

Our specialisation

We provide professional consultation in the fields of physical and technical security of data centres and archives, preparation of feasibility studies and subsequent project documentation.

We specialise in full project management for the provision and implementation of secure data centre constructions and Non-IT infrastructure. Full warranty and post-warranty service is provided, including SLA and 24/7 monitoring centre services.

The solutions proposed and delivered by us meet the maximum requirements for technical and physical security of ICT systems and sensitive data:

- 🔒 Requirements of ENISA/EU Agency for Cybersecurity
- 🔒 EU law 2016/679 – GDPR (The General Data Protection Regulation)
- 🔒 Directive of the European Parliament and of the Council 2016/1148 NIS 2 on measures to ensure a high common level of security of networks and information systems in the European Union.
- 🔒 European standard EN 50600 for planning, construction and operation of data centres
- 🔒 Reliability and security of Tier ready modular data centres (according to UPTIME)

Certification of the company

-  ISO 9001:2015 (Quality management systems)
-  AQAP 2110 (NATO Quality Standard – certification in process)
-  Project Management (Prince 2, Scrum master, GDPR Audit & DPO)
-  Information Security Management System (ISMS)
-  Business analysis (ArchiMate 3.0, BPMN, UML, UseCase)

Areas of application

Critical data centres and security archives of important digital media and paper documents

- 🏠 Security forces (police and military)
- 🏠 State administration (ministries, state agencies, municipalities)
- 🏠 Transport (airports, rail and highway authorities, shipping and ports)
- 🏠 Hospitals, universities, science and research facilities
- 🏠 Financial sector
- 🏠 Manufacturing
- 🏠 Energy, mining, oil and gas pipelines
- 🏠 Telecommunications
- 🏠 Critical document and electronic media archives (file service, magnetic and optical disc storage)
- 🏠 Archives of objects of historical or artistic value, valuables

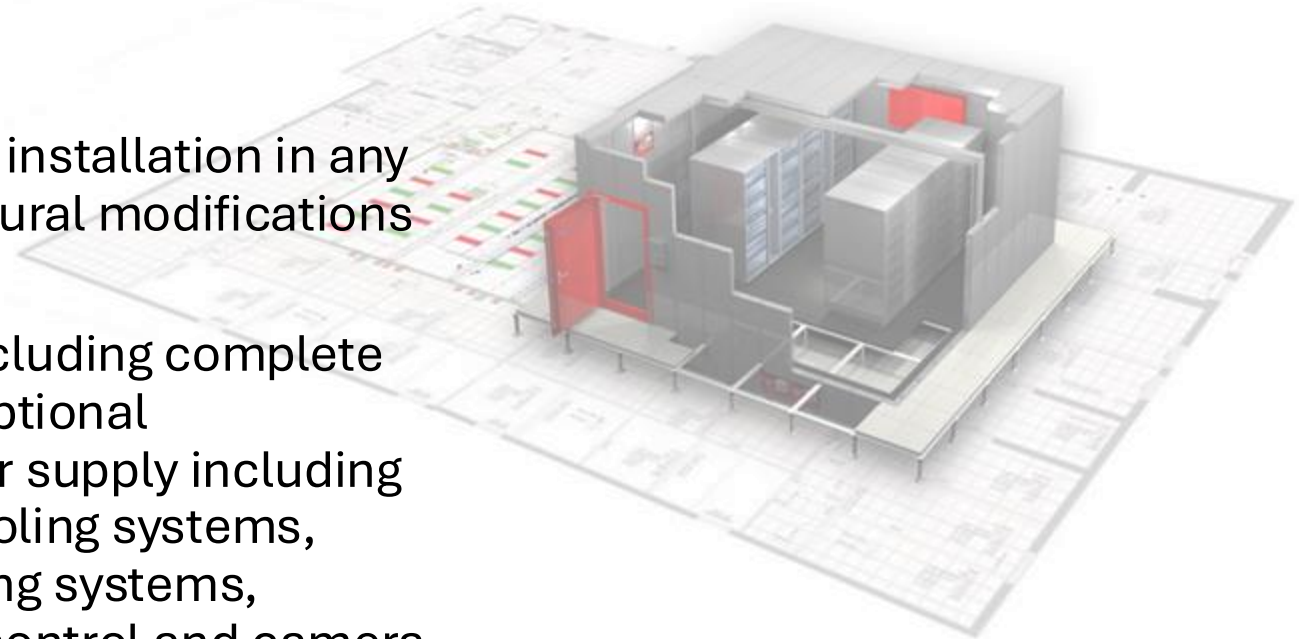
Our portfolio

-  DC-IT Security rooms
-  DC-IT Containers
-  DC-IT Safes
-  Data Safes



DC-IT Security room

-  Certified physical security of the ICT infrastructure of a data centre or storage of critical items
-  The independent modular design allows installation in any indoor space without the need for structural modifications
-  Possible delivery on tailormade basis including complete project documentation, installation of optional technologies (19" racks, complete power supply including UPS and motor generators, precision cooling systems, automatic detection and fire extinguishing systems, structured cabling, monitoring, access control and camera systems)



Installation at clients



Fire resistance test ac. to EN 1047-2



Room before test...



...during testing



... after the test!



System anti-penetration tests



Test specimen...



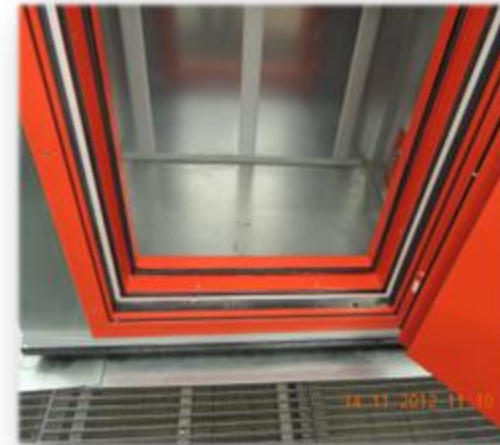
...burglars in action...



...dust deposits after the test ...



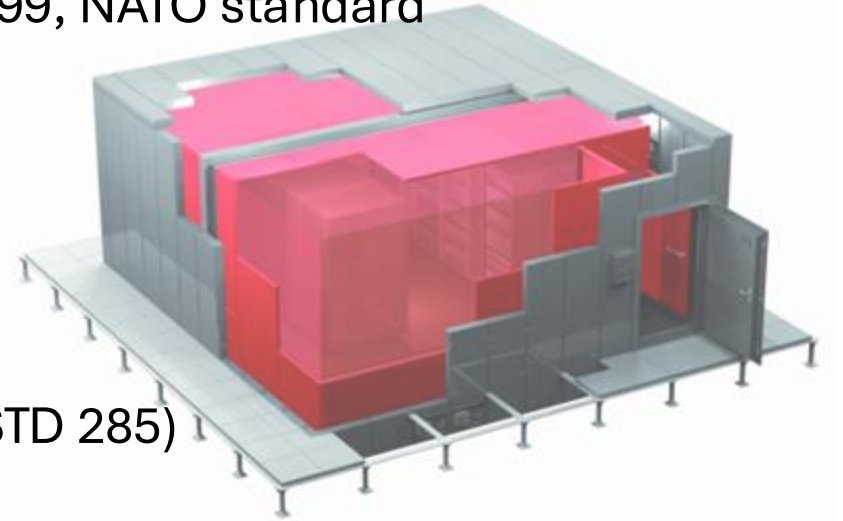
...Water jet test ...



...successfully passed!

DC-ITShielding

- Interception and radiation shielding from 60 up to 120 dB.
- Compliance with requirements of Tempest, NSA 65-2, IEEE 299, NATO standard
- Guaranteed shielding attenuation levels up to 40 GHz
- Modular construction with 2 mm thick steel plate modules
- Individual panel dimensions
- System tested to EN 50147-1, NSA 65-6, IEEE-STD 299 (MIL-STD 285)



RELIABLE PROTECTION AGAINST:



Natural influences



Espionage



Data theft



Technical
eavesdropping attacks



Electronic
attacks

DC-ITShielding - realisation



DC-ITContainer



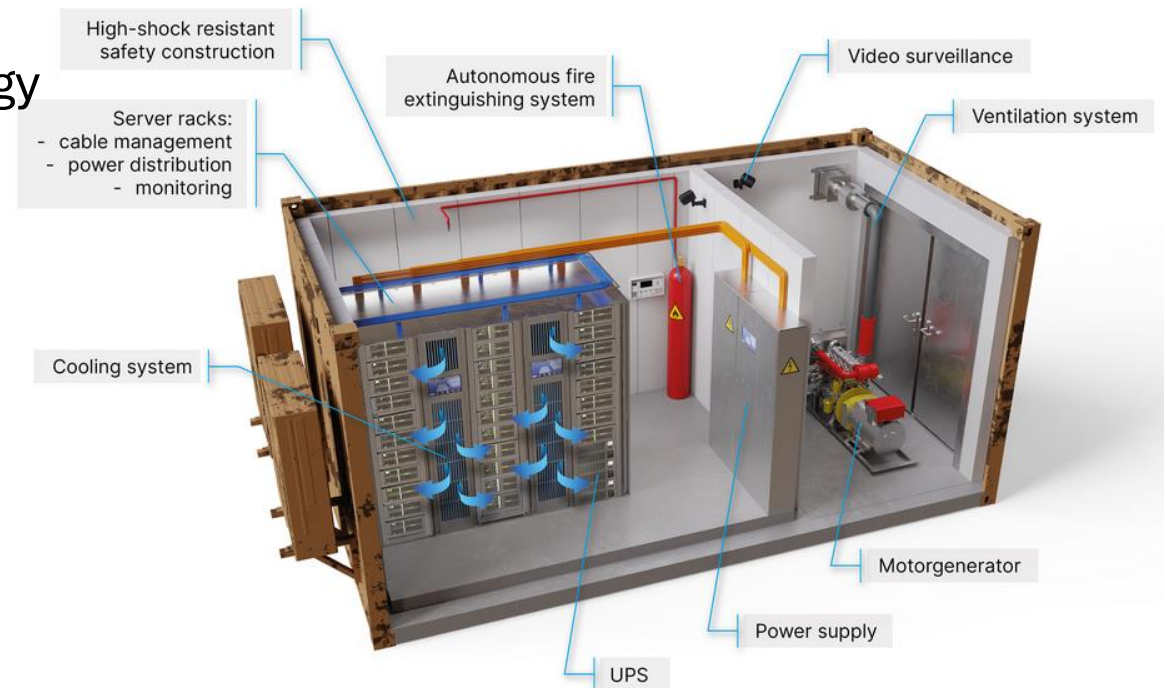
DC-ITContainer

- ❏ Plug & Play data centre in 20"/ 40" or customised container
- ❏ Robust, fully welded container construction with certified protection against physical hazards (fire, water, burglary, explosion, dust...)
- ❏ Completely pre-assembled at the factory and ready for operation on delivery
- ❏ Flexible and mobile DC solution suitable as a permanent or transitional data centre
- ❏ Can be placed and operated in any location, the independence of the solution enables immediate transfer if necessary



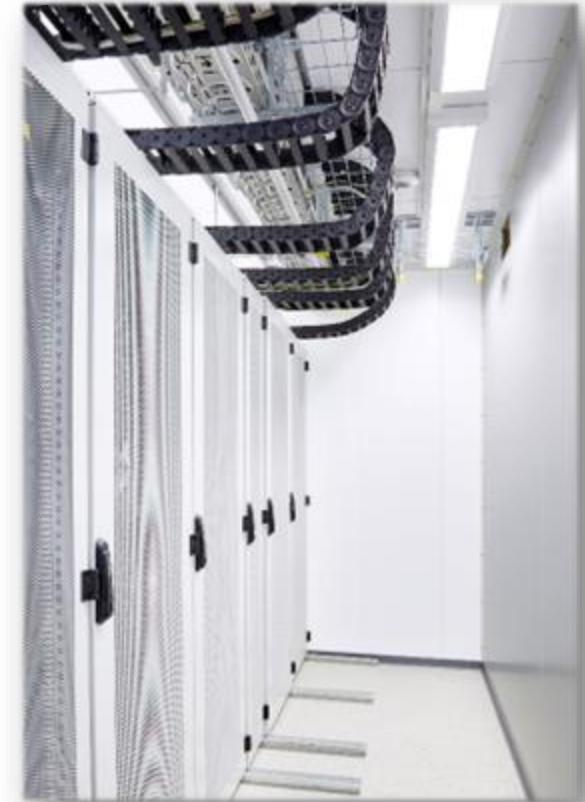
DC-ITContainer - Non-IT infrastructure

- ❏ Certified high-shock resistant safety construction
- ❏ 19" server racks
- ❏ Power supply and 19" UPS system
- ❏ Access control, monitoring, camera system
- ❏ Early fire detection and extinguishing system
- ❏ Redundant cooling with inverter DX technology
- ❏ Cable management
- ❏ Optional: motorgenerator



19" racks & cable management

- 19" racks (HxWxD): 2000 mm = 42 HU x 600 x 1000 mm
 - Other sizes on request
- Racks can be moved through high-quality telescopic rails enabling optimum access to the racks
- Cable routing into the racks with energy chains



Energy-efficient cooling

- ❖ Cooling by means of side/front cooler
- ❖ Energy-efficient premium power inverter technology
- ❖ Dimensions: HxWxD: 2000 x 300 x 1000 mm
- ❖ Power levels up to 25 kW
- ❖ Refrigerant R410 A



UPS System

- 19" UPS for installation in server racks
- 3phase UPS system with performance up to 96% in dual inverter operation
- SNMP network card with optional Server Shutdown function
- N+1 redundancy
- System performance (kVA), autonomy time according to installed power



DC-ITContainer

 20ft or 40ft **DC-IT** Security container

 Dimensions:

	20ft HC		40ft HC	
	Outside	Inside	Outside	Inside
Length	6.058 mm	5.330 mm	12.192 mm	11.460 mm
Width	2.438 mm	2.040 mm	2.438 mm	2.040 mm
Height	2.896 mm	2.440 mm	2.896 mm	2.440 mm



 20ft Container - up to 5 x 19“racks, 42 HU, 600x1000 mm WxD

 40ft Container - up to 10 x 19“racks, 42 HU, 600x1000 mm WxD

 Additional sizes and options upon request

Early fire detection and extinguishing



FRS-RACK®3 using fire extinguishing agent FK-5-1-12

GHZ CLEAN AGENT



FRS-RACK®3 SOLUTION



Benefits of using FRS-RACK®3

- ✓ **Promotes an environmentally responsible approach** by utilising a significantly reduced amount of extinguishing agent.
- ✓ **Installation, commissioning and maintenance costs reduced** creating a cost effective and budget friendly solution.
- ✓ Installed inside the rack, **ensuring constant availability**. The rack along with the FRS-RACK3 can then be relocated to any destination without requiring reinstallation.
- ✓ **Compact Design. FIRESI FRS-RACK®3 height is only 1U (44.45mm)** saving the 19" rack space for other technologies.

- ✓ The FRS-RACK®3 device **can be expanded with external safety elements** and has 4 potential-free outputs that are programmable.
- ✓ Highly sensitive smoke detection and fire extinguishing **without residues or harm to sensitive electrical equipment**.
- ✓ **Easy to specify, install and maintain**, out of the box in-cabinet fire protection solution.
- ✓ **Integration of FRS-RACK®3 to the network structure** provides the opportunity for remote monitoring and operation, ensuring a distinct advantage.



Certifications



Český metrologický institut
Okrružní 31, 638 00 Brno
tel. +420 545 555 111, fax +420 545 222 728, www.cmi.cz
V 3136

TESTCOM – Certifikační orgán pro certifikaci výrobků č. 3136,
akreditovaný CIA dle ČSN EN ISO/IEC 17065:2013
Hvozdčanská 3, 148 00 Praha 4; tel.: +420 271 192 138, e-mail: testcom@cmi.cz

CERTIFIKÁT VÝROBKU
č.: 0120-CT-T0019-21

Žadatel: FIRESI s.r.o.
Lidická kolonie 1108/47,
586 07 Jihlava, Česká republika

Výrobce: FIRESI s.r.o.
Lidická kolonie 1108/47,
586 07 Jihlava, Česká republika

Výrobek: Hasicí přístroj Typ: FRS Rack 3

Základní technické parametry:

Rozsah napíjecího napětí	100-240 V AC
Kmitočet	50 - 60 Hz
Proud (napíjecí napětí 230V AC)	0,5 A
Svodový proud (napíjecí napětí 230 V AC)	<1 mA
Výstupní napětí	24 V DC
Krytí	IP 20
Provozní teplota	+ 5 ° C - + 45 ° C
Relativní vlhkost (nekondenzující)	85%
Rozměry (bez trysky)	(483x456x63)mm
Hmotnost	12,50 kg

potvrzuje s h o d u
s následujícími technickými předpisy (normami, specifikacemi):
ČSN EN 50 130-4 ed.2:2012 + A1:2015
ČSN EN 55032 ed.2:2017
ČSN EN IEC 62 368-1,ed.2:2020, + A11:2020

Základ posouzení:
- Certifikační schéma podle ČSN EN ISO/IEC 17067:2014 kap. 5.3 (schéma 1a)
- Certifikační systém je založen na přezkoušení výrobku a posouzení dokumentace

Podkladem pro vydání tohoto certifikátu byly následující dokumenty:
- Závěrečná zpráva č. 0120-ZA-20219-21 vydaná TESTCOM – COV v Praze, dne 20.5.2021
- Protokoly z měření: 8551-PT-E0084-21 vydaný laborator TESTCOM dne 4.5.2021 a
8551-PT-B0095-21 vydaný laborator TESTCOM dne 13.5.2021 TESTCOM
Pravidla pro nakládání s tímto certifikátem jsou uvedena na jeho druhé straně

V Praze dne 24.05.2021

Ing. Miloš Procházka
vedoucího Certifikačního orgánu

Vozte 21-001_P09_012-MP-C002

EU PROHLÁŠENÍ O SHODĚ
v souladu se zákonem č. 90/2016 Sb.

Výrobce: FIRESI s.r.o. IČO: 29188024
Lidická kolonie 1108/47, 586 01 Jihlava, Česká republika

Výrobek: Hasicí zařízení

Typ: FRS-RACK 3

Účel použití:

Výrobek je samostatné, plně automatické, detekční a protipožární hasicí zařízení. Je určeno pro 19" a širší serverové, telekomunikační a ovládací skříně do celkového chráněného objemu 2 m³ jako řešení protipožární ochrany. Hasivem je FK-5-1-12, dle ČSN EN 15004-2

Zařízení splňuje všechna příslušná ustanovení těchto předpisů Evropských společenství:

- Směrnice Evropského parlamentu a Rady 2014/30/EU o elektromagnetické kompatibilitě (NV 117/2016 Sb.)
- Směrnice Evropského parlamentu a Rady 2014/35/EU o elektrických zařízeních určených pro používání v určitých mezních napětí (NV 118/2016 Sb.)

Použité normy:

- ČSN EN 50 130-4 ed.2:2012 + A1:2015
- ČSN EN 55016-2-1:2014
- ČSN EN 55016-2-3:2016/A1:2020
- ČSN EN 55024:2010/A1:2015, ik CISPR 24:2010/AMD1:2015
- ČSN EN 55032:2017 ed. 2
- ČSN EN 60721-3-3:2019
- ČSN EN 61000-3-2:2015 ed. 4
- ČSN EN 61000-3-3:2013
- ČSN EN 62368-1, ed. 2:2020, + A11:2020
- ČSN EN 15004-1:2019

PROHLÁŠENÍ O SHODĚ – FRS-RACK 3
veš A/2021
Stránka 1 z 2

PAVUS, a.s.
Prosecká 412/74, 190 00 Praha 9 - Prosek
vydává
CERTIFIKÁT
č. C-PAVUS-2021/0081
vydaný pro
výrobce: FIRESI, s.r.o., Lidická kolonie 1108/47, 586 01 Jihlava, IČO: 29188024
místo výroby: FIRESI, s.r.o., Lidická kolonie 1108/47, 586 01 Jihlava
na výrobek: Hasicí zařízení FRS-RACK 3

Certifikát prokazuje dosažení shody certifikovaného výrobku s deklarovanými vlastnostmi výrobku, posouzenými podle certifikačního schématu PAVUS-2 a podle požadavků uvedených v ČSN EN 15004-1:2019, podle nichž byla certifikace provedena.

Výsledky zkoušek a zjištění jsou uvedeny v Protokolu o certifikaci č. P-PAVUS-2021/0081 ze dne 28. dubna 2021. Který je nedílnou součástí tohoto certifikátu a je předkládán současně s tímto certifikátem.

Platnost certifikátu se omezuje do: 30.4.2026

V Praze dne 28. dubna 2021

Ing. Jaroslav Hoptejný
vedoucí CO pro certifikaci výrobků

PAVUS, a.s.
Prosecká 412/74, 190 00 Praha 9
IČ: 60259174, DIČ: CZ60259174
01

Posuzované vlastnosti certifikovaného výrobku jsou uvedeny na druhé straně tohoto certifikátu.

Product is certified according to all required EN norms

DC-ITContainer - Certificates

-  Fire protection 120 minutes as per EN 13501-2/EN 1363-1
-  Fire resistance to quality class R60D as per EN 1047-2, ECB.S system-tested
-  Dust and water penetration IP 56 as per EN 60529
-  Flue gas penetration as per EN 1634-3
-  Explosion resistance EXR 3 as per EN 13123-2/EN 13124-2
-  Break-in protection RC3-Certified as per EN 1627/1630
-  NSA technical device certificate, class 3
-  EMC-protection as per 50147-1



DC-IT Container - References



DC-IT Container - References



DC-IT Container - References



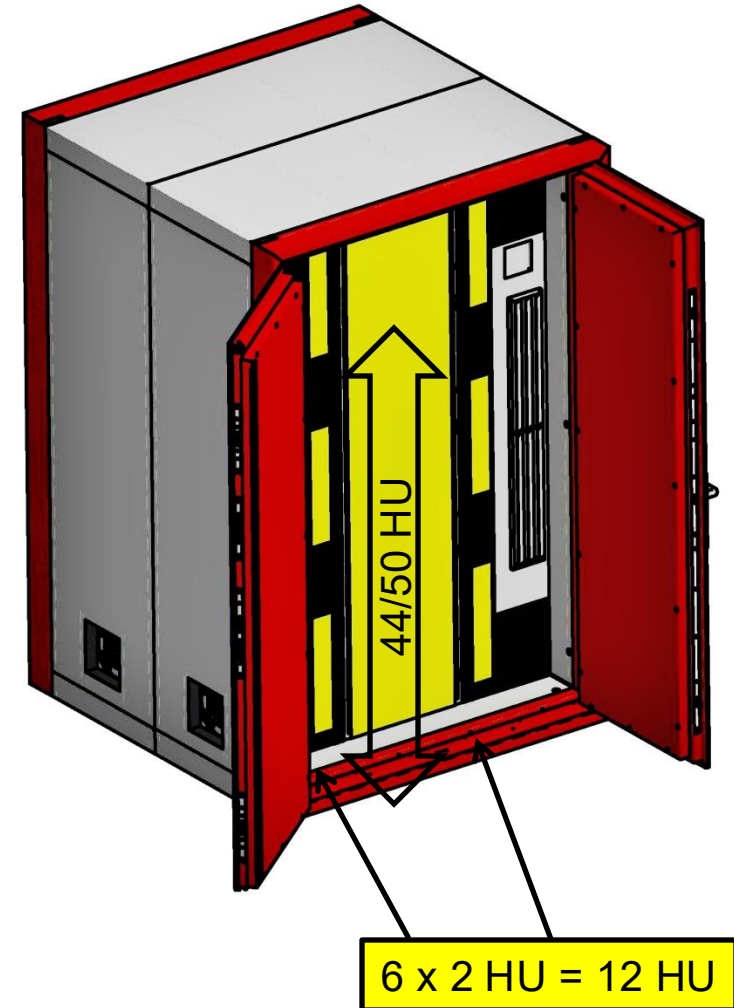
DC-ITSafe

- ❖ Modular compact and high availability Micro Data Centre
- ❖ Protection against fire, unauthorised access, water, dust, smoke gases, debris, EMP and explosion
- ❖ 100 % redundant cooling solution with energy-efficient inverter technology
- ❖ 19“ early fire detection and extinguishing system
- ❖ Redundant power supply (A/B).
- ❖ Monitoring- and energy-efficiency systems
- ❖ Extremely short delivery times



DC-ITSafe

- ❏ Dimensions:
 - ❏ W 1452 x H 2185 (56 HU) x D 1470 mm
 - ❏ W 1452 x H 2425 (62 HU) x D 1470 mm
- ❏ For rack dimensions WxD: 800 x 1200 mm:
 - ❏ 50 HU horizontal + 12 HU vertical = **62 HU**
 - ❏ 44 HU horizontal + 12 HU vertical = **56 HU**
- ❏ Additional sizes and options upon request
- ❏ Space-saving double-door system
- ❏ Access control
- ❏ 4 pcs. soft ducts, hard ducts DN 200 as option
- ❏ Expandable by linking modules



DC-ITSafe - Interlinkage



DC-ITSafe - Test certificates

- ❏ EI 90 as free-standing system test fired from 5 sides within EN 1363 with at least 40 minutes compliance within limit values (50 K temperature increase and rel. humidity <85%) within EN 1047-2
- ❏ Burglar protection RC 2 as per EN 1627
- ❏ Smoke/water protection IP 56 as per EN 60529
- ❏ Smoke/gas protection as per EN 1634-3
- ❏ Explosion protection
- ❏ Protection against debris
- ❏ Basic EMP protection

Optionally:

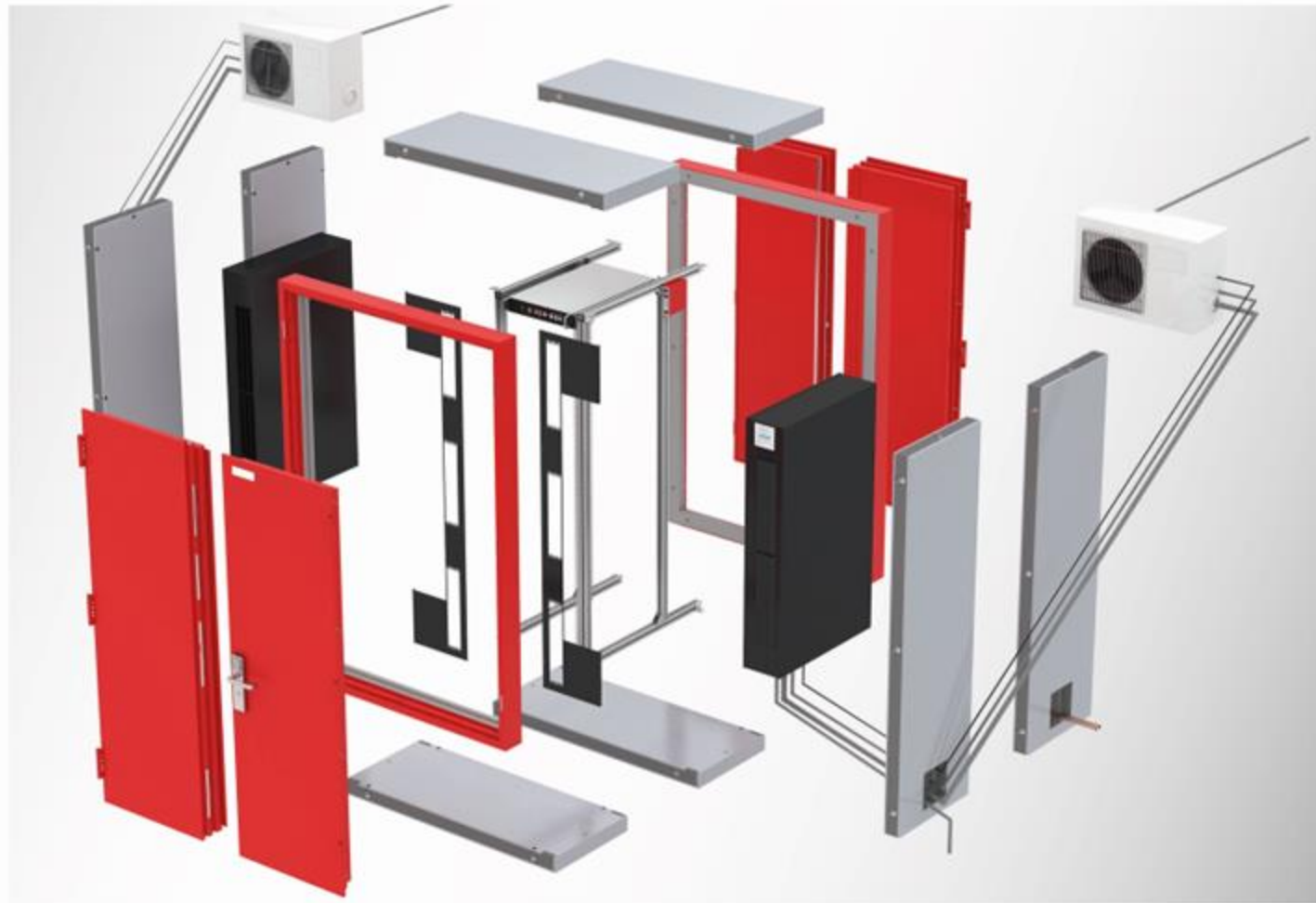
- ❏ Burglar protection RC 3 or 4 as per EN 1627
- ❏ Professional EMP protection



DC-ITSafe - Equipment and options



DC-ITSafe - Equipment and options



early fire alarm system



monitoring



482,6 mm (19" track



access control



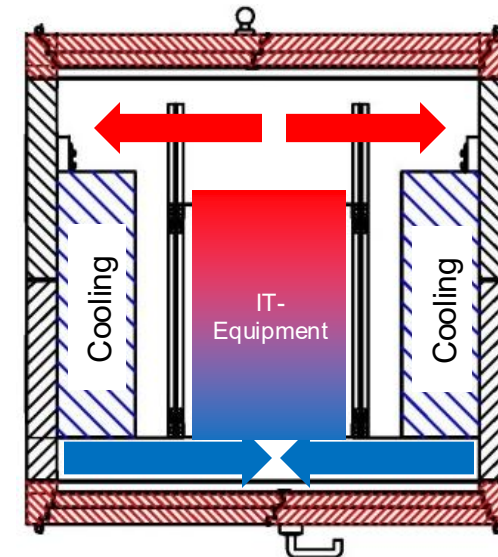
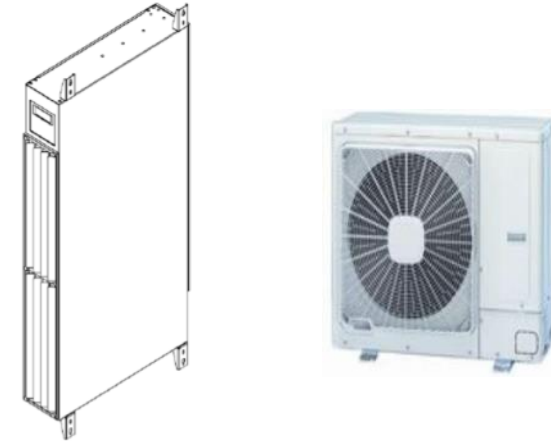
compact split cooling
unit



hard/soft cable duct

DC-ITSafe - Cooling systems

-  Compact split cooling units consisting of one inner unit within the DC-ITSafe and one outer unit for outdoor positioning
-  100% redundancy by 2 inner- und outer units for rack widths 800 mm possible
-  DX-Inverter technology
-  Refrigerant R410A
-  Improved isolation enabling directed air flow – cold and warm side
-  Energy-efficient, savings of 20 – 30 %
-  Cooling capacities up to 8,1 kW



Extinguishing system FRS-RACK®3

- 19" early fire detection and extinguishing system requiring only 1 HU
- Finished product ready for immediate use and installation, with no additional configuration or modifications required
- FRS-RACK®3 can be expanded with external safety features 4 potential-free programmable outputs
- Electrically non-conductive FK-5-1-12 fire extinguishing agent, does not damage protected technologies or data stored on data media
- Remote monitoring and operation possible



DC-ITSafe - UPS

- ❏ 19"-UPS placed horizontal in 19" rack
- ❏ Batteries placed below the inner air conditioning units
- ❏ All batteries are connected by hose systems for gas extraction via duct
- ❏ Power up to 8kVA
- ❏ Autonomy time up to 90 minutes



DC-ITSafe - DC-ITShielding

- Worldwide leading shielding solution in the field of micro data centres and IT-security safes
- Shielding attenuation of 80 dB
- Compliant with Tempest, NSA 65-2, IEEE 299, newest NATO-Standards
- EMP protection as per EN 50147-1, NSA 65-6, IEEE-STD 299 /MIL-STAD 285)



DC-ITSafe - References



DC-ITSafe Mini

- ❏ Plug & Play IT security safe including cooling system
- ❏ Basic protection against physical danger
- ❏ Low noise level, suitable for installation in open-plan offices
- ❏ Energy efficiency by targeted cooling and air routing with 20 – 30% cost saving
- ❏ Operator and service friendly two-door system (operator and service side)
- ❏ Easy transport by 4-way base construction
- ❏ Optionally: On request, the modular construction of the DC-ITSafe Mini allows delivery in a disassembled state, enabling on-site assembly at the installation location.

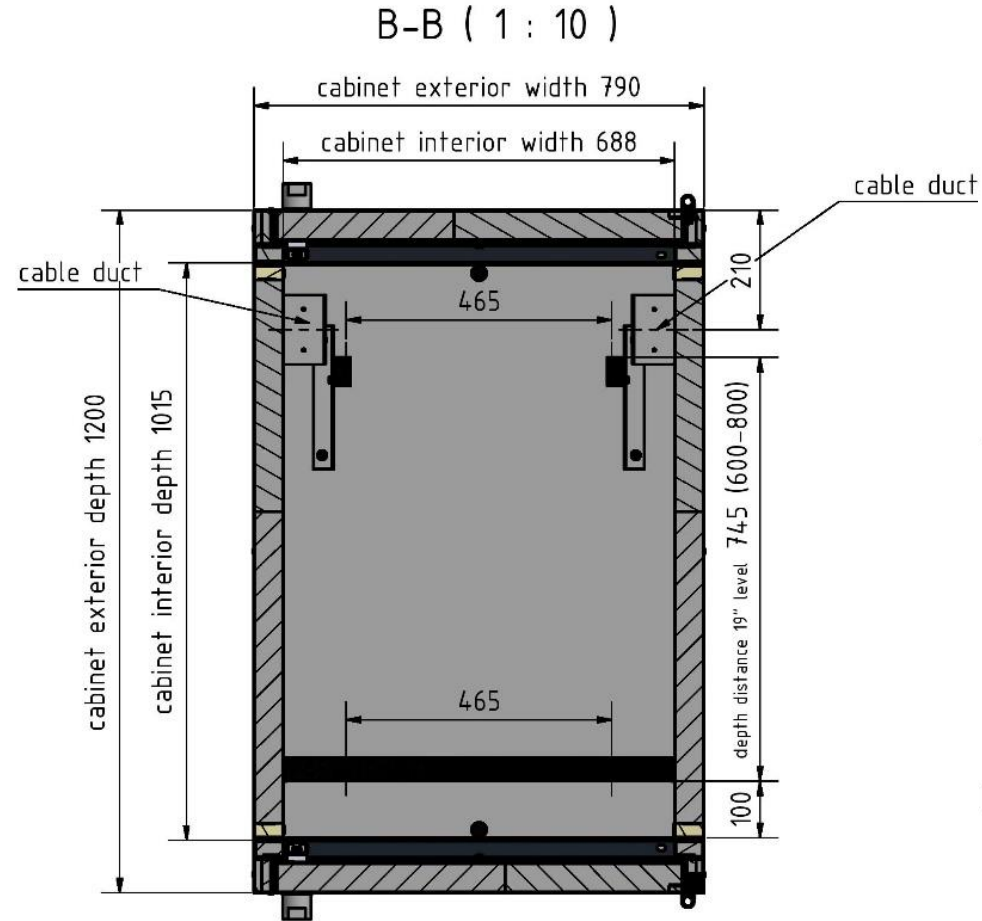
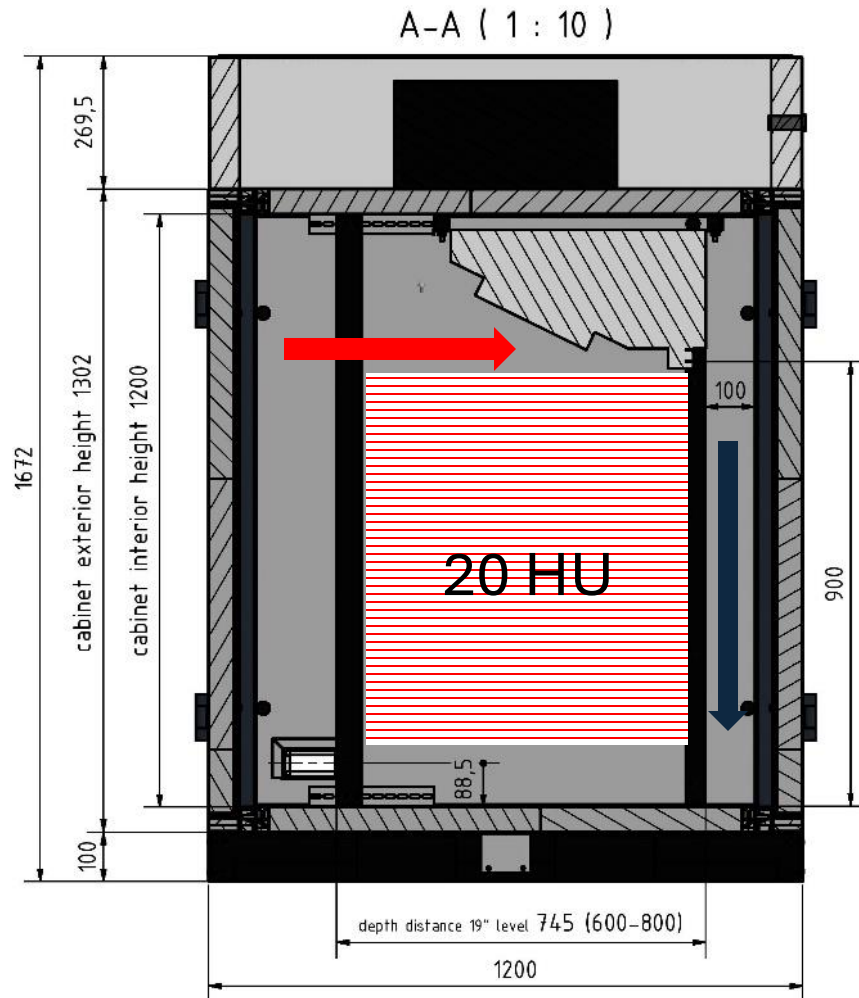


DC-ITSafe Mini

- ❏ Fire resistance EI 90 as per EN 1363/EN 13501
- ❏ Dust/ water protection IP 56 as per EN 60529
- ❏ Smoke gas protection as per EN 1634-3
- ❏ Burglary protection RC 2 as per EN 1627/EN 1630
- ❏ Protection against debris load
- ❏ Basic EMC protection & explosion protection



DC-ITSafe Mini - Dimensions



Weight cca. 450-500 kg

DC-ITSafe Mini - - Equipment

- ❏ Cooling capacity up to 1,6 kW
- ❏ Outdoor unit (compressor) positioned on the safe, indoor unit (evaporator) in the safe without redundancy
- ❏ Monitoring: DCM-Detection
- ❏ PDU's (passive or intelligent)
- ❏ Early fire detection and extinguishing
- ❏ UPS up to 3 kVA
- ❏ 19" rack equipment



Data Safes

- ❖ Guarantee of safe storage of electronic data and important documents according to legal requirements
- ❖ Certified fire resistance of 120 minutes including level II. security classes against burglary, optional interior equipment (fixed shelves, pull-out shelves with dividers, internal lockable box) and locking equipment (mechanical lock, electronic combination lock)

