WORLD'S MOST SPACE EFFICIENT DATACENTRES
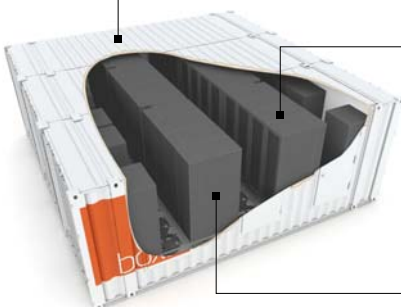
boxiT

50KW TO **400KW** PER UNIT

DESIGNED FOR **EASY TRANSPORTATION**

BUILT-IN GENSET(OPTIONAL), UPS AND COOLING

INTERNAL SPACE **EXPANDABLE** BY ADDITIONAL MODULES

RACKS THAT DON'T NEED TO BE MOVED

CROSSWISE™ PATENT PENDING LAYOUT

boxiT

The most cost effective solution for clouds, virtualization and high performance computing

Industry standard equipment ensures no vendor lock-in

Built-in cooling

Evaporative cooling option

Built-in genset

Very tough weathering steel shell

Transportable by road, rail and sea

Fire protected both inside and out

Watertight, certified marine spec

No water running inside the datacentre

Stackable: side by side (while running) and up to 5 floors

Fixed non moving racks

$\frac{\$}{MW}$ The best price per megawatt

$\frac{\$}{RACK}$ The best price per rack

$\frac{kW}{m^2}$ The best power density

Building on our 15+ years experience maintaining some of Europe's largest web services, we have designed BoxIT to be the perfect all-in-one datacentre for tough environments requiring easy transport and also for large facilities requiring easy expansion and extreme high density (e.g. virtualization).

Unlike other private infrastructure owners, we use as much industry standard equipment as possible and strive for simpler and cleaner designs. Although trickier to engineer, this results in easier maintenance, lower acquisition costs, lower TCO, and no vendor lock-in. This way we achieve better reliability and faster access to spare parts anywhere in the world.

CROSS**WISE** ™ PATENT PENDING LAYOUT

- simpler all-in-one datacentres
- internal space expansion through stacking
- 8 full-access racks with fixed positions
- built-in UPS & Cooling up to 400kW IT load
- built-in Genset up to 200kW IT load
- 2 Gensets up to 100kW IT load

DESIGNED FOR THE CLOUD

- blade chassis length and power densities are fully supported
- a single BoxIT module can host blades with >30.000 cores
- a storage BoxIT module can host over 20.000 3.5" hard drives

INFINITELY ADAPTABLE AND FUTURE PROOF

- can expand to 400kW even if initially built smaller
- 6-50kW/rack allows for any future equipment
- can be extended while running
- uses industry standard equipment
- Full 2N power & cooling redundancy up to 300kW

COMPACT AND TRANSPORTABLE

- small footprint of only 20 m^2
- transportable by road, rail and sea
- all-in and not dependent on external equipment
- immediately deployable on arrival
- easier or no construction permits
- can be placed on top of existing datacentres

BUILT TO LAST

- very tough Corten/Weathering steel shell
- A90 external fire guard
- multi-sensor (incl. VESDA) fire detection
- dual fire extinguishers
- water and air tight to ship standards
- vibration and seismic stable equipment mounts

ULTRA HIGH EFFICIENCY

- some of the lowest cost per megawatt/rack
- evaporative cooling, filtered at molecular level
- PUE up to 1.06 (even in hot climates)
- extremely efficient closed air compressor cooling

CROSSWISE ™

so much more inside...

FIRE SUPRESSION
up to two fully inde...
systems can be ins...
can be installed in...
VESDA detection is...

19" INDUSTRY STANDARD RACKS
unlike other containerized datacentres, we use unmodified industry standard racks not mounted on rails and accessible from both sides without any need to move them. Eight 600mm or six 800mm wide racks fit in

A90 FIREWALL
The hosted equipment is protected from outside fires by microporous insulation. Cooling, gensets and fuel are outside the protected zone. Special fire retardant paint protects the structure
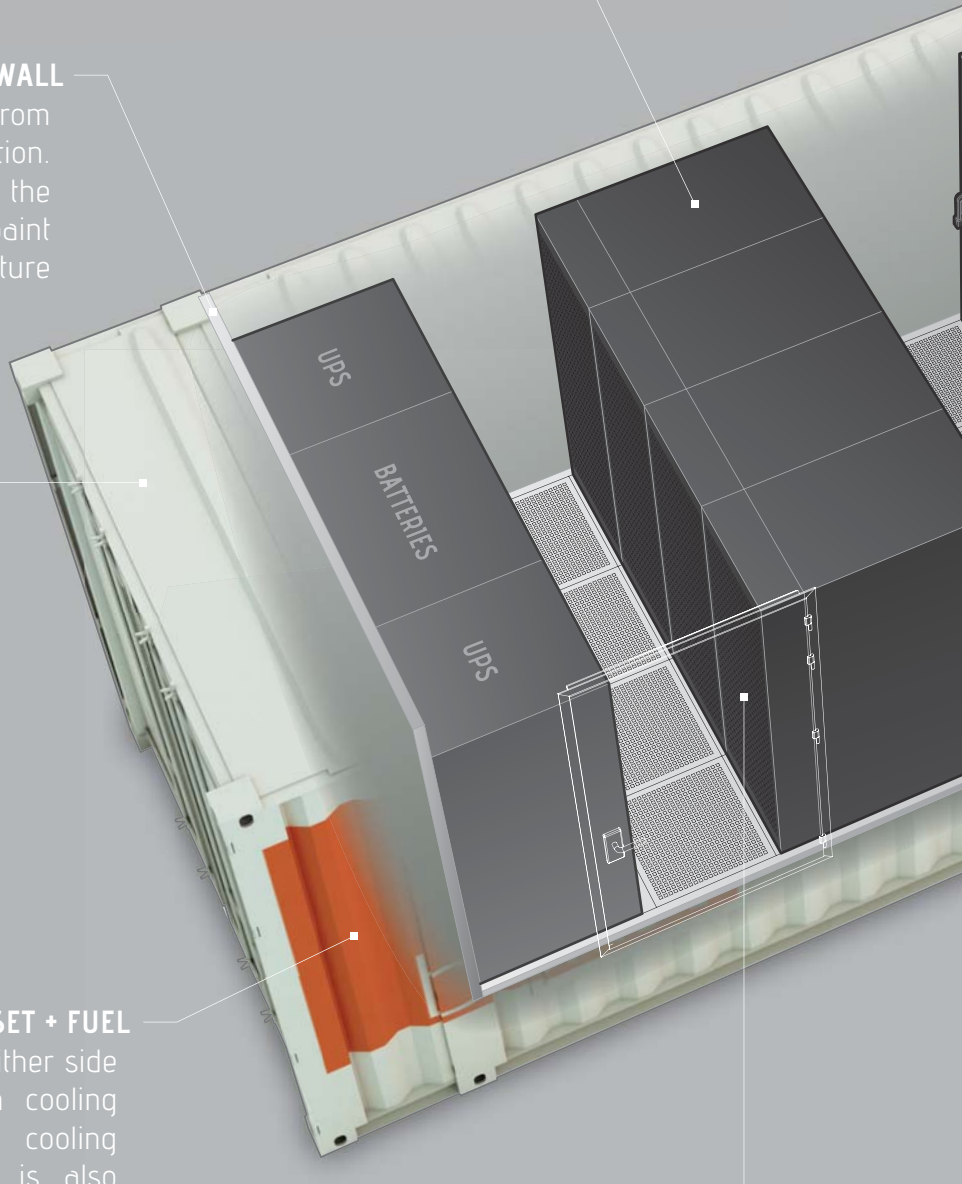
COOLING SYSTEM
two types of cooling systems are available: extremely efficient traditional compressor cooling, and bleeding edge direct evaporative cooling that filters aerosols, SO_x, NO_x and ammonia from incoming air

OPTIONAL 220 KW GENSET + FUEL
the two machine rooms on either side of the module can host a cooling system or a genset. A cooling system+genset combination is also available for loads of up-to 100kW

PASSIVE COOLING DOORS
in compressor cooling set...
at the heat source by pass...
This provides extreme coo...
guarantees no water leak...
data hall

UPS

BATTERIES

UPS

ULTRA HIGH DENSITY
FULLY INTEGRATED
MODULAR DATA CENTRE

boxiT

pendent fire suppression
talled. Multi sensor detection
either AND or OR configuration.
available as an option
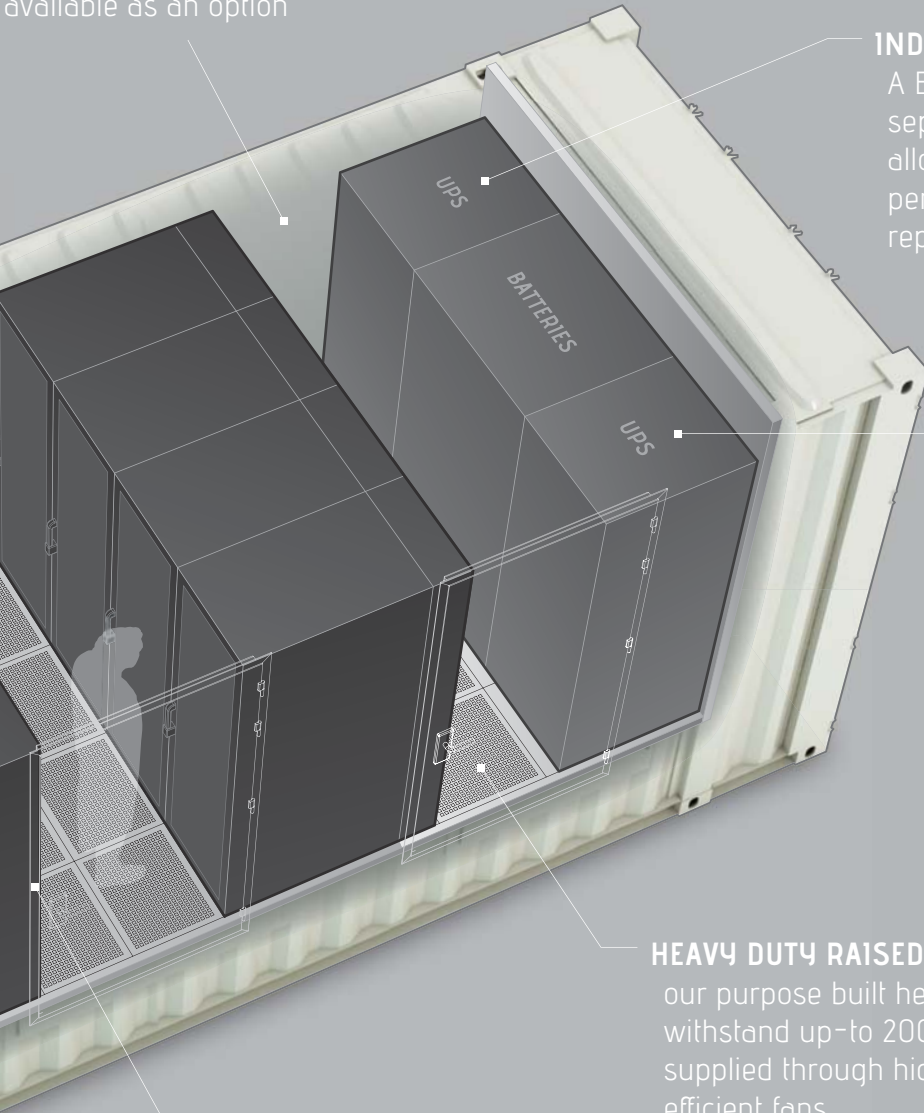
INDUSTRY STANDARD 200 KW UPS
A BoxIT module can be configured with two
separate UPS systems on each side. This
allows for smaller fault zones of only 4 racks
per UPS. The second UPS system can be
replaced by telecom racks

UPS

BATTERIES

UPS

SECOND UPS OR FLYWHEEL
each of the mirrored UPS systems can
be configured as UPS only, 2N UPS, or
UPS with one or two flywheels

HEAVY DUTY RAISED FLOOR
our purpose built heavy duty raised floor is able to
withstand up-to 2000 kg per rack. The cold air is
supplied through high flow crates assisted by extremely
efficient fans

A90 MARINE DOORS
the data hall doors are marine spec certified to
protect people in sinking ships from blasts, water
and fire. They are extremely tough and can be
remotely locked and unlocked

ps, air is cooled directly
ive DX cooling doors.
ng efficiency and
ge is possible in the

		Datacentre Module	Telecom Shelters		
8 IT / 23 Telco	50–400kW				
15 Telco Racks	up to 30 kW				
13 Telco Racks	up to 30 kW				
7 Telco + 4 IT	up to 30 kW				
9 Telco + 2 IT	up to 30 kW				
7 Telco + 3 IT	up to 30 kW				
7 Telco Racks	up to 18 kW				
3 Telco + 3 IT	up to 18 kW				

G – Genset
❄ – Cooling
⚡ – PDU

■ – Rack
□ – UPS

CROSSWISE™ layout – patent pending

Virtualization, Clouds and HPC

BoxIT is the only modular datacentre designed with high performance computing in mind. Whether for hosting, private/public clouds or compute clusters, BoxIT is both better and cheaper per CPU and per kW than any other solution available. We can deliver a BoxIT module equipped with blades that deliver >30.000 cores, >100TB of RAM and >3PB of storage all at once. Such a platform is easy to relocate by standard means of intermodal freight transport. Direct evaporative cooling is available for such applications as it is simpler, cheaper, more reliable and much more effective. Only power and, in case of evaporative cooling, untreated tap water is required on site.

Telecom and small sites

All BoxIT datacentres and telecom shelters use our patent pending **CROSSWISE**™ layout and are thus much smaller and denser. This allows for built-in gensets and very small area requirements. Relocation and installation is much easier. One module can host from 4 to 24 telecom and full access racks. For unattended locations, shelters can be equipped with perimeter security, video control, two-way audio and remote door locks. An evaporative cooling option is available for longer backup cooling or high ambient temperatures.

Building, mining and emergency

The BoxIT high strength corrosion resistant corten/weathering steel shell, external fire protection, air and water tightness to ship standards are especially well suited for dangerous environments. In case of disaster, the whole datacentre and all the built-in auxiliary equipment can be relocated with standard cranes within minutes. Transport to another site is straightforward and cheap. Space requirements are minimal. The relocated datacentre can be operational within minutes as only power is required and even that can be replaced by the built-in genset.

Military

A BoxIT datacentre of about 20 m² hosts any combination of 8 IT and 24 telecom racks. It can run on a truck and, being water tight, even on a ship. Standard container mounting points allow for helicopter transport. Equipment inside is not mounted on rails and is thus less sensitive to vibration and always ready for emergency/transport. Everything but the aircon condensers is inside of a protective shell, even the genset with >8 hours of fuel. 3N power and cooling redundancy with a single genset or 2N redundancy with dual gensets is available for IT Loads up-to 100kW. IT equipment is in the middle of the container while both power and cooling are mirrored on each side to minimise damage on impact.

Colocations and IT Departments, Datacenters

When space is scarce or higher density is needed, BoxIT can be delivered within a few months. Unused spaces such as car parks, rooftops, etc. can be converted to a modern high density facility which looks and feels like any stationary datacentre from the inside. Special entry options like staging areas and staircases are available, which can connect the BoxIT site to an existing facility. It is less costly to build a BoxIT site as there is no need to overbuild for the future (remember, you can expand even while running). Any unforeseen future needs can be covered by stacking additional BoxIT modules next to each other or up to 5 stories high. Last but not least, a BoxIT datacentre can be taxed as IT equipment. Need a tier certification? We can assist.

Disaster recovery/remote locations

Costs to cover new or changing regulations such as the minimum required distance to the disaster recovery site can be high. Seasonal usage patterns also require relocation of computing resources. BoxIT modular datacentres are however easy to relocate. The footprint of less then 20 m² means it can fit on a single parking space. For remote locations, the very strong steel shell, external fire protection and water tightness are very important. Vandalism is not a concern either as all the auxiliary equipment is inside. Noise is also minimal. For unattended locations, there is a perimeter security option with video control, two-way audio and remote door locks. If personnel are present, we can offer an attached staging area. Fewer permits are required for a small BoxIT datacentre as it is in fact a temporary building.

TECHNICAL DATA

General	
Footprint	20 m² per module, swap body and 20 ft ISO compatible
Hull	corten steel, A90 fire protection
PUE	compressor cooling: from 1,19
	evaporative cooling: from 1,06
Expandability	by additional BoxIT containers (patent pending)
	side-by-side: unlimited (while running)
	on top: up to 5
Space efficiency	2,5 m² per rack incl. gray areas
Power density	20 kW/m² incl. gray areas
Compute density	> 1.500 opteron cores/m²
	> 500 atom cores/m²

Racks	
Quantity	up to 8 IT / up to 23 telecom
Type	any standard 600/800 mm wide rack
Max weight	up to 2000 kg per rack
Layout	**CROSSWISE**™ (patent pending)

Cooling	
Compressor	up to 6 piston-type compressors
Direct evaporative	self-cleaning filters, max 35 000 m3/h, <80% RH
	aerosols, SOx, NOx and ammonia are filtered

Redundancy	2N	N+1
Cooling	20 – 300 kW	20 – 400 kW
Cooling & power per rack	6 – 50 kW	6 – 50 kW
UPS power	20 – 400 kW	20 – 400 kW
Backup time	2 min @ 400 kW	2 min @ 400 kW
Feeds	A + B	

Power options	
Built-in Genset (standby)	diesel, power up to 220 kW
Built-in Microturbine (primary)	TBA