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## Safety

***These are the standard Safety instructions.***

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج يجب قراءة الملاحظات الامنيه

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读。

(安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας.

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

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Пожалуйста! Прочитайте информацию по безопасности перед установкой этого продукта!

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Преди да инсталирате този продукт, моля прочетете информацията за безопасност.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Преди да се инсталира овој продукт, прочитајте информацијата за безбедност.

Antes de instalar este produto, leia as Informações sobre Segurança.

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

ཐོན་ཁུངས་འདི་བདེ་  
བྱ་འདྲ་མིན་ཡོད་པ་

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

ۇچۇرلىرىنى ئوقۇپ چىقىڭ .

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen canjbinj soengq cungj vahgangj ancien siusik.

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## **Safety statements**

These statements provide the caution and danger information that is used in this documentation.

### **Important:**

Each caution and danger statement in this documentation is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the Safety Information document.

For example, if a caution statement is labelled Statement 1, translations for that caution statement are in the Safety Information document under Statement 1.

Be sure to read all caution and danger statements in this documentation before you perform the procedures. Read any additional safety information that comes with your system or optional device before you install the device.

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## Statement 1



# DANGER

**Electrical current from power, telephone, and communication cables is hazardous.**

**To avoid a shock hazard:**

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

### **To Connect:**

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

### **To Disconnect:**

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

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## Statement 2



**CAUTION:** When replacing the lithium battery, use only Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

*Do not:*

- **Throw or immerse into water**
- **Heat to more than 100° C (212° F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

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## Statement 3



**CAUTION:** When laser products (such as CD-ROMs, DVD drives, fibre optic devices, or transmitters) are installed, note the following:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.



## **DANGER**

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

***Class 1 Laser Product***

***Laser Klasse 1***

***Laser Klass 1***

***Luokan 1 Laserlaite***

***Appareil A Laser de Classe 1***

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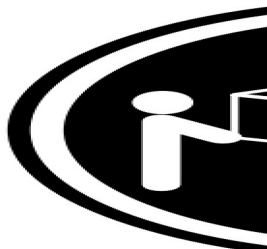
## Statement 4



**CAUTION:** Use safe practices when lifting.



≥ 18 kg (39.7 lb)



≥ 32 kg (70.5 lb)



≥ 55 kg (121.2 lb)

## Statement 5



**CAUTION:** The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



## Statement 6

**CAUTION:** If you install a strain-relief bracket option over the end of the power cord that is connected to the device, you must connect the other end of the power cord to an easily accessible power source.

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### Statement 8



**CAUTION:** Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

### Statement 12



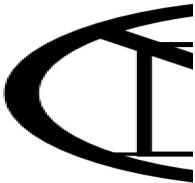
**CAUTION:** The following label indicates a hot surface nearby.



### Statement 26



**CAUTION:** Do not place any object on top of rack-mounted devices.



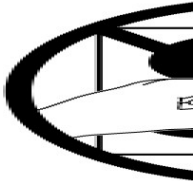


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## Statement 27



**CAUTION:** Hazardous moving parts are nearby.



## Rack Safety Information, Statement 2



**DANGER**

- Always lower the levelling pads on the rack cabinet.
  - Always install stabilizer brackets on the rack cabinet.
  - Always install servers and optional devices starting from the bottom of the rack cabinet.
  - Always install the heaviest devices in the bottom of the rack cabinet.
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## Guidelines for trained service technicians

This section contains information for trained service technicians.

### Inspecting for unsafe conditions

Use this information to help you identify potential unsafe conditions in a Lenovo product that you are working on.

Each Lenovo product, as it was designed and manufactured, has required safety items to protect users and service technicians from injury. The information in this section addresses only those items. Use good judgement to identify potential unsafe conditions that might be caused by alterations or attachment of non-Lenovo features or optional devices that are not addressed in this section. If you identify an unsafe condition, you must determine how serious the hazard is and whether you must correct the problem before you work on the product.

Consider the following conditions and the safety hazards that they present:

- Electrical hazards, especially primary power. Primary voltage on the frame can cause serious or fatal electrical shock.
- Explosive hazards, such as a damaged CRT face or a bulging capacitor.
- Mechanical hazards, such as loose or missing hardware.

To inspect the product for potential unsafe conditions, complete the following steps:

1. Make sure that the power is off and the power cords are disconnected.
  2. Make sure that the exterior cover is not damaged, loose, or broken, and observe any sharp edges.
  3. Check the power cords:
    - Make sure that the third-wire ground connector is in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and the frame ground.
    - Make sure that the power cords are the correct type.
    - Make sure that the insulation is not frayed or worn.
    - Remove the cover.
  4. Check for any obvious non-Lenovo alterations. Use good judgement as to the safety of any non-Lenovo alterations.
  5. Check inside the system for any obvious unsafe conditions, such as metal filings, contamination, water or other liquid, or signs of fire or smoke damage.
  6. Check for worn, frayed, or pinched cables.
  7. Make sure that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.
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## Guidelines for servicing electrical equipment

Observe these guidelines when you service electrical equipment.

- Check the area for electrical hazards such as moist floors, non-grounded power extension cords, and missing safety grounds.
  - Use only approved tools and test equipment. Some hand tools have handles that are covered with a soft material that does not provide insulation from live electrical current.
  - Regularly inspect and maintain your electrical hand tools for safe operational condition. Do not use worn or broken tools or testers.
  - Do not touch the reflective surface of a dental mirror to a live electrical circuit. The surface is conductive and can cause personal injury or equipment damage if it touches a live electrical circuit.
  - Some rubber floor mats contain small conductive fibres to decrease electrostatic discharge. Do not use this type of mat to protect yourself from electrical shock.
  - Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
  - Locate the emergency power-off (EPO) switch, disconnecting switch, or electrical outlet so that you can turn off the power quickly in the event of an electrical accident.
  - Disconnect all power before you perform a mechanical inspection, work near power supplies, or remove or install main units.
  - Before you work on the equipment, disconnect the power cord. If you cannot disconnect the power cord, have the customer power-off the wall box that supplies power to the equipment and lock the wall box in the off position.
  - Never assume that power has been disconnected from a circuit. Check it to make sure that it has been disconnected.
  - If you have to work on equipment that has exposed electrical circuits, observe the following precautions:
    - Make sure that another person who is familiar with the power-off controls is near you and is available to turn off the power if necessary.
    - When you work with powered-on electrical equipment, use only one hand. Keep the other hand in your pocket or behind your back to avoid creating a complete circuit that could cause an electrical shock.
    - When you use a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
    - Stand on a suitable rubber mat to insulate you from grounds such as metal floor strips and equipment frames.
  - Use extreme care when you measure high voltages.
  - To ensure proper grounding of components such as power supplies, pumps, blowers, fans, and motor generators, do not service these components outside of their normal operating locations.
  - If an electrical accident occurs, use caution, turn off the power, and send another
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person to get medical aid.

## **Safety statements**

These statements provide the caution and danger information that is used in this documentation.

### **Important:**

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For example, if a danger statement is labelled D005, translations for that caution statement are in the Safety Information document under D005.

Be sure to read all caution and danger statements in this documentation before you perform the procedures. Read any additional safety information that comes with your system or optional device before you install the device.

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**L001**



**DANGER**

**Hazardous voltage, current, or energy levels are present inside any component that has this label attached. Do not open any cover or barrier that contains this label. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.**

**DO NOT open up the chassis or any other parts of any UPS unit. This will void the unit warranty. Only replace parts for which a serviceable part exists, that is servicing any UPS unit is limited to FRU / CRU replacement parts.**

**(L001)**

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## D005



### DANGER

**When working on or around the system, observe the following precautions:**

**Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:**

- **If Lenovo supplied a power cord(s), connect power to this unit only with the Lenovo-provided power cord. Do not use the Lenovo-provided power cord for any other product.**
- **Do not open or service any power supply assembly.**
- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.**
- **Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.**
- **Connect any equipment that will be attached to this product to properly wired outlets.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.**

**To disconnect:**

1. Turn everything OFF (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

**To connect:**

1. Turn everything OFF (unless instructed otherwise).
  2. Attach all cables to the devices.
  3. Attach the signal cables to the connectors.
  4. Attach the power cords to the outlets.
  5. Turn the devices ON.
- **Sharp edges, corners and joints might be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching.**

**(D005)**

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**C004**



**CAUTION:**

**Lead-acid batteries can present a risk of electrical burn from high, short-circuit current. Avoid battery contact with metal materials; remove watches, rings, or other metal objects, and use tools with insulated handles. To avoid possible explosion, do not burn.**

**Exchange only with the Lenovo approved part. Recycle or discard the battery as instructed by local regulations. In the United States, Lenovo has a process for the collection of this battery. For information, call 1-800-426-4333. Have the Lenovo part number for the battery unit available when you call. (C004)**

**DO NOT mix old and new batteries in an Uninterruptible Power Supply unit.**

**DO NOT open up any battery pack retrieved from an Uninterruptible Power Supply unit.**

**Wear safety goggles for your own protection when replacing batteries of an Uninterruptible Power Supply unit.**

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**C009**



**CAUTION:**



18 kg (39.7 lb) – 32 kg (70.5 lb)

**The weight of this part or unit is between 18 and 32 kg (39.7 and 70.5 lb). It takes two persons to safely lift this part or unit. (C009)**



**CAUTION:**



32 kg (70.5 lb) – 55 kg (121.2 lb)

**The weight of this part or unit is between 32 and 55 kg (70.5 lb and 121.2 lb). It takes three persons to safely lift this part or unit. (C010)**

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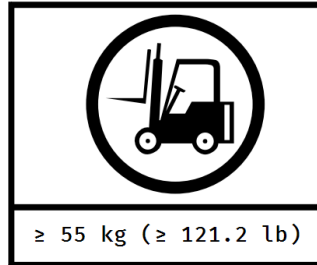




**CAUTION:**



≥ 55 kg (121.2 lb)



≥ 55 kg (≥ 121.2 lb)

**The weight of this part or unit is more than 55 kg (121.2 lb). It takes specially trained persons, a lifting device, or both to safely lift this part or unit. (C011)**

**C022**



**CAUTION:**

**This product might be equipped with a hard-wired power cable. Ensure that a licensed electrician performs the installation per the national electrical code. (C022)**

## R001

### Important:

The following general safety information should be used for all rack-mounted devices:



### DANGER

**Observe the following precautions when working on or around your IT rack system:**

- **Heavy equipment - personal injury or equipment damage might result if mishandled.**
- **Always lower the levelling pads on the rack cabinet.**
- **Always install stabilizer brackets on the rack cabinet.**
- **To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.**
- **Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices.**



- **Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.**
- **Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.**
- **An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.**

(R001 part 1 of 2)



**CAUTION:**

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or over-current protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- *(For fixed drawers)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

(R001 part 2 of 2)

**Rack Safety Information, Statement 3**



**DANGER**

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| <ul style="list-style-type: none"><li>• Always lower the levelling pads on the rack cabinet.</li><li>• Always install stabilizer brackets on the rack cabinet.</li><li>• Always install servers and optional devices starting from the bottom of the rack cabinet.</li><li>• Always install the heaviest devices in the bottom of the rack cabinet.</li></ul> |
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## Output power and ampere ratings

**Important:** Make sure that the power receptacle is near the equipment and is easily accessible so that the uninterruptible power supply (UPS) can be disconnected quickly.

To reduce the risk of fire, connect only to a circuit provided with branch circuit over-current protection with an ampere rating in accordance with the National Electrical Code (NEC), ANSI/NFPA 70 or your local electrical code.

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## Product Safety

- The UPS connection instructions and operations described in the manual must be followed in the indicated order.
  - **Important:** To reduce the risk of fire, the unit connects only to a circuit provided with branch circuit over-current protection as described in this manual, in accordance with the National Electric Code, ANSI/NFPA 70.
  - The upstream circuit breaker for Normal AC and Bypass AC must be easily accessible. The unit can be disconnected from AC power source by opening this circuit breaker. This circuit breaker is used for back-feed protection and must comply with IEC/EN 62040-1 (the creepage and clearance distances shall meet the basic insulation requirements for pollution degree 2).
  - Disconnection and over-current protection devices shall be provided by others for permanently connected AC input (Normal AC and Bypass AC) and AC output circuits.
  - Check that the indications on the rating plate correspond to your AC powered system and to the actual electrical consumption of all the equipment to be connected to the system.
  - For PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.
  - Never install the system near liquids or in an excessively damp environment.
  - Never let a foreign body penetrate inside the system.
  - Never block the ventilation grates of the system.
  - Never expose the system to direct sunlight or source of heat.
  - If the system must be stored prior to installation, storage must be in a dry place.
  - The admissible storage temperature range is -15 oC (5 oF) to +50 oC (122 oF).
  - This unit is not designed to conform to ANSI/NFPA 75 and therefore is not for use in ANSI/NFPA 75-certified data centers.
  - Although the UPS does not contain back-feed (ABF) relays, some back-feed protection is provided. For example, if some components are damaged in battery mode, the output voltage may feed back to the input. In this case, a current transformer (CT) is used to detect the bypass current feedback voltage. If a current back-feed fault condition is detected, the UPS will terminate the inverter output to avoid personal injury.
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