

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%

Flexibility to Pay as You Grow
Series of frame sizes

Hot Swappable Modules
Fast Replacement of Intelligent Modules

Unity Power Factor
kVA = kW

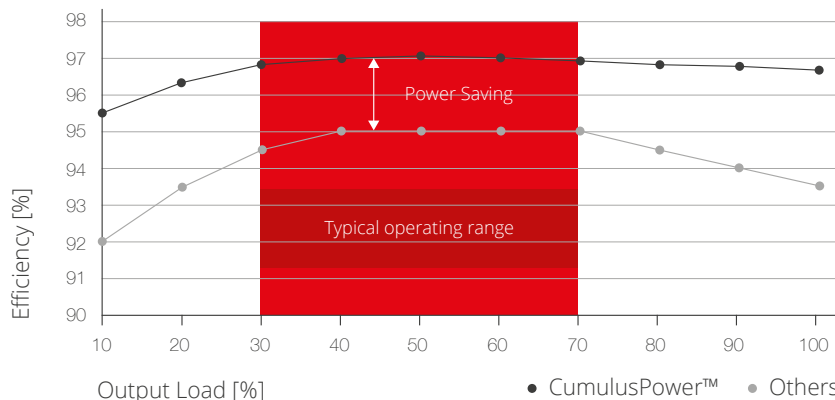
Proven Reliability
30 years of experience

9 Nines Availability
Zero Downtime

Distributed Architecture
No Single Point of Failure

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.

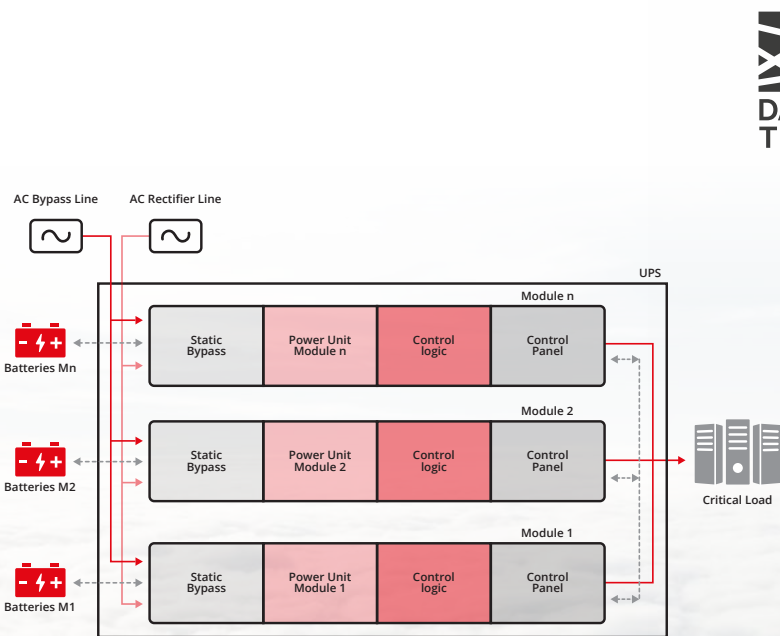


The Technology

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-I240-A0-X1	CP020-I320-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

	Model	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	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	
	Battery	Input frequency	50/60 ±2/4% (selectable)	
		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			
Output	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		
	Bypass	Efficiency	99,4%	
	Environment	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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