

Orion
REALTIME PROTECTION

Perfect Solution for Hyper Critical Applications

CROMA EX SERIES ON-LINE UPS SYSTEMS



6 KVA - 30 KVA

ISO 9001 & ISO 14001

RoHS

CE

UKcert

CERTIFIED COMPANY

**Croma
Series**

Croma EX Series (3P/1P - 1P) - Tower

6kVA – 30kVA

0.9
Output Power
Factor



Local Area
Network
(LAN)



Telecommunication
Devices



Data
Centre



Electro-Medical
Device



Storage
PLCS



Emergency
Alarm
Devices



E-Business
(Server Farms,
ISP/ASP/POP)

Croma EX Series (3P/1P - 1P) three/single phase input - single-phase output, true online double conversion UPS system guarantees consistent and quality electrical power to protect your mission critical applications such as mid-sized business servers, telecommunication systems and industrial equipment. The UPS is designed with a wide input voltage range to handle voltage fluctuating situations and a high accuracy output voltage to fail-safe your equipment. The Croma EX Series provides better output power factor of up to 0.9; offering high performance and efficiency for your critical applications.

By adopting the latest IGBT technology, this device is able offer excellent voltage switching characteristics during generator operation. In addition, this device comes with a parallel redundant system that allows UPS models to operate in parallel and as backup for each other. The CROMA EX series UPS also offers the option of adding on an isolation transformer to suit your requirements.

- True double-conversion
- DSP technology guarantees high performance
- Output power factor 0.9
- Wide input voltage range
- Active power factor correction in all phases
- Built-in phase auto adapt function simplifies wire installation
- 50Hz/60Hz frequency converter mode
- ECO mode operation for energy saving
- Programmable power management outlets
- Emergency power off function (EPO)
- Generator compatible
- SNMP+USB+RS-232 multiple communications
- 3-stage extendable charging design for optimized battery performance
- Adjustable battery numbers
- Maintenance bypass available
- Optional N+X parallel redundancy
- Optional isolation transformer available

Rear Panel

For 6kVA/10kVA model

1. RS-232 communication port
2. USB communication port
3. Emergency power off function connector (EPO connector)
4. Share current port (only available for parallel model)
5. Parallel port (only available for parallel model)
6. Intelligent slot
7. Charger fan
8. Power stage fan
9. Maintenance by-pass switch
10. Input circuit breaker
11. Output circuit breaker for receptacles
12. Output receptacles: connect to mission-critical loads
13. Input/Output terminal
14. External battery connector (Only available for Long-run Model)

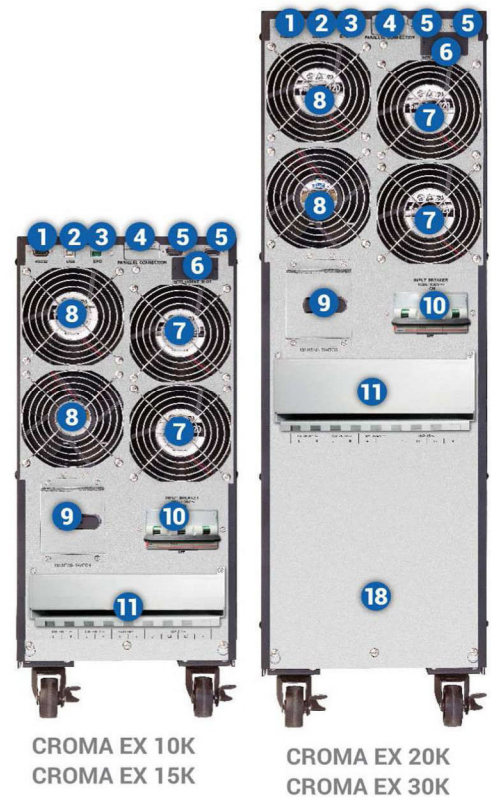


CROMA EX 6KI
CROMA EX 10KI

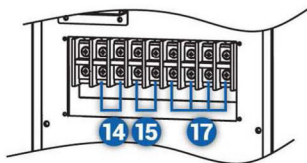


For 10kVA to 30kVA model

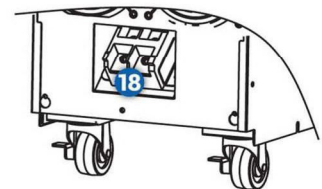
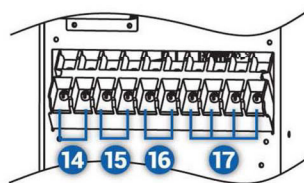
1. RS-232 communication port
2. USB communication port
3. Emergency power off function connector (EPO connector)
4. Share current port (only available for parallel model)
5. Parallel port (only available for parallel model)
6. Intelligent slot
7. Charger fan
8. Power stage fan
9. Maintenance by-pass switch
10. Input circuit breaker
11. Output circuit breaker for receptacles
12. Output receptacles: connect to mission-critical loads
13. Input/Output terminal
14. Output Terminal: Connect to mission-critical loads
15. Programmable Output terminal: Connect to non-critical loads
16. External battery terminal (only available for Long-run model)
17. Utility input terminal
18. Grounding terminal (only available for parallel system)



For 10K model

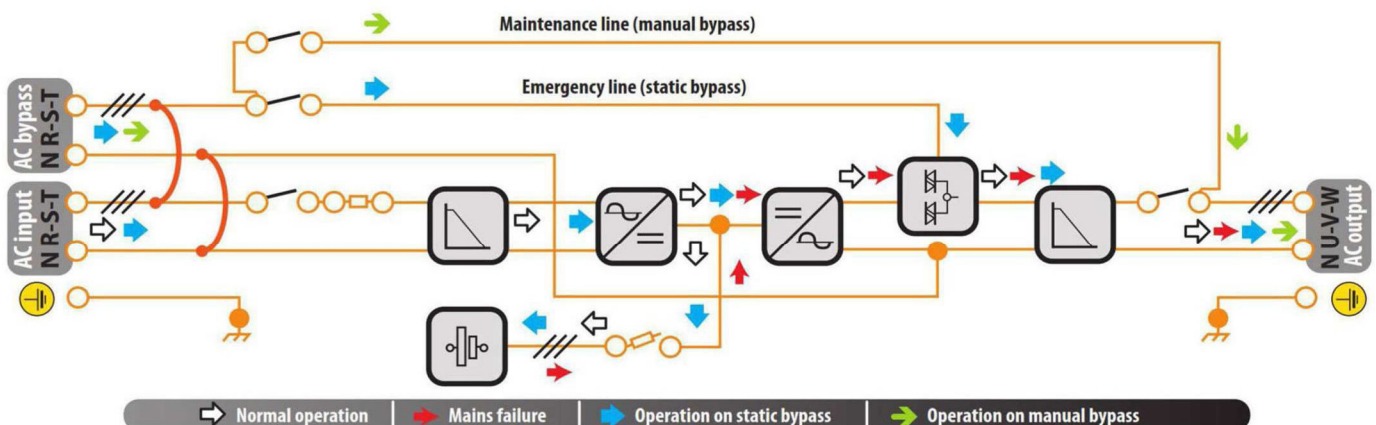


For 15K & 30K model



Options

- AS-400 Card (External alarm indicator)
- SNMP Card for data communication via network connection
- MODBUS Card (Communication interface)
- Input / Output Isolation Transformer (for Galvanic Isolation)



Croma EX Series (3P/3P) - Tower

10kVA – 30kVA

0.9
Output Power
Factor



Local Area
Network
(LAN)



Telecommunication
Devices



Data
Centre



Electro-Medical
Device



Storage
PLCS



Emergency
Alarm
Devices



E-Business
(Server Farms,
ISP/ASP/POP)

Croma EX Series (3P/3P) – Tower three-phase input / three-phase output, true online double conversion UPS system guarantees consistent and quality electrical power to protect your mission critical applications such as small server room, medical devices, telecommunication facilities and industrial processes. This (3P/3P) UPS is designed with a wide input voltage range to handle voltage fluctuating situations and a high accuracy output voltage to fail-safe your equipment.

The Croma EX Series (3P/3P) UPS system is available in capacities from 10kVA to 30kVA. By adopting the latest IGBT technology, this device is able offer excellent voltage-switching characteristics during generator operation. An internal bypass system allowing continuous power is also integrated for convenience when maintenance is necessary. In addition, this device comes with a parallel redundant system that allows two UPS models to operate in parallel and as backup for each other. The Tower series UPS also offers the option of adding on an isolation transformer to suit your requirements.

- True double-conversion
- DSP technology guarantees high performance
- Output power factor 0.9
- Active power factor correction in all phases
- 50Hz/60Hz frequency converter mode
- ECO mode operation for energy saving (ECO)
- Accepts dual-mains inputs
- Emergency power off function (EPO)
- Generator compatible
- SNMP+USB+RS-232 multiple communications
- 3-stage extendable charging design for optimized battery performance
- Adjustable battery numbers
- Maintenance bypass available
- Optional N+X parallel redundancy

Rear Panel

For 10kVA to 30kVA model

1. RS-232 communication port
2. USB communication port
3. Emergency power off function connector (EPO connector)
4. Share current port (only available for parallel model)
5. Parallel port (only available for parallel model)
6. Intelligent slot
7. Charger fan
8. Power stage fan
9. Maintenance bypass switch
10. Bypass Input Circuit Breaker (Only available for dual input unit)
11. Input circuit breaker
12. Input/Output terminal
13. External battery terminal (only available for Long-run model)



CROMA EX 10K33
CROMA EX 15K33
CROMA EX 20K33
CROMA EX 30K33

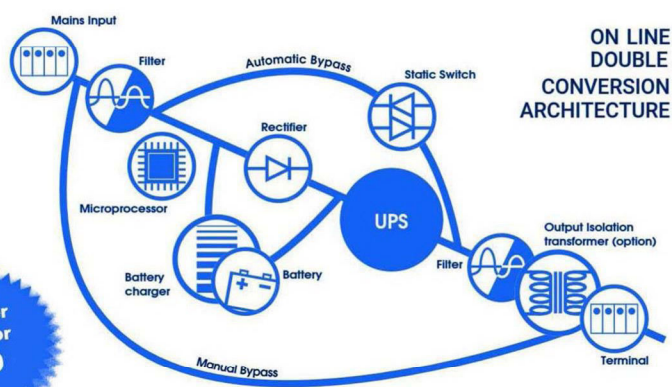


The Most Versatile Solution For Power Protection

The Croma Series is designed with the new state of art transformerless PWM technology that can be easily adapted to any kinds of complicated loads such as the non-linear systems (IT systems), highly inductive/capacitive loads, high-density discharge lamps and induction motors. The Croma series is designed with 2 important criterions in mind; maximum efficiency and energy conservation. The unit also comes with a small form factor to allow for minimum installation effort. The CROMA Series is available in capacities ranging from 6 to 30kVA.

Online Double Conversion Technology with DSP Control

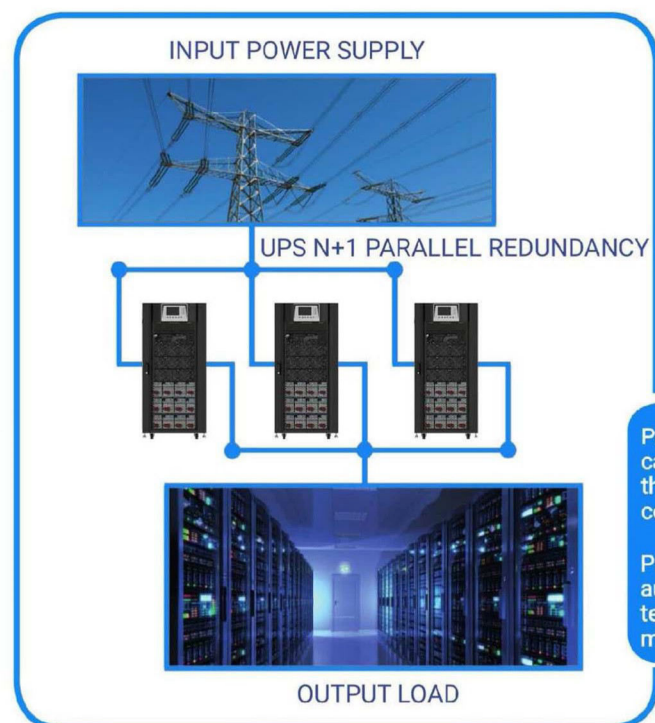
The Power Series is able provide a higher load up-time and effective insulation against network disturbance with its online double conversion technology. A Digital Signal Processor (DSP) controller improves the performance and efficiency of the UPS.



Power Factor 0.9

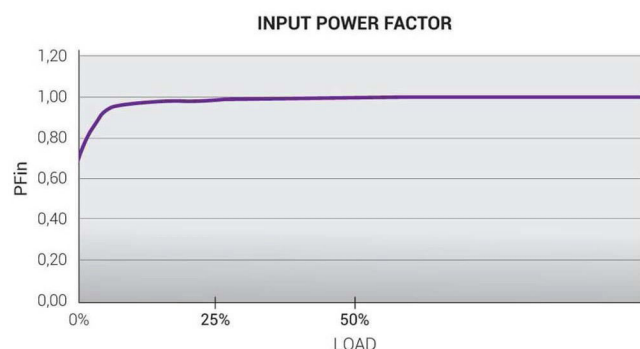
N+1 Redundancy

A parallel redundant system allows 4 UPS models to operate in parallel and as backup for each other.



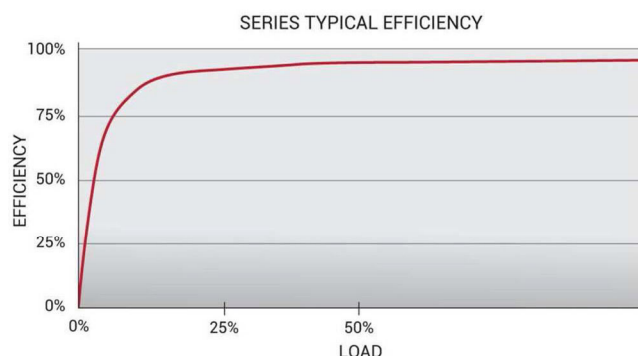
Input Power Factor 0.99 At 10% Load

Lower power losses would result in reduced consumption, lower operation and maintenance costs.



Output Efficiency of up to 94%

Designed with a DSP controller and fourth generation IGBT transistors, the UPS is able to achieve extremely high efficiency of up to 94%. With such high ratings, components in the UPS are not only protected but also prolonged due to the decrease in heat losses.



Output Power Factor 0.9

Croma Series (3P/1P) is a high-density UPS system with an output power factor of 0.9. With this high power factor, the UPS is able to provide higher performance to critical applications.

Output Voltage Regulation (tolerance +/- 1%)

The CROMA (3P/1P) Tower Series is able to produce extremely stable and clean electrical power with its high efficiency output voltage regulator. This regulator is able to achieve a tolerance of +/- 1%, making it extremely compatible even with sensitive power supplies.

Parallel configuration of from two to four UPS modules can at the same time, increase the power supported by the array, and maximize the security provided to the connected equipment.

Parallel installation can also allow to switch automatically to a backup UPS device in case of a temporary fault of one of the connected UPS modules.



An important consideration has been given during the UPS design phase to create a system that allows users to access the unit's electronic cards and power components with minimum effort. All electronic boards and components can be accessed from the front panel for easy maintenance and replacement activities.



Control Components are designed to withstand all kinds of loads

In the Power Series, the control components are designed to withstand all types of loads. These include loads such as; resistive, capacitive, non-linear, high-density discharge lamps, induction motors, speed drives etc. This makes the UPS extremely compatible with many types of electronics. Better yet, the UPS comes with a wide array of parameters that can be programmed locally or remotely to fit different types of environment.

Advanced Control with Adaptive Feed Forward Cancellation (AFC) Technology

By cancelling both the input current and the output voltage harmonics, the harmful effects of harmonic injection can be eliminated and this enhances the load integrity.

Various Communication Options Available

The UPS has provided the following standard communication selections:

- Relay interface
- RS-232/485 port
- 1 × SNMP slot
- Modbus RTU / SEC protocol
- 2 × connectors for parallel connection

ECO and Advanced ECO Mode for Energy Saving

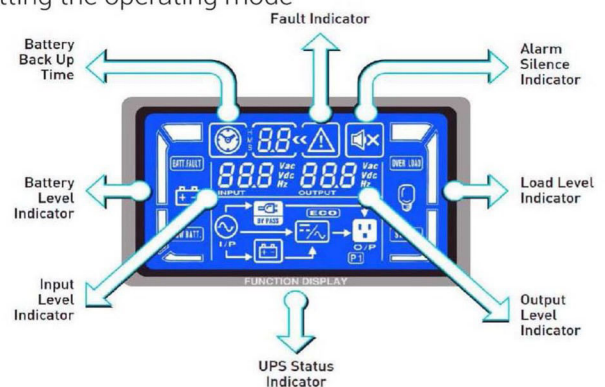
It allows the UPS to operate in high efficiency of up to 97% during energy saving ECO mode and 98% in operation mode. In the event of an electrical AC failure, the inverter will automatically step-in and provide electrical supply to the connected systems.

Emergency Power Off Function (EPO)

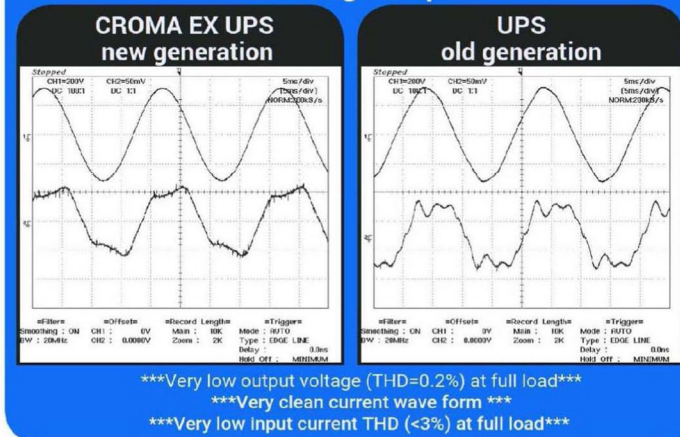
This feature provides adequate protection for the user and the equipment against hazards such as fire break-out or other emergencies.

User-friendly LCD Display

The accurate and user-friendly LCD screen displays status and parameters in real time. The front panel LCD display gives direct access to UPS settings: on/off, setting the operating mode



Output voltage distortion and output current with discharge lamp



Low Input Current Distortion (THDi <3~5%)

AFC cells are used to achieve extremely low distortion values. The CROMA EX series is able to obtain a low input current distortion at THDi <5% under full load and a THDv <1%. This will prevent distortion of electrical network upstream and thus, result in the reduction of cable usage and protective devices in the electrical network.

Made of 60% Recyclable Materials

When it comes to conserving the environment, ORION is committed to play our part by designing the UPS products using recyclable materials.



Long Battery Runtime Models Available

Our Long Battery Runtime Models offers the flexibility to add-on additional external batteries to provide a longer back-up time.



ORION Online UPS Accessories

SNMP Card

Integrated with our latest ViewPower software, the SNMP manager operates as an enhanced communication solution for your UPS system. It allows you to remotely manage and monitor your UPS system via internet connectivity. Once connected to the internet, the ViewPower software provides you access to remotely program or even shut down your UPS system.

- Allows control and monitoring of multiple UPSs through RJ-45 network connection
- Real-time dynamic graphs reflecting UPS data (Voltage, frequency, load level and battery level)
- Warning notifications via audible alarm, broadcast, mobile messenger, e-mail and SNMP traps
- Historical data logging
- One click easy firmware upgrade
- Password security protection and remote access management
- Supports optional environmental monitoring detector for temperature, humidity and smoke



Modbus Card

The ModBus Card provides UPS and PV inverter systems with the functionality to communicate with PCs through the ModBus Protocol.

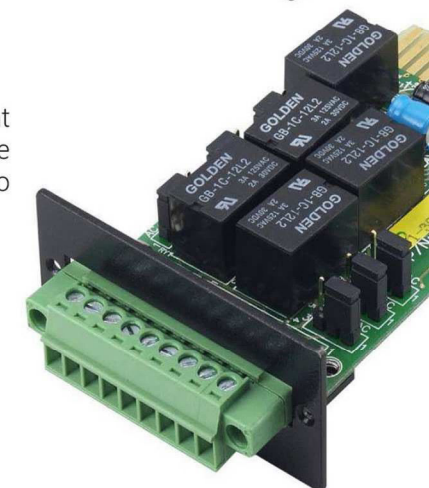
- Adopts ModBus RTU Protocol
- Comes with functions that includes read Holding Registers and write Registers
- RS232 and RS485 interface



AS-400 Card

The AS-400 communication card is designed with a high quality contact closure board that accurately converts UPS signals into dry contacts for users to monitor UPS events that are most concerned to them. By setting the jumper, the AS-400 communication card allows you to select various status indicators such as; UPS alarm, UPS failure, Bypass, Low Battery etc.

- Capable of selecting the status of the dry-contact signal by setting the jumper to meet different application requirements
- Suitable applications include; IBM Server, Personal PC & Workstations equipments, Auto-controlled industrial equipment & communication applications



Rack Mount Slider

The ORION Rack-mount slider kit offers you the best solution to install a CROMA Series UPS system into a 19" server rack enclosure. This kit comes with a pair of heavy duty sliders that are attached with quality assured ball bearings to ensure that your server can slide effortlessly into and out of the rack. Furthermore, the ORION Rack-mount slider kit includes a superior quality front and rear mounting brackets to withstand the weight of your UPS.

- Simple and easy installation
- Suitable for ORION Rack Mount Online UPS system
- Slider length available in 700mm and 1100mm to suit different types of cabinet



Specifications - CROMA EX (3/1 Phase in - 1Phase out)

MODELS		CROMA 6KL	CROMA 10KL	CROMA 10KT	CROMA 15KT	CROMA 20KT	CROMA 30KT
Phase		3/1-phase in / 1-phase out					
Capacity		6kVA	10kVA	10kVA	15kVA	20kVA	30kVA
INPUT							
Nominal Voltage		230 VAC (1Ph) (6KVA & 10KVA) / 400VAC (3Ph+N) (10-30 kVA)					
Voltage Range		110-300 VAC, 190-520 VAC (1/3-phase) at 50% load ; 160-300 VAC, 300-478 VAC (1/3-phase) at 100% load					
Frequency Range		40 ~ 70 Hz					
Power Factor		≥ 0.99 @ 100% load					
THDi		< 5% @ 100% load					
OUTPUT							
Output Voltage		220/230/240VAC	220/230/240VAC	220/230/240VAC		220/230/240VAC	220/230/240VAC
Voltage Regulation		±1%					
Frequency Range (Synchronized Range)		45~55Hz or 55~65Hz					
Frequency Range (Batt. Mode)		50 Hz ± 0.05 Hz or 60 Hz ± 0.05 Hz					
Current Crest Ratio		3:1					
Harmonic Distortion		≤2% THD (Linear Load) ≤5% THD (Non-linear Load)	≤2% THD (Linear Load) ≤5% THD (Non-linear Load)	≤ 2% THD (Linear Load) ≤ 5% THD (Non-linear Load)		≤2% THD (Linear Load) ≤ 5% THD (Non-linear Load)	≤2% THD (Linear Load) ≤5% THD (Non-linear Load)
Transfer Time	AC Mode to Batt. Mode	Zero					
	Inverter to Bypass	Zero					
Overload		110% for 60 mins; 125% for 10 mins; 150% for 60 Sec					
EFFICIENCY							
AC Mode		94%	94%	94%		94%	94%
Battery Mode		93%	93%	93%	93%	93%	93%
BATTERY							
Standard Model	Battery Type	12 V / 9 Ah					
	Numbers	20 pcs (16 - 20 pcs adjustable)*		20 pcs (16 - 20 pcs adjustable)* x 2 strings		20pcs(16-20pcs adjustable) x 3 strings	
	Recharge Time (Typical)	Back to 90% capacity in 8 hours				Not Applicable	Back to 90% capacity in 8 hours
	Charging Current (Max.)	1A		2A			
	Charging Voltage	273 VDC ± 1% (Based on 20pcs batteries)					
Long-Run Model	Battery Type	Depending on the application					
	Numbers	Depending on the application					
	Charging Current (Max.)	8~12A		8~12A		12A	
	Charging Voltage	273 VDC ± 1% (Based on 20pcs batteries)					
USER INTERFACE							
LCD Display & Audio Alarms		LCD Display showing Input/ Output Voltage & Frequency, Battery DC Voltage, Battery & Load Level, UPS, Battery & Load Status. Temperature, Fault Indicators for Over/Under Voltage, Over-temperature, Inverter/Charger fault, Short Circuit, Audio-Visual alarm for UPS on Battery, Overload, Low Battery, Setting UPS Operating & DC Parameters, Self-Test etc.					
PROTECTION							
UPS Protection		Surge Suppression, Spike & Noise Suppression, Battery Overcharge, Low Battery, Output over voltage, Input over-voltage & under voltage, Overload, Short-circuit, Over Temperature, Battery Self-Test, EPO, Isolation Transformer					
OTHER FEATURES							
		Cold Start: Allowing UPS to start on Batteries, in the absence of AC Mains Power; Auto-Restart: Allowing UPS to automatically re-start on resumption of AC Mains Power after shutdown due to Low Battery; Self-Diagnosis: Allowing UPS to undertake self-test of main components such as Inverter, Rectifier & Charger, Battery etc; Automatic and Manual Bypass; Remote Emergency Power off					
PHYSICAL							
Standard Model	Dimension (mm) D x W x H	592 x 250 x 576	592 x 250 x 826	815 x 250 x 826		815 x 300 x 1000	
	Net Weight (kgs)	83	144	164		234	
Long-Run Model	Dimension (mm) D x W x H	592 x250 x 576	592 x 250 x 826	592 x 250 x 576		815 x 250 x 826	
	Net Weight (kgs)	28	38	48		64	64
ENVIRONMENT							
Humidity		0 - 95% RH @ 0 - 40°C (Non-condensing)					
Noise Level		Less than 55dB @1 Meter		Less than 56dB @ 1 Meter			
MANAGEMENT							
Smart RS-232 / USB		Supports Windows® 7/8/10, Linux, Unix, and MAC					
Optional SNMP		Power management and remote monitoring through SNMP manager and web browser					
STANDARDS							
Certifications		ISO 9001, ISO 14001, OHSAS 18001, CE, RoHS, BIS					
Safety, EMC & Performance		IEC 62040-1, IEC 62040-2, IEC 62040-3					

Specifications are subject to change without prior notice due to continuous technical upgradation

Options

- AS-400 Card (External Alarm Indicator)
- SNMP Card for data communication via network connection
- MODBUS Card (Communication interface)
- Input / Output Isolation Transformer (for Galvanic Isolation)

Specifications - CROMA EX (3 Phase in - 3 Phase out)

MODELS		CROMA 10K33		CROMA 15K33		CROMA 20K33		CROMA 30K33	
Phase		3-phase in / 3-phase out							
Capacity		10kVA		15kVA		20kVA		30kVA	
INPUT									
Nominal Voltage		3 x 400 VAC (3Ph+N)							
Input Voltage Range		190-520 VAC (3-phase) at 50% load ; 300-480 VAC (3-phase) at 100% load							
Frequency Range		40~70 Hz							
Power Factor		≥ 0.99 @ 100% Load							
OUTPUT									
Output Voltage		3 x 380/400/415 VAC (3Ph+N)							
AC Voltage Regulation (Batt. Mode)		± 1%							
Frequency Range (Synchronized Range)		45~55 Hz or 55~65Hz							
Frequency Range (Batt. Mode)		50 Hz ± 0.05Hz or 60 Hz ± 0.05Hz							
Current Crest Ratio		3:1 (Max.)							
Harmonic Distortion		≤2 % THD (Linear Load) ; ≤5 % THD (Non-linear Load)							
Transfer Time	AC Mode to Batt. Mode	Zero							
	Inverter to Bypass	Zero							
Overload		110% for 60 mins; 125% for 10 mins; 150% for 60 Sec							
EFFICIENCY									
AC Mode		94%						95%	
Battery Mode		93%		92.5%		93%		93%	
BATTERY									
Standard Model	Battery Type	12 V / 9 Ah							
	Numbers	20 pcs (16 - 20 adjustable)*		20 pcs x 2 strings (16 - 20 adjustable)*				20pcs x 3 strings (16-20 adjustable)*	
	Recharge Time (Typical)	Back to 90% capacity in 9 hours							
	Charging Current (Max.)	1A		2A				4A	
	Charging Voltage	273 VDC ± 1%							
Long-Run Model	Battery Type	Depending on the capacity of external batteries							
	Numbers								
	Charging Current (Max.)	8~12A						12A	
	Charging Voltage	273 VDC ± 1%							
USER INTERFACE									
LCD Display & Audio Alarms		LCD Display showing Input/ Output Voltage & Frequency, Battery DC Voltage, Battery & Load Level, UPS, Battery & Load Status. Temperature, Fault Indicators for Over/Under Voltage, Over-temperature, Inverter/Charger fault, Short Circuit, Audio-Visual alarm for UPS on Battery, Overload, Low Battery, Setting UPS Operating & DC Parameters, Self-Test etc.							
PROTECTION									
UPS Protection		Surge Suppression, Spike & Noise Suppression, Battery Overcharge, Low Battery, Output over voltage, Input over-voltage & under voltage, Overload, Short-circuit, Over Temperature, Battery Self-Test, EPO, Isolation Transformer							
OTHER FEATURES									
		Cold Start: Allowing UPS to start on Batteries, in the absence of AC Mains Power; Auto-Restart: Allowing UPS to automatically re-start on resumption of AC Mains Power after shutdown due to Low Battery; Self-Diagnosis: Allowing UPS to undertake self-test of main components such as Inverter, Rectifier & Charger, Battery etc; Automatic and Manual Bypass; Remote Emergency Power off							
PHYSICAL									
Standard Model	Dimension (mm) D x W x H	815 x 250 x 826						815 x 300 x 1000	
	Net Weight (kgs)	109		164				233.5	
Long-Run Model	Dimension (mm) D x W x H	592 x 250 x 826						815 x 250 x 826	
	Net Weight (kgs)	38		52				64	
ENVIRONMENT									
Humidity		0 - 95% RH @ 0-40° C (Non - condensing)							
Noise Level		Less than 55 dB @1 Meter		Less than 56dB @ 1 Meter					
MANAGEMENT									
Smart RS-232 / USB		Supports Windows® 7/8/10, Linux, Unix, and MAC							
Optional SNMP		Power management and remote monitoring through SNMP manager and web browser							
STANDARDS									
Certifications		ISO 9001, ISO 14001, OHSAS 18001, CE, RoHS, BIS							
Safetv, EMC & Performance		IEC 62040-1, IEC 62040-2, IEC 62040-3							

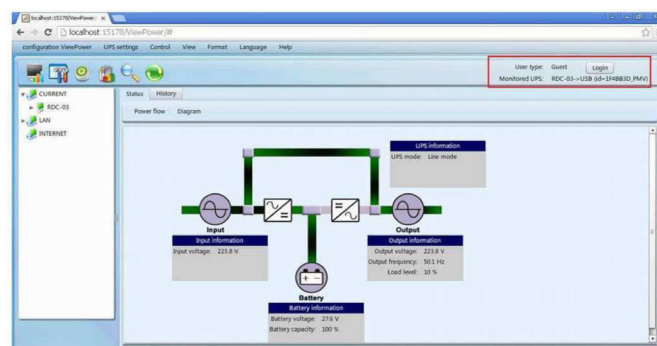
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ORION CROMA Series Online UPS Software

Viewpower – UPS Management Software

ViewPower is an advanced UPS management software that is designed for users to remotely monitor and manage multiple UPS units in a networked environment, either by LAN or INTERNET. The ViewPower software is able to protect your important data by executing a safety OS shutdown during power failure. Better yet, this software gives users the ability to store programming data and also scheduled a UPS shutdown when necessary.

- Allows control and monitoring of multiple UPSs via LAN and INTERNET
- User-friendly power analysis graphs
- Real-time dynamic graphs of UPS data
- Safety OS shutdown to prevent data losses during power failure
- Warning notifications via audible alarm, broadcast, mobile messenger, and e-mail
- Scheduled UPS on/off, battery test, programmable outlet control, and audible alarm control
- Password security protection and remote access management
- Supports multiple OS and local languages



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GUWAHATI

Odalbakra, Near Sabitri Bharali ME School,
 Guwahati - 781034 Assam
 Phone: 9678008031, 9678008032
 e-mail: info@dssystems.in
 www.dssystems.in

BHUBANESWAR

Ground Floor, Plot No. 1149/2415, Gobinda Prasad,
 Bomikhal, (Behind Ekamra Cinema)
 Bhubaneswar-751010
 Odisha

DELHI & NCR

B-13/3, First Floor,
 Jhilmil Industrial Area, Shahdara,
 Delhi - 110 095

KOLKATA

IB-118, Sector-III, Salt Lake,
 (Near Water Tank 14),
 Kolkata - 700106 West Bengal

AHMEDABAD

Tenement No. 12, Ground Floor, Sujalam
 Co-operative Housing Society, Vastrapur Road,
 Vastrapur Gam,
 Ahmedabad - 380 015, Gujarat

