	3140	2000	1650
	ZR 250 VSD	721	43.3	1528	335	3.7	-	63-73	62-71	4710	3140	2000	1650
	ZR 275	726	43.6	1538	350	3.7	-	67	66	4265	3140	2000	1650
	ZR 300	755	45.3	1600	350	4.1	-	71	70	6550	3700	2400	2120
	ZR 315	850	51.0	1801	400	4.6	-	72	70	6550	3700	2400	2120
	ZR 315 VSD	836	50.2	1771	400	4.3	-	63-73	62-71	4710	3140	2000	1650
	ZR 355	955	57.3	2024	450	5.1	-	72	70	6950	3700	2400	2120
	ZR 400	1043	62.6	2210	500	5.6	-	72	71	7050	3700	2400	2120
	ZR 400 VSD	1114	66.9	2361	570	6.4	-	68-75	66-73	8320	4060	2470	2120
	ZR 450	1306	78.4	2767	600	7.8	-	74	72	9300	4060	2400	2120
	ZR 500	1538	92.3	3259	700	8.9	-	74	72	9500	4060	2400	2120
	ZR 500 VSD	1318	79.1	2793	703	7.6	-	68-76	66-74	8320	4060	2470	2120
	ZR 630	1700	102.0	3602	800	9.9	-	76	74	10225	4060	2400	2120
	ZR 700 VSD	2063	123.8	4371	938	11.6	-	70-78	68-76	11850	4675	2470	2120
	ZR 750	1939	116.3	4109	900	11.2	-	76	74	10225	4060	2400	2120
ZR 900 VSD	2456	147.4	5204	1253	13.2	-	68-78	68-76	11850	4675	2470	2120	

ZR watercooled	Free air delivery <sup>(1)</sup>			Installed motor	Cooling water consump- tion <sup>(2)</sup>	Pressure dewpoint <sup>(3)</sup>	Sound pressure level <sup>(4)</sup>		Weight	Dimensions			
	Type	l/s	m <sup>3</sup> /min				cfm	HP		l/s	°C	w/o duct dB(A)	with duct dB(A)
<b>60 Hz - 10.4 bar(e)</b>													
FF (with IMD Dryer)	ZR 110	287	17.2	608	150	3.5	-28	70	68	3265	3440	2000	1650
	ZR 132 VSD	330	19.8	699	175	3.9	-28/-32	68-72	66-69	3500	3440	2000	1650
	ZR 145	336	20.2	712	200	4.1	-30	70	68	3530	3440	2000	1650
	ZR 160	375	22.5	795	200	4.4	-25	67	66	4695	4340	2000	1650
	ZR 160 VSD	392	23.5	831	215	4.2	-28/-32	68-74	66-71	3500	3440	2000	1650
	ZR 200	459	27.5	973	250	4.7	-25	67	66	4845	4340	2000	1650
	ZR 250	548	32.9	1161	300	5.2	-28	67	66	5515	4340	2000	1650
	ZR 250 VSD	648	38.9	1373	335	5.8	-25/-30	67-73	65-71	6080	4340	2000	1650
	ZR 275	641	38.5	1358	350	5.7	-30	67	66	5635	4340	2000	1650
	ZR 315 VSD	746	44.8	1581	400	6.7	-25/-30	67-73	65-71	6080	4340	2000	1650
Pack (w/o IMD Dryer)	ZR 110	287	17.2	608	150	1.7	-	67	65	2635	2540	2000	1650
	ZR 132 VSD	333	20.0	706	214	1.9	-	62-68	61-66	2590	2540	2000	1650
	ZR 145	336	20.2	712	200	2.0	-	67	66	2900	2540	2000	1650
	ZR 160	375	22.5	795	200	2.2	-	67	66	3785	3140	2000	1650
	ZR 160 VSD	394	23.6	835	215	2.1	-	62-70	61-66	2590	2540	2000	1650
	ZR 200	459	27.5	973	250	2.6	-	67	66	3935	3140	2000	1650
	ZR 250	548	32.9	1161	300	3.1	-	67	66	4145	3140	2000	1650
	ZR 250 VSD	648	38.9	1373	335	3.7	-	64-70	65-68	4710	3140	2000	1650
	ZR 275	641	38.5	1358	350	3.6	-	67	66	4265	3140	2000	1650
	ZR 300	677	40.6	1434	350	4.3	-	71	70	6550	3700	2400	2120
	ZR 315	762	45.7	1615	400	4.6	-	72	70	6550	3700	2400	2120
	ZR 315 VSD	746	44.8	1581	400	4.3	-	63-73	62-71	4710	3140	2000	1650
	ZR 355	858	51.5	1818	450	5.1	-	73	71	6950	3700	2400	2120
	ZR 400	945	56.7	2002	500	5.5	-	73	71	7050	3700	2400	2120
	ZR 400 VSD	979	58.7	2074	570	5.7	-	69-76	66-73	8350	4060	2470	2120
	ZR 450	1144	68.6	2424	600	7.7	-	74	xx	9300	4060	2400	2120
	ZR 500	1332	79.9	2822	700	8.7	-	75	xx	9500	4060	2400	2120
	ZR 500 VSD	1150	69.0	2437	703	7.6	-	69-77	66-74	8350	4060	2470	2120
	ZR 630	1474	88.4	3123	800	9.4	-	76	74	10225	4060	2400	2120
	ZR 700 VSD	1859	111.5	3939	938	11.4	-	70-78	68-76	11850	4675	2470	2120
ZR 750	1739	104.3	3685	900	10.8	-	76	74	10225	4060	2400	2120	
ZR 900 VSD	2057	123.4	4359	1253	12.5	-	68-79	68-77	11850	4675	2470	2120	
<b>60 Hz - 13 bar(e)</b>													
FF (with IMD)	ZR 145	299	17.9	634	200	4.3	-28	75	72	3530	3440	2000	1650
	ZR 250	491	29.5	1040	300	5.4	-28	72	70	5515	4340	2000	1650
	ZR 275	550	33.0	1165	350	5.8	-30	72	70	5635	4340	2000	1650
Pack (w/o IMD)	ZR 145	299	17.9	634	200	2.0	-	75	72	2900	2540	2000	1650
	ZR 250	491	29.5	1040	300	3.4	-	72	70	4145	3140	2000	1650
	ZR 275	550	33.0	1165	350	3.8	-	72	70	4265	3140	2000	1650

- (1) Reference conditions:
- Dry air
  - Absolute inlet pressure 1 bar(a)
  - Cooling and air intake temperature 20 °C
  - Nominal working pressure:
    - 7 bar(e) for 7, 7.5 and 8.6 bar(e) variants
    - 9 bar(e) for 10 and 10.4 bar(e) variants
    - 12 bar(e) for 13 bar(e) variants
  - Z VSD: 5 % derating for 380V nets
  - Capacity of the compressor package measured according to ISO 1217, Third Edition, Annex C

- (2) Cooling water temp. rise of 15 °C (10 °C for FF)

- (3) Pressure dewpoint is specified for
- 20 °C cooling air/water temperature
  - relative humidity of 60 %
  - nominal working pressure
  - load level of minimum 50 %

- (4) ± 3 dB(A) according to ISO 2151:2004 and using ISO 9614-2

**Conversions**

- 1 kg = 2.2 lbs
- 1 mm = 0.039 inch
- °F = °C x 9/5 + 32



## ZT 110-275 and ZT 132-315 VSD compressors - 50 Hz

	ZT aircooled	Free air delivery <sup>(1)</sup>			Installed motor kW	Installed fan motor kW	Pressure dewpoint <sup>(3)</sup> °C	Sound pressure level <sup>(4)</sup>		Weight kg	Dimensions			
		Type	l/s	m³/min				cfm	w/o duct dB(A)		with duct dB(A)	A mm	B mm	C mm
<b>50 Hz - 7.5 bar(e)</b>														
FF (with IMD Dryer)	ZT 110	312	18.7	661	110	4.8	-28	72	70	4095	4040	2000	1650	
	ZT 132	360	21.6	763	132	4.8	-29	73	70	4220	4040	2000	1650	
	ZT 145	390	23.4	826	145	4.8	-30	73	71	4360	4040	2000	1650	
	ZT 160	460	27.57	973	160	8.8	-30	77	75	5625	5040	2100	1650	
	ZT 200	563	33.75	1191	200	8.8	-25	77	75	6285	5040	2100	1650	
	ZT 250	705	42.31	1493	250	8.8	-28	77	75	6280	5040	2100	1650	
Pack (w/o IMD Dryer)	ZT 275	740	44.38	1566	315	18.5	-30	77	75	6630	5040	2100	1650	
	ZT 110	314	18.8	665	110	4.8	-	71	70	3585	4040	2000	1650	
	ZT 132	362	21.7	767	132	4.8	-	72	70	3710	4040	2000	1650	
	ZT 145	392	23.5	829	145	4.8	-	72	70	3850	4040	2000	1650	
	ZT 160	460	27.6	973	160	8.8	-	77	75	5185	5040	2100	1650	
	ZT 200	563	33.8	1191	200	8.8	-	77	75	5385	5040	2100	1650	
FF (with IMD Dryer)	ZT 250	705	42.3	1493	250	8.8	-	77	75	5380	5040	2100	1650	
	ZT 275	740	44.4	1566	275	8.8	-	77	75	5580	5040	2100	1650	
	<b>50 Hz - 8.6 bar(e)</b>													
	FF (with IMD Dryer)	ZT 110	281	16.9	595	110	4.8	-28	72	70	4095	4040	2000	1650
		ZT 132	322	19.3	682	132	4.8	-29	73	70	4220	4040	2000	1650
		ZT 132 VSD	349	20.9	739	132	4.8	-25/-30	67-71	66-70	4330	4040	2000	1650
ZT 145		361	21.6	785	145	4.8	-30	73	71	4360	4040	2000	1650	
ZT 160		422	25.3	894	160	8.8	-30	77	75	5625	5040	2100	1650	
ZT 160 VSD		404	24.2	856	160	4.8	-25/-30	67-74	66-71	4330	4040	2000	1650	
ZT 200		510	30.6	1081	200	8.8	-25	77	75	6285	5040	2100	1650	
ZT 250		661	39.7	1401	250	8.8	-28	77	75	6280	5040	2100	1650	
ZT 250 VSD		699	41.9	1480	250	18.5	-25/-30	70-77	68-75	6660	5040	2100	1650	
ZT 275		696	41.8	1475	275	18.5	-30	77	75	6630	5040	2100	1650	
Pack (w/o IMD Dryer)	ZT 315 VSD	789	47.4	1672	299	18.5	-25/-30	70-78	68-76	6660	5040	2100	1650	
	ZT 110	281	16.9	595	110	4.8	-	71	70	3585	4040	2000	1650	
	ZT 132	322	19.3	682	132	4.8	-	72	70	3710	4040	2000	1650	
	ZT 132 VSD	354	21.2	750	132	4.8	-	67-74	66-71	3820	4040	2000	1650	
	ZT 145	361	21.6	785	145	4.8	-	72	70	3850	4040	2000	1650	
	ZT 160	422	25.3	894	160	8.8	-	77	75	5185	5040	2100	1650	
	ZT 160 VSD	410	24.6	869	160	4.8	-	67-74	66-71	3820	4040	2000	1650	
	ZT 200	510	30.6	1081	200	8.8	-	77	75	5385	5040	2100	1650	
	ZT 250	661	39.7	1401	250	8.8	-	77	75	5380	5040	2100	1650	
	ZT 250 VSD	699	41.9	1480	250	8.8	-	70-77	68-75	6130	5040	2100	1650	
FF (with IMD Dryer)	ZT 275	696	41.8	1475	275	8.8	-	77	75	5580	5040	2100	1650	
	ZT 315 VSD	789	47.4	1672	299	8.8	-	70-78	68-76	6130	5040	2100	1650	
	<b>50 Hz - 10 bar(e)</b>													
	FF (with IMD Dryer)	ZT 110	260	15.6	551	110	4.8	-28	72	70	4095	4040	2000	1650
		ZT 132	313	18.8	662	132	4.8	-29	73	70	4220	4040	2000	1650
		ZT 132 VSD	316	19.0	670	132	4.8	-25/-30	67-71	66-70	4330	4040	2000	1650
ZT 145		334	20.0	707	145	4.8	-30	73	70	4360	4040	2000	1650	
ZT 160		389	23.3	823	160	8.8	-30	78	76	5625	5040	2100	1650	
ZT 160 VSD		370	22.2	784	160	4.8	-25/-30	67-74	66-71	4330	4040	2000	1650	
ZT 200		490	29.4	1038	200	8.8	-30	78	76	5825	5040	2100	1650	
ZT 250		608	36.5	1287	250	8.8	-28	78	76	6280	5040	2100	1650	
ZT 250 VSD		622	37.3	1316	250	18.5	-25/-30	71-78	69-76	6660	5040	2100	1650	
ZT 275		671	40.2	1420	275	18.5	-30	78	76	6630	5040	2100	1650	
Pack (w/o IMD Dryer)	ZT 315 VSD	709	42.5	1501	299	18.5	-25/-30	71-79	69-77	6660	5040	2100	1650	
	ZT 110	261	15.7	553	110	4.8	-	71	70	3560	4040	2000	1650	
	ZT 132	314	18.8	665	132	4.8	-	72	70	3700	4040	2000	1650	
	ZT 132 VSD	320	19.2	678	132	4.8	-	67-71	66-70	4050	4040	2000	1650	
	ZT 145	336	20.1	711	145	4.8	-	72	70	3850	4040	2000	1650	
	ZT 160	389	23.3	823	160	8.8	-	78	76	5185	5040	2100	1650	
	ZT 160 VSD	384	23.0	814	160	4.8	-	67-74	66-71	4050	4040	2000	1650	
	ZT 200	490	29.4	1038	200	8.8	-	78	76	5385	5040	2100	1650	
	ZT 250	608	36.5	1287	250	8.8	-	78	76	5380	5040	2100	1650	
	ZT 250 VSD	622	37.3	1316	250	8.8	-	71-78	69-76	6130	5040	2100	1650	
FF (with IMD Dryer)	ZT 275	671	40.2	1420	275	8.8	-	78	76	5580	5040	2100	1650	
	ZT 315 VSD	709	42.5	1501	299	8.8	-	71-79	69-77	6130	5040	2100	1650	

## ZT 110-275 and ZT 132-315 VSD compressors - 60 Hz

ZT aircooled	Free air delivery <sup>(1)</sup>			Installed motor HP	Installed fan motor HP	Pressure dewpoint <sup>(3)</sup> °C	Sound pressure level <sup>(4)</sup>		Weight kg	Dimensions			
	Type	l/s	m <sup>3</sup> /min				cfm	w/o duct dB(A)		with duct dB(A)	A mm	B mm	C mm
<b>60 Hz - 8.6 bar(e)</b>													
FF (with IMD Dryer)	ZT 110	315	18.9	667	150	6.5	-28	72	70	4095	4040	2000	1650
	ZT 132 VSD	349	20.9	739	175	6.5	-25/-30	67-71	66-70	4330	4040	2000	1650
	ZT 145	391	23.5	828	200	6.5	-30	73	70	4360	4040	2000	1650
	ZT 160	416	25.0	881	200	12.3	-30	77	75	5615	5040	2100	1650
	ZT 160 VSD	404	24.2	856	215	6.5	-25/-30	67-74	66-71	4330	4040	2000	1650
	ZT 200	510	30.6	1280	250	12.3	-25	77	75	6225	5040	2100	1650
	ZT 250	608	36.5	1287	300	12.3	-28	77	75	6435	5040	2100	1650
	ZT 250 VSD	699	41.9	1480	335	24.8	-25/-30	70-77	68-75	6660	5040	2100	1650
	ZT 275	713	42.8	1509	350	24.8	-30	77	75	6705	5040	2100	1650
	ZT 315 VSD	789	47.4	1672	400	24.8	-25/-30	70-78	68-76	6660	5040	2100	1650
Pack (w/o IMD Dryer)	ZT 110	317	19.0	671	150	6.5	-	71	70	3585	4040	2000	1650
	ZT 132 VSD	354	21.2	750	175	6.5	-	67-74	66-71	3820	4040	2000	1650
	ZT 145	392	23.5	831	200	6.5	-	72	70	3850	4040	2000	1650
	ZT 160	416	25.0	881	200	12.3	-	77	75	5175	5040	2100	1650
	ZT 160 VSD	410	24.6	869	215	6.5	-	67-74	66-71	3820	4040	2000	1650
	ZT 200	510	30.6	1280	250	12.3	-	77	75	5325	5040	2100	1650
	ZT 250	608	36.5	1287	300	12.3	-	77	75	5535	5040	2100	1650
	ZT 250 VSD	699	41.9	1480	335	12.3	-	70-77	68-75	6130	5040	2100	1650
	ZT 275	713	42.8	1509	350	12.3	-	77	75	5655	5040	2100	1650
	ZT 315 VSD	789	47.4	1672	400	12.3	-	70-78	68-76	6130	5040	2100	1650
<b>60 Hz - 10.4 bar(e)</b>													
FF (with IMD Dryer)	ZT 110	282	16.9	598	150	6.5	-28	72	70	4095	4040	2000	1650
	ZT 132 VSD	316	19.0	670	175	6.5	-25/-30	67-71	66-70	4330	4040	2000	1650
	ZT 145	329	19.7	697	200	6.5	-30	73	70	4360	4040	2000	1650
	ZT 160	359	21.5	761	200	12.3	-30	78	76	5615	5040	2100	1650
	ZT 160 VSD	370	22.2	784	215	6.5	-25/-30	67-74	66-71	4330	4040	2000	1650
	ZT 200	438	26.3	928	250	12.3	-30	78	76	5765	5040	2100	1650
	ZT 250	526	31.6	1115	300	12.3	-28	78	76	6435	5040	2100	1650
	ZT 250 VSD	622	37.3	1316	335	24.8	-25/-30	71-78	69-76	6660	5040	2100	1650
	ZT 275	616	37.0	1305	350	24.8	-30	78	76	6705	5040	2100	1650
	ZT 315 VSD	709	42.5	1501	400	24.8	-25/-30	71-79	69-77	6660	5040	2100	1650
Pack (w/o IMD Dryer)	ZT 110	283	17.0	600	150	6.5	-	71	70	3585	4040	2000	1650
	ZT 132 VSD	320	19.2	678	175	6.5	-	67-71	66-70	4050	4040	2000	1650
	ZT 145	331	19.9	701	200	6.5	-	72	70	3850	4040	2000	1650
	ZT 160	359	21.5	761	200	12.3	-	78	76	5175	5040	2100	1650
	ZT 160 VSD	384	23.0	814	215	6.5	-	67-74	66-71	4050	4040	2000	1650
	ZT 200	438	26.3	928	250	12.3	-	78	76	5325	5040	2100	1650
	ZT 250	526	31.6	1115	300	12.3	-	78	76	5535	5040	2100	1650
	ZT 250 VSD	622	37.3	1316	335	12.3	-	71-78	69-76	6130	5040	2100	1650
	ZT 275	616	37.0	1305	350	12.3	-	78	76	5655	5040	2100	1650
	ZT 315 VSD	709	42.5	1501	400	12.3	-	71-79	69-77	6130	5040	2100	1650

- (1) Reference conditions:
- Dry air
  - Absolute inlet pressure 1 bar(a)
  - Cooling and air intake temperature 20 °C
  - Nominal working pressure:
    - 7 bar(e) for 7, 7.5 and 8.6 bar(e) variants
    - 9 bar(e) for 10 and 10.4 bar(e) variants
  - Z VSD: 5 % derating for 380V nets
  - Capacity of the compressor package measured according to ISO 1217, Third Edition, Annex C

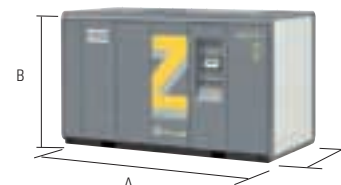
- (2) Cooling water temp. rise of 15 °C (10 °C for FF)

- (3) Pressure dewpoint is specified for
- 20 °C cooling air/water temperature
  - relative humidity of 60 %
  - nominal working pressure
  - load level of minimum 50 %

- (4) ± 3 dB(A) according to ISO 2151:2004 and using ISO 9614-2

#### Conversions

- 1 kg = 2.2 lbs
- 1 mm = 0.039 inch
- °F = °C x 9/5 + 32





**W**hat sets Atlas Copco apart as a company is our conviction that we can only excel in what we do, if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

**T**hat is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.



#### ISO 9001

A consistent quality earned us the industry's leadership and the customer's trust.



#### ISO 14001

Atlas Copco's

Environmental Management System forms an integral part of each business process.

Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.

**Atlas Copco**