

Cubus

Version 3.5 / March 2018

Configuration

Standard Configuration Cubus

Machine type	Standalone
Stacks	Flexible stacks for reel storing, adjustable by customer
Reel detection	Automatic diameter, width and weight detection, automatic barcode detection
Control	PC, keyboard and LCD
Windows version	Windows 10
Database	Data access via Access table; Connection to existing SQL systems
Software	<ul style="list-style-type: none"> • Cubus control software • Job planning software • MSL tracking (<i>Moisture sensitivity level</i>) • Bar code label designer and print software • Component stock management software • Software interface to eMIS planning and optimization system • Adjustable operator language (English, German. Other languages on request) • User group rights
Other included items	Power connection cable

Specifications

General	Regular	Large
Power requirements	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
Power consumption	400W	400W
Required circuit breaker	10A	10A
Environment	Temperature Relative humidity Noise level	15 - 30°C 10 - 60% 50dB
Storage	4-7" reels: 8-72 mm tapes 11-15" reels: 8-72 mm tapes Max. 3.5 kg	4-7" reels: 8-72 mm tapes 11-15" reels: 8-72 mm tapes Max. 3.5 kg
Maximum capacity	4-7" reels: 612 or any mix of 4-15" reels up to 4-7" reels: 320 and 11-15" reels: 121 (8mm tape only)	4-7" reels: 932 or any mix of 4-15" reels up to 4-7" reels: 480 and 11-15" reels: 188 (8mm tape only)
Access time	9-11 seconds per reel	9-11 seconds per reel
Options		
Tray Box ^(*)	Option for storing trays: Capacity in Cubus Regular: 73 x Tray Boxes Each containing up to 10 x JEDEC trays (8 mm)	Option for storing trays: Capacity in Cubus Large: 110 x Tray Boxes Each containing up to 10 x JEDEC trays (8 mm)
Spindle 7" ^(*)	Option for a compact storing of 7" reels Capacity in Cubus Regular: 146 x spindles Each containing up to 7 x reels (each size 11mm)	Option for a compact storing of 7" reels Capacity in Cubus Large: 220 x spindles Each containing up to 7 x reels (each size 11mm)
Spindle 15" ^(*)	Option for a compact storing of 15" reels Capacity in Cubus Regular: 35 x spindles Each containing up to 7 x reels (each size 11mm)	Option for a compact storing of 15" reels Capacity in Cubus Large: 54 x spindles Each containing up to 7 x reels (each size 11mm)
Support plate 15"	Handling of reels which do not comply specifications, like extremely bended reels or reels with weak material. Each support plate can handle only one reel, no stacking possible.	

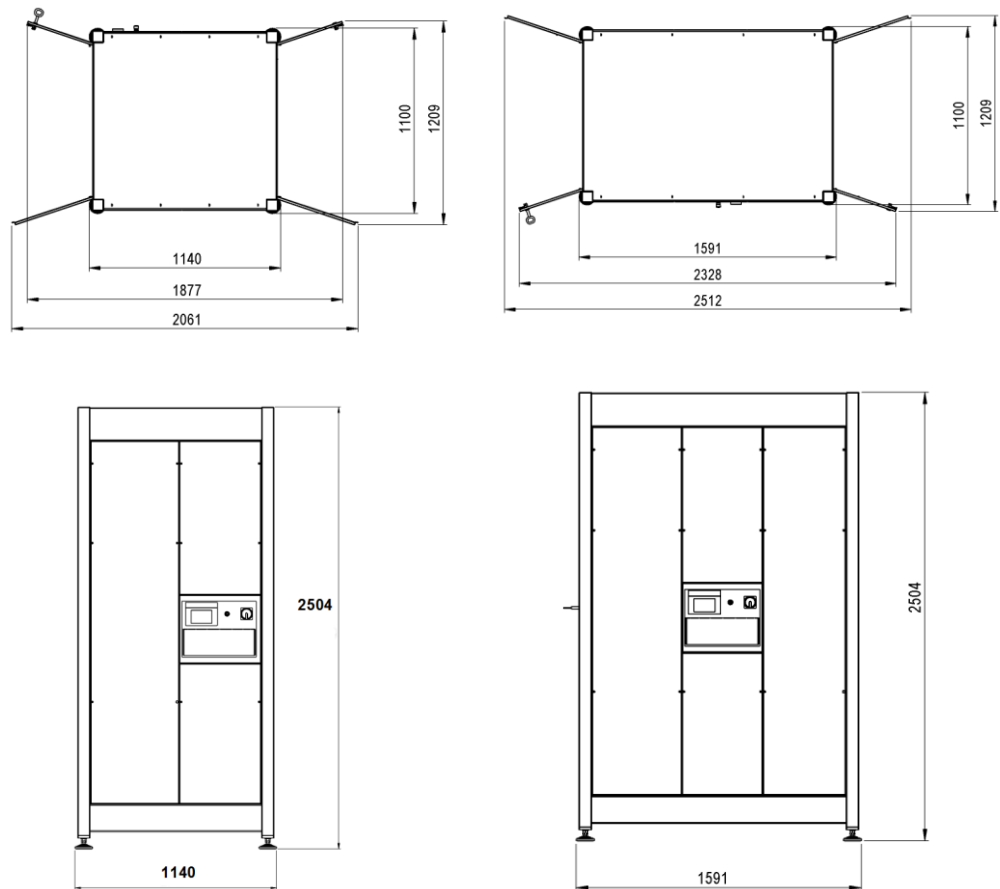
^(*) From eStorage software version 26.0 and higher it is available with Remote Service external stock management. It is not compatible with Remote Service internal stock management.



Machine Dimensions and Packaging

General	Regular	Large
Machine Dimensions	1140x110x2504 mm (w x d x h)	1591x1100x2504 mm (w x d x h)
Machine Weight	500 kg (without reels)	700 kg (without reels)
Packaging Dimension		
Wooden crate / cardboard	1350 x 1500 x 2700 mm (w x d x h)	1800 x 1500 x 2700 mm (w x d x h)
Entire wooden crate	1350 x 1550 x 2800 mm (w x d x h)	1800 x 1550 x 2800 mm (w x d x h)
Packaging Weight		
Wooden crate / cardboard	130 kg	180 kg
Entire wooden crate	220 kg	280 kg
Total Weight		
Wooden crate / cardboard	630 kg	880 kg
Entire wooden crate	720 kg	980 kg

Dimension Drawings



Cubus Air Dryer / Required Air Quality (CU-DRY)*

General

Compressed air	6 bar-10 bar
Min. Compressed air flow	18m ³ /h@6bar
Typical Compressed air consumption	With air flow limiter: 12m ³ /h@6bar Without air flow limiter: 18m ³ /h@6bar Nominal approx. 6m ³ /h**
Air connection diameter	8mm

Required Air Quality

Class 1 Particulate	In each cubic meter of compressed air, the particulate count should not exceed 20,000 particles in the 0.1 - 0.5 micron size range, 400 particles in the 0.5 - 1 micron size range and 10 particles in the 1 - 5 micron size range.
Class 2 Water	A pressure dew point (PDP) of -40°C or better is required. No liquid water is allowed.
Class 1 Oil	In each cubic meter of compressed air, not more than 0.01mg of oil is allowed. This is a total level for liquid oil, oil aerosol and oil vapor.

Option CU-TH

Measurement accuracy of humidity sensor	0...5% RH: +/- 0.5% RH
	5...10% RH: +/- 1% RH
	10...20% RH: +/- 1.5% RH
	Drift per year: 0.2% RH (with above mentioned air quality)

* Cu-Dry is designed to maintain humidity inside the Cubus and must not be used as a Dry Cabinet

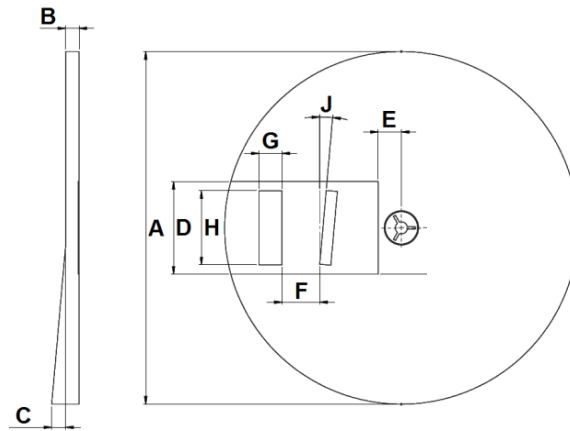
** Depending on the work load and environment

eStorage PC Requirement

Hardware Item	Minimum Requirement
Processor	Dual Core i3 Processor, 64 bit compatible INTEL or AMD
Memory	2 Gigabyte Strongly recommended: 4 Gigabyte
Graphic Card	DirectX 9.0 support No high end graphic speed needed Recommendation: do not use Nvidia, GUI artefacts might occur Tip: graphic-card can be substituted with in-processor integrated GPU
Network Card	Two network cards required (GB-Link at least): 1x Connection to Cubus 1x Network connection
Hard Disk	Min. 60 GB, recommended 200 GB hard disk, SSD preferred in all cases
Extensions	One USB Slot for Software Protection Dongle

Software Item:	Minimum Requirement:
Operating System	Microsoft Windows 7, 64 Bit version Strongly recommended: Microsoft Windows 10, 64 Bit version
Database	A real server installation is recommended

Reel Specifications



- | | | | |
|----|-----------------------------|-----|---------------------------------|
| A | Nominal diameter [mm] | F | Distance between two codes [mm] |
| B | Reel width [mm] | G | Barcode height [mm] |
| Cd | Reel bending downwards [mm] | H | Barcode label width [mm] |
| D | Barcode label area [mm] | J | Barcode label twist [°] |
| E | Barcode label area [mm] | Cu* | Reel bending upwards [mm] |

Reel Dimensions / Shelf Pitch for 180 mm (7 inches) Reels

Tape width [mm]	A min [mm]	A max [mm]	B min [mm]	B max [mm]	Recomm. Shelf Pitch <1000 g	Recomm. Shelf Pitch >1000 g	Recomm. Shelf Pitch >2000 g
8	100	178	10.5	14.4	25	30	35
12				18.4	30	35	40
16				22.4	35	40	45
24				30.4	45	45	55
32				38.4	50	50	65
44				50.4	65	65	75
56				62.4	75	75	85
Cd max [mm] <1000 g				Cd max [mm] >1000 g		Cd max [mm] >2000 g	
2		3		4		3500	
Cu max [mm] <1000 g		Cu max [mm] >1000 g		Cu max [mm] >2000 g		Max Reel weight [g]	
1		1		1		3500	

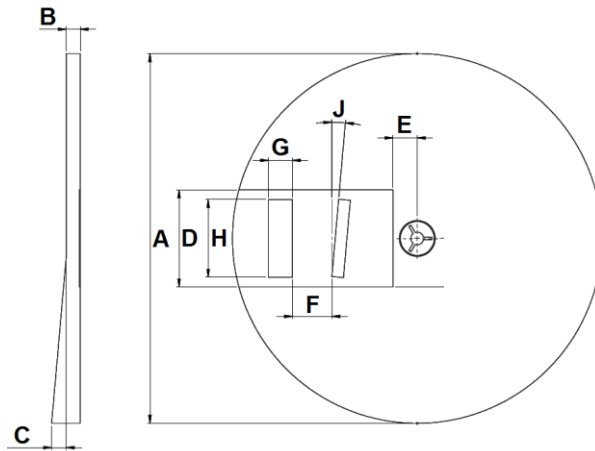
Cu* The bending upwards is usually included in the height measurement of the reel. But the bending might be different between the front or back side of the reel, in this case Cu must not be higher than the mentioned value.

Reel Dimensions / Shelf Pitch for 330/380 mm (13/15 inches) Reels

Tape width [mm]	A min [mm]	A max [mm]	B min [mm]	B max [mm]	Recomm. Shelf Pitch <1000 g	Recomm. Shelf Pitch >1000 g	Recomm. Shelf Pitch >2000 g
8	-	381	10.5	14.4	30	35	35
12				18.4	35	40	40
16				29	45	50	50
24				37	55	55	55
32				45	65	65	65
44				57	75	75	75
56				69	85	90	90
72				89	105	110	110
Cd max [mm] <1000 g				Cd max [mm] >1000 g		Cd max [mm] >2000 g	
6		7		8		3500	
Cu max [mm] <1000 g		Cu max [mm] >1000 g		Cu max [mm] >2000 g		Max Reel weight [g]	
3		3		3		3500	

Cu* The bending upwards is usually included in the height measurement of the reel. But the bending might be different between the front or back side of the reel, in this case Cu must not be higher than the mentioned value.

Barcode Label Dimensions



- A Nominal diameter [mm]
- B Reel width [mm]
- C Reel bending [mm]
- D Barcode label area [mm]
- E Barcode label area [mm]
- F Distance between two codes [mm]
- G Barcode height [mm]
- H Barcode label width [mm]
- J Barcode label twist [°]

Barcode Label Dimensions

Type	D max	E min	F min	G min	G max	H max	H min	J max	Max. number of labels	Min. size of square / line
1D	110	30	8	8	100	100	8	35° depends on G	4	0.3 mm
2D	110	30	8	6	22	22	6	Must be placed 0° / 90° 180° / 270°	4	0.5 mm

Note: The system can recognize a maximum of 4 barcode labels.

Barcode Label Recommendation

White and matt labels are recommended.

Other colors or gloss surfaces can impact negatively to the function of the barcode reader or can cause malfunction.

For a proper recognition of the barcode, stick it only on a plane surface. Embossed surfaces, recesses, bumps and indentations are not suitable.

Within the readable field (D) barcodes side by side (same height) can cause malfunction.

Please ask for the System Description or Product Note for further details of available options

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