

Intelligent modular single phase technology

LITHIUM
READY



centiel
continuous power availability

CumulusPower™ X1

CumulusPower X1
Single phase modular UPS
10kW to 20kW N+1



CumulusPower X1

CumulusPower X1 is a Swiss made 1-phase, online double-conversion and fully distributed modular Uninterruptible Power Supply.

From **10kW to 20kW N+1** CumulusPower X1 provides the maximum flexibility to adapt to any application.

Thanks to its Distributed Active-redundant technology (DARA™), CumulusPower X1 design eliminates any single point of failure, preventing human error, reducing time to maintain and repair, and delivering industry leading availability of 9 nines to fulfill the needs of the most critical applications.

Highest Efficiency

+97.1%

Hot Swappable Modules

Fast Replacement of Intelligent Modules

Proven Reliability

30 years of experience

Distributed Architecture

No Single Point of Failure

Flexibility to Pay as You Grow

Series of frame sizes

Unity Power Factor

kVA = kW

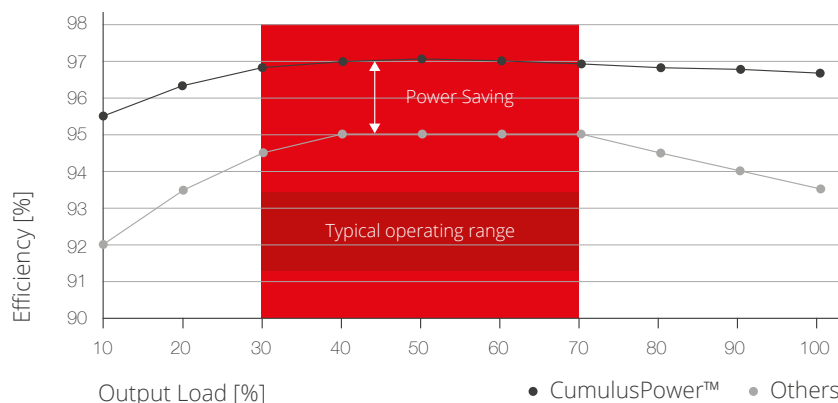
9 Nines Availability

Zero Downtime

Lowest Total Cost of Ownership

Reduced Component Count Simplifies Maintenance

Lowest Total Cost of Ownership



97.1%

High Efficiency (VFI)

Maximum Efficiency Management (MEM)

CumulusPower X1 incorporates an Intelligent MEM function which matches the number of modules to the load demand by monitoring the level of optimum energy efficiency. At low load levels, any modules no longer required to maintain redundancy are placed into Active-Sleep mode, reducing overall energy consumption. Active-Sleep modules are instantly online when load increases, maintaining maximum availability at all times.

High Efficiency 97.1% (VFI)

With the best in class efficiency of 97.1% in double conversion mode (VFI), CumulusPower X1 provides the lowest Total Cost of Ownership and lowest carbon footprint.

Serviceability

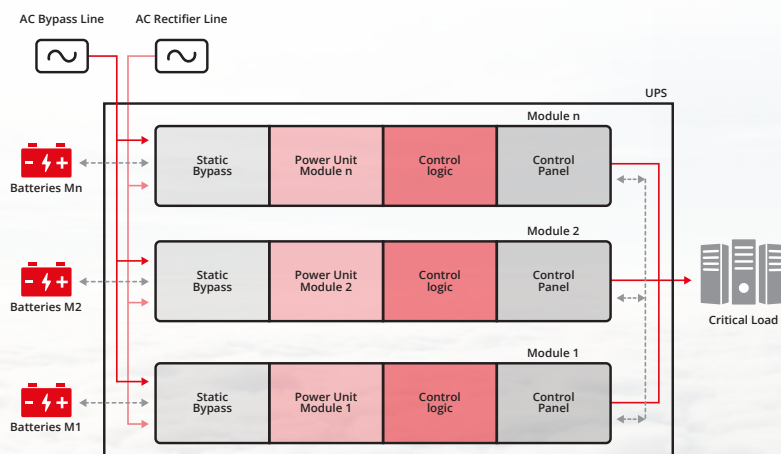
Modular design allows fast replacement of Intelligent Modules, reducing Mean Time to Repair (MTTR), maximising availability and reducing costs.

The Technology

Distributed Active-Redundant Architecture (DARA™)

The architecture of the CumulusPower X1 was designed to respond to the highest availability requirements, through the implementation of the system's distributed decision-making in an event of a critical failure, and a correct management of the

load sharing. The communication between the Intelligent Modules is accomplished by means of a fully redundant **TripleMode™** communication BUS.



IM10-X1



Flexible Intelligent Module (IM10-X1)

Each module is a complete UPS. Thanks to Centiel's long experience in module-design, the CumulusPower X1 Intelligent Modules are equipped with three independent power converters, one static bypass,

all hardware and all software (intelligence and monitoring) functions, making them fully independent and capable of safely isolating from the multi-module system whenever an internal fault occurs.



CumulusPower X1

IM10-X1

From **10kW**
to **20kW N+1**



| Model | CP020-E-A1-X1 | CP020-l240-A0-X1 | CP020-l320-B0-X1 |
|--------------|---------------------|------------------------|---------------------|
| Module Type | 3 x IM10-X1 | 2 x IM10-X1 | 3 x IM10-X1 |
| Max Power | 20kW N+1 | 20kW | 20kW N+1 |
| Batteries | External | 240x 7/9Ah or 64x 20Ah | 320 x 7/9Ah |
| H x W x D mm | 1.315x510x815 | 1.980x510x815 | 1.980x730x815 |
| Footprint | 0,41 m ² | 0,41 m ² | 0,59 m ² |

CumulusPower X1

IM10-X1

19" Universal Rack

From **10kW**
to **20kW N+1**



| Model | CAB-UR010-E-Co-X1 | CAB-UR020-E-C1-X1 | Battery Shelf KIT |
|-------------|-------------------|-------------------|--------------------------|
| Module Type | 2x IM10-X1 | 3 x IM10-X1 | - |
| Max Power | 10 kW N+1 | 20 kW N+1 | - |
| Batteries | External | External | 1 x 40 / 1 x 48 (7/9 Ah) |

All Universal Racks include:

- | **Electrical distribution**
- | **System Manual Bypass**
- | **Bypass fuses**
(1 x module)
- | **Output parallel isolator**
(1 x module)
- | **DC Battery MCB protection**
(1 x module)
- | **Connectivity board**
(5x Dry output, 5x Dry Input, RS232, RS485, Bluetooth, Ethernet, Slot for SNMP)



Universal Rack
Frame

Universal Rack
Battery KIT



Technical Datasheet

| | | CAB-CP020-E-A1-X1 CAB-CP020-I240-A0-X1 CAB-CP020-I320-B0-X1 | CAB-UR010-E-Co-X1 CAB-UR020-E-C1-X1 |
|--------------|-----------------------------------|--|---|
| General Data | Model | | |
| | Module type | IM10-X1 | |
| | Nominal power per module [kVA=kW] | 10 kW | |
| | Max Power per Frame [kVA=kW] | 20kW (N+1) | |
| | Number of modules per frame | 1-3 | |
| | Max power per system [kVA=kW] | 600 kW | |
| | Max number of modules per system | 1-60 | |
| | Topology/Technology | Online double conversion/DARA (Distributed Active-redundant Architecture) | |
| Input | Mains | Input wiring | 1Ph+N+PE or 3Ph+N+PE |
| | | Rated voltage | 220/230/240 VAC or 380/400/415 VAC |
| | | Voltage range | For loads <100% (-25%, +20%), <80% (-32.5%, +20%), <60% (-35%, +20%) |
| | | Input frequency | 40-70 Hz |
| | | Total Harmonic Distortion | THDi<3% for linear load, THDi<5% for non-linear load |
| | | Input power factor | 0,99 |
| | Bypass | Input wiring | 1Ph+N+PE |
| | | Rated voltage | 220/230/240 VAC |
| | | Input frequency | 50/60 ±2/4% (selectable) |
| | Battery | Rated voltage | 360-600 VDC (the number of batteries can be selected) |
| | | Internal batteries (7/9Ah) | E: External I240: 240x 7/9Ah or 64x 20Ah I320: 320x 7/9Ah or 80x 24/28Ah |
| | | Type | Lead-Acid / NiCad / Lithium |
| | | Blocks [LA]/Cells[NiCad] | 30-50 |
| | | Charger (Amp/module) | 20 |
| | Inverter | Output wiring | 1Ph+N+PE |
| | | Voltage | 220/230/240 Vac ±1% |
| | | Frequency | Tracking the bypass input (Online Mode); 50/60 Hz±0,05% (Battery Mode) |
| | | Waveform | Sine wave (THDV<1% for linear load; THDV<3% for non-linear load) |
| | | Output power factor | 1 |
| | | Efficiency (module/frame) | 97.1% / 96.7% |
| | | Overload capacity | Inverter: 124% continuous; 125% for 10 min; 150% for 1 min Bypass: 135% overload for long term; <1000% overload for 100ms |
| | | Short circuit capability | 6 x IN |
| Environment | Bypass | Efficiency | 99,4% |
| | | Operating temperature | 0-40°C (No power derating) |
| | | Storage temperature | -40-70°C |
| | | Relative humidity | 0%-95% (No condensing) |
| | | Maximum operating altitude | 1000 m. Above 1000 m, derating 1% for each additional 100 m |
| | | Audible Noise | <65dB |
| Others | | Height × Width × Depth (mm) | 1315 x 510 x 815 1980 x 730 x 815 |
| | | Weight (kg) without modules | E: 107 I320: 225 |
| | | Certifications | EN/IEC 62040-1; EN/IEC 62040-2; EN/IEC 62040-3; CE; RoHS |
| | | Communications | RS485, RS232, 2 Dry Input, Dry contacts, Ethernet, Bluetooth |



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