# Single phase UPS

## 1ph from 450 VA to 10 kVA



## Applications

- Home Office
- Computers and peripherals
- Networks and servers
- Small data centers

## Highlights

- User-friendly and Plug and Play
- Compact and noiseless
- Intuitive LCD display
- Rack/Tower convertible design
- Parallel redundant configuration

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# GIOTTO

**1ph from 450 to 2000 VA**

Line-interactive UPS
for Home Office,
computers and peripherals
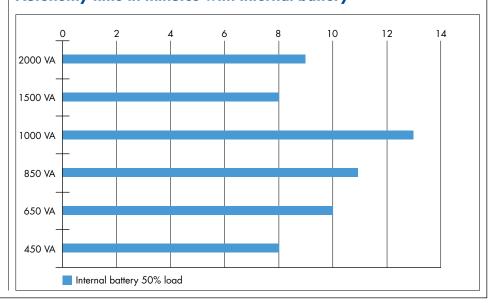
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## Features and benefits

- User-friendly UPS ensuring compact protection for a wide range of needs:
  - Best power protection for PC from 450 to 850 VA with one output receptacle (IEC 320-C13) and one Schuko.
  - Advanced power protection from 1000 to 2000 VA with four output receptacles (IEC 320-C13) and one Schuko for high performance PC and peripherals.
- Instantaneous battery back-up power and electrical interference protection.
- Plug and Play installation easy to set up also for first-time users.
- Compact and noise-free running to be placed anywhere at home or office.
- Energy efficient ensuring lowest impact on energy costs.
- Intuitive LCD display provides easy-to-read UPS status and power information.

- Audible alarm alerts upon utility power and UPS status change.
- Easy User-replaceable battery.
- AVR technology stabilizing output voltage to protect your electronics over a wide range of mains quality issues.
- Advanced battery management extending battery life.
- Internet Modem / LAN protection via RJ-11/45 plug.
- USB communication port providing UPS managements.
- Cold start for powering loads when mains are not available.
- Borri Power Guardian user-friendly UPS management software free downloadable at www.borri.it/download (for more info see p.10).

## Autonomy time in minutes with internal battery



Internal battery 50% load

# GIOTTO technical data

| Rating (VA) | 450 | 650 | 850 | 1000 | 1500 | 2000 |
|---|---|---|---|---|---|---|
| Nominal power (W) | 270 | 380 | 500 | 600 | 900 | 1200 |
| UPS dimensions WxDxH (mm) | 100x292x140 | | | 148x315x198 | | |
| UPS weight (kg) | 4 | 5 | 5.5 | 9 | 10.5 | 11.8 |

**Input**

| | | | | | | |
|---|---|---|---|---|---|---|
| Connection type | IEC 320-C14 | | | | | |
| Nominal voltage | 230 Vac 1-phase | | | | | |
| Voltage range | 160 to 290 Vac | | | | | |
| Frequency and range | 50/60 Hz, 45 to 65 Hz | | | | | |

**Output**

| | | | | | | |
|---|---|---|---|---|---|---|
| Connection type | 1 IEC 320-C13 and 1 Schuko | | | 4 IEC 320-C13 and 1 Schuko | | |
| Nominal voltage | 230 Vac 1-phase | | | | | |
| Frequency | 50/60 Hz | | | | | |
| Waveform | Simulated sine wave | | | | | |

**Battery**

| Autonomy time (min) ◆ | 50% load | 8 | 10 | 11 | 13 | 8 | 9 |
|---|---|---|---|---|---|---|---|
| | 100% load | 3 | 3 | 3 | 3 | 3 | 3 |

**Connectivity and function extensions**

| | |
|---|---|
| Front panel | LCD, ON/OFF button |
| Communication | Included: USB.<br>Compatible platforms: Windows, Linux, Mac |

**Environmental**

| | |
|---|---|
| Operating temperature range | 0°C to +40°C |
| Altitude (AMSL) | < 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m |
| Audible noise at 1m (dBA) | <40 |

**Standards and certifications**

| | |
|---|---|
| Quality assurance, environment, health and safety | ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 |
| Safety | IEC/EN 62040-1 |
| EMC | IEC/EN 62040-2 |
| Marking | CE |

◆ Measurement conditions: optimized parameters, fully charged battery, 0.6 PF

# GALILEO

## 1ph from 1000 to 3000 VA
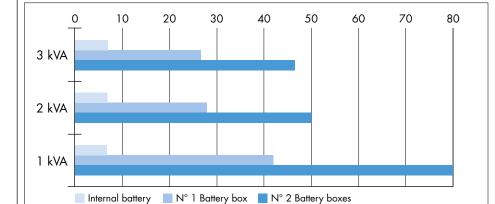On-line UPS
for networks and servers



## Features and benefits

- On-line double conversion UPS from 1000 to 3000 VA, Tower and 2U Rack/Tower from three to six output receptacles (IEC 320-C13) and one or two Schuko.
- Rack/Tower convertible design to protect your investment when migrating from tower to rack-mount environment. Both UPS and display panel can be rotated.
- Easy installation and set up, user-replaceable and upgradable battery.
- Intuitive LCD display providing easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Smart cooling system ensuring further energy savings.
- Programmable switched outlet group for setting load priorities.

- Active harmonic power quality control ensuring up to 0.99 input PF and THDi<3% for maximum compatibility with sources.
- Automatic self test and advanced battery management maximizing battery performance and extending battery life.
- Battery extension box allowing additional autonomy time to be quickly added.
- Remote power off for immediate UPS shutdown in case of emergency.
- USB communication port providing UPS management.
- One slot auto-sensing communication cards.
- Cold start for powering loads when mains are not available.
- Borri Power Guardian user-friendly UPS management software with alerts upon main power failures and system shutdown notification via SMS and email, free downloadable at www.borri.it/download (for more info see p.10).
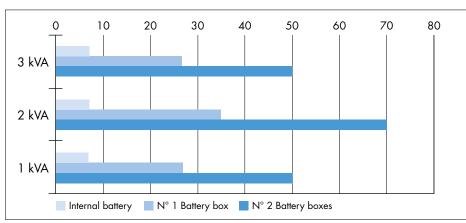
## Main options

- SNMP card to send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol to monitor UPS status by any internet browser from workstations and to receive SMS or e-mail alerts from the UPS on any portable device.
- Contact relay card to send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts.
- Additional battery charger for external battery box.
- Rail kit Rack/Tower.
- Rack PDU with external sockets and manual bypass switch.

## Autonomy time in minutes for Rack/Tower UPS



Internal battery · N° 1 Battery box · N° 2 Battery boxes

## Autonomy time in minutes for Tower UPS



Internal battery · N° 1 Battery box · N° 2 Battery boxes

## GALILEO technical data

| UPS Type | T * | T * | T * | RT (2U)** | RT (2U)** | RT (2U)** |
|---|---|---|---|---|---|---|
| **Rating (VA)** | **1000** | **2000** | **3000** | **1000** | **2000** | **3000** |
| Nominal power (W) | 900 | 1800 | 2700 | 900 | 1800 | 2700 |
| UPS dimensions WxDxH (mm) | 144x367x236 | 151x444x322 | 189x444x322 | 440x390x88 | 440x475x88 | 440x600x88 |
| UPS weight (kg) | 11.2 | 18.8 | 24.9 | 12.0 | 17.0 | 26.5 |

### Input

| | | | | | | |
|---|---|---|---|---|---|---|
| Connection type | IEC 320-C14 | | IEC 320-C20 | IEC 320-C14 | | IEC 320-C20 |
| Nominal voltage | 230 Vac 1-phase | | | | | |
| Voltage range | 195 to 260 Vac | | | | | |
| Frequency and range | 50/60 Hz, 45 to 65 Hz | | | | | |
| Power factor | 0.98 | | | 0.99 | | |
| Current distortion (THDi) | <3% | | | | | |

### Output

| | | | | | | |
|---|---|---|---|---|---|---|
| Connection type | 3 IEC 320-C13 1 Schuko | 3 IEC 320-C13 2 Schuko | 6 IEC 320-C13 2 Schuko | 3 IEC 320-C13 | 6 IEC 320-C13 | |
| Nominal voltage | 230 Vac +/-1% 1-phase | | | | | |
| Frequency | 50/60 Hz | | | | | |
| Power factor | Any power factor up to 0.9 lagging or leading without power derating | | | | | |
| Overload capability | 105% continuous, 120% for 30 seconds, 150% for 10 seconds, >150% transfer to bypass | | | | | |
| Mode of operation | On-line, Eco mode | | | | | |

### Battery

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Autonomy time internal battery (min)◆ | 50% load | 12 | 13 | 15 | 12 | 13 | 15 |
| | 100% load | 6 | 6 | 6 | 6 | 6 | 6 |

### Connectivity and function extensions

| | |
|---|---|
| Front panel | Display LCD, status LED, function keys |
| Communication | Included: USB, EPO, RS232. Optional: dry contact card, SNMP card. Compatible platforms: Windows, Linux, Mac |

### Environmental

| | |
|---|---|
| Operating temperature range | 0°C to +40°C |
| Altitude (AMSL) | < 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m |
| Audible noise at 1m (dBA) | <50 |

### Standards and certifications

| | |
|---|---|
| Quality assurance, environment, health and safety | ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 |
| Safety | IEC/EN 62040-1 |
| EMC | IEC/EN 62040-2 |
| Marking | CE |

*Tower  **Rack/Tower  ◆ Measurement conditions: optimized parameters, fully charged battery, 0.7 PF

GALILEO T 1 kVA

GALILEO T 2 kVA

GALILEO T 3 kVA

GALILEO RT 1 kVA

GALILEO RT 2/3 kVA

# LEONARDO

**1ph from 6 to 10 kVA**

On-line UPS
for networks and servers,
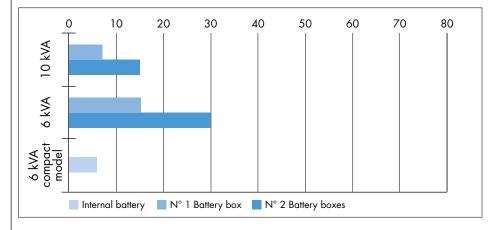small data centers

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## Features and benefits

- On-line double conversion UPS from 6 to 10 kVA, Tower and 2U or 3U Rack/Tower.
- Parallel redundant configuration maximizing the availability.
- Rack/Tower convertible design to protect your investment when migrating from tower to rack-mount environment. Both UPS and display panel can be rotated.
- Easy installation and set up, user-replaceable and upgradable battery.
- Intuitive LCD display providing easy-to-read UPS status and power information.
- Audible alarm alerts upon utility power and UPS status change.
- Smart cooling system ensuring further energy savings.
- Active harmonic power quality control ensuring 0.99 input PF and THDi<3% for maximum compatibility with sources.
- Automatic self test and advanced battery management maximizing battery performance and extending battery life.
- Battery extension box allowing additional autonomy time to be quickly added.

- Remote emergency power off to guarantee your piece of mind in critical applications.
- Internal manual bypass for safe and easy maintenance.
- RS232 communication port providing UPS management.
- Two slots auto-sensing communication cards.
- Cold start for powering loads when mains are not available.
- Borri Power Guardian user-friendly UPS management software with alerts upon main power failures and system shutdown notification via SMS and email, free downloadable at www.borri.it/download (for more info see p.10).
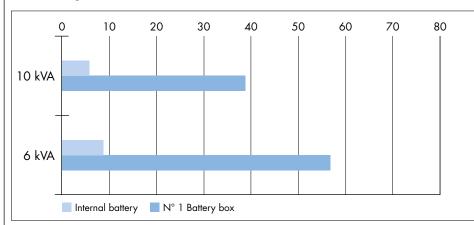
## Main options

- SNMP card to send UPS status to BMS's by Ethernet connection and SNMP or ModBus over IP protocol to monitor UPS status by any internet browser from workstations and to receive SMS or e-mail alerts from the UPS on any portable device.
- Contact relay card to send UPS status to PLC's, SCADA's or AS400's by voltage free SPDT contacts.
- Additional battery charger for external battery box.
- Parallel kit.
- Rail kit Rack/Tower.
- Rack PDU with external sockets and manual bypass switch.

## Autonomy time in minutes for Rack/Tower UPS



Legend: Internal battery | N° 1 Battery box | N° 2 Battery boxes

## Autonomy time in minutes for Tower UPS



Legend: Internal battery | N° 1 Battery box

# LEONARDO technical data

| UPS Type | | T * | T * | RT (2U)*** | RT (4U)** | RT (3U)*** |
|---|---|---|---|---|---|---|
| **Rating (kVA)** | | **6** | **10** | **6** | **6** | **10** |
| Nominal power (kW) | | 5.4 | 9 | 5.4 | 5.4 | 9 |
| UPS dimensions WxDxH (mm) | | 290x645x748 | 290x645x748 | 440x680x88 | 440x680x176 | 440x680x132 |
| UPS weight (kg) | | 86 | 96 | 24 | 52 | 26 |

## Input

| | |
|---|---|
| Connection type | Hardwired 2w (rectifier), 2w (bypass) / Hardwired 2w |
| Nominal voltage | 230 Vac 1-phase |
| Voltage range | 160 to 280 Vac |
| Frequency and range | 50/60 Hz, 45 to 65 Hz |
| Power factor | 0.99 |
| Current distortion (THDi) | <6% |

## Output

| | |
|---|---|
| Connection type | Hardwired 2w |
| Nominal voltage | 230 Vac +/- 1% 1-phase |
| Frequency | 50/60 Hz |
| Power factor | Any power factor up to 0.9 lagging or leading without power derating |
| Overload capability | 104% continuous, 150% for 160 seconds, >150% transfer to bypass |
| Mode of operation | On-line, Eco-mode |

## Battery

| Autonomy with internal battery (min)◆ | 50% load | 25 | 17 | external battery | 15 | external battery |
|---|---|---|---|---|---|---|
| | 100% load | 9 | 6 | external battery | 6 | external battery |

## Connectivity and function extensions

| | |
|---|---|
| Front panel | Display LCD, status LED, function keys |
| Communication | Included: RS232 card, EPO. Optional: dry contact card, SNMP card, RS485 card. Compatible platforms: Windows, Linux, Mac |

## Environmental

| | |
|---|---|
| Operating temperature range | 0°C to +40°C |
| Altitude (AMSL) | < 1000 m without power reduction, > 1000 m with reduction of 0.5% per 100 m |
| Audible noise at 1m (dBA) | <50 |

## Standards and certifications

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| Safety | IEC/EN 62040-1 |
| EMC | IEC/EN 62040-2 |
| Marking | CE |

*Tower with internal battery  **Rack/Tower with internal battery  ***Rack/Tower without internal battery  ◆ Measurement conditions: optimized parameters, fully charged battery, 0.7 PF



LEONARDO RT(2U) 6 kVA

LEONARDO T 6/10 kVA

LEONARDO RT(4U) 6 kVA

LEONARDO RT(3U) 10 kVA