

Dessicant air dryers for superior productivity

CD+ series (360-1600 l/s, 762-3392 cfm)
BD+ series (360-3500 l/s, 762-7416 cfm)
XD+ series (550-3600 l/s, 1165-7628 cfm)



Complete protection for your application

Dry and clean compressed air is essential for a broad range of industrial applications. Yet it must be produced reliably, energy-efficiently and cost-effectively. Atlas Copco's desiccant dryers protect your systems and processes. Their robust design ensures they operate with total reliability and deliver a constant, stable dewpoint in full load conditions and even during a temporary overload.

Protecting your reputation and production

Compressed air entering the air net is always 100% saturated. When it cools, this moisture will condense, causing damage to your air system and finished products. Removing moisture from compressed air with a pressure dewpoint (PDP) as low as -70°C/-94°F, Atlas Copco desiccant dryers eliminate system failures, production downtime and costly repairs.

Highest reliability

Constantly delivering promised dew point or lower. Reaching pressure dewpoint down to -40°C/°F or lower at 100% load conditions.
• A proven, durable design for the switching valves significantly improves the dryer lifetime.
• An advanced control and monitoring system ensures production efficiency.

Maximum energy efficiency

Atlas Copco's desiccant dryers incorporate energy-saving features to cut your carbon footprint. A low pressure drop below 0.2 bar/2.9 psi drives down energy costs. Dewpoint sensing and control adapts the energy consumption to the real load of the dryer. An adjustable PDP setpoint enables you to adapt the dryer to your actual needs.

Blower heated dryers feature SmartCycle technology as standard. This results in significant energy savings at partial load without a dew point sensor.

Easy installation and long maintenance intervals

The dryers have a small footprint thanks to an innovative all-in-one design. Delivered ready for use, installation is straightforward, minimizing costly production downtime.

Assuring your peace of mind

All internal components are easily accessible to facilitate maintenance. The use of high-grade desiccant and durable valves extends maintenance intervals beyond the standard three years.



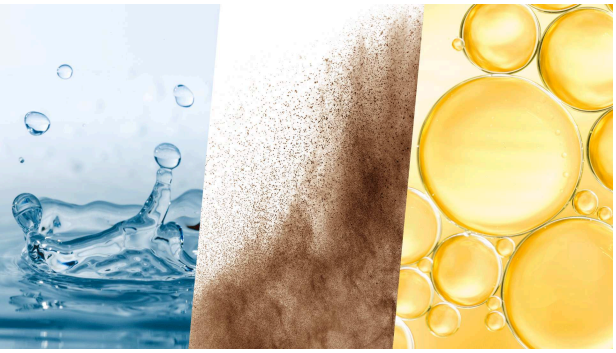
Air Quality

Having the right air quality protects your production.

Why air quality?

By using our compressors and air treatment equipment you will avoid dust, water or oil in your process. It's important to have the right air quality to maximize your efficiency. If the Air Quality is too low, you will reduce the reliability of production equipment or processes. If the Air Quality is too high you're wasting energy. Therefore it's crucial to have the right Air Quality for your needs.





The perfect installation for your requirements

You have to avoid 3 things: water, dust & oil contaminants.

Water

Water in compressed air leads to several issues, such as corrosion, icing, blockages and water hammer. All of them can damage your process and end product.

Dust

Dust in your compressed air creates extra friction, which leads to extra wear & tear in e.g. pneumatics. Our wide range of filtration solutions can remove all levels of dust in your system.

Oil

Oil particles entering the compressed air system can create product contamination and damage your end products. With our oil-free products and filtration solutions we can deliver Class-0 air for industries like Food & beverage, Medical & health care, Textiles, Chemical,...

Our air treatment portfolio



Refrigerant dryer

Refrigerant dryers are the most common and consist of an air-to-air heat exchanger and an air-to-refrigerant heat exchanger. They are used to avoid free water and corrosion in the system. A relative humidity of below 50% is enough to achieve this. Both air-cooled and water cooled refrigerant dryers are available.

Twin tower desiccant dryers

Adsorption dryers are used when the compressed air application requires a pressure dew point below 0°C. The dryers consist of two pressure vessels. Both vessels are filled with desiccant. One vessel is removing moisture from the compressed air. When this vessel is saturated with moisture the valves will switch and lead the air to the other standby vessel. During adsorption in the other vessel the one saturated with moisture will be regenerated. It's a cyclic process.

Rotary drum dryer

The rotary drum dryer is also using adsorption technology. The desiccant does not come in granular form. Instead it is bonded with a binding material in a honeycomb structure. This unique technology does not require any additional energy, as it is using the heat of compression. The rotating drum is divided into sections. In general 3/4 of the drum is used for adsorption, while 1/4 is used for regeneration. It's a continuous process as the drum rotates and therefore doesn't require any switching valves.

Filters

Atlas Copco offers a wide selection of filtration solutions for compressed air with different filter media and grades to remove any dust or oil from your compressed air system.

Reliability XD+ & BD+

Designed for optimal reliability



BD330+ - 3000+

In-house developed switching valves

• High reliability and low maintenance due to extensive endurance tests.

Galvanized piping with flanged connections

• Flanged piping simplifies maintenance and minimizes the chance of leakage.

Long-life silica gel desiccant

• Multi layer desiccant bed; a water-resistant bottom layer protects the high-performing top layer(s).
• Pressure dewpoint of -40°C/-40°F as standard (-70°C/-94°F as option).
• The best desiccant available on the market, selected for maximum performance, long life and high energy efficiency.

Smart Cycle control algorithm

• Included as standard on all BD+ dryers. - Delivers energy savings at partial load, similar to dew point control, but without the dew point sensor option.

Robust and compact design

• Standard frame, including forklift slots and lifting lugs for easy handling.
• Wide vessels ensure a low air speed and a longer contact time.
• Flanges connecting vessels are integrated into the top and bottom shells, lowering the total unit height.

XD550+ - 3600+



Heaters (only for G version with guaranteed dew point)
• High grade stainless steel heater tubes
• Low watt density with baffle plates to avoid hot spots
• Thermostatically controlled by the Elektronikon
• Tripple protection against overheating, for maximum safety

Drying towers
• Generously sized for optimal contact time
• Stainless steel removable desiccant strainer
• Top and bottom nozzles equipped with custom pad flanges to reduce height.

Dewpoint Dependent Switching
• Real PDP monitoring (hygrometer).
• PDP display on controller (and alarm).

Electronic water drains with standard alarm
• No loss of compressed air.
• Maintenance-free and trouble-free operation.
• Manual drains allow for easy servicing while in operation.

Stainless steel coolers
• Maximum energy efficiency and extended lifetime.
• Guaranteed easy inspection and maintenance.
• Low pressure drop.
• High water separation.
• Bundles can be rodded in place.

Premium grade desiccant
• Water resistant
• Low desorption temperature and energy consumption
• High adsorption capacity
• High lifetime
• Limited release of dust

BD 630+



Elektronikon Touch controller

• User friendly interface with 4.3" high resolution color display and touch & swipe navigation.
• Integrated SMARTlink functionality for remote monitoring and control.
• Smart cycle technology included.

Switching valve

• High reliability and low maintenance due to extensive endurance tests.
• Optimal sealing of the valve and high torque actuators ensure no leakage and optimal performance
• Resistant against harsh and aggressive conditions in desiccant dryers, such as desiccant dust, acidic moisture and hydrocarbons, cyclic pressure and temperature swings.

Galvanized piping

The best corrosion resistant surface treatment available for all conditions. Scratch resistance due to it's self-healing properties. Heat resistant. Applied on both the external as well as internal surfaces for optimal protection.

Flanged connections

DIN or ANSI flange connections available for convenience and ease of installation

Dessicant

High adsorption capacity desiccant for maximum performance, long life and high energy efficiency

Small footprint

Compact baseframe with forklift slots, designed to save floor space

Safety valves

Sized for the full flow. For optimal protection in every scenario.

CD 630+



Robust and compact design

• Standard frame, including forklift slots and lifting eyes for easy handling.
• Wide vessels ensure a low air speed and a longer contact time.
• Flanges connecting vessels are integrated into the top and bottom heads, lowering the total unit height.

Up-sized silencers with integrated safety valves

Advanced mufflers avoid back-pressure, increase purge efficiency, offer protection in case of clogging via the integrated safety valve, and reduce noise level during blow-off.

Open silencer

Absorptive silencer combines the benefits of absolutely no backpressure during purge for optimal energy efficiency, with excellent sound attenuation.
Rugged design with stainless steel deflector cap.

Advanced control and monitoring system

• Fitted inside a real IP54 electrical enclosure for improved reliability and safety.
• Monitors all parameters to ensure maximum reliability of the installation.

PDP controller

PDP controller to control the dew point.

Butterfly valves

Corrosion resistant actuators and valves with stainless steel trim. In-house tested for endurance.

High-quality desiccant

• Pressure dewpoint of -40°C/-40°F as standard (-70°C/-94°F as option).
• Up to 30% extra desiccant overfill to deliver consistent performance even in harsh conditions such as high temperatures and temporary overloads.

Outlet valves

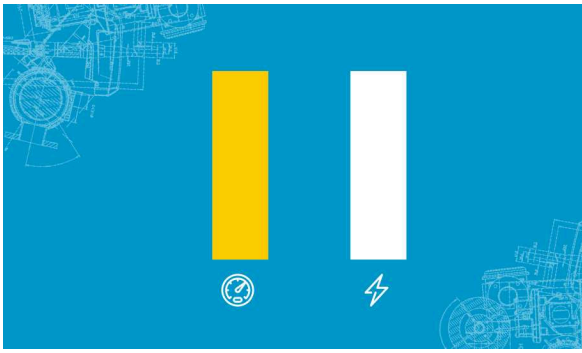
Outlet check valves with stainless steel trim. Combined with purge orifice, reduces the risk and the effects of compressed air leaks.

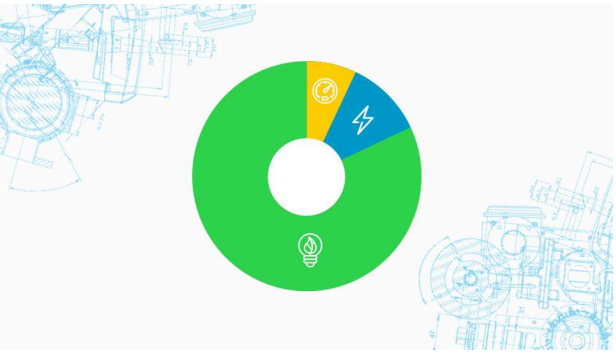
Superior energy efficiency

A dryer's energy consumption mainly goes to internal pressure drops and the regeneration process. The key for designing desiccant dryers is therefore to keep the pressure drop as low as possible, and to develop technologies that allow regeneration to be as efficient as possible. Atlas Copco's dryers are designed to have a very low internal pressure drop below 0.2 bar/2.9 psi, and provide the most efficient regeneration process.

Low pressure drop saves energy and reduces operating costs

Atlas Copco's CD+, BD+ and XD+ desiccant dryers incorporate state-of-the-art energy management control with built-in Dewpoint Dependent Switching. This makes the dryers more efficient, leading to energy savings of up to 90%, depending on installation and usage. The principle is simple. Although the regeneration time remains constant, the delay before switching from one tower to the other is controlled via the dew point sensor. As soon as the target dew point is reached, the dryer cycle that was on hold will resume by switching to the dry tower. Delaying cycles in this way leads to major energy savings. This occurs when operating conditions are lower than reference, or the flow fluctuates below maximum nominal load.





Efficient regeneration due to Dewpoint Dependent Switching

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The key for designing desiccant dryers is therefore to keep the pressure drop as low as possible, and
to develop technologies that allow regeneration to be as efficient as possible. Atlas Copco's dryers are
designed to have a very low internal pressure drop below 0.2 bar/2.9 psi, and provide the most efficient
regeneration process.

Different models for your needs

Our CD 360+ - 1600+ range is the most efficient solution where there is a demand for heatless dryers thanks to the low pressure drop regeneration cycle. This is perfectly suitable for applications with low running hours.

Our BD 330+ - 3000+ range covers blower heated dryers and its very energy efficient design will provide great savings. Especially with higher yearly running hours.

Our XD 550+ - 3600+ range is a heat of compression dryer. It can be used together with oil-free compressors, especially with centrifugal compressors. Thanks to using heat energy coming from the compressor, it's very efficient at low or high yearly running hours.





CD 360+ - 1600+

Dewpoint Dependent Switching

- Real PDP monitoring.
- PDP display on controller (and alarm).
- The dryer will only switch to the next tower when the desiccant is saturated (based on PDP input). During that period, the dryer will not consume any purge air.

Galvanized piping with flanged connections

- Flanged piping simplifies maintenance and minimizes the chance of leakage.
- Pipe sizing is optimized to ensure a low pressure drop, resulting in energy savings.

Advanced control and monitoring system

- Fitted inside a real IP54 electrical enclosure for optimal protection and safety.
- Monitors all parameters to ensure maximum reliability of the installation.
- Plug & play design and fully wired.

BD 360+ - 3500+



Advanced control and monitoring system

• Smart Cycle technology included to save energy at partial load without the optional dew point sensor.
• Plug & play design and fully wired.
• Monitoring all parameters to ensure maximum reliability of installation.

Low-watt density heater

• Low watt density heater elements will avoid hot spots. Optimal baffle design ensures optimal flow distribution across the entire length of the elements.
• Heater is installed in an insulated heater housing to ensure the most energy-efficient setup
• High grade stainless steel design to ensure long life time

Cooling modes

The BD 360+ - 3500+ dryers come in three variants, related to the cooling mode. The cooling cycle is one of the steps during operation, after the heating cycle.

1. Standard cooling: This variant is using a small amount of dry air

2. ZeroPurge - open loop cooling: This variant is using fresh ambient air by the blower. It is more energy efficient compared with standard cooling, as no compressed air is lost. This is the best choice for moderate climates

3. ZeroPurge - Closed loop: This variant is cooling the desiccant using an additional air cooled cooler (BD 360+ - 970+) or water cooled cooler (BD 1260+ - 2500+). The cooling air runs in a closed loop, preventing that the desiccant is pre-loaded with moisture coming from the ambient. This is the best choice for challenging humid climates and provides optimal energy efficiency.

Long-life silica gel desiccant

• High-adsorption silica gel desiccant needs less reactivation energy than other drying agents.



XD550+ - 3600+

Advanced control and monitoring system

• Fitted inside a real IP54 electrical enclosure for optimal protection and safety.

• Monitors all parameters to ensure maximum reliability of the installation.

Hot air inlet

• Heat of compression used for regeneration.

• No energy consumption.

Drying towers

• Reduced pressure drop.

• Built-in water separator to reduce desiccant load and extend the drying cycle.

Dewpoint Dependent Switching

• The dryer will only switch to the next tower when the desiccant is saturated (based on PDP input). During that period, the dryer will not consume energy.



Installation

Our smart AIR solutions combine compressors, blowers and boosters with quality air solutions fully optimized to operate together in the most efficient and reliable way.



1. Compressors

Often people buy the same size compressor, but to optimize the system it's better to make a combination of different size compressors, technologies and controls.

2. Central controller

Having a central controller reduces the average pressure band.
It also reduces the operating pressure of your machines.
• By reducing the pressure by 1 bar (or 14.5 psi), your energy usage lowers by 7%.
• By reducing the pressure by 1 bar (or 14.5 psi) decreases air leakages by 13%.
Multiple embedded functions in the Optimizer 4.0 in which pressure, capacity and speed can be regulated.

Legend
A = Net pressure
B = Average pressure
C = Min. system pressure

3. Integrated dryers

Our full feature concept offers an integrated dryer in the compressor. This has additional benefits, reducing installation cost, time and complexity, having dryers controlled together with the compressors, reducing connecting pipes, hence the chance of leakages and extra pressure drops. Another key benefit is the space savings that a full feature machine brings.

4. Air receiver

A correctly sized air receiver brings both energy efficiency and system reliability. It allows a narrow pressure band and limits the un-& offload cycles to reduce stress on element bearings and other internal components.

5. Air treatment portfolio

Atlas Copco has a wide air treatment portfolio that matches your needs. Our portfolio ranges from removing water, oil and dust from your compressed air to generating Oxygen and Nitrogen on site.



smart AIR solutions

Smart AIR Solutions, are a complete air or gas solution designed to provide our customers with the lowest life cycle costs for their equipment. smart AIR solutions combine compressors, blowers and boosters with quality air solutions fully optimized to operate together in the most efficient and reliable way.

Optimize your system

Additional features and options.

Scope of supply

Air circuit	Switching valves and check valves
	Galvanised in- and outlet piping
	In- and outlet air flanges
	Insulated heater pipe and connection pipe to vessels
	Sonic nozzle
Connections	DIN-flanges
	ANSI-flanges
Electrical components	Pre-mounted electrical control panel
	Elektronikon control and monitoring system with SMARTLINK and SmartCycle* technology
	IP54 protected
	Voltage free contacts for remote alarm and warning signals
	Pressure dewpoint sensor and control (optional for CD+ with basic control and BD+)
Framework	Base frame with forklift slots
	Lifting lugs
Mechanical approval	CE approval
	ASME approval

Options

	CD+	BD+	XD+
Option	360+ - 1600+	360+ - 3500+	550+ - 3600+
Maximum working pressure 14.5 bar(e)/210 psig	•	•	-
PDP sensor and control	• = Basic control; v = Elektronikon control	•	v
2nd PDP read out	-	•	•
-70°C/-94°F pressure dewpoint	•	•	-
Pre- and after-filter package for GA oil-injected compressors	•	-	-
Pre- and after-filter package for Z oil-free compressors	•	-	-
After-filter package	-	-	•
Pressure relief valves	•	v	v
High inlet temperature variant	•	•	-
High ambient temperature variant	-	•	•
Dryer tower insulation	-	•	•

v = Standard
• = Optional
- = Not available

Options

	CD+	BD+	XD+
Option	360+ - 1600+	360+ - 3500+	550+ - 3600+
Optimized purge nozzle, for the actual working pressure	•	•	-
Blower inlet filter	-	•	-
External pilot air connection for low pressure inlet	-	•	-
Single inlet	-	-	•

v = Standard
• = Optional
- = Not available

Technical specifications

Technical data of the dryer units.

Heatless desiccant dryers CD+

Type	Inlet flow FAD 7bar(e)+ 100psig			Pressure drop		Inlet/outlet connections		Filter sizes (recommended)			
								Pre-filters			After-filter
	l/s	m^3/hr	cfm	bar	psi	DIN	ANSI	1 µm (0.1 ppm)	0.01 µm (0.01ppm)	0.01 µm (0.01ppm)	1 µm
CD 360+	360	1296	762	0.15	2.18	DN80	3 inch	DD425+	PD425+	UD425+	DDp425+
CD 480+	480	1727	1018	0.15	2.18	DN80	3 inch	DD550+	PD550+	UD550+	DDp550+
CD 630+	630	2268	1336	0.15	2.18	DN80	3 inch	DD850+	PD850+	UD850+	DDp850+
CD970+	970	3492	2056	0.15	2.18	DN100	4 inch	DD1100+	PD1100+	UD1100+	DDp1100+
CD1260+	1260	4536	2671	0.15	2.18	DN100	4 inch	DD1400+	PD1400+	UD1400+	DDp1400+
CD1600+	1600	5760	3392	0.18	2.61	DN150	6 inch	DD1800+	PD1800+	UD1800+	DDp1800+

Dimensions

Type	Dimensions						Weight	
	mm			in			kg	lbs
	L	W	H	L	W	H		
CD 360+	1776	1088	2537	69.9	42.8	99.9	950	2095
CD 480+	1776	1088	2537	69.9	42.8	99.9	1030	2271
CD 630+	1884	1091	2592	74.2	43.0	102.0	1310	2889
CD 970+	2359	1259	2655	92.9	49.6	104.5	2120	4675
CD 1260+	2472	1259	2637	97.3	49.6	103.8	2600	5733
CD 1600+	2693	1428	2576	106.0	56.2	101.4	3700	8159

Blower heated desiccant dryers BD+

Dryer type	Inlet flow FAD 7bar(e)/100psig			Avg. power	Pressure drop (excl. filters)		In-/outlet connections		Recommended pre-filter		After-filter
	l/s	m^3/hr	cfm	kW	bar	psi	DIN	ANSI	Oil-injected air	Oil-free air	
BD 360+	360	1296	763	10.9	0.18	2.6	DN80	3 inch	UD 430+/380+ InPASS	PD 430+/380+ InPASS	DDp 430+/380+ InPASS
BD 480+	480	1728	1017	13.3	0.18	2.6	DN80	3 inch	UD 525+/510+ InPASS	PD 525+/510+ InPASS	DDp 525+/510+ InPASS
BD 630+	630	2268	1335	17.8	0.18	2.6	DN80	3 inch	UD 630+	PD 630+	DDp 630+
BD 970+	970	3492	2055	27.0	0.18	2.6	DN100	4 inch	UD 1100+	PD 1100+	DDp 1100+
BD 1260+	1260	4536	2670	37.5	0.18	2.6	DN100	4 inch	UD 1260+	PD 1260+	DDp 1260+
BD 1600+	1600	5760	3390	TBC							

Blower heated desiccant dryers BD+

Dryer type	Inlet flow FAD 7bar(e)/100psig			Avg. power	Pressure drop (excl. filters)		In-/outlet connections		Recommended pre-filter		After-filter						
	l/s	m^3/hr	cfm	kW	bar	psi	DIN	ANSI	Oil-injected air	Oil-free air							
BD 2100+	2100	7560	4450	TBC							0.18	2.6	DN100	4 inch	UD 1260+	PD 1260+	DDp 1260+
BD 2500+	2500	9000	5297														
BD 3500+	3500	1260	7416														

Dimensions

Type	Dimensions						Weight	
	mm			in			kg	lbs
	L	W	H	L	W	H		
BD 360+	1776	960	2585	69.9	37.8	101.8	1734	3822
BD 480+	1776	960	2571.0	69.9	37.8	101.2	1810	3991
BD 630+	1884	948	2708.0	74.2	37.3	106.6	2205	4860
BD 970+	2359	1000	2717	92.9	37.3	107.0	3164	6976
BD 1260+	2382	1715.6	2701	93.8	67.5	106.3	3738	8242
BD 1600+	TBC							
BD 2100+								
BD 2500+								
BD 3500+								

Heat of compression desiccant dryers XD+

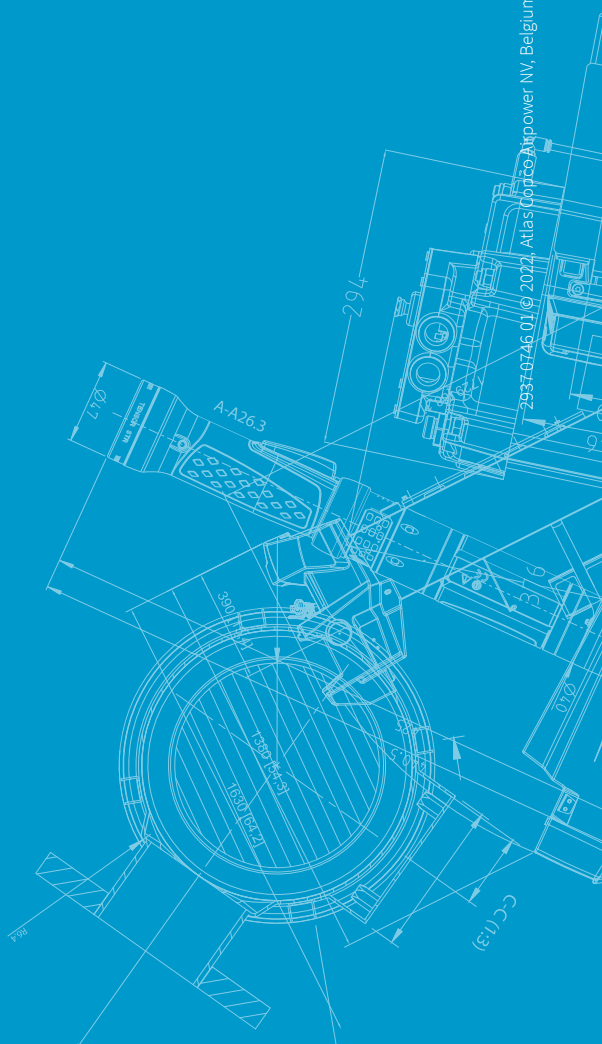
Dryer type	Inlet flow FAD			Avg. power		Pressure drop (excl. filters)		In-/outlet connections		Filter sized (recommended)
	l/s	m^3/hr	cfm	kW	hp	bar	psi	DIN	ANSI	After-filter
										1 µm 0.1 ppm
XD 550+	550	1980	1166	3.4	4.59	0.39	5.655	80	3 inch	DDp550+
XD 850+	850	3060	1802	5.1	6.9	0.39	5.655	100	4 inch	Ddp850+
XD 1100+	1100	3960	2332	6.5	8.8	0.39	5.655	100	4 inch	DDp1100+
XD 1400+	1400	5040	2968	8.4	11.3	0.35	5.075	150	6 inch	DDp1400+
XD 1800+	1800	6480	3819	10.8	14.6	0.35	5.075	150	6 inch	DDp1800+
XD 2200+	2200	7920	4664	13.2	17.8	0.35	5.075	150	6 inch	DDp2200+
XD 3000+	3000	10800	6360	18	24.3	0.35	5.075	200	8 inch	DDp3000+
XD 3600+	3600	12960	7632	21.6	29.2	0.35	5.075	200	8 inch	DDp4000+

Dimensions

Type	Dimensions						Weight	
	mm			in			kg	lbs
	L	W	H	L	W	H		
XD 550+	1884	1589	2612	74.2	62.6	103	2196	4876
XD 850+	2359	1936	2752	92.9	76.2	108	3320	7371
XD 1100+	2473	1936	2734	97.4	76.2	108	3835	8515
XD 1400+	4120	2290	2556	162	90.2	101	5921	13146
XD 1800+	4120	2292	2560	162	90.2	101	6550	14543
XD 2200+	4120	2292	2680	162	90.2	105.51	7365	16353
XD 3000+	5617	2724	2866	221	107	112.83	9531	21162
XD 3600+	5617	2724	2866	221	107	112.83	10390	23069

Notes

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