

centiel

continuous power availability



CumulusPower™

Modular UPS 10kW to 3.6MW



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CumulusPower™

CumulusPower™ is a Swiss made 3-phase, online double-conversion and fully decentralized modular Uninterruptible Power Supply.

From **10kW to 3.6MW** CumulusPower™ provides the maximum flexibility to adapt to any application. By eliminating any single point of failure, adding Decentralized Active-redundant technology (DARA™), preventing human error and reducing the time to maintain and repair, CumulusPower™ delivers an industry leading Availability of 9 nines to fulfill the needs of the most critical power applications.

The Technology

Intelligent Module (IM)

Each module is a complete UPS. Thanks to Centiel's long experience in module-design, the CumulusPower™ 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.

Hot-Swappable without Human Error

CumulusPower™ modules can be swapped without the need to switch over the load to bypass. Besides that, a per-module parallel isolator fiscally isolates the module from the system reducing the risk of human error and increasing system Availability.

9 nines Availability Zero Downtime

Distributed Architecture No Single Point of Failure

Unity Power Factor $kVA = kW$

Ease of Service Frontal Access Plug & Play Components

Small Footprint $+ 0.51 MW/m^2$

Swiss Quality

Distributed Active-Redundant Architecture (DARA™)

The architecture of the CumulusPower™ 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.



+97.1% Efficiency
VFI



Advanced Performance and Availability

Class Leading Availability

By eliminating any single point of failure, adding Active-redundant technology, preventing human error and reducing the time to maintain and repair, CumulusPower™ delivers an industry leading Availability of 9 nines to fulfill the needs of the most critical power applications.

Ultra-Safe Eco mode

With a 99.4% efficiency in Eco mode operation and an ultra-fast reaction time of <1.9 ms, Ultra-Safe ECOMode enables an excellent trade-off between power quality and energy efficiency.

Outstanding Overload Capability

With a 124% continuous operation in overload condition, mission critical applications can be safe on the event of unexpected load demands.

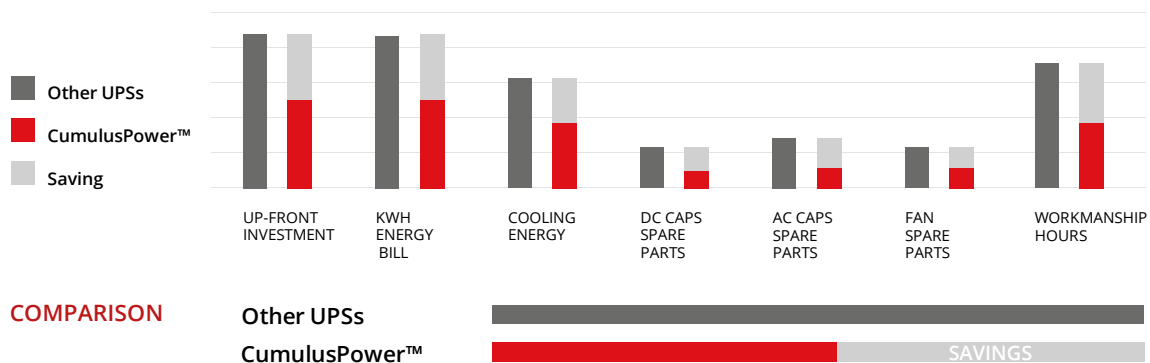
Advanced TripleMode™ Communication

With Triple redundancy in the communication lines and electronic circuits, disconnection or short-circuit on any of the communication lines does not represent a risk for the system thus eliminating the single point of failure.

Swiss Quality

Developed and manufactured in Switzerland, CumulusPower™ provides the highest standards of quality in components and manufacturing processes approved by the Swiss made label.

Minimized Total Cost of Ownership



Reduced Energy Bill

With a best in class efficiency of 97,1% in double conversion mode (VFI), CumulusPower™ minimizes energy waste on power protection and cooling system.

Ease of Service

Direct access to components and plug-and-play internal modules minimize mean time to repair (MTTR) and simplifies routine maintenance.

Minimized Life-time Maintenance Cost

The CumulusPower™ product line was designed to reduce the number of components that need replacement while at the same time reduce the time and cost of such maintenance operations.

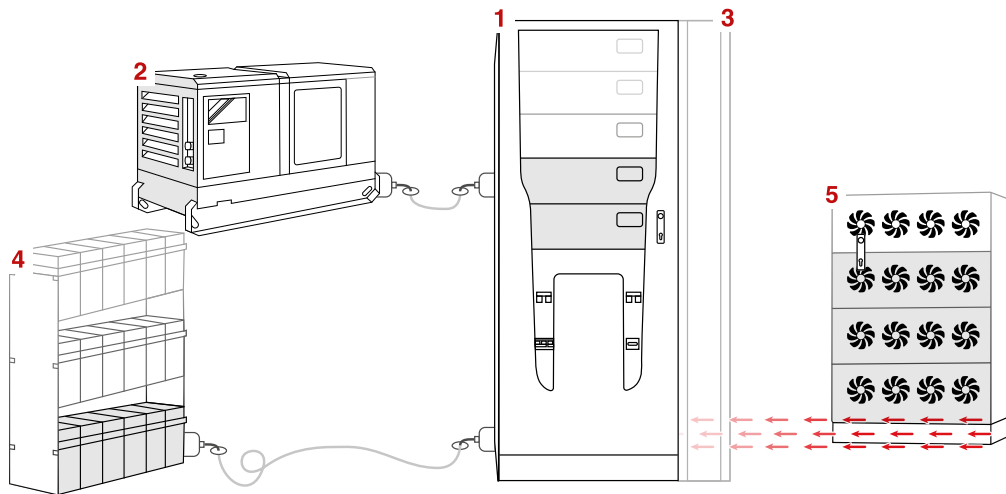
Maximum Efficiency Management (MEM)

MEM looks for the most optimized energy efficiency point, if load demand decreases and a lower number of modules can handle the load while maintaining redundancy, the superfluous modules enter into active-sleep mode to optimize overall energy consumption.

20 to 50 Flexible Battery Blocks



Reduced System Cost.



1 Reduced Up-front Investment

Compared to a standalone UPS solution or centralized UPS architectures, Centiel's scalable modular UPSs have a lower total up-front investment cost, allowing you to grow your power protection capacity at the pace of the demand.

2 Downsize Diesel Generators and Components

Thanks to our DARA™ architecture and Smart-Battery-Booster, every switch over in the event of mains failure is taken smoothly, minimizing in-rush current, avoiding generator destabilization and hence eliminating the need to oversize the diesel generator.

3 Eliminate ad-on External Components

Back-feed protection embedded in every module, maintenance bypass, bypass fuses, 233% higher battery charging current and battery DC breakers embedded at the frame level eliminate the need for external components connections, reducing your total system cost.

4 Battery Flexibility 20 to 50 blocks

Batteries represent a substantial part in a project cost structure. With CumulusPower™ you have the flexibility to select the number and type of battery blocks in a case by case basis to find the best way to optimize total system cost.

5 Reduced Cooling Costs

CumulusPower™ industry-leading **VFI 97,1% efficiency** and its flat efficiency curve, contribute to minimize energy losses and heat dissipation, reducing the size and cost of cooling system.

Flexibility

Same core technology different solutions

CumulusPower™ fits on a 19" (IM10/20/25) to provide the maximum flexibility to the final application. Centiel's flexible solution approach can customize a frame solution to satisfy specific needs.



MODEL	CAB-CP050-I080-A1 CAB-CP050-I240-A0	CAB-CP100-E-A1 CAB-CP100-I320-B0	CAB-CP150-E-A0	CAB-CP250-E-B0	CAB-CP300-E-B0	CAB-CP600-E-D0
GENERAL DATA						
Module Type	IM10/IM20/IM25	IM10/IM20/IM25	IM10/IM20/IM25	IM10/IM20/IM25	IM50/IM60	IM50/IM60
Nominal power per module [kVA=kW]	10/20/25	10/20/25	10/20/25	10/20/25	50/60	50/60
Max Power per Frame [kVA=kW]	50	100	150	250	300	600
Number of modules per frame	1-2	1-4	1-6	1-10	1-5	1-10
Max power per system [kVA=kW]	1500	1500	1500	1500	3600	3600
Max number of modules per system	1-60	1-60	1-60	1-60	1-60	1-60
Topology/Technology	Online double conversion/DARA (Distributed Active-redundant Architecture)					
INPUT						
MAINS						
Input Wiring	3Ph+N+PE					
Rated Voltage	380/400/415Vac					
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 nonlinear load					
Input Power Factor	0,99					
BYPASS						
Input Wiring	3Ph+N+PE					
Rated Voltage	360/400/420 Vac					
Input Frequency	50/60 ±2/4% (selectable)					
BATTERY						
Rated Voltage	360-480 Vdc (the number of batteries can be selected)					
Internal Batteries (7/9Ah)	I080: 80 I240: 240	E External I320: 320	E External	E External	E External	E External
Type	Lead-Acid/NiCad/Lithium					
Blocks [LA]/Cells[NicAd]	IM10: 20-50 IM20/IM25/IM50/IM60: 30-50					
Charger (Amp/module)	20					40
OUTPUT						
INVERTER						
Output Wiring	3Ph+N+PE					
Voltage	380/400/415 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% / 96.9%					
Overload Capacity	Inverter 124% continuous 125% overload for 10 min 150% overload for 1 min Bypass 135% overload for long term <1000% overload for 100ms					
Short circuit capability	3 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						
Dimensions (H x W x D) [mm]	1,315x510x815 1,980x510x815	1,315x510x815 1,980x730x815	1,980x510x815	1,980x730x815	1,980x730x845	1,980x1,460x845
Weight [Kg] withouth modules	125 180	107 225	148	210	209	396
Certifications	EN/IEC 62040-1 EN/IEC 62040-2 EN/IEC 62040-3 CE RoHS					
Communications	Basic RS485 RS232 2 Dry Input. Pro Basic + Dry contacts Ethernet Bluetooth					



CumulusPower™



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